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Session:

”Environment: Global Challenges”

Honourable Excellencies,
Distinguished Colleagues,
Distinguished Fellow panelists,

First of all I would like to thank the organizers of the World Forum for giving me the honour of reporting from this important session. It is no doubt that the partnerships that we are discussing in science, technology and innovation **must lead to change**. The world is full of pressing issues and the knowledge that we have and that we will create in the future must be implemented to improve the lives of humans on the ground. And the most general and fundamental condition of this improvement is the environment. **Climate change,**

bad land use, and weakening ecosystem services – the silent work of nature to simply function, the *sine qua non* of any economy – and many other major environmental concerns, are at present imperilling the progress that otherwise lies within reach.

In order to deal with this we need science and technology. We know this and the contributions in this session have made it even more clear. We need environmental technology. We need better environmental management. We need climate abatement technologies. It is obvious.

But before I say a few more words about the interesting contributions let me point to one of the most crucial findings of research in the social sciences and humanities in recent years which has an important story to tell us in this regard. **The message is this: to invest in education and science is to invest in the environment.** This is a connection which is of the same kind as the connection that we have seen between the level of women's education and the performance of a society on many welfare indicators.

Why is this? Let me give you an example from research that we have undertaken in the Stockholm Resilience Centre, a newly formed major institute in Stockholm. We have studied urban parks, urban and near urban reserves, and the city itself. We have found that the best possible thing for the environment is to be populated by active, well educated citizens that are well organized and belong to civic groups,

in particular if these groups use the landscape or the parks or any particular part of the city.

These results are sustained by research world wide on how conservation old style, where reserves were set aside to “preserve” original nature, is not easily compatible with equity and sustainability and with peoples’ interests.

Another factor is diversity. Cities and regions which nurture diversity are not only becoming more creative and generate higher income. They also generate biodiversity. In New York City and in Capetown the ethnic and social diversity creates a biodiversity mosaic. Intense use for diverse purposes creates a manifold environment.

We think there are deep lessons to learn from this new work. Other cities have been encouraged to join. In cooperation with UNESCO in New York Stockholm Resilience Center has already started a network of cooperating cities – including not just Cape Town, Stockholm, New York, but also Delhi, New Orleans, Helsinki, Istanbul, and Canberra to continue comparative this work.

The most important capacity that we can see in this research is motivated citizens. They can enhance qualities of their neighbourhoods. They will inevitably make tougher demands on their

politicians. They will also act more responsibly in their lives – and they will contribute to welfare and economic growth.

The session

Mr president, there is a breathing – a rhythm – in every conference. And during this session I think that we have just experienced this rhythm, with a counter perspective. In the previous sessions we have heard a range of arguments in favour of an expanded role for universities and science. These have of course been well founded. During this session we have heard words of caution, and a discussion of the limits as to what universities could or should do.

Laura Marchetti spoke about epistemology and new relations to nature. He linked this to policy and she saw some limitations in previous talks. For example, she referred to patenting of life is a problem. She talked about rights. We can not have a new monoclonal neo-colonialism, she said, and simply export knowledge from the North to the South. She spoke for local knowledge. She insisted on a fourth element of the Knowledge Triangle: which is to preserve history, heritage, and landscapes. **Clearly: to only go for economic growth is not enough.**

Another word of caution came from **Michael Osborne**. In the midst of a rich presentation of new knowledge tools, he also addressed fundamental issues about what should count as knowledge. What constitutes “evidence for argument?”, he asked. It is hard to agree across fields. He and the OECD expressed doubts of the

usefulness of interdisciplinarity (while clearly many others believe it is indispensable for technology and policy). He also discussed the role of ethics – who has the right to claim ethics? Religion? Politics? Science? – or economics?

These are important questions. They could be asked to all of us and also to those we represent. For example, what sort of evidence comes from organizations, like OECD? What gives the World Bank a right to speak with authority? We should perhaps remember that some nations have questioned international organizations – like the UN, which is consistently under pressure. Or, famously, the International Atomic Energy Association and their security teams looking for WMD's in Iraq. Who questions what when and why? This is not just a matter of evidence but also of power.

Another set of limits were drawn up by **Julian Hunt**. He showed admirably the **complications and the complex connections of the hazard and vulnerability issues. He warned against simple solutions. The** goal of work, he said, was ultimately to provide better **policy**. But he was also clearly aware that whatever you do it is a matter of **values**. Choice of technology is, at some level, political. Some dislike nuclear, some cling to fossil. Universities should not rule anything out, he said. “No push on universities.” Universities should work on everything. But they should not support everything. He drew a red circle – clear limits of universities. But then: What about the innovation? Does not innovation demand a deeper involvement with all sorts of actors and firms and government agencies?

He also looked at the cost issue. Precision plus the need to be comprehensive is an expensive formula. Who pays for all the monitoring systems involved in climate research? One case in point is space research. **Giuseppe Morsillo** talked about how space produces new technologies and needs a lot of support from governments and that it could possibly provide spinoffs, even environmental spinoffs. How does one count the value of this investment? A question which is likely to be posed by the developing countries. And where is the “evidence of argument”, to use Osborne’s phrase?

The question was already asked from the floor: should we not promote action rather than more data? It is once again about limits: how far could we argue for investing in high-tech solutions far away from earth? Who decides, after all, about the science agenda? This is always tricky. We never know fully what is going to come out of our investments. A lot of useful environmental knowledge came out of the funding of science in World War II and the Cold war. Now space is being argued for not just with industrial arguments but also with the environment. It is a sign of how **rational** for science **investments** can move.

Conclusion

This session, full of important contributions, calls for a closer scrutiny of the power issues in science spending and science planning, and how to involve many partners in the partnerships that is a key word in the name of this World Forum.

I lack therefore the word *power* that should be part of our analysis. I also lack the word *law*. We have good studies showing that law is a driver of environmental innovation, not least policy innovation, but also technology. Protecting citizens is business opportunity for those who can take it.

And I miss a deeper discussion of the word policy. Policy is about making sound judgments. I do not believe that professor Hunt for a second actually discloses the possibility that universities go all the way along and provides policy advice. Some limits, even those drawn in red, should perhaps be transgressed – by those that are both qualified and impartial, as universities often are. For the public good. Still, it is useful to always be aware of the limits.

Let me finish by Lovelock, who was mentioned as a prophet of holism. I went to a Lovelock seminar at Oslo University two weeks ago. Lovelock said that Gaia will take care of overpopulation. Eighty percent of us would probably have to leave this planet. And Britain was already full; no more immigrants, please. It was an inverted lifeboat ethic of the world. I was quite shaken.

Peder Anker, a Norwegian historian of science, who was also speaking, then reminded us how Lovelock's holistic Gaia-thinking actually emerged from the cybernetics ecology of the 1950's and 1960's that in Lovelock came out in a quite extreme version.

Anker knows what he is talking about. His dissertation at Harvard was precisely about holism. He wrote of botanist-politician

Jan Christian Smuts, the ideological father not only of holist ecology but also of apartheid.

We could use this warning example from history as evidence that there is a **political dimension** of the kind of responsibilities that we are trying to take at this Forum.

I have just arrived in Trieste from the CSD side events in the UN in New York. A task force on behalf of the Norwegian government presented a 20 year follow up on the Brundtland report from 1987. I was part of that group of international scientists and social thinkers. I must say it was much easier to defend Brundtland than it would have been to defend Lovelock. But nothing is complete or forever. It is time, we said, to bring Brundtland even further, to connect her notion of sustainable development more thoroughly to ordinary people and to their dreams and aspirations. Not just talk of restrictions but more about the hopes and needs of humans, to present a compelling story that can reach particularly to the unreached and appeal to the have nots.

Thank you.