GREENING INFRASTRUCTURE IN SOUTH AFRICA: TOWARDS AN INTEGRATED APPROACH

Ladies and gentlemen, 10 years or so ago, the idea of greening an economy, and by extension its infrastructure, was one you didn't mention, or entertain, in discussions with African politicians, technocrats, academics, opinion leaders and certain multilateral development promoters. It was an easy way to get dismissed and discredited as being (at best) completely out of touch with the real and persistent problems of poverty, hunger, disease, social unrest and weak economies. In those days, one would have had a pretty tough time assembling enough people to attend a meeting on the subject of greening infrastructure in an African country. But here we are; now we can. These days, one can safely mention greening infrastructure, poverty alleviation and sustainable development in the same sentence without fear of losing credibility. What is the source of this newfound confidence?

To start with, we've gotten better at defining the concept, and even more important, in translating it in language that stakeholders -- politicians and policy makers in particular – can understand. A large part of our initial problem of credibility had been, to put it bluntly, that too many earlier advocates of green economy (including yours truly) either did not really know what they were talking about, or failed to communicate in accessible language to critical audiences. But now, a growing body of literature suggests that this problem is firmly behind us. It would be difficult to find a well-educated advocate of sustainability who would dispute the following general definition of a green economy: one that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities. More simply, a green economy is one which is low carbon, resource efficient and socially inclusive. As UNEP's Green Economy Report 2010 puts it: "In a green economy, growth in income and employment should be driven by public and private investments that reduce carbon emissions and pollution, enhance energy and resource efficiency, and prevent the loss of biodiversity and ecosystem services."

By the way, if you were wondering why I keep talking about green economy and not green infrastructure programs – the theme of this conference -- I hope the previous statement addresses your question, for it contains the conceptual bridge between green economy and green infrastructure. As most of you might already know, the notion of green infrastructure originated in the US in the mid-1990s, with a view to highlighting the importance of the natural environment in decisions about land use planning. It drew attention to the "life support" functions provided by natural ecosystems, with an emphasis on interconnectivity to support long-term sustainability. My point, Ladies and Gentlemen is that, greening infrastructure is nothing more or less than a particular case of greening an economy. Development planners would say green infrastructure is a means to the achievement of a green economy, itself a stepping stone to sustainable development; a development path that maintains, enhances and, where necessary, rebuilds natural capital as a critical economic asset and as a source of public benefits, especially for poor people whose livelihoods and security depend on nature.

Our new confidence in advocating a green economy agenda also has to do with the growing number of practical success stories, a good number of which, as we shall learn at this conference, originate from South Africa. These concrete examples are contributing to an expanding body of evidence that is

systematically debunking several myths which have, until recently, consigned green economy thinking to the 'intellectual doghouse' amongst African development analysts and practitioners.

For example, UNEP's Green Economy Report tells us that one of the most widespread myths proclaimed an inescapable trade-off between environmental sustainability and economic progress. Yet, there is now substantial evidence that the "greening" of economies neither inhibits wealth creation or employment opportunities. In fact, there are many green sectors which show significant opportunities for investment and related growth in wealth and jobs. Another myth was that a green economy is a luxury only industrialized countries can afford. Some analysts even seriously entertained the conspiracy theoretical view that green economy was an instrument invented by the developed-world to restrain development and perpetuate poverty in developing countries. On the contrary, there are a several good examples of greening transitions taking place in various sectors in the developing world.

But our success in getting the definition right, and in debunking a bunch of theoretical myths is yet to be matched by progress towards operationalization of the concept in specific contexts. Why is progress in replication and scale-up of best practices so slow? There is of course no shortage of good answers to this question, and I am sure we will hear many of them at this conference. I am looking forward to the analyses, innovative solutions and examples that will be offered on how to address well-known barriers, including Africa's persistent starvation of visionary leadership and political will, the prevalence of weak policy frameworks and the highly risky business environments hampering much needed investment flows. Without diminishing the importance of these challenges, however, permit me to highlight what seems to me an even more fundamental challenge, which Bill Vanderburg described in 2002 as a 'pollution of our knowledge infrastructures," defined as a body of specialized knowledge that results from the "the transmission, development and application of highly specialized knowledge (including institutional frameworks).

Ladies and gentlemen, I believe that we will continue to experience great difficulty in our attempts at greening infrastructure programs and the economy as a whole unless these efforts are preceded – or at least accompanied -- by a process of "greening" the fundamental knowledge infrastructures that inform the design, implementation, monitoring and evaluation of these efforts. Failure to do so would probably be as self-defeating as the proverbial act of putting new wine in old wineskins. Due to structural weaknesses within our existing knowledge systems, we are unable to harness the full transformative potential of green economy initiatives. In particular, it has been difficult to translate and integrate experience from green economy initiatives into systematic and convincing knowledge that can provide much needed decision support that policy makers and politicians can use to realign national priorities and resources in support of concrete measures. In short, Ladies and gentlemen, although the sum of our scattered efforts is great, we have so far failed to integrate the pieces into a holistic body of knowledge, resources and power that could be far greater.

Vanderburg has suggested the slow pace of progress has a lot to do with some basic tendencies that are inherent in our existing knowledge infrastructures. First, our knowledge communities – which include many green economy advocates – rely on intellectual and professional divisions of labor, according to which those who are experts in a particular sector, are free to make decisions whose consequences fall

outside their domains of competence. Thus it is not unusual for the project designers to see nothing really wrong with consciously passing off 'external' consequences as matters to be dealt with "after-the –fact" by other experts who are considered specialized in dealing with these undesired effects. Vanderburg illustrates the problem with a couple of concrete examples: we produce fertilizers to improve crop yields, and then install control devices to keep them from polluting waste streams and then landfill them. As a result, the "signal" of desired results (in this case, improved yield) is increasingly threatened by the "noise" of the undesired results, thus producing a poor "signal-to-noise" ratio of desired to undesired effects. Ladies and gentlemen, I would suggest that a lot of green infrastructure projects suffer from the same problematic tendency to first create problems and then "solve" them by "adding devices or services to compensate for or mitigate the undesired effects…" As anyone who has studied the negative environmental and social impacts of some large-scale bioenergy initiatives will tell you, many in the 'green' infrastructure business are simply displacing rather than solving the sustainability problems they are purporting to solve.

To the extent that our current climate and development crises can be equated to the 'noise' generated by mainstream industrialization and economic policies, it is hard to deny that the existing knowledge infrastructure, which still continues to inform too many green economy projects, is inherently unsustainable. Yet, we find this same highly specialized knowledge infrastructure guiding much of the green economy communities of practice, especially those having to do with very large-scale projects whose advocates appear to think that simply referring to something as 'green' makes the environmental impacts vanish. I am by no means trying to say that the negative environmental impacts outweigh the real sustainability benefits of pursuing a green economy agenda. But the point is that in a world still largely dominated by strong vested interests in the status quo, we need all the social and political support we can get (not just investments). And we cannot 'win hearts and minds' of stakeholders (including vulnerable local communities) by passing off the negative environmental and social impacts of any projects as externalities for others to deal with. I would suggest that the slow pace of transition to the green economy might have a lot to do with our continuing reliance on knowledge infrastructures justifying actions that are fundamentally opposed to sustainability principles.

Another weakness in the conventional mindset and associated knowledge infrastructures becomes evident when we examine how the system normally identifies issues that need to be addressed in a given situation. For the most part, individual specialists tend to highlight those aspects of the situation that correspond to their area of specialty while pushing everything else in the background. When repeated by other specialists, this tendency produces incommensurate diagnoses and recommendations -- in the Kuhnian sense of incommensurability. As Vanderburg observes, it then becomes "impossible to scientifically integrate the findings of different specialties to arrive at a comprehensive interpretation of a given situation. The knowledge system is thus unable to decide between root causes of the problems it produces and what are the merely derivative symptoms that should not be mistaken for them." (Vanderburg, 2002). I would suggest that many of the barriers hindering deployment of an integrated approach to greening infrastructure, can be traced to the more fundamental reality of a disciplinary fragmentation in the community of green infrastructure practitioners, advocates and leaders.

Now, please let me say again that these critical remarks should not blind us to promising signs of the sort of knowledge infrastructure renewable Vanderburg called for in 2002. There is some evidence that a growing community of practice is developing and following a "preventive" rather than 'end-of-pipe" approach, generating new bodies of knowledge and related tools that could serve save the green agenda very well. For instance, this emergent community tends to focus explicitly *and simultaneously* on the "noise" generated by specific projects and economic activity, even as they assess the benefits (and I am not referring here to ordinary "environmental cost-benefit analysis!). That, ladies and gentlemen is the essence of a more "preventive approach" in the production and distribution of knowledge. UNEP's Green Economy Report contains many excellent examples of this approach in practice, providing a refreshingly balanced picture of the benefits of green economy initiatives while simultaneously recognizing and offering solutions to negative environmental and social impacts where these arise. We learn from the report that the world economy quadrupled over the last quarter century, benefiting hundreds of millions of people (the signal), but at the same time, 60% of the world's major ecosystem goods and services that underpin livelihoods have been degraded or used unsustainably (the noise). In other words, the economic growth of recent decades has been accomplished mainly through drawing down natural resources, without allowing stocks to regenerate, and through allowing widespread ecosystem degradation and loss. Best practice approaches to addressing these problems all over the world are clearly articulated in the report, with concrete recommendations covering policy, financial and technical aspects.

The problem of disciplinary fragmentation and incommensurability that I alluded to earlier is also being addressed, albeit with very large room for improvement. The Green Economy report draws attention to international processes and mechanisms aimed at promoting coherence and collaboration in the transition to a green economy. The United Nations Conference on Sustainable Development (Rio +20) summit in 2012 will provide an invaluable opportunity for the international community to promote green economy action given that one of the two themes for the summit is "a green economy in the context of sustainable development and poverty eradication." The commitment and action by governments, business, international organizations and other stakeholders over the next two years will determine whether the summit provides the impetus and direction required to drive the transition. In preparation for accelerating national-level green economy action, the United Nations Environmental Management Group is coordinating with international organizations to develop an inter-agency assessment on how the expertise of the different UN agencies, funds and programs can contribute directly to supporting countries in the transition to a green low-carbon economy.

At the national level, there is growing political support for greater integration. Perhaps nothing illustrates this in the case of South Africa more than the establishment of the Presidential Infrastructure Coordinating Commission. The fact that it is chaired by his Excellency, the President himself, sends a very strong message confirming the government's commitment to the renewal of the knowledge infrastructure that would inform a more integrated, preventive approach to greening infrastructure in South Africa.

Ladies and gentlemen, green economy advocacy and practice have come a long way in the right direction. To accelerate progress, it is essential to abandon the largely invalid assumptions that have

contributed significantly to our present crises at the nexus of technology, environment and political-economy. There are sound theoretical and empirical arguments supporting the view that successful transition to a green economy must be informed by a more integrated community of practice whose members share a commitment to preventive approaches in infrastructure programming and development planning in general. Ladies and gentlemen, I am convinced that the institution of an annual sustainability-focused Knowledge Week by DBSA is an irreversible step, endorsed by a forward-looking government, moving in the right direction here in South Africa. Thank you.

Lawrence Agbemabiese, September 2011