

Leo Jansen: working for the next generations

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Abstract

Leo Jansen became a major player in the field of sustainable development. How did a son of a greengrocer develop himself to a professor in sustainability? And more important, what are the learning's of more than 40 years of experiences in building a sustainable society?

With a PhD in Chemical Engineering and a management position at AKZO (-Nobel) Leo experienced the reasoning of industry. At the same time, publications like *Silent spring* and *Limits to growth* showed the world the limitations of the consumption society. Moreover the triple P (People – Planet – Profit) model became introduced. Leo was a supporter of using the third P for prosperity instead of profit to stress the social aspects. In the triple P perspective, the “planet” part had a different position compared to the other Ps. Whereas environmental protection (P of planet) can be practices as such, the other Ps ask for social development. As a member of an opposition party in the parliament Leo experienced the resistance of the society (i.e. the majority of the parliament and existing bureaucratic structures) to structurally change developments. This convinced him that to initiate developments towards a more green economy and smaller differences between the poor and the rich, a broader support from many different stakeholders is needed.

Every more or less radical change in the social development comes with the stress of uncertainties. This also counts for the change towards a green economy. The difficulty to change is manifested as opposition to long-term risks, insufficient innovative power and a rigid disciplinary organization of science. Key to sustainable development is therefore education. When we include sustainable development into education on every level, people might understand the benefits of sustainability, learn to think into the future and accept more the uncertainties of long term predictions.

To make real steps towards more sustainability, Leo experienced that we need transitions: sets of developments in different domains reinforcing each other. These transitions demands transdisciplinary cooperation of clusters of societal parties, for example citizens, consumers and non-governmental organizations, corporations, governmental institutions and organizations involved in science and education. The future graduates therefore need many skills, not only to perform research, but also to create support for changes, to cooperate with other organizations, for stakeholder management, expectations management and so on. This insight was Leo's motivation to work with much joy on the EESD congresses for the future of the next generations.

1 Introduction



Leo Jansen was born in 1934 and the first child of the 13 in his family. His father kept a grocery and as a teenager Leo helped serving the clients and he took care of the horse. He made some money in using the leftovers of the grocery for the breeding of rabbits which he sold in the neighbourhood. After his study and PhD in chemical engineering, he worked for several different organizations: industry, politics, local government, science and NGOs. He learned the limitations of approaches from one player in the field without involving other stakeholders and the time new developments costs. This insight is the basis of his developed multi-stakeholder and back casting approach. In person, his way of living reflected his believe to work on a sustainable future for the next generations. Leo had a car for only a few years after which he travelled always by public transport or on his bike. He used

materials as long and as practically possible and gave things away when he did not need them anymore. One thing he always shared with pleasure: his knowledge or vision on how to make the world more sustainable. The insights in this article are based on his personal communications and his scientific legacy.

2 Limits to effect

After his PhD at Technical University Delft, Leo worked at the chemical fiber development of AKZO (-Nobel). From his management position he experienced that the chemical industry of the 60s was much more focussed on financial profit than on the environment. These were the years of the publications of *Silent spring* (Carson et al. 1962) and *Limits to growth* (Club of Rome, 1972). These books stressed the limitations of unlimited growth of the industry without eye for the environment and natural recourses.

Leaving AKZO and joining a political party, Leo wanted to work directly on the realisation of a sustainable world for next generations. However, in a relatively small opposition party, it is hard to realize changes in the country and his regulations. Even when his party joined coalition government, his position in parliament was too limited to make real changes in environmental

protection. As stated before, Leo experienced that the P of Planet was the easiest to work on. As environmental protection can be practised in the nation under national laws and local regulations, the influence is much more than the international Ps of people and prosperity. After the parliament Leo stepped over to the Steering board of the public debate on nuclear energy after which he got high positions at the Dutch ministry of Housing, Spatial Planning and the Environment (VROM). One of these was the responsibility for the environment of the harbour area of Rotterdam. These positions and cooperation with Dutch NGOs gave more insights in the need for multi-stakeholder cooperation to realize real change. Real changes create real resistance. A new development needs to become supported to become implemented. Although people know the current situation and they might realize the need for something else, it is difficult to explain exactly how the new situation will look like and what will be the impact for the citizens. In addition, new developments ask new bureaucratic regulations, control etcetera. Most governmental organisations are not keen to implement new (complex) regulations. It means the development of regulations, training of people, the set-up of control, the handling of objections and so on. In this way, personal feelings and bureaucratic organisations will raise resistance against new (structural) development. Therefore, it became clear that practical successes could be made quickest when local governments, industry, science, NGOs and citizens could work together, make agreements and build up trust.

3 How to handle uncertainties?

Every more or less radical change in social development comes with the stress of uncertainties. This also counts for the development of a sustainable/green economy. Most people cannot handle uncertainties. Small ones on short term are less stressful, but the uncertainties that come with long-term evaluations, the development of (revolutionary) solutions are hard to handle by most people. Are those revolutionary solutions needed? Leo thought they are. When we want to provide a twice as big population with a five times higher prosperity while halving the environmental pressure, we need to produce $2 \times 5 \times 2 = 20$ times more sustainable. This is not reachable by making optimal use of current processes, nor with improvements of current production technologies or products (Figure 1).

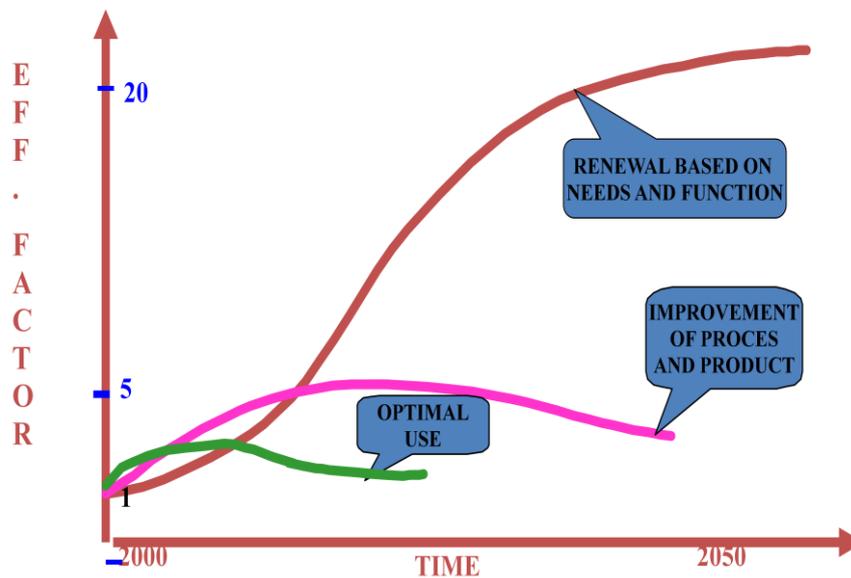


Figure 1: Reachable efficacy factor in time for production based on three different approaches to produce more sustainable.

For a true sustainable production in the future, transitions are needed. Transitions are sets of developments in different domains reinforcing each other. These transitions demand transdisciplinary cooperation of clusters of societal parties, for example citizens, consumers and non-governmental organizations, corporations, governmental institutions and organizations involved in science and education. These transitions take time to develop and the outcome is quite unsure. The aim is however clear: a way of production of a comparable product with a twenty fold less impact on the environment and on people and with acceptable social effects.

4 Back casting

For the development of such transitions, the process of back casting can be used. In this process, the future result is taken as an endpoint of the development. From that point steps are defined back in time to research the needed developments on several fields like social support, technological development and scientific research (Figure 2).

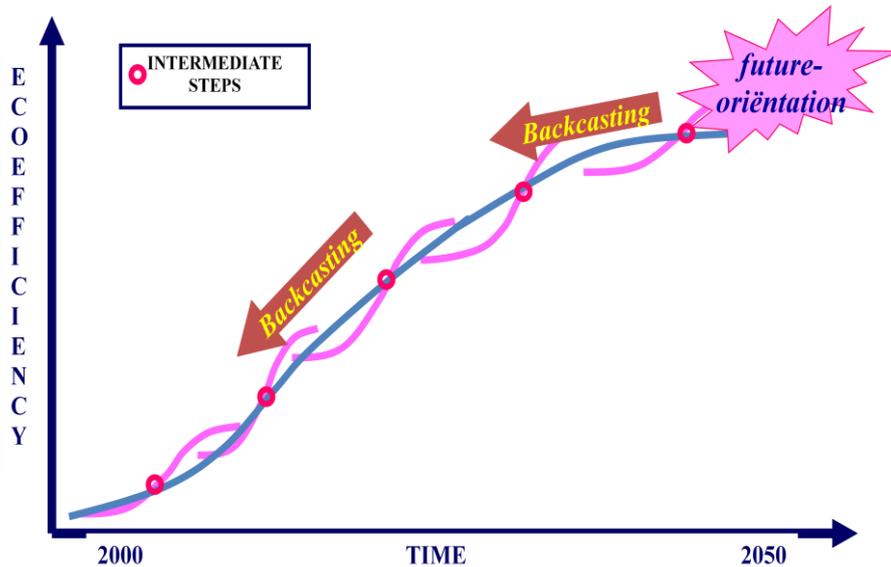


Figure 2: the process of back casting

The tool of back casting is very important for sustainable development because it concerns a long term development with great uncertainties; many stakeholders; conflicting interests; and it is multi-dimensional and multi sectoral. This demands a thorough way of thinking out the problem (product or process development) with all of its pitfalls and opportunities. Therefore multi-disciplinary teams are needed to work out these back castings and to collect the needed information to start working on a group of stakeholders willing to take some risks and step in this long term cooperation. The uncertainty of long-term risks comes along with the uncertainty of needed developments and investments in research and (social) development. This might lead to insufficient innovative power and a rigid disciplinary organization of science. Governments are needed to support these kinds of processes to stimulate the uncertain product/process development projects. Otherwise the (financial) risks are simply too large for industry to start such a process.

The process of back casting can help in defining long term goals and steps in between. In this way it can somewhat limit the uncertainties which come along with the definition of long term developments and the need to start transitions. But there is more. Key to sustainable development is education. When we include sustainable development into education on every level, people might understand better the benefits of sustainability, learn to think into the future and accept more the uncertainties of long term predictions. This is why Leo Jansen worked hard to introduce a course on sustainability in every study at Delft University of Technology. To understand possible risks and the discussions on risks and needed changed technology or consumer behaviour, preferably this should also be implemented at every secondary school and university.

5 Multifunctional scientists for sustainable development

The above demonstrates that sustainable development is not something of technical engineers only. Not only should other scientific disciplines be involved. Solutions should be a co-creation involving all stakeholder needs to ensure more an acceptance of a new product/process to replace the less sustainable way of producing. This asks a lot from the future engineers. The future graduates therefore need many skills, not only to carry out interdisciplinary research, but also to create support for changes, to cooperate with other organizations (often thinking from complete other frameworks), for stakeholder management, expectations management, communication skills (by social media?) and so on. In the view of Leo, the education of engineers should also take into account these non-beta aspects of the future scientists. In this way we would create bigger support to initiate sustainable transitions in the future. There is no time to waste. This insight was Leo's motivation to work with much joy on the EESD congresses for the future of the next generations.

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