Already a key component of sustainable development policies, the alleviation of inequalities within and between countries also stands as a policy goal, and deserves to take centre stage of the Sustainable Development Goals, agreed during the Rio+20 Summit in 2012.

The 2013 edition of *A Planet for Life* represents a unique international initiative grounded on conceptual and strategic thinking, and – most importantly – empirical experiments, conducted on five continents and touching on multiple realities. This unprecedented collection of works proposes a solid empirical approach, rather than an ideological one, to inform future debate.

The case studies collected in this volume demonstrate the complexity of the new systems required to accommodate each country’s specific economic, political and cultural realities. These systems combine technical, financial, legal, fiscal and organizational elements with a great deal of applied expertise, and must be articulated within a clear, well-understood, growth- and job-generating development strategy.

Inequality reduction does not occur by decree; neither does it automatically arise through economic growth, nor through policies that equalize incomes downward via blind taxing and spending. Inequality reduction involves a collaborative effort that must motivate all concerned parties, one that constitutes a genuine political and social innovation, and one that often runs counter to prevailing political and economic forces.

Rémi Genevey, Rajendra K. Pachauri and Laurence Tubiana (Editors)
To meet the challenges of sustainable development, attendees at the 2012 Rio+20 Conference – marking the twentieth anniversary of the Earth Summit in Rio de Janeiro – agreed to negotiate Sustainable Development Goals, aiming to strengthen existing accords and conventions. These objectives would be few in number, simple to understand, universal in application and adaptable to each country beginning in 2015. Global inequalities will be a crucial topic of discussion for this new development agenda.

**Defining sustainable development goals for 2030**

The chapters in this volume document the rise in inequality in many parts of the world, a trend that seems to represent a complex combination of technological forces, globalization, and domestic politics to a varying degree. Whatever the causes, the consequences of high inequality can be severe, not only societies that are less fair, but also societies that are less healthy, politically stable and economically efficient. The goal of greater economic equality is therefore not just a moral one, but also a practical one. It is no accident that “social inclusion” is one of the main pillars of sustainable development, together with economic growth and environmental sustainability.

Inequality is also not simply a fait accompli. Societies can take measures to make their economies more equal as well as more efficient. The social democracies of Scandinavia, for example, are marked by very low levels of inequality, combined with a high degree of social trust, quality of government, public health and overall economic well-being. The key, it would appear, is universal access to investment in human capital, meaning in essence that every child in a society, whether born in a rich or poor family, has the opportunity to develop his or her skills and physical well-being to the full potential. Societies that invest heavily in public health, children’s nutrition, quality day care and pre-school, and quality public education and job training, end up with greater social and economic equality, as well as lower unemployment and higher average economic prosperity.

While the challenges of sustainable development are reasonably well understood the world is not making sufficient progress in ending poverty and promoting
economic development, maintaining social inclusion and ensuring environmental sustainability. To accelerate practical problem solving at local, national, regional and global levels, UN Secretary-General Ban Ki-Moon has launched the Sustainable Development Solutions Network. The Network has recently prepared a draft framework for sustainable development, which synthesizes the challenges faced by countries around the world – rich and poor alike, including the challenges of economic and social inequality, and social inclusion.

Below we reproduce an abridged version of this framework. The framework touches on all aspects of sustainable development, including poverty elimination, social inclusion, protection of the Earth's ecosystems and the good governance of public and private institutions needed for success in sustainable development. The Solutions Network invites interested organizations to join the network and to help promote practical problem solving and innovative solutions for addressing the integrated challenges of sustainable development in all parts of the world.

**Global sustainable development challenges**

The scale of the global sustainable development challenge is difficult to exaggerate. The fight against poverty has made great progress, but more than 1 billion people continue to live in extreme poverty. Inequality and social exclusion are widening within many countries, rich and poor alike. With the world at 7 billion people and an annual GDP of US$70 trillion, human impacts on the environment have reached dangerous levels and are already exceeding some planetary boundaries. By 2050 there may be anywhere from 8.1 billion to 10.6 billion people and a global GDP of more than US$250 trillion.

If this growth occurs on the business-as-usual trajectory, without drastically reducing the resource intensity as well as the pollution caused per dollar of economic output, the consequences will include catastrophic environmental threats. Current growth patterns are also not providing enough decent jobs, and are exacerbating inequalities within our societies. The bottom line is that we need a new global growth framework, one that is compatible with social and environmental objectives.

Even at today’s global population and economic output, many key ecosystems are being threatened or destroyed. Climate change is not a distant threat but a stark reality in rich and poor countries alike. Global temperatures are rising; extreme weather events are becoming commonplace; the ocean is acidifying; fisheries are being fished to exhaustion; many fossil resources including oil and groundwater are being rapidly depleted; and the earth is in the midst of an unprecedented mass extinction of species. These problems will expand dangerously and rapidly unless the world changes course urgently.

Fortunately, rapid positive change has become eminently feasible thanks to rising incomes, unprecedented scientific and technological progress, a growing political awareness of the need for sustainable development pathways, and the recognition of the importance of strengthened global partnerships. The world has at its disposal
the tools to end extreme poverty in all its forms, promote economic growth and advance environmental sustainability. Where improved tools are needed, particularly to decouple economic progress from the use of environmental resources, these can be developed through concerted action and practical problem solving by governments, business, civil society, science and academia.

No country can tackle the sustainable development challenges alone. Integrated solutions must be developed at local, national, regional and global levels. Every country must rise to the challenge since the traditional distinctions between developed and developing countries or between donors and recipients no longer describe the complex world in which we live. Likewise, businesses and civil society must work towards achieving sustainable development. A compelling framework for sustainable development is needed to mobilize all stakeholders, explain the challenges, focus operational action at the right scale, and form a basis for a true international partnership.

The Sustainable Development Solutions Network (SDSN or the Solutions Network) has been commissioned by UN Secretary-General Ban Ki-Moon to engage scientists, engineers, business and civil society leaders, and development practitioners for practical, evidence-based problem solving.

The framework for sustainable development

We are moving from a development period defined by the Millennium Development Goals (MDGs), which are to be attained by 2015, to one defined by goals that recognize the full economic, social and environmental dimensions of sustainable development. The Rio+20 Conference endorsed the concept of Sustainable Development Goals for this purpose.

The MDGs have successfully focused world attention on ending extreme poverty in all its forms and reducing gender inequality. They have accelerated progress towards these objectives and have become a normative framework for development. The discussion around a post-2015 framework must not detract attention away from achieving the MDGs by the end of 2015 or from the core priority of ending extreme poverty. Yet, today’s challenges of sustainable development are broader than the scope of the MDGs. They affect all countries, and all countries must contribute to solutions. In addition to national and local governments, businesses and civil society organizations must also be called upon to contribute to meeting the challenges of sustainable development.

The framework for sustainable development describes society’s commitment to four interconnected objectives: economic development (including the end of extreme poverty), social inclusion, environmental sustainability and good governance (including security). Each of these four dimensions of sustainable development contributes to the other three, and all four are therefore necessary for individual

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1. Many other internationally agreed goals exist that together cover much of sustainable development, but these goals have been far less successful than the MDGs in mobilizing public attention and stimulating action.
Reducing inequalities...

Sustainable development is sometimes described by the first three dimensions: economic, social, and environmental. We add good governance and personal security as a fourth dimension to highlight several enabling conditions for sustainable development, including transparency, effective institutions, the rule of law, participation and personal security, accountability and adequate financing for public goods. These standards of good governance apply to the public sector, the private sector and civil society.

ECONOMIC DEVELOPMENT AND ENDING POVERTY A central task of sustainable development is to complete the job of ending extreme poverty in all its forms and promoting economic development. A billion people or so remain in extreme poverty, lacking adequate incomes, food security, education, basic infrastructure, and access to healthcare as well as being amongst the most vulnerable to disaster risk. Within the coming generation, i.e. by 2030, it should be possible to ensure that all households have access to basic needs through adequate household income, decent nutrition, food security, and universal access to primary health services including the prevention and treatment of certain non-communicable diseases. Likewise, they should have access to early childhood development, adequate education for professional life skills, and access to basic infrastructure services including, safe water and sanitation, clean energy and broadband connectivity.

While most countries of the world have the domestic resource base to achieve sustainable development, some 50 or so low-income or otherwise fragile countries do not. They are too poor, too remote, too conflict-ridden, too bereft of natural resources, or too burdened by other challenges to meet the goals for sustainable development on their own. Often they experience insecurity and armed conflict. These countries, including many in the Horn of Africa, the Sahel, Central Asia and many landlocked and small-island economies, need special international support to break the vicious cycle of lack of economic development, environmental degradation, insecurity and conflict.

Population growth remains very high in some parts of the world. To enable sustainable development, countries where population growth is still high because of high fertility should accelerate the reduction of fertility rates by expanding access to voluntary family planning and reproductive healthcare, investing in child survival, promoting an understanding of the benefits of small families, investing in girls’ education and adopting a holistic approach to the empowerment of women. Accelerating the reduction of fertility has the potential of ushering in a period where the age distribution of the population is beneficial for economic growth, as the number of potential workers rises in relation to that of children and older persons. Many middle-income countries have benefitted from those changes. For low-income countries to have similar experiences, action to promote the voluntary reduction of fertility should be expanded.

Through broad-based and environmentally sustainable economic growth, all low-income countries can reach the per-capita income threshold of middle-income
countries by 2030. Today’s middle-income countries can end extreme poverty and become upper-middle-income or high-income countries, depending on their starting point.

**Social Inclusion** Labour markets around the world are undergoing unprecedented changes driven in large part by globalization and technical change. Workers with low educational attainments increasingly find themselves without marketable skills, left unemployed or with wages at poverty levels. Good jobs now require more schooling and more specialized training than before. Those with the skills, good education and social connections, often enjoy huge gains in income. As a result, inequalities of earnings in many countries, rich and poor, have soared in the past two decades, undermining the fairness, justice and even basic human rights in these societies. Of particular concern is the high youth unemployment in many countries, except in a few where targeted institutions of vocational training and apprenticeships seem to support the school-to-work transition.

Despite major progress, gender inequality persists in many societies and violence against women remains widespread. In addition, discrimination against ethnic minority groups, indigenous peoples and geographically isolated populations still exists in many contexts. Gender inequality and other forms of discrimination rob societies of the full productive potential of large shares of their populations. Realizing the economic and social rights of all members of society and reducing inequalities are therefore important elements of a framework for sustainable development.

Another challenge of social inclusion is to maintain or enhance the quality of social interactions, which sociologists call “social capital”. This term has many interconnected meanings. It may signify the extent of trust in the society, a scarce resource that contributes to economic productivity and human well-being. Social capital may refer to cultural rights and practices that enable people to feel pride in their identities. It also refers to the honesty and accountability of governments and companies. Social capital also covers the ability of people to assert their points of view and pursue their interests in shared public decision-making processes, which are critical to poor people’s access to resources and opportunities and to the realization of their rights. Finally, social capital refers to the resiliency of civil-society organizations – such as charities, self-help groups and not-for-profit “social companies” that address social needs beyond the profit motive. In many countries research suggests a decline in social capital. Trust is falling, corruption (or the perception of it) is on the rise vis-à-vis both the government and corporate sector, and civil-society organizations may be stymied.

To ensure sustainable development economic gains must be socially inclusive, and the quality of social interactions – culture, trust, honesty, voluntarism and altruism – needs to be enhanced through the promotion of social ethics and the observance of human rights for all. Pathways towards addressing inequalities, overcoming discrimination, and improving other forms of social capital are complex and uncertain. Yet, there is strong evidence that policies and investments can play an important role
in lowering inequalities and promoting equal opportunities for all. These include improved education and on-the-job-training, particularly for the poor; smart policies to promote new industries; administrative reforms and measures to combat corruption; affirmative action for the poor and marginalized; and social safety nets to better manage the risk of sickness and the consequences of old age.

ENVIRONMENTAL SUSTAINABILITY Sustainable development cannot be attained without ensuring environmental sustainability and pursuing a green economy, meaning a decoupling of economic progress from human-induced environmental damage. In spite of growing public awareness, the dire environmental challenges have worsened considerably during the twenty years between the Rio Earth Summit in 1992 and Rio+20 in 2012: climate change, pollution and unsound chemicals management, unsustainable water use, unsustainable agriculture, unhealthy cities, massive biodiversity loss, emerging diseases, deforestation, desertification and the depletion and degradation of oceans. It is necessary and possible to reverse these trends, but countries lack long-term strategies to address these deep challenges, and there remains far too little environmental understanding and problem solving at local, national and global scales.

The poor often depend heavily on natural resources for their livelihoods and survival and are most vulnerable to environmental change, so extreme poverty can only be ended if environmental degradation is halted and reversed. This will require inter alia a drastic reduction in key dimensions of primary resource intensity of production and consumption in high-income and middle-income countries.

Of particular urgency is the need to decarbonize the economy by 2050. The world economy is built on fossil fuels, which constitute over 80% of primary energy use globally. In order to safeguard the world from runaway climate change, we need to achieve a decarbonized energy and industrial system by 2050, meaning one that emits far less carbon dioxide, or that captures and sequesters the carbon dioxide that is emitted. Yet even with advances in renewable energy technology, fossil fuels remain cheaper on a market basis than most low-carbon energy sources, and carbon emissions have consequently continued to rise steeply. The crux of the problem is that the market prices of fossil fuels do not reflect their true social and environmental costs, including the costs of climate change and pollution. A “social price on carbon” must be added to the market cost to reflect the true costs of fossil fuels, and thereby induce a shift to low-carbon energy.

Even under the most optimistic scenarios, some severe climate change has by now become unavoidable. For example, in the coming decades the frequency and severity of extreme weather events will increase, putting pressure on agriculture, cities and infrastructure; some coastal areas will likely be flooded and some fragile regions may become uninhabitable; many more coral reefs will bleach and biodiversity loss will accelerate. As a result, strategies to achieve economic, social, environmental, governance and personal security objectives must be “climate resilient” and promote adaption to climate change.
Another central challenge is sustainable agriculture and food security. Food production is often environmentally destructive, causing groundwater depletion, topsoil loss, greenhouse gas emissions, pollution from fertilizers and pesticides, loss of habitat, and declining biodiversity. While, on average, there is enough food today to feed all 7 billion people on Earth, under-nutrition among billions coexists with over-nutrition (excess caloric intake) of another billion or so. Too much food is wasted. Regions experiencing widespread malnutrition and growing food scarcity today will tend to expand and remain vulnerable to food insecurity over the foreseeable future, especially because of climate change, depletion of fresh water supplies, and land erosion. The rising world population and per capita food demands will exacerbate these problems. These challenges must be addressed by pursuing an environmentally sustainable intensification of agriculture – particularly among smallholder farmers, investments in the resilience to climate change, drastically reduced losses in the food production chain, and promoting the rapid, voluntary reduction of fertility.

Cities and urban development constitute another priority challenge. Cities are often growing at unmanageable rates; are unhealthy for their residents; comprise large and growing slum areas; rely on outmoded transportation and energy technologies; are threatened by severe environmental disasters; and fail to generate the number of jobs needed to employ their often young populations. Since urban infrastructure is very long-lived, investment decisions made today risk locking cities into unsustainable resource use and unhealthy environments for a long time. Yet, cities also offer tremendous potential for positive change and are often at the forefront of innovation in technologies and policies. Cities are increasingly the fulcrum of economic development and poverty eradication, social inclusion, environmental sustainability and good governance.

Policymakers are generally not familiar enough with the scale of environmental challenges, are too focused on short-term objectives and are excessively influenced by vested interests that resist the transition to sustainability. Often environmental policies are compromised by the belief that one should go for economic growth now, and then clean up later. But the experiences of many countries show that the cost of “cleaning up later” can be prohibitive. Even more critically, the fact that the world is meeting or exceeding many planetary boundaries makes it impossible to sustain growth-first policies. Alternative development pathways are available, but governments in many parts of the world doubt their feasibility, overestimate costs and lack trust in each other’s real intentions to address sustainability.

GOOD GOVERNANCE AND PERSONAL SECURITY Good governance is required of all sectors of society: governments, businesses and civil-society organizations. National and local governments need to build effective institutions and pursue sustainable development with transparency, accountability, clear metrics and openness to the participation of all key stakeholders. They should uphold and promote the rule of law as well as basic economic and social rights. Governments must design financing
strategies, help mobilize the necessary resources and provide the public goods needed for sustainable development. Public policy decisions must be made on the basis of scientific evidence.

The most important public good is peace and security, including personal security. Development cannot thrive without safety from personal and psychological violence. When conflict is flaring development becomes impossible and hard-fought gains are quickly reversed, as evidenced by the fact that no conflict countries are achieving the MDGs. Ending conflict often requires international support in the form of mediation, peacekeeping and assistance to address the underlying economic and social needs that drive conflict. Personal security, ending conflict and peace building are therefore essential components of good governance for sustainable development.

The private sector is the principal engine for economic growth and job creation. It will develop and deliver many of the new technologies, organizational models and management systems that are needed for sustainable development. Good corporate governance therefore calls for all companies, especially the major multinational companies, to adopt transparent goals for sustainable development, and to hold themselves accountable for those goals vis-à-vis their investors, customers, suppliers and society at large. We should acknowledge that companies are often more powerful than governments in determining the fate of sustainable development and that they have unrivalled technologies, organizational skills and means. Yet their incentives are often not aligned with the public objectives of sustainable development. There can hence be no sustainable development without good corporate governance and accountability. In particular companies should work responsibly and constructively with governments to address market failures, help mobilize the needed resources and ensure that private incentives become more fully aligned with public objectives. They must be accountable for the environmental and social consequences of their actions, along the lines of the “polluter pays” principle. All of this may require fundamental changes to some business models.

There also can be no sustainable development without civil society doing its part. This includes voluntary organizations that hold both government and business to account in terms of performance and honesty, organize and mobilize communities, deliver services, keep neighbourhoods pleasant and safe, and promote cultural activities. It includes philanthropies that support science, research, education and help for the poor. It includes civil society organizations that defend the environment against pollution and other externalities arising from the economy. And it includes “social enterprises,” often with distinct legal status, that work on a business model yet do not pursue profit as their sole or main motive.

A central challenge for governments at all levels, the private sector and civil society is to fulfil the promise of new technologies for sustainable development. Substantial progress on any of the four dimensions of sustainable development will require the large-scale adoption of advanced technologies already available. Many more sustainable technologies will need to be developed. Universities and research institutions therefore play an important role in sustainable development. They are engines of
basic scientific and technological research. They train future generations of leaders who will have to resolve many of the sustainable development challenges left by previous generations. They conduct much of the operational research that is needed to better understand the challenges, devise solutions, monitor and evaluate progress. And they can be an important partner in diagnosing local challenges and devising pathways towards sustainability.

SYNERGIES AND TRADE-OFFS – INTEGRATING ACROSS THE FOUR DIMENSIONS OF SUSTAINABLE DEVELOPMENT Strategies for sustainable development must be integrated and address the interconnections across the four dimensions. For example, a food security strategy must address the special needs of the extreme poor in rural and urban areas and address gender disparities so that women and young girls have equal access to food. Just as importantly, it must ensure sustainable use of water resources, preserve soil nutrients, protect biodiversity hotspots, and promote resilience as well as adaptation to climate change. Likewise, such a strategy needs to develop effective institutions, ensure adequate financing in the context of limited resources, and much more.

The interdependencies across the four dimensions of sustainable development vary from country to country, from city to city, and from region to region. Therefore, public and private actors at local, national, and regional levels need to diagnose the interdependencies across sectors, identify strategies for exploiting synergies or “win-wins”, and determine how to manage trade-offs across policy areas.

Setting goals for sustainable development for 2030
Addressing the challenges of sustainable development requires a shared focus on ending extreme poverty in all its forms and a fundamental transformation in the way our economies are organized. The necessary focus and collaboration across actors and countries can only be achieved through shared global objectives. For this reason the world needs effective and widely shared goals for sustainable development to follow-up on where the MDGs will leave off in 2015. Of course setting global goals will have little impact unless followed up by concerted action, but it is difficult to imagine a pathway towards global sustainability without an ambitious set of shared goals for sustainable development.

Well-crafted post-2015 goals will guide public understanding of complex long-term challenges, inspire public and private action, and promote accountability. Children will learn the goals at school as a shorthand definition of sustainable development. The goals will also promote integrated thinking and put to rest the futile debates that pit one dimension of sustainable development against another. They will mobilize governments and the international system to strengthen measurement and monitoring for sustainable development.

If our sustainable development framework is a good description of the challenges the world faces, then a new set of post-2015 goals till the year 2030 should apply to all countries – rich and poor – for the four dimensions of sustainable development. This does not mean that every goal must be a “stretch goal” for every country. Rich
countries, for instance, are likely to have met most goals relating to economic development, but many still lag behind on goals relating to social inclusion, environmental sustainability and governance. Countries that cannot meet the goals on their own should receive international support to do so.

The General Assembly of the United Nations will adopt the post-2015 goals following an intergovernmental process of negotiation. While that process is just starting, there is a reasonable chance that the post-2015 goals might comprise the components below: Ending extreme poverty and promoting sustainable growth; Promoting healthy lives and sustainable fertility; Promoting quality education, job skills and decent work; Promoting gender equality, personal security and well-being; Averting dangerous climate change and industrial pollution; Ensuring food security and sustainable food supplies; Protecting biodiversity and ecosystem services; Building smart, healthy and resilient cities; Fulfilling the promise of technologies for sustainable development; Ensuring good governance and accountability.

These goals may seem utopian. They are not. Indeed the world has considerable wind in its sails to achieve them. Extreme poverty in developing countries was halved between 1990 and 2010, from 43% to around 22%. Child mortality rates have come down, from 97/1,000 to 63/1,000. Enrolment in primary education has risen from 82% to 90% of the number of children of primary-school age. Access to safe water has increased from 76% to 89% of the population. And the technological revolution is spreading everywhere, with mobile phone subscriptions worldwide exceeding 6 billion, including 250 million in sub-Saharan Africa. By 2017, more than 80% of the world will have access to wireless broadband internet. The impetus of technology, management and global awareness all make it possible to be ambitious regarding sustainable development.

One of the lessons of the MDGs is the need for better data systems to track progress towards the international goals, and to support management efforts aimed at achieving the goals. Therefore, the new set of goals for sustainable development must be bolstered by a massive improvement in local, national, and global data collection and processing, using new tools (GIS, satellite, social networking, etc.) as well as existing tools. We will need real-time, complex, place-based and sub-national data to support the sustainable development efforts.

Applying the framework: Integrated pathways to sustainable development
A framework for sustainable development must be applied at global, regional, national and local scales. Each region, each country, each city, and each rural locality will need to make its own situation analysis, asking questions such as: How can we end extreme poverty in all its forms? How can we reduce youth unemployment? How can we reduce disparities across gender and socio-economic groups? What are the locally and regionally available renewable energy resources? What are the local vulnerabilities of food production and food security? How do prevailing fertility rates and population trends affect prospects for sustainable development? And so forth.
Feasible pathways are of course highly complex, subject to great technological uncertainty, and likely to require substantial financial resources. They often require changes in behaviour and involve complex interactions across objectives, across time and across actors. The sections below identify a few questions that will need to be addressed in applying the framework. This list is not complete and is designed as a starting point to trigger discussion and elicit practical problem solving.

(I) THE IMPORTANCE OF DECOUPLING Pathways to sustainable development need to “decouple” economic growth from the rising use of primary resources, thereby reducing the resource-intensity of production. At a time when high-income economies are looking to maintain living standards and re-start growth, and middle and low-income economies want to achieve economic convergence, decoupling is a fundamental condition of sustainable development.

Decoupling requires a holistic approach to the transformation of the entire economy in regard to the use of energy and to the use of resources and materials. Important areas of decoupling include:

- Energy efficiency measures and low-carbon energy systems (renewables, nuclear, carbon capture and storage) can decouple rising energy use from carbon dioxide emissions;
- Precision farming, improved crop varieties, efficient water management and no-till farm practices can decouple rising food yields from unsustainable utilization of water, chemicals, fertilizers and land;
- Green buildings, smart grids, and improved transportation systems can decouple urbanization from rising urban energy use and ensure effective land use;

Market signals are not currently adequate to achieve decoupling, since the market does not compel polluters2 to bear the full cost of pollution and does not establish prices for ecosystem services. This is particularly the case when pollution is global or at long distances from impacted areas, since political systems then have great difficulty in internalizing externalities, either through laws, economic incentives or social norms. For this reason, successful decoupling will require corrections to faulty market signals, increased political cooperation regionally and globally, strategies to promote research and development on sustainable technologies, and increased public awareness and understanding of the key challenges.

Investments in sustainable infrastructure will cost money and put a burden on low-income countries. At the core of sustainable development, therefore, must be a financing strategy that is deemed to be fair and practical. There will need to be at least three components of such a strategy. First, polluters should pay to clean up after themselves and compensate those bearing the burden of the pollution. Second, ecosystem services need to be priced. Third, rich countries should help poor countries to cover the incremental costs of investment.

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2. The term ‘polluter’ includes inter alia low-efficiency producers and wasteful consumers that squander resources with detrimental spillover to society at large.
Finally, decoupling requires clear strategies for managing non-sustainable “stranded assets” such as fossil fuel deposits that should not be exploited or coal-fired power plants that become uneconomical once the price for carbon emissions rises. Such strategies need to address deep political, legal and financial issues, which would otherwise delay or hinder the decoupling of economic growth from resource use and pollution.

(II) THE NEED TO CHANGE BEHAVIOUR AND ARTICULATE THE BUSINESS CASE FOR SUSTAINABLE DEVELOPMENT

Putting the world rapidly onto a long-term path towards sustainable development requires very large numbers of individuals to change behaviour and make different choices with regards to business management, ethics, politics, healthy lifestyles and personal consumption, resource use, fertility, education and so forth. In some instances public policies create the incentives that guide behaviour (through corrective pricing for example). Often the behaviour is conditioned by factors outside the direct control of public policies and economic incentives. When government leaders are accountable to their people, changing people’s understanding and even behaviours becomes a necessary prerequisite for changing policies.

Operationalizing the framework for sustainable development therefore requires clear diagnoses of the needed changes in professional and personal behaviour as well as explicit strategies for bringing about such changes. Such strategies can draw on successful examples from public health, education, politics and other fields. Changing the behaviour of private corporations requires inter alia a clear articulation of the business case for sustainable development. In some instances companies

**BOX 1 ECONOMIC GROWTH AND RESOURCE CHALLENGES.**

Using the World Bank’s definitions of income groups, the world is divided between low-income, middle-income and high-income categories as follows:

<table>
<thead>
<tr>
<th>Category</th>
<th>Population 2011 (billion)</th>
<th>Mean Income 2011 ($US PPP)</th>
<th>Total Income $US PPP trillions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low-Income</td>
<td>0.8</td>
<td>1,383</td>
<td>1.1</td>
</tr>
<tr>
<td>Lower Middle-Income</td>
<td>2.5</td>
<td>3,833</td>
<td>9.7</td>
</tr>
<tr>
<td>Upper Middle-Income</td>
<td>2.5</td>
<td>10,705</td>
<td>26.6</td>
</tr>
<tr>
<td>High-Income</td>
<td>1.1</td>
<td>38,572</td>
<td>43.8</td>
</tr>
<tr>
<td>World</td>
<td>7.0</td>
<td>11,574</td>
<td>81.3</td>
</tr>
</tbody>
</table>

As this table shows, raising the low-income countries to at least lower-middle-income status would not by itself lead to a large increase in global income. If today’s low-income countries, with average incomes per capita of $1,383, were to become lower-middle-income countries at $3,833 per capita, the increment of income would be $2 trillion, or just 2.5% of today’s world income. If today’s lower-middle-income countries were to become upper-middle income countries, the increment to world income would be 21% of the world income. If today’s upper-middle-income countries were to achieve high-income status, the increment would be 85% of today’s world income.

Since resource use remains directly related to income, the main conclusion is that raising average incomes in the poorest countries is not by itself a major resource challenge or burden on the planet. The much greater resource challenge is accommodating the rise of today’s middle-income countries to high-income conditions. The latter can only be accomplished sustainably if the world succeeds in decoupling economic growth, primary resource use and environmental degradation.
are beholden to “old ways of doing things” and fail to explore new business opportunities that increase profitability by reducing material use, lowering pollution, and increasing acceptance by their customers. The Sustainable Development Solutions Network will work with private sector networks to help articulate the business case for sustainable development with a particular focus on overcoming the perceived first-mover disadvantage.

(III) QUANTIFYING THE CHALLENGES OF SUSTAINABLE DEVELOPMENT Sustainable development requires quantification. At what pace should de-carbonization occur? How much water use for agriculture is feasible in a particular location? How should fertilizer use be moderated to protect crops and waterways at the same time? What are the implications of the growth of cities? What do different demographic pathways imply for countries’ sustainable development prospects? Which are the most effective techniques for reducing and managing disaster risks? These questions, and many others like them, require a quantitative assessment that combines Earth systems with human systems, and does so at many scales, from local to global. As one example, we illustrate the resource challenges emanating from economic growth (box 1).

Conclusion
The post-2015 development framework will be devised and adopted by UN member states over the coming two years. In comparison to the MDGs it seems necessary to broaden the agenda and give greater prominence to issues of inequality and social inclusion, the special needs of fragile states, natural resource use and planetary boundaries, etc. The world has also become more interconnected and is pushing hard against many planetary boundaries, so the post-2015 framework will need to apply to all countries – rich and poor alike.

Adopting a bold and broad post-2015 framework will not guarantee that countries successfully address the four dimensions of sustainable development. Yet, it seems difficult to imagine how meaningful progress can be made in eradicating poverty, promoting economic development, enhancing social inclusion, and promoting environmental sustainability without a shared international framework. For this reason the successful adoption of a bold, operational set of goals is so important.

The Sustainable Development Solutions Network will help mobilize universities, research institutes, business and civil society organizations through an open process to accelerate practical problem solving for sustainable development. In particular the network will identify and promote solution initiatives that can have a transformational impact on sustainable development. In this way we hope to make a contribution towards moving the world onto a sustainable development pathway.
Already a key component of sustainable development policies, the alleviation of inequalities within and between countries also stands as a policy goal, and deserves to take centre stage of the Sustainable Development Goals, agreed during the Rio+20 Summit in 2012.

The 2013 edition of *A Planet for Life* represents a unique international initiative grounded on conceptual and strategic thinking, and—most importantly—empirical experiments, conducted on five continents and touching on multiple realities. This unprecedented collection of works proposes a solid empirical approach, rather than an ideological one, to inform future debate.

The case studies collected in this volume demonstrate the complexity of the new systems required to accommodate each country’s specific economic, political and cultural realities. These systems combine technical, financial, legal, fiscal and organizational elements with a great deal of applied expertise, and must be articulated within a clear, well-understood, growth- and job-generating development strategy.

Inequality reduction does not occur by decree; neither does it automatically arise through economic growth, nor through policies that equalize incomes downward via blind taxing and spending. Inequality reduction involves a collaborative effort that must motivate all concerned parties, one that constitutes a genuine political and social innovation, and one that often runs counter to prevailing political and economic forces.