Shifting from quantity to quality:

Growth with equality, efficiency, sustainability and dynamism

Greening of Economic Growth Series

UNITED NATIONS ESCAP
Economic and Social Commission for Asia and the Pacific

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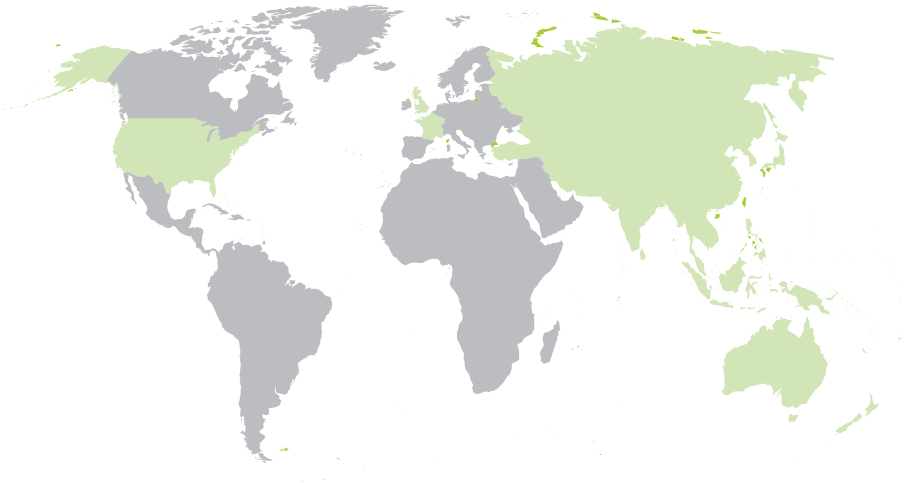

The greening of economic growth series

ESCAP, its partners and Asia-Pacific countries have advocated the "greening" of economic growth as a strategy to achieve sustainable development in the resource-constrained, high-poverty context of the Asian and the Pacific region.

The conventional "grow first, clean up later" approaches to economic growth are increasingly placing the futures of regional economies and societies at risk. The forward-thinking policymaker is tasked to promote development based on eco-efficient economic growth and at the same time, record more inclusive gains in human welfare and socio-economic progress. In order to assist policymakers in responding to such challenges, ESCAP's "Greening of economic growth" series provides quick access to easy-to-read guidance to specific policy tools.

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Abbreviations and acronyms

CSIRO	Commonwealth Scientific and Industrial Research Organisation (Australia)
ESCAP	Economic and Social Commission for Asia and the Pacific
GDP	Gross Domestic Product
SCP	Sustainable Consumption and Production
UNEP	United Nations Environment Programme

EXECUTIVE SUMMARY

Conventional growth strategies have reduced poverty. People now have more access to basic services and more opportunities for mobility and participation. But there are still persistent unmet needs, widening inequalities, and new development challenges such as climate change, intensifying natural disaster and resource depletion. There is a search for growth strategies that better fit a changing economic, social and environmental reality.

The 2012 United Nations Conference on Sustainable Development (Rio+20) emphasized the need for a balanced integration of the three dimensions of sustainable development. This publication responds to this call. It advocates a transformation in economic growth strategies and its underlying economic theories – a shift from a focus on quantity of economic growth, to quality of growth.

Short-term growth strategies aimed at maximizing GDP growth has created a “vicious cycle” - growth driven by the exploitation of human and natural capital. Achieving sustainable development will depend on shifting to a "virtuous cycle" of investment in people and planet – where economic growth is a means of achieving shared prosperity and human well-being within planetary limits – rather than a goal in itself.

This shift cannot be achieved without addressing the tradeoffs between the three dimensions of sustainable development and rethinking mainstream economic theories that have help to create these tradeoffs. Economic system change is needed to close the “time” and “price” gaps that favour short term investment in manufactured capital. Productivity strategies and concepts must be rethought, and social justice be brought into economic strategies – placing people at the centre of development.

Quality of growth can be considered as having three dimensions – as does sustainable development – environmental, social and economic. At the same time, five key determinants of a good quality of growth are proposed: 1. Inclusiveness in relation to environmental, social and economic benefits; 2. Efficiency and productivity of use of natural, human and manufactured capital; 3. Structural transformation that promotes social and economic values; 4. Balanced investment in all forms of capital; and 5. Limits in the economic, social and environmental spheres that are defined by a credible science, a strong science-policy interface and stakeholder dialogue. Different kinds of institutional and policy support is needed for each of these key determinants.

This publication provides a framework for quality of growth that can help policymakers and other stakeholders to assess and develop strategies for the system changes needed to shift to growth paths which are aligned with sustainable development. It can also support discussions on a transformative United Nations Development Agenda beyond 2015, as the period of the Millennium Development Goals comes to a close.

1. Introduction: Economic growth and sustainable development

"It would be wrong and irresponsible to only seek quick fixes for this current crisis and ignore the very real problems facing the global economy and society, including the climate crisis, the energy crisis, the growth in inequality in most countries around the world, the persistence of poverty in many places, and the deficiencies in governance and accountability."

Report of the Commission of Experts of the President of the United Nations General Assembly on Reforms of the International Monetary and Financial System

Financial, energy, food and climate crises converged in 2008 resulting in rising prices, job losses, slowed economic growth and increased vulnerability – and increased awareness of the need for fundamental changes in growth strategies. The Commission of Experts of the President of the United Nations General Assembly on Reforms of the International Monetary and Financial System examined the origins of the financial crisis, and issued its report in September 2009. It concluded that "both policies and economic theories played a role."[1]

Three years later, the United Nations Secretary General's High Level Panel on Global Sustainability underlined that the current global development model is unsustainable – by 2030, the world would need at least 50 percent more food, 45 percent more energy and 30 percent more water.[2]

The 2012 United Nations Conference on Sustainable Development (Rio+20) underlined the need to integrate the three dimensions of sustainable development, while discussions on a post-2015 Development Agenda have emphasized the need for a transformative development agenda.

Conventional economic growth strategies aimed at maximising gross domestic product (GDP) have reduced poverty, increased access to basic services and created opportunities for mobility and participation. The Asia-Pacific region's role in the global economy has also expanded.

However there are still persistent unmet needs and new development challenges. Governments and other stakeholders are now seeking growth strategies that better fit a changing economic, environmental and social reality.

Acknowledging that economic growth has been environmentally-costly and has not benefited all its citizens equally, Malaysia has launched a "New Economic Model", in the framework of "both inclusive and sustainable" growth.[3] Thailand integrates low carbon concepts and the philosophy of "sufficiency economy" into its 11th Five-year Plan,[4] while India is incorporating ecological values into national accounts and Bhutan has used Gross National Happiness measures as a basis for planning. Viet Nam has launched a national "Green Growth strategy" while Pacific countries identified the "blue economy" as a priority in the lead up to Rio+20.[5]

Several other governments are making strategic links between economic, social and environmental goals. China has adopted bold targets for energy, resource efficiency and air pollution reduction and focused on quality of growth in its recent Five-Year Plans. Green investments represented about 15 percent of global stimulus spending as a response to global financial crisis,[6] with these investments concentrated in some European countries, China and the Republic of Korea.

These initiatives represent important progress, but at the same time, more action is required to foster growth that is focused on achieving shared human well-being, rather than on expanding the scale of economic activity.

This publication describes key strategies and governance approaches for promoting "quality of growth" – growth strategies that integrate economic, social and environmental dimensions, and which are aligned with sustainable development – taking a long-term perspective and creating a "virtuous cycle" driven by investment in people and planet.

It responds to the mandates of Rio+20 regarding the integration of the three dimensions of sustainable development, and can also contribute to the formulation and implementation of the Development Agenda beyond 2015.[7]

2. The impacts of a short-term economic growth perspective

HIDDEN COSTS

As a target for policymakers focusing on short-term economic gains, GDP, a measure of economic activity, is often misused as an indicator of country's overall development status – leading to rising hidden costs.

Firstly, the "hidden costs" of economic growth such as environmental degradation and resource depletion are excluded from GDP figures – are economically significant. For example, air, water pollution and soil degradation has cost China nearly 10 percent of its GDP over the past decade,[8] while the total cost of climate change is estimated to represent five percent of world GDP annually for the foreseeable future, unless action is taken.[9]

Second, the policy focus on short-term GDP gains has undervalued or ignored many socially-desirable, and economically-important activities, especially those activities that take place outside markets. These economic activities include unpaid or underpaid work in the workforce or at home, or the services provided to the economy by nature (ecosystem services), such as purifying water or absorbing pollutants.[10]

Rising GDP, while highly correlated to some improvements in quality of life, also provides a misleading picture. The "net growth" of the socially-desirable services produced in an economy is often much lower than statistical GDP growth. As GDP figures include "defensive expenditures" such as the costs of dealing with crime, environmental cleanups, pollution control, and medical treatment, they mask key trends that impact directly on quality of life and long-term prospects for growth. While quality of life may be improving for some sectors of the population, GDP figures can also mask differences in quality of life.

There is now growing support for better measures of progress – as highlighted in the outcome document of Rio+20 – The future we want.[11]

EXPLOITATION AND INEQUALITY

"The dearth of jobs and the asymmetries in globalization have created competition for jobs in which workers have lost and the owners of capital have won." – Joseph E. Stigliz, *in "The Price of Inequality"*

The "trickle down" approach to reducing poverty is increasingly discredited.[12] Nearly 900 million people still live in extreme poverty in the region; undernourishment and hunger, gender disparities, rural poverty and social vulnerability persist, or are expanding.[13] Progress on ensuring food security is slowing in some countries.[14]

A focus on short-term profits has been enabled by policy support to capital-intensive growth and targeting of export markets. Relatively low energy costs, elite "capture"[15], globalization of markets, including labour markets, and competition based on price have reduced incentives to use energy and other resources efficiently, and to invest in human capital. Boosting labour productivity through capital-intensive investments while also reducing labour costs is a common growth strategy. These trends can be linked to the jobless growth[16] and rising youth unemployment which is now evident in several countries.

In both developed and developing economies, the result is that wages for the most disadvantaged are too low to escape poverty. Around 670 million workers in Asia live on less than US$2 a day (322 million below US$1.25).[17]

The numbers of working poor and vulnerable workers are rising. The low priority given to wages over

capital returns has simultaneously led to low capacity to consume, the consequent reduction of potential effective demand,[18] and rising youth unemployment, limitations on economic resilience and dynamism, and widening income inequality.

Although Asian and Pacific countries are not the most unequal in the world, rising inequality is an important reason why it is increasingly difficult for economic growth to deliver on poverty reduction.[19] Income inequality reduces economic efficiency and constrains dynamism.Inequality also reduces the prospects for sustained growth – a 2011 International Monetary Fund study has concluded that growth is more persistent in more equal countries.[20]

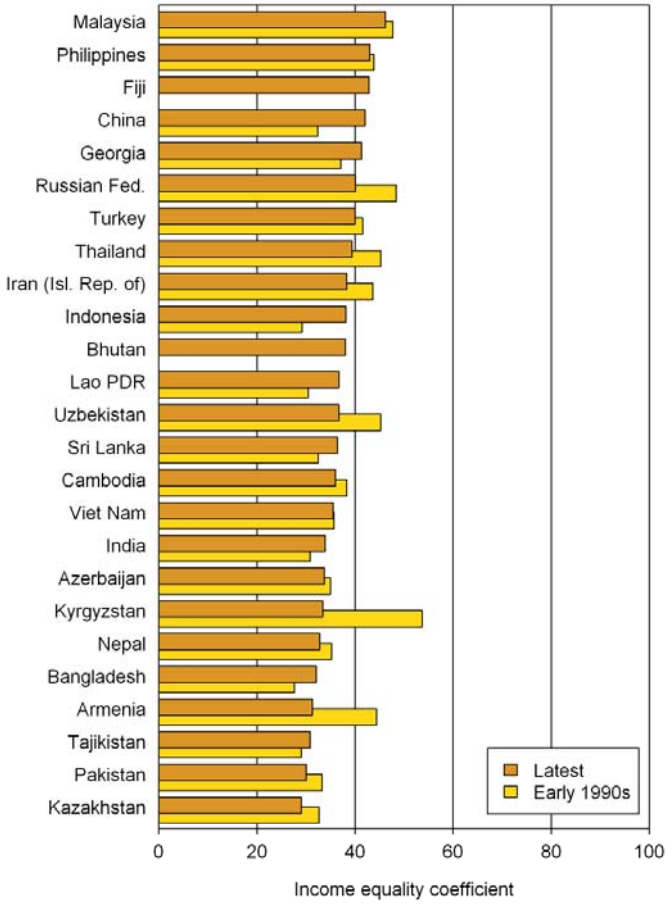
Rising Gini coefficients[21] in Asian and Pacific countries representing more than 80 percent of the regional population[22] are threatening prospects for long-term growth and socio-economic progress (see figure 1). Inequalities have increased across population groups, including with respect to non-income dimensions of social progress.[23]

Poverty is becoming a problem of national, rather than international distribution of wealth;[24] in Asia 610 million out of 750 million people living with less than US$1 per day are living in a middle income country.[25] Rural-urban disparities are mainly responsible for national level income gaps. At the same time, China and India together account for 77 percent (respectively 57 percent and 20 percent) of total regional extreme poverty.[26]

Inequality results from, and leads to unequal opportunities. Inequality rooted in the lack and inequitable distribution of investment in human capital is further entrenched when an important share of the workforce unprepared to adapt to changing labour market requirements, including those related to technological change.

The effect of income inequality on growth has been estimated to be more negative in developing than developed economies,[27] and inequality has been identified as a contributor to financial instability.[28]

FIGURE 1: **Gini index, Asia and the Pacific, early 1990s and latest**



SOURCE:
ESCAP, Statistical Yearbook for Asia and the Pacific, 2013, United Nations publication, Sales No. E.13.II.F.1, (Bangkok, United Nations, 1013), accessed from http://www.unescap.org/stat/data/syb2013/ on 15 December 2013

SPECULATION AND RISING DEBT

ESCAP has underlined that "urgent action is needed to address debt-driven and resource-intensive consumption and the expansion of speculative investments that lie at the nexus of jobless growth, financial insecurity and climate crisis."[29]

Access to financing and credit, i.e. debt creation plays an essential role in an economy. However, unless debt creates new opportunities for shared prosperity, it passes a financial burden to future generations that constrains their investment and development options – at odds with the requirement of inter-generational equity that is a key aspect of sustainable development.

Investors at all levels, including governments, now have access to investment opportunities provided by a globalizing financial sector. Responding to investor demand for easy gains, capital markets facilitate speculative investments that can be far more attractive than investments that support productive economic growth. The result is asset bubbles in stock or real estate markets that create financial instability. Speculation in commodity and energy markets has been a key factor in the rising and volatile commodity prices that have entrenched and expanded poverty in the region.[30]

Resource-intensive export-led strategies have succeeded in large part due to the accumulation of debt[31] in developed countries – but the global deficit of potential effective demand due to rising debt levels has become unsustainable.[32] Developing countries in Asia and the Pacific will need to rely more on internally-generated economic activity that is not fuelled by accumulating debt.

Rising household indebtedness is observed in countries such as Malaysia, the Republic of Korea, Singapore and Thailand,[33] posing risks to the financial sector[34] and consumer demand. In countries with limited social protection measures, informal sector loans can be particularly debilitating with debt repayment forming the main spending priority in vulnerable households, while indebtedness has been linked to farmer suicide.

3. A changing economic reality

The most prominent elements of Asia-Pacific growth strategies have been low wage-labour, a cheap supply of natural resources and for the most successful economies in the region (in terms of GDP growth), a reliance on exports. These elements combined with expanding technological capacity and high savings and investment rates, and led to the rapid accumulation of manufactured capital and the high rates of GDP growth[35] of recent decades.

However, regional economies face a new economic reality, one to which dominant growth strategies are not well-adapted. Where previously manufactured capital and human capital were considered scarce, and raw materials from nature considered limitless and abundant, now, rising prices of raw materials and energy are the more important constraints. Prices of raw materials and energy face upward pressure[36] and dependence on externally-sourced resource inputs is increasing in almost every region.[37]

In the region's developing countries, the persistence of low-cost labor blocks a transition from resource-driven growth to the productivity-driven growth necessary to meet the needs of people in the long run. These labour market rigidities can therefore lead to a "middle income trap", where countries are simultaneously unable to compete – both with "low-income, low-wage economies in manufactured exports and with advanced economies in high-skill innovations."[38]

Financial instability and macroeconomic imbalances, rising inequality, growing debt and weakening links between economic growth and development outcomes all underline that growth strategies need to adapt to a new economic reality to be able to deliver shared prosperity and well-being in the long run.

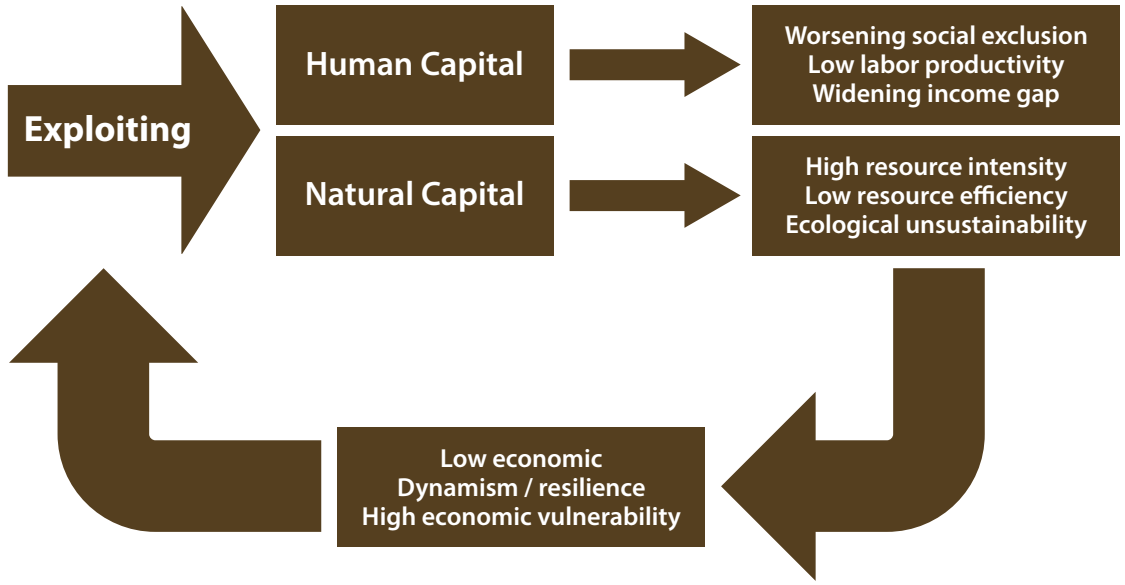
A VICIOUS CYCLE OF GROWTH

An excessive focus on maximizing short-term GDP growth is shaping an economic expansion that has lifted many out of poverty. At the same time, persistent poverty and inequality and resource constraints are signs

of a "vicious cycle" that is driven by the exploitation of human and natural capital.

Figure 2 highlights that both market failures and governance shortcomings are driving feedback loops that help to explain the widening gap between economic growth outcomes and achieving sustainable development targets.

FIGURE 2: **A vicious cycle of growth**



Market incentives that largely externalize environmental and social values, prioritizing short-term gains and private benefits outweigh incentives for economic activity that supports shared prosperity and respect environmental limits. As larger proportions of basic government function (such as the provision of education and healthcare) are devolved to markets geared towards profit, access to basic services becomes more unequal– widening inequalities, human capital formation and economic dynamism.

Rising and changing consumer demand, the search for profit, and undervalued natural resources, increases the demand for resources. As the demand for resources increases, so does environmental degradation, impacting on the capacity of ecological systems to meet basic needs – for example as food-producing areas are converted to production of bio-energy crops.

While the demand for resources and insecure land tenure decreases access to natural resources critical to rural livelihoods, environmental degradation, climate change and natural disaster all impact on the livelihoods of the most vulnerable and are an important dimension of inequality. At the same time, rising prices for basic needs, including water and energy, diminish the capacity of households and businesses to invest in productive assets.

Results of analyses of different economic contexts and across different time periods "deliver a consistent message: inequality is detrimental to long-run growth."[39] As growth prospects decline and while consumption patterns continue to change, the search for profit and exploitative practices increase (see Box 1).

Box 1: **Environmental scarcities and changing consumption patterns as a driver of economic activity**

One paper argues that a vicious growth cycle is driven by environmental scarcity as individuals, reacting to deterioration of the environment (as well as diminished access to nature), and with the capacity for greater consumption enabled by increased per capita income, may switch to patterns of production based on private goods rather than common environmental resources. In order to keep or purchasing these private goods, they may have to work harder, further depleting environmental goods, perpetuating a cycle in which constrained environmental resources provides incentives for increasing economic activity.

Highlighting that this theory is at odds with the dominant growth theory that positive external effects of economic activity, not the negative ones, constitute the engine of growth, the paper Underlines that the increased production which ensues generates further depletion of environmental goods, increased work effort and an economic system in which environmental scarcity provides incentives to accelerate economic activity, rather than acting as a signal to respect biophysical limits.

The author points out that this "may easily produce undesirable growth, in the sense that the well-being of individuals is greater in a situation with lower levels of work effort and output and a better quality environment." It could be pointed out that a similar analysis may apply to with depletion of social capital as a driver of a vicious cycle of unsustainable, "undesirable" growth patterns.

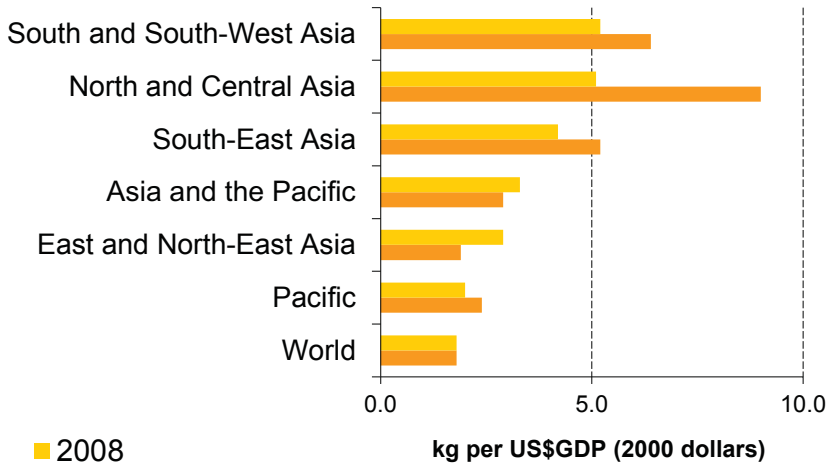
See http://www.econ-pol.unisi.it/bartolini/papers/external.pdf

RESOURCE CONSTRAINTS

A "grow now, clean up later" strategy is no longer a credible answer to contemporary challenges. In a context of resource constraints and scarcity,the region's material consumption intensity in 2008 was twice that of the world (figure 3). [40] Since 2000, in opposition with the global trend, it is also rising.[41]

Resource-intensive growth strategies ignore the fundamental role of environmental resources in the production of other goods and services. Thus, in the absence of major changes, the rise in average income is likely to be constrained by the economic impacts of finite resources and limits in the absorptive capacity of the Earth's ecosystems,[42] limits which are likely to have already been breached.[43] Although the environmental Kuznets curve predicts a reduction of environmental pressure above a certain level of income, this relationship is only found to be true for certain types of pollutants and environmental issues. Rising incomes have generally led to rising environmental pressures. [44]

FIGURE 3: **Domestic material consumption intensity – Asia-Pacific, its subregions and the world, 1992 and 2008**



SOURCE: CSIRO and UNEP Asia Pacific Material Flows database

The active participation of developing countries in reducing global environmental pressures is critical to a global solution,[45] and also in the interests of developing countries themselves. Environmental costs and lack of environmental sustainability of growth patterns are reflected in increasing greenhouse gas emissions and growing resource constraints as well as local pollution (air and water pollution especially), loss of biodiversity and land degradation.

Asian and Pacific emissions of greenhouse gases have increased sharply, contributing to climate change, which in turn increases the risk of natural disasters in the region of the world which is most vulnerable to such disasters.[46] The qualitative dimensions of growth are interlinked, and together determine whether growth is inclusive and whether it is accompanied by well-being improvements.

Analysis of the quality of growth by the World Bank underlines that environmental degradation can be more costly to the well-being of the poor than many economic policies.[47] Neglecting natural capital, like neglecting other forms of capital, reduces growth potential, and is not only inappropriate for the current economic context, it is also bad growth policy.

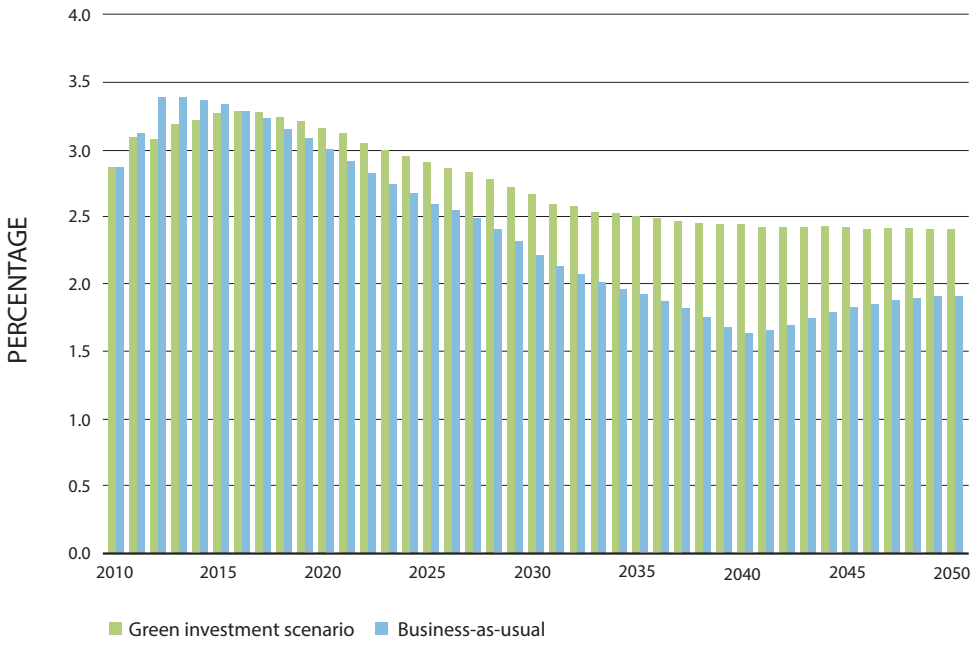
4. Better long-term prospects through a focus on quality

The above discussion highlights that economic growth that is inclusive, dynamic, resilient and sustainable requires a shift from a short-term to long-term perspectives in many aspects of development of a growth strategy – from the way in which investments are made, to the way in which the benefits of growth are distributed, to the strategies for enhancing productive activity, resource pricing policy and to the recognition of planetary limits in the form of resource constraints.

The potential for a long-term perspective on investment is highlighted in the landmark UNEP green economy report.[48] Besides reducing environmental pressures (which principally affect the poor) and increasing investment in natural capital green investment was shown to increase the potential for long-term growth at the global level.

According to the study, devoting the equivalent of two percent of global GDP per year (10 percent of global investment) to green investment may lead to slower growth for few years but would then result in faster growth and increased poverty reduction (figure 4).

FIGURE 4: **Projected annual GDP growth rates under a green economy scenario**



SOURCE: UNEP (2011). Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication, http://www.unep.org/greeneconomy/greeneconomyreport/tabid/29846/default.aspx

5. Quality of growth: Transforming a vicious cycle of exploitation into a virtuous cycle of investment – people at the centre

Improving the quality of growth seeks to align growth outcomes with the objectives of sustainable development – placing the goal of improving human well-being[49] within planetary boundaries at the heart of economic growth strategies.

Well-being depends on meeting basic needs. These basic needs can be objectively defined – including for example, access to water, energy and food.[50] The importance of "subjective" factors, such as family life and social engagement can vary – but across individuals and societies there seems to be some consensus. According to the Commission on the Measurement of Economic Performance and Social Progress:

> *"quality of life depends on people's health and education, their everyday activities (which include the right to a decent job and housing), their participation in the political process, the social and natural environment in which they live, and the factors shaping their personal and economic security."* [51]

This highlights that the most appropriate measure of economic progress would focus on the "quality and value of final services provided to the consumer" by the economy. The objective of economic growth should be the provision of "better and more valuable services to ultimate consumers",[52] rather than on expanding the scale of economic activity.

Good health, for instance, depends on a wide range of services provided by the economy. Such services include the provision of food of sufficient quantity and quality, the protection from bad weather provided by clothing and shelter.[53] Opportunities for improving quality of life depend on education and the supportive services provided by government social services.

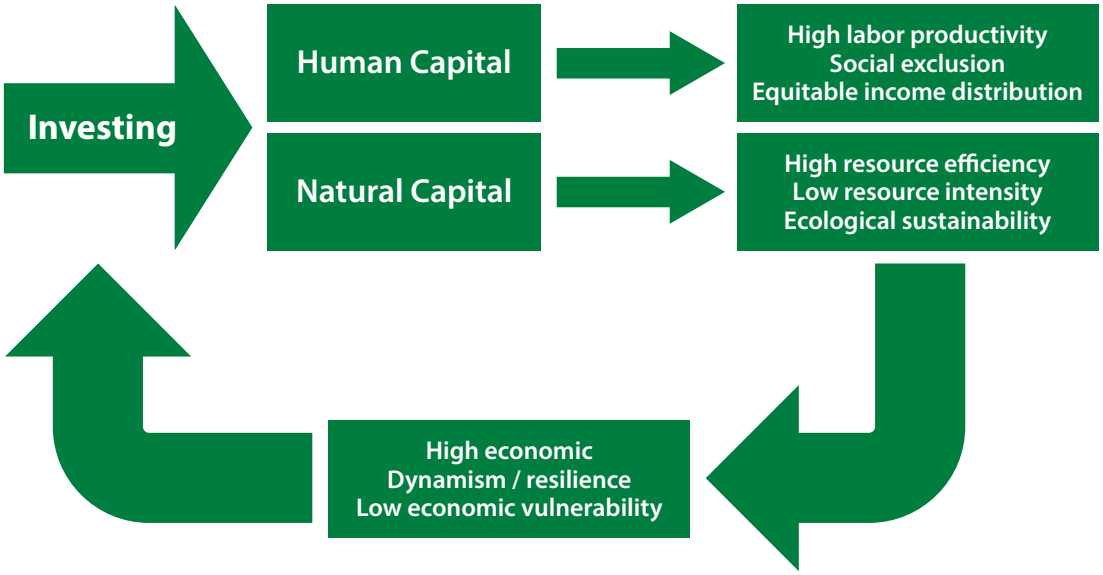
At the same time, human well-being is also dependent on services provided outside of the economy – such as clean water and clean air provided by nature, or care provided by the homemaker.[54] These services are sometimes dramatically affected by the economic growth strategies employed – for example, resource-intensive growth impacts the services provided by nature. Even though some of these services can be substituted by man-made goods and services, not all are able to afford market-produced substitutes such as bottled water or household help – creating gaps in income and opportunity.

An inclusive growth strategy carefully considers how all socially and environmentally beneficial goods services are produced and accessed. *All* forms of "capital" – manufactured capital, human capital, natural capital are critical for people-centred growth strategies.

However, in dominant economic theory, degradation of (or improvements in) environmental and social capital are too often unaccounted and treated as "externalities." Fundamental and systemic tradeoffs between different forms of capital are created by ignoring or undervaluing the contributions to the economy of people and natural resources (including energy).

Exploitation of human and natural capital is therefore facilitated by strategies based on conventional growth theory. A focus on quality of growth means reforming the current "vicious cycle" to create a "virtuous cycle" driven by investment in people and nature (figure 5).

FIGURE 5: **A virtuous cycle of growth – quality of growth**



6. System change for quality of growth: turning tradeoffs between the three dimensions of sustainable development, into synergies

The Future We Want, the Rio +20 outcome document, recognizes "the importance of the evaluation of the range of social, environmental and economic factors" and encourages "where national circumstances and conditions allow, their integration into decision making." ESCAP's "Low Carbon Green Growth Roadmap for Asia and the Pacific"[55] identifies three dimensions of growth quality: ecological quality, economic quality and social quality – corresponding to the three dimensions of sustainable development where:

- Economic quality – moving towards higher productivity and value-added production, economic dynamism and, resilience of the economy to external shocks; economic competitiveness based on value, not only on cost; shared economic gains and employment opportunities

- Social quality – access to opportunity and basic needs shared by all sectors of society, a productive labour force, and strong investments in human and social capital and the presence of adequate safety nets, as well as the capacity of the economy to foster social, technology and other innovations

- Environmental quality – shared access to environmental resources and ecosystem services, maintaining the environmental impact within earth's carrying capacity, investing in natural capital and eco-efficiency of consumption and production.

Shortcomings in any dimension affect the long-term prospects for the other dimensions. Trade-offs between achieving high economic quality of growth and simultaneously high social and environmental qualities of growth are created by market prices and government policies which undervalue the contributions of both human and natural capital, and undermine aspirations for achieving sustainable development.

Achieving sustainable development will depend on addressing these systemic factors that create trade-offs between the social, economic and environmental dimensions of sustainable development. System change is needed to reduce or eliminate these trade-offstradeoffs, and create synergies between the three dimensions. "Economic growth, environmental protection, and social equity are one and the same agenda: the sustainable development agenda. We cannot make lasting progress in one without progress on all." [56]

The following strategies are key for reducing trade-offs, and promoting system change to create a virtuous cycle of growth, rather than a vicious cycle of exploitation. Each strategy of the strategies below: equity; efficiency and productivity; structural transformation; balancing capital investments; and recognizing limits, seeks to address a particular challenge for the quality of growth, from the perspective of the three dimensions of sustainable development

EQUITY – ADDRESSING DISTRIBUTIONAL ISSUES IN ALL THREE DIMENSIONS

> "development is a comprehensive economic, social, cultural and political process, which aims at the constant improvement of the well-being of the entire population and of all individuals on the basis of their active, free and meaningful participation in development and in the fair distribution of benefits resulting therefrom."
>
> United Nations General Assembly Resolution 41/128
> Declaration on the Right to Development, 4 December 1986

The outcome document of the Rio+20 conference states that "Eradicating poverty is the greatest global challenge facing the world today and an indispensable requirement for sustainable development." It is well accepted that poverty reduction strategies should "deal with aspects of equity, equality of access and opportunity [provision of basic services], generation of employment, and protection to vulnerable in the various facets of daily living." [57]

Policymakers however question whether attention to inclusive growth will create trade-offs with the need for sustained growth. Experience in India shows that there can be severe trade-offs between social protection measures and the economic dynamism needed to generate high quality jobs.

However, there is much research that indicates that more equitable societies have better growth prospects and more stable economies. A focus on quality of growth can lead to better long-term growth. As shown by some Nordic countries, investments with a long-term view towards building human capital and conserving natural capital, has created synergies between economic dynamism, resilience and the high capacity of an economy to create shared prosperity. By contrast where investments in human capital, and nature are limited, inequality and financial uncertainty persists.

Social justice in policy and governance structures is not only a social imperative, but it is also a critical economic imperative. Social justice although often neglected in economic policy, has a critical place in dialogue on the economy.[58] Governance approaches which ensure the participation of all sectors of society in the economy, as well as secure the right to development are critical for redressing shortcomings in distributional impacts, and stimulate high-quality of growth.

Sustainable development requires economic growth strategies that consider distributional issues in relation, not just only to economic opportunities, and to income, but also to the opportunity to access, build, and benefit from other forms of capital crucial for inclusive growth. From a social perspective, there must be access to opportunities to build human capital, and equitable benefits from the economy – education, and health services, decent wages, and access to decent work.

From an environmental perspective, inclusive growth requires policies and participatory governance and resource-management approaches that secure equitable access to ecosystem services. Inclusive access to ecosystem services and their benefits means attention to land tenure security, especially for small farmers, access to traditional food sources, access to safe drinking water and good quality air. It means equitably distributed profits from the exploitation of natural resources as well as attention to social justice regarding the burdens of environmental degradation.

There is a perceived trade-off between investment in environmental quality (or natural capital) and poverty reduction. However, research shows that in developing countries, the impacts of policies to promote investments in natural capital may be the most positive for the most disadvantaged.[59]

A study of Indonesia suggests that a carbon tax aimed at addressing climate change could have progressive distributional effects (particularly in rural areas) – where the results of many studies conducted in developed countries show the opposite.[60] Another study conducted in China shows that the cost to households of imposing a US$43 carbon tax per ton of CO_2 would be balanced by the co-benefits of the tax in terms of improved health, reduced air pollution and increased crop production.[61]

EFFICIENCY AND PRODUCTIVITY

Economic growth requires enhanced productivity, as the main driver of economic expansion. Boosting productivity is a dominant economic concern. However, in practice, this objective is too often realized by increasing labour productivity to maximize profit regardless of the efficiency of the economic system in its use of the various forms of capital. This focus on a narrow aspect of productivity is generating tradeoffs. Increases in overall (total factor) productivity often reflect substitution between human, natural and manufactured capital inputs.

Labour productivity can increase for many reasons – because more energy and other forms of natural capital are used as economic inputs, per worker, or because machines have replaced people, or because more value added is created by greater knowledge-inputs in the economy.

Neoclassical theory links increasing labour productivity to future increases in wages and the capacity to create more jobs. However, recent trends show that this link is not automatic, with labour productivity improvements relying to a disproportionate extent on increased inputs of energy and other forms of capital – accompanied by wage stagnation and erosion of workers'rights.

Short term strategies relying on capital- and energy-intensive growth and reducing human inputs – thus increasing the output per worker (labour productivity), with the trade-off of rising environmental pressures and diminished capacity of the economy to create jobs. Strategies to improve the productive capacity of the economy must move away from an exclusive focus on capital intensive growth.

Simply investing in the services sector, rather than in resource or energy-intensive manufacturing might seem to be the answer, but, as R. Ayres (2007) points it, "what seems like an advantage in terms of job creation is a disadvantage from the perspective of labour productivity" as economies of scale are smaller in service sector than in manufacturing sector. The trends related to declining labour productivity in several countries of the region have been at least partly attributed to the increased contributions of the service sector to the economy.[62]

Reducing or, at the very least, mitigating the trade-offs between the policy objectives in the social, environmental and economic spheres requires rethinking the notion of productivity (see Box 2).

Discussions at the ESCAP *Expert Dialogue on the Quality of Growth*[63] revealed how moving away from neoclassical interpretations of productivity address some of these fundamental tradeoffs.

Enhanced productivity with a focus on eco-efficiency

Participants in the *Expert Dialogue* shared the tantalizing finding that improvements in the efficiency of resources by the economy could prove to be the elusive driver of economic growth. It has been shown that increasing inputs of energy and other natural resources, and increasingly efficient use of energy and other natural resources can largely explain trends in growth– although dominant growth theory excludes energy and other forms of natural capital (see Box 2).

Box 2: **Productivity and growth**

The "neoclassical growth model" also known as "exogenous growth model" (formulated by Solow and Swan) assumes that growth is driven by the growth of inputs from two factors: labour and manufactured capital (such as infrastructure and equipment). The increasing inputs from labour and manufactured capital factors however accounts for a small share of recorded economic growth. This neoclassical growth model identifies "technical progress" and productivity improvements as the main drivers of growth. However it does not fully explain what technical progress or productivity improvements are, or the relationship between them. Also, despite today's growing consensus that natural capital is a factor of production in its own right, neo-classical theory overlooks the role of nature (notably materials and energy) in the process of growth.

Extensive research has been conducted on the drivers of growth and development to better explain technical progress and expand the concept of capital. "Endogenous growth" theories seek to explain technical progress. P. Romer (1986) points to the role of investment in human capital, innovation, and knowledge as drivers of technical progress. Technical progress is assumed to drive growth through increased productivity of labour. "Evolutionary economics" gives more insight on the mechanisms linking technical progress and productivity improvement. In this view, specific actors in the economy (or "entrepreneurs") drive productivity improvements and structural change, shaped by an evolving institutional framework. The "structuralist" view attributes growth to the capacity of an economy to transform – to constantly generate new dynamic activities.

With the evolution of economic theory, new models highlight the contribution of nature. Ecological economics, is based on the reality of the economy as a subsystem of the natural environment. According to the Ayres-Warr model of economic growth, most of the productivity improvement attributed to technical progress can be explained by the way in which natural capital is used. More specifically, the theory shows that apparent labourlabor productivity improvements can be attributed to increased availability of energy for human use and the improvement of the efficiency with which this energy is transformed into "useful work" (in thermodynamic terms). According to the theory and supporting statistical analysis, wealth creation has been, in large part, attributable to more and more efficient use of natural resources. Ayers and Warr's analysis also conclude that resource efficiency improvement, rather than increased resource exploitation, is the main driver of growth.

References: Romer, P.M., (1986). "Increasing Returns and Long-Run Growth". The Journal of Political Economy, 94(5), p.1002-1037; Foster J., (2011), "Evolutionary macroeconomics: a research agenda", Journal of Evolutionary Economics: Acemoglu D., Johnson S. & Robinson J., (2004). "Institutions as the Fundamental Cause of Long-Run Growth," NBER Working Papers10481, National Bureau of Economic Research, Inc); (Daly H. E., "Ecological Economics: The Concept of Scale and Its Relation to Allocation, Distribution, and Uneconomic Growth", CANSEE, October 16-19, 2003, Jasper, Alberta, Canada); (Ekins P., (1992), "A four-capital model of wealth creation" In "Real-Life Economics: Understanding Wealth Creation", Ekins P, Max-Neef M (eds). Routledge: London; 147–155); Ayres R. U. and B. Warr, (2009), "The economic growth engine: How energy and work drive material prosperity", Edward Elgar Publishing.

This finding that, in a context of resource constraints, a focus on resource efficiency could be the only basis for future economic progress resonates strongly with a call for a "resource-efficiency revolution" as the next stage of economic transformation.[64] Increasing the contribution of energy and resource-efficiency to overall economic productivity (total factor productivity) will also reduce vulnerability to rising and volatile energy and resource prices, and create savings that can be better invested in socio-economic progress.

Including social values and time use in a wider understanding of productivity

Neoclassical growth theories also exclude social values – and so and so conventional strategies for moving from "lower productivity" to "higher productivity" in a process of structural transformation and growth pay little, if any, attention to the social value created by underpaid or unpaid work – such as education or domestic work.

Unpaid domestic work may be "low productivity" economic activity when conventional notions of

productivity focus on monetary returns, but can be considered highly productive if social values are included. Accounting for unpaid work by and a better understanding of how time is used by the population can help to reduce the trade-offs between the economic and the social dimensions of sustainable development by promoting an understanding of productivity as the capacity of the economy to create higher social value and well-being.[65]

Quality of life and quality of growth are strongly influenced by the way in which time is used by people. When leisure time and time in the home is constrained there is reduced potential for investment in some aspects of social capital – such as strengthening family ties.

Constrained time for leisure has also been associated with more resource-intensive lifestyles. Social scientists have analyzed time as a resource that can be allocated in more, or less-beneficial ways, with opportunity costs and tradeoffs, depending on the way time is used, in the same way that money is a resource. In this context, knowing how time use is invested in creating social value-added per hour can be as important as understanding how productively money is used. [66]

More research is needed on the contributions of unpaid work and the way in which growth and well-being are influenced by time use patterns in Asian and Pacific cultural contexts, including gender considerations. Internalization of social values in a wider understanding of productivity can be operationalized, for example, through state support for child care and for maternal and paternal leave, justifiable by the social value-added.

STRUCTURAL TRANSFORMATION – COMPLEXITY, DYNAMISM AND RESILIENCE

Economic growth relies on the capacity of an economy to constantly generate new dynamic activities activities[67] ESCAP's work shows that economies that diversify their economies towards more complex products are associated with higher total output.[68]

New and more complex economic activities increase the opportunities for job creation. When an economy is able to evolve and transform, continuously adding economic activities that are more complex, the share of employment in less complex sectors decline and average productivity of the economy as a whole increases in tandem with increasing employment.

More diversified economies are not only more dynamic, they are also more resilient.[69] They have a higher built-in capacity to adapt to changing circumstances and self-organize to continue functioning in times of crises. Those economies which are able to adapt to change and shock share many characteristics of an economy that gives it economic dynamism – diversity and capacity to evolve and adapt (see box 4). ESCAP has proposed a composite index of resilience based on indirect assessment of these capacities.[70]

Structural transformation and diversification processes can be carefully shaped as a basis for economic growth which creates more value-added, which is more job-intensive, less emissions-, resource- and carbon-intensive and which allows for enhanced quality of life. Increasing the synergies between the three dimensions of sustainable development will require structural change that focuses on "green" products and services, as well as sustainable infrastructure development[71] that also have strong potential for job creation.

More careful attention to the contributions of different kinds of investments can increase the transformative capacity of the economy (see box 4). Investment in education, knowledge and innovation coupled with policies favouring structural change (for example fiscal policies, including tax incentives) are essential for long term growth, as they simultaneously favourfavor labour productivity improvement and foster technical progress development and diffusion.

Sustainable consumption and production (SCP) policies and institutional support are also critical for structural transformation in line with sustainable development. These include voluntary standards, green procurement policies and eco-labelling initiatives. "SCP aims at doing more and better with less – across the entire life cycle of products, while increasing quality of life for all. 'More' delivered in terms of goods and services, with 'less' impact in terms of resource use, environmental degradation, waste and pollution.[72]

As pointed by R. Ayres (1996), consumers are ultimately not interested in goods *per se* but in the services

Box 3: **Resilience**

Originally the concept of resilience was limited to the capacity of a system to return to its original state upon a perturbation. Adaptability and transformability are part of wider approach of resilience.

"Resilience is the tendency of a SES [social-ecological system] subject to change to remain within a stability domain, continually changing and adapting yet remaining within critical thresholds."[1]

Adaptability is the capacity of a system to adapt its response to a changing environment in order to remain on stable path of development i.e. without crossing critical thresholds to undesirable situations. Transformability is the capacity of transformation to cross thresholds into more desirable development trajectory. It has been defined as: *"the capacity to create a fundamentally new system when ecological, economic, or social structures make the existing system untenable."* Introducing the scale dimension solve the apparent opposition between resilience and transformation: "transformation at smaller scale enables resilience at larger scales."

Focusing on specific (notably small scale) resilience may reduce the capacity to adapt to other shocks and even increase other kinds of instability. Crisis can thus be seen as opportunities to foster larger scale resilience.

Folke C., Carpenter S. R., Walker B., Scheffer M., Chapin T., and Rockström J., (2010), "Resilience thinking: integrating resilience, adaptability and transformability", Ecology and Society 15(4): 20

Box 4: **A typology of investment expenditure**

Investment expenditures are not homogenous. Investments are not all equivalent for the quality of growth. J. Foster (2011) proposes a disaggregation of investment expenditure from an evolutionary perspective in four main categories:

1. Strategic investment, which involves expenditure on items which help defend market share, such as marketing and sales promotion, product differentiation and the erection of entry barriers and a range of other rent seeking activities.

2. Investment in expenditure which is necessary to keep production going. This includes the provision of stocks of inventories throughout the production process and maintenance and repair expenditures.

3. Investment in cost-cutting methods, such as organisational improvement and labour saving technologies

4. Entrepreneurial investment leading to the adoption of new inventions and innovations that result in new products and new production techniques."

Foster J., (2011), "Evolutionary macroeconomics: a research agenda", Journal of Evolutionary Economics 21:5–28

those goods can provide.[73] An important question to assess the quality of growth is whether growth strategies are promoting consumption as a means to improve human well-being, or as an end in itself. Consumption activity is a well-accepted major indicator of economic health, with little attention paid to the nature of the consumption (impact on social or environmental values), or to source of funding for consumption. Where consumption is debt-fuelled, a vicious cycle of debt creation, household and financial sector insecurity and financial crisis can reult.

Changes in lifestyles and time use, market prices, financial and other incentives, and access to environmental resources (see box 1), education, social norms and values can all help to shape consumption patterns that

contribute to economic-growth with lower environmental impact and higher contributions to building human and social capital.

Business models that meet consumer needs in a resource-efficient way are an important part of the solution. Examples of such business models include those based on "product service systems,"[74] for example providing "floor covering services" (renting carpets instead of selling them), or chemical "leasing" (for example offering "rental" , rather than sale of industrial solvents, where used solvents are recovered from the industrial facility by the rental company, cleaned and offered again for rental). These business models offer other environmental and economic benefits - minimising waste and pollution, and reducing costs for companies.

BALANCING CAPITAL INVESTMENT – BRIDGING "PRICE" AND "TIME GAPS" TO INCENTIVIZE INVESTMENTS IN PEOPLE AND PLANET

Growth strategies that under-invest in human and/or natural capital dominate conventional economic policy, leading to a low quality of growth, as described in previous sections. As a result, nearly two-thirds of the ecosystem services provided by nature to humankind are in decline worldwide.[75] These losses have economic impact; as an example, losses of biodiversity have been estimated in Europe to be worth Euro50 billion each year.[76] Despite being substantial, these kinds of hidden costs are still seen as "externalities." [77]

Such hidden costs are the result of a "price gap" between market prices and prices that reflect the full and long-term social and environmental values created or destroyed by an economic activity. The result is environmentally and socially detrimental investments that are influenced by short-term decision-making, and thus ineffective economic choices.

The relatively long time needed to generate returns on investments in human and natural capital,[78] creates a "time-gap" which exacerbates the tendency of markets and governments to take short-term decisions. So, investments in the provision of public goods (such as education or health)[79] or improvements in environmental quality are less attractive, even to governments, than capital intensive investment even though there are potentially higher returns. Some examples include the contribution of insect pollinators to agricultural output, estimated at US$ 190 billion a year and the genetic resources at the origin of 25 to 50 percent of the US$ 640 billion value of pharmaceutical products.[80]

Because the different forms of capital utilized by the economy (manufactured, human and natural) often cannot fully substitute for each other[81], if there is insufficient investment in one, the capacity of the society or economy to meet the needs of both current and future generations can be compromised.[82] Improving the quality of growth requires reducing the trade-offs between accumulation of manufactured capital and the maintenance of the natural and human capital needed to sustain social progress by closing these price and time gaps.

Governance and institutional interventions to shape market and other incentives will play a critical role in reducing the trade-offs between investments in human, natural and manufactured capital, by closing both "price" and "time" gaps.

Quality of growth requires systemic changes to incentivize investments in people and planet – so that there is balanced accumulation of the different capital assets[83], rather than the rapid accumulation of manufactured capital to the detriment of other forms of capital.

BRIDGING THE PRICE GAP – FISCAL REFORM

Extensive research by the World Bank shows that the critical elements of a good quality of growth lie in strong fiscal policy – in particular investing in public goods.[84]

Rebalancing growth requires closing the "price gap" between market and social and environmental costs or prices by shifting the tax burden away from socially-beneficial aspects of the economy (the "goods") – such as education, employment, corporate or household income towards environmentally and socially harmful aspects –(the bads) such as pollution and intensive resource use.

Environmental tax reform[85] that shifts the tax burden away from labour (employment taxes) and corporate income taxes for example, simultaneously reduces environmental pressure and, creates incentives to work, save and invest, improving growth potential. A first step is to eliminate environmentally-damaging and economically disadvantageous subsidies such as low taxes or subsidies on natural resources.

On the social front, fiscal policy provisions such as inheritance taxation and other socially-progressive taxation policy promote more dynamic[86] and equitable growth. The World Bank's work shows how tax loopholes and evasion benefits the rich, and how dependence on indirect taxation increases the tax burden on poorer households in some cases.

Finally, all budgetary allocations must be assessed in terms of their impact on distributional issues, including disaggregation of impacts by gender and impacts on vulnerable groups. According to the International Energy Agency, only eight percent of fossil fuel consumption subsidies in 2010 reached the poorest 20 percent of the population.[87] The top 20 percent of households received on average approximately 42 percent of the total energy subsidies.[88] An International Monetary Fund study (2010) found that as much as 80 percent of the benefits of the gasoline subsidies worldwide went to the richest 40 percent of households.[89]

An important point is that changing prices on one aspect of capital alone is not likely to help – a "revenue-neutral approach" that increases costs on one hand, and reduces costs on the other, is needed both to increase the overall impact, and to help mitigate the costs of additional taxes. One study concludes that even with higher prices for carbon, businesses would still opt to lower their wage costs than invest in lowering material and energy throughputs, unless tax regimes are simultaneously overhauled.[90]

Bridging the time gap

The role of the government is central in bridging the "time gap" between short term costs and long term benefits – compensating market actors for the market's inability to provide economic benefits within an attractive time frame for human or natural capital investments.

The time gap can also be closed by retaining and enhancing the government's role in providing public goods. The World Bank study "Quality of growth: fiscal policy for better results" shows that increasing the share of investment in public goods such as education, health or environmental protection, increases human welfare and reduces environmental pressures as well as boosting growth potential and poverty reduction.

Based on long-term vision and planning, a strong commitment to foster investments in human, natural capital but also institutional capital and sustainable infrastructure is thus necessary. Public funding should be used strategically to encourage a strong private sector response. Strategic projects having low commercial returns but large social benefits, particularly benefitting lower-income groups can justify exclusive public financing.

Prudent investment of public funds is within the reach of most governments. The 2013 edition of the Economic and Social Survey of Asia and the Pacific concludes that the public investment required in ten Asia-Pacific countries to implement a package of key social policies, such as employment guarantee, income support for older persons and persons with disabilities, basic education for all, basic healthcare for all and universal access to modern forms of energy by 2030, is within financial reach of most countries, although countries with special needs and least developed countries would also need global partnership and development cooperation.

Increasing government capacity to finance these investments will depend on its capacity to draw on tax revenue. Developing Asia has the lowest government revenue to GDP ratio in the world – 19 percent of GDP, as compared with 22 percent in Latin America or 37 percent in Africa and Middle East and a world average of 35 percent.[91]

Low taxation incomes increase government dependence on large projects with short-term returns and reduce their capacity to invest in public goods. It also reduces the potential for application of critical policy tools such as environmental fiscal reform.

Strengthened national and regional capital markets can attract more investment based on the principles of good corporate governance, full disclosure, transparency, corporate and social responsibility. Appropriately

conditioned to reward resource-efficient and socially-responsible enterprises, in particular small and medium-sized enterprises, such capital markets can create pathways for attracting investment to support productive capacity and job creation.

Closing the time gap can also be achieved by recycling the revenues from environmental fiscal reform to support socially or environmental investments in public goods, or to reduce or eliminate taxes that generate distortions or have regressive impact.

In Indonesia, where it has been found that fossil fuel subsidies largely benefit higher-income, rather than lower-income households, for example, a series of efforts at government subsidy reforms have been based on the principle of reducing subsidies and recycling the savings to buffer the impact of higher prices on poor households and to strengthen social protection measures and to fund infrastructure development, including access to basic services such as access to drinking water and education.

RECOGNIZING LIMITS – ECONOMIC, SOCIAL AND ENVIRONMENTAL

Climate change, income inequality, energy, water and food insecurity and resource constraints have been among the risks identified by the World Economic Forum's Global Risks Report.[92] Other risks include increased volatility in trade, capital flows and exchange rates.

While risk has increased, vulnerability has also increased- for example the sensitivity of Asian financial markets to external shocks has increased over the last decade. The promotion of free markets has gradually reduced protection against socio-economic risks (such as capital controls or social protection). These increased risks are not equitably allocated – with those which are most vulnerable and households seeming to have borne an increasing share of the risks.

Economic models and policymaking neglect high-impact low-probability events, non-linearity and thresholds effects which have a critical impact. High rates of growth are not uncommon in developing countries but they tend to alternate with period of growth collapse triggered by shocks – a cycle that has limited the capacity of many developing countries to sustain progress.[93]

Recognizing the existence of planetary "limits" and the threat that the economic system would exceed the limits of environmental carrying capacity, Herman E. Daly[94] introduced the notion of scale – the relative size of economic system in relation to the environment. However, the idea that economic policy should recognize, and be guided by critical limits or thresholds is relevant not only to environmental limits and thresholds, but also to other dimensions of sustainable development.

Kate Raworth,[95] points out that, in addition to environmental limits, a social "foundation" is needed to define a "safe and just space for humanity." Careful consideration must be given, for example, to identifying the minimum access to basic needs that would be socially just and equitable. An example of such "limits" is provided by the Millennium Development Goals that have galvanized efforts to meet the needs of the poorest.

Macroeconomic policies have long been based on the enforcement of targets and limits – even if the relevance of some of these are questioned. Common examples include targets and limits related to fiscal deficits, inflation, markets liberalization and trade balances. Some economists have advocated the consideration of limits related to debt (private as well as public) to GDP ratio[96] and income inequality, pointing out that these key factors have contributed to financial crisis. The European Union, because of its high level of economic integration, has been particularly active in defining such economic limits.

Recognizing planetary limits in growth strategy is critical because the planet is finite, but also because of the risk of abrupt collapse in critical environmental systems. A group of scientists led by Johan Rockström proposed a framework of "planetary boundaries" designed to define a "safe operating space for humanity" (see box 5). The environmental limits that are most relevant to a given country or community depends on its infrastructure, geography and lifestyles, among other factors, and require a strong science-policy interface to be able to inform policies –for example relating to land or oter resource-use.

The notion of limits (whether economic, social or environmental) are relevant at individual, sub-national, national and global scales. Access to health care and education must be considered at an individual level,

Box 5: **A safe operating space for humanity**

In 2009, a group of scientists led by Johan Rockström from the Stockholm Resilience Centre proposed a framework of "planetary boundaries" designed to define a "safe operating space for humanity".

This framework is based on scientific research that indicates that since the Industrial Revolution, human actions have gradually become the main driver of global environmental change. The scientists assert that once human activity has passed certain thresholds or tipping points, defined as "planetary boundaries", there is a risk of "irreversible and abrupt environmental change".

A total of nine boundaries are identified: climate change, rate of biodiversity loss, biogeochemical flows (both nitrogen and phosphorus), stratospheric ozone depletion, ocean acidification, global freshwater use, change in land use, atmospheric aerosol loading and chemical pollution.

The scientists estimate that human activity appears to have already transgressed the boundaries associated with climate change, rate of biodiversity loss and changes to the global nitrogen cycle. Further findings suggest that humanity may soon be approaching the boundaries for interference with the global phosphorous cycle, global freshwater use, ocean acidification and global change in land use. The scientists suggest that the boundaries are strongly interlinked, so that crossing one may shift others and even cause them to be overstepped.

While the scientists themselves stressed that their assessments were only initial estimates, their work represents an important initiative to systematically monitoring risk."

SOURCE: The Stockholm Resilience Centre from United Nations, (2012),
"Resilient People, Resilient Planet: A future worth choosing",
"The report of the United Nations Secretary-General's High-level Panel on Global Sustainability"

while availability of freshwater must be considered at the local and regional level. Some limits have a global dimension – as in the case of issues such as global warming.

The notion of limits is also relevant to the goal of inclusive growth. If, resources were equitably shared, the possibility of meeting the needs of all within existing resources will be higher. This raises difficult questions around the need not only to raise the quality of life of the poor, but also to constrain the resource and environmental impacts of the lifestyles of the wealthy.

Social and political dialogue on setting limits that are scientifically-sound and socially-acceptable in all three dimensions of sustainable development are important to defining growth strategies that lead to long term stability and shared prosperity.

Understanding risk exposure (whether social, economic or environmental) and impacts on different stakeholders and determining acceptable levels of risk is essential to setting appropriate limits, targets or thresholds in each dimension of sustainable development.

GOVERNANCE: POLICY AND INSTITUTIONS AS ENABLING ASSETS

Social infrastructure influences the way assets are put to work for human well-being. The quality of institutions determines how the economic system reflects and coordinates the preferences of the different stakeholders in the allocation of resources between different usage (between different forms of investments or consumptions, between consumption and investment, and distribution related choices, for example).

Institutional and policy support for quality of growth encompasses mechanisms for coordination and collaboration, stakeholder participation, recalibration of markets to internalize social and environmental values, and for monitoring and policy feedback.

The promotion of social justice, the rule of law and the respect of human rights and the right to development are at the heart of any governance strategy to promote quality of growth. Most fundamentally, specific institutional mechanisms are needed for integrating the three dimensions of sustainable development and coordinating policy at the highest decision-making levels.

Market failures, lack of inclusion, participation and access to information leads to governance deficits. Problems of incentives can affect governments and institutions' resource-allocation efficiency. Taxation policies often do not reflect a long-term view and shared goals for society – failing to take into account satisfactorily their distributive and distortive effects. The lack of political incentives for investing in both natural and social capital and the institutional mechanisms to assess the needs for investment (with longer times to secure investment returns) can also negatively influence the allocation of resources.

Corruption (the appropriation by wealthy and powerful elites, of policies, laws and resources of the state), discrimination and inequality divert public expenditure from the most socially-productive assets and by reducing their benefits for society as a whole, reduce their impact on social progress. Illicit financial flows and the loss of funds from developing countries (both legal and illegal) reduces the ability of governments to invest in public goods – such as access to education and health care, or in entrepreneurship and job creation.

Institutional and policy support for quality of growth can be aligned with key policy goals described above – to promote equitable distribution of benefits and access to opportunity in all three dimensions of sustainable development; to promote efficiency and productivity; to support structural transformation; to balance capital investments to support investments in human and natural capital; and to recognize targets and limits in all three dimensions of sustainable development.

Each goal requires specific governance responses. For example, economic growth that distributes gains equitably depends on institutional and policy support for inclusion, opportunity and participation, including ensuring that priorities are based on a broad consensus that all stakeholders (notably the most vulnerable) are consulted in a participatory decision-making process. Transparency and accountability[97] access to information, participation and justice, including in environmental matters are also critical – as provided for by the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters.

Following the principle of subsidiarity specific governance responses should be developed at local, national as well as international levels. Local governments, in particular city administrations have an important role to play in a context of the region's rapid urbanization.

Global issues such as climate change and reform of international financial systems call for more decisive action and strengthened international cooperation. International institutions themselves will need to reform their governance to be able to rise to the growing challenges.[98]

Finally the role of communities and mechanisms for stakeholder solidarity should receive greater attention. They are still the dominant mechanism of resource allocation in many developing countries. The literature on community-owned resources shows that community management and community driven development can produce sustainable outcomes with more equitable distribution of benefits within the community.[99] Solidarity often provides a social safety net – but can be vulnerable to demographic, political and economic pressures.

7. Quality of growth and the greening of growth

The quality of growth extends on green growth concepts that were brought to the inter-governmental arena in Asia and the Pacific in 2005. Then, green growth was adopted at the Fifth Ministerial Conference on Environment and Development in Asia and the Pacific (MCED) as a strategy for achieving sustainable development and for achieving Millennium Development Goals 1 (poverty reduction) and 7 (environmental sustainability).

Since 2005, several countries and regional groupings have developed green growth, or green growth-related

development strategies. Green growth can be defined as economic progress that fosters environmentally sustainable, low-carbon and socially inclusive development. Pursuing green growth involves outlining a path to achieving economic growth and well-being while using fewer resources and generating fewer emissions in meeting demands for food production, transport, construction and housing, and energy.

The work done by ESCAP on green growth emphasizes that green growth, or the process of building a green economy in the context of sustainable development and poverty eradication, can only be achieved through systemic changes – addressing the trade-offs between the three dimensions of sustainable development, and closing price and time gaps described in earlier sections. ESCAP's Low Carbon Green Growth Road Map identifies specific policy options, fact sheets, policy papers and case studies that illustrate how this can be achieved in practical terms.

Policies and investments that promote green growth seek to improve the "eco-efficiency" of growth which involves minimizing resources use and negative environmental impacts per unit of benefit generated by the economy. Green growth is a pre-requisite for building a green economy characterized by substantially increased investments in economic activities that build on and enhance the earth's natural capital or reduce ecological scarcities and environmental risks – activities such as renewable energy, low-carbon transport, energy- and water-efficiency buildings, sustainable agriculture and forest management and sustainable fisheries.[100]

The outcome document of Rio+20, *The Future We Want*, encourages "each country to consider the implementation of green economy policies in the context of sustainable development and poverty eradication, in a manner that endeavours to drive sustained, inclusive and equitable economic growth and job creation, particularly for women, youth and the poor."[101]

Green growth in the context of sustainable development is seen as a key aspect of quality of growth. In this regard, the benefits of green growth should be equitably allocated, and based on inclusive access to natural resources and fair sharing of the profits derived.

The quality of growth framework provides that green growth strategies will be focused on promoting the capacity of the economy to meet the needs of its people in an eco-efficient way and promote boosting of productivity in low-carbon economic activities that secure jobs and to do so within planetary limits and ensuring socially-beneficial investments of natural, human and manufactured capital for the long-term.

Placing green growth in the framework of quality of growth, and further work to define green growth indicators,[102] provides a focus on growth that is appropriate for developing countries, and also strengthens approaches of other institutions which have developed green economy or growth indicators.

8. A conceptual framework for policy analysis and assessment

Sustainable development relies on transforming a vicious cycle of economic growth into a virtuous circle of growth that promotes investment in human and natural capital.

This requires turning existing trade-offs between the three dimensions of sustainable development into synergies. It means attention to rethinking certain basic tenets of dominant economic thinking – bringing environmental and social values, and notions of social justice that are externalized under mainstream economic growth strategies, to the centre of investment strategies.

Rethinking productivity and the strategies for boosting productivity, a resource efficiency revolution, and governance structures that apply social justice to economic theory and which transform "short-termism" into long-term thinking are all important strategies for reducing the tradeoffs between the three dimensions of sustainable development.

Transforming a vicious cycle to a virtuous circle of growth, means paying attention to equity, resource

efficiency and structural transformation and dynamism, recognizing limits and making system changes to promote investments in human and natural capital.

Extending these concepts to cover the economic, social and environmental qualities of growth provides a conceptual framework (see figure 6) for systematically evaluating and defining growth strategies based on identifying tradeoffs and potential synergies between the three dimensions of sustainable development in five determinants of quality of growth:

- Distribution- equity and access
- Efficiency and productivity
- Structural transformation
- Balancing capital investment
- Recognizing limits

Governance (or institutional and policy "enablers") is also covered by the framework to help define the specific policy and institutional support needed.

A strategy targeting the improvement of the quality of growth, that integrates the three main dimensions of sustainable development in a comprehensive framework can help to build institutional and policy coherence[103] and a better coordination. A coherent conceptual framework can help policymakers establish or reform policy and institutional support to ssystematically minimise trade-offs and identify conflicting strategies. Focusing on the interactions between the dimensions and on the way they can complement one another, can also result in more efficiency in the implementation of growth strategies.

This conceptual framework also facilitates social dialogue around economic growth strategies. The possibility to identify key performance indicators for assessing policy performance based on quality of growth indicators requires further research.

FIGURE 6: **A conceptual framework for quality of growth**

	Dimensions of sustainable development			Governance (Institutional and policy enablers)
	Economic	**Environmental**	**Social**	
Distribution – equity and access	Distribution of economic gains *(wages, income equality, consumption, employment and livelihoods)*	Distribution of benefits from natural resources through products (indirectly) or ecosystems services (directly), sharing the burden of degradation and pollution	Access to opportunity and distribution of human capitaL *(education, health-care, mobility, basic needs and infrastructure, participation, social protection)*	IInstitutional and policy support for inclusion, opportunity and participation *(multi-sectoral integration and coordination, government investment in public goods, enforcement of rights to development, rule of law, access to information, participation and justice, inclusiveness of policies related to natural resource use)*
Efficiency & productivity	Total factor productivity, manufactured capital productivity	Efficient resource use, low resource, waste and emission intensity	Labour productivity enhancement through human capital investment and decent work	Institutional and policy support for multi-sectoral integration and coordination; governance efficiency and for efficiency/productivity improvement
Structural Transformation	Moving from low-value added to high-value added, economic diversification and complexity, job creation	Moving from high resource and emissions intensity sectors to lower resource and emissions intensity sectors, using resources effectively and efficiently *(green investments, production of environmental goods and services, green jobs)*	Investment in social and human capital formation *(Networks, R&D, knowledge, skills and physical and emotional health)*	Institutional and policy support for multi-sectoral integration and coordination; social, technology and other innovation; and adaptive governance, including stakeholder participation and monitoring and feedback mechanisms
Balancing capital investment	Investment in manufactured capital *(factories, machinery, infrastructure)*	Investment in natural capital *(non-renewable and renewable endowments)*	Investment in human capital *(investment in social capital, education, life expectancy and general well-being and related outcomes)*	Institutional and policy support for multi-sectoral integration and coordination; and balanced capital investment (including internalization of social and environmental values)
Recognizing limits	Policy targets and limits related to Ability to pay in the long-run (debt, inflation), or financial (capital) limits to growth or market failure	Policy targets and limits related to planetary limit - Resourceresource depletion (scarcity) and overuse of absorptive capacity of ecosystems (degradation) – global environmental change or environmental limits to growth	Policy targets and limits related to human well-being (e.g. poverty reduction, millennium development goals etc.)	Institutional and policy support for multi-sectoral integration and coordination; strong science-policy interface and stakeholder involvement in policy-making

9. In conclusion

This publication provides a framework for quality of growth by building a virtuous cycle of investment in people and nature – a growth path which is more closely aligned with sustainable development.

Adapted to each country's priorities and circumstances, the framework can help policymakers and other stakeholders to assess and develop specific policy objectives and strategies for the system changes needed for balanced integration of the three dimensions of sustainable development as called for by Rio+20 outcomes.

As the period of the Millennium Development Goals comes to a close, such a framework can also support discussions on a transformative United Nations Development Agenda beyond 2015.

However, given the urgency and complexity of the development challenges faced, strong political will, and effective stakeholder engagement will be critical to the success of any policy initiative to promote quality of growth.

Further investment is also needed to develop indicators of quality of growth and economic models that can effectively integrate the three dimensions of sustainable development.

End notes and references

1 See the report at http://www.un.org/ga/president/63/commission/financial_commission.shtml, accessed on 20 June 2013.

2 See the report of the Global Sustainability Panel at http://www.un.org/gsp, accessed on 20 August 2013.

3 National Economic Advisory Council, *New economic model for Malaysia- Strategic Policy directions*, (Putrajaya, 2010), accessed from http://www.pmo.gov.my/dokumenattached/NEM_Report_I.pdf on 17 November 2012

4 National Economic and Social Development Board Office of the Prime Minister (Thailand), *The Eleventh National Economic and Social Development Plan B.E. 2555 – 2559* (Bangkok, Thailand , 2011), accessed from http://www.nesdb.go.th/Portals/0/news/plan/p11/Plan11_eng.pdf on 17 August 2012

5 See Permanent Mission of Nauru to the United Nations, "United Nations Conference on Sustainable Development (Rio plus 20): Contribution of the Pacific Small Island Developing States", 1 November 2011, accessed at http://www.uncsd2012.org/content/documents/552PSIDS%20Rio%20plus%2020%20Contribution%201%20November%202011.pdf on 20 November 2013

6 Barbier E. B., *A Global New Deal: Rethinking the Economic Recovery*, (Cambridge: Cambridge University Press and UNEP , 2010).

7 Referring to the United Nations Development Agenda that is planned to succeed the Millennium Development Goals after 2015.

8 The World Bank and the Development Research Center of the State Council, the People's Republic of China, *China 2030: Building a Modern, Harmonious, and Creative High-Income Society*, (Washington DC, 2012), accessed from http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2013/03/27/000350881_20130327163105/Rendered/PDF/762990PUB0china0Box374372B00PUBLIC0.pdf on 17 November 2012

9 Stern, N., S. Peters, V. Bakhshi, A. Bowen, C. Cameron, S. Catovsky, D. Crane, S. Cruickshank, S. Dietz, N. Edmonson, S.-L. Garbett, L. Hamid, G. Hoffman, D. Ingram, B. Jones, N. Patmore, H. Radcliffe, R. Sathiyarajah, M. Stock, C. Taylor, T. Vernon, H. Wanjie, and D. Zenghelis, *Stern Review: The Economics of Climate Change*, (London, HM Treasury, 2006), accessed from http://webarchive.nationalarchives.gov.uk/20130129110402/http://www.hm-treasury.gov.uk/stern_review_report.htm on 20 October 2012

10 For example freshwater purification, recreation opportunities, climate regulation. See the Millennium Ecosystem Assessment reports at http://www.unep.org/maweb/en/index.aspx

11 See United Nations General Assembly Resolution 66/288,*The future we want*, accessed from http://www.uncsd2012.org/thefuturewewant.html on 5 September 2012

12 Though in some countries delinking of growth from impacts of poverty reduction can be partly explained by diminishing numbers of the poor and a subsequent fall in the marginal impact of growth on poverty, the elasticity of poverty reduction to growth is clearly declining since 2002. Guanghua Wan, Sebastian I., "Poverty in Asia and the Pacific: An Update", *ADB Economics Working Paper Series*, (2011), No. 267, p.20; Chakrangi L., Rati R., "Growth elasticity of poverty: estimates from new data", *International Journal of Social Economics*, (2010), Vol. 37 Issue: 12, pp.923 – 932.

13 Economic and Social Commission for Asia and the Pacific (ESCAP), *Statistical Yearbook for Asia and the Pacific 2011*, (Bangkok, United Nations, 2011).

14 Food and Agriculture Organization of the United Nations (FAO), *The State of Food Insecurity in the World: How does international price volatility affect domestic economies and food security?* (Rome, 2011) accessed at http://www.fao.org/docrep/014/i2330e/i2330e.pdf on 14 August 2012

15 See definitions and concepts at Dutta, D., Elite Capture and Corruption: Concepts and definitions. (NationalCouncil for Applied Economic Research of India, New Delhi, 2009), accessed at http://www.ruralgov-ncaer.org/images/product/doc/3_1345011280_EliteCaptureandCorruption1.pdf on 18 November 2013.

16 Azizur Rahman Khan, *Asian experience on Growth, Employment and Poverty: An overview with special reference to the findings of some recent case studies*, (United Nations Development Programme (UNDP) Regional Centre Colombo, International Labor Office (ILO) Geneva, 2007) accessed at http://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/documents/publication/wcms_bk_pb_142_en.pdf on 5 September 2012

17 International Labor Office (ILO), "Key Indicators of the Labour Market (KILM), 7th edition" , *ILO: Global Employment Trends 2012*, (Geneva, 2012) accessed from http://www.ilo.org/empelm/what/WCMS_114240/lang--en/index.htm on 15 March 2013

18 United Nations, *Report of the Commission of Experts of the President of the United Nations General Assembly on Reforms of the International Monetary and Financial System*, (New York, 2009), accessed at http://www.un.org/ga/econcrisissummit/docs/FinalReport_CoE.pdf on 23 July 2012

19 Bourguignon F., "The Poverty-Growth-Inequality Triangle", paper presented in Paris on November 13, 2003 at the *Conference on Poverty, Inequality and Growth*, sponsored by the Agence Française de Développement and the EU Development Network, accessed at http://siteresources.worldbank.org/INTPGI/Resources/342674-1206111890151/15185_ICRIER_paper-final.pdf on 29 March 2012

20 Berg A. G. and Ostry J. D., "Inequality and Unsustainable Growth: Two Sides of the Same Coin?", *IMF Staff Discussion Note*, (Washington, D.C., International Monetary Fund (IMF), 2011) accessed at http://www.imf.org/external/pubs/ft/sdn/2011/sdn1108.pdf on 15 September 2013

21 Gini coefficient is a statistical measure of dispersion. A Gini coefficient of 0 represents a situation of perfect equality while a Gini coefficient of 1 represents a situation of absolute inequality.

22 The trend is particularly strong in China, where the Gini coefficient has increased from 0.35 in 1990 to 0.47 in 2010. Lin T. J., Zhuang D., Yarcia, and Lin F., "Income Inequality in the People's Republic of China and Its Decomposition: 1990–2004.", *Asian Development Review 25* (Manila, Asian Development Bank (ADB), 2008), (1, 2) accessed from http://www.adb.org/publications/asian-development-review-volume-25-numbers-1-and-2 on 5 September 2012

23 Non income Millennium Development Goals such as primary school completion or reaching last grade, hunger, health and under-five and maternal mortality, despite some improvements, have shown inconsistent progress, while sanitation and environment sustainability are key areas of under-performance. United Nations, *The Millennium Development Goals Report 2011* (New York, United Nations, 2011) accessed at http://mdgs.un.org/unsd/mdg/Resources/Static/Products/Progress2011/11-31339%20(E)%20MDG%20Report%202011_Book%20LR.pdf on 23 July 2012

24 Summer A., "Poverty in Middle-Income Countries", *International Development Studies* (IDS), (Brighton, 2011), accessed at http://www.ids.ac.uk/files/dmfile/Bellagio_Sumner1.pdf on 7 March 2012

25 Guanghua Wan and Sebastian I., "Poverty in Asia and the Pacific: An Update", *ADB Economics Working Paper Series* (Manila, Asian Development Bank (ADB), 2011), No. 267, p.20

26 Guanghua Wan and Sebastian I., "Poverty in Asia and the Pacific: An Update", *ADB Economics Working Paper Series (*Manila, Asian Development Bank (ADB), 2011), No. 267, p.20

27 Barro R. J., "Inequality and growth revisited", p8, Working Paper Series on Regional Economic Integration (Manila, Asian Development Bank (ADB), 2008), no. 11

28 R. Rajan and J.K. Galbraith have pointed to inequality as the main cause of the 2008 financial crisis and the 1929 great depression. In developed countries unsustainable debt accumulation is at least partly a symptom of increasing inequality. For the last two decades, despite GDP growth, incomes have been stagnating because steadily growing inequalities in most countries. One of the main causes of increased debt in developed economies was thus to maintain the level of consumption.

29 Economic and Social Commission for Asia and the Pacific (ESCAP), *Towards defining a transformative agenda for sustainable development. Background note by the secretariat*, (Bangkok, 2013), DEV/APMD/2013/1, 20 August 2013. Accessed at http://apmd2013.unescap.org/documents/APMD2013_BackgroundNote.pdf on 10 October 2013

30 Economic and Social Commission for Asia and the Pacific (ESCAP), *Towards defining a transformative agenda for sustainable development. Background note by the secretariat*, (Bangkok, 2013), DEV/APMD/2013/1, 20 August 2013. Accessed at http://apmd2013.unescap.org/documents/APMD2013_BackgroundNote.pdf on 10 October 2013

31 Economic and Social Commission for Asia and the Pacific (ESCAP), "Towards inclusive and sustainable growth in Asia and the Pacific", *working paper on growth imbalances, chapter 3,* (Bangkok, 2009)

32 United Nations, *Report of the Commission of Experts of the President of the United Nations General Assembly on Reforms of the International Monetary and Financial System*, (New York, 2009), accessed at http://www.un.org/ga/econcrisissummit/docs/FinalReport_CoE.pdf on 23 July 2012

33 Coface, "Press Release: Emerging Asia: Coface warns of growth risks linked to household debt", Paris, 14

October 2013, accessed at http://www.coface.com/News-Publications/News/Emerging-Asia-Coface-warns-of-growing-risks-linked-to-household-debt on 12 December 2013.

34 Hindu Business Online. "Rising household debt threatens Asian banks: S&P". Bangkok, 29 October 2013, accessed at http://www.thehindubusinessline.com/news/international/rising-household-debt-threatens-asian-banks-sp/article5285363.ece on 12 December 2013.

35 Economic and Social Commission for Asia and the Pacific (ESCAP), "Towards inclusive and sustainable growth in Asia and the Pacific", *working paper on growth imbalances, chapter 3,* (Bangkok, 2009)

36 Dron D. and Juvin H., "L'économie du prochain siècle, ou l'inversion des raretés", *Croissance et Environnement* (Paris, Ecole Polytechnique, 2007), accessed at http://www.x-environnement.org/index.php?option=com_content&view=article&id=51%3Asept-2007&catid=36%3Ajaune-rouge&Itemid=41&limitstart=4 on 29 April 2012

37 See Economic and Social Commission for Asia and the Pacific (ESCAP), Asian Development Bank (ADB) and United Nations Environment Programme (UNEP), "Green Growth, Resources and Resilience: Environmental Sustainability in Asia and the Pacific", *Ministerial Conference on Environment and Development ESCAP Fifth Report, ADB's Asian Environment Outlook series Third Report* (Bangkok, United Nations and Asian Development Bank, 2012), accessed at http://www.unescap.org/esd/environment/flagpubs/GGRAP/documents/G2R2-web-20121121.pdf on 14 December 2012

38 The existence of "poverty traps" is often evoked to explain the stagnation in low income economies. "A poverty trap is a self-perpetuating condition, in which an economy suffers from persistent underdevelopment, vicious circle of poverty, created by circular causation due to the presence of some external economies and/or strategic complementarities" Matsuyama K., "Poverty traps", *The New Palgrave Dictionary of Economics*, (Macmillan, 2008), Second Edition. There may also be "middle income traps" preventing middle income economies from catching up with developed economies. Asian Development Bank (ADB), *Asia 2050: Realizing the Asian Century* (Manila, Asian Development Bank (ADB), 2010), accessed at http://www.adb.org/sites/default/files/asia2050-executive-summary.pdf on 14 December 2012

39 Benabou R., "Inequality and Growth", *NBER Working Papers* (Cambridge, Massachusset Institute of Technology (MIT), 1997), 5658, p13

40 For example 85 percent of all fish stocks are classified as overexploited, depleted, recovering or fully exploited. United Nations Secretary-General's High-level Panel on Global Sustainability, *Resilient People, Resilient Planet: A future worth choosing*, (New York, United Nations, 2012), accessed at http://www.un.org/gsp/sites/default/files/attachments/GSP_Report_web_final.pdf on 14 December 2012

41 Economic and Social Commission for Asia and the Pacific (ESCAP), Asian Development Bank (ADB) and United Nations Environment Programme (UNEP), "Green Growth, Resources and Resilience: Environmental Sustainability in Asia and the Pacific", *Ministerial Conference on Environment and Development ESCAP Fifth Report, ADB's Asian Environment Outlook series Third Report* (Bangkok, United Nations and Asian Development Bank, 2012), accessed at http://www.unescap.org/esd/environment/flagpubs/GGRAP/documents/G2R2-web-20121121.pdf on 14 December 2012

42 [39]United Nations Environment Programme (UNEP) and Commonwealth Scientific and Research Organization (CSIRO), *Resource efficiency: Economics and outlook for Asia and the Pacific*, (Bangkok, United Nations Environment Program (UNEP) Regional Office for Asia and the Pacific, 2011)

43 [40]Rockström J., Steffen W., Noone K., Persson Å., Chapin III F.S., Lambin E.F.,Lenton T.M., Scheffer M., Folke C., Schellnhuber H.J., Nykvist B., de Wit C.A., Hughes T., van der Leeuw S., Rodhe H., Sörlin S., Snyder P.K.,Costanza R., Svedin U., Falkenmark M., Karlberg L.,Corell R.W., Fabry V.J., Hansen J., Walker B., Liverman D., Richardson K., Crutzen P. and Foley J.A., "Planetary Boundaries: Exploring the Safe Operating Space for Humanity", *Ecology and Society*, (Stockholm, 2009) , 14(2): 32, accessed at http://www.ecologyandsociety.org/vol14/iss2/art32/ on 21 April 2012

44 Empirical studies seem to conclude in favor of the validity of the environmental Kuznets curve hypothesis for some "local pollution". However in the case of global or regional pressures on the environment (such as greenhouse gas emissions or energy and material use) this theory does not hold. In this case higher GDP per capita is correlated with higher environmental pressure. S. Dinda in a review of the empirical literature on the subject shows an inverted U-shaped curve in the case of SO_2, fine particles, CO and NO_X while a monotone curve is found for other environmental indicators notably CO_2, energy and waste. These results are one of the rationales to focus on global pollutants at the international level. Dinda S., "Environmental Kuznets Curve Hypothesis: A Survey", *Ecological Economics*, (Philadelphia, Elsevier, 2004), vol. 49(4), pages 431-455, August.

45 Division for Sustainable Development, UN-DESA, United Nations Environment Programme, UN Conference on Trade and Development, "The Transition to a Green Economy: Benefits, Challenges and Risks from a Sustainable

Development Perspective", Report *by a Panel of Experts to Second Preparatory Committee Meeting for United Nations Conference on Sustainable Development*, (New York, 2011), accessed at http://www.uncsd2012.org/content/documents/Green%20Economy_full%20report%20final%20for%20posting%20clean.pdf on 23 July 2012

46 At the global level carbon dioxide emissions increased by 38 percent between 1990 and 2009, while current global GHG emissions at 42 Gt per annum are already five times higher than what is considered as the environmental threshold. Stern, N., S. Peters, V. Bakhshi, A. Bowen, C. Cameron, S. Catovsky, D. Crane, S. Cruickshank, S. Dietz, N. Edmonson, S.-L. Garbett, L. Hamid, G. Hoffman, D. Ingram, B. Jones, N. Patmore, H. Radcliffe, R. Sathiyarajah, M. Stock, C. Taylor, T. Vernon, H. Wanjie, and D. Zenghelis, *Stern Review: The Economics of Climate Change*, (London, HM Treasury, 2006), accessed from http://webarchive.nationalarchives.gov.uk/20130129110402/http://www.hm-treasury.gov.uk/stern_review_report.htm on 20 October 2012. The region accounts for around half the world's CO_2 emissions while its share of the world's total was only 38 percent in 1990 and China has become the world's largest emitter (but on per capita basis, the North American rate is still nearly 4 times higher). Greenhouse gas emissions are possibly increasing the risk and magnitude of natural disasters in a region including 90 percent of the people affected during the last decade. Economic and Social Commission for Asia and the Pacific (ESCAP), *Statistical Yearbook for Asia and the Pacific 2011*, (Bangkok, United Nations, 2011).

47 Thomas V., Dailimi M., Dhareshwar A., Kaufmann D., Kishor N., Lopez R. and Wang Y., *The quality of growth,* (Oxford , Washington, D.C., World Bank, 2000)

48 United Nations Environment Programme (UNEP), Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication, (Nairobi, United Nations Environment Programme (UNEP), 2011) accessed from http://www.unep.org/greeneconomy/ on 29 March 2012

49 The "needs" referred to by the classical definition of sustainble development (development that meets teh needs of the present without compromising the ability of future generations to meet their own needs) can be considered the "austere component of well-being". United Nations University International Human Dimensions Programme on Global Environmental Change (UNU-IHDP) and United Nations Environment Programme (UNEP), *Inclusive Wealth Report 2012.Measuring progress toward sustainability*, (Cambridge, Cambridge University Press, 2012), Chapter1, accessed at http://www.unep.org/pdf/IWR_2012.pdf on 23 July 2012

50 The concept of well-being is concerned with both subjective and objective dimensions. Subjective measures provide important information about quality of life and its determinants (level of satisfaction, positive and negative emotions, self-evaluation…) but are by definition subject to individual circumstances. The reference to "needs", suggests an approach centered on the objective and according to Dasguptha even austere component of quality of life. United Nations University International Human Dimensions Programme on Global Environmental Change (UNU-IHDP) and United Nations Environment Programme (UNEP), *Inclusive Wealth Report 2012.Measuring progress toward sustainability*, (Cambridge, Cambridge University Press, 2012), Chapter1, accessed at http://www.unep.org/pdf/IWR_2012.pdf on 23 July 2012

51 Stiglitz J. E. & al., *Report of The Commission on the Measurement of Economic Performance and Social Progress*, (Paris, 2009), accessed at http://www.stiglitz-sen-fitoussi.fr/documents/rapport_anglais.pdf on 1 April 2012

52 "The true measure of economic output is not the quantity of goods produced, but the quality and value of final services provided to the consumer." "The kind of growth now occurring in the US and Europe is no longer making people happier or improving their real standard of living." "Economic growth should be the provision of "better and more valuable services to ultimate consumers." Ayres R.U., *Turning point: the end of the growth paradigm*, (Paris, INSEAD, 1996), 96/49/EPS

53 Ayres R.U., *Turning point the end of the growth paradigm*, (Paris, INSEAD , 1996), 96/49/EPS

54 Raworth, K, *A Safe and Just Space for Humanity: Can we live within the doughnut?*, (London, Oxfam International, 2012)

55 Economic and Social Commission for Asia and the Pacific (ESCAP), *Low Carbon Green Growth Roadmap for Asia and the Pacific*, (Bangkok, United Nations, 2012).

56 United Nations Secretary-General's High-level Panel on Global Sustainability, *Resilient People, Resilient Planet: A future worth choosing*, (New York, United Nations, 2012), accessed at http://www.un.org/gsp/sites/default/files/attachments/GSP_Report_web_final.pdf on 14 December 2012

57 Asian Development Bank (ADB), *Asia 2050: Realizing the Asian Century* (Manila, Asian Development Bank (ADB), 2010), accessed at http://www.adb.org/sites/default/files/asia2050-executive-summary.pdf on 14 December 2012

58 See Daly H.E., *Ecological economics: the concept of scale and its relation to allocation, distribution and uneconomic growth*, (Jasper, Alberta, Canada, CANSEE, 2003)

59 See the Poverty and Environment Initiative at http://www.unpei.org/

60 Yusuf A. A., *The Distributional Impact of Environmental Policy: The Case of Carbon Tax and Energy Pricing Reform in Indonesia*, (Singapore, Economy and Environment Program for Southeast Asia, 2008)

61 Aunan K., Berntsen T., O'Connor D., Persson T. H., Vennemo H, and Fan Zhai, "Benefits and costs to China of a climate policy", *Environment and Development Economics* (Cambridge, Cambridge University Press, 2007), 12: 471–97.

62 See "Jobless Growth and Economic Prodcutivity in Asia and the Pacific", presentation by Sukti Dasgupta at the Expert Dialogue on the Quality of Growth, Bangkok, 2012, accessed at http://www.unescap.org/esd/environment/quality_of_growth/egm_nov_2012/documents/presentations/Se-2-Pr-2-Sukti-Dasgupta.pdf on 14 October 2013.

63 Expert Group Meeting organized by the Economic and Social Commission for Asia and the Pacific (ESCAP) in Bangkok, November 2012

64 Presentation by Marina Fischer Kowalski, *Social transformation, resource use and sustainability transitions*, at the Expert Dialogue on Quality of Growth, (Bangkok, Economic and Social Commission for Asia and the Pacific (ESCAP), November 2012)

65 Comments by Maria Durano at the Expert Dialogue on Quality of Growth, (Bangkok, Economic and Social Commission for Asia and the Pacific (ESCAP), November 2012)

66 See Arizpe N., Ramos Martín J., Giampietro M., *An analysis of the metabolic patterns of two rural communities affected by soy expansion in the North of Argentina,* UHE Working Paper (Barcelona, Unitat d'Història Econòmica (UHE), 2012) 2012_06, accessed at http://www.h-economica.uab.es/wps/2012_06.pdf on 17 November 2013

67 The "structuralist" view is that development is determined by the capacity of the economy to generate new activities, which holds major policy implications. "Because production structure must change if growth and development are to proceed, conscious choice of policies that will drive the transformation of the system towards new dynamic activities can play an essential role for long term economic expansion." Division for Sustainable Development, United Nations Department of Economic and Social Affairs, United Nations Environment Programme, United Nations Conference on Trade and Development, "The Transition to a Green Economy: Benefits, Challenges and Risks from a Sustainable Development Perspective", Report *by a Panel of Experts to Second Preparatory Committee Meeting for United Nations Conference on Sustainable Development*, (New York, 2011), accessed at http://www.uncsd2012.org/content/documents/Green%20Economy_full%20report%20final%20for%20posting%20clean.pdf on 23 July 2012

68 Economic and Social Commission for Asia and the Pacific (ESCAP), *Economic and Social Survey 2011: Sustaining Dynamism and Inclusive Development: Connectivity in the Region and Productive Capacity in Least Developed Countries,* (Bangkok, United Nations, 2011), Sales No. E.11.II.F.2.28

69 Economic and Social Commission for Asia and the Pacific (ESCAP), Theme Study on Building Resilience to Natural Disasters and Major Economic Crises, (Bangkok, United Nations, 2013), ST/ESCAP/2655.

70 See Economic and Social Commission for Asia and the Pacific (ESCAP), Theme Study on Building Resilience to Natural Disasters and Major Economic Crises, (Bangkok, United Nations, 2013), ST/ESCAP/2655.

71 Patterns of infrastructure development determine the environmental sustainability of economic growth. Sustainable infrastructure refers to infrastructure that is conceptualized, built and operated with explicit reference to eco-efficiency objectives. More eco-efficient infrastructure delivers services with lower resource use and negative environmental impact.

72 See United Nations Environment Programme (UNEP), *Global Outlook on SCP Policies: taking action together*, (Nairobi, United Nations, 2012) accessed at http://www.unep.org/pdf/Global_Outlook_on_SCP_Policies_ExecutiveSummary.pdf on 17 November 2013

73 Ayres R.U., *Turning point the end of the growth paradigm*, (Paris, INSEAD , 1996), 96/49/EPS

74 Product service systems are "a system of products, services, supporting networks and infrastructure that is designed to be: competitive, satisfy customer needs and have a lower environmental impact than traditional business models" Instead of being centered on 'traditional' forms of sale, ownership, consumption and disposal of products, a PSS focuses on the delivery of a 'function' to the customer. Williams, "Product service systems in the automobile industry: contribution to system innovation?", *Journal of Cleaner Production*, (Philadelphia, Elsevier, 2007), 15,1093-1103.

75 United Nations Secretary-General's High-level Panel on Global Sustainability, *Resilient People, Resilient Planet: A future worth choosing*, (New York, United Nations, 2012), accessed at http://www.un.org/gsp/sites/default/files/attachments/GSP_Report_web_final.pdf on 14 December 2012

76 Braat L. and P. ten Brink, "The Cost of Policy Inaction (COPI): The case of not meeting the 2010 biodiversity target", *Report to the European Commission*, (Brussels, European Commission, 2008)

77 "Externalities are defined as benefits or costs generated as an unintended by-product of an economic activity that do not accrue to the parties involved in the activity and where no compensation takes place." United States National Research Council, Committee on Health, *Environment, Hidden costs of energy: unpriced consequences of energy production and use*, (Washington, D.C, National Academy of Sciences, 2010)

78 "Investments in human and natural capital require a long time to mature relative to most investments in physical capital. Capital market imperfections are likely to affect the financing of the former more negatively than the financing of the latter. Thus, the private market economy tends to concentrate more on the accumulation of physical capital than of the other two assets." Thomas V., Dailimi M., Dhareshwar A., Kaufmann D., Kishor N., Lopez R. and Wang Y., *The quality of growth,* (Oxford , Washington, D.C., World Bank, 2000)

79 Public goods broadly defined can include "education, health, social security, transport, communication, public order and safety, housing and community amenities" their provision is suboptimal because of the two characteristics of non rivalry and non excludability. López R. E., Thomas V., and Wang Y., "The Quality of Growth: Fiscal Policies for Better Results", *IEG Working Paper,* (Washington, D.C., The World Bank, 2008), 2008/6 accessed at http://lnweb90.worldbank.org/OED/oeddoclib.nsf/DocUNIDViewForJavaSearch/A9850DD014439861852575450054 12D0/$file/quality_growth_wp.pdf on 7 March 2012

80 Respectively,: Gallai, N., Salles, J.-M., Settele, J. and Vaissière, "B.E. Economic Valuation of the Vulnerability of World Agriculture Confronted with Pollinator Decline", *Ecological Economics*, (2009), Vol. 68(3): 810-21; The Economics of Ecosystems and Biodiversity, *TEEB for National and International Policy Maker; Summary: Responding to the Value of Nature*, (TEEB, 2009) cited in: United Nations Environment Programme (UNEP), *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication,* (Nairobi, United Nations Environment Programme (UNEP), 2011) accessed from http://www.unep.org/greeneconomy/on 29 March 2012

81 The extent to which different forms of capital are substitutable should be considered by the full range of economic, social and environmental values supported, and any limits in the availability of diffferent forms of capital (especially in relation to environmental resources). Environmental economists refer to "weak" and "strong " sustainability to describe the way in which different forms of capital are treated.

82 "More needs to be added to the asset base in the form of investment or natural regeneration than is subtracted though depreciation or depletion." Organization for Economic Co-operation and Development (OECD), *Towards Green Growth: Monitoring Progress OECD Indicators*, (Paris, 2011)

83 Thomas V., Dailimi M., Dhareshwar A., Kaufmann D., Kishor N., Lopez R. and Wang Y., *The quality of growth,* (Oxford , Washington, D.C., World Bank, 2000)

84 López R. E., Thomas V., and Wang Y., "The Quality of Growth: Fiscal Policies for Better Results", *IEG Working Paper,* (Washington, D.C., The World Bank, 2008), 2008/6 accessed at http://lnweb90.worldbank.org/OED/oeddoclib.nsf/DocUNIDViewForJavaSearch/A9850DD014439861852575450054 12D0/$file/quality_growth_wp.pdf on 7 March 2012

85 i.e. replacing existing taxes by less distortive ones internalizing environmental externalities.

86 "If we believe that abilities are distributed normally regardless of incomes, a highly skewed distribution of educational opportunities would be highly damaging for growth and poverty reduction." Thomas V., Dailimi M., Dhareshwar A., Kaufmann D., Kishor N., Lopez R. and Wang Y., *The quality of growth,* (Oxford , Washington, D.C., World Bank, 2000)

87 International Energy Agency (IEA), *World Energy Outlook*, (Paris, IEA, 2011)

88 López R. E., Thomas V., and Wang Y., "The effects of fiscal policies on the quality of growth", *IEG Evaluation Brief* (Washington, D.C., The World Bank, 2010) 9, p.9

89 Coady D., Gillingham R., Ossowski R., Piotrowski J., Tareq S., and Tyson J., "Petroleum Product Subsidies: Costly, Inequitable, and Rising", *International Monetary Fund (IMF) Staff Position Note*, (Washington, D.C., International Monetary Fund (IMF), 2010), SPN/10/05

90 European Commission, Science for Environment Policy Newsletter, (Brussels, 2013), Issue 326, 2 May 2013.

Based on an article by Allwood, J. A., Ashby, M. F., Gutowski, T. G., Worrell, E., "Material efficiency: providing material services with less material production", *Philosophical Transactions of the Royal Society* (2013), 371; 20120496.

91 IMF Government Finance Statistics Database

92 [87]World Economic Forum, *The Global Competitiveness Report 2011–2012*, (Geneva, World Economic Forum, 2011), accessed at http://www3.weforum.org/docs/WEF_GCR_Report_2011-12.pdf on 14 December 2012

93 See Peter J. Montiel's presentation, *Increasing Resilience to Shocks to Ensure Sustainable Growth*, (Apia Samoa, March 23, 2012), accessed at http://www.imf.org/external/np/seminars/eng/2012/PIC/pdf/p-m.pdf

94 Daly H.E., *Ecological economics: the concept of scale and its relation to allocation, distribution and uneconomic growth*, (Jasper, Alberta, Canada, CANSEE, 2003)

95 See http://www.kateraworth.com/2012/12/07/whos-putting-pressure-on-the-planet/

96 Following I. Fischer's explanation of the Great Depression, some economists have pointed to debt deflation following an excessive accumulation of debt in the economy as the main cause of the 2008 financial crisis. The Euro convergence criteria reflects the issue of limits on public debt by defining a public debt-to-GDP ratio limit at 60

97 United Nations Development Program (UNDP), "Governance for Sustainable Human Development", *A UNDP policy paper* (United Nations Development Program (UNDP), 1997), p 2-3

98 United Nations, *Report of the Commission of Experts of the President of the United Nations General Assembly on Reforms of the International Monetary and Financial System*, (New York, 2009), accessed at http://www.un.org/ga/econcrisissummit/docs/FinalReport_CoE.pdf on 23 July 2012

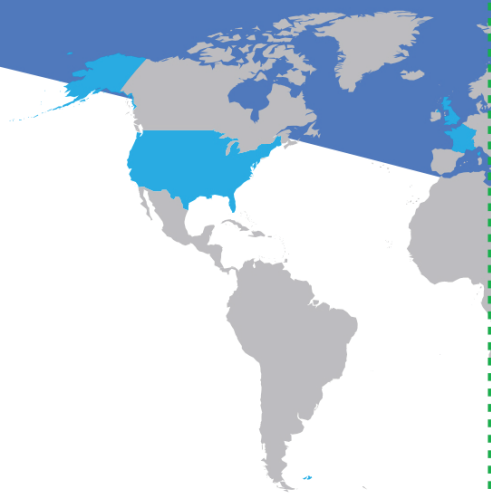
99 Ostrom E., Gardner R., Walker J., *Rules, Games, and Common-Pool Resources*, (University of Michigan Press, 1994)

100 Economic and Social Commission for Asia and the Pacific (ESCAP), Asian Development Bank (ADB) and United Nations Environment Programme (UNEP), "Green Growth, Resources and Resilience: Environmental Sustainability in Asia and the Pacific", *Ministerial Conference on Environment and Development ESCAP Fifth Report, ADB's Asian Environment Outlook series Third Report* (Bangkok, United Nations and Asian Development Bank, 2012), accessed at http://www.unescap.org/esd/environment/flagpubs/GGRAP/documents/G2R2-web-20121121.pdf on 14 December 2012

101 See http://www.un.org/en/sustainablefuture/

102 Economic and Social Commission for Asia and the Pacific (ESCAP), "Green growth indicators: A practical approach for Asia and the Pacific", *Greening of Economic Growth series,* (United Nations, Bangkok, 2013). ST/ESCAP/2674

103 The Secretary-General of the United Nations points to policy coherence as one of the factor of success: "More successful countries not only followed strategies to overcome particular major constraints, but also ensured a fair degree of coherence among economic, social and, sometimes, environmental policies. National development strategies need to enable policy coherence tailored to country conditions." United Nations General Assembly, "Accelerating progress towards the Millennium Development Goals: options for sustained and inclusive growth and issues for advancing the United Nations development agenda beyond 2015", *Annual report of the Secretary-General*, (New York, United Nations, 2011), A/66/126



The blue areas of the map represent the members and associate members of ESCAP

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