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SUSTAINABILITY IN A MULTIPOLAR WORLD

THE HAGUE CENTRE FOR STRATEGIC STUDIES AND TNO





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THE HAGUE CENTRE FOR STRATEGIC STUDIES (HCSS) AND TNO

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The TNO and *The Hague* Centre for Strategic Studies (HCSS) programme Strategy & Change analyzes global trends in a dynamic world affecting the foundations of our security, welfare and well-being.

The programme attempts to answer the critical question: what are the policies and strategies that must be developed to effectively anticipate on these emerging challenges?

Strategy & Change provides both a better understanding and feeds the agenda for a sustainable future of our society.

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1 INTRODUCTION

Hardly a week passes without a news story about the potential effects of climate change, food and mineral scarcity, the loss of tropical forests and biodiversity in general. In an era in which more people live on this planet and enjoy a higher level of consumption than ever, the question arises: at what point will the Earth's carrying capacity impose limits to population growth and economic development. In its 30-Year Update of the well-known publication 'The Limits to Growth', the Club of Rome stressed that the once-debated notion of natural constraints to growth is now becoming apparent as the overall human impact on the Earth's ecosystem seems to be reaching the limits of the latter's carrying capacity. This paper will not address the scientific merits of these issues but will instead focus on another important question, namely: if the Earth's carrying capacity is limited, how can policymakers deal with these limits as they relate to demographic and economic growth?

The Club of Rome and the Brundtland Commission on Development and Environment initiated an international momentum to address the needs of both present and future generations through a joint policy agenda for sustainable development. Institutions such as the United Nations (UN) have played a key role in developing multilateral agreements to codify this momentum. Together, this led to the establishment of international sustainability frameworks that became increasingly specific and binding.

However, the international landscape and this onward progression have undeniably changed. The UN Climate Change Conference in Copenhagen in December 2009 was the world's largest ever gathering on climate change yet the conference failed to move the international sustainability agenda forward. This failure was preceded by a complicated ratification process of the Kyoto protocol which, with hindsight, seems to have marked a decisive turning point.

We believe this failure is reflective of the emerging multipolar world and the changing role of international institutions such as the UN. Even despite the early, optimistic analysis of the results of the most recent UN climate change talks in Cancún (December 2010), the emerging international landscape appears to be characterized by the return of national and local interests instead of multilateralism. The international sustainability debate is confronting these diffused rather than shared interests and finding that it is much more difficult to achieve cooperative policies on common good issues.

This does not necessarily mean that aspirations for global sustainability have evaporated. It may instead be the start of a new phase in which the Western-dominated view on sustainable development is being molded to a greater variety of international viewpoints and interests. As a result, even while multipolarity may produce inaction and conflict, it may also create an opportunity for a sustainability agenda that is more inclusive and so, arguably more sustainable.

This report addresses a number of questions: what space exists for co-operative sustainability strategies in a multipolar world in which the role of international bodies, such as the UN, are weakened? Do we face a divided world in which nations do not have a shared view on our common future? Or are we instead witnessing the advent of new strategies that present innovative and unexpected opportunities for co-operative action at the international level, enabling present and future generations to fulfill their basic needs?

The report is divided into three parts. Part I is an international comparison of the sustainability policies of the following six countries: the Netherlands, China, India, Russia, South Africa and Mexico. The policy comparison begins with a substantive focus, looking at how countries define each dimension of sustainability (economic, environmental, political and social). It then has an institutional focus and examines the national policy frameworks for sustainability. This comparison aims to gauge whether, and on what points, there is international divergence or convergence in these countries' visions and approaches.

Part II maps the future bandwidth of international sustainability policies based on a meta-analysis of a number of foresight studies. This section aims to identify future trends and issues in sustainable development and asks whether an international shared sustainability framework is likely.

Finally, Part III discusses the emerging international landscape and focuses on the tension between international competition for common resources and a multilateral approach to sustainability. In addition, this part identifies key issues and suggests a number of recommendations for policymakers in Europe on how to effectively pursue a sustainability agenda in a multipolar world.

PART I: INTERNATIONAL POLICY COMPARISON

2 OPERATIONALISING THE RESEARCH DESIGN

2.1 DEFINING SUSTAINABILITY: WHAT DO WE UNDERSTAND BY IT?

To establish a working definition of sustainability, we first made an overview of definitions used by governments, international institutions, think-tanks, academics and a number of NGOs. This preliminary study found that the most commonly used definition of sustainability is the UN's Brundtland Commission's, namely 'meeting the needs of the present without compromising the ability of future generations to meet their own needs.'¹ In other words, sustainability is about balancing current needs with issues of intergenerational equity. Drawing from Economics and specifically from the concept of discount rates, intergenerational equity relies on the perception that the future is important and that it is increasingly discounted when present needs are more critical. Consequently, sustainability and intergenerational equity require that countries deem the future important enough to give something up today.

We added two main dimensions to organize this otherwise broad definition of sustainability. First, a time dimension that distinguishes between short-term and long-term issues. Second, a substantive dimension that distinguishes between economic, environmental and social-political sustainability issues. The following matrix shows the different components of the working definition schematically. It is used throughout the policy comparison to examine whether sustainability policies differ or coincide. The numbers in parentheses refer to the sections in this report that deal with each component.

1 World Commission on Environment and Development (1987).

	ECONOMIC	ENVIRONMENTAL	SOCIAL AND POLITICAL
SHORT-TERM	Financial feasibility of development and growth (4.2)	Environmental systems and stresses (5.2) Human vulnerability to environmental stresses (5.3)	
LONG-TERM	Physical capital reserves for future generations (4.3) Human capital investment in future generations (4.4)	Mitigation (5.4) International efforts to protect and preserve the environment's integrity (5.5)	Social and political cohesion (6.2)

FIGURE 1: SCHEMATIC REPRESENTATION OF THE WORKING DEFINITION OF SUSTAINABILITY

2.2 METHODOLOGY

The policy comparison is based on an in-depth review of policy and academic papers on sustainability in six countries. This review was cross-checked and complemented by text mining. Using a complex algorithm, text mining technology scores words on the basis of frequency and their association with other words. In addition, it is able to identify if certain concepts are increasingly used through time. In so doing, text mining gives an objective impression of the key issues and provides a snapshot of what countries talk about when mentioning a given issue. This should correct for possible analyst biases or blind spots and offer an empirical basis for the statements made throughout the report.

The sources that were used for the policy comparison include national strategies for sustainability and/or sustainable development, national position papers for key international conferences or institutions (particularly the Copenhagen conference, the Millennium Development Goals or MDGs and Agenda 21), regional position papers or agreements, major speeches on sustainability issues by key government officials as well as secondary

sources (academic and expert reviews) that provided a critical interpretation of official documents.²

The countries selected for this report are China, India, the Netherlands (as a benchmark study for the European Union, EU, more generally), Mexico, Russia and South Africa. These countries were selected based on the following reasons:

- They are confronted with different economic, environmental, social and political issues;
- They represent different stages and models of economic development;
- They represent individual reference points in their respective regions and internationally;
- They tend to be vocal on the international stage and have formulated position papers on key sustainability challenges;
- They are of particular interest to Europe. Specifically Russia, China and India play an important role in our energy and economic security.

2 Agenda 21 is a comprehensive plan of action to be taken globally, nationally and locally. It has been adopted by UN agencies, governments, and other actors. UN Department of Social and Economic Affairs (2009). Agenda 21. [08.09.2010: <http://www.un.org/esa/dsd/agenda21/>].

3 BACKGROUND

3.1 NATIONAL CONTEXTS AND SALIENCE LEVELS

Concepts of sustainability and corresponding policies are shaped both at the international and national level. As a result, understanding the different domestic contexts is an important first step to explain variation between national sustainability agendas. The statistics displayed in Figure 3 (next page) give an overview of some of these contextual differences.

The table reveals a number of noteworthy economic, environmental, social and political disparities. First, China and India have the highest total CO² emissions and the worst overall Environmental Performance Indices, which places them amongst the largest contributors to global pollution. However, this changes when looking at their emissions per capita. This partly explains why population size plays such a prominent role in the sustainability debate.

Second, the statistics of the Netherlands and Russia show the relationship between higher GDP per capita and higher emissions per capita. This highlights that economic growth and related changes in consumption patterns are a major cause of environmental degradation, a recurring theme throughout this study.

Third, South Africa and India's low life expectancy at birth statistics explain why health issues loom so largely on their national discussions on sustainability.

	CHINA	INDIA	MEXICO	THE NETHERLANDS	RUSSIA	SOUTH AFRICA
O2 Emissions						
Overall Rank, 2007	96	139	87	27	33	47
Emissions per capita, 2000 ¹	2.7	1.1	3.8	10.6	9.8	8.1
Emissions per capita, 2007 ²	4.6	1.2	4.1	11.1	11.2	7.3
UNDP Human Development Indices, 2007						
Human Development Index, Overall Rank ³	92	134	53	6	71	129
Human Poverty Index, Overall Rank ⁴	36	88	23	n/a	32	85
Life expectancy at birth	72.9	63.4	76	79.8	66.2	51.5
GDP per capita (PPP US\$)	5,383	2,753	14,104	38,694	14,690	9,757
Education index ⁵	0.851	0.643	0.886	0.985	0.933	0.843
Environmental Performance Indices (EPI)						
Overall Rank, 2007 ⁶	121	123	43	47	69	115
EPI-Water, 2008 ⁷	79.3	81	91.4	100	94.8	87.9
EPI-Air Rank, 2007 ⁸	135	125	85	72	27	35
WWF Ecological Footprint, 2005						
Total Ecological Footprint ⁹	2.1	0.9	3.4	4	3.7	2.1
Ecological reserve or deficit ¹⁰	-1.2	-0.5	-1.7	-2.9	4.4	0.1
Water Footprint Network Survey, 1997-2001						
Water Footprint ¹¹	702	980	1,441	1,223	1,858	931
Agricultural Water Use ¹²	565	907	837	31	1,380	644
Water Scarcity ¹³	30	52	31	21	6	79
Economist Democracy Index¹⁴						
Overall Rank, 2008	136	35	55	4	107	31

FIGURE 2: SUSTAINABILITY DATA FOR EACH OF THE COUNTRIES

- 1 Measured per capita. Source: Carbon Dioxide Information Analysis Center (2000).
- 2 Ibid.
- 3 The Human Development Index (HDI) measures human development by looking at life expectancy, education and GDP per capita. Source: UNDP (2007).
- 4 The Human Poverty Index (HPI) measures standard of living by looking at the number of people with life expectancy below 40, adult literacy rates, access to water and underweight children. Source: UNDP (2007).
- 5 The Education Index is calculated on the basis of data on adult literacy rates and gross enrolment ratios with 1 as the highest theoretical score. Source: UNDP (2007).
- 6 The Environmental Performance Index (EPI) ranks 163 countries on 25 performance indicators tracked across ten policy categories covering both environmental public health (environmental burden of disease, water and air pollution effects on humans) and ecosystem vitality (pollution effects on ecosystems, water, biodiversity and habitat, climate change). Source: Yale and Columbia Universities (2010).
- 7 EPI - Water measures the percentage of the country's population with access to drinking water. Source: Yale and Columbia Universities (2010).
- 8 EPI-Air Rank measures air pollution according to indoor air pollution, urban particulates, local ozone, regional ozone, sulfur dioxide emissions. Source: Yale and Columbia Universities (2010).
- 9 The Ecological Footprint measures humanity's demand on the biosphere in terms of the area of biologically productive land and sea required to provide the resources we use and to absorb our waste. Calculated in global hectares, with one global hectare being equal to a world-average hectare in ability to produce and absorb waste. Source: World Wide Fund for Nature (2010).
- 10 See Footnote 8, calculated in global hectares per person. Source: World Wide Fund for Nature (2010).
- 11 The Water Footprint of a nation is the total amount of water used to produce the goods and services consumed by its inhabitants. It includes two components: the internal water footprint (water use inside the country) and the external water footprint (water use in other countries for products consumed internally). Assessed on the basis of data from 1997-2001. Measured as m³ of water consumed per capita per year. Source: Hoekstra and Chapagain (2008).
- 12 Agricultural Water Use is measured as the m³ of internal water used for agriculture per capita per year. Assessed on the basis of data from 1997-2001. Source: Hoekstra and Chapagain (2008).
- 13 Water Scarcity is calculated as the percentage of water consumed as compared to the total internal water available. Assessed on the basis of data from 1997-2001. Source: Hoekstra and Chapagain (2008).
- 14 The Economist Democracy Index (EDI) measures the state of democracy by looking at the electoral process, pluralism, civil liberties, functioning of government, political participation and political culture. Source: Economist Intelligence Unit (2010).

Fourth, the water footprint statistics show that most countries consume large quantities of water even when faced with internal water scarcity. This is largely due to inefficient water use, specifically in agriculture, which is key to many of these countries, as the analysis below will show. Finally, the Economist Democracy Index points to the different political landscapes in place in the countries analyzed, with the Netherlands, India and South Africa being among the more democratic ones.

In sum, the statistics show a picture of an uneven distribution of wealth and of social and environmental conditions between the countries analyzed. These contextual differences may also explain the variation in the salience levels of sustainability and sustainable development across these countries.

SALIENCE

For each of the selected countries, we measured the salience of 'sustainability' or 'sustainable development'. This was done by conducting an extensive internet search for both terms in government internet domains to see what percentage of government websites mentioned either of these terms. Figure 4 shows that the results produce three levels of salience. Russia and the European Commission (though not the EU more generally) mention the issue most frequently, China and South Africa are in the middle, and Mexico and India mention the issue least.

It must be noted that these results reflect a limited linguistic bias because the search was done in English. Another search using the national languages of China, Mexico and Russia reduced the overall salience of both terms, with the exception of China where 'sustainable development' in Mandarin appeared on over 5% of the government's websites.

COUNTRY	GOVERNMENT DOMAIN NAME	% OF SITES WITH THE TERM 'SUSTAINABLE DEVELOPMENT'	% OF SITES WITH THE TERM 'SUSTAINABILITY'
CHINA	gov.cn	1.37	0.59
SOUTH AFRICA	gov.za	1.60	1.56
INDIA	gov.in	0.05	0.06
MEXICO	gob.mx	0.34	0.11
RUSSIA*	eng.kremlin.ru	2.09	0.67
EUROPEAN COMMISSION*	ec.europa.eu	3.05	4.28
EUROPEAN UNION PORTAL*	europa.eu	1.20	1.35

* In Russia there is no central government domain name so the Kremlin website (central coordinating government authority) was chosen instead. Similarly, in the absence of a fully operational Dutch government domain name, the europa.eu domain (portal of all EU organizations) and ec.europa.eu of the European Commission (main executive authority for sustainability issues within the EU) were used.

FIGURE 3: SALIENCE OF 'SUSTAINABILITY' AND 'SUSTAINABLE DEVELOPMENT' ACROSS GOVERNMENTS

The results also reveal semantic difference between countries. Whereas the EU uses the term 'sustainability' most, China and Mexico and Russia show a clear tendency to use the term 'sustainable development'. The latter also use the terms 'poverty alleviation' and 'environmental progress' to refer to the concept of sustainability. As far as possible, policy documents mentioning these terms were included in the analysis. However, the main focus of the research remains on policies that are carried out under the international banner of sustainability or sustainable development.

3.2 NATIONAL DEFINITIONS OF SUSTAINABILITY

Figure 4 presents an overview of descriptions of sustainability and sustainable development that were found in relevant official policy documents.

SOURCE	DESCRIPTION
<p>CHINA</p>  <p>NATIONAL REPORT ON SUSTAINABLE DEVELOPMENT</p>	<p>'Social and economic development are the cornerstone of sustainable development. Experience in history has led us to believe that sustainable development cannot be attained when the populace is plagued by backwardness and poverty. China must firmly give priority to the primary task of developing her national economy so as to alleviate poverty and improve the living standards of the people. Economic development, as the nation's central task, is essential to raising social productivity, improving the competence level and living standards of the people, and achieving sustainable management of natural resources and protection of the environment. Economic development constitutes the material foundation for any national undertakings in the country, and is a fundamental guarantee to achieving the co-ordination of population, resources, environment, and economy.'</p>
<p>EUROPEAN UNION</p>  <p>EUROPEAN COMMISSION'S DG ENVIRONMENT</p>	<p>'Sustainable Development stands for meeting the needs of present generations without jeopardizing the ability of future generations to meet their own needs - in other words, a better quality of life for everyone, now and for generations to come. It offers a vision of progress that integrates immediate and longer-term objectives, local and global action, and regards social, economic and environmental issues as inseparable and interdependent components of human progress. Sustainable development will not be brought about by policies only: it must be taken up by society at large as a principle guiding the many choices each citizen makes every day, as well as the big political and economic decisions that have. This requires profound changes in thinking, in economic and social structures and in consumption and production patterns.'</p>
<p>INDIA</p>  <p>MINISTRY OF ENVIRONMENT AND FORESTS</p>	<p>'The concepts of interrelatedness, of a shared planet, of global citizenship, and of 'spaceship earth' cannot be restricted to environmental issues alone. They apply equally to the shared and inter-linked responsibilities of environmental protection and human development.'</p>

<p>MEXICO</p>  <p>NATIONAL DEVELOPMENT PLAN 2007-2012</p>	<p>'Sustainable Human Development as a guiding principle of that National Development Plan assumes the purpose of development is to create an atmosphere where everyone can increase their capacity and opportunities can be extended to the present generation and the future ones. [Individual rights and the expansion of their capacities] is the backbone of all decisions and definitions of public policy.'</p>
<p>THE RUSSIAN FEDERATION</p>  <p>NATIONAL TRANSITION TO SUSTAINABLE DEVELOPMENT</p>	<p>'Following the recommendations and principles set out in the documents of the OUN Conference on environment and development (Rio de Janeiro 1992) and being guided by them, hereby we are introducing necessary and possible measures required for the transition of the Russian Federation to sustainable development, providing balanced solutions of socio-economical issues and securing favorable environment and natural resources potential in order to satisfy the needs of current and future generations.'</p>
<p>SOUTH AFRICA</p>  <p>NATIONAL FRAMEWORK FOR SUSTAINABLE DEVELOPMENT</p>	<p>'South Africa aspires to be a sustainable, economically prosperous and self-reliant nation state that safeguards its democracy by meeting the fundamental human needs of its people, by managing its limited ecological resources responsibly for current and future generations, and by advancing efficient and effective integrated planning and governance through national, regional and global collaboration. [...] [This] <i>will entail shared and accelerated growth, targeted interventions and community mobilization to eradicate poverty, and ensure the ecologically sustainable use of our natural resources and eco-system services.</i>'</p>

FIGURE 4: NATIONAL DESCRIPTIONS OF 'SUSTAINABILITY' AND 'SUSTAINABLE DEVELOPMENT'

This overview shows different understandings of sustainability and sustainable development. What stands out is that the EU has a comprehensive approach to sustainability, including all three dimensions (economic, environmental, and social and political) in its definition. The EU makes explicit that the responsibility for sustainable development befalls not just governments but all actors in society, including individual citizens. Mexico's description also covers all three dimensions but focuses mainly on individual citizens. It sees sustainability as the right of citizens to benefit from a set of common goods, ranging from economic growth to a green environment. By contrast, Russia's definition clearly delimits sustainable

development as a responsibility of the state and focuses primarily on economic and environmental issues. South Africa's definition is the narrowest and focuses primarily on the economic dimension.

PHILOSOPHICAL UNDERPINNINGS

National concepts of sustainability are also shaped by particular cultural and/or philosophical traditions. The Indian government states that its sustainability policies are rooted in Hindu philosophy and the principle of circular regeneration, whereby human beings should limit their consumption of global goods to the point that they can be naturally regenerated. The Indian government understands climate change in this context, namely that human actions have damaged the process of natural regeneration.³ China also refers to its own philosophical traditions – Confucianism, Taoism, etc. – when arguing that human actions towards other human beings and towards nature have to be mindful of natural balances and common livelihoods.⁴ Russia alludes to ideas from the 19th century Russian philosopher Vladimir Vernadsky. He argued that the earth evolved from inanimate matter ('geosphere') to biological life ('biosphere') to our current state of 'noosphere' whereby human cognition is the determining variable in organizing the world.⁵ This is one explanation for why Russia focuses relatively more on innovation and technology to attain economic and environmental sustainability.

PREREQUISITES

'Only when the economic growth rate reaches and is sustained at a certain level, can poverty be eradicated, people's livelihoods improved and the necessary forces and conditions for supporting sustainable development be provided.'

China's Agenda 21: White Paper on China's Population, Environment and Development in the 21st Century, Preamble, 1994

Aside from prioritizing one dimension of sustainability over another, certain countries also identify prerequisites. For developing countries like China, India and South Africa, poverty reduction is a sine qua none condition for

3 Saran (2009).

4 Sun, Cheng and Min (2008), p. 15-16.

5 *Foundations of the sustainable development strategy*. 2002. pg. 120.

addressing other issues related to sustainable development. They believe it is premature to speak about environmental issues as long as the basic living needs of its citizens remain unfulfilled.⁶ Similarly, Russia claims that national security is a prerequisite for sustainability.⁷ All countries also consider energy security an important prerequisite for sustainability.

Figure 5 illustrates the relationships between the dimensions of sustainability in the different national approaches. The approaches of China, South Africa and Russia differ most from the standard model. The South African and Russian approach can be schematized as one of concentric issues with governance and security respectively in the middle. For China, environmental issues constitute a subset of economic and social-political issues.

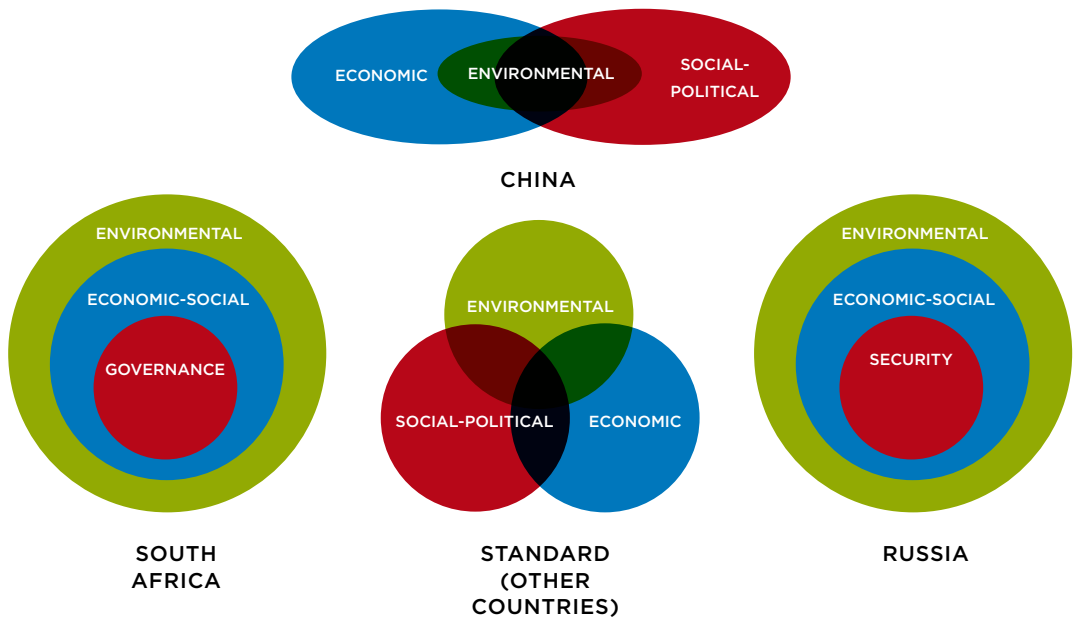


FIGURE 5: VISUALIZING THE DIMENSIONS OF SUSTAINABILITY

6 Republic of South Africa (2008), p. 30; Bahuguna, S. (2002), p. 1.

7 Russian Federation (2009b), p. 2.

USING 'SUSTAINABLE DEVELOPMENT'					
CHINA	INDIA	MEXICO	NETHERLANDS/EU	RUSSIA	SOUTH AFRICA
Economic Development Resources Climate Change Carbon Emissions Environ-mental Energy Developed countries Protection Areas Developing countries	Energy Developing countries Environ-mental Climate Education Economic Population Growth Local Government	Energy Carbon emissions Climate Change Economic National Environ-mental Opportunities Government Social Production	Energy Environmental Consumption Indicator Economic Resources Emissions Social Transport Biodiversity	Economic development Educational Environ-mental Social Implemen-tation Security Natural resources National Transition State	Africa Climate Baseline Social Economic Governance National Implementation Energy Resources
USING 'ECONOMIC DEVELOPMENT'					
CHINA	INDIA	MEXICO	NETHERLANDS/ EU	RUSSIA	SOUTH AFRICA
Sustainable development Resources Climate Change Carbon emissions Countries Environmental System Energy Developed countries Protection	Sustainable Energy Developing Countries Growth Environmental Climate Change Education Government Population Trans-portation	Energy Strategy Carbon emissions Climate Change National Adaption Environmental Social Government Resources	Sustainable and Sustainability Energy Environ-mental Consumption Indicator Emissions Resources Transport Social Biodiversity	Education Environmental Social Implementation Security Natural resources National Transition State Problems	Sustainable Africa Climate Social Governance National Interventions NGOs Energy Labor

FIGURE 6: TEXT MINING 'SUSTAINABLE DEVELOPMENT' AND 'ECONOMIC DEVELOPMENT'

4 ECONOMIC SUSTAINABILITY

This chapter examines national concepts of economic sustainability. First, it presents the results of the text mining of the policy documents. Second, it compares national policy using the different elements contained in the working definition of economic sustainability presented above. The analysis of the short-term dimension of economic sustainability focuses on the financial feasibility of development and growth while the long-term dimension is concerned with physical capital reserves and human capital investments.

4.1 TEXT MINING RESULTS

Figure 6 shows the results of the text mining process for the terms 'Sustainable Development' and 'Economic Development'. The tables show the words that are most associated with these terms. In bold are the words that have become increasingly prominent in the policy documents over time. There is significant overlap between the results in the two tables. This suggests that, for these six countries, the notion of sustainable development is intertwined with economic development.

4.2 ECONOMIC DRIVERS OF DEVELOPMENT AND GROWTH

The economic drivers of each country's development and growth strongly depend on the composition of their national economies. Figure 7 shows the importance of each economic sector for the six countries. Whereas services constitute the greatest share of the economies of India, the Netherlands, Russia, Mexico and South Africa, the industrial sector comprises half of China's economic composition.

Because the economic drivers are different, the policies for growth are also different. In Mexico, the National Plan focuses on small and medium enterprises and improving their competitiveness on the global market. This is pursued by liberalizing trade, entering new export markets, creating

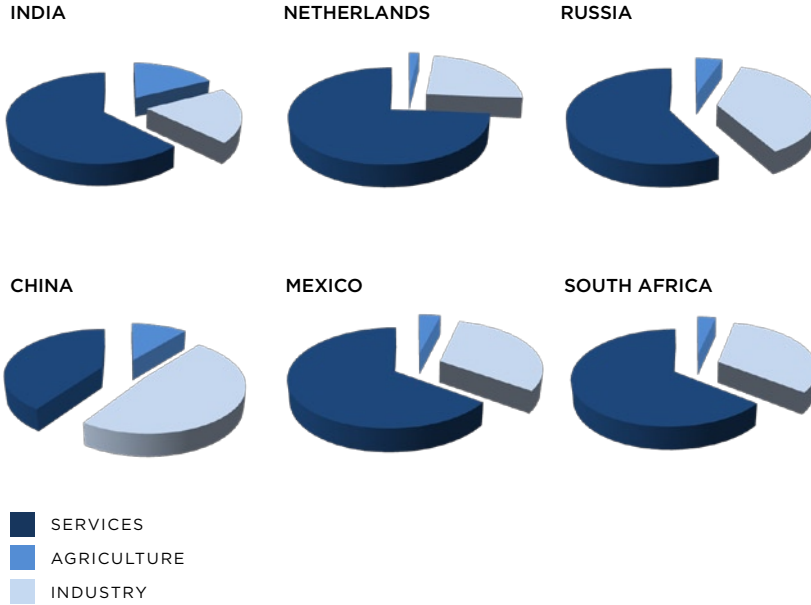


FIGURE 7: ECONOMIC COMPOSITION PER SECTOR, 2009 (SOURCE: CIA WORLD FACTBOOK)

strategic alliances between (foreign) companies and the government, and by promoting tourism.⁸ Russia focuses on the competitiveness of a 'powerful stratum of developing companies' and the high-tech sector, which is expected to play a more important role in the country's economic future.⁹ China, a planned economy, identifies export and agriculture as the key sectors for economic growth in its latest 5 Year Plan. China's impressive growth (targeted to remain at 7.5%) is primarily driven by exports: in 2008 alone, its export volume was \$1.43 trillion. This has relied on the availability of international markets, a cheap and mobile labor force, cheap natural resources (particularly coal), preferential policies to attract foreign investment, and, according to some experts, an undervalued currency.¹⁰

8 United Mexican States (2007a), p. 111.

9 Russian Federation (2008a), p. 2, 9.

10 People's Republic of China (2006).

India focuses on increasing agricultural productivity – its 5 Year Plan sets the target of doubling output – and developing the technology sector.¹¹

4.3 PHYSICAL CAPITAL: ENERGY AND INFRASTRUCTURE

Maintaining physical capital reserves for future generations is one of the long-term components of economic sustainability. Physical capital is reflected in the text mining results in Figure 7 by words such as 'resources', 'energy' and 'transport'. The latter is one of the words that for each of the countries – with the exception of Russia – is most closely associated to economic sustainability. For Mexico, energy has also become increasingly important over time. The pre-eminence of 'energy' confirms that all countries consider energy security as a fundamental precondition for economic sustainability, as energy resources are necessary for all sectors of the economy.

In addition, demographic trends such as population growth and urbanization further increase the need for energy security. For China and India, rapid economic development and urbanization has increased energy demand as well as dependency. India imports 70% of its oil and is expected to import 90% by 2030¹². China, despite major coal, natural gas and hydropower resources, currently imports half of its oil to meet 22% of its overall energy needs.¹³ As a result, developing alternative energy resources has also become an economic necessity.

Infrastructure is another form of physical capital. The maintenance of the technical infrastructure – such as roads and other communication lines – is a prerequisite for all sectors of the economy to function and grow. This is also true for the energy sector, which relies on an extensive infrastructure for the transport and treatment of raw materials and the distribution of finished products to the market. Russia, as a major producer of oil, should particularly be concerned with upgrading its oil and gas infrastructure. However, favoring a short-term approach to economic growth, the country has not made the necessary investments in the energy sector. This is corroborated by the absence of the word 'energy' in the text mining results for Russia.

11 Republic of India (2006), p. 17, 26.

12 Rekha, K. (2008).

13 Zhou, D. (2009).

Other infrastructure, such as water supply, sewers and power grids, are also crucial to manage the process of urbanization. This was confirmed in the policy statements of South Africa and in the 5 Year Plans of both India and China. Large segments of these documents are dedicated to plans for upgrading infrastructure. In addition, at a more local level, the Delhi Master Plan and the Beijing Plan aim to improve transport infrastructure and mobility in these cities and to make them more environmentally friendly specifically because they have witnessed rapid urbanization.

4.4 HUMAN CAPITAL: EQUITABLE GROWTH AND EDUCATION

Besides physical capital reserves, long-term economic sustainability also requires a human capital base. For many countries, maintaining the human capital base for economic sustainability is primarily about getting all actors in society within the orbit of economic growth through education so that the benefits of economic growth are shared rather than isolated. It is generally accepted that equitable growth is more sustainable as economic exclusion leads to other social issues (health, child mortality, etc). However, many of the countries surveyed struggle with endemic poverty (see the poverty and development indices in Figure 3). For them, a major concern is that a potentially productive base of their population is excluded from contributing to economic growth. This is particularly true for South Africa and Mexico that do not enjoy the same economic growth rates as India and China. Figure 8 shows the relative importance that the six countries attach to equitable redistribution as a dimension of economic sustainability.

In China, the issue of equitable growth is particularly critical as it is at the heart of the government's efforts to reconcile communism with a capitalist economy. In practice, however, China has one of the most uneven wealth distributions. The economic advantages of growth are concentrated in its eastern provinces to the detriment of rural populations in the central and western regions. In response, the government has formulated a major rural reform program, the 'new socialist countryside', which is the first item on the latest 5 Year Plan.¹⁴ India also has incorporated equitable redistribution in its general plan for economic growth. By contrast, Russia does not

14 People's Republic of China (2006).

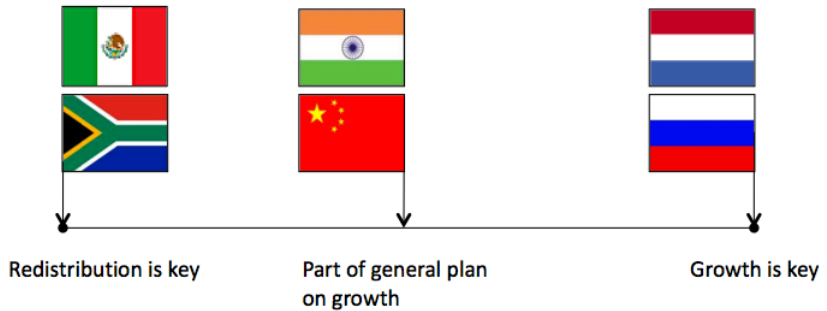


FIGURE 8: RELATIVE IMPORTANCE OF REDISTRIBUTION IN ECONOMIC SUSTAINABILITY

directly address the issue of equitable distribution of economic growth: it seems to take a top-down approach to wealth creation.

In the Netherlands, which does not suffer from comparable poverty levels, redistributive policies are mostly mentioned in the context of maintaining its social welfare state. However, the Netherlands does look at equitable distribution at a global scale. It is sensitive to the argument of developing countries that international trade regulations are an impediment to their sustainable development. The Netherlands acknowledges that it makes relatively large use of natural resources from vulnerable countries to create wealth within its own. Therefore, it says it has a larger responsibility than average to tackle global sustainability issues.

Maintaining human capital is also about education, not least as a way of making its population productive in the long-term. India goes further (in the text mining results the word 'education' occurs on the 5th and 7th place in relation to 'sustainable development' and 'economic development' respectively) and posits that education is at the crux of each dimension of sustainability and that it is key to creating a 'demographic dividend instead of a demographic catastrophe.'¹⁵ Similarly, for Russia, where 'education' ranks 2nd and 1st in relation to the same words, having an educated population is essential to creating a modern, service-based economy.

¹⁵ Republic of India (2006), p. 78.

To this end, it has a national strategy on education for sustainable development.¹⁶ In Mexico, education is an essential part of its overall sustainable development approach because the empowerment of individuals (and especially women) is at the heart of its strategy.¹⁷

'The emphasis of this strategy is to shift from the simple transfer of knowledge and habits, necessary for existing in the contemporary society, to a readiness to act and live in a fast-changing environment, to participate in the planning of social development, to learn to predict the consequences of actions including the possible consequences on the sustainability of natural ecosystems and on the social structure.'

The Russian Federation's National Strategy on Education for Sustainable Development

16 Russian Federation (2008b).

17 United Mexican States (2007a), p. 268.

5 ENVIRONMENTAL SUSTAINABILITY

This chapter examines national concepts of environmental sustainability. After discussing the text mining results, the chapter looks at the short and long-term dimensions of the working definition of environmental sustainability. Under the short-term rubric, the analysis focuses on national environmental systems and environmental stresses as well as human vulnerability to these stresses. This is largely captured by adaption policies so the analysis will identify whether this is a primary focus of the countries. By contrast, longer-term policies are concerned with mitigation, namely emissions targets and other, similar international efforts.

5.1 TEXT MINING RESULTS

Figure 9 shows the words that are most frequently associated with 'Climate Change' in each of the country's policy documents. Climate change was used as a substitute for environmental sustainability in the text mining process as it is the major, international issue under this banner. In bold are words that have increased in prominence over time.

The results reveal that climate change, and environmental sustainability more generally, are commonly seen as closely related to economic issues. The word 'economic' ranks 3rd for China and Mexico, 8th for the Netherlands and 4th for Russia. However, Russia's understanding of climate change in its policy documents is distinct from the other countries: it suggests that climate change may yield economic benefits, as some parts of Siberia may become habitable and melting ice sheets may open up new oil and gas sources in the Arctic Ocean.¹⁸

18 Green Futures (2008), p. 5; EurActiv (2009).

USING 'CLIMATE CHANGE'					
CHINA	INDIA	MEXICO	NETHERLANDS/ EU	RUSSIA	SOUTH AFRICA
<ul style="list-style-type: none"> - Carbon emissions - Energy - Economic - Developed - Developing - Mitigation - International - Reduction - UNFCCC - Protocol 	<ul style="list-style-type: none"> - Energy - Sustainable development - Carbon emissions - Mitigation - UNFCCC - Developing - Technologies - National - Government - China 	<ul style="list-style-type: none"> - Carbon or ghg emission - Energy - Economic - Development - Mitigation - Adaptation - Opportunities - Production - Forest - National - Sectors 	<ul style="list-style-type: none"> - Sustainable development - Indicator - Energy - Transport - Consumption - Environmental - Emissions - Economic - GDP - Target 	<ul style="list-style-type: none"> - Sustainable development - Education - Environmental - Economic - Social - Regions - Production - State - Implementation - Transition - Security 	<ul style="list-style-type: none"> - Mitigation - Adaptation - Kyoto - Developing countries - Developed countries - Emissions - Impacts - Long-term - Energy - Development

FIGURE 9: TEXT MINING 'CLIMATE CHANGE'

'Climate change has diverse effects in various regions of the Russian Federation and differently affects population groups, economic sectors and natural sites in them. Therefore, it is impossible to definitively assess the potential climate change impact on the Russian Federation and develop a climate change policy taking into account all related losses and benefits.'

*Russia's 2009 Climate Doctrine*¹⁹

5.2 ENVIRONMENTAL SYSTEMS AND STRESSES

This short-term component of environmental sustainability is primarily concerned with national and local issues (Figure 10 shows the countries' different landscapes) and with issues that are either apparent or emerging. It is informative that, despite different land compositions, many countries face similar challenges and are principally concerned with water scarcity, forests cover, air pollution and the preservation of biodiversity.

¹⁹ Russian Federation (2009a).

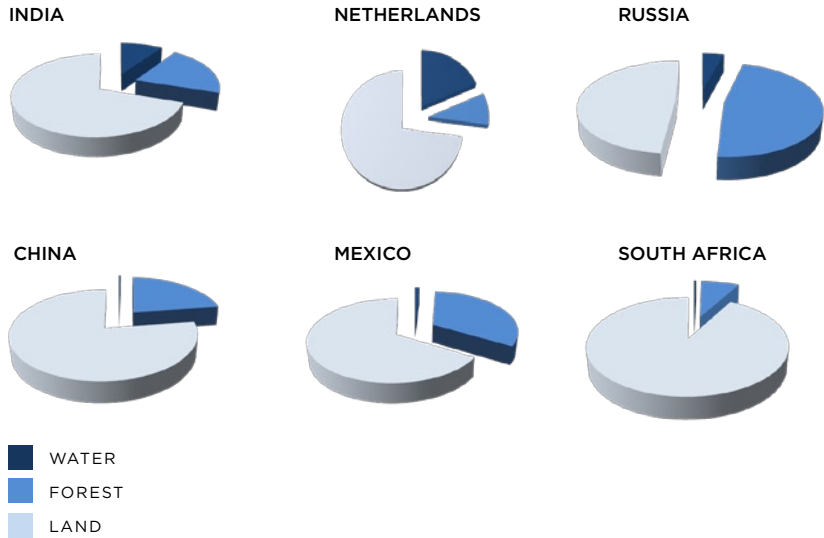


FIGURE 10: LAND COMPOSITION IN PERCENTAGE OF OVERALL TERRITORY, 2005
(SOURCE: CIA WORLD FACTBOOK)

WATER SCARCITY

Water scarcity is the most recurring issue across the countries. To deal with declining water resources, China has made substantial investments in flooding and irrigation infrastructure and introduced a number of programs to increase water efficiency in agricultural production.²⁰ This is also a focus for India together with dealing with human pollution of water sources produced by fast-expanding cities: its 5 Year Plan notes that it is an 'essential requirement to clean up our rivers [and that this] should receive priority attention from state governments especially in areas of large urban and industrial concentration.'²¹ However, experts note that local authorities lack adequate funding to carry out this out. Mexico varies from region to region with some areas facing desertification and others severe pollution.²² In South Africa, water scarcity is primarily caused by droughts which are

20 People's Republic of China (2008).

21 People's Republic of China (2006), p. 105.

22 United Mexican States (2007b), p. 12, 54.

expected to be exacerbated by climate change and have important implications for the agricultural sector and food supply in already vulnerable populations.²³

FORESTS COVER

Another recurring issue in the policy documents is the preservation of forest cover. The greatest stresses to forest cover come from overgrazing in the agricultural sector and forest logging for commercial purposes. Each country surveyed has policies to either increase or protect forests or, in China's case, to improve production methods to require less wood.²⁴ Forests are also considered an important element in the mitigation of climate change since they trap and convert carbon emissions.

AIR POLLUTION

For India and China, another major issue is air pollution, particularly in urban environments. This is also reflected in the EPI Air statistics in Figure 3. According to estimates, acid rain affects up to 40% of China's territory.²⁵

BIODIVERSITY

India and South Africa are also concerned with ecosystem and biodiversity preservation which are threatened primarily by tourism and climate change. India highlights the melting Himalayan glaciers and illegal wildlife trade, particularly in the Bengal Tiger, as key priorities.²⁶

5.3 ADAPTATION AND HUMAN VULNERABILITY TO ENVIRONMENTAL STRESSES

According to the working definition, the second short-term component of environmental sustainability is human vulnerability to the stresses described above and to climate change more generally. From a policy point of view, governments that focus on adaptation are primarily concerned with this part of environmental sustainability. The variation across the countries, whether they concentrate on short-term or long-term issues, is depicted in the figure below.

23 Republic of South Africa (2008), p. 26, 40-41.

24 People's Republic of China (2007d).

25 Pan and Zhu (2006), p. 29-30.

26 Green Futures (2008), p. 5, 14.

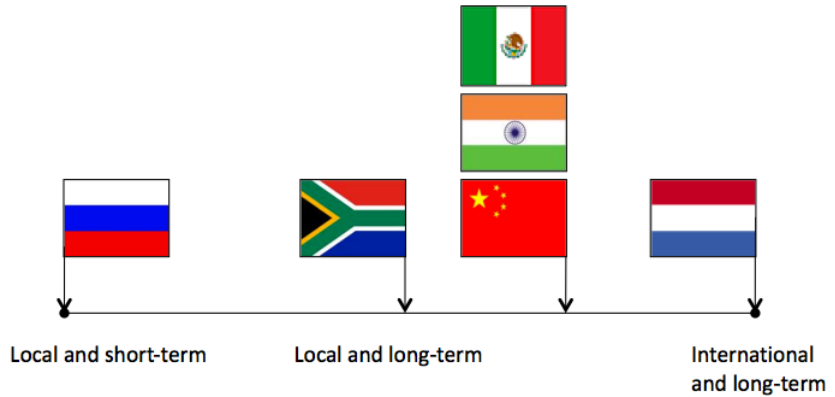


FIGURE 11: ENVIRONMENTAL SUSTAINABILITY AS A LOCAL, SHORT-TERM OR INTERNATIONAL, LONG-TERM ISSUE

The text mining results show that the word 'adaptation' is most closely associated to 'climate change' in Mexico (5th place on the list) and South Africa (2nd place). This suggests that they are more concerned with the short-term implications of climate change. This is not surprising given the expected increase of: droughts in a context of agricultural dependence, health issues (e.g. malaria) in populations with already low life expectancy (see Figure 3) and coastal flooding.²⁷ Although South Africa favors a primarily economic approach to sustainability and gives secondary importance to environmental issues, it considers adaptation to these environmental stresses a crucial policy priority.

China's particular focus on adaptation is explained in its 5-Year Plan where it states that adaptation is a more 'present and imminent task for developing countries.'²⁸ China shares the concerns of developing countries (particularly since its own underdeveloped regions are expected to suffer most from the effects of climate change) though it suggests that, as policy, mitigation and adaptation should receive equal emphasis.

²⁷ Republic of South Africa (2008), p. 2.

²⁸ People's Republic of China (2008).

For India, as Figure 11 shows, there is no strong relationship between 'climate change' and 'adaptation'. Nonetheless, according to its policy documents, the government is concerned about climate change specifically, like South Africa, with droughts where 70% of its farmed lands are currently rain-fed and with rising sea levels in some of the country's most populated cities.²⁹ It has seen that this can have social repercussions as islands in the Bay of Bengal have already been submerged under rising levels causing refugee streams toward Kolkata. Although the government recognizes these emerging issues, it has not implemented adequate responses for the time being.³⁰

TRADE-OFF AND FEEDBACK LOOP: THE ENVIRONMENT AND ECONOMICS

"The reason that we are still in the process of building our energy, transport and industrial infrastructure. We can make investments in leapfrog technologies so that we can avoid polluting our planetary atmosphere. Our cities can be built with modern public transport systems. Our energy security can be pursued through local and distributed systems based on renewable and bio-fuels. And industries that are being set up can adopt the most energy efficient and least carbon intensive technologies."

Speech delivered by Shyam Saran, Special Envoy of the Indian Prime Minister for Climate Change, 24 March 2009

All the countries studied recognise that there is a trade-off and feedback loop between the environment and economics: the trade-off is primarily that with economic development comes environmental degradation while the feedback-loop involves using economic power to leapfrog this degradation.

Indian Prime Minister Singh has been outspoken in his concerns with "conspicuous consumption" among the rich and the high waste per capita that comes with their increased purchasing power. For South Africa, environmental and economic sustainability are seen as almost

29 Sathaye, Shukla and Ravindranath (2006).

30 Green Futures (2008), p. 5.

mutually exclusive: its government action plan mentions a study that estimates that the carbon footprint of Cape Town's richest suburbs would require 14 planets if everyone lived like them, whereas the poorest suburbs would require 0.5 to 1 planet.

As for the feedback loop, both the Netherlands and India, and to a lesser extent China and South Africa as well, look to technology as the solution for this trade-off. For India, "leapfrogging" the dirty stage of development is a major component of its sustainable development strategy. This is specifically brought to bear in investments in clean energy and in green infrastructure in the housing and transport sectors. It is seen as a way of creating economic and environmental benefits since, especially in India and China, major investments in solar energy in rural areas has put a number of these communities on the electricity grid for the first time.

However, it is worth noting that many of these investments rely on economic growth and so have been reduced during the recent economic downturn. In order to compensate for sluggish government investments, South Africa and India have both tried to attract private and/or foreign investments in this area.

5.4 MITIGATION

The long-term aspects of environmental sustainability are largely captured under the rubric of mitigation policies. To a great extent, in national contexts, these focus on energy efficiency and carbon emissions. As Figure 10 shows, 'emissions', 'energy', 'mitigation' and similar, related terms are closely correlated to 'climate change' across the countries surveyed (only the Netherlands and Russia do not have 'mitigation' by name in the table). This is in keeping with their policies where all of the countries have made some headway in committing to emissions cuts, whether domestically or in the context of international agreements. However, another interesting finding in the text mining results is that China, India and South Africa all have 'developing' or 'developing countries' as key correlated terms to 'climate change'. This is because these countries, together with Mexico, argue that Western countries have a historical responsibility for the problem and should fulfill their 'common but differentiated' responsibilities' by

making transfers or subsidizing emission-reducing and carbon-capturing technologies.³¹ This point was forcefully made at the Copenhagen conference.

POSITION AT THE COPENHAGEN CONFERENCE

"If we all agree that carbon dioxide emissions are the direct cause for climate change, then it is all too clear who should take the primary responsibility. [...] It is totally unjustified to ask [developing countries] to undertake emission reduction targets beyond their due obligations and capabilities in disregard of historical responsibilities, per capita emissions and different levels of development."

Chinese Premier Wen Jiabao at the Copenhagen Conference, December 2009

The EU went into the Copenhagen conference with a common policy proposal that focused first and foremost on emission cuts: it made a unilateral decision to reduce its member states' emissions by 30% by 2020. Mexico was the only country of the ones in this study that also committed to halve its emissions (based on 2000 levels) by 2050. Most countries shied away from making similar, binding commitments. Many developing countries (and especially China and India) saw this focus on emission cuts as a Western construct, as a way of passing on their historical responsibility for these emissions to other countries which would handicap the latter's development agendas. They advocated technological and financial transfers and the creation of a "Green Fund" to offset the costs associated with both adaption to and mitigation of climate change. South Africa supported this, although it focused more on adaption and added that financial transfers should not include funds already earmarked development aid. Mexico was among the more forceful countries and stressed that there should be punitive and conditional elements regulating access to the Green Fund.

In its Monitor, the Netherlands has argued that cutting its emissions would have limited global effect but should still be pursued because it gives 'a

31 China.org (2009); People's Republic of China (2009).

moral connotation to climate policy.³² This normative approach to carbon emissions is not shared around the world. Instead, the focus elsewhere is on rather more pragmatic programs designed to improve energy efficiency and to stimulate clean energy.

ENERGY EFFICIENCY

In their 5 Year Plans, both China and India aim to improve their energy efficiency by 20%.³³ India focuses primarily on energy efficiency in relation to individuals and their consumption habits, whereas China singles out its industry. Faced with an energy inefficient economy (by 2004 estimates, it consumed 4 times more energy per unit of GDP than the US) and recurring blackouts, China has strong incentives for improvement. Existing programs include the introduction of fuel-efficient stoves for the poor and a nationwide solar, water and wind power program.³⁴ Experts note the ubiquity of solar panels in recent urban planning and the emergence of 'eco-cities' around the country.³⁵ In India, the government has introduced subsidies for energy-efficient lamps and has launched a program incentivizing green construction, although experts suggest this has not been done on the same scale as in China.³⁶ In both countries, weak local authorities hamper the monitoring and implementation of these programs.

CLEAN AND RENEWABLE ENERGY

Another step towards long-term environmental sustainability is the development of clean and renewable energies. As with energy efficiency, at

32 Statistics Netherlands (2009), p. 15.

The Sustainability Monitor for the Netherlands is a joint publication by the Statistics Netherlands (CBS), the Netherlands Bureau for Economic Policy Analysis (CPB), the Netherlands Environmental Assessment Agency (PBL) and the Netherlands Institute for Social Research (SCP) in which the concept of sustainable development is elaborated and made measurable. The starting point for this publication is the identification and description of resources that are needed for both present and future generations. The Monitor presents indicators across 12 sustainability themes to assess whether the Netherlands is moving in the right direction and how it performs in comparison with other EU countries.

33 Republic of India (2006), p. 105; People's Republic of China (2006).

34 Pan and Zhu (2006), p. 13-15.

35 Ibid, p. 20.

36 Republic of India (2006), p. 58.

a national level, this is driven by energy security and economic concerns rather than solely environmental concerns. All the countries surveyed, with the exception of Russia, are looking to expand their use of renewable energies: China currently ranks 5th in the world in wind power capacity (having doubled its wind power ever year for the past five years) and is, by far, the world leader in solar energy. As a total, 8% of its energy comes from renewable sources. At the same time, however, there is no indication that China is moving away from its massive reliance on cheap coal, not least because it is readily available domestically and finances whole communities.³⁷ In India, a Ministry of Nonconventional Energy Sources has been established and the National Action Plan on Climate Change has identified solar energy as an area for priority investment.³⁸

5.5 INTERNATIONAL EFFORTS TO PROTECT AND PRESERVE THE ENVIRONMENT

The final long-term component of environmental sustainability, which is largely a continuation of national mitigation policies, covers international efforts to protect and preserve the environment. Officially, all of the countries surveyed support the environmental agenda set out in the Brundtland Report, Rio Declaration and Agenda 21. However, in practice, not all the countries equally emphasize this international dimension.

Mexico and the Netherlands, for example, put a large onus on cooperation and the coordination of international efforts while Russia and China seem more reticent to incorporate international agreements or to find common approaches to environmental issues. South Africa's attitude is somewhat ambivalent: on the one hand, it recognizes the importance of international agreements; but on the other, it is reluctant to take specific action and seems to see itself as a beneficiary rather than a contributor to international efforts for environmental sustainability.

37 *Ibid.*, p. 14.

38 Republic of India (2008), p. 7.

6 SOCIAL AND POLITICAL SUSTAINABILITY

This chapter focuses on how states view the final dimension of the working definition of sustainability, namely social and political sustainability. First, it presents the results of the text mining of the policy documents. Then, the chapter discusses national policies on social and political cohesion.

6.1 TEXT MINING RESULTS

Figure 12 shows the words that were most frequently associated with 'social sustainability' in the policy documents of the countries surveyed. Words in bold have become increasingly important over time. The text mining results show that the most recurring social sustainability themes are health, demographic trends (including labor force issues), government/governance and education.

USING 'SOCIAL SUSTAINABILITY'					
CHINA	INDIA	MEXICO	NETHERLANDS/ AND THE EU	RUSSIA	SOUTH AFRICA
<ul style="list-style-type: none"> - Sustainable development - Resources - Economic - Population - Ecological - Conservation - Carbon - Protection - Government - Education 	<ul style="list-style-type: none"> - Economic development - Growth - Education - Environmental - Services - Employment - Rural - State - Public - Trade 	<ul style="list-style-type: none"> - Economic development - Government - Education - Public - Population - Services - Resources - Federal - Climate - Infrastructure 	<ul style="list-style-type: none"> - Sustainable development - Energy - Consumption - Education - Labor - Environmental - Population - Production - Growth - Participation 	<ul style="list-style-type: none"> - Economic development - Education - Security - Environmental - National - Resources - Economy - Natural - Society - Production 	<ul style="list-style-type: none"> - Sustainable development - Africa - UN (UNFPA, UNICEF, UNDP) - NGOs - HIV - Governance - National - Economic - Labor - Poverty

FIGURE 12: TEXT MINING 'SOCIAL'

Health is a major issue in South Africa and specifically HIV/AIDS and TB. In the text mining results, HIV ranks 5th in relation to social sustainability. It is estimated that 17.5% of South Africa's adult population (defined as being older than 15) is currently living with HIV.³⁹ Most of them are women (60%) and from the middle class, a segment of society that is critical for economic development and for the establishment of strong, democratic foundations. India's policy documents also mention HIV/AIDS as a threat to social sustainability, but generally pay more attention to water-borne diseases that are expected to be exacerbated by rising sea levels.⁴⁰

The demographic dimension of social sustainability is reflected in the text mining results by the words 'population', 'labor', 'society' and 'consumption'. The policy documents of China and the Netherlands are most concerned with population growth and aging as they are expected to put pressure on social security nets.⁴¹ China is also concerned that population growth can threaten social stability as it puts a strain on limited natural resources and on complicates poverty reduction efforts. India, conscious of the failures of previous population control policies, takes a more caution approach to this issue and stresses that such policies need to be 'sensitive' and focus on the empowerment of women.⁴²

Finally, Mexico, India and Russia highlight security as a major aspect of social sustainability: in Mexico, this primarily refers to internal issues like organized crime, border security and human rights whereas Indian policy documents are concerned with the possibility of war as a major threat to social and political sustainability.⁴³

6.2 SOCIAL COHESION

According to the working definition used for this report, social cohesion refers to society's ability to work towards common goals. Each of the countries have a different understanding of how to preserve this cohesion

39 AIDS Foundation South Africa.

40 Bahuguna, S. (2002), p. 4.

41 Eurostat (2009), p. 23 and People's Republic of China (1994a), p. 50.

42 Ibid, p. 8.

43 United Mexican States (2007a).

though all agree (with the exception of Russia) that moving towards gender equality is part of it.

Overall, social cohesion issues loom large in the EU and the Netherlands' understanding of sustainability where policy documents identify the following threats to it: immigration, the increasingly fragmented ethnic and religious composition of society, the growing emphasis on the individualism in contemporary society, and inequality within and between populations. It also receives a lot of attention in South Africa where the empowerment of black communities after apartheid is a major objective of the country's sustainability strategy. The country has undertaken major projects in land redistribution and housing construction to this end.⁴⁴ No other country is as explicit in implementing 'positive discrimination' as a way of offsetting social divisions.

From the Indian government's perspective, the empowerment women is the most pressing challenge for social cohesion though experts also point to the empowerment of disenfranchised castes, ethnic and linguistic groups.⁴⁵ China also a distinct approach as it is closely intertwined with economic concerns: for it, social cohesion is about balancing a capitalist economy with communist ideology. It has launched a government-wide project called the 'Harmonious Society' which aims to address the rising income inequality across the country and between its citizens.⁴⁶

6.3 POLITICAL COHESION

Political cohesion is largely about governance and preserving the state as a unitary actor in the face of the social divisions described above. As Figure 6 above shows, governance is at the heart of South Africa's approach, again, as a result of its historical experience with apartheid. This idea that democratic representation is the bedrock for sustainable societies is also a central part of India and Mexico's approach. For them, democracy creates more resilient societies as it assuages existing divisions and prevents them from escalating into open conflict. In this understanding, democracy is a

44 Republic of South Africa (2008), p. 86.

45 Republic of India (2006), p. 75, 87-88.

46 People's Daily (2005).

means to end whereas in South Africa, it is an end in itself. Figure 13 illustrates this distinction across the countries reviewed.

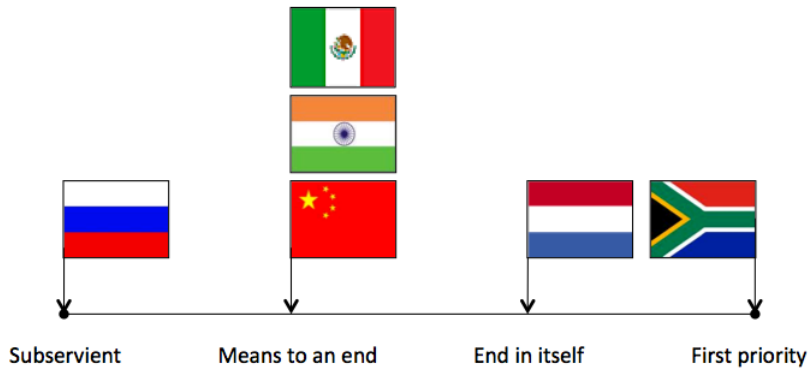


FIGURE 13: IMPORTANCE OF SOCIAL DIMENSION IN NATIONAL SUSTAINABILITY CONCEPTS

7 NATIONAL INSTITUTIONALIZATION OF SUSTAINABILITY

7.1 NATIONAL STRATEGIES

One measure of the government's focus on sustainability is whether countries have a dedicated strategy to the issue or whether it is part of a broader policy. The difference of focus across the countries is illustrated in Figure 14.

Overall, the analysis found that most of the countries do not have a stand-alone national sustainability strategy. The exception is China that has two strategic policy documents on sustainable development, namely the White Paper on China's Population, Environment and Development in the 21st Century (2004) and the Priority Program for Agenda 21 (2003), drafted by the Ministry of Science and Technology and implemented by the National People's Congress.

The Netherlands has largely adopted the EU's sustainable development strategy while South Africa is currently developing a sustainable development strategy on the basis of a discussion document called People-Planet-Prosperity: A Strategic Framework for Sustainable Development in South Africa. This document brings together existing sub-strategies on environmental issues and on equitable development.⁴⁷

For their part, Mexico and India do not have stand-alone sustainability strategies either but have embedded sustainability issues within their respective 5 Year Plans that focus on a broader range of issues including foreign policy or security.⁴⁸ This is complemented by compartmentalized sustainability strategies at ministry-level on specific issues like the

⁴⁷ Republic of South Africa (2008).

⁴⁸ United Mexican States (2007a); Republic of India (2006); People's Republic of China (2006).

development of renewable energies in Mexico and responses to climate change in India.

Russia’s latest national strategy on sustainable development dates back to the mid-1990s though sustainability is also addressed in its more recent National Security Strategy. In this context, the focus is first and foremost on building strong economic foundations for the country and on the adequate use of natural resources.⁴⁹

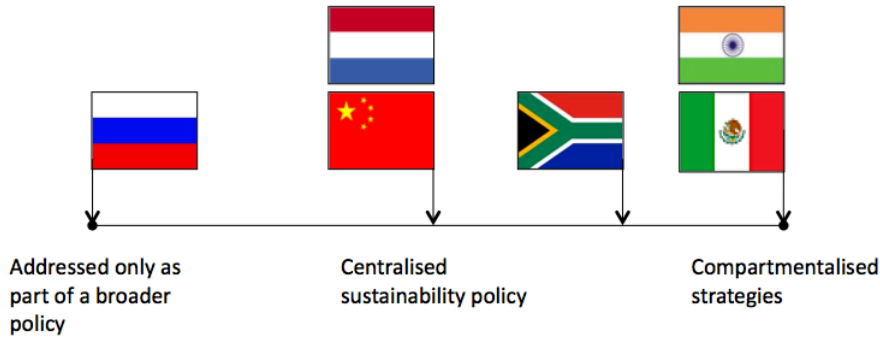


FIGURE 14: SUSTAINABLE DEVELOPMENT: PART OF BROADER POLICY DOCUMENT OR STAND-ALONE STRATEGY?

INTERNATIONAL ALIGNMENT

The policy comparison also found differences in the extent to which national sustainability policies are aligned to international agreements. As illustrated in Figure 15, Russia has designed its policy most independently while China and South Africa are most explicit in aligning their policies to international frameworks. China’s sustainable development strategy is mapped out against the UN’s Agenda 21 and South Africa has tied its agenda to the MDGs and the Johannesburg Plan of Implementation. Sometimes, however, countries reject specific elements of international policy documents. For instance, India and South Africa argue that some of

49 Russian Federation (2009b), p. 6.

the environmental and social clauses that are implicitly or explicitly part of international agreements are in fact, used by developed countries to erect trade barriers.⁵⁰

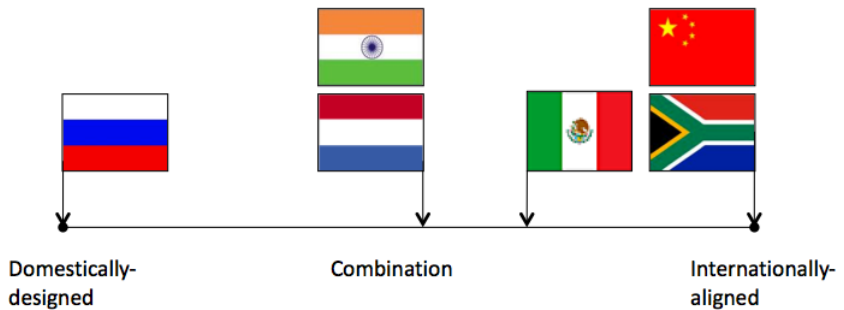


FIGURE 15: ARE NATIONAL SUSTAINABILITY POLICIES INTERNATIONALLY-ALIGNED OR DOMESTICALLY DRAWN?

INPUT FROM VARIOUS SOURCES

The countries surveyed also vary in the extent to which they incorporate views from different actors across society in developing their sustainability policies. The Netherlands, Mexico and South Africa have a fairly inclusive approach: they receive input from NGOs, private companies, political actors and the public more generally to determine what their priorities should be. The Netherlands has also consulted experts from third countries in the lead-up to its national sustainability policy; this process of peer review was suggested by the European Commission as a way of correcting for blind spots.⁵¹ In Russia, the private sector and state-owned companies, rather than civil society, have contributed the most to the policy-drafting process.⁵²

By contrast, In China and India, policy-making is the exclusive domain of the state and so the government alone shapes policies. Remarkably, this does not necessarily result in clearer policy documents: instead, they reflect

50 Republic of South Africa (2008), p. 61-62; Republic of India (2006), p. 14-16.

51 Van Zijst (2006).

52 Platonov (2001), p. 4.

divisions within the government on whether the environment or the economy should be given first priority. The Chinese strategy in particular is a fairly ambivalent document in this regard.⁵³

7.2 IMPLEMENTATION

Another point of comparison across the countries is the extent to which the implementation of the strategies is centralized. The Netherlands and Mexico are the most centralized and implementation is undertaken at a nationwide level while India and China delegate most authority to local governments. As these often lack funding and capacity, they generally weaken implementation efforts. Russia is the most decentralized with authority delegated to individual ministries.

Even with government oversight, the successful implementation of sustainability strategies depends on the cooperation of citizens and private companies who are ultimately responsible for much of the environmental degradation and may not naturally feel committed to longer-term objectives. To respond to this, many countries have established public-private partnerships in order to comprehensively implement their strategies. Across the countries surveyed, these partnerships can broadly be categorized into situations where the state acts either as a partner, rival or conduit for private efforts.

STATE AS A PARTNER

The Netherlands provides the clearest case of an equal partnership between the public and private sector. Dutch companies are among the most self-regulated in the world and have a long-standing experience in corporate social responsibility (CSR). Dutch multinationals like Shell, Unilever or Phillips have a global reach and impact and recognize that this also produces a global responsibility for sustainability issues. This explains why they have played an active role in the UN Global Compact, a compilation of best practices in sustainability for businesses that want to work towards achieving the MDGs.⁵⁴

53 Yi, W. (2009), p. 16.

54 Global Compact, the Netherlands.

For Mexico and South Africa, partnership with the private sector is driven by necessity. South Africa especially recognizes that it lacks the financial resources to address many of its sustainability issues. In order to tackle AIDS and poverty, for example, the government has created strategic partnerships with international organizations and private companies. Mexico has also made some headway in recent years in using private philanthropy and CSR to address its poverty and income inequality issues. Most notably, Carlos Slim, the richest man in the world according to Forbes Magazine, has donated some \$6 billion towards a number of microfinance, education and health programs in Mexico and Latin America.⁵⁵

STATE AS A CONDUIT

In India and China, the government can be described as a conduit for private efforts whereby private and public efforts are complementary but the relationship is less equal as the public sector dictates the direction and scope of private efforts. In its 5 Year Plan, India explicitly calls on local venture capital and private equity firms, as well as the country's estimated 36 billionaires, to invest in specific areas, such as solar energy.⁵⁶ Although 124 Indian companies have signed the UN Global Compact, they have not incorporated the sustainability agenda into their business practices in any significant way. Instead, they approach these issues in a more self-interested way, driven by business models aimed at 'reaching the bottom of the pyramid' and industrial nationalism. For instance, the Tata electric car was marketed as an environmentally friendly and affordable vehicle for the poor but was also designed to tap into a market largely dominated by foreign competitors.⁵⁷

'Private-Public partnerships must serve to put private resources into public projects and not the other way around. [...] [Sustainable development efforts] can be supplemented wherever possible by private effort but there can be no doubt that even after allowing for the scope of expanded supply by the private sector, the bulk of responsibility will fall on the public sector.'

India's 11th 5 Year Plan, 2007-2012

55 Coster (2007).

56 Republic of India (2006), p. 106.

57 Ibid, p. 10-12.

China is distinct because although it has a growing number of private companies, it remains a government-led market economy which means the state has greater leverage over companies it wants them to comply with national sustainability policies. However, overall, public-private partnerships in India and China have not fully developed their potential yet.⁵⁸

STATE AS A RIVAL

Russian private companies have not fully incorporated sustainability issues into their business practices nor taken a proactive role in filling the void left by the federal state. Some international companies that operate in Russia have implemented international CSR standards while local companies like Lukoil, Gazprom and Norilsk Nickel, have made some modest investments in environmental protection. However, overall, the private sector has mostly been successful in lobbying the government to prevent the imposition of sustainability regulation on their businesses.⁵⁹

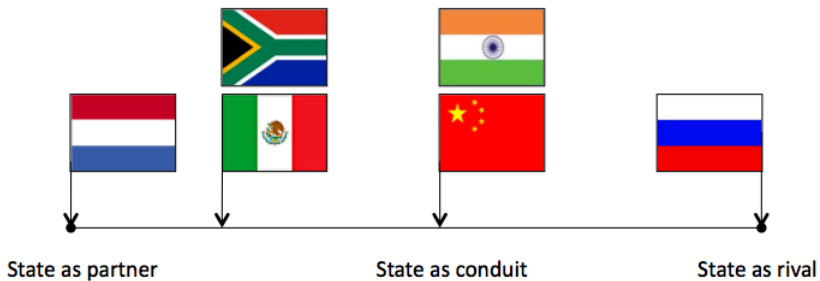


FIGURE 16: IS THE STATE A PARTNER, CONDUIT OR RIVAL TO PRIVATE COMPANIES?

CIVIL SOCIETY

Besides the private sector, effective implementation of sustainability policies also requires partnerships with civil society. All the countries surveyed stress the importance of an educated citizen base in order to achieve sustainability goals and make raising public awareness - especially

58 Liu (2008), p. 1-2.

59 Mol (2009), p. 15.

about environmental and health issues - a major part of their strategies. China and Russia have witnessed a significant increase in the number of environmental NGOs; these play a role in bringing local issues to the attention of the government and in mobilizing communities to change their habits. They are also responsible for a number of traditionally state-led tasks in the field of environmental protection, such as forest protection and reforestation programs in Russia.⁶⁰

7.3 PROGRESS MONITORING

The majority of countries in this study have developed, or are developing, mechanisms to measure the effectiveness of their sustainability policies. Both China and the Netherlands have a historical record of tracking and recording data, which arguably explains why they are the most advanced in this regard. Data analysis is at the heart of the Netherlands' approach: its national statistical Monitor tracks trends across the three dimensions of sustainability on issues ranging from biodiversity to social participation, knowledge and international development.⁶¹ This is complemented by efforts at the regional level where the European Commission and Eurostat also produce indicators and progress reports.⁶² South Africa is currently developing a list of indicators that it hopes will be equally comprehensive.⁶³

Mexico also benefits from regional indicators with the UN's Latin American and Caribbean Initiative for Sustainable Development. However, at a national level, Mexico has a weak record of tracking sustainability data not least because of its compartmentalized approach whereby it treats economic and environmental indicators separately. Russia and India have the least developed progress monitoring system: in Russia, there is no overarching authority to organize or co-ordinate existing efforts while India has no clear indicator system.

60 Mol (2009), p. 4, 15.

61 Statistics Netherlands (2009).

62 Eurostat (2009).

63 Republic of South Africa (2008), p. 92-92.

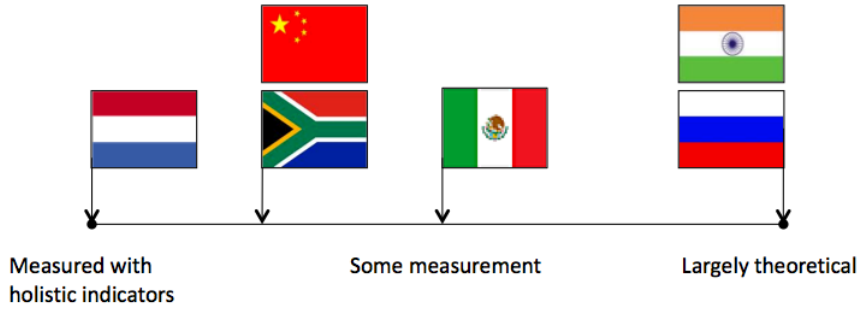


FIGURE 17: IS PROGRESS ON SUSTAINABILITY MEASURED WITH INDICATORS OR A THEORETICAL AFFAIR?

PART II: THE FUTURE OF SUSTAINABILITY

8 THE FUTURE OF SUSTAINABILITY

8.1 MAPPING THE FUTURE: OBJECTIVE AND METHODOLOGY

This part of the report maps the future of sustainability based on the existing foresight literature on sustainability. We conducted a meta-analysis of 33 recent English-language foresights that focused on sustainability or sustainable development. These sources were found through a comprehensive search of HCSS’ internal foresight database as well as various Internet databases. Figure 18 shows the distribution of sources according to their type and year of publication. Most foresights were in English and published by Western sources which may skew the results as they reflect a pre-dominantly Western perspective about the future. Nonetheless, these sources have an international outlook and address a wide range of global issues, including development, poverty and energy.

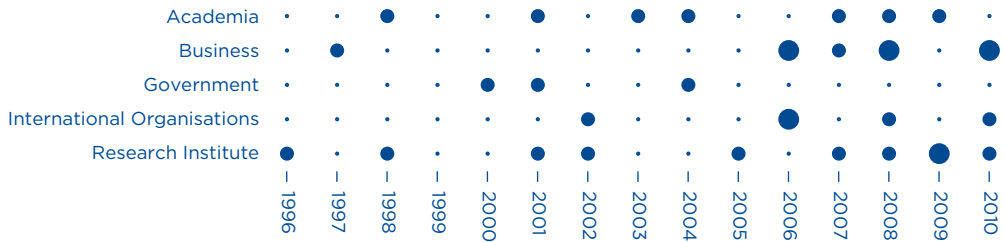


FIGURE 18: SOURCES ACROSS TIME AND ACROSS SECTOR

The aim of this meta-analysis is to determine the future bandwidth of the international debate on sustainability and to identify trends and emerging issues. The meta-analysis looks at what aspects of sustainability may change in the future (parameters), what instigates (drivers) and affects (disruptive elements) these changes and what their implications are.

PARAMETERS

Figure 19 outlines the parameters that were used for the meta-analysis of the foresight studies. They represent the different aspects of sustainability that may change in the future.

PARAMETERS	CATEGORIES
SUBSTANTIVE FOCUS	Environmental Economic Social-Political Comprehensive
GEOGRAPHICAL FOCUS	Global Regional National Local, sub-national
IMPLEMENTATION MECHANISMS	Top-down internationally: international governance Top-down nationally: government regulation Civil Society: citizens and NGOs Adjusted capitalism: market forces, CSR
PUBLIC-PRIVATE PARTNERSHIPS, STATE IS	Partner Conduit Rival Separate
CONCEPTUAL TIME HORIZON	Now Until 2020 2020-2050 2050 onwards
INTERNATIONAL NORMATIVE COHERENCE	High: agenda is reaffirmed and strengthened Medium-High: consensus slows down but still grows Medium-Low: situation remains the same, work with the consensus we have Low: consensus breaks apart

FIGURE 19: LIST OF PARAMETERS AND THEIR CATEGORIES

DRIVERS AND DISRUPTIVE DEVELOPMENTS

Figure 20 presents the different drivers of change and disruptive elements that were cited in the foresight studies. Drivers and disruptive elements are treated together for the purpose of this study.

DRIVERS	CATEGORIES
Motivation - Why?	Incentives: interest-based Normative: value-based Necessity
Changes in Political System Domestically	Rise of democracy as a decentralized process with plural actors Rise of democracy as a state-run but transparent process Growth of state-control No change
Changes in Economic System	Wealth distribution increases internationally Wealth distribution decreases internationally Wealth distribution increases domestically Wealth distribution decreases domestically No change
Direction of Globalization	Deepens: increased economic and political interdependency Modified: rise of non-state actors Negative: countries turn inwards
International Normative Frameworks	Encourages: international peer pressure Discourages: ambiguity leads to lack of coordination No Impact
Public Awareness	Grows internationally: 'planetary consciousness' Decreases internationally and nationally Turns Inwards
Culture	Emerging international culture Culture pushes people outwards Culture pushes people outwards with a specific focus Culture pushes people inwards
DISRUPTIVE DEVELOPMENTS (TREATED AS DRIVERS IN THE TABLE BELOW)	
Developments in Science & Technology Climate Change becomes apparent Resource Scarcity Demographic Shifts Urbanization and Population Density Local Circumstances (e.g. war, disease) shifts the focus	

FIGURE 20: LIST OF DRIVERS AND OF MOST FREQUENTLY CITED DISRUPTIVE DEVELOPMENTS

8.2 WHAT ASPECTS OF SUSTAINABILITY WILL CHANGE?

Figure 18 shows the results of the meta-analysis for the parameters. A number of interesting findings emerge. First, the substantive focus of sustainability is expected to be either primarily environmental or comprehensive. Economic, social and political issues alone are unlikely to be the major focus of the sustainability agenda. This is in keeping with the finding in the policy comparison that countries pay at least lip service to a comprehensive approach to sustainability.

Second, the foresight literature expects that the geographical focus of sustainability will remain global. This suggests that sustainability will be conceptualized as a global common good requiring a global response. This is in contradiction to the contention of this report that in a multipolar world, countries turn inwards and focus on narrower national interests and/or local issues. That said, the second most likely geographical focus of sustainability is expected to be local. Together, these findings suggest a future in which international policy frameworks continue to be global while solutions focus on, and are implemented, at the local level. This trend is already visible in current national policies that are aligned with international agreements but are adapted to the specifics of the area where they are implemented.

Third, many foresights expect a growing role for private companies in the implementation of sustainability policies. These companies are expected to contribute to accomplishing national and international sustainability objectives in two ways: by increasingly adopting CSR business practices and by incorporating the negative externalities of economic growth. At the same time, companies will be responding to consumer activism demanding that they produce products in a sustainable manner. The state remains the second most important actor for the implementation of sustainability policies.

Fourth, the results on the 'public-private partnerships' parameter show that private companies are expected to either become partners or conduits of the state. The distribution of values on this parameter is in keeping with the variation that was found in the policy comparison.

Fifth, the majority of the foresights predict that, in the future, sustainability strategies will project into the next one to four decades. This relatively short time horizon suggests that the future will still be significantly discounted in favor of the present.

Sixth, and finally, the findings for the last parameters predict that international normative coherence will be high and that the normative approach to sustainability will be reaffirmed and strengthened. This is at odds with the initial prediction of this report that global solutions will be more difficult to impose in a multipolar world with weakened international institutions.

8.3 WHAT FACTORS SHAPE THE FUTURE OF SUSTAINABILITY?

DRIVERS

Figure 19 shows the results of the meta-analysis for the drivers of change and disruptive elements. Again, a number of interesting findings emerge. First, the results on the 'motivation' driver show that the foresight literature expects that the reasons why states pursue sustainability policies are primarily interest-based rather than value-based. This confirms the underlying view of this report regarding the return of the primacy of national interests over the common good in the emerging world order. This does not mean, however, that there will not be international consensus on certain sustainability issues.

Although the findings for the parameters suggest that the sustainability agenda will be strengthened, the results on the 'international normative framework' driver show that this will not necessarily happen through international frameworks. Overall, it is not clear whether these frameworks will encourage the momentum for sustainability through international peer pressure or will have a discouraging effect due to their ambiguity and lack of coordination.

Second, the idea that a convergence of views internationally may occur outside from international frameworks is also supported by findings on the 'direction of globalization' driver. The foresights expect globalization to continue and to have a positive impact on the sustainability agenda by deepening economic and political interdependencies. Globalization, rather

than international frameworks, will enhance the sustainability agenda by producing a shared awareness of sustainability issues among the public ('public awareness' driver) and an international culture ('culture' driver).

Third, the results of the 'changes in the economic system' driver are inconclusive: the foresights are divided on whether globalization will increase or decrease international wealth distribution. Many foresight studies suggest that some countries, especially the BRICs (Brazil, Russia, India and China), will witness considerable growth and bridge the economic divide with Western economies while the verdict on the future of sub-Saharan Africa is more ambiguous. As long as it remains unclear whether developing countries will reap greater financial benefits from globalization, or instead lag further behind in their economic development, it is difficult to assess whether the current polarization between developed and developing countries in the sustainability debate will persist.

With regard to internal wealth distribution, expectations are that this will become more uneven. As the policy analysis showed, greater internal income disparities have negative effects on economic sustainability as well as on social and political sustainability. However, the positive effects of changes in domestic political systems may offset this. The results for the 'changes in domestic political system' driver show that democracy, as a decentralized process with plural actors, will rise. This is in keeping with the policy comparison that found that the creation of a strong and inclusive democratic system is considered, except by China and Russia, as an important means for sustainability. South Africa in particular, aims to create inclusive governance structures.

A final remark with regard to the results is in order. Overall, with the exception of public awareness, none of the findings on the drivers of sustainability are as clear as the findings for the parameters. This means that there is a higher degree of uncertainty about what will drive or explain the future changes in the sustainability agenda.

DISRUPTIVE DEVELOPMENTS

Figure 19 shows very clearly that a number of disruptive developments can radically alter the expected trends in the direction of the sustainability agenda.

First, science and technology are expected to play a crucial role in the future of sustainability as they have the potential to provide solutions to a range of sustainability issues: they offer opportunities to circumvent dirty stages of development, to improve our environment and well-being, provide jobs and economic opportunities, etc. In turn, this faith in science and technology can alter countries' understanding of sustainability as well as their sense of urgency (i.e. time horizons).

Second, climate change is expected to become increasingly apparent. In contrast to the point made about science and technology, this encourages a sense of urgency specifically with regards to environmental issues.

Third, resource scarcity (particularly in water and energy) is expected to loom large in the future of sustainability. One foresight explicitly referred to energy as the 'missing MDG'.⁶⁴ This may encourage the rapid transition to alternative energies and affect national approaches to sustainability both negatively and positively. Resource scarcity was also major recurring theme in the policy analysis.

Fourth, and finally, demographic shifts, such as population growth and aging, are expected to affect all dimensions of sustainability. They will put tremendous pressure on the financial capacities of states and exacerbate scarcity issues. Again, this concern was reflected in the policy documents.

EDUCATION, TRADE AND PRO-POOR STRATEGIES

Two other issues arose both from the policy comparison and the foresight literature but were not captured in either the parameters or drivers. The first issue is the role of education in forging a sustainable future. In the policy documents, education was considered essential to making people more environmentally responsible and economically productive. In the

64 Beyond 2015.

FIGURE 21: PARAMETERS - OVERALL RESULTS

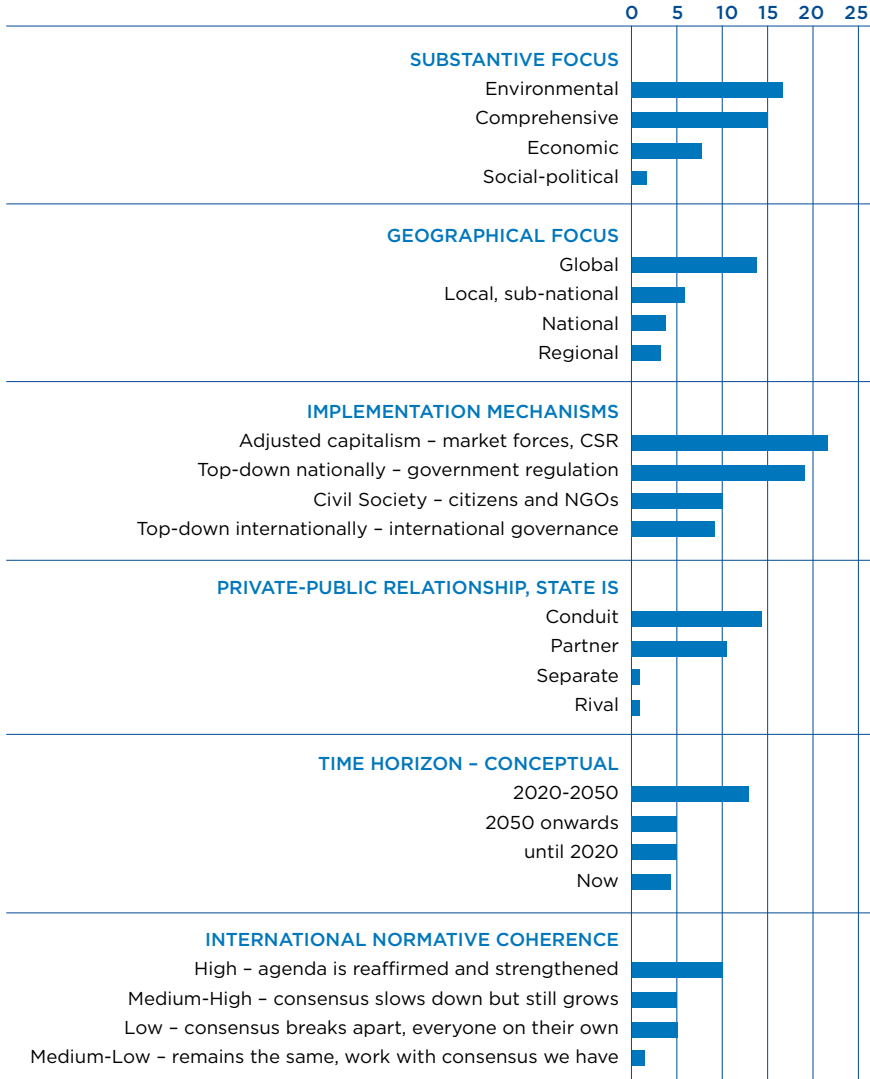
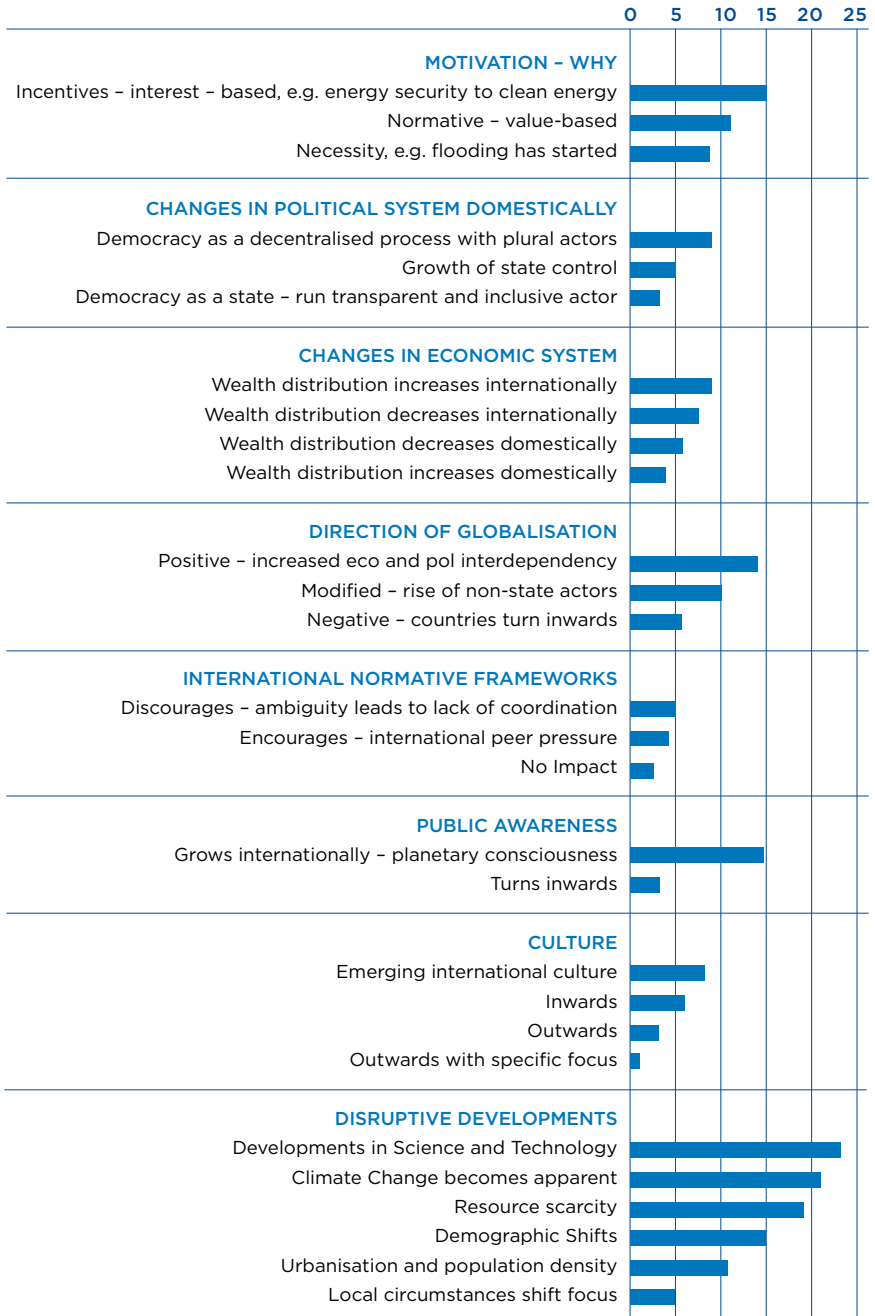


FIGURE 22: DRIVERS AND DISRUPTIVE DEVELOPMENTS



foresight literature the emphasis was more on the education of CEOs (on the benefits of incorporating sustainability codes into their business practices) and of consumers. There is no consensus across the foresights on what the effect of consumers may be on the future of sustainability: according to one strand, consumers are drivers of change as they force business to produce sustainable products; and according to the other, consumers will not be willing to pay more for such goods in spite of the broader benefits.⁶⁵

This attention to consumer behavior may reflect a Western bias in the source selection. In developing countries, high poverty levels would arguably make this less of a priority. Similarly, the negative side of trade and pro-poor strategies are overlooked in the foresight literature although they are key to many developing countries' strategies, as the policy comparison found. The foresight studies expect trade to increase wealth overall (internationally and in absolute terms) but not necessarily in a redistributive way at the domestic level. This suggests that pro-poor strategies will become increasingly important domestically as trade exacerbates existing divisions.

8.4 IMPLICATIONS

The foresights produce four different outcomes for the future of sustainability, it may be characterized by: national approaches, international consensus, a 'free for all' world or a bottom-up consensus. Figure 23 shows that according to the foresight literature, the 'free for all' scenario is not likely. The foresight studies are almost evenly distributed across the three remaining outcomes. This makes it difficult to assess what the implications of the predicted changes will be.

Nevertheless, the foresight literature sets out conditions under which certain outcomes are more or less likely. International cooperation can be achieved if the international community succeeds in designing international sustainability policies that are comprehensive and address the full-range of issues that are important for both developing and developed countries. National approaches will be more dominant if they are clearly articulated

65 Facing the Future, A New Era for Sustainability.

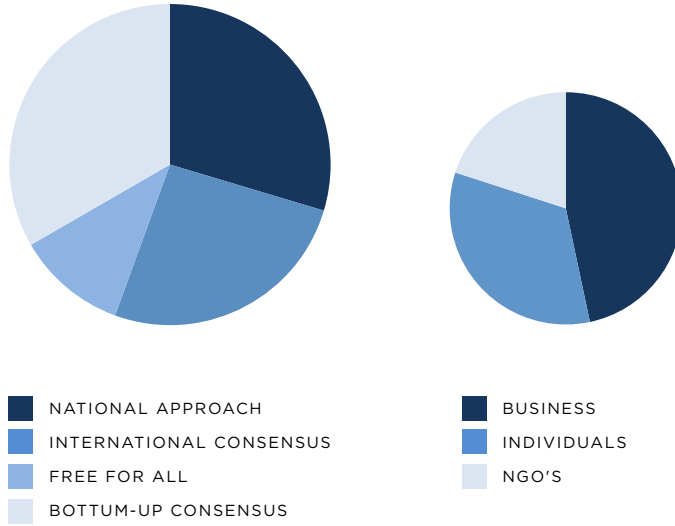


FIGURE 23: IMPLICATIONS FOR SUSTAINABILITY (RIGHT IS BOTTOM-UP)

and paired with incentives for business. The business world is also a key driver for the bottom-up implementation of the sustainability agenda: as Figure 23 shows, business is expected to play a greater role than NGOs or individuals in producing grassroots consensus.

PART III: TOWARDS A
SHARED FRAMEWORK OF
SUSTAINABILITY?

9 THE EMERGING INTERNATIONAL LANDSCAPE

9.1 THE SHADOW OF MULTIPOLARITY

A number of recent developments cast a shadow over multilateral cooperation and, in so doing, weaken the sustainability agenda. In the West, the financial crisis has challenged these countries' international commitments, notably to the Millennium Development Goals, as fiscal austerity turns many of them inwards. In the East, China and India seem most preoccupied with their economic growth and with bolstering their international positions. These moves suggest a multipolar order that is characterized by narrow rather than shared perspectives, and by interest-based rather than normative values.

In many ways, the Copenhagen conference reflected this emerging world. The sustainability agenda became polarized across developing and developed country lines and normative discourses were largely dismissed as Western ploys. With China and India each vying for the role of 'spokesperson' for developing countries, they were able to impose their agenda and avoid making concessions on what they saw as their national interests while also producing a counter-narrative to the Western approach to sustainability.

Without a doubt, China will be a key player in the years to come, not least because of its resilience during the financial crisis but also because of its involvement in Africa, a key continent for the sustainability agenda. In that continent, China's unique combination of state capitalism and communism has its appeal as the credibility of liberalized markets, as promoted by the IMF and developed countries, is undermined. In addition, as Western

countries falter on their MDG commitments, China has entered the African market with significant infrastructural investments in exchange for access to valuable energy sources that are vital for its own economic sustainability.

Coming from this new position of strength, African countries were united at the Copenhagen Conference in arguing that their development rights should be given first attention and that they should not sacrifice these rights for environmental issues over which they have less responsibility. By contrast, European countries struggled to be united in the same way and were sidelined despite being coming into the conference with a shared platform.

These divergences do not necessarily mean that the whole discussion on sustainability has come to a halt. Although countries are dragging their feet on binding environmental commitments today, there are strong interests at stake for each country. Developing countries may argue that they are not historically responsible for climate change and resist implementing bolder mitigation strategies but they are on the frontline of these issues as they are expected to feel the worst effects of sea level rise, drought and desertification.

Ultimately, in a globalised world, these issues have different but overlapping consequences for all countries and each has a stake in addressing the core issues of the sustainability agenda. If 'the only way forward for effective global governance in the multipolar world is to talk to each other in the language of common interests⁶⁶,' the emerging international landscape also offers the opportunity to create a sustainability agenda that is more inclusive of these different interests and, therefore, arguably more sustainable.

9.2 BRIGHT FUTURE PERSPECTIVES

As the meta-analysis of the foresight literature shows, future perspectives for sustainability tend to be bright, with reinforced international shared frameworks resulting both from dynamics between states and from the

66 Hulsman, J., Qasem, I and Sweijis, T. (2010) *Strategy and Change: A Narrative for the Age of Multipolarity*.

bottom-up. This grassroots momentum will be spurred on by individual activism, the media that will create a culture of awareness and by private companies. The foresight literature predicts the advent of private companies as producers rather than recipients of change.

The foresights are optimistic that interests of states will converge around shared social, economic and environmental concerns, and especially on climate change as it becomes increasingly apparent. But the foresight literature also mentions other key issues - such as water scarcity, energy security and demographic shifts - which may draw countries and continents closer together to produce joint strategies. In addition, the foresights expect that countries will increasingly realize that the different dimensions of sustainability are interlinked and that unilateral solutions fall short. This is expected to strengthen the prospects of a comprehensive policy approach.

Together with the expected potential of technology and human ingenuity in contributing to innovative global solutions, there is every indication that the momentum for sustainability is not at its end.

10 PROSPECTS FOR COMPETITION AND CO-OPERATION

A new chapter in the global sustainability agenda began at the 2009 Copenhagen Climate conference. For better or worse, a broader range of ideas and interests from countries around the world will define this chapter. In the worst-case scenario, the world will be divided as nations compete for finite resources to secure short-term and national interests thereby compromising the needs of other nations and future generations. And in the best-case scenario, this marks the advent of new and unexpected opportunities for international cooperative action enabling both present and future generations to fulfill their needs around the world.

10.1 NATIONAL INTEREST

As the policy comparison revealed, in all six countries reviewed, sustainable development is primarily about economic development that respects the environment and human beings. Achieving economic growth in a sustainable manner is the most important interest that all the countries surveyed share.

The analysis showed that economic sustainability is determined, in the short-term, by local economic factors (engines of growth and budgets). Since these short-term factors vary significantly across the countries, this results in different emphases and priorities on this part of economic sustainability. At an international level, this means that on this point, countries diverge and will have a more difficult time agreeing on common frameworks.

This divergence is also possible on the second part of economic sustainability, namely the physical capital reserves that are needed for short-term and long-term growth. This is where competition on finite and/or scarce resources, such as oil, natural gas, water and minerals is possible or even likely as countries continue to define competition for these

resources in zero-sum terms. This analysis also showed that both India and China were concerned about population growth and rising domestic demand for these resources. Internationally, this has led to a number of aggressive steps on these countries' part, including China cutting export quotas on Rare Earths Elements (REE), which is vital for the production of electronic equipment. This has further strained its relations with Japan, a country whose economy depends on Chinese exports of these REE.

10.2 CONVERGING INTERESTS

With regards to the physical capital reserves, and energy in particular, another scenario is possible. Given that virtually all the countries surveyed are concerned with energy security (because it underpins their prospects for economic growth), it may be an area where international cooperation could reap great benefits for all of them. Furthermore, it is arguably impossible to push cooperation on other issues without first satisfying this point. Specifically, cooperation is most likely in the development of additional energy sources, such as solar, wind and biomass. This is a priority for most of the countries surveyed (as both economic and environmental sustainability hinge on its success) even if many have not been able to make sufficient investments. Therefore, ultimately, a global transition to green energy is potentially one of the most promising platforms for converging interests and international cooperation.

To a lesser extent, this also true for the other long-term part of economic sustainability, namely the preservation of human capital through education. Education is seen as the key tool to empowering social groups (e.g. women, disadvantaged groups, etc.) and so ultimately producing more equitable distribution of wealth. As the analysis also showed in the discussion on social sustainability, most of the countries are concerned that inequality undermines their stability. Internationally, instability produces migration flows (a concern for developed countries like the Netherlands) while global income disparity also produces tensions. Although social sustainability has largely been overlooked in international agreements on sustainability, cooperation on these different issues (education, income disparity) can draw on existing agreements and be an area for continued progress.

Much like economic sustainability, with environmental sustainability, short-term concerns are most likely to be colored by local issues and by definition,

turn countries inwards. These concerns include preserving a set of environmental conditions domestically or protecting against human vulnerability to changes. The latter is commonly referred to as adaptation in climate change negotiations. Adaptation is a focus for developing countries and undermines broader international consensus on climate change, specifically on mitigation.

Although both developing and developed countries are concerned with energy efficiency and clean energies, developing countries have been pushing to receive financial and technology transfers (specifically in carbon capturing technology) to this end. Again, this is clearly an area where cooperation can be deepened. Ultimately, mitigation is as much an economic as an environmental issue, specifically in developing countries where climate change is likely to have the most damaging effects.

10.3 GROUP THINKING

Looking at climate change negotiations, what is remarkable is that countries seem to diverge or converge into groups or pairs, rather than individually. These groups share a set of perceptions and interests that are produced by common levels of economic development, political systems or geography. The policy analysis revealed that the greatest overlap is between China and India, both in the way that they define sustainability and the way they implement it. Their 5-Year plans address the same issues and priorities, such as energy security, urbanization, consumption patterns, population control, air pollution and the role of technology and innovation. They also both have a top-down approach towards the private sector, which has resulted in the same problems with the translation of national policy into local and business practices. These similarities in perceptions, interests and strategies encourage cooperation between the two countries in the field of sustainability, as occurred at the Copenhagen Conference.

At the Copenhagen Conference, the African states were also united and spoke in one voice about climate change issues, primarily in defending the interests of developing countries. This perspective is reflected in South Africa's policy documents. These regional approaches to sustainability are increasingly shaping the dynamics of international cooperation on sustainability. Latin America, although to a lesser extent than in Africa, is also moving towards a regional approach to sustainability. Mexico is one of

the leading actors in building this regional consensus. Similarly, the EU is working on a united European perspective on sustainability. The Netherlands acts in accordance with the EU's approach, which is most visible in its statistical Monitor that overlaps significantly with the European Commission's statistical report.

10.4 A COMPREHENSIVE APPROACH

The economic, environmental, social and political dimensions are not independent or even distinct from one another. However, the policy comparison revealed that most countries treat these dimensions separately in their policies and do not have a comprehensive approach to sustainability. At the same time, the meta-analysis of foresight studies found that countries will become increasingly aware that the dimensions are interrelated and that a comprehensive approach is needed.

Adopting a comprehensive approach is the only way to tackle inevitable feedback loops and trade-offs between the dimensions of sustainability. In addition, awareness of these interdependencies will also encourage inclusive international sustainability frameworks because, in a globalised world, sustainability policies can only be effective if they are comprehensive and have a global outlook. Figure 24 presents an overview of some of the trade-offs and feedback loops that were observed in the policy documents. It also lists a number of overarching issues, that cover all three dimensions of sustainability and that all countries share. These issues also afford the greatest possibilities for cooperation.

TRADE-OFF AND /OR FEEDBACK LOOP	ENVIRONMENTAL	ECONOMIC	SOCIAL-POLITICAL
TRADE-OFF	There is a tension between economic development and environmental degradation. Economic development leads to environmental degradation, which increases the vulnerability of the poor and thus undermines economic sustainability.		
FEEDBACK LOOP	Environmental sustainability policies are driven by both economic and environmental motives and affect both the environment and the economy positively. Example: the development of clean and alternative energy.		
FEEDBACK LOOP	Urbanization, which is brought on by and encourages economic development, damages social sustainability by deteriorating health and safety and environmental sustainability by increasing energy consumption and air pollution.		
FEEDBACK LOOP	The development of clean and alternative energy has a positive effect on climate change mitigation, but can also negatively affect environmental and social-political sustainability. Example: the construction of dams for hydropower causes rivers to dry up, degrading the environment and altering the livelihood of rural populations who may be forced to relocate, causing internal and external tensions related to migration and over transboundary water supply.		
FEEDBACK LOOP	Economic progress leads to increased consumption. Western consumption patterns have damaging effects on the environment in developing countries but also bring economic growth. Economic growth and concurrent changing consumption patterns affect society unevenly, however, creating more disparities and thus undermining social sustainability both internally as internationally.		
TRADE-OFF		Protective trade barriers in the West are beneficial to domestic economic growth, while they constitute a major obstacle to economic growth for developing countries. Trade barrier hence undermine global economic and social and political sustainability.	

OVERARCHING ISSUES ACROSS COUNTRIES	
ENERGY	Energy security is a shared concern and runs across all dimensions: energy security is a precondition for economic growth, securing access to cheap energy is a source of empowerment for the poor, developing alternative and clean energy is motivated by both environmental and economic interests.
WATER	Water is a major issue in all countries. Its supply is crucial for economic growth and populations. Water scarcity is enhanced by economic growth and environmental degradation and threatens the livelihood of the poor by deteriorating sanitation and health issues. Rising sea levels and droughts cause ecological migration.
EDUCATION	Education is considered key to promote all dimensions of sustainability. It enhances the economic productivity of individuals and their engagement to consume and act sustainably.
TECHNOLOGY	Both developing and developed countries see technology as a key factor to promote the three dimensions of sustainability. Technology can, for example, improve energy efficiency, drive the development of clean energy, create new economic opportunities, improve education and people's social participation.

FIGURE 24: TRADE-OFFS, FEEDBACK LOOPS AND OVERARCHING ISSUES

10.5 CONCLUSION

This report set out to answer the question: what room exists for cooperative sustainability strategies in a multipolar world? The findings suggest that sustainability policies are driven not by normative values, but by clear-eyed interests. This has important implications for international negotiations because these become platforms in which states can push these interests. It is only when these interests converge that the sustainability agenda can move forward.

This report broke the concept of sustainability into different dimensions in order to identify areas of convergence, points on which cooperation is possible. Both current policies and future prospects were analyzed. In this analysis, it emerged that sustainability is primarily understood in economic terms across developed and developing countries with environmental sustainability as the next most important issue. Climate change, in particular, is seen as a pressing issue, not least because it may have key economic ramifications. This does suggest that there is room for cooperation on climate change as there is a common interest to tackle its causes and effects. Likewise, resource scarcity (principally water and energy) is also a shared concern and can therefore provide a platform for co-operative strategies. As for social sustainability, although the policy comparison suggests that it is relatively overlooked, investing in its components is another important shared interest.

Ultimately, a more comprehensive approach to sustainability is needed to effectively move towards an international framework for sustainability. Comprehensive means that it not only covers all three dimension of sustainability but also that it includes the plurality of views around the world. In particular, issues such as trade and international income disparity will have to be addressed. The foresight studies suggest that this new perspective will emerge and that a convergence around a more holistic understanding of sustainability will materialize. Rather than a global consensus, the policy analysis suggested that a consensus will emerge by clusters of states and that these clusters will determine the shape of the sustainability agenda in a multipolar world.

Overall, the assessment of the future of sustainability is optimistic. The foresights anticipate that in the multipolar world, room exists for

cooperative sustainability strategies with a growing role for the private sector and civil society in the implementation of these policies. This critical role for the private sector also emerges in the policy analysis.

11 POLICY IMPLICATIONS

This report shows that a multipolar world will produce a set of new challenges and opportunities for the sustainability agenda. The inherent tension between the short-term satisfaction of national interests and the need for joint action on global commons will be made more acute. So what are the policy implications of this for policymakers in Europe?

A MORE COMPREHENSIVE APPROACH OF SUSTAINABILITY

Any cooperation between people and institutions implies some level of understanding and respect of each other's values and needs. Likewise, a globally shared framework of sustainability can only come about if states and regions understand and accept each other's priorities. As we have seen in this report, these priorities are not necessarily aligned: the focus in Europe might be more on mitigation whereas in developing countries, health and poverty issues loom larger. The Copenhagen conference starkly demonstrates the dangers of treating each dimension of sustainability separately as it was largely because developing countries were concerned that their economic concerns would be left to the wayside that they resisted the agreement altogether.

As a result, producing a more comprehensive approach to sustainability is required to effectively move towards an international framework for sustainability. We believe Europe could take an important first step towards a shared climate policy by widening its focus on mitigation through quantitative targets for CO₂ emission reduction to including issues like poverty eradication and the abatement of short-term climate effects (droughts, flooding, and climate related health issues). Bringing these issues together would open the door to effective multilateral action, particularly with countries like India, Mexico and South Africa.

INVOLVE BUSINESSES WORLDWIDE

The comprehensive approach to sustainability mentioned above not only involves the inclusion of all dimensions of sustainability but also of all actors. Governments should actively pursue partnerships with the private sector and NGOs as foresight studies point to these actors as important catalysts of an international sustainability culture.

An illustrative and inspiring example is the organization of round tables on palm tree oil by Unilever. Traditionally, the production of palm oil results in substantial and irreversible damage to tropical forests. The Round Tables bring together representatives concerned with the whole supply chain, including local businesses, unions, environmental organizations and local authorities. Together, they develop new and sustainable solutions that safeguard the tropical forest and ensure a reasonable income for local workers. In addition, authorities and companies work together on initiatives designed to develop the market share for new alternatives. This strive to define a new license to operate is also designed to set a precedent for other companies involved in the production of palm oil.

The palm oil example illustrates how public-private partnerships can provide sustainable products and generate momentum from the bottom-up. These partnerships can also play a key role in the transfer of technologies to developing countries, notably in the field of energy efficiency and clean energy. The latter, in particular, could be a potentially lucrative area of investment for European companies. India and South Africa have already invited such investments though Mexico and China would certainly welcome similar transfers as they seek clean and affordable answers to their strongly rising demand of energy. These bottom-up initiatives, inspired mainly by foreign business opportunities, could result in a growing worldwide network of public-private partnerships in sustainable development, complementing the European Union's present efforts to establish a shared framework through international negotiations.

EU COORDINATION AND GLOBAL COALITIONS FOR SECURING SCARCE RESOURCES

The availability of physical capital is crucial for short-term and long-term growth and sustainable development. Specifically metallic minerals, such as Rare Earths Elements, Platinum, Niobium, Lithium and Tantalum, have a

vital role in the transition from the present fossil-based energy system to an energy system based on sustainable energy from sun, wind, geothermia and biomass. Countries lacking natural reserves of these metals, such as the member states of European Union, will need to find ways to secure access to these resources. Individual EU member states will not be able to do this by themselves. In addition to intra-European action, the European Union could also strive for long term trade agreements, for instance with Australia, as a means to secure a steady flow of Rare Earths Elements and other scarce metals from Australia to Europe. A strong coalition between both partners could be built on mutual dependence in trade and on cooperation in sustainable technologies. Such a coalition may even grow gradually, by taking in strategic partners of both parties, such as Singapore and South-Africa, thereby connecting to other world regions. In a multipolar world, such a strategy of building global partnerships based on shared interests, may present a promising alternative for conflict and competition between individual nations.

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