Millennium Consumption Goals (MCGs) for Rio+20 and beyond: A practical step towards global sustainability

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Abstract

In January 2011, the idea of Millennium Consumption Goals (MCGs) was first proposed at the United Nations, because unsustainable patterns of consumption and production have led to multiple problems threatening the future of humanity. The global economy driven by consumption already uses natural resources equivalent to almost 1.5 planets earth, with the world's richest 1.4 billion consuming almost 85% of global output, which is over 60 fold the consumption of the poorest 1.4 billion. The consumption of the rich is not only ecologically unsustainable, but also "crowding out" the prospects of the poor and exacerbating inequalities that increase the risk of conflict and global unrest.

The MCGs provide an innovative future vision and complement the Millennium Development Goals (MDGs) that aim to help the world's poor. First, the MCGs seek to address the issues of global poverty and inequality by ensuring that the basic consumption needs of over 2 billion poor people are met. Next, the MCGs will provide benchmarks for the consumption of the rich, which will reduce the burden on the world's natural resource base. Instead of viewing the affluent as a problem, the novel approach of the MCGs would persuade them to contribute to the solution without having to reduce their quality of life.

The MCGs apply even-handedly to the rich in all countries. The concept enjoys broad support worldwide and is being promoted by a global coalition called the MCG Initiative (MCGI). A bottom-up approach has already been started by many pioneering individuals, communities, organizations, firms, cities, regions and nations. They prefer not to wait for broad multilateral agreements and are acting now, to voluntarily pursue their own specific MCGs. A parallel top-down path is being pursued through mandatory agreements at the United Nations/international level, starting with the Rio+20 Earth Summit and beyond. The MCGs fit in with other major UN initiatives like Agenda 21, the MDGs, green economy, SCP and the Sustainable Development Goals.

Keywords: Millennium Consumption Goals; sustainable consumption and production; sustainomics; Millennium Development Goals.

1. Why we need to make consumption and production more sustainable

The Millennium Consumption Goals (MCGs) proposal was made as a novel method of correcting the unsustainable patterns of consumption, production and resource exploitation that have led to multiple problems threatening the future of humanity — like poverty, unequal consumption, resource scarcities, hunger, disease, environmental harm, conflict and climate change — which exacerbate all the preceding issues (Munasinghe, 2009; Eurostep, 2011). The global economy driven by consumption already uses natural resources equivalent to over 1.5 planets earth (also called the global ecological footprint of humanity) (Global Footprint Network, n.d.)[1]. The 1.4 billion people in the richest 20th percentile of the world's population consume almost 85% of global output — 60 times more than those in the poorest 20th percentile (Munasinghe, 2009). Clearly, the consumption of the rich is not only ecologically unsustainable, but also "crowding out" the prospects of the poor.

Overconsumption puts stress on the world's resources. Current strategies for economic development and growth

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[1] The Ecological Footprint uses yields of primary products (from cropland, forest, grazing land and fisheries) to calculate the amount of biologically productive land and sea area (i.e., the biocapacity) needed to provide the resources a population consumes and to absorb its wastes, given current technology and management practices.

focus on rapid accumulation of physical, financial and human capital, while excessively depleting and degrading natural capital (including natural resources, ecosystems and biodiversity). This pattern of development and growth that is depleting the world's stock of natural wealth (often irreversibly), has not only had detrimental impacts on the well-being of current generations, but also poses great risks and challenges for the future.

The MCGs rely on a unique bottom-up approach that can successfully mobilize heterogeneous stakeholders and communities to address the issue of sustainable consumption and production, which is crucial for sustainable development. Such an initiative will complement the top-down intergovernmental process that has made only limited progress in this area, mainly because it is so politically sensitive. The MCGs will also complement the Millennium Development Goals (MDGs), and serve as one essential brick that will support any or all of the much larger schemes at the Rio+20 Earth Summit, including Agenda 21, the green economy, and the Sustainable Development Goals (United Nations, 1992; 2012; UNEP, 2011; Stakeholder Forum, 2012). The MCGs need to be pursued after Rio+20 as well.

The MCGs would aim to reduce waste and make the consumption of the rich more sustainable, evenhandedly in all countries, thereby freeing up resources to provide the basic needs of the poor. Instead of viewing the affluent as a problem, the novel concept of MCGs would persuade them to contribute to the solution, without having to reduce their quality of life — thereby offering the hope of a more manageable future, rather than an unpredictable and potentially disastrous outcome. This will require both bottom up and top down processes (see section below) to set global targets and then allocate consumption equitably among countries, sectors, cities, communities and firms.

A comprehensive path to sustainable development was laid out with great enthusiasm and hope in Agenda 21, at the 1992 Rio Earth Summit (UNDESA, 2009). After a period of inaction, the original goals of Agenda 21 (considered to be too ambitious and expensive by donor nations) were replaced by the more modest Millennium Development Goals (MDGs) — launched in 2000 to raise consumption levels of billions of poor people (UNDP, 2012). Even here, the results have been mixed (UNDESA, 2010) and the current economic crisis and emerging problems like energy, food and water shortages, as well as climate change, make it unlikely that many MDG targets will be met. Indeed, current efforts to solve a range of global issues continue to be ineffective. Problems like the economic debt crisis, poverty and social inequity, and environmental degradation are worsening, as explained in Box 1. A business-as-usual attitude will exacerbate our problems and increase the risk of global breakdown (WEF, 2012).

Ideally, the multiple global issues (mentioned earlier) need to and can be addressed within an integrated solutions framework that addresses many problems simultaneously. Piecemeal solutions have not been effective, and in some cases, solving one problem has exacerbated others; for example, the blind pursuit of economic growth at any cost has often caused massive environmental degradation and even worsened poverty. Agenda 21 was an early attempt to formulate an integrated response, the MDGs were a scaled back compromise, and 20 years later we tried again to put a comprehensive solution together at the Rio+20 Earth Summit — but with little success. The MCGs provide one building block that will contribute towards any such comprehensive framework that might emerge from Rio+20 and enable humanity to avoid the crisis and improve overall well-being.

The MCGs have roots in the original Agenda 21 of 1992 (UNDESA, 2009), which stressed the need for "changing unsustainable consumption and production", and are linked to the component on sustainable consumption and production mandated by the 2002 World Summit on Sustainable Development in Johannesburg. The MCG concept is directly based on a comprehensive and integrated trans-disciplinary framework called Sustainomics, which was also presented at the 1992 Rio Earth Summit (see Box 2) (Munasinghe, 2009; 2011). Sustainomics set out a step-by-step methodology to make development more sustainable, based on balanced consideration of economic, social and environmental concerns, using trans-disciplinary thinking and both conventional and new analytical tools. During the past two decades, the approach has been successfully applied practically, worldwide. It is therefore fitting that the MCGs are under consideration for the Rio+20 Earth Summit agenda (Eurostep, 2011). The MCGs generally supported the major objectives and themes of Rio+20: securing political commitment, assessing progress, new and emerging challenges, green economy, and institutional framework for sustainable development.

2. Initial MCGs

The long term objective of the MCGs is to achieve sustainable development, by: making consumption and production more sustainable in economic, environment and social terms; improving overall well being; reducing the burden on natural resources; freeing up resources to alleviate poverty; and ensuring intra- and inter-generational equity.

More specific goals to be achieved (say by 2050 with a global population of 9 billion) are as follows. The environmental goal would be to reduce humanity's global footprint to less than one planet earth. The social goal would be to meet the basic consumption needs of the poor and make the distribution of consumption more equitable,

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Box 1. Ineffective solutions for current global economic, social and environmental threats

The economic collapse is the most urgent and visible global problem (Figure B.1). An asset "bubble" driven by investor greed rapidly inflated the value of financial instruments well beyond the true value of the underlying economic resource base. The collapse of this bubble in 2008 caused the global recession (OECD, 2009; Taylor, 2009). "Toxic" assets (many still hidden) are larger than global GDP, and continue to undermine recovery efforts in developed economies.

The figure also shows the major social problems of poverty and inequity, which constitutes another "bubble" that continues to undermine the benefits of economic growth, and exclude billions of poor from access to productive resources and basic necessities (World Bank, 2009). In 2000, the top 20 percentile of the world's population by income, consumed 60 times more than the poorest 20 percentile (Munasinghe, 2010). Economic recession now exacerbates poverty, worsening unemployment and access to survival needs.

Finally, mankind faces major environmental problems (externality "bubble"), because myopic economic activities continue to severely damage the natural resource base on which human well-being ultimately depends (MA, 2005; Nellemann *et al*., 2008). Climate change is one major global outcome, but equally serious issues are the degradation of local water, air, and land resources. Ironically, the worst impacts of climate change will fall

on the poor, who are not responsible for the problem (IPCC, 2007). Natural resource degradation is a particularly serious problem, because human socio-economic and financial systems are ultimately supported by the fundamental bio-geo-physical resource base.

And what are our current policy priorities as we face these challenges? Governments have very quickly found about five trillion dollars for stimulus packages to revive shaky economies (G20, 2009). However, only about 100 billion dollars per year is devoted to poverty reduction, and far less to combat climate change (Munasinghe, 2010). Annual military expenditures at 1.7 trillion are over 15 times larger than development aid. Furthermore, the recession has dampened enthusiasm to address more serious long term poverty, climate and other environmental and social issues. Finally, the asset bubble far exceeds annual global GDP, while the high share of trade (>30%) in GDP underlines global connectivity that increases systemic risk.

World leaders missed a golden opportunity to simultaneously address these multiple threats, by using over five trillion dollars of stimulus funds more effectively. A larger share should have been invested in key areas of green resources and infrastructure especially renewable energy (as well as agriculture, water and transport), sustainable livelihoods and safety nets for the poor, and social development (typically education, health and safety), to stimulate the economy, increase employment, reduce poverty, and protect the environment (including the climate). Instead, funds were used to protect current expenditures and maintain wasteful subsidies. Although bank bailouts were necessary to prevent a far more disastrous financial crash, there is a growing fear that proposed banking regulatory reforms have not be sufficiently far-reaching and are merely restoring the failed status quo. The momentum for longer-term sustainable change was lost.

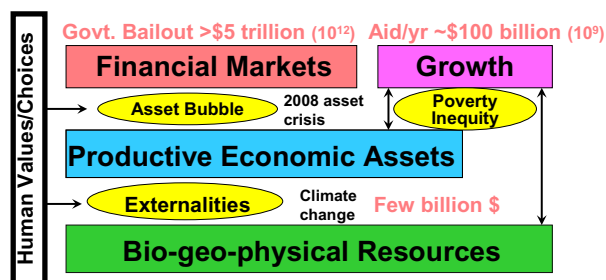**Figure B.1.** Multiple global crises and human policy priorities.

Source: Author's elaboration.

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within this global resource use envelope. The economic goal would be to promote prosperity within a sustainable economy that is economically efficient, but respects critical environmental and social sustainability constraints.

2.1. Underconsumption of the poor

The first and most important MCG addresses chronic underconsumption of the poor: Meet everyone's basic consumption needs (food, water, energy, shelter, health, education, etc.). The key target group would be the poor, already identified in existing poverty programmes.

2.2. Unsustainable consumption of the rich

MCGs applying to several well studied resources and environmental media would address unsustainable consumption of the rich, by targeting the consumption of both consumers and producers, focusing on areas such as: greenhouse gas emissions reduction; energy use (conservation, fossil fuels, renewable energy, transport, buildings, urban, etc.); water use (conservation, quality, re-use, etc.); land and biomass use (urban habitats, rural land, buildings, forests, protected areas, agro-ecological balance, biodiversity, etc.); ores, metals and industrial

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Box 2. MCGs link to sustainomics

The four core principles of sustainomics proposed at the 1992 Rio Earth Summit, apply to the MCGs:

1. The main goal is 'Making Development More Sustainable' (MDMS) using a step-by-step method that empowers people to take immediate action by identifying and eliminating the many existing unsustainable activities. The bottom-up and voluntary activities encouraged by the MCGs epitomize the MDMS approach.
2. The three dimensions of the sustainable development triangle (economic, social and environmental) must be given balanced treatment. In the MCG context this means consumers must be empowered to make sustainable choices by equipping them with relevant product information on all three aspects, and ensuring that pricing reflects real costs. Correspondingly, firms need to analyse value/supply chains from the same triple perspective (see below).
3. Thinking should transcend traditional boundaries to bring about sustainable behavioural changes in the longer term. Replacing unsustainable values like greed with sound ethical principles, especially among the young, must go hand in hand with raising awareness across every sector of society. Trans-disciplinary analysis is essential, that includes thinking on a global scale and over long time spans.
4. Full life cycle analysis is required for all products, covering the entire value/supply chain, to identify hot spots where innovation can improve production sustainability, reform pricing, and improve labelling information.

Source: Munasinghe (1992; 2010).

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minerals; construction materials and minerals; and pollution and waste (air and water effluents, solid waste, toxic waste and chemicals, etc.). Products and industries that are more resource intensive would be the main targets.

2.3. Lifestyle and behaviour

Some MCGs would aim to reduce consumption and increase human and ecological well-being by bringing about less material-intensive lifestyles, and improving livelihoods. Focus areas might include: food and agriculture (e.g., reducing food losses and waste, increasing agricultural yields, reducing land degradation and deforestation, etc.); health and obesity (e.g., diet, smoking, exercise, etc.); transportation, housing and habitats (e.g., reduced energy use, better space planning, more sustainable cities, etc.); and livelihoods, recreation and leisure (e.g.,

through reduced working hours and better working conditions). The primary target group could be the global top 15 or 20 percentile of income earners in all countries. Ownership of assets (wealth) could be an alternative criterion.

2.4. Other selected areas

Finally, the MCGs could target unsustainable consumption in selected areas such as economic-financial systems (progressive taxation, banking reform, measures of well being, etc.) and military expenditures. These are the current list of MCGs arrived at through discussions within the Millennium Consumption Goals Initiative (MCGI) — see below. Clearly, further multi-stakeholder, multilateral dialogue is required to reach global consensus on the final list of MCGs.

3. How to implement the MCGs — general ideas

To move this idea forward, the Millennium Consumption Goals Initiative (MCGI) was launched at the UN by a coalition of stakeholders from many institutions and countries (MCG, 2011). The MCGI is a broad-based initiative that enjoys worldwide support, with a role for all stakeholders, including the UN system, civil society, business, government, international financial institutions, and the academic/research community. In particular, the MCGI is engaging with civil society through all major groups. There is broad initial consensus supporting the MCG concept. The MCGI has launched a process of extensive stakeholder consultations and robust dialogue, to move this idea forward sensibly and systematically in the run up to the Rio+20 Earth Summit and beyond.

3.1. Multilevel strategy: Complementary bottom-up and top-down approaches

The MCG idea is being pursued using an inclusive, multilevel strategy, which combines two complementary paths — both top-down (mandatory) and bottom-up (voluntary), depending on specific circumstances, for example, the entity concerned (like country, city, firm, etc.), the kind of resource (energy, water, food, etc.), and the socio-economic system. Consumption and consumer sovereignty are sensitive topics worldwide, so both soft and hard approaches are needed.

The top-down process is being pursued through the UN system and governments, to establish the MCG benchmarks (not always mandatory) to which the affluent could aspire, while ensuring the basic needs of the poor. Once established, these targets would need to be supported by enabling government policies that would link with bottom-up processes (see below), which will help to achieve more sustainable consumption and production patterns, within those countries.

While progress is being made at the UN/international level, the MCGI will promote voluntary actions by rich consumers, working with many who prefer not to wait for broad multilateral agreements, and are acting now. This bottom-up approach involves pioneering individuals, communities, organizations, firms, cities, regions and nations, who are willing to set up their own specific voluntary MCGs, monitor and implement them, and report progress.

In particular, MCGs will empower the middle tier of decision-makers (e.g., mayors of cities, leaders of community organizations, and CEOs of companies), providing a readily implementable framework to act more decisively and quickly. They are more effectively in touch with ordinary people and form the critical bridge between the general public and national/global leaders. Already, many large cities in Europe and elsewhere have declared voluntary targets to reduce consumption of resources like energy and water and carbon emissions, usually by 20% or more within the next 5 to 10 years. An example of this is the Climate Alliance, a group of over 1,600 European cities and communities, which has formally endorsed the MCGs (Climate Alliance, 2012). As larger urban population groupings increasingly accept voluntary targets for consumption of critical resources, it will become easier for national leaders to also commit their nations to commensurate consumption targets.

Progressive business leaders have also pledged to overcome barriers faced by consumers, including the availability and affordability of sustainable products, lack of information and product labelling, and a sense of powerlessness. Furthermore, firms themselves consume large amounts of natural resources. Major reductions in resource use per unit of output are possible (UNEP, 2011; McKinsey Quarterly, 2012). Several giant multinational companies and other firms have declared energy and water use and carbon emissions reduction goals on their web sites, over time periods from 2020 to 2050 (Novozymes, 2010; Tesco, 2011). A recent global survey of over 3,000 company executives found that many more firms are incorporating sustainability principles into their business practice (McKinsey Quarterly, 2011). In particular, among the firms interviewed, reductions in energy use, waste, emissions and water use were being targeted by 63, 61, 43 and 38%, respectively. Improving operational efficiency and reducing costs was the main motivating force, followed by company reputation. Resource intensive industries like energy, extractive and transport were the most proactive. This is a welcome contrast to the continuing reluctance of world leaders to boldly address pressing sustainable development issues. According to the World Business Council for Sustainable Development (WBCSD), their 200 member-companies worldwide strongly believe resource efficiency and demand-side management are the key to reach sustainability by 2050, when 9 billion people will have to share the resources of one planet

(Vision 2050 Project, 2012). In summary, voluntary MCGs could be pursued by the willing, at whatever level they choose, and focusing on the goals they prefer. A sensible commitment is all that is required to make a start.

3.2. Implementation issues

The implementation of MCGs will depend critically on the progress of science in understanding the consequences of a business-as-usual approach and convincing concerned stakeholders of potentially dangerous outcomes. Many other factors will play important roles, including the interplay of institutions and organizations, policy instruments, financing mechanisms, rules, procedures, social norms and values, and regulatory processes governing global environmental and social protection. Although the traditional top-down approach of the UN and governments have achieved some success during the last few decades in terms of new treaties, funding and institutional arrangements, the implementation of policy has not been effective enough to address social issues like poverty and to slow down environmental degradation. One of the main reasons for slow progress has been the lack of innovative approaches to complement or replace traditional methods and tools. The MCGs offer a potentially different and attractive pathway towards sustainable consumption and production.

The inadequacy of public policies and laws has resulted in the growing popularity of soft measures such as certification schemes, eco labels, and other initiatives based on voluntary participation of stakeholders. Nevertheless, soft methods cannot single-handedly address ongoing environmental and social decline due to their inherit limitations — such schemes are mainly based on monetary incentives to encourage environmental and socially responsibility. It is questionable whether there is sufficient ethical and moral force in society to discourage unsustainable practices in the absence of financial incentives. MCGs therefore could gain traction and authority through a combination of national/transnational rules and regulations, and soft governance system that encourage participation through stakeholder (individual, company, city, community, government) conscience. Needless to mention, the progress of MCGs depends on how well the scientific community can communicate with stakeholders about required goals, indicators, tools and methods, and reporting of success.

Enabling actions would be necessary by authorities at national and international levels, taking full account of regional and sub-regional conditions to support a locally driven and country-specific approach. Specific activities to implement the MCGs would include various sectoral interventions (e.g., agriculture, industry, energy, etc.), involving a range of actors (e.g., farmers, companies, households, NGOs, academics etc.), from local to global

levels (individuals, communities, nations, etc.). The principle of subsidiarity is important to delegate authority, accountability and resources to the most appropriate level. In summary, the MCG concept is both fractal and subsidiary, because the basic idea remains unchanged at finer levels of detail, and effective implementation is possible from the global/government to local/individual levels as described below.

MCGs have the potential for quicker results, by energizing communities (including high-consumption households and businesses) to change their behaviour more quickly, without relying only on central government policies and long-term investments. Since the rich account for over 80% of consumption and pollution, even modest shifts in their consumption can effectively reduce the environmental burden and free up resources to raise poorer peoples' living standards. Research indicates that there is a great deal of overconsumption and waste here, so initial cuts can be made with little pain and even an increase in well being — for example, using energy and water saving appliances and processes, washing laundry at lower temperatures, eating less meat, planting trees or using fuel efficient cars (Visions for Change, 2011). While doing so, the affluent could also maintain or improve their quality of life (e.g., through healthier lifestyles and diets), starting with simple measures. There is significant scope for savings in food, given that food waste within homes is around 30% in Western Europe and closer to 50% in North America (UNHRC, 2011). Incremental changes in the short run will help to build the momentum to achieve more substantial long run improvements in consumption behaviour, as explained below.

4. How MCGs will help to achieve a long term vision

While quick improvements are possible by using existing knowledge and methods, much bigger gains need to be made to realize a sustainable future, requiring major changes in consumer and producer values and behaviour patterns. For example, the advertising and psychological ploys that currently encourage greater consumption may be "tweaked" to promote more sustainable consumption at all levels of society. More public education (especially for the young), is essential to ensure the widest possible support for the measures. A sustainability-oriented culture would emerge as social trends evolve over time. An encouraging contemporary example is the major change in social attitudes towards smoking. However, such shifts may take decades to bring about — time which humanity may not have. In summary, we have the choice of making a managed change to sustainability or have those changes forced on us by catastrophic events triggered by our own (unsustainable) consumption and production.
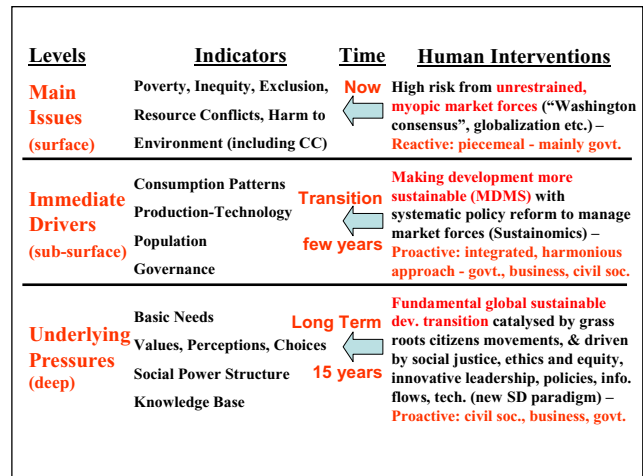
Figure 1. Millennium consumption goals help realize a future vision. *Source*: Munasinghe (2010).

Adopting the MCGs would help us develop and apply the kinds of information and measures needed to shift values, public opinion and behaviour in the direction of sustainable consumption and production in the long run. Such information and measures should be reliable, understandable, convincing and meaningful, speak to the needs and interests of the particular audiences they are targeting, and be delivered through trusted channels by credible knowledge brokers. The media have a key role to play here. For example, how do we improve the measurement and reporting of well-being, since current measures like gross domestic product (GDP) imply that more material consumption is better? We need to develop and popularize measures that encourage sustainable development (e.g., include environmental and social externality costs). A recent expert report recommended governments to develop measures of well being that go beyond traditional GDP (Stiglitz *et al*., n.d.). In 2011, the UN General Assembly adopted a resolution proposed by the Government of Bhutan to pursue a more holistic approach to development built on the concept of "Gross National Happiness" or GNH that could improve happiness and well-being around the globe (Royal Government of Bhutan, 2012). The GNH initiative was discussed at a high level UN conference of experts in April 2012. The MCG proposal would help to operationalize such initiatives.

MCGs are part of the longer term vision summarized in Figure 1. In the top row, we analyse the current situation, where powerful phenomena like globalization and unconstrained market forces based on the "Washington Consensus" have led to current interlinked problems like economic collapse, poverty, inequity, hunger, disease, resource scarcities and conflict, poor governance and environmental harm. Government leaders have not been successful in addressing these surface level issues, because their actions have been myopic, reactive, uncoordinated and
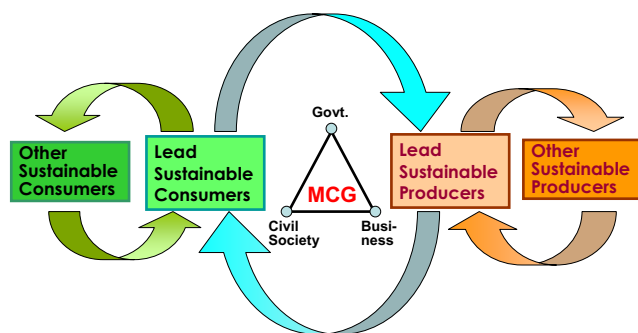
Figure 2. MCGs will help to bring sustainable consumers and producers together to create a "virtuous circle" and spread the sustainability culture throughout society.
Source: Author's elaboration.

piecemeal. Therefore, present trends pose significant risks that could lead to a breakdown in global society.

The second row of Figure 1 depicts how a transitional step forward is immediately possible by working on the key drivers of change, including consumption patterns, production-technology, governance and population. These four drivers shape the main surface issues in the top row (like economic collapse, poverty, etc.). By focusing on making drivers like consumption and production more sustainable, the sustainomics framework and MCGs will help to address a broad range of surface issues in an integrated manner, controlling global trends and managing market forces.

In the third row of the figure, our children and grandchildren could get the chance to pursue their long term goal of a truly global sustainable development paradigm. However, this will be possible, only if the second (transition) row is successfully implemented now. In future decades, humanity needs to learn more about deep underlying pressures linked to basic needs, social power structure, ethical values, perceptions, choices, and knowledge base. Fundamental changes are necessary, driven by social justice and equity concerns, through inspired leadership, a networked, multi-stakeholder, multi-level global citizens' movement, sustainable business models, responsive governance structures, improved policy tools, advanced technologies and better communications (including the Internet).

Figure 2 shows how the MCGs would help to achieve this long term vision, starting with a small initial group of sustainable consumers and producers who support each other. Over a period of time, enabling government policies and legislation, with the widening support of civil society and business, would help to spread this sustainable behaviour and create a society-wide sustainable culture. In summary, the MCGs would enable business and civil society to take the initiative to proactively push governments towards the ultimate goal of sustainable development. This networking approach would avoid over-

reliance on the alternative extremes of unrestricted markets and hierarchical (top-down) government control, both of which have not worked well.

We could draw on the past experience of international programmes, especially the MDGs, to develop more effective governance mechanism to measure, report, monitor and implement the MCGs (see Section 5 below). One important challenge is to find the right balance between bottom up (voluntary actions and behaviour change encouraged by social pressures) and top down (government policies and mandatory measures to change consumption habits and production processes) approaches. Better collaboration is also needed among key stakeholders, including consumers, producers and government. Improved coordination with existing initiatives is important. For example, the Climate Alliance is pursuing "twinning" projects which link up the achievement of a MCG target in a rich community with the implementation of an MDG to raise consumption along more sustainable paths in a poor community (Climate Alliance, 2012).

5. Progress so far and challenges

MCGs aim for a level of global consumption that limits the ecological footprint to one planet earth by 2050. This will require setting global targets for a mix of major consumption categories identified in the MCGs, which may be done by using existing methods and data (Global Footprint Network, n.d.). The next step of allocating such global consumption targets among different countries will require further international negotiations. The current economic system already makes such allocations, but very unsustainably, inefficiently and inequitably. We need to think beyond Rio+20 and develop a long term action plan, using civil society and business groups to continue pressing governments to adopt strategies for sustainable development.

5.1. Ecological footprint and resource efficiency

Eventually, the incremental and often voluntary changes at individual, community, city and corporate levels need to be incorporated into national level targets that add up to global totals, which will ensure planetary sustainability. Recent work provides sufficient data to identify preliminary targets for sustainable use of key resources and environmental media at the global level (International Resource Panel, 2011). Further thinking is required to scale down global targets and build in sufficient flexibility into key MCGs, so that they can be adapted and harmonized to fairly reflect characteristics at lower implementation levels (e.g., country, province, city, community, organization, family, individual).

Generally, the national ecological footprint is correlated with per capita income, with some exceptions (Global

Footprint Network, n.d.). One measure of a country's ecological sustainability is whether the ratio of the national ecological footprint (actual resource use) to nationally available biocapacity (sustainable level of resource use) is less than unity. For example, in 2008, this ratio was about 1.8 for high income countries, 1.1 for middle income countries, and 1 for low income countries. At the upper end, high income countries like Singapore, Kuwait, Israel and UAE had ratios of 180, 23, 14 and 13 respectively. In contrast, Norway and Sweden (which also have high incomes per capita), have ratios of 0.9 and 0.6, respectively. Many rich countries essentially impose their footprint globally, and "suck up" resources from abroad. It highlights imbalances in trade, where the consumption of the affluent is often supported by production in poor countries using underpriced natural resources and labour that depletes dwindling domestic resources even further.

While the ecological footprint focuses on biological resources, a complementary way of looking at the consumption issue is to study material resource use. A recent UNEP study (International Resource Panel, 2011) compared income and metabolic rates of countries, that is, the per capita aggregate consumption of biomass, fossil energy, ores and industrial minerals, and construction minerals. Countries like Norway and Sweden have achieved relatively high GDP per capita while consuming few resources per capita, that is, low resource use per unit of GDP. Their intensity of material resource use per unit of GDP is one third to one sixth the comparable value for high income but highly resource intensive nations like Australia, Qatar and UAE. Clearly, global consumption and production patterns (within individual country constraints) would become more sustainable, if people in the highly material resource intensive countries could learn from those in the less resource intensive countries, how to reduce their resource use per unit of GDP.

While relative improvements within countries would be welcome, ultimately, the aggregate resource use in all countries would have to fall within the overall envelope of global resource availability, and the long term global ecological footprint of humanity would have to become unity or less. The MCGs would facilitate such a shift by establishing motivating targets and increasing citizen and corporate awareness about resource saving methods.

One encouraging trend is that resource efficiency has become a key priority for decision-makers in Europe, although there has been some variation in how 'resource efficiency' is defined by each country (EEA, 2011). Broad definitions have been used to include diverse raw materials, energy sources, biomass, waste, land and soil, etc. Most countries already have developed national sustainable development strategies, national environmental strategies and action plans, followed by SCP action plans; raw materials plans and strategies; strategies and plans related to climate change; and economic reform programmes. Energy

and waste management are already pressing issues for most European cities.

MCGs focus on the rich, because research indicates that there is a great deal of overconsumption and waste here, so initial cuts can be made with little pain and even an increase in well being — for example, at the individual level, healthier diets and lifestyles will not only save resources but also improve the quality of life. For many cities and communities, reducing resource use in areas like energy and water can be done cost effectively, for example, 10-15% resource use reductions can be achieved quickly together with net economic savings. Often, these win-win outcomes (i.e., saving both resources and money) have not been pursued because waste and overuse are encouraged both globally and locally, by distorted policies (like subsidized prices for energy, water and agriculture) as well as market failures (like externalities, where hidden pollution costs are imposed on innocent parties and not incurred by the polluters).

Ensuring that markets set resource prices that reflect their true economic values and getting polluters to actually pay for the damages caused by their actions, are among the first measures that will help eliminate unsustainable consumption. Government laws and regulations are crucial, but sustainability-conscious businesses and civil society need to cooperate, rather than exploiting loopholes. Some communities and cities have achieved success in this respect. In summary, an immediate start is possible by implementing many existing policy tools (including cost-reflecting prices, accurate product labeling and information, public education, environmental laws, the polluter-pays principle, etc.), and by adopting best practice methods and processes — especially recent improvements in resource use efficiency among producers (firms). At the same time, such initial gains must be followed up with effective long term measures for sustainable development, requiring the cooperation of all stakeholders — especially civil society and business working with governments.

Pricing and other market based policies generally lead to more efficient allocation of scarce resources devoted to consumption and production. But they will not ensure sustainability unless economic activity is subjected to sustainability constraints based on environmental and social criteria. That is why we need the MCGs which place the emphasis directly on sustainable consumption (and production). We note that just increasing the efficiency of production (e.g., reducing the resource intensity per unit of industrial output) is not sufficient to ensure sustainability, since the growth of consumer demand will eventually overwhelm any gains in the efficiency of production and lead to resource exhaustion. This effect was observed by the English economist Stanley Jevons in 1865, and is called "Jevons' paradox", that is, any technological advance that increases the efficiency of resource use tends to eventually result in an increase in the consumption of that resource (Science Direct, 2009).

5.2. Lessons learned from climate change and the Millennium Development Goals

The problems of setting and implementing mandatory national targets are illustrated by studying the issue of greenhouse gas emissions which cause global warming. The most widely known example of a global consumption target is the 1997 Kyoto Protocol (KP) where the Annex 1 (developed) countries agreed to reduce their collective greenhouse gas emissions by 5.2% during 2008-2012, relative to their 1990 emissions baseline. However, there was no enforcement mechanism. Ultimately, the United States refused to ratify their target of 7%, and even the EU (8%), Japan (6%) and many others who signed the KP have not met their goals. Recent international meetings on climate change have failed to revive the KP or develop any binding targets. Instead, most countries appear to be more comfortable with pledges to meet voluntary targets (which do not add up to the total global emission reduction targets required by science), while discussions to determine how the emissions mitigation burden should be shared among nations drags on. Negotiations are based on past and existing emission levels, resource endowment and availability, economic capability, equity and other country-specific criteria.

Among the more positive developments, Australia recently passed a carbon tax aimed at achieving their voluntary GHG emissions reduction target of 5% by 2020 (relative to their 2000 emissions baseline). New Zealand has also passed a similar carbon tax. Meanwhile, to reduce national energy consumption and the growth rate of GHG emissions, China set a voluntary target of improving energy efficiency by 20% between 2006 and 2011. The EU offered to unconditionally reduce GHG emissions 20% by 2020, and even increase the cut to 30% if other countries also make commensurate pledges.

Lessons learned from the MDGs can provide insights to meet foreseeable challenges for MCGs, as follows (Bond Development and Environmental Group, 2012).

1. Ownership and leadership: There is perception that MDG indicators and targets are arbitrary, because they were not subject to a process of extensive consultation with a wide range of stakeholders.
2. Scope and integration: The MDGs are also criticized for not addressing development in a comprehensive manner. There is sense that they have failed to integrate human rights, equity, environmental sustainability, peace, and conflict resolution adequately.
3. Building technical capacities: It has emerged that there is a lack of capacity and/or resources at the national level to collect data for some of the indicators and therefore, monitoring progress has been a major challenge throughout the MDG process.
4. Limited scope with regard to governance: Many developing countries have found that the MDG
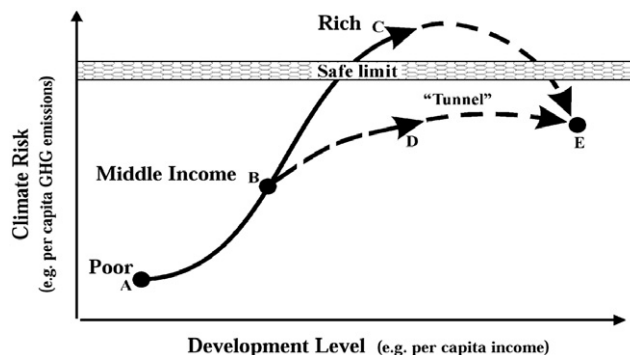

Figure 3. Different paths for countries in various stages of development.
Source: Munasinghe (2002).

framework does not allow them to fully address governance-related issues such as the development of robust government institutions, social welfare systems and an enabling environment for civil society. This has meant that many developing countries have been particularly vulnerable to emerging global development challenges such as climate change, food crises, rapid increasing urbanization and unsustainable resource use.
5. Quality and effectiveness: The results-management agenda of MDGs has been criticized for being too focused on outputs and quantitative indicators as opposed to quality and the overall impact of interventions on people's lives — especially regarding the poorest and most marginalized groups.
6. Nature of financial mechanism: The MDGs have encouraged a donor-centric approach that has created aid dependence and an imbalanced partnership between donors and aid recipients.

6. The MCGs pose different challenges to rich, poor and emerging countries

In Figure 3, the specific example of carbon emissions is again used to illustrate the different challenges facing developed and developing countries. On this stylized curve of environmental risk against a country's level of development, poor nations are at point A (low GHG emissions and low GNP per capita), rich nations are at point C (high GHG emissions and high GNP per capita), and intermediate countries are at point B.

The sustainable development path to be followed by any country depends on its position along this curve. Industrial countries (already exceeding safe limits) should mitigate and follow the future growth path CE, by restructuring their consumption and production patterns to delink carbon emissions and economic growth, thereby making their development path more sustainable. Middle income countries could adopt innovative policies to "tunnel"

through (along BDE, below the safe limit), by learning from past experiences of the industrialized world. Poorer developing countries should be encouraged (with technical and financial assistance) to increase their consumption and production more sustainably by following a growth path that is less carbon-intensive. Finally, the poorest countries and poorest groups must be provided an adaptation safety net, to reduce vulnerability to climate change impacts.

Clearly, the same generic arguments may be applied to all forms of natural resource use. The MCGs use similar ethical ideas based on a fair and just distribution of resources, to ensure that the basic consumption needs of the poor are met while limiting excessive consumption of the rich within the bounds of sustainability. We stress that the MCG approach is more even-handed across countries, because it applies equally to rich and poor wherever they may live, without targeting specific countries. The end result will be a global sustainable development path that does not exceed the carrying capacity of the planet, while providing everyone a decent quality of life.

7. Concluding ideas

Ordinary citizens, businesses and mid-level policymakers are often ahead of national political leaders in terms of willingness to address sustainable development issues, including climate change. Given the many existing best practice examples, we do not need to wait for new technologies, laws or infrastructure. Consumers can be encouraged to behave more sustainably without lowering their quality of life, starting with Millennium Consumption Goals for the rich that parallel the Millennium Development Goals for the poor. The MCGs are one essential brick that will support any or all of the much larger constructs proposed, including Agenda 21, the green economy, and the Sustainable Development Goals.

All human beings are stakeholders, when it comes to sustainable development and climate change. Consumers and producers can and must strive to make development more sustainable — economically, socially and environmentally. By acting together now, we will make the planet a better and safer place for our children and grandchildren.

References

Bond Development and Environmental Group, 2012. Sustainable development goals: Building the foundations for an inclusive process. Available at http://www.bond.org.uk/pages/development-and-environment-group.html (accessed 5 July 2012).

Climate Alliance, 2012. Available at http://www.climatealliance.org/ (accessed 5 July 2012).

EEA, 2011. "Resource efficiency in Europe: Policies and approaches in 31 EEA member and cooperating countries", EEA Report No 5/2011, EEA, Copenhagen.

Eurostep, 2011. Belgium. Available at http://www.eurostep.org/wcm/eurostep-weekly/1308-rich-countries-called-upon-to-take-responsibility-for-global-environmental-damage.html (accessed 5 July 2012).

G20, 2009. The global plan for recovery and reform. Final Communique, G20 Summit, London. Available at http://www.londonsummit.gov.uk/resources/en/PDF/final-communique (accessed 5 July 2012).

Global Footprint Network, n.d. Available at http://www.footprintnetwork.org/en/index.php/GFN/ (accessed 5 July 2012).

Intergovernmental Panel on Climate Change (IPCC), 2007. *Synthesis Report*. Cambridge: Cambridge University Press.

International Resource Panel, 2011. *Decoupling Natural Resource Use and Environmental Impacts from Economic Growth*, UNEP, Nairobi, Kenya, Available at http://www.unep.org/resourcepanel/Publications/Decoupling/tabid/56048/Default.aspx (accessed 5 July 2012).

MA, 2005. *Ecosystems and Human Well-being: Synthesis*, Island Press, Washington DC.

Mckinsey Quarterly, 2011. The business of sustainability. Available at www.mckinseyquarterly.com/The_business_of_sustainability_McKinsey_Global_Survey_results_2867 (accessed 5 July 2012).

McKinsey Quarterly, 2012. Mobilizing for a resource revolution. Available at www.mckinseyquarterly.com/Mobilizing_for_a_resource_revolution_2908 (accessed 5 July 2012).

Millennium Consumption Goals (MCG), 2011. Available at http://www.millenniumconsumptiongoals.org/ (accessed 5 July 2012).

Munasinghe, M. 1992. Environmental economics and sustainable development. Paper presented at the UN Earth Summit, Rio de Janeiro, Environment Paper No. 3, World Bank, Washington, D.C.

Munasinghe, M. 2002. The sustainomics trans-disciplinary meta-framework for making development more sustainable. *International Journal of Sustainable Development*, 5(1–2): 125–182.

Munasinghe, M. 2009. *Sustainable Development in Practice: Sustainomics Framework and Applications*. Cambridge University Press: London.

Munasinghe, M. 2010. *Making Development More Sustainable: Sustainomics Framework and Practical Applications*. Second Edition, MIND Press, Munasinghe Institute for Development, Colombo. Available at http://www.mohanmunasinghe.com/sustainomics.cfm#2 (accessed 5 July 2012).

Munasinghe, M. 2011. Available at http://www.mohanmunasinghe.com/sustainomics.cfm (accessed 5 July 2012).

Nellemann, C., MacDevette, M., Manders, T., Eickhout, B., Svihus, B., Prins, A. G., Kaltenborn, B. P. (Eds.), 2008. *The environmental food crisis — The environment's role in averting future food crises*. A UNEP rapid response assessment. United Nations Environment Programme, GRID-Arendal, Available at www.grida.no (accessed 5 July 2012).

Novozymes, 2010. Sustainability. Available at http://www.novozymes.com/en/sustainability/sustainability-priorities/water/Pages/default.aspx (accessed 5 July 2012).

OECD, 2009. *The Road to Recovery Update on the OECD's Strategic Response to the Financial and Economic Crisis*. OECD, Paris, Available at http://www.oecd.org/dataoecd/40/14/42528786.pdf (accessed 5 July 2012).

Royal Government of Bhutan, 2012. Meeting on "happiness and well being": Defining a new economic paradigm. Available at http://www.2apr.gov.bt/ (accessed 5 July 2012).

Science Direct, 2009. Energy policy. Available at http://www.sciencedirect.com/science/article/pii/S0301421508007428 (accessed 5 July 2012).

Stakeholder Forum, 2012. *Sustainable Development Goals*. London, UK.

Stiglitz, J.E., Sen, A. Fitoussi, J.-P., n.d. Measurement of economic performance and social progress. Paris, France, Available at http://www.stiglitz-sen-fitoussi.fr/documents/rapport_anglais.pdf (accessed 5 July 2012).

Taylor, J. B. 2009. The financial crisis and the policy responses: An empirical analysis of what went wrong. Rock Center for Corporate Governance Working Paper No. 30; NBER Working Paper No.

w14631. Available at http://ssrn.com/abstract=1341170 (accessed 5 July 2012).

TESCO, CSR Report 2011. Available at http://www.tescoplc.com/media/60113/tesco_cr_report_2011_final.pdf (accessed 5 July 2012).

UNDESA, 2009. Agenda 21.Available at http://www.un.org/esa/dsd/agenda21/ (accessed 5 July 2012).

UNDESA, 2010. The Millennium Development Goals Report 2010, Available at http://www.un.org/millenniumgoals/pdf/MDG%20Report%202010%20En%20r15%20-low%20res%2020100615%20-.pdf (accessed 5 July 2012).

UNDP, 2012. The Millennium Development Goals, Available at http://www.beta.undp.org/undp/en/home/mdgoverview.html (accessed 5 July 2012).

UNEP, 2011. *Towards a Green Economy*, Nairobi, Kenya, Available at http://www.unep.org/greeneconomy/Portals/88/documents/ger/GER_synthesis_en.pdf (accessed 5 July 2012).

UNHRC, 2011. HR bodies. Available at http://www.ohchr.org/Documents/HRBodies/HRCouncil/RegularSession/Session19/A-HRC-19-59_en.pdf (accessed 5 July 2012).

United Nations, 1992. Agenda 21, New York, USA, Available at http://www.un.org/esa/dsd/agenda21/ (accessed 5 July 2012).

United Nations, 2012. Rio+20, 2012. Available at http://www.uncsd2012.org/rio20/compdocument.html (accessed 5 July 2012).

Vision 2050 Project, 2012. The must haves for sustainable 2050. Report 2021-1 MAHB Lab.

Visions for Change, 2011. UNEP, Available at http://www.unep.fr/shared/publications/pdf/DTIx1321xPA-VisionsForChange%20report.pdf (accessed 5 July 2012).

WEF, 2012. *Global Risks 2012*, Global Economic Forum, Davos, Switzerland, Available at http://www.weforum.org/reports/global-risks-2012-seventh-edition (accessed 5 July 2012).

World Bank, 2009. *World Development Report 2009: Reshaping Economic Geography*. World Bank, Washington DC.