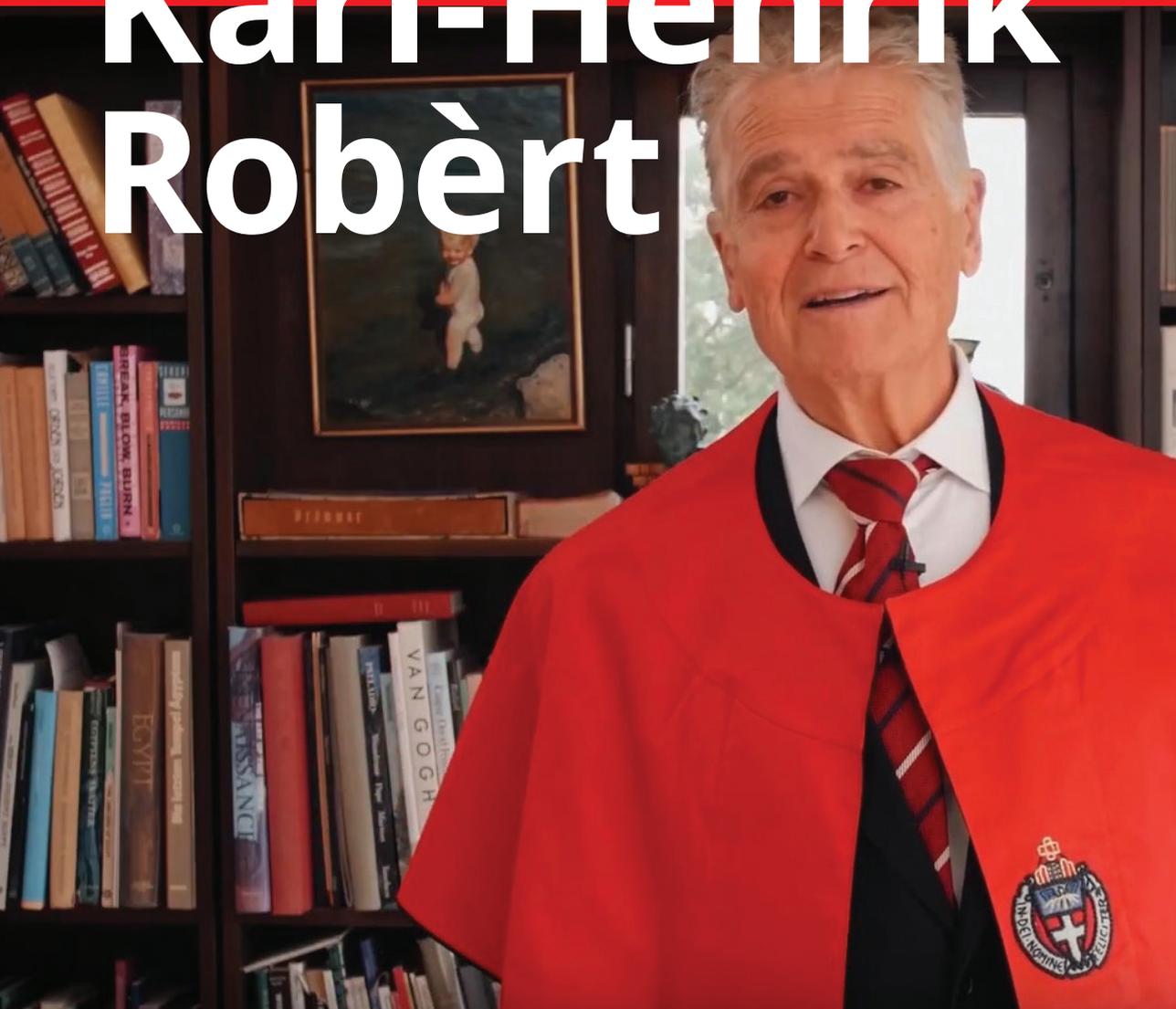


Honorary  
Doctorate Prof. Dr.  
**Karl-Henrik  
Robèrt**



**RADBOUD  
UNIVERSITY  
PRESS**

**Doctor Honoris Causa Series**  
Radboud University

Honorary Doctorate Prof. Dr. Karl-Henrik Robèrt



# Honorary Doctorate **Prof. Dr. Karl-Henrik Robèrt**

15 October 2020

Stevenskerk, Nijmegen,  
the Netherlands

**Radboud University**



**Honorary Doctorate Prof. Dr. Karl-Henrik Robèrt**

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**Honorary Doctor**

Prof. Dr. Karl-Henrik Robèrt  
Professor of Strategic Sustainable Development  
(Blekinge Institute of Technology)

**Honorary Promotor**

Prof. Dr. Han van Krieken  
Professor emeritus – Faculty of Medical Sciences (Radboudumc)  
Rector Magnificus Radboud University (2016-2023)



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HAN VAN KRIEKEN

**LAUDATIO**





HAN VAN KRIEKEN

**LAUDATIO**

More than 30 years before Greta Thunberg started her celebrated school strike in front of the Swedish Parliament in Stockholm, drawing attention to the issues of climate change and unsustainable development, our honorary laureate, Professor Karl-Henrik Robèrt, was already engaged in a related battle, at a nearby location. 15 minutes by bicycle take you from the Swedish Parliament to the Karolinska Institute. That is where Dr. Robèrt had been trained as a medical doctor, where he obtained his doctorate in internal medicine, and where he subsequently rose to scientific prominence as an oncologist, and to institutional prominence as head of a research laboratory within Karolinska Institute, exploring chromosome aberrations and functional cell-markers of importance to clinical practice in haematological malignancies.

His awareness that various types of cancer can be triggered by toxic substances in the environment led him to recognize the impact of air and water pollution. However, instead of focussing uniquely on the interrelation between human health and what he termed “molecular garbage,” his concerns soon turned to humanity’s environmental behaviour at large. He began to describe how industrial society interrupted natural cycles by extracting resources that will not return to any cycle but heap up in nature as trash, for example in the form of plastics or toxic metals, causing not just disease in humans, but eventually a break-down of natural systems.

At that point, our honorary laureate decided to try something bold and utopian. Seeing that reasoning about environmental issues was frequently bogged down by political disputes – a problem that has still not gone away – he attempted to write up a fact-based environmental report that could be signed by scientists across the entire political spectrum. After 21 versions, he had garnered a scientific consensus and his report was ready. Endorsed by the King of Sweden, that report, together with recommendations that were understandable to everyone, was distributed in 4.3 million copies to all Swedish households. This is how in 1989, “The Natural Step” started, an organization that

spread out from Sweden to reach The Netherlands early on, and with offices now in many countries. It was also the starting point for the “Framework for Strategic Sustainable Development,” which is a sophisticated model designed to help countries, cities and companies to work towards greater sustainability.

In the past decades, our new honorary doctor has been engaged in an impressively international and interdisciplinary effort to develop, teach and implement his framework. For example, in 2002, he co-founded a Master’s programme in Strategic Leadership towards Sustainability, at the Blekinge Institute of Technology, where he still works as a professor at the Department of Strategic Sustainable Development. Among the teachers in that unique master’s programme, you will find chemists, economists, social scientists, engineers and business leaders.

It is for a variety of reasons that Radboud University wants to honour Professor Karl-Henrik Robèrt. Our university’s new Strategic Plan defines explicitly our “responsibility for the world in which we live.” It states as one of our goals that “we want to be in the vanguard when it comes to achieving the United Nations’ sustainable development goals and to make our own contribution to the changes needed in the world in the coming decades.” Professor Robèrt can show us ways in which we can translate these goals more effectively.

There is also something specific about the trajectory of his professional life that we want to honour, as it serves to elucidate our university’s vocation. Since its foundation, Radboud University has sought to educate students in such a way that they could become aware of their larger responsibility towards society. Our aim is to produce educated citizens who on the one hand possess sound knowledge and skills in the discipline they have studied, but on the other are able and willing to make a significant contribution to the world in a spirit of moral responsibility and interdisciplinary collaboration.



Radboud Universiteit



Professor Robèrt's life illustrates our ideal in an impressive way. It shows how specific expertise – in oncology, in his case – could become the basis for a much broader societal engagement. Åland, a semi-autonomous region located between Sweden, Finland and the Baltic Nations, now functions as the world's first nation according to his Framework for Strategic Sustainable Development. It is hard to think of an example that could better illustrate the motto of our strategic plan, A Significant Impact.

We are happy to count you from now on among the members of our academic community and are grateful for all the help you are willing to give us in developing our own ambitions in the domain of sustainability.

**CERTIFICATE  
HONORARY  
DOCTORATE**





**CERTIFICATE  
HONORARY  
DOCTORATE**

**RECTOR ET DECANI UNIVERSITATIS RADBODI  
NOVIOMAGENSIS  
LECTORIBUS SALUTEM!**

IN CHRISTI NOMINE. AMEN. Sapienti consilio a maioribus nostris institutum est, ut non modo ingenuarum artium studiosi, academicis disquisitionibus rite peractis, honorificum peterent industriae atque eruditionis testimonium, verum etiam homines doctos qui studiis atque litteris inter omnes excelleret et ad artes doctrinasque adiuvas maxime contulissent, eadem honoris significatione Universitates sponte sua decorare possent.

Quamobrem, cum Universitas nostra commemoravisset illustrissimum

**Carolus-Henricus Robèrt**

Natum Stockholmiae, in urbe Sueciae, doctoratus honoris causa ei decretus est.

Ab oncologia per scientiam morborum contagiosorum ad scientiam quae inquirat quomodo industria hominum corrumpit vim ac rationem rerum naturae necnon etiam ad scientiam rerum ad perpetuitatem moderandarum: progressus qui doctori Carolo-Henrico Robèrt quaerenti salubrem inter hominum naturaeque aequabilitatem quasi naturalis fuit, pia eius opera pervenit ad illam “compagem progressionis perpetuae prudenter praestituendae”, quae hodie ubique terrarum adhibetur. Quod doctrinam efficacissime ad vitae usum confert nobis nostrisque discipulis exemplo sit!

Quippe qui hominum doctorum omnium consensu eximias laudes meruerit et dignus sit qui ab Universitate nostra insigni laureae decore augetur, Nobis, quo causam honestissimam adiuveremus, summos honores ei tribuere placuit.

Quapropter Nos pro potestate nobis concessa eundem

**Carolus-Henricus Robèrt  
DOCTOREM HONORIS CAUSA**

sollemni modo ritumque creavimus et renuntiavimus et ei concessimus quicquid iuris et honoris legitime creato doctori vel lege vel more tribui solet.

Cuius rei quo sit firma testataque fides, Diploma hoc manu Rectoris subscriptum et maiore Universitatis sigillo confirmatum ei tradendum curavimus. Datum Noviomagi, in celebranda festivitate Universitatis nostrae diei natalis nonagesimi septimi, Idibus Octobris a. MMXX.

Rector / Promotor  
Professor J.H.J.M. van Krieken



# RECTOR ET DECANI UNIVERSITATIS RADBODI NOVIOMAGENSIS

LECTORIBUS SALUTEM!

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Professor J.H.J.M. van Krieken



KARL-HENRIK ROBERT

# ACCEPTANCE SPEECH





KARL-HENRIK ROBERT

# ACCEPTANCE SPEECH

Dear academy fellows, dear friends at Radboud University,

I am deeply honoured to have received this fantastic token of kinship from you. I am proud, humbled, and happy. This is not the least since we already have a very nice history together, it is with warmth I recall all the nice seminars and workshops throughout the years. And it is with warmth I recall Professor Toine Smit's river-Rhein-delta project, which was about inter-municipal cooperation to improve the resilience of the river delta in times of climate change. And to do so sustainably, which is where I was connected into the project.

My work has, for 30 years now, been about designing an over-arching, or universal, framework for strategic sustainable development. By “over-arching” and “universal” I refer to something that is unique in the science around sustainability. The Framework for Strategic Sustainable Development is designed to...

1. Cover all kinds of impacts that have a sustainability perspective.
2. Cover all kinds of possible measures to deal with such impacts.
3. Make it possible to model such measures such that solutions in one area do not negatively hamper another.
4. Make it possible to approach such futures stepwise and with increased economic potential from upfront and throughout the whole transition.
5. Make it possible to apply all kinds of concepts, frameworks and tools such that they can function cohesively rather than one by one in separation, adding to the confusion.

The key element of making all this possible is called “boundary conditions”, a term from design-science. Boundary conditions make it possible to model any type of future such that it is successful, in this case sustainable. Any modelled scenario within such boundary conditions is sustainable, any scenario outside of them is not. Once concrete and operational boundary conditions are in place, the rest of the five characteristics above follow rather naturally.



It is like a game of football. The boundary conditions of winning are two, (i) follow the rules of the game and (ii) put the ball more often in the goal of your opponents than you receive it in your own. If you, for instance, throw the ball into the goal it does not count. All participants in the game (not the least in the Netherlands where you have such a clever national team), enjoy the complexity of the game since you can cut through *everything* that takes place on the field by use of the two boundary conditions of winning. The referee, the players with different tasks on the field, the audience, all share this mental model of winning. And all the excitement revolves around that – “which team will, at the end of the game, comply with the two boundary conditions?” Without this shared understanding, all excitement of the game would vanish – who would then pay a ticket to watch grownups play with a ball?

Another example of winning in a complex game is a shared understanding of the boundary conditions for the cure of cancer. It was not until we knew the boundary conditions of cure, that different scientific fields could share that understanding and develop modes of cancer cure – radiologists, radiotherapists, pathologists, surgeons, pharmacologists and so on. It was not until several decades into the 20th century we knew about cancer stem cells, so it was not until then that the two boundary conditions for cancer cure were on the table: *kill the last cancer cell, but don't kill the patient*. This is tackling the disease *upstream*, with its myriad symptoms downstream (anaemia, fatigue, pains, dysfunctional organs, weight-loss...). All scenarios within those boundary conditions, and all routes to get there, mean cure. All scenarios outside do not. Not any of the medical groups could cure patients on their own, it is only through cooperation it was possible.



Now, the patient is our unsustainable civilization with its unsustainable organizations. Giving us myriad increasing symptoms downstream in cause-effect chains – climate change, shrinking biodiversity, pollution, lowered production capacity in fisheries, cropland and forests, poverty and increasing political tensions locally as well as geopolitically, from those problems. What are the universal boundary conditions for cure of un-sustainability, so that we can begin to cooperate across sectors to model organizations and regions that are sustainable *together*?

The scientific consensus process that has been going on for over 30 years has cracked this problem, displayed the easy-to-understand boundary conditions and, shown that they work when it comes to analyses, planning, monitoring and communication of concrete cross-sector cooperation, cohesive use of tools and concepts. And to do so with improved economics from upfront.

This was published recently in a special volume of the *Journal for Cleaner Production on Strategic Sustainable Development*. We need science to sharpen our senses because we don't see CO<sub>2</sub> or pollution increasing, biodiversity shrinking, or food-production capacity declining. So we need Radboud, one of the most proactive universities in the world. Furthermore, Radboud is actively engaged in creating a new sustainability program. And, finally, at this time in history, I get the fantastic honour of receiving an honorary doctorate. In summary, the boundary conditions for the cure of un-sustainability are there, our history of cooperation is there, our kinship is there, our mutual friendship and respect are there. What can stop us now?

# CURRICULUM VITAE





# **CURRICULUM VITAE**

Professor Karl-Henrik Robèrt is one of Sweden's foremost cancer scientists who, in 1989, initiated an environmental movement called "The Natural Step". Dr. Robèrt received his MD in 1975, his PhD in 1979 and in 1981 he became an Associate Professor of Internal Medicine. In 1984, he won the Swedish Hematological Association Research Award. From 1985 to 1993 he headed the Division of Clinical Hematology and Oncology at the Department of Medicine at the Huddinge Hospital. He was the Editor of *Reviews in Oncology* from 1987 to 1993.

### CV Summary

- MD, PhD, cancer scientist.
- Founder of the NGO The Natural Step International (TNSI).
- Professor at Blekinge Institute of Technology.
- Fellow of World Business Academy.
- Advisory Board Member at Georgia Institute of Technology, USA.
- Doctor of Public Service at the University of Portland, USA.
- Honorary Doctor at Mälardalens Högskola.
- Winner of the 1999 Green Cross Award for International Leadership.
- Winner of the 2000 Blue Planet Prize, the "Sustainability Nobel Prize".
- Winner of the 2005 Laureate Medal for Social Responsibility by the Global Center for Leadership & Business Ethics.
- In 2009 Ashoka Fellow.
- In 2010 one of Ashoka's 20 "Globalizers".
- Included in the publication - 100 Visionaries of the 20th Century.
- In September 2011 one of five founding members of the International Society of Sustainability Professionals (ISSP) Hall of Fame.
- Since September 2011, chairman of Research Alliance for Strategic Sustainable Development.
- Honorary Doctor at Georgia Tech, Mälardalens University, and Radboud University



While heading a research laboratory at the Karolinska Institute, the leading cancer research facility in Sweden, Prof. Dr. Robert authored more than eighty scientific publications concerning leukemia, lymphoma, lung cancer and their clinical implications, and he has for long been a common keynote speaker at international conferences on these issues. He educated four young scientists who published their doctoral dissertations at his research laboratory.

His research on damaged human cells provided a platform for his interest in environmental questions. Later, in a scientific consensus process that he has managed to obtain for many years, he developed first-order principles, the “system conditions”, for sustainability. Together with a growing network of scientists and decision-makers in business and politics, the system conditions have been elaborated into a concrete framework for strategic planning towards sustainability. The framework is described in several scientific publications and doctoral dissertations around the world.



### **The Natural Step (TNS)**

As a cancer specialist, Dr. Karl-Henrik Robert became more and more aware that the establishment of a sustainable society was necessary to prevent the environment from further deteriorating. He believed that a model country could help establish that sustainable society and decided his home country, Sweden, could be that model.

In 1989 he founded, with the support of the Swedish king, The Natural Step, a non-profit, non-governmental science-based organisation with the purpose of accelerating the transition towards a truly sustainable global society: socially, ecologically and economically.

After the start of the organisation, over 4 million households and schools all over Sweden received an information package to increase the knowledge about the environment and the dangers it was facing. Nowadays 25 percent of the Swedish municipalities adhere to the principles of the Natural Step and are an example for municipalities all over the world.

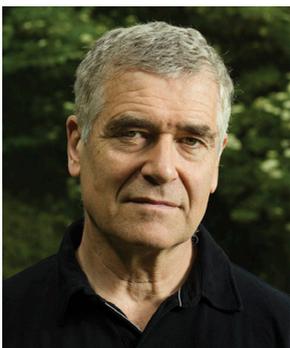
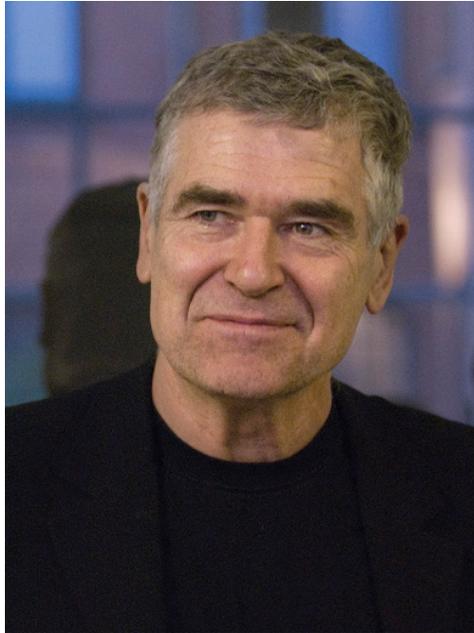
But also companies have adopted the TNS ideas and have used the TNS Framework (see box 3) to diminish their ecological footprint, IKEA being one of the first.

The Natural Step today has offices in 12 countries (including one in the Netherlands) and associates and ambassadors in more than 50 countries. They aim to:

- continuously develop the TNS Framework for Strategic Sustainable Development;
- help organisations to use the TNS framework through education and training;
- offer a platform for dialogue.

At the launch of The Natural Step (TNS), Dr. Robèrt edited educational material and distributed it to every household and school in Sweden. Thereafter he initiated a number of independent professional networks to draw professionally relevant conclusions from the TNS systems perspective, for example, business executives, engineers, medical doctors, economists and so on. Many of the top executives from Swedish corporations, such as IKEA, Electrolux, leading construction companies, the leading supermarket chains of Sweden, insur-

ance companies, banks and a large number of other business corporations, as well as over 100 Swedish municipalities including Stockholm, began to incorporate the TNS framework into their business practices. With those as role models, Robèrt has worked with executives from around the world – Dupont, Nike, Interface, Starbucks, Hydro Polymers, McDonalds, BP, Home Depot – to do the same. And included those experiences, together with an ongoing peer-reviewed scientific process with numerous publications, doctorates, programs etc., into a more and more crystalized operational system: systemic (taking the whole biosphere-civilization system into account), systematic (step-wise processes whereby organizations can develop systemically i.e. at any scale) and strategic (ensuring that each step of the processes can serve as platforms for the next while improving on bottom lines).



The framework, mostly referred to as Framework for Strategic Sustainable Development (FSSD), is one of its kind. It does not compete with any well-thought-through concept for sustainable development like UNs SGS, Planetary Boundaries, Circular economy etc., but the opposite: Like any Operative system in the IT world will increase the value of any app, so is the function of FSSD.

## Framework for Strategic Sustainable Development (FSSD)

There are many well-designed tools and concepts for sustainable development, for instance, UN SDGs, Planetary Boundaries, ISO14001, ISO26000, Life Cycle Assessments, Footprinting, Factor-analyses, and Circular Economy etc. The Framework for Strategic Sustainable Development is designed as an operative system, i.e. a unifying framework putting all concepts and tools cohesively into context. It helps any organization or region, at any scale, to put itself in the context of an operational definition of the full scope of social and ecological sustainability, and guide step-wise approaches with improved returns and the right choices of various support systems.

The FSSD is the result of a consensus process aiming at developing a definition and approach to sustainability that was started by Professor Robèrt in Sweden in the early 1990s. In the years since the Framework has been further reviewed and developed.

The FSSD comprises the following main features:

- A funnel metaphor facilitating an understanding of the sustainability challenge and the self-benefit of competent proactivity.
- A five-level structuring and inter-relational model distinguishing and clarifying the inter-relationships between phenomena of fundamentally different character.
- A principled definition of sustainability useful as boundary conditions for back casting planning and redesign for sustainability.
- An operational procedure for creative co-creation of strategic transitions towards sustainability.

The FSSD helps manage boundaries and decisions better, allowing for predicting sustainability outcomes before investing. It also encourages collaboration across different fields and areas, making it easier to work together on

sustainability. The FSSD can even help prevent unforeseen issues and improve the selection and development of tools for sustainable development.

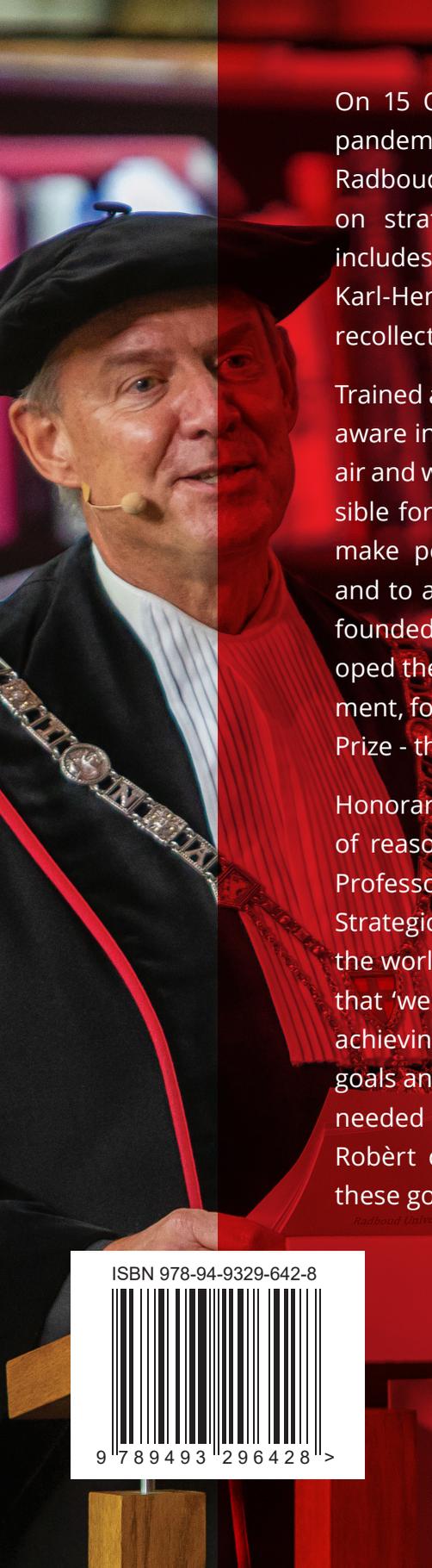
The FSSD can be applied not only to organisations, but also to processes, products and services.

So, the FSSD does what it's supposed to do: effectively promote sustainability. But, while there are some great examples of organisations and institutions using the FSSD successfully, more needs to be done to tackle the sustainability challenges we face.

For more information see: Göran Ingvar Broman, Karl-Henrik Robèrt. 'A framework for strategic sustainable development'. *Journal of Cleaner Production* 2017;140(Part 1):17-31. <https://doi.org/10.1016/j.jclepro.2015.10.121>.

In 1995, Dr. Robèrt was appointed Adjunct Professor of Physical Resource Theory at Chalmers University of Technology, Gothenburg, Sweden. In 2002, Dr. Robèrt was appointed Professor of Sustainable Product Development at Blekinge Institute of Technology, Karlskrona, Sweden. He has written books, articles and scientific publications on the environment, sustainability and product development, which encourage an understanding of the linkage between ecology, economy and technology. He is amongst the world's most famous keynote speakers at international conferences on those issues, and he has received many honours. For example, in 1999 he was awarded The Green Cross Millennium Award for International Environmental Leadership and in 2000 he was awarded The Blue Planet Prize (BPP) for scientifically laying out the systems perspective needed to plan strategically for sustainability. BPP is generally regarded as the Nobel Prize for sustainability research.





On 15 October 2020, in the middle of the COVID-19 pandemic, Prof. Dr. Karl-Henrik Robèrt received a Radboud honorary doctorate in recognition of his work on strategic sustainable development. This edition includes honorary promotor Han van Krieken's laudatio, Karl-Henrik Robèrt's acceptance speech, and a detailed recollection of his professional history.

Trained as an oncologist, Dr. Karl-Henrik Robèrt became aware in the last decades of the twentieth century that air and water pollution in the environment were responsible for several types of cancer. It became his goal to make people aware of the environmental problems and to achieve a more sustainable society. In 1989, he founded 'The Natural Step', an organisation that developed the Framework for Strategic Sustainable Development, for which Robèrt received in 2000 the Blue Planet Prize - the 'Nobel Prize' for sustainability.

Honorary promotor Han van Krieken: "It is for a variety of reasons that Radboud University wants to honour Professor Karl-Henrik Robèrt. Our university's new Strategic Plan defines explicitly our 'responsibility for the world in which we live'. It states as one of our goals that 'we want to be in the vanguard when it comes to achieving the United Nations' sustainable development goals and to make our own contribution to the changes needed in the world in the coming decades'. Professor Robèrt can show us ways in which we can translate these goals more effectively."

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