

12 QUESTIONS TO MARKO HEKKERT

1. From your point of view, what are today's most pressing environmental problems?

The most pressing problems are climate change and biodiversity loss. While the first problem attracts a lot of public attention, the second is unfortunately less visible in the news and in policy programs.

2. When looking at potential improvements in our environment, what gives you hope?

I am very positive about the performance improvements of renewable energy technologies, especially wind and solar. We started developing these technologies decades ago and for a very long time the costs were way too high to be considered a viable alternative for fossil fuels. Now, due to mass production and well-functioning innovation systems, the costs are falling rapidly. The costs are becoming so low, that in the near future the growth in demand will no longer be based on government support programs but on market trends. The downside is the long time frame needed to phase out fossil fuels.

3. Is there a particular environmental policy reform you admire the most?

I am a big fan of the recent offshore wind policy in the Netherlands. For a long time, offshore wind was considered too expensive. This shifted in recent years because the Netherlands agreed to a renewable energy obligation in the context of EU regulations. Since the Netherlands were way behind schedule and offshore wind was seen as the only technology to quickly bump up the renewable energy share, the Minister of Economic Affairs, a member of the main liberal party, had no other choice than to embrace offshore wind. And at that moment, government functioned at its best. It took the lead, organized the whole process of tenders and permits very efficiently and took care of all ancillary processes like location choice, seabed mapping and connecting the wind parks to the grid. The government also introduced a competitive tendering system where the consortium that offered to build the offshore wind park at the lowest cost would win the bid. This initiated a very fast drop in offshore wind prices. Now, in 2020, the first subsidy free offshore wind farm is tendered and several consortia are interested in building it.

4. Which trend in environmental policy and politics do you consider an aberration?

The disconnect between global climate negotiations and international trade policy. Many countries are aware that climate change is one of the greatest threats to future human wellbeing. And yet, it goes without consequences that some countries determine the fate of the rest of the world by not ratifying internation-

al agreements. Only negative economic implications may lead to different attitudes. Unfortunately, the most serious countries are not willing to risk short-term economic benefits for longer-term survival of the earth as we know it.

5. Why environmental research?

I am lucky to be able to do research on the topic that I find most important – sustainable innovation and societal transitions. We, as a society, need to shift to new production and consumption systems that are sustainable. This shift is extremely complex since it requires change in technological, institutional and behavioural processes and these changes are all interrelated. It is a systemic process. Understanding the dynamics of these systemic change processes is not only academically highly interesting, it is also urgently needed to better intervene.

6. What has your experience been when it comes to transferring scientific insights into practice?

This is something I really like to do. My experience is that practitioners are very hungry for scientific insights that help them in day to day decision-making. We have developed models that explain sustainable innovation and transitions that are easy to communicate. These models are able to capture the most important aspects of these highly complicated processes in a limited set of variables and mechanisms. Policy makers highly appreciate this academic work since it structures and simplifies their complex policy environments.

7. Besides the one you're working in, what field of research in the environmental sciences do you find most exciting?

I am frequently envious of my colleagues who do research on the natural environment. They collect data in the field and for work they need to be in the most spectacular natural environments. Instead, I talk to firms and policy makers. I could imagine being a researcher on biodiversity and more specifically birds or large mammals.

8. Can you name any person or event that has had a particular influence on your commitment to environmental issues?

When I was a child, I went bird watching every Saturday under the guidance of a very enthusiastic amateur ecologist. I think these endless hours in nature under excellent guidance have formed me most.

9. What knowledge about the environment would you like to pass on to young people?

I would like young people to know how ecosystems function and how dependent the survival of all species is on a well func-

tioning ecosystem. I would like them to be able to see the chain reaction of the stress that human activities impose on ecosystems.

10. As a scientist concerned with sustainability, what contradictions do you face in everyday life?

In many areas, it is easy to make the right decisions like recycling of waste, trying to avoid unnecessary packaging or traveling by bike and public transport as much as possible. However, like all other human beings I am susceptible to cravings. I like to eat meat once in a while, being Dutch I love dairy products, I like to camp and climb in areas for which I need a car, and I like to buy things online. My struggle to balance my wants and their environmental impacts also fuels my interest in innovation and technology. I am convinced that it is easier to dramatically reduce the environmental impact of the goods and services that we use through sustainable innovation instead of changing consumer behaviour.

11. What are you reading at the moment?

I am reading *Wolf Hall* by Hilary Mantel. It is a historical fictionalized novel based on the life of Thomas Cromwell. According to the *Guardian* it is the best book of the century.

12. Apart from the ones we've raised here, what is the most important question of our day?

How do we change democratic societies in such a way that the interest of future generations and the interest of the natural environment are part of the equation? I observe that democratic societies tend to prioritize activities that deliver instant satisfaction to current generations instead of long-term well-being. At some point, this is a dead-end street.



Marko Hekkert,

professor of Dynamics and Innovation Systems and director of the Copernicus Institute of Sustainable Development, Utrecht University, the Netherlands.

Born 1971. Studies in chemistry at Utrecht University, PhD in 2000 on material efficiency in relation to climate change at Utrecht University. Since 2016 director of the Copernicus Institute of Sustainable Development, Utrecht University. Chair of Future Food Utrecht, Utrecht University.

Research focus: sustainability transitions, circular economy, sustainable innovation, sustainable agriculture.

Selected memberships: Societal Transitions Research Network (STRN) | Sustainable Development Committee of Socio and Economic Council of the Netherlands | Technological Forecasting and Social Change (Editorial Board).

Selected publications: Institutional power play in innovation systems: The case of Herceptin® (*Research Policy*, 2016; with others) | Keeping sustainable innovation on a leash? Exploring incumbents' institutional strategies (*Business Strategy and the Environment*, 2015; with others) | Technological innovation systems in contexts: Conceptualizing contextual structures and interaction dynamics (*Environmental Innovation and Societal Transitions*, 2015; with others) | Functions of innovation systems: A new approach for analysing technological change (*Technological Forecasting and Social Change*, 2007; with others).

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MARKO HEKKERT ...

... is one of the most inter- and transdisciplinary scholars I've had the opportunity to meet in my entire career. Trained as a chemical engineer, he wrote his PhD thesis on energy and material systems modeling. The beginning of his academic career saw him moving towards innovation studies, with a focus on success conditions in developing and scaling renewable energy technologies. Through his early research, he left a significant mark by further elaborating the technological innovation system framework. This earned him a professorship at Utrecht University at the age of 36. In addition, he gained expertise in the social sciences, thereby coming to embrace these two cultures from a foundation in deep knowledge and his own research.

Ever since, Marko has continued to develop the innovation systems approach into a major strand in the rapidly expanding scholarly field of sustainability transitions research. This was how I came to know him at international conferences: a young professor with a major research program boosting green innovation research and generating a rapidly emerging intellectual community. Over time, he and his colleagues continued to expand this program to ever broader contexts, thereby enabling him to address sustainable innovation in more and more encompassing terms.

This development was strongly supported by the foundation of the interdisciplinary Copernicus Institute of Sustainable Development at Utrecht University, where Marko became the leader of innovation studies, one of the Institute's four sections. His extensive background led him to quickly become one of the leading faculty members of the institute – which made him a rather natural candidate, in 2016, for becoming the director of what is now the largest Dutch research institute in sustainability research. The Copernicus Institute currently has over 200 researchers and is very highly regarded, with an excellent international standing.

He is a very gifted, considerate, strategic and people-oriented academic leader.

These achievements would have been unthinkable had it not been for one of Marko's greatest talents: his academic leadership skill. A very gifted, considerate, strategic and people-oriented academic leader, he also understands institutional structures and knows exactly how to deal with them – a rare skill in academia. This makes the Copernicus Institute an extraordinarily thriving, inspiring and collegial place.

Last but not least, it is worth mentioning that Marko did not start out with the goal of achieving academic success and becoming a cherished director. His true ambition has always been to make a difference in the world – which is why, from the very beginning, he oriented his research to influence the actual sustainability policy of the Netherlands and abroad. He continues to be called upon regularly by the Dutch government to advise on sustainability-oriented research and industry programs. He's also increasingly working on developing frameworks for more mission-oriented innovation policy. All in all, Marko has managed to develop a profile of expertise that illustrates how a transdisciplinary approach to sustainability can lead to significant academic recognition – a true sustainability research success story.

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