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ICTs, the Internet, and Sustainability: An interview with Jim MacNeill

The following is the record of an interview with Jim MacNeill, former secretary general of the Brundtland Commission and lead author of *Our Common Future*. The interview was conducted by David Souter, senior associate, IISD and managing director of *ict* Development Associates.

This interview with Jim MacNeill is one of 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 in advance of 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 (IGF 2012), and the International Telecommunication Union World Conference on International Telecommunication in Dubai in December 2012 (WCIT-12).

Jim MacNeill is a Canadian consultant, environmentalist and international public servant. He was director of environment at the Organisation for Economic Co-operation and Development in Paris (1978–1984), secretary general of the World Commission on Environment and Development (Brundtland Commission) and lead author of its landmark report *Our Common Future* (1984–1987). He is currently a member of the Caspian Development Advisory Panel, the jury of the Volvo Foundation Environment Prize and a member of several boards, including the Woods Hole Research Centre, whose mission is to advance scientific discovery and seek science-based solutions for the world's environmental and economic challenges through research and education on forests, soils, air and water.[1]

Could we start by talking about the Brundtland Report, which was published 25 years ago? What do you think have been the most important changes in society in the time since it was published?

That's a rather tall order. I would say that there have been many significant changes over the past 25 years, but I can't really begin to say which are the most important: the fall of the Berlin Wall; the rise of China and India and the other so-called BRICs; the relative decline of the U.S. and the West and the resulting changes in the balance of power; the Arab spring still unfolding—and that's on the political front only. On the technological front, there have been a huge number of profoundly important changes in fields such as medicine, biotechnology, biopsychology, nanotechnology, geo-engineering and so on. Of course, given the subject of this discussion, the development of a wireless world has affected every living person, putting everybody and every nation in each other's backyard.

[1] Biography abstracted from **http://en.wikipedia.org/wiki/Jim_MacNeill**

Over the past 25 years, we've also seen a colossal expansion of the world economy. Global GDP has more than doubled, rising from about $33 trillion at the time we wrote our report to over $65 trillion today. As you know, we in the Commission did call for a large and very rapid increase in global production, largely in order to reduce levels of mass poverty. That has, in fact, happened. In many countries, I would say, it has happened more dramatically than we anticipated. However, and this is very important, I think, to an understanding of our report. Our call for a rapid increase in global production came with a very important caveat—a caveat that many people never really understood, or perhaps they simply forgot. Rapid growth was necessary to deal with poverty, and also to accommodate perhaps two more doublings in the size of the global population. But—this was the caveat—we insisted that future growth must be based on forms of development that were sustainable: economically, socially and ecologically sustainable. It should not be a continuation of the unsustainable forms of growth that got us into the situation that prompted the United Nations to call for the Commission in the first place. If that happened, we said, our future would be in peril.

Unfortunately, there was no shift to more sustainable forms of development. "Business as usual" not only continued, it grew enormously, and today our future is indeed in peril.

A lot of the changes experienced over the past 25 years have been very positive: millions of people lifted out of grinding poverty, freedom for the peoples in the Soviet bloc and so on. That said, the one great failure of the past 25 years threatens our survival on this planet. Following the 1992 Earth Summit, most governments decided to simply ignore the commitments they made to lead a rapid transition to more sustainable forms of development. Instead we got 25 more years of unsustainable business-as-usual forms of development in agriculture, in industry—you name it—with the result that economic and life support systems have degraded at an increasing rate, just as we predicted they would.

Keep in mind that in 1987 when we published our report, we had not yet crossed any of the so-called critical ecological thresholds. The Commission's recommendations and the Earth Summit were designed to ensure that we wouldn't actually get there. Today, scientists tell us that we have crossed at least four of the most critical planetary boundaries. Climate is the one that everyone talks about because of global warming, but there are also those relating to nitrogen and the loss of species. In addition, a large number of ecological services are absolutely central to the maintenance of economic systems. In 2005 the UN Millennium Assessment found that 15 out of 24 such services had already been pushed beyond their sustainable limits. We're talking about such services as providing fresh water in many regions, regulating climate and so on. For all our growth and all our new-found wealth, the fact is that the human species is now in much greater peril than it was 25 years ago.

Can we consider the definition of sustainability? The one that's often cited from the Brundtland Report is that which is concerned with intergenerational equity, and I know you think that emphasis on this has oversimplified the message. I wonder if you could summarize the concept as you saw it then, and talk about how you might think differently today in the light of changing circumstances such as those that you've referred to.

The definition that you cite—the one that, frankly, most people cite—refers to one element, the intergenerational element, of what was a multi-faceted definition of sustainable development. I have to assume some responsibility here. It was phrased in a very catchy way so it grabbed the headlines in 1987 and stuck, unfortunately to the exclusion of the others.

What were these others? The first was consumption levels. Development that was sustainable, we said, had to

be "based on consumption standards that are within the bounds of the ecologically possible and to which all can reasonably aspire." The second was the need to live within nature's limits. Development that was sustainable, we said, was development that "at a minimum must not endanger the natural systems that support life on earth—the atmosphere, the waters, the soils and the living beings." In other words, the intergenerational element was just one of three crucial elements in any definition of sustainable development.

In addition to that, we put forward a number of broad directions that we felt development must take if it is to be sustainable. These directions ranged from ensuring a sustainable level of population to increasing equity within and between nations, to reducing poverty, of course, and managing the resource content of growth. Perhaps the most important was merging environment and economics in decision-making. Movement in these directions, we felt, was fundamental to any transition to sustainability. I could go on but I think that that captures the essence of our definition, which the intergenerational element standing on its own does not.

Is there any element of that, or the way in which you put it at the time, that you would think about differently now? If the report were written today, are there definitional changes you would expect as a consequence of the changes in politics and economics and society that you've described—or of environmental developments such as increased knowledge of climate change or the fact that we have moved beyond some of the planetary boundaries?

A very good question—and one that has been asked by a number of people, including several who, from time to time, have wanted to establish a commission and update what we said. If the report were written today, the issues that you've just mentioned would obviously make a difference to the way in which we described the nature of the global crisis and the challenge it presents to different actors—not just governments, which we emphasized, but also the corporate sector and civil society (both of which are much stronger today than they were 25 years ago). We would also deal with the international community in rather different terms than we did. But I don't really think those changes, important as they are, would change the meaning of sustainability or the essence of the definition of sustainability. Speaking personally, I would try to formulate a definition that didn't lend itself to the level of misunderstanding that happened as a result of our breaking it up into these separate elements. But these three elements would still be central. Living within nature's limits is fundamental to sustainability, and to the concept of sustainable development. So is maintaining consumption levels that enable us to live within the bounds of the ecologically possible. As the global system is closed, and limited, and technology isn't going to change either of those things, the notion of intergenerational equity also remains a fundamental element in any definition of sustainability.

I'd like to add a couple of comments to that. You may recall, in the late 80s and early 90s, we experienced a worldwide growth industry—as I called it at the time—in attempts to redefine sustainable development. Some of them were frankly quite ingenious; some of them were very elegantly expressed, and quite compatible with ours. But most of them, frankly, were (and were intended to be) totally self-serving. Every industry wanted to ensure that whatever they were doing, and however they were doing it, could somehow be deemed "sustainable." To have their products or practices deemed unsustainable was marketing suicide. For example, in 1988 the forest industry in British Columbia came up with a definition of "sustainability" that embraced the clear-cutting of old growth forests. Just recently, a growing number of Canadian politicians have taken to referring to the Alberta tar sands as a source of oil that is not only ethical but also sustainable. Now, anybody who has lived in Canada understands the politics of this only too well. But, given the fact that we have long ago exceeded the system's carbon limits, the notion that the development of fossil

fuels is an endeavour that can be deemed sustainable belongs, in my view, in another galaxy, not ours.

Some people believe there's necessarily a trade-off between the economy and the environment. The message of the Brundtland Report, however, is that this is not necessarily so. There is another way. I wondered if you'd comment on how you see the relationship between growth and sustainability?

Well, there is obviously a conflict between economic growth as we have known it—characterized as business-as-usual or resource-intensive growth—and the environment. After all, history is full of civilizations that collapsed because they over-consumed the ecological capital on which their development depended. Having just passed four critical planetary boundaries, with more to come, we are still on that unsustainable path.

I can recall, in the late 1960s, after 25 years of unfettered post-war growth, we were in a real environmental mess, and our political leaders were forced to do something to clean it up. They established environmental protection agencies with a mandate to do just that. They, of course, made sure that these agencies were given absolutely no power to influence the fiscal and energy and industrial and other policies that had created the mess in the first place. Instead, they gave them a very simple mandate—to clean up pollution and degradation after the fact, using largely end-of-pipe measures to retrofit and to rehabilitate and restore.

The rest is history. In spite of our best efforts to clean up the mess—and we made magnificent efforts and we did clean up a lot—environmental protection agencies simply couldn't keep up with the new pollution and the new environmental degradation generated by runaway, resource-intensive, business-as-usual growth. Trade-offs between the environment and the economy were usually made in favour of the economy. The result was that, by 1984, the environmental crisis had assumed even more threatening proportions, and that's what prompted the United Nations to establish the Commission. It asked us to come up with new ways of addressing the crisis that went beyond the standard after-the-fact environmental protection.

In *Our Common Future*, we called for a rapid global transition to more sustainable forms of development. And we proposed a range of policy and institutional changes that would make it possible for nations to grow and prosper sustainably, all the while keeping within nature's limits. Governments endorsed our recommendations in 1987 and again in 1992, but, as I said earlier, after the Earth Summit they promptly forgot about them. And so today, we're back to where we were in 1972, making trade-offs between the environment and the economy. And in North America today, those trade-offs are being made almost always in favour of the economy. Politicians speak of the environment being the enemy of the economy, a threat to growth and a killer of jobs. To them, the relationship is a simple one. It's like a children's teeter-totter or see-saw, with the economy at one end and the environment at the other. If the economy goes up, the environment goes down, and the resulting degradation is viewed as the inevitable price of progress. If the environment goes up, the economy goes down with a resulting loss of growth, jobs and income. Can't let that happen! With such a mindset in power, it's no wonder that the planet is in peril.

There is only one alternative and that is for governments to return to the commitments they made at the Earth Summit and begin to implement the policy and institutional reforms needed to bring about an urgent transition to more sustainable forms of development.

Can we now move on to more specific issues around the information technology sector? The Brundtland Report came out in 1987. The Internet did not become publicly available until 1989. There have been enormous changes in information and communications technology, mobile telephony and the Internet in the intervening 25-year period. Going back to 1987, did you anticipate that information technology would have that degree of impact on the future, or on sustainability?

Well, the short answer is "no." What we did was, I think, to see the fact that we could move information around the globe faster than ever before. We saw that as enormously important, and felt that it would have a fairly positive influence on the transition to sustainable development. We also said that more open information systems were essential to such a transition. But, in 1987, we didn't foresee the ICT revolution—equally, we didn't foresee the fall of the Berlin wall, or the rise of the BRICs and so on—and nor, as far as I am aware, did anyone else.

How much difference do you think the information and communications revolution has made to sustainability over the past 25 years? Has it significantly affected prospects one way or the other?

I don't think the information revolution changes what we mean by sustainability. I think that it provides additional tools, perhaps very powerful tools, for achieving the reforms that need to be made in the transition. But a lot of people feel that way, I know, and discussion tends to end there. It seems to me, however, that this can work both ways. ICTs are all-pervasive, they are open to everybody—those who favour change and those who oppose it, those who stand to gain from any transition and those who stand to lose. And I think we have to keep in mind that those who defend the status quo have far greater access to the political power and the reserves of financial capital needed to deploy ICTs in whatever form they are, than do the rest of us.

I'm interested here in an idea which you included within the definitional parts of the report—the idea of "limitations imposed by the state of technology on the environment's ability to meet present and future needs." Has the state of technology moved forward in such a way that it has removed some of these limitations on the environment's ability to meet present and future needs—or has it imposed any new limitations?

I think that's a very difficult question. We felt back in 1987 that technology and most of the ways it can be introduced into the market and workplace did put certain limits on our ability to shift from unsustainable to more sustainable patterns of production and consumption. The inertia of social organization also places limits on it. I'd like to give you an example. I belong to a group called the Factor 10 Club. We believe that we can achieve a tenfold increase in the efficiency with which we use energy, natural resources and other materials. We've had the technologies to achieve a fivefold increase for more than a decade now, perhaps two decades, and scientists tell us that we have the potential for at least another fivefold increase. Thanks to the relatively slow pace of capital turnover, however, and to the inertia of the status quo, progress has in fact been very slow. The inertia of social organization has proved formidable, particularly the slow pace at which governments seem able to change the incentive structures that could accelerate the adoption of more sustainable technologies.

In our discussions before this interview, one of us asked the question whether the information revolution, or indeed technology in general, has made it easier to develop, grow, consume and prosper within the planet's natural limits. Has the information revolution made it easier for governments or people or the international community to envisage development, growth, prosperity within the planetary boundaries or natural limits to sustainability than was the case before?

I think I answered that in part when I talked about the fact that ICTs work both ways, both for those who favour change and for those who oppose it. But to go beyond that, there is no doubt that ICTs are now a major player in just about everything, that they are all-pervasive. They have changed the nature of domestic politics, and of debate about issues such as global warming. They have also changed the nature of international politics. Witness the very easy global reach now of non-governmental organizations: they can organize not only locally, as they could in my day, and nationally, but also internationally. That is true of both those who want to advance progressively and those who don't. And ICTs have altered the way people behave: witness the Arab Spring. They have had a profound effect on all aspects of economy and society, politics and culture.

But do they make it more easy or difficult to grow and prosper within Earth's natural limits? I must admit that I haven't seen any comprehensive studies on this, so I hope I'm wrong. But in my view, the balance of evidence is that ICTs are making it more difficult rather than easier. ICTs have changed some production and consumption patterns, but I don't see any evidence that they have done so in the positive way that we hoped technology and communications would. Contrary to our expectations, ICTs have reinforced a number of environmentally unsustainable trends. Not only are they large and increasing sources of environmental harm themselves, but they seem to me to facilitate runaway consumption and short-term decision-making.

They are also having—we can't yet be sure but I suspect—a profoundly negative effect on the capacity for governance. When it comes to governance, I think the first question you have to ask is, "What *is* governance?" Yesterday, I looked it up in the Oxford dictionary. That formidable dictionary says that "governance" is "the action or manner of governing a state or organisation." "Governing" is the adjective for "govern" and, according to Oxford again, "to govern" means "to conduct the policy, actions and affairs of a state, organisation or people with authority." I repeat, "with authority." Now I fear personally that the net effect of the all-pervasive use of ICTs, along with other trends, has been to weaken that authority, which could also, I fear, weaken the capacity of governments to govern effectively. I also fear, frankly, that it has made it more difficult politically to challenge the massive power of the status quo regarding unsustainable forms of development—fossil fuels, for example, but not only fossil fuels—and made it more difficult to effect any transition to more sustainable forms of development which will call for very strong actions by government.

ICTs have become no doubt a necessary feature and a powerful driver of modern development, but much as I hate to say it, their runaway use does not increase my optimism for the future. In any event, I suspect that there's no way of controlling the speed of ICTs, the rate at which they are advancing, even if one wanted to. Their growth to date has been largely or totally uncontrolled. I suspect that, given the limits of government, it is now virtually beyond control. So we will have no choice but to react to every new development that comes along and live with whatever the consequences are. I hope I'm wrong and that the consequences are positive, but I think the balance of evidence to date is that they are likely to be largely negative.

The Brundtland Report recommended and emphasized institutional changes to enable sustainable development—and the kind of challenges you've been describing very much require multilateral cooperation and therefore the authority of government agencies. Governance of the Internet, by contrast, has challenged many of the traditional norms of international governance, including the authority of multilateral agencies. It takes place outside intergovernmental agencies, and it emphasizes multistakeholderism. I wondered if you see that as a model that is likely to spread, or that threatens the kind of international cooperation that's necessary to tackle challenges like climate change.

We devoted a full chapter in *Our Common Future* to governance in relation to sustainable development. It called for measures to make institutions, national and international, capable of overseeing the urgent transition to sustainable development we called for. In 1987 they were not capable of doing so and, unfortunately, since the reforms we called for were not undertaken, they are still not capable of doing so.

I would like to go back to your earlier question about the relationship between ICTs and sustainable development. You raised the question of ICTs facilitating the possibility for monitoring, and it's clear that we do need better monitoring. There's no doubt that ICTs have made monitoring much easier. But it's more important in my view to address the unsustainable forms of development that lead to the syndromes that we need to monitor—higher global temperatures, melting glaciers, declining rivers, forest fires and so on.

I'm not thinking about sustainable development here so much as about the rapid growth in what I call "the fear society" since 9/11. Ever greater surveillance has been made possible not only of our movements through airports but also on the streets of cities like London, where there's a camera on virtually every lamppost. And then we have attempts by some governments to restrict our rights of privacy, which have been made much easier by certain ICTs. All of this helps to reinforce the unsustainable status quo across the board, and certainly in government. I think that's a very important point. I'd like somebody to argue the opposite of what I'm saying. I think it would be fascinating. I do hope I'm wrong, but maybe somebody in this discussion will take the opposite tack.

My last question is to do with dialogue between the sustainable development community and the information technology world. It's quite rare to see information technology have much place on the agendas of international conferences on sustainability. It's barely mentioned, for example, in the zero draft for Rio+20. I wondered if you have any suggestions as to how to improve dialogue between these two areas of professional expertise.

I've thought about this since we talked earlier, and I must say that I'm not sure how to answer it. I feel that dialogue is something that's conducted between two parties. Given the multiple forms of ICTs, hundreds of forms and thousands of applications, who represents the ICT sector? Given that there are hundreds of non-governmental organizations, corporate leaders and others who are promoting sustainable development, who represents the sustainable development community? So I don't know who is going to be communicating with whom. Nevertheless, I think that it would be very useful if people like you and experts from the ICT community, a number of whom would argue the opposite of what I have been arguing, got round a table with a number of leaders from sustainable development non-governmental organizations or institutes. They would represent a small fraction of each, but I think that would be a very useful exercise. The resulting paper or papers could make a contribution to our dialogue. There may be other ways of doing it, but both communities are so diffuse it's hard to come to grips with.

Thank you very much.

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