"Investing in Sustainable Infrastructure Worldwide"
(Abridged Version)

ASCE International Roundtable White Paper

"Investing in Sustainable Infrastructure Worldwide"

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Investing in Sustainable Infrastructure Worldwide

by Kathy Sierra[1]

(Abridged version)

I believe there is a common commitment among the World Bank, the American Society of Civil Engineers (ASCE) and the World Federation of Engineering Organizations (WFEO) to sustainable infrastructure and to promoting a better quality of life to all of the world communities. The stated vision of the ASCE is "to position engineers as global leaders building a better quality of life." And, at the World Federation of Engineering Societies, one of the goals is "to foster peace, socioeconomic security, and sustainable development among all countries of the world, through the proper application of technology."

These are eminently laudable goals: building a better quality of life, fostering peace, promoting sustainable development, and using technology to do so. And these are goals that we share at the World Bank. Our mission statement is summed up in eight words: "Our dream is a world free of poverty." In fact, today's Bank emphasizes poverty reduction as the overarching goal of all of our work. To that end, we are integrating our infrastructure work with our colleagues working on the environment and social development.

This approach is designed to show that durable, sustainable poverty reduction is a comprehensive effort, requiring the "hard" components of dams and roads and railways and water treatment plans, but also the "soft" components that touch on every part of our work: a respect for the environment, an understanding of how societies evolve, and an engagement behind reforming today so that people's lives will be better, and permanently better, for decades to come.

The Twin Pillars

At the Bank, we have what we call a "twin-pillar" strategy to support our overall goal of sustainable poverty reduction. One pillar of our action concerns what we call "the investment climate" – the investments needed in developing countries to create growth, provide jobs, increase output, and raise productivity. This pillar encompasses much of the work we do in the Vice Presidency I lead at the World Bank – but it also includes helping to shape the investment climate with sensible economic policies, good governance, strong institutions, and the rule of law.

The second pillar of our strategy revolves around empowering and investing in people. Here, we are helping countries to give people the ability to shape their own lives, to take decisions on their own, for themselves, their families, their communities, and their country.

> ***Key Question 1*** *- How should engineers work with other professionals such as economists, environmental and social specialists, lawyers and financers to help assess the soundness and cost-effectiveness of proposed projects?*

[1] Vice President, Sustainable Development, The World Bank

This has been a shift in emphasis for us. Where we once had a relatively homogeneous staff of engineers and financial analysts, we now have a multidisciplinary and diverse staff including economists, public policy experts, sectoral experts, and social scientists. And that's the way it should be because today's world is a much more complex place than it was when the Bank first began operations 60 years ago.

The mission of the World Bank and that of ASCE and WFEO are inextricably linked. We all see infrastructure as key to alleviating poverty in the world, as an essential building block in helping poor countries to get on the path of sustainable development, as an indispensable component of growth for any economy.

In the year 2000, heads of state gathered at the United Nations to agree on the Millennium Development Goals – objectives to improve human lives by the year 2015 that all countries agreed to. It was the largest meeting of world leaders ever – and it resulted in the remarkable goals that have guided international development work ever since.

At the Bank, much of our work, certainly at the country level, revolves around contributing to meeting the MDGs. Our recent Progress Report on Infrastructure at the World Bank says it clearly: "Infrastructure has a central role in the development agenda and is a major contributor to growth, poverty reduction and achievement of the Millennium Development Goals." The report adds that "the needs for access to good quality, reliable, and affordable infrastructure are universal in developing countries."

> ***Key Question 2.*** Why aren't engineers working more closely with the development community to support the MDGs? Isn't this something the engineering community supports?

At the World Bank, we believe that infrastructure is a key part of the development challenge, and its impacts are among the most important. In our approach to infrastructure, we look at its impact, its "ripple effect", if you will, through three "lenses" – each different, but complementary. I'd like to share that approach with you now.

Economic Growth

First, we look at infrastructure for **economic growth**. Quite simply, no country can achieve sustained GDP growth without investment in infrastructure. Whether it is energy services, water treatment, roads, railways, ports and airports, telecommunications, urban services, or rural facilities, no country in the world has ever grown its economy without investing in its infrastructure.

Yet there is a gap on the part of the international community in terms of knowing what investment is required and then following through on commitments to make those investments. For instance, the International Energy Agency has estimated that more than $300 billion in capital investment will be needed each year for the next 25 years so that developing and transition economies can meet their energy needs. Today, the world is investing only a fraction of that.

We estimate that there are 1.6 billion people in the world without access to basic energy services; 500 million of them live in sub-Saharan Africa. We estimate there are 2.4 billion people in the world who, if they have a daily meal to cook, still cook it using wood or dung or other traditional biomass fuels. Yet these are among the least efficient and most polluting of all energy sources.

Today, we have the technologies to solve this problem. We have the intellectual resources to bring energy to the poor. We have governments and corporations ready to leap in and start the work of ending energy poverty. What we don't have, though, are the financial resources of the international community to bring this about.

The poorest countries need to spend about 9% of their own GDP to operate, maintain, and expand infrastructure services if they have any hope of reaching the Millennium Development Goals. Right now, they are probably spending about half that amount, collectively, with enormous disparities from one country to another.

Human Growth

The second "lens" that we use is to look at infrastructure for **human growth**. Here, the connection is quite clear and we can see the immediate impact of infrastructure investment and how it directly affects people. Without clean water, people are much more susceptible to disease and illness. Without electricity, homes cannot be lit at night so that children can study their school lessons. Without telephones, local companies cannot enter the world's trading systems. And without roads, farmers cannot easily get their produce to markets.

There are other examples from other areas. Intuitively, though, we know what modern, reliable, efficient infrastructure can do for people. We know that woman or children condemned to the tedious labor of carrying drinking water can see their lives transformed when wells are dug. We know that even the most elementary sanitation systems, once installed, can substantially reduce the numbers of people victim of water-borne diseases that we in rich nations have long forgotten.

Studies bear this out. Survey results from Morocco showed that when communities got paved roads, school attendance for girls more than doubled, going from 21 to 48 percent, while boys' attendance also rose, from 58 to 76 percent.

Yet, again, the needs are huge. If there is any hope of meeting the Millennium Development Goals in the nine years to go before the deadline, the international community will have to become much more committed – and follow through on its commitments.

Smart Growth

I've spoken about infrastructure for economic growth and infrastructure for human growth. Let me now explain the third "lens" that we use to think about our work: infrastructure for **smart growth**.

What do we mean by smart growth? The answer may seem obvious … We mean investments that lead to growth in GDP that is economically justifiable, environmentally sustainable, socially acceptable, locally desirable, and politically achievable. Smart growth also means learning from what we've done in the past and drawing lessons for our future work.

We recently undertook an analysis of the Bank's work in infrastructure over the past 20 years. From 1998 until 2002, lending on infrastructure projects by the World Bank dropped from $9 billion annually to about $5 billion. We moved away from infrastructure, partly, because we thought that private investment was moving towards it.

But something happened that we didn't expect: the private sector didn't fill the gap. Private sector investment in infrastructure in developing countries peaked at $114 billion in 1997, before declining to $56 billion in 2003.

We also moved away from infrastructure investment, frankly, because many of the projects we funded were too complex, too controversial, and too risky. We listened a lot to our critics who were opposed to large infrastructure projects. But we didn't listen enough to the clients we served, the poor in developing countries who wanted more of these services. We essentially forgot the fundamental synergies that exist between infrastructure, growth, and poverty alleviation.

Lessons Learned: Confronting Corruption

I mentioned the study that we have just completed about lessons learned from 20 years of World Bank experience in infrastructure. We found some good insights into our work of the past two decades, and we're working to implement those lessons.

One key lesson was that we had to get tough—and stay tough—on corruption. Today, we are working with a broad coalition of stakeholders to eliminate corruption from the projects we're involved with. For instance, with partners in the Extractive Industries Transparency Initiative, we want to ensure that revenues from oil, gas and mining are used to fight poverty and promote development. Other sectors, such as the construction industry, may also benefit from similar initiatives in the future.

At the Bank we are examining our own systems and procedures. We think that we have perhaps concentrated too much on the "front end" of procurement in our projects, and not enough on corruption throughout the entire project cycle. We are looking at making more frequent use of auditors to spot corruption early on.

Key Question 3. What are the specific contributions the engineering community can make to address corruption at the project level?

Internally, we recently gave our the first ever Infrastructure Anti-Corruption Awards at the World Bank – to our staff for their work in integrating anti-corruption efforts into the project right from the design stage. We were surprised – and encouraged - at the number of projects that already incorporated some form of anti-corruption work, but we also know that there is a lot more to be done.

This is one area where we look to your organizations – to engineers around the world – to help us search for the best ways to put a stop to this plague. We encourage you to work with us, at the global level through my office, or at the regional or country levels, with our local Bank officers. Your on-the-ground expertise in designing, implementing, and monitoring of infrastructure projects can be invaluable as we work together to thwart this disease. I look forward to working with your leadership to ensure that our partnership in this area is a fruitful one.

Lessons Learned: Capacity Development

Part of our work on anti-corruption will also touch on capacity development. I know that this is an important topic for you and your organizations. It's also important for the international community: adequate country capacity is one of the critical missing factors in our collective efforts to meet the Millennium Development Goals.

In recent years, about one-quarter of all development aid goes into what is loosely called "Technical Cooperation" or "Technical Assistance", the bulk of which is ostensibly aimed at capacity development. Yet despite about $15 billion a year going to this area, developing sustainable capacity remains one of the most difficult areas in international development. Let me, then, share with you some of what we have learned in this area, as well.

First, we know that our operations need to take an integrated view, building capacity with, and within, each of three elements:

- Operating environment: Tax and regulatory regimes; stable government, respect for the rule of law.
- Organization: Ability to carry out policy decisions; training and adequate compensation for civil servants; proper work flow and deliverables.
- Individuals: training and individual growth; acceptance of personal responsibility for delivering results.

Second, we know that there are huge differences in the three areas I've just mentioned, according to the sector in question. For instance, capacity development in the transport sector has been successful in many areas. On the other hand, health and education have been less successful in this regard. It is much more difficult than in the transport sector to set goals and measure progress. As well, building capacity in some parts of the world is very difficult because of the continual outflow of trained staff to who leave for higher salaries and better working conditions.

> ***Key Question 4***. How can the World Bank's programs be structured to better tap the engineering community's experience in capacity building?

Third, we know that there is a need to be explicit about capacity development goals. The objectives have to be specific and the indicators of success have to be clear. In other words, there must be a results agenda linking to every aspect of capacity development. One way to think of this is to ask "capacity for what?" and focus on the specific capacities needed to accomplish those clearly defined goals.

Perhaps the most important lesson we've learned is that capacity development needs to be country-driven while being supported by donors. Imposed solutions from the outside will not work. The message for us all is that the days of simply transferring knowledge and technology from the developed world to developing countries is over. Partnerships are the order of the day and countries are in the driver's seats.

A Sustainable Future

As I've tried to demonstrate to you, growth is essential to reducing poverty and to reaching the Millennium Development Goals by 2015. But we also know that growth at any cost is not sustainable. Responsible growth — growth that embraces both environmental sustainability and social development — is what we need to maintain the increases in human welfare, in health, in human skills, in social equity, that are targets of the MDGs.

We know that investing in the environment is also investing in the future of the poor. When poorly-managed development hurts the environment, it is often the poor who suffer the most, because they often live in the most fragile environmental regions.

From drought in Africa to floods in Asia to the loss of the rain forest in Latin America, it is the poor who suffer most from climatic variability and environmental degradation. And as we look to accelerate investments in infrastructure to help the poor in developing countries, we must always keep in mind the environmental and social ramifications of our work.

The World Bank is scaling up its investments in infrastructure by about a billion dollars a year. By next year, we plan to be lending about $9-10 billion dollars annually – approaching 40% of total Bank lending, our historic average. These are large sums, but I ask you to remember that the Bank is still small financially. Total investments in developing countries, from country governments themselves, Official Development Assistance, or the private sector comes to about $1.5 trillion per year. This is about 100 times what the Bank lends yearly, so we are just one per cent of total capital flows.

But while we are relatively small on financing, we are not small on ideas, and we're not small in the world of policies and proposals on how to shape institutions, how to improve governance, and how to build the right investment climate.

It would be easy for me to say that, with our 60 years of experience, with our global presence, with our highly educated staff from more than 140 countries, we have the answers to solve the sustainable development issues of developing countries. But I can't and I won't.

Like our financing we are just one part of the solution. A much greater part, by far the largest part, must come from the developing countries themselves. They know best what solutions will work for them. They know best how to drive their skills, their energies, and their commitments to the task of creating modern infrastructure for economic growth, for human growth, for smart growth. But they, too, are looking to us and what we can offer in our interdependent world.

New Opportunities, New Efforts

That is one reason why I am making the case for a closer cooperation amongst everyone involved in development work: the engineers ASCE and WFEO represent around the world, government officials, private sector operators, civil society, and other development partners. We need to work more closely together to build on the commitments of the international community and to make a real push on infrastructure development.

More specifically, I would like to see the World Bank and your profession work more closely together. In our project cycle, for instance, I can see more involvement from engineers in two areas in particular: one is in identifying projects that support local strategies and that are financially, economically, socially, and environmentally sound. A second area for closer cooperation is in project preparation, where our clients conduct various technical studies and prepare project documentation before negotiation and approval by our Board of Directors.

> ***Key Question 5.*** How can the engineering profession most effectively influence a country's project decision-making processes?

In order to move ahead, it would be good for staff from the World Bank to sit down with engineers representing your organizations to form a working group or committee on future cooperation. They should be mandated to come back in a period of time, perhaps six months, with a charter or other document that could outline the areas and degrees of expertise and assistance that engineers can bring to development proposals, at a global level or perhaps even at a regional or country level.

This closer cooperation could be linked to our project cycle itself, but more generally we would value your input into efforts that build capacity and tackle corruption, as I indicated earlier. Again, this working group or committee could offer suggestions about just how engineers could help developing countries and international organizations such as ours to carry out our mandates.

We all know that development is a long-term and often difficult task. Reform does not happen overnight – often, it takes years, sometimes decades, before results are known and shown. But the World Bank is a long-term partner and we seek others committed, like us, to staying the course. I know that the people you represent fall into that category.

We should all judge our success initially by how well we do in mobilizing support to provide quality sustainable development services to people. In the longer term, though, we should judge our work on the results it brings in terms of economic, human, and smart growth and, in the end, on poverty reduction. The poor of the world deserve no less.