Future Challenges in Sustainability: A Call to Action

Press Summary of
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PREFACE:

The grand global challenges of the 21st Century – poverty, hunger, health, climate change, and so on – are so complex, they cannot be addressed by isolated initiatives no matter how well-meaning. They are multidisciplinary by nature – requiring solutions from the worlds of the physical sciences and engineering, the life sciences, the social sciences and, by no means least, the economic and political sciences. Academia's geniuses alone cannot solve them. Industry, academia and government must all work together to create the synergies required to solve global problems. And this means that grand challenges demand grand alliances.

This talk will filter these issues by the core area of competency of Wageningen University and Research Centre. Six core points will be made:

I. Nutrition is one of the mega challenges this planet faces.: Nutrition

On our planet today, roughly 2.5 billion people are either under-nourished or over-nourished – either starving or obese! That means that more than 1 of every 3 people on our planet are in danger of dying … and not merely from starvation but, at far greater numbers, from treatable diseases that kill them both because they cannot afford treatment and because their mal-nutrition compromises their ability to fight off those diseases.

II. Too many people in the Developed World think the main challenges in nutrition are under-nutrition (hunger and imbalanced diets) in the Developing World. But this is only half true. For example…

I reference the World Food Programme:

- About 6 million children die of starvation each year – that's as if **1/3 of the Netherlands population were to die annually from something we could fix!**
- **925 million people in the world are undernourished**.
- Their malnutrition dramatically increases their vulnerability to all sorts of killer diseases because their immune systems are compromised. In fact, **hunger and malnutrition are the number one risk** to health worldwide — **greater than AIDS, malaria and tuberculosis combined!**
- Among the key causes of hunger are of course poverty but also natural disasters, conflict, poor agricultural infrastructure, and over-exploitation of the environment. And, recently, financial and economic crises have pushed more people into hunger.
- And it's not just the obvious sort of hunger resulting from an empty stomach. There is also the **hidden hunger of micronutrient deficiencies** which, as I've said, make

people especially susceptible to infectious diseases, but also impairs physical and mental development, reduces their labor productivity, and increases the risk of premature death.

- Hunger does not only weigh on the individual. It imposes a crushing economic burden on the developing world. Economists estimate that every child whose physical and mental development is stunted by hunger and malnutrition stands to lose 5-10 percent in lifetime earnings.

HOWEVER, the other half of the nutrition challenge is equally deadly:

I reference the World Health Organization:

- Worldwide obesity has **more than doubled** since 1980.
- In 2008, more than **1.4 billion adults**, 20 and older, were overweight.
- Beyond the 1.4 billion adults, **more than 40 million children under the age of five** were overweight in 2010!
- In my country alone, experts writing in the Lancet predicted that **½ the population will be obese by 2050** – that would be over 150 million people!
- Unlike what so many think – that obesity is a high-income country problem -- obesity is dramatically on the rise in low- and middle-income countries, particularly in urban settings. In fact, close to **35 million of the roughly 43 million overweight children on this planet are living in developing countries**!
- In fact, **65% of the world's population lives in countries where overweight and obesity kills more people than underweight.**
- And, finally, **overweight and obesity are the fifth leading risk for global deaths**. At least **2.8 million adults die each year as a result of being overweight or obese**. In addition, 44% of the diabetes burden, 23% of the ischaemic heart disease burden, and a substantial but poorly calculated percentage of certain cancer burdens are attributable to overweight and obesity!

IV. The only hope of addressing mega-challenges like under- and over-nutrition is to develop global partnerships that take advantage of complementary strengths.

One of the biggest efforts along these lines is the UN Millennium Goals initiative. In September 2000, all the nations of the world voted to dedicate themselves to achieve 8 goals by 2015 – among these, halving poverty and hunger, achieving primary school for all including girls, reducing maternal mortality by ¾, halving the number of people in the world without access to clean water, and so on.

No one knew how to do this affordably until the macroeconomist, Dr. Jeffrey Sachs, at the request of Kofi Annan, created a plan based on the input of hundreds of experts.

In the few years since that plan was approved, not all of the goals have been met and the UN will fall short on a number of them by 2015. But a lot of progress has been made in some areas.

Looking at the Millennium Goals from Wageningen's perspective, one sees the following: while the poverty goal will actually be achieved, the hunger goal will not!

Worse, the Millennium Goals didn't even take obesity into account!!!

V. Why should anyone believe transformational progress is possible?

Three reasons:

1. Science & technology are capable of game-changing developments – consider the extraordinary benefits conferred by the Green Revolution in the 1960s and 1970s.

2. Humans are capable of massive behavioral change – consider the remarkable decrease of smokers in many countries over the last two decades.

3. And institutions are capable of devising innovative mechanisms to scale the interventions that they are capable of devising – consider the unprecedented flowering (a good word in the Netherlands) of public/private partnerships for progress on a global scale.

VI. Wageningen UR – the Wageningen University & Research Centre -- is one of the world's pre-eminent brain trusts for progress in addressing the global challenges presented by under- and over-nutrition as well as sustainable agricultural practice in the face of climate change and other challenges. It has distinguished itself already by devoting itself to:

1. Applied science and its crucial role in addressing global challenges.

2. Public private partnerships and their capacity to be transformational on a global scale.

For example, Wageningen has made remarkable alliances with industry to go beyond knowledge for knowledge's sake – what some people call curiosity-driven research – to develop an extraordinary array of applied research collaborations that have the promise of making the world a better place in an affordable way.

And Wageningen took an even bolder step: Recognizing that innovative bilateral alliances are unlikely to produce, in profusion, transformational breakthroughs that would change the world for the better at scale, Wageningen played a key role in creating the Netherlands' Top Institute for Food & Nutrition when its Centre for Food Sciences became the Top Institute for Food & Nutrition to answer the challenge of the Netherlands government.

Europe too is making a contribution, having formed the European Nutrition for Health Alliance.

And in the U.S., the The New York Academy of Sciences has created – together with the World Health Organization – a global alliance called The **Sackler Institute for Nutrition Science (see slides 10 & 11).**

And Wageningen UR plays a very special role in the Sackler Institute's global alliance as the pre-eminent university in Europe in addressing the grand challenges of under- and over-nutrition. Indeed, the New York Academy of Sciences and Wageningen UR have agreed to co-host a landmark gathering in the spring of next year to bring together the leaders of the institutions worldwide who could – if they work together – make a true difference and have them commit to partnering together to solve the crucial and highest impact challenges defined by the World Health Organization in the WHO "roadmap" on nutrition that will be issued by its partner, The New York Academy of Sciences, late this year.

VIII. The Sustainable Development Solutions Network

The final point of this talk: a "Call to Action" to Wageningen and to Netherlands to become charter members of the newest network to be announced by the United Nations only last month:

I quote the UN Press release of 9 August:

United Nations Secretary-General Ban Ki-Moon will launch a new independent global network of research centres, universities and technical institutions to help find solutions for some of the world's most pressing environmental, social and economic problems. The Sustainable Development Solutions Network will work with stakeholders including business, civil society, UN agencies and other international organizations to identify and share the best pathways to achieve sustainable development. This initiative is part of the work undertaken in response to the mandate on post-2015 and the outcome of the Rio + 20 Conference.

"The post-2015 objectives will help the world to focus on the vital challenges of sustainable development," said UN Secretary-General BAN Ki-moon, "and the Sustainable Development Solutions Network will be an innovative way to draw upon worldwide expertise in the campuses, universities, scientific research centres and business technology divisions around the world."

The scale of the global sustainable development challenge is unprecedented. The fight against extreme poverty has made great progress under the Millennium Development Goals (MDGs), since they were agreed at a UN Summit in 2000 with a target date of 2015, but more than one billion people continue to live in extreme poverty. Inequality and social exclusion are widening within most countries. With the world at seven billion people and current annual GDP of US$70 trillion, human impacts on the environment have already reached dangerous levels. As the world population is estimated to rise to nine billion by 2050 and global GDP to more than US$250 trillion, the world urgently needs a framework for sustainable development that addresses the challenges of ending poverty, increasing social inclusion and sustaining the planet. Yet, the reality is that politics around the world too often focuses on short-term issues while governments often lack the timely information needed for long-term sustainable-development strategies. It is essential that scientists and technology experts outside of government support the development of long-term analyses, demonstration programmes and development pathways. This will be an unparalleled global challenge, requiring a new generation of problem solving that will address local, national and regional objectives and strategies around highly complex issues facing humanity in the 21st century."

The New York Academy of Sciences is offering its members' energies, expertise and passion to the Secretary General. We hope Wageningen UR does as well because, among the world's research universities, none knows more about partnering to improve the world than those at Wageningen.