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Convocation Address - III

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Multiple global problems need integrated solutions: applying the sustainomics framework

The world is facing multiple economic, social, and environmental threats, best characterised by a "bubble" metaphor based on false expectations, where a few enjoy immediate gains while the vast unsuspecting majority will pay huge "hidden" costs in the future. These threats can interact catastrophically, unless they are addressed urgently and in an integrated fashion, by applying the sustainomics framework for making development more sustainable. Piecemeal responses will be ineffective, since the problems are interlinked and feed on one another.

Economic, Social and Environmental Bubbles

The most urgent and visible problem is the economic collapse. Figure 1 shows how a greed-driven asset bubble 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. It is estimated to contain about $100 trillion of "toxic" assets (twice the annual global GDP).

Meanwhile, a social bubble based on poverty and inequity continues to undermine the benefits of rapid economic growth of recent decades, excluding billions of poor from access to productive resources and basic necessities, like food, safe water and sanitation, energy, health care, shelter, and a clean environment. In 2000, the top 20 percentile of the world's population by income, consumed 60 times more than the poorest 20 percentile. Poverty is now exacerbated by the economic recession, which is worsening unemployment and access to survival needs. This bubble cannot be ignored indefinitely, without grave consequences for humanity.

Finally, mankind faces the bubble of environmental externalities, whereby myopic economic activities continue to severely damage the

natural resource base on which human well being ultimately depends. Beyond degradation of local air, land and water resources, climate change is the ultimate global manifestation of this threat, where carbon dioxide emissions which have driven growth since the industrial revolution will result in catastrophic impacts that will undermine progress for centuries to come. Ironically, the worst impacts of climate change will fall on the poor, who are not responsible for the problem.

And what are our current priorities as we face these challenges? Governments have very quickly found over four trillion dollars for stimulus packages to bailout rich bankers and revive shaky economies. However, only about 100 billion dollars per year is devoted to help billions of poor people, and far less to combat climate change. Furthermore, the recession is further dampening enthusiasm to address more serious long term poverty and climate issues.

The immediate way forward

The ongoing economic crisis has provided opportunities for world leaders to move in new directions, as they implement unprecedented stimulus packages and seek to coordinate policies. Prompt action including appropriate investments, social safety nets, and price policies, can yield multiple dividends.

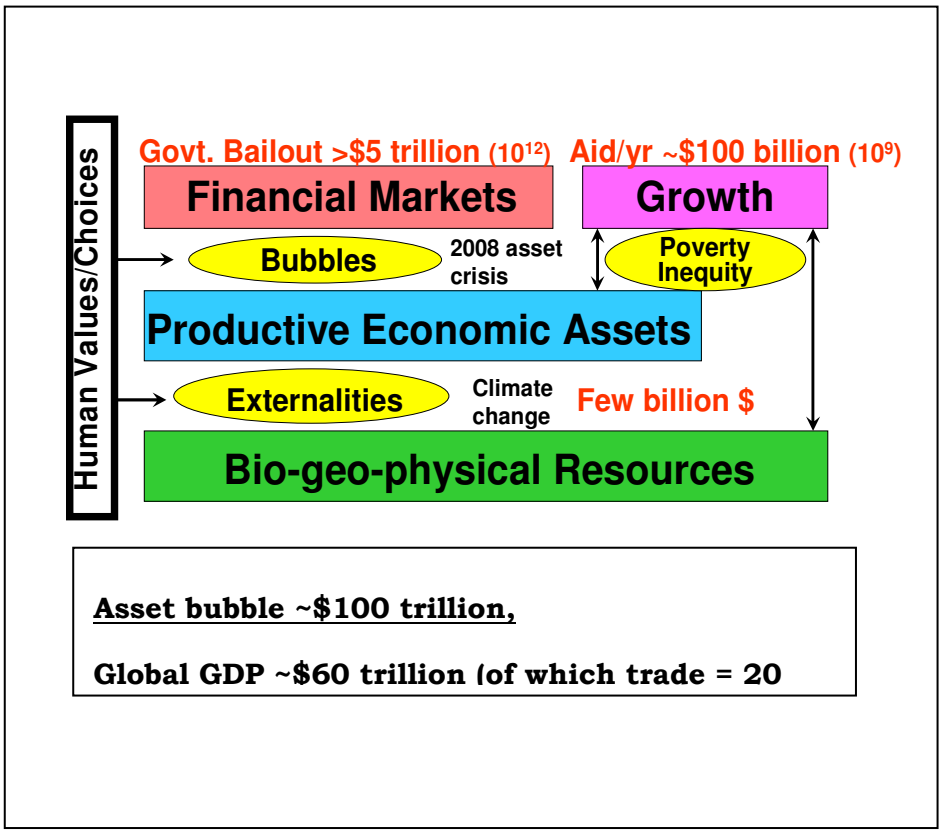

Figure 1 - Multiple global crisis and human priorities.

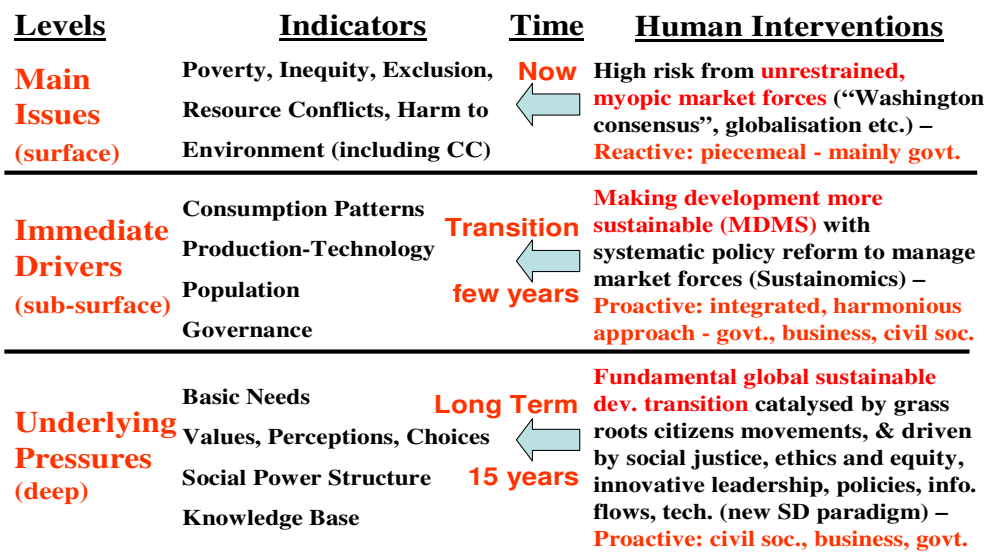

Figure 2 – A vision for the future.

First, leaders need to invest a bigger share of the fiscal packages in key areas of green infrastructure (like energy, water, transport and agriculture) and social development (typically education and health), which will stimulate the economy, increase employment, and protect the environment. They must resist pressures to use the increased spending merely to protect current expenditures (especially wasteful subsidies and bailouts).

Investments in green and carbon saving technologies will boost the development of renewable energy. Gains in energy efficiency are possible in major sectors like energy, industry, transport, construction and agriculture. Finally, reversing global deforestation could boost sustainable livelihoods while absorbing atmospheric carbon and protecting the local environment.

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Second, the developing world is too big to be allowed to fail – it contributes over 47 per cent to the $55 in world economy, produces more than half OECD imports, and contains three billion people living on less than $2.50 a day. Donors need to expand poverty reduction efforts, because hundreds of millions more people are likely to slip into poverty. Financial packages need to focus on investments with a high potential for job creation, sustainable livelihoods and access to assets for the poor.

Sound social safety nets can protect the vulnerable. Mexico, Brazil and other countries have shown how conditional cash transfer programs could provide income to the poorest families, while encouraging them to invest in the health and education of children. Devoting about one per cent of GDP for such efforts can make a huge difference.

Third, pricing policies need to be reformed. Energy subsidies – a quarter trillion dollars in 2005 worldwide – represent energy wastage, a fiscal drain and harm to nature. Although they are aimed at the poor, the bulk of the gains do not reach their target. These subsidies need to be phased out, while targeted safety nets protect the basic needs of the poor (see below). Other areas for price reforms include water, fertilizer and chemicals, where subsidies amount to several percentage points of GDP in many countries.

Improvements in global governance should include market regulatory reforms, giving more weight to the developing world within the IMF/World Bank, making the UN system more responsive, and shifting emphasis from G7 to G20. It may be useful for the G20 to create two advisory bodies – B20 and C20, consisting respectively of business and civil society leaders nominated by the G20.

A long term vision

Based on the foregoing, a longer term vision for the future is summarised in Figure 2. The top row recognises that our current focus is on surface level issues like poverty, inequity, exclusion, resource scarcities and conflict, mis-governance and environmental harm. These problems are driven by powerful forces including globalisation and unconstrained market forces, based on the “Washington Consensus”. Present trends could lead to a breakdown in global society, due to the ineffectiveness of governments seeking to cope with multiple, interlinked crises, using myopic, reactive and uncoordinated responses. A recent example is the futile attempt to alleviate oil

scarcities by promoting corn-ethanol, which meanwhile worsened food security arising from a drought-driven worldwide grain shortage.

The second row shows that a transitional step forward is possible today, by influencing key common drivers of change, including consumption patterns, population, technology and governance. This will help address a broad range of issues in an integrated manner, shaping global trends and managing market forces. The immediate way forward, described earlier, is a key part of this transition.

More broadly, using existing experience and tools that make development more sustainable today, business and civil society could help governments move proactively towards the ultimate goal of sustainable development. The emphasis is on early action, to overcome the huge inertia of "supertanker earth", and begin steering it away from its risky current path towards safer waters.

The third row follows on from the successful implementation of the second (transition) row. Here, our children and grandchildren might pursue their long term goal of a truly global sustainable development paradigm. They would need to work on deep underlying pressures linked to basic needs, social power structure, values, 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, responsive governance structure, improved policy tools, advanced technologies and better communications (including the internet).

Sustainomics

To facilitate this transition, a comprehensive practical framework called "sustainomics" was proposed by author at the 1992 Rio Earth Summit, which has been widely applied since then (Munasinghe 1992, 2009). It involves three basic principles:

- First, making development more sustainable (MDMS) becomes the main goal, while sustainable development is defined as a process (rather than an end point) for improving the range of opportunities that will enable individual human beings and communities to achieve their aspirations and full potential over a sustained period of time, while maintaining the resilience of economic, social and environmental systems. MDMS is a step-

by-step method that is more practical and permits us to address urgent priorities without delay, because many unsustainable activities are easier to recognise and eliminate (like conserving energy and reducing pollution).

- Second, the three elements of the sustainable development triangle need to be given balanced treatment. These elements include the social (focusing on equity, inclusion, empowerment and values), the economic (dealing with growth, efficiency and stability), and the environmental (concerned with natural resource degradation and pollution).

- Third, the thinking should transcend traditional boundaries (involving disciplines, space, time, and stakeholders). Trans-disciplinary analysis is essential, since issues and solutions cut across conventional academic disciplines. Problems like climate change also span the whole planet, play out over centuries, and concern every human being on earth.

The sustainomics framework also provides policy makers with a variety of practical tools. They help to not only identify and implement the most desirable “winwin” climate policies that simultaneously yield economically, environmentally and socially sustainable paths, but also resolve trade-offs among conflicting goals.

At the national level, tools include macro- and sectoral modeling, environmentally adjusted national income.

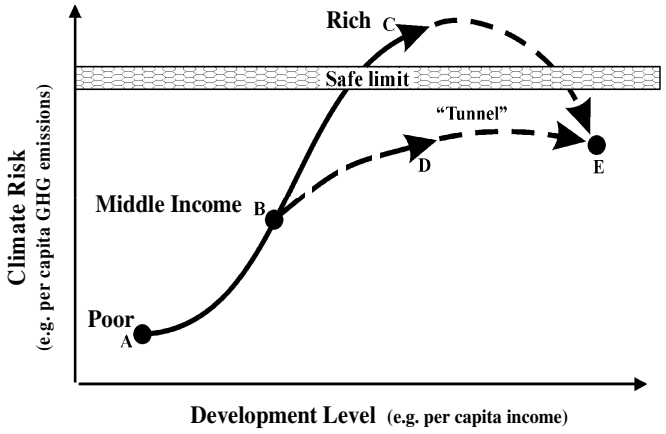

Figure 3 - Reconciling development aspirations with climate change responses, poverty analysis, and the Action Impact Matrix (AIM – described below).

At the project level, other useful methods are available for sustainable development analysis – like cost-benefit analysis, multicriteria analysis, and environmental and social assessment. At all levels, the choice of appropriate sustainable development indicators is also vital. The range of policy instruments includes pricing, taxes and charges, regulations and standards, quantity controls, tradable permits, financial incentives, voluntary agreements, information dissemination, and research and development. Ethical, moral and human rights considerations also play a key role.

Global level application – climate change responses

Figure 3 shows how the sustainomics approach could be applied to reconcile long-term development aspirations and climate change responses. On this stylised curve of environmental risk against a country's development level, poor nations are at point A (low GHG emissions and low GNP per capita), rich nations are at point C, and intermediate countries are at point B.

The following elements are essential for a workable global compact:

- Industrial countries (already exceeding safe limits) should mitigate and follow the future growth path CE, by restructuring their development patterns to make both production and consumption more sustainable and delink carbon emissions from economic growth;

- The poorest countries must be provided an adaptation safety net, to reduce vulnerability to climate change impacts;

- Middle income countries could adopt innovative policies to "tunnel" through (along BDE – below the safe limit), by learning from past experiences of the industrialised world;

- Developing countries should receive technical and financial assistance, to simultaneously continue to develop (and grow) more sustainably, by following a less carbon-intensive growth path that also reduces climate vulnerability.

Country level applications

A recent example of macro-analysis shows the complex trade-offs involving economic, environmental and social goals, while using complementary measures to resolve problems. In West Africa, growth inducing macropolicies (including structural adjustment) interacted with imperfections in the economy to increase GHG emissions and worsen climate impact vulnerabilities. Such imperfections (like policy distortions, market failures, and institutional constraints) make private decisions deviate from socially optimal ones. Macro-modeling showed that rapid aggregate economic growth, promotion of timber exports, subsidies for land-clearing, and open access forests, have combined to cause accelerated deforestation, thereby exacerbating rural poverty, harming the local environment, increasing GHG emissions and undermining adaptation. Implementing complementary measures (like eliminating land-clearing subsidies and enhancing forest protection) helped to address the problems and improve mitigation and adaptation prospects – most importantly, without reversing the growth-promoting macro-policies. In Figure 3, the highly peaked path ABCE could result from economic imperfections and environmental externalities. Corrective policies would help to reduce such distortions and permit movement through the sustainable tunnel BDE. Such a tunnel path is also more economically optimal (e.g., like a "turnpike" growth path).

Another sector-based example involves energy pricing. It would be economically efficient to set energy prices at marginal cost. Adding environmental externality costs (appropriately valued), including a carbon tax, would further reduce energy use and mitigate GHG emissions. From the social viewpoint, it would be equitable to earmark some of these tax revenues to help the poor who cannot afford to meet their basic energy needs, and to fund their adaptation efforts. Otherwise, simply raising prices could become a way of rationing energy in favour of the rich, while worsening the plight of the poor.

Agriculture, food and water sector issues in Sri Lanka

Among the various sustainomics tools mentioned above, the Action Impact Matrix (AIM) is a unique method that shows how to practically integrate climate change and sustainable development. This approach also has been used successfully in several other countries. It identifies and prioritises the two-way interaction: how

a. the main national development policies and goals affect

b. the key adaptation and mitigation options; and vice versa. It determines the priority macro-strategies in economic, environmental, and social spheres that facilitate the implementation of climate change adaptation and mitigation policies.

The AIM methodology uses a fully participative stakeholder exercise, including development and climate change experts from government, academia, civil society and business. This collaboration helps participants to better understand opposing viewpoints, resolves conflicts, promotes cooperation and ownership, and facilitates implementation of agreed policy remedies.

Application of the AIM approach in Sri Lanka showed major climate vulnerabilities arising from food security, agriculture and water. A more detailed agriculture model was applied to identify how past output changes in important crops like rice and tea had depended on natural variations in temperature and rainfall. Then, a downscaled regional climate model was used to make detailed temperature and precipitation predictions specific to Sri Lanka. The combined results of both models showed significant adverse impacts on future rice cultivation (almost 12 percent yield loss by 2050) – affecting poor

farmers in the dry zone, where incomes are lowest. Meanwhile, the wet zone, where tea is grown and incomes are higher, would experience gains (+3.5 percent yield by 2050).

These findings raised several important policy issues. Rice is the staple food and rice farming a major source of employment. Thus, adaptation measures are essential to protect national food security, protect livelihoods and reduce vulnerabilities of the rural poor in the dry zone. Meanwhile, the differential impacts of climate change on poor farmers and richer (wet zone) landowners have troubling income distributional and equity implications. Finally, potential population movements from dry to wet zones need to be considered.

Conclusion

Multiple, interlinked crises currently pose a serious challenge to humanity. Fortunately, we know enough to confront these problems together, and take the first steps towards making development more sustainable, that will transform the risky "business-as-usual" scenario into a safer future. Humanity can and must plan, coordinate and implement the necessary responses on a global scale, with business and civil society supporting governments. This is a unique opportunity to progress on all fronts. More than ever, the well being of future generations depends on our choices today.

Further Reading

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