# INTRODUCTION

'"Only one Earth" marked a watershed in the evolution of humanities relationship with the earth and global concern about the environment'

*United Nations Conference on the Human Environment, 1972*

'Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs'

*Our Common Future: World Commission on Sustaianble Development, United Nations, 1987*

'… Protecting and managing the natural resource base for economic and social development'.

*'The Future We Want', Outcome document of the 2012 United Nations Conference on Environment and Development, United Nations.*

'Sustainable development calls for robust economic development and a long term convergence in living standards between rich and poor countries in ways that are socially equitable and respect planetary boundaries'

*Sustainable Development Network, United Nations, at the launch of 'The World in 2050: Pathways towards a sustainable future', March 2015.*

'… we have a hard time grasping what it means to live within planetary limits … transforming key systems such as transport, energy, housing and food systems lies at the heart of long-term remedies … as well as redesign of systems that have steered these provisioning systems and have created unsustainable lock-ins: finance, fiscal, health, legal and education'

*The European Environment - state and outlook 2015: synthesis report, European Environment Agency, 2015*

'… China wants to write the rules for the worlds's fastest growing region … why would we let that happen? We should write those rules'

*President State of the Union Address January 15, 2015.*

'… To build a community of common destiny … The interests of others must be accommodated while pursuing one's own interests, and common development must be promoted while seeking one's own development … security should be given equal emphasis as development, and sustainable development surely provides a way to sustainable security'.

*Keynote Speech by H.E. Xi Jinping, President of the People's Republic of China, at the Boao Forum for Asia Annual Conference 2015, 28 March 2015*

# Social Dimension of Sustainability

# 1

In a unipolar, and post-colonial world, assured access to low-cost natural resources shaped economic growth pathways: industrialization, urbanization and lifestyles. A multipolar world is not able to keep commodity prices low modifying longer term trends shaping economic growth: urban design, community attitudes and individual decisions affecting natural resource use consumption patterns are taking place in an increasingly services oriented and knowledge-based economy, giving hope for finally moving sustainability from ideas to reality. In the twenty-first century, with unprecedented interdependence, wealth and inequality, sustainability is about the use and distribution, not scarcity, of natural resources – the neglected social dimension of sustainable development.

The impact of human activity on the global environment increased dramatically after 1950; by 1970, three-fourths of the population of industrialized countries had moved to cities, and the 'American way of life' soon became the 'Western way of life' as Europe rebuilt its cities, but at half the level of natural resource use in the United States. What is considered economic development is really based on use of natural resources for infrastructure and energy, electricity for lighting, heating, cooling and mechanical power, and oil powered cars, trucks and aircraft for transportation of people and industrial food production. High energy consumption affected every aspect of daily life with the promise of large houses in the suburbs, low price fuel, fast travel and foreign holidays, dining out, weekly shopping and new fabrics. Infrastructure–production and lifestyle–consumption systems reflected technological advances as well as social values and worldviews, which combined with low commodity prices, have led to path dependency of a high natural resource use and high carbon system. The citizens of these countries, until recently, were not even aware that two-third of the total national emissions of carbon dioxide emissions come from the residential, commercial and transport sectors which together constitute urban economic activity. Such was the power of ideas, institutions and rules that the imbalance being created in the planet was first described as global environmental change and later, to accommodate developing countries concerns, as sustainable development, without requiring any action at the personal level in the industrialized countries.

Re-emerging China and India, with three times the population of the industrialized countries[1], are adopting an 'Asian way of life' that is less energy intensive and wasteful, not so much focused on accumulation of material goods and with values and behaviour shaped by very different ancient civilizations. Half of China is already living in cities with denser urban design and smaller homes,

[1] The difference rises to 15 times in comparing the population that shifted to urban areas in the mid 20th century with the urbanization taking place in the 21st century.

greater reliance on public rail transport, more internal than foreign travel for recreation and greater preference for local food with much less waste. In this transformation, the largest mitigation and adaptation opportunities are going to be in rapidly urbanizing areas where urban form and infrastructure are not yet locked-in [IPCC, 2014].

This book analyses the challenges of global interdependence; the value judgments in the science–policy interface of how sustainable development has been framed in an unequal world in terms of human impacts of a growing population on nature rather than the nature of the activities and consumption patterns as rural agrarian populations shifted to cities. An institutional focus was adopted – interplay of agency, architecture, accountability and legitimacy, to which equitable allocation of resources and adaptiveness of governance systems was later added (Bierman, 2014) – instead of analysing patterns, trends and drivers of natural resource use. Europe's consumption footprint is double that of its own biological productive capacity, and hence human well-being depends on ecological capacity from elsewhere [WWF, 2013]. The United States ecological footprint is even greater. These patterns of natural resource use were shaped by the trend, in real terms, of oil and gas, metal and food prices remaining flat or falling throughout the twentieth century and they have increased by an average of 260, 176 and 120 per cent, respectively, since 2000 as a result of a combination of strong demand, notably from China and rising supply costs, shaping very different consumption patterns in the twenty-first century [McKinsey and Co, 2013]. Despite this increase, in 2010, emerging economies made up 40 per cent of the world's GDP and by 2025 this number is predicted to be over 70 per cent, largely in Asia. This trend is going to continue as the global economy doubles by 2030 and doubles again by 2050 driven by the re-emerging economies with very different norms, consumption patterns and practices.

Very different societal values are leading to different trends of natural resource use in the re-emerging countries, which will in turn shape institutions for a new world order that will dilute the North–South divide between countries for an urban–rural divide, as most of these flows will take place between developing countries requiring new forms of international cooperation. The book draws more on practice and policymaking rather than international relations theory, or approaches based on economics and political science, which are analytically rigorous but do not describe reality accurately.

## 1.1 The importance of a developing country perspective

Sustainable development, the way it was framed, was a deliberate construct to bridge the growing divide around natural resource management between industrialized countries that had become urban by the 1970s, and the much larger population in countries which had earlier emerged from colonialism after the 1950s, from where natural resources were sourced and were expected to urbanize in the coming years. The intellectual conceptualization of sustainable development had three elements: it encompassed a common concern for the global environment while supporting economic growth in different degrees in all countries; international cooperation was to be achieved through expert groups, treaties and institutional bargaining among autonomous actors with different perceptions of problems and interests; and the agenda was identified by and the outcomes were shaped by the industrialized countries, and reflected their priorities. Since the United Nations did not, and does not even now, play a role in economic policies, the way the issues were defined in physical terms, as 'scarcity', and in technical terms, as chemical agents, focussed attention on the symptoms and linked them to development as an additional cost. This paradigm reflected the capacity for strategic thinking built up in the United States to deal with the Cold War, which could easily be applied to other issues in order to secure their national interest.

At the international level, the management of finite natural resources raised two issues: sharing global common resources and collectively managing transnational problems. International environment law, formulated through a political process, shaped policy less in dealing with environmental damage and

more in industrialized countries securing rights over natural resources outside national boundaries: the oceans, biological diversity and the atmosphere. The way the issues were framed around these related but distinct concerns served the interests of industrialized countries with maximum benefits and minimum obligations for them. For example, gaining access to biological diversity to support the next wave of growth through the biotechnology industry was a key policy objective of the Rio Conference in 1992, leading to products eventually, covering healthcare, energy and industrial and agriculture sectors. The market capitalization of these companies in the United States, Europe, Canada and Australia increased from $4 billion in 1994 to $400 billion in 2006 and rose to $792 in 2013 with revenues of $92 billion and the global biotechnology industry is expected to exceed $320 billion in 2015, only now with China and India playing an increasing role in development of bio-drugs [Ernst and Young, 2014].

The process of international norm creation for the global commons began in 1972, in Stockholm. International cooperation, shaped by global treaties in 1992, in Rio, evolved into concepts of public–private partnership in 2002, in Johannesburg, and, into global goals in 2012, again in Rio. In this 40-year span, countries moved from being connected, to becoming interconnected and now interdependent on each other. This evolution reflects globalization: the global spreading of industrialization to old colonies and beginning of the shift of their rural populations to urban areas and into the middle class as consumers driving economic growth, and natural resource use. With understanding of the interdependence of environmental challenges and social and economic systems, the focus of inquiry and policy is now shifting to modification of longer term trends in urban consumption patterns, or 'lifestyles' of the rich worldwide, with an emerging rural–urban rather than the historical North–South divide.

Since sustainable development was projected as a technical subject describing scarcity in particular sectors rather than analyzing the causes, it was not designed to solve the problem. The objective was to divert attention from activities in industrialized countries to what was happening in developing countries. The refusal of developing countries to agree to a partitioning of the atmosphere at Copenhagen, in 2008, was the turning point and reflected their growing power to be able to reject formulations presented by industrialized countries and the gradually lessening leverage exercised by multilateral financial institutions that were established outside the United Nations. The subsequent China–United States climate deal, November 2014, recognizes human well-being within ecological limits and does not adopt a purely risk management perspective.

Within the United Nations, the evolution of sustainable development reflects three related but distinct discourses. First, the tension between the traditional focus of the organization on sectors, or the specialized agencies, and the growing need to consider distribution as environmental considerations are raised in broader cross-cutting areas. The post-Rio 2012 global goals are now leading to an enhanced role for the Economic and Social Council as the World Trade Organization and World Bank lose their relevance in the opening of markets and means of implementation. Second, just as the 2002 World Summit on Sustainable Development was a dialogue among major stakeholders from government, civil society and the private sector on new partnerships, signalling an end to the gap between the public and private sectors in international cooperation, in the future many sustainable development concerns will be treated outside the framework of the United Nations, for example, by cities, suggesting the need for new formulations and institutions, such as the Compact of Mayors launched at the 2014 United Nations Climate Summit. Third, the geopolitical shifts have also had an impact on international civil servants and the leadership of the specialized agencies is now considering distribution issues, broadening the science linkage. The conditions are ripe for a new framework, or paradigm, for the related global concerns of management of natural resources and human well-being.

## 1.2 How is this different to the current approach

Urbanization led to growth slowing in the industrialized countries in the 1970s, and one outcome was to establish global institutions and rules to seek natural resources in the global commons. In addition, natural resources like forests and biological diversity were sought to be characterized as global environmental goods. International environmental law was conceptually an extension of the rules that had led to the flow of commodities for their industrialization and infrastructure at low costs, did little to reduce global environmental damage and increased wealth and income gaps between and within countries. The harmonization of the free-market system has a natural tendency towards increasing the concentration of wealth and policy proposals assume this growing concentration of wealth is not only inevitable, but the thing that matters most [Piketty, 2014]. Increase in wealth in turn led to increase in natural resource use, in urban and not in rural areas, as well as inequality, and 'sharing of the pie' with the bottom 40 per cent of people is only now gaining traction even with the International Monetary Fund; for example, the United States economy's per capita gross domestic product has grown by more than $6,000 since 1999 but the median income has declined by more than $4,000. Consequently, changing the way we think about society, and a focus on distribution, supports the adoption of low-carbon models different from the current high-carbon socio-technical systems; growing inequality is now raising important questions of global social justice and human rights, for example, as the poorest billion are responsible for less than 5 per cent of global emissions and need carbon space for their economic growth. This acknowledgement has come about with geopolitical shifts, underlining the importance of the way the issues are framed. For the first time, the Intergovernmental Panel on Climate Change in its fifth assessment report, in 2014, has identified ethics and justice along with economic analysis as guidance for policymakers [IPCC, 2014]. In this view, the exercise of individual choices or lifestyles may need to become more austere, if everyone has to get equal access to energy, for example, instead of treating the integrity of ecosystems as more important by those who already have access to energy.

The scientific effort to understand global change has been, and to an extent continues to be, framed by the natural sciences that investigate, monitor and document environmental damage. The planetary boundaries that are set involve judgments about what constitutes an acceptable risk. Consequently, the policy framework is such that the assessment of what is and what is not relevant has also been determined by the natural sciences. The responses have, therefore, been issue based, addressed in a piecemeal manner focused on sectors and countries rather than trends and goals at the global level; the outcome is incremental with partial solutions, while also limiting which analyses are deemed possible and relevant. For example, it is only now that the Intergovernmental Panel on Climate Change is considering "'key factors", it is still not considering "drivers", and identifies them as: 'population size, economic activity, energy use, land use patterns, technology change and climate policy' in the Synthesis Report. The Report still does not distinguish between the excessive resource use by some while others' increase in natural resource use is questioned because of planetary limits. It is only now beginning to be recognized that social science, along with the natural sciences, enables us to better imagine the future we want.

Sustainability is a political challenge, as choices have to be made about human well-being within ecological limits and how countries understand themselves and the world their citizens wish to live in. While there are no alternatives to physical infrastructure, alternative growth models and urban design can have a transformative impact with a greater potential than that of new technologies, by modifying consumption patterns as the urban middle class increases three times by 2050; energy efficiency is now recognized as a fuel by the Intergovernmental Panel on Climate Change, the International Energy Agency and McKinsey and Company. Natural resource use in cities, energy use, transport, food and water consumption are social processes where environmental impacts are linked with the economies which collectively shape us just as society shapes the natural environment;

they are not independent silos, as we have been considering since the Report of the Brundtland Commission in 1987. Achieving global well-being within planetary limits, as the essential challenge of sustainable development, questions the consumption patterns that define prosperity in terms of material resources for a greater focus on the qualitative aspects of well-being.

In the new paradigm, industrial pollution, scarcity of natural resources, degradation of ecosystems and planetary limits are seen as symptoms of the way consumption and production have been organized as human populations shifted from their century's long dependence on their local environment as agricultural producers to becoming urban consumers depending on global trade in natural resources for the goods and services required to maintain their well-being and lifestyles. Even adaptation to the adverse effects of climate change has so far been researched in terms resilience of ecological systems and is only now being seen in terms of social systems, considering adaptive livelihood systems in the context of wider transformational changes.

## 1.3 Dimensions of the 'common concern' on environment and human well-being

The architecture and contours of international cooperation around the environment were shaped by the United States, as the major user of natural resources and the most powerful state. The United States set the global agenda in a manner that characterized the global environment as a 'common concern', with a set of agreed rules for its management. The increasing scarcity and interdependence was not reflected in sharing natural resources. Using the leverage of cheap loans from multilateral financial institutions to debt laden countries enabled multinational corporations to enter, extract and keep commodity prices low and was an incentive for international cooperation in three areas: a key role for scientists, and later non-governmental organizations, in shaping ideas and the agenda; countries working together to share gains, again defined by the scientists; and, with institutions increasing transparency, preventing cheating and monitoring compliance of elements also identified by scientists. The continuing problem with these processes is the absence of a common understanding on how broader social change and human well-being will take place.

Both the establishment and the evolution of the treaty-based regimes were shaped by ideas developed by groups of scientists and scholars in industrialized countries, with the agenda and new global rules projected to represent impartial expertise rather than politics. The conceptions of appropriate behaviour were expected to change the way states looked at costs and benefits as well as perceptions of their interests and roles in the multilateral system. Developing countries remain reluctant partners in this arrangement, as they gradually became aware, with the implementation of multilateral environmental agreements, that their policy space had been restricted while industrialized countries had gained access to key natural resources within their borders; for example, access to biological diversity without sharing the benefits of biotechnology.

In other ways as well, the institutional approach did not deliver the global benefits it was designed to secure. For example, in 1992, technology was considered as the key to solving the world's problems, but the intellectual property right regime of 1995 worked against its transfer. In 2002, it was realized that there would be no lasting change without modifying knowledge systems and lifestyles to develop qualitatively different growth pathways. However, the 10-year 'framework of programs on sustainable consumption and production' of the United Nations remains voluntary. In 2012, new 'green growth' was also considered largely in terms of efficiency of production patterns, without addressing the underlying drivers of related urban middle class consumption.

The way global sustainable development policymaking is evolving poses three challenges. These concerns are reviewing the approaches for understanding and assessing the change that has

taken place; identifying those trends that need to be modified rather than adopt a broad focus on production and consumption; and ensure a long-term perspective in policymaking that incorporates global links allied to social rather than regulatory transformations. A more holistic approach to environmental problems focuses on 'restraint', in particular uncontrolled consumerism, and requires altering behaviour instead of the sole focus on new markets for reshaping production patterns, as social considerations are weighed alongside environmental and economic ones. This transformation will be difficult, for example, designing cities around reducing the need to travel, and the determining factor will be societal change. The United Nations continues to be best place to generate strategic knowledge leading to deepening coherence of the global agenda in order to support a common understanding on patterns of resource use that are in principle common for all.

The way the problem is now being framed also challenges the 'universalism' that has dominated the global agenda for a stronger recognition of 'diversity' as a part of the architecture, because there will be different sets of solutions for countries at different levels of industrialization and urbanization, or different levels of development. The shift from a focus on the symptoms to the causes of the problem focuses on urban consumers as the drivers of change in all countries. Norway, in April 2015, followed in the footsteps of a host of other countries, including the UK, Ireland, Finland and Denmark to put in place legislation adopting a carbon budget as the best way to slash emissions and increase the role of renewable energy in the energy mix, without relying on a global treaty or markets; as the Prime Minister pointed out, "there is a need to transform Norwegian society". The United Kingdom adopted a Carbon Budget system in 2008 as the best way to make the transition (UK, 2014). The emerging framework is still not stressing equitable sharing of the global commons, or natural resources, to meet the scale of the demand. It will need a new type of international cooperation as re-emerging countries shape their urban future establishing linkages with other developing countries.

There is also a contradiction between ecological, economic and technological interdependence and the political fragmentation within the United Nations, which continues to see global issues, for example, sustainable development, trade, technology and finance, as separate issues because they have been treated as technical concerns. For example, asymmetries in power and capacities are reflected in the use of the dispute settlement mechanism of the World Trade Organization in terms of access and retaliatory measures; so far 40 per cent of cases have been between developed countries while another 22.2 per cent of cases involved developed countries requesting the investigation of middle-income countries that are industrializing [Lee et al., 2014]. Increasing globalization raises the question of global governance with norms that consider the various human activities as parts of a single system to share both responsibility towards the environment and prosperity of all human beings. With geopolitical shifts the old frameworks are being challenged with China establishing new financial institutions in Asia, where three-fourth of future growth is going to take place.

Since 1972 some 500 million Chinese, which is more than the urban population of the United States and Europe in 1972, have moved to cities and an equal number is expected to shift by 2030. This is now a part of the global mega-trend driving natural resource use, and 750 million Indians are also expected to be living in cities in 2030. Therefore, the issue that must now be debated is how to manage the Asian century, or transformation, and the rural–urban complementary flows that will shape politics within and between nations in the interim period. One difference with the previous wave of urbanization is that it was driven by access to and use of low-cost commodities and industrial production, the Asian Century will be shaped in a greater degree by the global services and knowledge economy, for example, renewable energy, biotechnology, nanotechnology and information technology, enabling a different growth model, urban design, consumption patterns and social concerns; as well as shaping a different type of international cooperation that is not based on the North–South divide.

For example, in 2012, flows of goods, services and finance reached $26 trillion, with knowledge-intensive flows nearly half of total flows, or 36 per cent of global GDP, 1.5 times the level in 1990, and expected to triple by 2025 [MGI, 2014]. In 2013, labour mobility covered 232 million persons, largely from Asia, and is a factor in reducing wage differences between countries; India obtained $70 billion by way of remittances in 2014. Information and Computer Technology has a unique footprint in Asia: export revenues in 2011 accounted for nearly a quarter of exports, twice the global average; cloud computing is expected to generate 10 million jobs and will transform traditional business models and productivity; more than half of the global growth in frontier technologies, such as photovoltaics and semiconductors, is in Asia, and India had a 40 per cent share of global revenues of knowledge and legal process outsourcing. India is a hub for manufacture of generic biotechnology-based pharmaceuticals. These trends challenge the linear path of progress and will enable Asia to jump technology cycles [ADB, 2013] as well as earlier patterns, trends and drivers of natural resource use.

This is the context in which the book analyses the evolution of sustainability within the United Nations. The developments reflect the power of ideas, persuasion and pressure. The objectives and processes were shaped by international civil servants, natural and social scientists and think-tanks, mainly in industrialized countries. The way the issues have been framed explains why the outcomes did not lead to the professed results, as they served national interests of industrialized countries. The book also explores new social science inputs, forms of international cooperation in a multipolar world and the best ways societies can modify consumption and production patterns to pursue sustainable development paths for well-being of their citizens while reducing the causes of risk to the planet. People are now at the centre of sustainable development, the challenges call for a transformation of social systems and new ideas are now coming from re-emerging countries. They are focusing on how to facilitate a broadly acceptable societal change, which will be supported rather than driven by technology. While much can be learned from the experience of the industrialized countries, much more will need to be learned from the initiatives in China, India and other developing countries that are now rapidly urbanizing, and managing the rural–urban divide until their population moves into the middle class, with new global governance arrangements, processes and rules 'to build a community of common destiny'.

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