

Wageningen University, January 17th 2014. Symposium ‘Grab your chance’

(25th Anniversary of VWI – network of female alumni)

Speech by Professor Simone E. Buitendijk, MD, MPH, PhD

‘Global challenges and gender balance’

I feel inspired by the title of your symposium to grab my chance, too. My chance to give you my views about gender balance in science and research. I will not use this opportunity to tell you that Leiden University is doing so much better than Wageningen University, I will not use it to tell you that the male professors at this university should feel guilty about the fact that they make up 91.2 percent of the group of Wageningen professors and I will not use it to tell you that the only way forward is the implementation of top down measures that will alienate the university’s leadership from the entire organization. I will not do that because none of these statements hold true.

I will instead grab my chance to tell you that I am very worried that the Netherlands may soon lose its competitive edge in Europe and in the world because of the pervasive Dutch gender imbalance in research and innovation and to tell you how we can avoid losing that edge if we get our act together really, really

soon. And I will grab my chance to ask you to work with me in a new collaborative movement that we need to start, because I cannot do it alone. My hope is that today I can instill a collective sense of urgency, because we literally have no time to lose.

Why am I worried about our Dutch competitive edge and how does that apply to you? Before coming here I studied your website and found a very compelling vision for your research focus. Wageningen University focuses in its research on food production, bio-based economy, nature and landscape, climate and water, healthy lifestyles and 'the continued pressures on our natural environment'. "The university is strongly focused on application of its research results and on present day societal challenges." I am sure your executive board and all your excellent researchers are keeping a keen eye on the possibilities that the calls for proposals in the new 80 billion European flagship programme Horizon 2020 will provide.

H2020 has a strong focus on societal challenges and application of results:

"Climate action, environment, resource efficiency and raw materials, is one of the six great societal challenges of Horizon 2020. It has the objective of achieving a resource efficient and climate change resilient economy and society, protecting and sustainably managing natural resources and ecosystems and ensuring a sustainable supply and use of raw materials, in order to meet the needs of a growing global population within the sustainable limits of the planet's natural resources and eco-

systems”. It is almost as if they first read the Wageningen University website before drawing up the H2020 program.

“As a result it is expected that at least 60% of the overall Horizon 2020 budget should be related to sustainable development and that climate-related expenditure should exceed 35% of the budget”.

You would think this is only great news for innovation in Dutch academia and at Wageningen University. But it may not be because of article 15 of the proposed structure of Horizon 2020. Although most researchers in the Netherlands are totally aware of H2020’s grand societal challenges and the budget attached to it, and will no doubt put in fine proposals to try and replicate that fact that we get 1.5 times the money back from Europe that the Dutch government invests in the EU research budget, I suspect very few are aware of article 15. This lack of awareness may lower the chances of being truly innovative and, hence, of getting funded. It reads as follows:

Article 15

Gender equality

‘Horizon 2020 shall ensure the effective promotion of gender equality and the gender dimension in research and innovation content.’

And I suspect that too few Dutch researchers are aware of a recent call from Brussels: “The European Commission has launched a call for gender experts for Horizon 2020, its next funding framework. Experts are needed to “evaluate proposals for EU funding and for other activities such as monitoring, programme evaluation, and policy development.”. I have picked out a few topics from the long list, those that I thought would be of most interest for Wageningen University:

Gender in ecology, Gender in biodiversity conservation, Gender in biology, Gender in developmental biology, Gender in biochemistry and molecular biology, Gender in microbiology, Gender in water resources, Gender in oceanography, Gender in climatic research, Gender in environmental sciences, Gender in geosciences, Gender in organic chemistry, Gender in environmental sciences, Gender in health sciences, Gender in medical biotechnology, Gender in industrial biotechnologies, Gender in environmental biotechnologies, Gender in natural sciences.

You may wonder what gender has to do with these fields and what on earth the EU is doing. It is very simple: they have understood that if they do not push scientists to think about whom their research results apply to, scientists are likely to have a blind spot for half the global population, namely the women. How innovative and

applied can research be, especially when it concerns the global challenges, when it mainly deals with the issues of half of the global population?

Policy makers and decision makers and people who will have a say in the division of the vast funds are reading texts such as these:

Did you know that:

- I. Contributions to greenhouse gases, are directly linked to wealth. Women feature disproportionately amongst the poor in all countries, so, by virtue of income alone, they consume less energy, and contribute less to climate change. There is also evidence that women have different consumption habits. It has been demonstrated in Europe that direct and indirect energy consumption is higher amongst men than women independent of income and age (39% higher in Germany and 22% higher in Sweden).
- II. Gendered social and economic roles lead to women and men experiencing the effects of climate change in different ways, which relate to the gendering of everyday lives. In the Global North, women are more likely to experience fuel poverty due to gendered income differentials throughout the life course. Investing in clean energy

- alternatives to burning biomass is likely to have a positive impact on female mortality in the developing world.
- III. There is evidence that women are more likely to consider climate a problem and that greater presence of women in decision making structures correlates with increased adoption of mitigation measures. However, the numbers of women in high level positions related to climate change and in the energy sector is low.
- IV. Extreme weather conditions have gendered impacts. In terms of mortality, flooding in Bangladesh in 1991 killed 71 per thousand women compared to 15 per thousand men, while the heat wave in France in 2003 killed many more women. The total excess mortality for women was 75%. Even accounting for age distribution, the excess mortality for women remains 15% higher.
- V. The failure to invest in clean energy alternatives to burning biomass has a gendered impact on mortality. In Pakistan, indoor air pollution accounts for 28,000 deaths and 40 million cases of acute respiratory illness, annually, the majority of which are women, the elderly and children.

<http://www.genderste.eu/>

<http://genderedinnovations.stanford.edu/>

There is an abundance of examples in the fields of engineering and medicine, too.

We need much more gendered research to be truly innovative, to be truly inclusive.

You may wonder what this has to do with gender balance in research teams? You may wonder if I am trying to say that we that we by definition need more women researchers if we want to become aware of the importance of gendered innovations in science and technology? No, not at all, male scientists can and have been proven to be able of being gender aware in their approaches to science and research. At the moment, though, while we are still in the starting phase, most researchers who can provide gender training and expertise in research in general and in the STEM fields in particular, are women. But that may soon change. Perhaps I should say it is the other way round: there is more and more evidence that gendered innovations in the STEM fields attract young female students and scientists, just as we know transdisciplinary approaches in education and research do. In that sense there is a relationship between gendered innovations and gender balance in teams.

Not just the EU is catching on. There is a growing number of peer reviewed journals that have editorial policies requiring sex or gender specific reporting of scientific results in animal models, cell line research, human randomized

controlled trials and many other types of studies. Journals such as Nature, the Lancet and PLOS Biology, just to name a few.

There are three ways to fix the problem of the pervasive bias against women in research and academia, as professor Londa Schiebinger, the PI of the EU/Stanford Gendered Innovations project always says: first, fix the women, second fix the system and third fix the knowledge. I believe most of the explained variance will come from measures two and three, in conjunction. Fixing the knowledge will work so much better with diverse research teams and fixing the system will work so much better with gendered innovation that will attract more female students and will require more female academic leadership. And trust me: once we start seeing how gender unaware science and innovation is nowadays, we will see the bias against women as decision makers and science leaders, too.

We are all biased against women being leaders in research and academia. If I don't correct myself, I am too. How do I know I feel this way? Because, much though I hate to admit it, I am only human. And all humans have prejudices. They stem from experiences in our early lives, from parental and societal messages and images that have become so deeply embedded that we are often no longer aware of them. I have no reason to believe that I am different than other academics in this respect. And most academics, male and female, are biased against women if they don't retrain themselves. I want to briefly tell you about an article that was

published last year in the Proceedings of the National Academy of Sciences. It describes a study that was carried out among leading researchers of eight top US universities. The researchers were presented with an application of a person for a PhD level job as head of a research lab that they had to judge. The candidates were not perfect, but also not bad. One half of the candidates were women and the other half were men. What the leading scientists did not know is that what they read was a fake application and that the CV's they judged as a group were all the same. The only difference was that one half of the applications had a male name on it, and the other half a female name. The results of the study was that the applicants named Peter were offered the job significantly more often than the applicants called Jennifer, received a salary of 30,00 dollars while the Jennifers received 26,000 on average, and were more likely to be offered mentoring by the scientists than the Jennifers were. The female scientists were just as likely as the male scientists to favor the Peters over the Jennifers. I find the results pretty depressing. The only good thing 'Jennifer' had going for her is that she was liked more than 'Peter'.

Quote from authors: *“If faculty express gender biases, we are not suggesting that these biases are intentional or stem from a conscious desire to impede the progress of women in science. Past studies indicate that people’s behavior is shaped by implicit or unintended biases, stemming from repeated exposure to pervasive cultural stereotypes that portray women as less competent”.*

And there is so much more evidence from studies such as this one: bias against female first authors, bias against female applicants for professor positions, bias against women applicants for research grants and bias against women as academic leaders in general. It starts early in women's careers and it does not stop. Many mole hills become a big mountain.

What does this mean for all of us academics? It means that if we don't challenge our own biases, if we don't believe we are influenced by stereotypes, if we insist that we are just and righteous in our promotion, publication and funding systems, that we are not biased and that we make those choices based purely on merit and quality, we are fooling ourselves and much worse: we are shortchanging the academic women that we are biased against because we do nothing do rectify the situation. And in case of the knowledge we are producing: we are shortchanging half the world.

Academic leaders, funding agencies and the government in the Netherlands have an extra hard job because of the pervasive Dutch motherhood ideology which locally compounds the global problem of gender imbalance in teams and thereby in the choice of topics for innovation. The Dutch culture pushes even more men than women into the STEM areas, in more than full time, very competitive mono-cultures that seem to favour the male model of thinking. That modus operandi disproportionately keeps out and scares off young women. Six multimillion euro's

recent NWO subsidized 'Zwaartekracht' proposals with only male PI's and all male teams of in total 40 people cannot be a statistical fluke.

The consequences are huge. We will start lagging behind and we will not be able to keep our status as globally competitive universities, at least not in the area of global challenges. My conviction is that within the next ten years globally competitive and focusing on solving global challenges will be the same thing.

NWO will have to change too and they will, if only under pressure of the EU and the ERC. But when will Dutch academia catch on and start moving? Soon enough? I am an optimist, but I do have my moments of doubt and despair.

Today you have made great progress at your University in moving further. Fixing the women is already in progress and you have with great vision added fixing the system. I hope you will swiftly move on to fixing the knowledge. And I hope for a partnership between Leiden University and Wageningen University in trying to fix the situation in the Netherlands because we need all the help we can get.