

Public Lecture Series 2014

Science & Citizens meet Challenges of Sustainability



University of Luxembourg

Campus Limpertsberg
162a, avenue de la Faïencerie
L-1511 Luxembourg

Tuesday 18.03.2014 19.00-20.30 Room BS 0.03



Gerard DRENTH

Associate Fellow,
Saïd Business School,
Oxford University, (UK)
and Director for Strategy and
Scenarios, NormannPartners

Exploring scenario planning as social learning process for sustainability transitions

Scenarios set out a small number of alternative future contexts. We explore the potential of the method of scenario planning as a participatory process for the collaboration of key stakeholders, scientists and citizens in critically considering alternative framings of challenges and uncertainties societies face. Scenario sets facilitate holding courageous conversations about differences and disagreements on objectives or goals, as well as values. These conversations might enable those involved to better assess trade-offs, dilemmas, and differing assumptions held about the future.

Gerard Drenth is Associate Fellow, Saïd Business School, Oxford University, and also Partner and Director, Strategy and Scenarios at NormannPartners, an international consulting firm that focuses on innovation, strategy and scenarios. At NormannPartners Gerard has worked on scenarios and business innovation projects, including those for clients in media, finance, energy, education, development aid and mining, as well as for the UK Department for BIS. His focus is on developing the UK and Benelux business. Before joining NormannPartners in 2011, Gerard worked for Morgan Stanley, as Vice President in the European Strategy Group, engaging with executives and with clients of the firm on developing their understanding of risk and opportunities and helping them with strategic direction setting. He also spent a few years in Morgan Stanley Investment Management, directing the strategic development and operations of marketing infrastructure for the EMEA region. From 1990 until 2004, Gerard was with Shell in a variety of roles including assignments in the global scenarios team, in exploration and production, in Shell trading, in information technology, and in business consultancy. He spent the last five years with Shell as the Scenario Manager in Shell's scenario team in London. During his time at Morgan Stanley he developed and produced Morgan Stanley's prize-winning strategy simulations, and ran scenario projects on Peak Oil, Financial Services in China and India, Avian Flu, and Renewable Energy.

At Saïd Business School (University of Oxford), Gerard teaches on the Oxford Diploma in Global Business, as well as on numerous executive education programmes. He often is invited speaker on scenario planning at other institutions, including Imperial College, London Business School and Cambridge University.



Mathias BINSWANGER

Professor,
University of Applied Sciences
and Arts, Northwestern
Switzerland

Growth, Happiness and Sustainability – The Dilemma of Modern Economies

Several recent studies have shown that in developed countries the reported levels of happiness do not increase in line with growth. The existing literature also suggests that people are experiencing more and more stress at work but also during their free time. These findings suggest that people would be better off if they cared less about maximising income and more about leading a good life. If different economic behaviour makes people happier, why don't they change their behaviour? There are various mechanisms responsible for this paradox, labelled treadmill effects. On a treadmill, you can walk faster and faster, but you will always stay at the same place. The treadmill is used as a metaphor for the endless pursuit of happiness by striving for more income, which indeed leads to more income but not to more happiness. We keep on running, as the illusion of achieving more happiness by higher income never dies even if it is constantly frustrated. This leads to a basic dilemma, which characterizes the economies of developed countries. The treadmills keep the economy going but fail to make us happier. They are an essential driving force of the growth in consumption, which is the largest component of Gross Domestic Product (GDP). But why do economies actually always have to grow? Research suggests a non-growing economy is not a viable option under current circumstances, due to the link between growth and profits in the business sector. An economy does only function if a majority of the companies actually engages in profitable economic activities. Therefore we face the challenge of mitigating the growth imperative of our economies, which also keeps us from developing more sustainable lifestyles. Indeed there is the chance for a win-win situation, as less focus on growth could add to our happiness and increase sustainability.

Mathias Binswanger is Professor of Economics at the School of Business at the University of Applied Sciences and Arts Northwestern Switzerland in Olten and „Privatdozent“ at the University of St. Gallen.

The areas of his research are macroeconomics, finance, ecological economics and the relation between income and happiness. He is author of the Swiss bestsellers "Die Tretmühlen des Glücks" (in German, 2006), and "Sinnlose Wettbewerbe" (in German, 2010).



Marleen DE SMEDT

*Advisor to the Director-General,
EUROSTAT, Luxembourg.*

Statistics, indicators and challenges in the transition from GDP to measuring sustainable development and well-being

Sustainable development can be defined simply as the pursuit of a better quality of life for both present and future generations. Sustainable development is an overarching concept and by definition it is of a cross-border/inter-generational nature. It is a vision of progress that links economic development, protection of the environment and social justice, and therefore concerns all of us, in the EU, and in the whole world. Measuring of how our societies are progressing towards this overall goal requires more than economic figures. This lecture starts from the viewpoint that societies (as part of a globalised interaction or political community) have to find their way towards sustainability. As this is a major change affecting the sphere of production as well as the behaviour of consumers, it involves iterative phases and steps, with learning systems and evolutionary procedures as typical features. Where all these pathways chosen will lead to, is unpredictable (e.g. the climate change debate). Nevertheless, it is possible to prepare political choices/decisions to be taken in the best way possible and with the best information available, whereby it should also be ensured that decision making itself is rooted in democratic culture and respects the basic rules of communication to and participation of citizens. Toward this goal it makes sense to rethink what we choose to measure and compare over time. Indicators such as GDP that are rooted in economic growth as main goal need to be complemented with indicators attempting to reflect sustainable production and consumption, as well as measures to evaluate and monitor directly the outcome for people: the different aspects of quality of life and well-being. Starting from the corresponding debate launched by the Stiglitz report and the European Commission's 'GDP and beyond' Communication and 'Europe 2020' paper, we will study where we stand in terms of conceptual development and in translating these concepts into meaningful measurement tools and indicators.

After having worked for 5 years in Belgium as an occupational physician Mrs De Smedt joined the European Commission in 1988, where she has held various positions mostly in the field of health and safety.

In 2009-2010 she was an EU fellow at Harvard University, where she engaged in a study on using statistics for health policy purposes. She works now as adviser to the Director-General of Eurostat where she focusses on measurement of 'quality of life'.

Tuesday 29.04.2014 19.00-20.30 Room BS 0.03



Stéphanie KLAEDTKE

Stephanie Klaedtke
(Dipl. Ing. agr.),
Université de Liège

Towards deep changes for a more resilient farming system: Examining roles farmers, science and citizens can play in transition

This lecture considers the complexity of challenges of the agricultural transition from the perspective of farmers, who act at the intersection between the ecology, economy and policy. The lecture will start by providing an overview on the resource requirements for our global production chains of life stock and meat, grain and legume farming and say some words on the human diet, and food and feed conversion efficiency of energy-intake through food. This lecture also places a fresh emphasis on the development of local knowledge and locally specific arming and nutrition practices that are adapted to local environments, as a necessary complement to agricultural science striving to make universal claims. This leads on to basic insights on needs for knowledge production in agriculture, and merits and limitations of action research and engaged research, raising questions on how farmers, scientists and citizens might better collaborate to inform choices in food production and consumption.

For the future there are some indications on a new trend on new more decentralised governance of the food system including citizen's involvement in French organic certification and Community based Auditing and citizens science in communities in Australia to work with farmers on reducing environmental impacts and address ensuing trade-offs for farmers as a community.

*Stephanie Klaedtke conducts research for organic agriculture in Luxembourg at IBLA (Insitut fir Biologësch Landwirtschaft an Agrarkultur Lëtzebuerg asbl). She is particularly interested in topics concerning crop diversity, the local adaptation of crops and participatory research methods. From 2011 to 2013, she was responsible for winter cereal variety testing, on-farm research on reduced tillage in organic agriculture, a network of demonstration farms and the publication of technical brochures in collaboration with partners in Luxembourg and abroad. She started research on "Plant adaptation and plant health in a context of on-farm breeding of common bean (*Phaseolus vulgaris*) in European organic farms" in collaboration with INRA Rennes, France, and the Université de Liège, Belgium, in 2013 combining crop science and rural sociology at the interface between science and praxis.*

After her schooling in Luxembourg, she studied agronomy at the University of Bonn (Germany) with a particular focus on plant breeding, organic agriculture and tropical plant production. As a visiting student at the "Universidad de Costa Rica" in 2007, she gained hands-on experience with tropical crops. She conducted the trials for her diploma thesis in the bean breeding program of the Centre for Tropical Agriculture (CIAT) in Colombia before graduating as agricultural engineer in 2010.

The 2000 Watt Society: Implications for science, policy and life style decisions



Roland STULZ

Executive Director,
Novatlantis – sustainability
at the ETH-domain,
Switzerland

The 2000-watt society is an environmental vision, first introduced in 1998 by the [Swiss Federal Institute of Technology in Zürich](#), which pictures the average [First World](#) citizen reducing their overall average continuous energy usage to no more than 2,000 [watts](#) (48 [kilowatt-hours](#) per day) by the year 2050 - without lowering their [standard of living](#). The concept addresses not only personal or household energy use, but the total for the whole society, divided by the population. Today, the vision is widely accepted as a framing for energy policy in Switzerland; it is supported by the Swiss Federal Office of Energy,^[3] the Association of Swiss Architects and Engineers, and other bodies including three pilot cities Basel, Zürich and Geneva who have built public private partnerships to realize the concept. Two thousand watts is approximately the current world average rate of total energy use. This compares to averages of around 6,000 watts in [western Europe](#), 12,000 watts in the [United States](#),^[1] and 1,000 watts in India. It is envisaged that achieving the aim of a 2000-watt society in Western Europe will require, amongst other measures refurbishment of the nation's building stock and significant improvements in the efficiency of [road transport, aviation](#); the use of [renewable energy](#) sources, [district heating](#), [microgeneration](#); and a refocusing of research into new priority areas. The Swiss pilot cities have realized a wide range of demonstration projects.

Whilst a first decade-long focus on technological change brought significant gains in energy-efficiency, rebound effects are noted that leave society with largely unchanged overall energy use. It is concluded that technological fixes may be necessary but not sufficient. Policies co-created in participatory processes and accepted by referendum, which aim at energy sufficiency and life style changes are required to make progress towards this ambitious vision. It also implies a deeper change in how we value energy in every-day life and in the economy. Research today centres on profiles of individuals and families who achieve significant reductions in energy-use whilst experiencing a high (unreduced) quality of life, their life style changes, world views and values.

Roland Stulz is the Executive Director of Novatlantis – Sustainability at the ETH-domain. This program of the Swiss ETH-domain has the mission to translate cutting-edge technology research relevant for sustainability into practical applications, especially in the fields of mobility, renewable energy, and building construction. In this role he became the initiator and co-founder of the 'International Sustainable Campus Network'. He is also a member of the advisory board of Energy Center at EPFL, Swiss Federal Institute of Technology Lausanne and of University of Applied Science Lucerne. He is also a Managing Partner of Amstein + Walthert Ltd., one of the largest Swiss engineering companies with offices in 8 cities and a strong focus on energy efficiency in building construction and facility management. Roland Stulz has many years of experience as an architect, as well as urban planner and consultant for energy efficiency and ecology in building construction.

He has been lecturer at the ETH and at technical colleges. Roland Stulz has been the president of the Energy Commission of the Swiss Association of Engineers and Architects (SIA) and he is member of the board of – The Sustainability Forum Zurich. He has developed and planned many leading pilot and demonstration buildings in the field of sustainability in developed economies (Europe, USA), as well as in developing countries, including issues of appropriate technologies and low-cost building constructions. He has lectured at a range of universities (1990-2000). Roland Stulz graduated in Architecture at the Swiss Federal Institute of Technology (ETH) Zurich.

Tuesday 20.05.2014 19.00-20.30 Room BS 0.03

Water quality, distribution and use: a complex issue at the interface of the natural and the social world



Henry-Michel CAUCHIE

Head of Research Unit on Ecology, Centre de Recherche Public Gabriel Lippmann, Belvaux, Luxembourg

As citizens, what can we actually do to use water in a sustainable manner? There is more to this question than would be thought at the first glance. Water is embedded in many issues such as food production, manufacturing, energy use, and other industrial or eco-system services our well-being depends upon...

We propose to tackle the question of citizen action in relation to the complexity of water resource management at multiple scales: local, national, EU. What are the data that we need? Are these data available? Is there transparency in water management in Luxembourg? What are our rights, responsibilities and possibilities to act as citizens in civic, political, social and ecological terms?

Henry-Michel Cauchie is currently responsible for the « Aquatic and Terrestrial Ecosystem » Research Unit at the Centre de Recherche Public – Gabriel Lippmann (Belvaux, Luxembourg). His main activities focus on the assessment of the environment quality. H.M. Cauchie is an aquatic ecologist by training. He got his PhD in 2000 at the University of Liège (Belgium) for his work on the coupling between an innovative wastewater treatment (aerated waste stabilisation ponds) and the production of biopolymers extracted from the biomass growing in these ponds. He became project leader at the Centre de Recherche Public – Gabriel Lippmann immediately after his thesis. During the last 10 years, he has gradually implemented R&D activities in the field of environmental microbiology. The activities of this research group are currently concerning the methodological aspects of monitoring microbial quality of waters (sampling strategies, implementation of HACCP methodology, implementation of EU legislation concerning water), the ecology of waterborne pathogens and the development of proper indicators for monitoring surface and groundwater, among others. The competencies of this research group are regularly requested by private companies or local authorities for auditing their activities in relation to drinking water production. H.M. Cauchie is also involved in teaching activities about fundamental and applied ecology, environmental monitoring and sustainable development at the University of Liège (Belgium) and the University of Luxembourg.

Tuesday 27.05.2014 19.00-20.30 Room BS 0.03



Ariane KÖNIG

*Head of Sustainable
Development and Senior
Researcher at the Institute of
Geography and Spatial
Planning,
University of Luxembourg*

Education in the anthropocene: challenges to teaching and learning

What are new requisites to education in the anthropocene, the era in which the human industrial metabolism starts exceeding the carrying capacity of the earth? After considering challenges to science and citizens to better understand and act upon complex problems at the nexus of the natural world and social organization, in this lecture we will explore implications for teaching and learning, and the particular promise of embedding citizens science projects in the curriculum.

Ariane König is Head of Sustainable Development and Senior Researcher at the University of Luxembourg. Her research and implementing activities concern the co-creation of knowledge for transition to sustainable development pathways with a focus on integration of education and research with the practices of campus operations, planning and civic engagement projects. Before coming to Luxembourg she was employed at the universities of Harvard and Oxford, where over a seven-year period she conducted research and taught postgraduate and executive training courses, focusing on governance of new technologies and risk. Prior to this, König was regulatory affairs manager and scientific affairs coordinator for Europe/Africa in a leading multinational life science corporation. She has also worked as an independent scientific consultant for the Organisation for Economic Co-operation and Development (OECD), the European Commission and European Union (EU) research consortia.

König gained her Bachelor's, Master's and Ph.D. degrees in Biochemistry from Emmanuel College, University of Cambridge.