IISDCOMMENTARY

ICTs, the Internet and Sustainability:

An interview with Ashok Khosla

The following is the record of an interview with Ashok Khosla, president of the International Union for the Conservation of Nature (IUCN) and one of the world's leading experts on the environment and sustainable development. The interview was conducted by David Souter, senior associate, IISD and managing director of *ict* Development Associates, in June 2012.

This interview is one in a series of papers being published by IISD's Global Connectivity team to inform and stimulate discussion and debate on the relationship between information and communication technologies (ICTs), the Internet and sustainability, surrounding the UN Conference on Sustainable Development in Rio de Janeiro in June 2012 (Rio+20), the UN Internet Governance Forum in Baku in November 2012 and the International Telecommunication Union World Conference on International Telecommunications in Dubai in December 2012 (WCIT-12).

Ashok Khosla is founding director of the Indian government's Office of Environmental Planning and Co-Ordination, the first such agency in a developing country. In 1976 he was appointed director of the United Nations Environment Programme (UNEP), where he designed and launched Infoterra, the global environmental information exchange. He left the UNEP in 1982 to found Development Alternatives, a Delhi-based non-governmental organization devoted to promoting commercially viable, environmentally friendly technologies. Dr. Khosla has been president of the IUCN since 2008.[1]

What would you say have been the main successes and failures of sustainability over the 20 years since the first Earth Summit?

In a sense, this is actually the 40th anniversary of the first major event in the field of environment, the United Nations Conference on Human Environment, in Stockholm in 1972. The only two real outcomes of Stockholm, apart from the principles agreed there, were GEMS—the Global Environmental Monitoring System—and Infoterra, which was called IRS at the time, the International Referral System for Environmental Information. So the idea that information is critical in improving our ability to manage both environment and development goes back all the way to Stockholm. I spent the seven or eight years after that first helping design and then founding and heading the Infoterra system—which was in direct response to governments saying that they were not bad people, they just didn't know and needed better information.

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[1] Biography abstracted from http://www.devalt.org/dr-Ashok-khosla.aspx and http://www.principalvoices.com/voices/ashok-khosla-bio.html

So it is not a recent phenomenon, the nexus between information and sustainability. It dates back to the beginning. The question you're asking is really about what has happened from Stockholm, through Stockholm+10 in Nairobi and then Stockholm+20, which was the first Earth Summit held in Rio de Janeiro, and then Johannesburg 10 years later, to today—another decade later in Rio once again. All these progressions have not really led to deeper commitment to action. They've led to more widespread understanding and commitment to raising the issues on the international agenda. No other subject has had so many summits. But they haven't led to action on the ground very much, or to commitments of financial and other resources in the way one would have hoped. Apart from a few products that deal with issues that are really technical, like the Montreal Protocol, very little that involves multisectoral action on a multilateral level has made much progress, and in some cases things have gone backwards over the 40 years.

It is pretty clear that the outcomes of the original Earth Summit in Rio in 1992—such as Agenda 21 and the conventions on climate change, biodiversity and desertification—were very carefully negotiated documents. There was a commitment embedded in each of them, generated through two or three hard years of preparatory work, which led to outstanding documented agreements—and yet the world seems to be deteriorating in many of these areas. So I can't really truly say that we've been successful. That doesn't mean that we don't have a future—or that the world's coming to an end—although if we continue on the path we are on, we could well be headed for a life that is, as the philosopher said, "solitary, poor, nasty, brutish and short."

I would say things have deteriorated on many fronts. First of all, there's the incidence of poverty in the world. Poverty, hunger, deprivation, marginalization of people, disempowerment: these are all things that are, in absolute numbers, actually worse today than they were at the time of Rio 1992. Of course, economists and politicians like to look at percentages, and we may be holding steady or maybe even improving in some areas in terms of percentages. But that's ridiculous. People are not just statistics: they are individuals with their own aspirations and expectations of a good life. When we talk about halving the percentage of hungry people in the world, we have to remember that the population has almost doubled in the 25 years stipulated in the Millennium Development Goals (MDGs) from 1990 to 2015. So, if you are going to halve the percentage, and the total number has doubled, that means you are leaving the number of persons afflicted more or less where it was. And that is what the MDGs do. The MDGs are important because for the first time, they express the intent of the global community to set time-bound targets to deal with fundamental issues of sustainable development. But while some people go around the world saying they are "bold and ambitious," they would seem to me to be somewhat meaningless even if they were to be fulfilled—which most of them will not be. What is bold or ambitious about having nearly 1 billion people in the world without clean drinking water within a mile of their homes? It's nonsense to have a world that annually turns over 60 or 70 trillion dollars where 1.8 billion people continue to be without access to a toilet.

Things are getting worse on almost all fronts. On environmental issues, what is really frightening is that many of the things that we're talking about in Rio+20 didn't even exist in anybody's mind in the original Rio. There are such big surprises coming up every year. Ocean acidification, the collapse of fisheries, the disappearance of corals—nobody thought about these things in 1992. A decade earlier, maybe climate change was a little bit on the radar screen, maybe biodiversity was beginning to be—but now we find that we are in the sixth mass extinction, losing species at a rate not seen since the demise of the dinosaurs. And not much that governments or corporations are doing is really directed to dealing with these issues, even superficially, let alone systemically. The problem is that, when we meet again in 20 years at Rio+20+20, we'll be discussing things that are not even on the agenda now. And the problems of today will be intensifying and getting worse if we don't do something urgently.

So the answer to your question is really complex. It's not that recognition hasn't been given to the issues, but the fact that nobody seems to be willing to do anything about them. There are countries in the Middle East and Europe that are using 10 times as many resources as their resource base produces sustainably. The time horizons we have for our decisions are far too short to foresee the problems they will create. The conceptions and understandings of the situations that we face are compartmentalized into silos that make it virtually impossible for all the expertise needed to come together, so it is impossible to come up with systemic solutions. Almost every crisis we're facing, including the financial mess the world is in, is deeply interrelated—and it's going to get worse. It's a big problem.

Thanks for putting it so comprehensively. If I might summarize: 20 years in which not a lot has been achieved, but a lot has happened that has made things substantially worse. Is there anything about this that is specific to or different in your own region of South Asia?

South Asia, like every other region, is a complex area. Let me say that in my opinion there are two South Asias. The South Asia that consists of India, Pakistan, Bangladesh, Sri Lanka, Afghanistan, Nepal and maybe Burma/Myanmar as it opens up: that is one group, one side of South Asia, that is really trying to become "modern"—as defined by the global North. They are trying, basically, to catch up with America. They are pursuing a mirage aspiration, that everyone can extract and consume resources more or less like Japan, and now China, are doing. It's all part of the competitive mythology of neo-liberalism. We are going towards hell in a handbasket, on the basis that we have a right to because other people did it.

That is one part of South Asia. But then there is another part of South Asia, which happens to be rather small—only three quarters of a million people—and that's Bhutan, which has rejected this notion. It says, "We don't want any part of this; we want a totally different concept of what is a good life and we're going to pursue it in our own way." And although this landlocked nation may be very small, in my opinion, they count for almost as much as the rest in terms of evolving solutions that might work for the future of all. I think they feel they would like to achieve a better life and a modern world, and that there are options available using good technologies, including information technologies, that can help them to achieve their goals. They have a pretty pure Buddhist attitude that creating more physical and financial wealth is not the only way to measure a good life. There are other factors that go towards the ultimate purpose, which is to make people—oneself and the people around one—happy.

"Sophisticated" people may laugh. Yesterday I was interviewed by somebody who asked, "How do you measure happiness?" Well, frankly, one should ask, how do you measure GDP? And when you do measure it, leaving out virtually all the domestic work of women, the services provided by ecosystems and the benefits of community and social capital, what is so great about the concept of GDP? The Bhutanese have done a lot of very good work in defining and quantifying how you measure happiness. Some in the West are working on these issues too. The science is only at the beginning, but I think it's profoundly important. You can certainly critique it, but that's not the issue. The issue is that they're heading towards an analytical framework that is probably comparable to what GDP looked like 20 years after Kuznets proposed it. It's not something to be ashamed of, the place they've reached.

So, if you ask me about South Asia, I say there are two South Asias. There are 1.6 billion or so people pursuing a chimerical dream of becoming rich and affluent in the way that people in North America and Japan are. And there's one group of about three quarters of a million who've said, "No, we're not going this route, we've a whole new world that we've got to create and we're going to set an example." With the exception of this little spark of hope in the mountains, I don't really see a very good future for South Asia. It would be difficult to claim that my own country, India, is heading

in the right direction. Its policies are built on a model based on neoclassical economics that has no long-term meaning whatsoever in a finite world, pursuing a dream of making a few people extremely rich, and a very large number of people very miserable.

How would you relate technological innovation to a sustainability agenda?

If there is a future, it is in innovation. As proof of my conviction of this truth, the business model of my own organization, Development Alternatives, which was set up 30 years ago and was the first social enterprise in the world aimed at sustainable development, is based on the primacy of innovation, both in technologies and institutions. We are the biggest R&D organization in the Third World dealing with rural technology. And we have numerous innovations in designing effective organizations for innovation, delivery and policy influence.

But innovation has to be geared to the needs of the people—not just for the few that are rich, but for everybody. There must be today some one and a half to two billion women in this world who cook on stoves that have zero innovation in them. They are wasting fuel, creating indoor air pollution, dying of lung disease and cancer, and nobody has put more than a few pennies into improving the cookstove. We need innovation for health, for education, for well-being, for cooking, for mobility. We need huge amounts of innovation, but the kind of innovation that's needed doesn't get you Nobel prizes. It's not mainstream in the sense that's been defined by universities like Cambridge and Harvard and, frankly, it has nothing to do with improving the lives of half the population of the world.

I believe that there are a few high-tech innovations, like the cellphone and the Internet, that have really made a difference for the people of the world, but these are very, very few. The innovations that are needed are those that improve people's health, create means of livelihood and provide cooking and lighting. Raising crops without poisoning the land. Building homes that need less material and energy. This is real innovation. But what do you get instead? You get GMOs, you get chemical- and energy-intensive agriculture—anything that will make more money for a few corporations. That's not living innovation, that's killing the earth.

You mentioned the cellphone as an exception to the non-inclusive nature of most technological innovation. The 20 years since the first Earth Summit have seen a huge change in the nature of information and communications. How would you describe that?

There are different kinds of innovation. Innovation that leads to higher productivity, that improves efficiency, that reduces entropy: that's good innovation. Innovation that creates more burdens on nature, that destroys the links between people and society, or people and nature: that's bad innovation. Innovation that creates things like the Internet, or leads to better information processing or data handling, or improves the relationship that people have with society or with Mother Nature—this is positive. Every innovation carries with it certain advantages, certain benefits, and also carries with it certain liabilities and negative impacts.

With all its good points, the cellphone is still not a purely benign innovation. Its net impact is probably highly positive, but it has goods and bads associated with it. It's a technology that poisons the environment, for example. It uses rare earths and scarce minerals, in the mining and processing of which people's health is impacted. But by and large it has liberated people. It has created employment and opportunities for people to have more fulfilling lives, whether it's a tool for entertainment, for leisure, for interaction or for work. I can think of no technology in the recent past that has had such a huge impact even on very poor people, for example creating opportunities for them to find markets for their skills and products and services. Even a carpenter, even a farmer, can now benefit hugely from being able to interact through a mobile phone.

There are goods and bads with any innovation. Nobody should deny that innovation has made this world a much more interesting and fulfilling place than it was. But, except for these few information-related technologies, its benefits have been largely appropriated by a very few people and have not done much for the many.

In your own organization in India, you've extensive experience of using information technology for development purposes, for development that reaches the people as a whole. How would you see that experience evolving? Do ICTs have transformational potential in the sense of changing the way in which society works?

Yes, absolutely. In Development Alternatives we do use information technology a great deal. I kick myself for not having been the inventor of the cellphone. It is the most appropriate technology that I can think of, and if only we in Development Alternatives had not got stuck on things like mud houses and cookstoves for the very poorest, we might have even anticipated its impact. But the impact has really exploded without people having predicted it. It was a technology, originally, that only a very few people—CEOs, government officials, film stars—could afford. Innovation inexorably managed to bring it within reach of virtually everyone, including the very poor.

That does not happen with many innovations. We have a few technologies—television, cellphones, the Internet—that actually scaled up in this way, partly because of economies of scale, partly because scaling up feeds on itself, as expressed in Metcalfe's law.[2] But a few good technologies like that doesn't mean that all technologies have been great. For example, even the Internet has its downsides. Ultra-high-speed connectivity also enables high frequency trading, which in turn enables several trillion dollars a day to slosh around the world in nonsense transactions. These transactions have nothing to do with the real economy, and they are one of the things that has brought the world economy to its knees. So it has its costs too.

I would say that information technology has been truly transformational. It has changed people's behaviour, their relationships, the family, the community, the political system, the ability to elect people, the ability to get rid of people from positions of power, to be able to monitor their doings. And of course, all the things it is well known for—trade, transactions, banking and all the other aspects of modern commerce and business—these have all been made possible by information technology.

Does that imply that we need to rethink sustainability as it was understood 20 or 25 years ago?

Perhaps, but not very deeply. Sustainability is sustainability whether you have good technology or not, whether you have good information or not. Sustainability is more or less a given. You can fine-tune it a little here and redefine it a bit there. You can say that sustainable use of natural resources—let's say sustainable fishing—may be possible if information technology gives you a better idea of what is happening to fish populations. But the idea that we need to sustain our fisheries is still exactly what it was. Your objectives have not changed, but your strategies for getting to them may well be radically changed by the use of information technology. The overall objectives of living within the world's means, of ensuring that the limits of the resource base are not transgressed, those are not changed at all.

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2 Metcalfe's Law asserts that the value of a telecommunications network is proportional to the square of the number of users that are connected to it.

Can I take you to governance, and again come back to Asia? Both India and China have put a great deal of emphasis on the information technology sector—in China's case in terms of manufacturing, in India's in terms of services. What is your view of how governments in those countries have addressed the opportunities that they've seen there? Have the ways in which they've done so helped, or hindered, a sustainability agenda?

The Chinese policy-makers were proactive in enabling the hardware sector to flourish by making investments, opening doors, changing laws to attract capital and technology and open up new markets. That, of course, has an impact on sustainability because hardware takes up a great deal of limited resources. I don't think they really looked at sustainability in terms of physical resource limitations, but primarily in terms of the financial implications. The Indian government, I don't think, has given any thought to it at all.

The interesting part of this is that services have a huge impact on resource use as well, not much less than manufacturing. For example, Google and Wikipedia and Facebook have server farms so huge that they are using electrical power at rates comparable to those of a sizable city. The amount of scarce resources needed for the hard discs, processors and switching systems in server farms is phenomenal, not to mention the amount of steel and copper in their racks, cables and buildings. Another example: in 1995, less than 20 years ago, there wasn't a single cellphone in India—in fact, there were hardly any landlines. Today, the cellphone industry has grown so much that virtually everybody has a phone, and that means that virtually everybody has to be within sight of a tower, a base station. Now, within these two decades, the base stations in India have come from nowhere and are the second largest consumer of diesel in the whole country, second only to the Indian Railways. This sector has a huge impact on our oil imports, on the use of fossil fuels, on the emission of carbon dioxide. While we think the cellphone is a service, in fact the handsets, the switching systems and the base stations are huge consumers of energy and resources, including some that are toxic and some that are very scarce.

I believe that not enough thought was given to the implications of this. It could have been very easy to use the base towers, many of which are in remote areas—far away from the grid, with their own stand-alone diesel generators—to share some of that power with the local communities. We should look at how to get win-wins for the cellphone sector. These are extremely rich companies that want to cut costs—and you can cut them hugely, by factors of two or three in electricity bills, if you can improve their power generation, and that needs a little scaling up of the operations. Both the community and the operator can benefit from this, but such possibilities do not occur to a business. Companies have very narrow views; they don't see their job as supplying electricity to the community, which is deprived of power, lighting, whatever. This requires a proactive approach, a thinking-through approach, on the part of both corporations and governments. Such an approach would have led to cross-cutting decision making across different ministries— renewable energy, power and telecommunications—and fiscal or other incentives that would encourage such outcomes. This is not possible in any normal government, and in India it's even less so.

When you talk about transformation and policy, you're talking really about proactive policy, about how one can use the interests of the rich and the powerful—their perceived self-interest—to generate benefits for everyone else. Adam Smith cottoned on to this idea, but nobody has ever really worked it out in real life. It's got to be done. There's no invisible hand on its own; it's got to be designed into the business plan.

How much attention is being paid to the relationship between ICTs and sustainability?

There are lots of people who are concerned about these issues. But this is a can of worms. One can spend a lot of money developing databases and knowledge systems, which nobody then uses. It happens all the time. It happened with Infoterra after a while. Infoterra was terrific; it worked for many years. We managed to bring in more than 130 countries as members—and there were only about 150 countries in the world at that time—into sharing information on the environment in the late '70s and early '80s. But with the advent of the Internet, it got left behind. And even when it was actively used, it wasn't used really for the purpose that we had in mind, which was better decision making. It was used for justifying political decisions that had already been made for particular interests or for political convenience. The art of governance is (and probably always has been) not to do things for rational reasons but finding seemingly rational justifications for doing things that have already been decided. And so databases for politicians, and economists unfortunately, are seen as useful only if they feed into their self-interest or pet theories. This is not going to change at Rio de Janeiro. Rio is not about governments doing the right thing; it's about governments trying to justify doing what they want to do and finding arguments that will be plausible to the wider public and the global community.

Are there messages that should feed into the ICT process—for example, the 10-year review of the World Summit on the Information Society—from the Rio Summit?

There are a lot of people here in Rio. Every single one of them is intelligent, knows what the issues are, and knows that the world is in pretty serious trouble. They all come with antennae, and as everyone knows, there are two kinds of antenna: a transmission antenna and a receiving antenna. The strength of the receiving antenna is hugely diminished, and the strength of the transmission antenna is simply huge. So the ability for people to receive new information and process it and incorporate it into their thinking at an event like Rio is dwarfed by their ability to talk about their own viewpoint. It would be amazing if many people were to go away from Rio on the 23rd of June having fundamentally changed their minds. I've never really seen that happen. But if as a result of our discussions here we collectively change our course by five or ten degrees and manage to swerve off the road heading for the cliff, yes, things will possibly change. It may not in the long run be enough to save us from the cliff, because the cliff's pretty long and we may hit it at a slightly different and less dangerous point. Having said that, I don't think, basically, that the world's policy-makers, including those in companies and in civil society, are going to go back fundamentally changing their minds.

But, you know, the problem is that everything here in Rio is in tied up in packages that have labels: it's a North/South thing for population and consumption; it's an East/West or North/South or developing/developed thing for sovereignty, protectionism, and all the buzzwords that go with looking at these issues. People use the word "green" as a qualifier for "economy" in very different ways. Some people believe the green economy is a desirable thing, but costly, because it involves change from convenient and comfortable patterns that we have become accustomed to and therefore seem better than the alternative, which is change. So it's got to be sold as a moral thing and an ethical thing. For others like myself, what we need is a win-win situation. So, we don't talk about the green economy anymore: it's the "blue economy" or the "ultra-violet economy." We need a transparent system of governance for an economy that fully respects the earth. And the word "green" doesn't carry the same connotation for half the people of the world. "Green economy," for most Group of 77 people, carries the idea of another hegemonist neo-colonizing exercise. We're using jargon and labels that really don't carry the meaning that they intend to carry. So it's going to take a while and, frankly, the preparation for this conference wasn't adequate to make that transformation happen.

So, as I say, I'm not optimistic about people going away from Rio having changed their minds or coming to their desk on June 24th morning saying: "From now on, we're going to respect the earth and respect our fellow human beings." I don't think that's going to happen. But I think that our social, economic and political processes will take a step forward. The next time there are three or four catastrophes like Katrina or Deepwater Horizon, that will bring home that we can't go on as we are.

The implication for the information domain is that more information is almost always desirable, provided it is accessible, timely and digestible—by the lay public as much as by the scientists, by governments as well as the captains of industry, and by political leaders. We're not getting such information because a large part of the power people at the top have comes from keeping everybody else in the dark. Information technology is a democratizing force, and to that extent it's going to have as deep—and transformative—impact on political systems as on technological and social ones.

Thank you very much.

About IISD

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