

**Tobias Welz**  
**Industrial Engineer – focus on Sustainability**

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born on December 23<sup>rd</sup> 1981, in Bad Kreuznach, Germany

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## Abstract

- Several years of experience in integrating sustainability for public procurers using data science methods  
Development of strategic procurement goals and monitoring as well as consulting in procurement projects
- Applied practical knowledge as head of the environmental management unit in the Archdiocese of Cologne  
Establishment of an organisational unit that structurally embeds sustainability issues such as climate protection, biodiversity, eco-fair procurement activities on a day-to-day basis
- More than ten years of work experience in projects on sustainable production and consumption  
Development and realisation of research projects as well as leading international multi-stakeholder dialogues
- Comprehensive knowledge in sustainable development, especially life cycle management and sustainable public procurement. Applying approaches such as life cycle costing, life cycle assessment or environmental management (EMAS) as also reporting schemes (SDG, GRI, MONET-2030, Cercle Indicateurs, ISO20400)
- My strengths are interdisciplinary thinking, quick comprehension of complex problems, as well as good skills in articulating results in oral presentations and writing in German and English

<b>Field of activity</b>	<b>Expert on Sustainable Public Procurement</b> Bern, Switzerland	<b>09.2021-present</b>
	Mandates for various actors at different federal procurement levels on sustainable public procurement. Also activities in science and technology transfer, as well as lecturing at various universities.	
	<b>University of Bern</b> Bern, Switzerland	<b>04.2019-08.2021</b>
	<b>Scientific Collaborator Sustainable Public Procurement.</b> Sustainability expert in Swiss national funded project (NRP 73) on Sustainable Public Procurement. Monitoring sustainability performance on sector level of most important product categories in private and public sustainable procurement, i.e. Construction, ICT, Food and Catering, Vehicles and Textiles. <i>(List of references supplement University of Bern).</i>	
	<b>Archdiocese of Cologne</b> Cologne, Germany	<b>01.2015-03.2019</b>
	<b>Environmental Manager.</b> In charge of the development of “moveo - Initiative Energie und Nachhaltigkeit im Erzbistum Köln”, an initiative with a holistic sustainability approach, i.e. Climate Change mitigation, Biodiversity conservation, Eco-Management system (EMAS) as also Sustainability Reporting. <i>(List of references supplement Archdiocese of Cologne).</i>	
	<b>CCB Cologne Cargo Bike</b> Cologne, Germany	<b>09.2017-present</b>
	<b>Co-Founder.</b> Establishment of a cargo bikes store as an impulse to promote alternative urban private and business mobility opportunities.	
	<b>University of Applied Sciences</b> Cologne, Germany	<b>2011, 2014</b>
	<b>Lecturer.</b> Gave lecture on Design for Environment, Sustainable Development and Life Cycle Assessment.	

**World Resources Forum** St. Gallen, Switzerland

**06.2012-10.2014**

**Programme Manager Sustainable Consumption and Production.**

Main objective was to bring together natural and social sciences to build transdisciplinary approaches to overcome obstacles towards a more Sustainable Development in society.

*(List of references supplement World Resources Forum).*

**Zumtobel** Dornbirn, Austria

**2011-2013**

**Freelance Consultant.**

Freelance consultancy on Life Cycle Assessment, eco-design and sustainable consumption and production. Adaption of theoretical academic approaches on business models, practised on lighting devices, as closed-loop resource flows in a circular economy approach.

**e-fis** (European Food Information System) Linz, Austria

**2009-2012**

**Manager Sustainable Development.**

Member of the high tech start-up e-fis in the upper Austrian research cluster. Drafted e-fis sustainability concept and reports on how to strengthen sustainable food purchasing using advanced consumer information systems and Information Technology.

*(List of references supplement e-fis).*

**Empa** (Swiss Federal Labs for Materials Science) St. Gallen, Switzerland

**2007-2009**

**Project manager Sustainability Assessment – solder materials.**

**Project manager Life Cycle Assessment – lighting technologies.**

Member of Life Cycle Assessment & Modelling Group at Technology and Society Lab.

*(List of references supplement Empa).*

**Education**

**International Programme on the Management of Sustainability**, SCF, The Netherlands

Applying the principles of Sustainable Development Diplomacy

**2013**

**Postgraduate School of Industrial Ecology**, NTNU, Norway

Life Cycle Assessment and Environmental Systems Analysis

Sustainable Consumption

**2010**

**Study of mechanical engineering and business management**

University of Applied Sciences, Cologne

**2005 – 2009**

**Study of mechanical engineering and business management**

Technical University, Kaiserslautern

**2001 – 2005**

**A-levels**

Technical grammar school, Mainz

**2001**

**Soft skills**

Proficient in standard office software applications and Python, SQL, OpenCms and Typo3.

As well as profound skills in LCA software SimaPro, OpenLCA, and LCI database ecoinvent.

Using management tools like: Logical Framework Strategic Planning Tool (Logframe), Project Management Method Kanban (Trello), Eco-Management and Audit Scheme (EMAS III:2017).

**Memberships**

SERI Germany – Sustainable Europe Research Institute

**2010-present**

ERSCP – European Roundtable for Sustainable Consumption and Production

**2020-present**

**Languages**

German: Mother tongue, English: fluent, French: good

**Interests**

cycling, ski-trekking, ice-hockey

Architecture, Music, Theatre, Information Technologies

### **National Research Programme on Sustainable Economy (NRP73) – Sustainable Public Procurement**

Development of a methodology to analyse current sustainable procurement practices and further elaborate sustainability criteria for the assessment on sector level. Applying this methodology for five of the most important sectors in public procurement (Construction, ICT, Vehicles, Food and Catering, and Textiles) reveals to which extend environmental and social sustainability aspects exist in day-to-day procurement.

This analysis allows to monitor sustainable public procurement at federal, cantonal and community level, and further shows the progress regarding international sustainability indicators, globally according to UN Sustainable Development Goals, nationally in accordance with the MONET-2030 indicator system or the Cercle Indicateurs for cantons and cities. With these results at hand, a scientific dialogue with national key-stakeholders, e.g. the Swiss Federal Procurement Conference (BKB), is initiated in order to adopt these findings in day-to-day procurement activities as well as for strategic procurement management.

Welz T., Stuermer M. (2021) Monitoring Sustainable Public Procurement Behaviour – Demand-side Analysis of public tenders in Switzerland, 20<sup>th</sup> ERSCP 2021

Welz T., Stuermer M. (2021) Nachhaltige Öffentliche Beschaffung – Nachhaltigkeitsanalyse der Beschaffungspraxis, Ergebnisbericht des SNF NFP73 Forschungsprojekts

Welz T., Behn M., Stuermer M. (2021) Holistic Sustainability Assessment of Sectors in Public Procurement - shown for ICT Hardware Procurement (Working Paper)

Stucki M. et al. (2021) How life cycle based science and practice supports the transition towards a sustainable economy, The International Journal of Life Cycle Assessment

Welz T. (2020) Nachhaltigkeitskriterien für öffentliche Ausschreibungen, PUSCH - Thema Umwelt (1/2020)

### **Conceptual study - Swiss federal sustainable public procurement reporting scheme**

The aim of this conceptual study is to expand the current monitoring of sustainable procurement in line with fundamental new reporting requirements. The core elements of this particular development consider more detailed sustainability aspects, reporting on day-to-day procurement as well as strategic issues. Additionally, the necessity for digital and automated collection of required key data is addressed. With such an approach it is possible to record sustainability for all relevant product groups on Swiss federal and sub-federal level throughout the entire procurement process.

Welz T., Stuermer M. (2021). Weiterentwicklung des «Monitorings nachhaltige Beschaffung» – Vom Kenndatenreporting zum strategischen Beschaffungscontrolling, Swiss Federal Office for the Environment

### **Sustainability analysis of ICT hardware procurement in Switzerland**

Status-quo analysis on how public agencies take sustainability into account when procuring ICT hardware. Unfortunately, it appears to be difficult for public agencies to embrace their duties of exemplarity and responsibility to enact change. To make a real change, it is crucial to recognize not just product functionality but the impact of the entire product life-cycle and look deeper into the supply chain to consider environmental, ethical and fair business practices. Preconditions to enable sustainable public procurement are political mandates, a professional procurement team as well as knowledge of the financial efficiency of sustainable alternatives.

Welz T., Stuermer M. (2020) Sustainability of ICT hardware procurement in Switzerland, ICT4S 2020

### **Sustainability Assessment – ICT and Sustainability potentials through digitalisation in a Swiss context**

There is a discussion about how digitalisation can change the way we act more sustainable and what actions are needed to enact change. In fact, IT is a key technology to establish sustainable ways of living, i.e. to meet the goals of the global climate treaty. This requires a consistent development of IT, with a special focus on the global use of data, the required digital infrastructure and digital skills. The group of 14-29 year-olds in particular has great opportunities to bring the concept of sustainability in a digital society to life. Thus, Swiss households have the prospect to shape sustainability not only through consumption behaviour on physical goods but also through conscious use of digital contents.

Welz T., Stuermer M. (2019) Nachhaltigkeit und Digitalisierung

## **Supplement Archdiocese Cologne**

### **moveo – sustainability initiative of the Archdiocese of Cologne**

The sustainability initiative – moveo, is acting in the sense of an integral ecological approach on climate change mitigation and biodiversity conservation. Its aim is to enhance environmentally conscious behaviour in parishes and other associated institutions. Based on the understanding of the global urgency to act, e.g. as indicated in the encyclical letter *Laudato Si* by Pope Francis, moveo is acting in the manner of “walk the talk”, to engage individuals and institutions to take care of our common planetary home.

As moveo acts as a provider of approaches that foster environmentally conscious behaviour, the initiative aims to become a platform of best practice, to empower a revolving stakeholder dialogue within the global urgency to act.

### **Climate Change mitigation programme of the Archdiocese of Cologne**

As agreed in the Paris Agreement (COP21) and according to the correlated targets of the German National Climate Initiative, moveo is acting in the manner of implementing low emission strategies in the areas of buildings, mobility and procurement. Thereby, the main focus lies in energy-efficiency of buildings, especially heat generation systems. The overall goal is defined on the reduction of all incorporated carbon dioxide emissions by 25 per cent in 2020 compared to 2007.

### **Biodiversity Conversation programme of the Archdiocese of Cologne**

Due to the fact of massive losses in biological diversity, moveo has set up a regional approach to conserve and restore ecosystem services in urban habitats. This programme aims on bio-capacity and awareness building, as well as addressing threats through increased energy-efficiency, as by using the concept of Animal-Aided Design (AAD) to overcome the loss of biological diversity.

### **Energy management on building stock to achieve mid-term climate goals**

Establishment of an energy management for the church building stock with over 5000 buildings to specifically determine resource consumption. This is key in achieving short and medium-term climate change goals. Documentation of reduction measures creates visibility on the effectiveness of the measures. Linking building stock and energy consumption thus enables an effective controlling especially supporting decision-making.

### **Eco-fair procurement to change consumption habits as lever for sustainability**

How local action in the Archdiocese of Cologne moves the global Agenda 2030 becomes visible in the area of procurement. The total emissions of procurement in the Archdiocese seem negligible, but the opportunity for change is much easier. Because by questioning habits, it is easy to create attitude. Thus, procurement is the greatest lever for changing attitudes and habits. Central elements are the annual conference on eco-fair procurement, the campaign on eco-fair procurement in church congregations and the use of the ecumenical procurement platform.

### **Eco-management and Audit scheme within the administration of the Archdiocese of Cologne**

To take action effectively, moveo is using the European Commissions “Eco-Management and Audit Scheme” (EMAS) framework to provide measures and actions to comply with the goals on climate change mitigation and biodiversity conservation. EMAS is used in the administration of the Archdiocese of Cologne to foster a stakeholder dialogue on those very topics.

### **Sustainability Reporting consolidation of activities in the Archdiocese of Cologne**

The need for action is clear. What is much less clear, however, is what and how things need to be tackled. And this is exactly what sustainability management is needed for - a clear idea of what and how things need to be done. Sustainability Reporting is therefore a central component to give an overview on the sustainability actions in the Archdiocese of Cologne, such as the Climate Change mitigation programme, the social dimension of sustainability and the Biodiversity Conservation programme.

Furthermore, Sustainability Reporting is fundamental in describing the measures that contribute to global challenges, namely UN SDGs, and whether one is on course to achieve these goals.

## **Supplement World Resources Forum**

### **The social dimension of sustainability – Environmental justice and the governance of global resources**

Stakeholder dialogue on the fact phenomena that yet, neither science and technology nor social sciences and humanities alone, were able to really halt, or even reverse unsustainable development, characterizing almost every realm of life. This suggests a twofold way out: First, sustainable development must incorporate more yet untapped potentials of social sciences and humanities in the analysis of social-ecological processes that make development more or less sustainable and, second, social sciences and humanities must concentrate on issues and concepts that are adequate and relevant for linking up and eventually integrate with the societally defined and negotiated “messy” principles of sustainable development, which quickly reach out beyond purely academic boundaries and interests.

Rist S., Welz T., Stiefel S. (2014) The social dimension of sustainability – Environmental justice and the governance of global resources, World Resources Forum 2014

### **Social sciences as the translator of natural science models for stakeholder in society**

Structural approach on the importance of social sciences as translator of the models built by natural sciences on resource use in society. How can actors in society, as consumer, business and politician, transform this knowledge and adopt on their behavioural models. This approach shows how social sciences enable the intersection between science and society, to build a more sustainable metabolism in society, shown for instance for consumer food purchase decision.

Welz T., de Leeuw B. (2012) Nachhaltige Konsumententscheidungsmodelle – Sozialwissenschaften als Schnittstelle zwischen Naturwissenschaften und Gesellschaft, Bulletin (4/2012), Journal of the Swiss Academy of Humanities and Social Sciences

### **The sense of urgency in society for achieving drastic progress towards increasing resource productivity**

Development of a stakeholder dialog between hard and soft sciences on the one side, and science, business, and politicians on the other side, to derive approaches that allow sustainability to become more dominant on current decision models in society.

Welz T., de Leeuw B., Bianchi S. (2012) When will they start listening to us?, World Resources Forum 2012

### **Development of regional sustainability concept for stakeholder, as consumer and food producer, to implement sustainability on their decision process**

Research project on how regional food producer with strong endeavour for sustainable agriculture can communicate their products to consumer, to bring sustainability in consumers’ food decision model, and strengthen food producers’ economic performance.

Welz T. (2012) Nachhaltigkeit als ökonomischer Erfolgsfaktor in der Lebensmittelbranche – das hochwertige Produkt ist nachhaltig, World Resources Forum 2012

## **Supplement e-fis**

### **Development of sustainability concept for implementation of e-fis into retail market**

Structural approach on how to build an information system most sustainably and in addition so as to strengthen sustainability of stakeholders – producers, retailers and consumers.

Welz T. (2011) Nachhaltigkeit für das European Food Information System - Kunden/ Konsumenten/ Informationstechnologie - Grant given by the European Union's 7<sup>th</sup> framework programme through Marie Curie actions.

### **Strengthen sustainable food purchasing**

Approach that describes characteristics on how to influence food purchasing and consumption patterns so as to reduce environmental impacts on society. Aim is to provide insights into key parameters framing actual behaviour and to further categorize an approach that will put this sustainability tenet into practice.

Welz T. (2010) Towards sustainable food purchasing, Norwegian University of Science and Technology

Welz T., Adam G. (2011) IT for sustainable food purchasing, World Resources Forum 2011

### **Economic performance potential for producers and retailers in the agro-food industry through credible engagement on environmental sustainability issues**

Observation of the entire food supply chain by looking at parameters that determine sustainability for associated stakeholders. What expectations have to be met so that multi-stakeholder relations will result in better economic performance, especially using e-fis.

Welz T. (2011) Ökonomische Vorteile durch ökologisches Verhalten – Betrachtung der Lebensmittelbranche

## **Supplement Empa**

### **Sustainability Assessment – Lead-free Solder and its Environmental Load** (diploma thesis)

Investigation of the environmental impacts of lead-free solder as a substitute favoured by the ban on lead in electrical and electronic equipment.

Welz T. (2009) Bleifreie Lote & ihre ökologische Leistung, Cologne University of Applied Sciences

### **Technology Risk Assessment – Prediction of potential impacts by massive deployment of RFID-Tags in consumer goods on the environment and waste management**

Project by the German Federal Environment Agency in cooperation with the Institute for Futures Studies and Technology Assessment (IZT) Berlin. Author of Section "Impacts caused through RFID-Tags to municipal solid waste systems".

Erdmann L. et al. (2009) Einfluss von RFID-Tags auf die Abfallentsorgung, German Federal Environment Agency

### **Life Cycle Assessment – Lighting devices in the private sector**

Comparison of environmental burdens by all kinds of bulbs in the private sector. Including my own investigation of Life Cycle Inventories.

Welz T., Hischer R., Hilty L.M. (2011) Environmental impacts of lighting technologies – Life Cycle Assessment and Sensitivity analysis, Environmental Impact Assessment Review (31)

Welz T., Hischer R. (2011) Licht und seine Einflüsse auf Nachhaltigkeit, ET Licht (1/2011)

## Supplement Further Education

### Areas of specialisation in my studies of sustainability

- Introduction to Sustainable Development
- Introduction to Industrial Ecology
- Rational energy consumption
- Recycling technologies
- Product development
- Engineering ethics

### Further education in Life Cycle Assessment

<b>UNEP/SETAC Life Cycle Initiative Workshop</b> - Uncertainty in LCA, Berlin	<b>2012</b>
<b>European Union's 7th Framework</b> - LC-IMPACT Uncertainty Workshop, ETH Zurich	<b>2012</b>
<b>UNEP/SETAC Life Cycle Initiative Workshop</b> - Knowledge Mining on Product Sustainability from LCA Studies for Effective LCM Practices, TU Berlin	<b>2011</b>
<b>ecoinvent ecoEditor workshop</b> , Sevilla, Zurich	<b>2010, 2012</b>
<b>Mathematical analysis of the ecoinvent LCI database</b> for the purpose of developing new validation tools for the database, ETH Zurich	<b>2009</b>
<b>ecoinvent ecoSpold workshop</b> , Zurich	<b>2009</b>

### Project funding schemes

- SNF | Swiss National Science Foundation
- a+ | Swiss Academies of Arts and Sciences
- Innosuisse (former KTI) | Swiss Innovation Agency
- SATW | Swiss Academies of Engineering Sciences
- National Climate Initiative | German Federal Environment Ministry
- Federal program on Biodiversity | German Federal Agency for Nature Conservation
- UFOPLAN | German Environment Agency

### Conferences

Participation in several conferences on Life Cycle Assessment, sustainable consumption and production, and sustainable development.

- LCA Discussion Forum – Life Cycle Thinking = Lower Environmental Footprint?, Zürich 2021
- 20<sup>th</sup> European Round Table on Sustainable Consumption and Production, Graz 2021
- LCA Discussion Forum – LCA in the National Research Programme NRP 73 «Sustainable Economy», Wädenswil 2020
- 7<sup>th</sup> International Conference on ICT for Sustainability, Bristol 2020
- International Conference on Religions and Sustainable Development Goals, Vatican City 2019
- International Conference on the 3<sup>rd</sup> Anniversary of Laudato Si, Vatican City 2018
- World Resources Forum, Arequipa 2014
- World Resources Forum, Davos 2013
- World Resources Forum, Beijing 2012
- 15<sup>th</sup> European Roundtable on Sustainable Consumption and Production, Bregenz 2012
- LCA Food, Saint-Malo 2012
- LCA Discussion Forum – ecoinvent v3, Zurich 2012
- SETAC World Meeting, Berlin 2012
- World Resources Forum, Davos 2011
- International Food Data Conference, Norwich 2011
- Life Cycle Management, Berlin 2011
- LCA Discussion Forum – Applying Life Cycle Assessment on the food and beverage supply chain, Lausanne 2011

- Sustainable Lifestyles 2050: Visions and Policy Actions, Cologne 2011
- LCA Food, Bari 2010
- SETAC Europe 20<sup>th</sup> Annual Meeting, Seville 2010
- Growth in transition, Vienna 2010
- R'09 – Resource Management and Technology for Material and Energy Efficiency, Davos 2009
- World Resources Forum, Davos 2009
- The Alliance for Global Sustainability – Annual Meeting, Zürich 2009
- European Society for Ecological Economics, Leipzig 2007
- Information Technologies in Environmental Engineering, Oldenburg 2007
- Annual conference German society for ecological economics, Heidelberg 2006
- Symposium Industrial Ecology, Kaiserslautern 2006

### **Scholarships**

European Union's 7th framework Programme - Marie Curie actions - scholarship **2010**  
 Swiss State Secretariat for Education and Research Leonardo da Vinci scholarship **2008 – 2009**