

INTERNATIONAL SCIENTIFIC ENVIRONMENTAL RESEARCH  
ON SUSTAINABLE INDUSTRIAL DEVELOPMENT.  
THE LIFE PATH OF DR. HEINZ LEUENBERGER

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<https://doi.org/10.23939/ep2020.03.164>

*Received: 25.06.2020*

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**Abstract.** The article deals with the main scientific priorities of the development of environmental research on sustainable industrial development under the leadership of the international expert in the field of natural resource efficiency and cleaner industrial production, Dr. Heinz Leuenberger, Professor and Senior Advisor at the University of Applied Sciences, Basel (FHNW). Current priorities of his scientific research are green industry, resource efficiency and cleaner production, environmental impact assessments, wastewater, hazardous waste and chemicals management, material flow analysis. Extensive practical research experience and constant work in international projects in the field of environmental

protection are aimed at introducing the results into the manufacturing sector of European countries.

**Key words:** green industry, resource efficiency and cleaner production, environmental impact assessments, waste water, hazardous waste, chemicals management, material flow analysis

Dr. Heinz Leuenberger is an international expert in natural resource efficiency and cleaner industrial production, a part-time Professor at the University of Applied Sciences and Arts, Northwestern Switzerland (FHNW)–Senior Advisor in Sustainable Industrial Development. He was born in Switzerland, on the 26th of October, 1952. Dr. Leuenberger holds a Master's degree in Chemistry (1978), and the second Master's degree in International Relations, as well as a Ph.D. in Chemistry (1982) from the Swiss Federal Institute of Technology (ETH) in Zurich, Switzerland.

Dr. Leuenberger has vast invaluable practical experience as the research chemist in air and water pollution. His research projects and teaching areas of work were held at Federal Materials Testing and Research Institute (EMPA), (Dübendorf, Switzerland, 1984–1985), at the University of Zurich (Switzerland, 1985–2000), at the Department of Water Pollution and Waste Management, Environmental Agency (Canton of Solothurn, Switzerland, 1987–1991) and were aimed at water, air and waste pollution measurements as well as water management, cleaner production, and technology audits, hazardous waste, and water management in industries and municipalities.

Prior to joining UNIDO, Dr. Leuenberger was a Professor at the FHNW. From 1991 to 1999, he was the Head of the Environmental Technology Institute (IFU). He designed and lectured as professor at a

postgraduate course on “Environmental Technology and Management”. From 1999 to 2002, he served as Chief Technical Adviser (CTA) for the Vietnam Cleaner Production Centre at the Hanoi University of Technology.

In 1991 Dr. Leuenberger became Professor and Head of Basel Institute of Environmental Technology, University of Applied Sciences, Switzerland and is still working as a lecturer, speaker and consultant with students and PhD masters at training courses.

As the Chief Technical Adviser (CTA) at the Vietnam National Cleaner Production Centre (UNIDO-Project) in 1998-2002 Dr. Leuenberger took part in CP assessments in pulp and paper, textile, food processing, chemical and metal industry, cement production, pesticide formulation, footwear and sugar production, Cleaner Technology gap assessments (metal finishing and textile), training programmes in Cleaner Production for Universities, Industries and Agencies, developed Marketing and Business plans for Vietnam Cleaner Production Centre.

Being Professor and Chief Technical Adviser (CTA) at University of Applied Sciences, Basel (FHBB) and Vietnam Cleaner Production Centre (VNCPC) Dr. Leuenberger held such projects as Zero Wastewater House, (KT.BL and KT.SO, 2003), Benchmarks Study in Metal Finishing (KT.SO, 2003–2004), Feasibility Study of Cleaner Technology Project in Laos and Cambodia, in co-operation with UNIDO (Seco, 2002), Pre- Feasibility Study of Cleaner Production in Egypt (UNIDO, Nov. 2003), Hazardous Waste Management in Nam Dinh (Vietnam, SDC, 2004–2007), Project Proposal, Evaluation of PCB Oil Elimination Technologies in Vietnam (SDC, 2004–2007). In addition, during this period he made a business plan of Cleaner Technology Promotion, Implementation and Transfer in Vietnam (VNCPC, 2004–2007), he co-organised and lectured in the International Capacity Building Project in “Management of Hazardous Substances and Goods” (SDC, 2002–2004 in Muttentz) and Regional Training Courses on “Environmentally sound management of hazardous substances and goods” in Vietnam, Costa Rica, Sri Lanka, Kazakhstan and Jordan during 2003–2004.

During his tenure at UNIDO, Dr. Leuenberger coordinated the redesigning and strengthening of the global “Joint UNIDO-UNEP Programme on Resource Efficient and Cleaner Production in Developing and Transition Countries” and was primarily responsible for the design, formulation and implementation of UNIDO’s flagship “Green Industry Initiative”.

For eight years from 2006 to 2014 Dr. Leuenberger has worked in Austria as Director of Environmental Management Branch, UNIDO, in Vienna International

Centre. With the largest technical cooperation portfolio amongst the organization’s Branches, the Environmental Management Branch was responsible for activities related to resource efficient and cleaner production, waste, chemicals and water management, and the reduction of mercury use in artisanal gold mining. The Branch also conducted activities related to the sustainable management of large marine eco-systems, the implementation of measures related to the Stockholm Convention, and assisted municipalities and cities with methodologies and tools to improve the environmental performance of their industries.

During 2006–2008 he was responsible for UNIDO’s Energy Efficiency, Renewable Energy, Water Management and Cleaner Production Units to promote increased access to energy for productive use while supporting sustainable patterns of energy and resource use by industry. The global evaluation and redesign of UNIDO’s Cleaner Production Programme and the development of UNIDO’s renewable energy strategy were the key programmatic accomplishments in this period. Until 2014 Dr. Leuenberger was responsible for UNIDO’s Green Industry Initiative, through which UNIDO helps improve the environmental performance of the global manufacturing industry and support the creation of industries delivering environmental goods and services. He was also responsible for UNIDO’s Cleaner Production, Stockholm Convention and Water Management Units. The key programmatic accomplishments here are the development of the global UNIDO-UNEP Resource Efficient and Cleaner Production (RECP) Programme, including the expansion of the global network of RECP centres, development and growth of UNIDO’s project portfolio related to the elimination of persistent organic pollutants, chemicals and waste management, expansion of UNIDO’s activities related to the sustainable use of water resources by industry, including the establishment of innovative public and private partnerships and a programme on mercury management, development of the Green Industry Programme and a Multi-stakeholder Green Industry Platform (in cooperation with UNEP) with 194 Members from private sector, governments and international organisations.

From Mai 2015 to October 2017 Dr. Leuenberger worked as the Chief Technical Advisor for three international projects run by the United Nations Industrial Development Organization (UNIDO), converting three industrial parks into eco-industrial parks in Vietnam, launching a pilot national Resource Efficient and Cleaner Production (RECP) Programme in Myanmar, and running the national RECP centre in Ukraine.

Today Dr. Heinz Leuenberger is an international expert in the field of natural resource efficiency and

cleaner industrial production; in particular, in the design, implementation and operation of eco- industrial parks, and in operationalizing the 2030 Agenda for Sustainable Development and the associated Sustainable Development Goals (SDGs) for the private sector at the enterprise level. He has extensive experience in technology, capacity building and policy advice. His contribution to the development of knowledge about environmental protection technologies in the field of sustainable development continues to expand the horizons of the international community and allows us to find new areas of scientific interest. He has a great number of publications, 13 under overall guidance and 17 publications authored or co-authored [14–30].

## References

- [1] Luken R., Van Berkel R., Leuenberger H., Schwager P.: *J. Cleaner Production*, 2016, 112 (1), 1165.
- [2] Giljum, S.: *Resource Use and Resource Productivity of Economic Sectors – UNIDO Green Industry – Policies for Supporting Green Industry*, SERI/UNIDO.
- [3] Hinterberger F., Giljum, S.: *Green Growth: From labour to resource productivity – Best practice examples, initiatives and policy options*, SERI/AFD/UNIDO 2013.
- [4] UNWTO, *Sustainable Tourism Governance and Management in Coastal Areas of Africa*, UNWTO/UNIDO 2013.
- [5] Dittrich, M., Giljum, S. et al.: *Green Economies Around the World – Implications of resource use for development and the environment*, SERI/UNIDO 2012.
- [6] Hirschnitz-Garbers, M., Srebotnjak, T.: *Integrating Resource Efficiency, Greening of Industrial Production and Green Industries – Scoping of and recommendations for effective indicators*, SERI/UNIDO 2012.
- [7] UNIDO, *MED TEST – Transfer of Environmental Sound Technology in the South Mediterranean Region*, UNIDO 2012.
- [8] Van Berkel R., Wong, C.: *Towards Green Growth Through Green Industry Development in Vietnam*, UNIDO 2012.
- [9] Giljum, S., Dittrich, M. et al.: *Resource Use and Resource Efficiency in Emerging Economies – A pilot study on trends over the past 25 years*, SERI/Wuppertal Institute/UNIDO 2011.
- [10] UNIDO, *Green Industry - Policies for Supporting Green Industry*, UNIDO 2011.
- [11] Giljum, S., Dittrich, M., et al.: *Resource Use and Resource Efficiency in Asia – A pilot study on trends over the past 25 years*, SERI/Wuppertal Institute/UNIDO 2010.
- [12] Giljum, S., Polzin, C., *Resource efficiency for sustainable growth: Global trends and European policy scenarios*, SERI/UNIDO 2009.
- [13] UNIDO, *Funding options for Small and Medium Size Enterprises to finance Cleaner Production projects and Environmentally Sound Technology investments*, UNIDO 2009.
- [14] Massard G., Leuenberger H., Dong T. D.: *J. Cleaner Production* 2018, 188, 80.
- [15] Leuenberger H., Mehdi H.: *Development*, 2015, 57–58, 492.
- [16] Leuenberger H., Tonda, E.: “United Nations Industrial Development Organization” in Wexler, P., van der Kolk, J., et al., *Chemicals, Environment, Health: A Global Management Perspective*, CRC Press 2012.
- [17] UNIDO, *Green Industry Initiative for Sustainable Industrial Development*, UNIDO 2011.
- [18] UNIDO, *A Greener Footprint for Industry – Opportunities and challenges of sustainable industrial development*, UNIDO 2010.
- [19] UNIDO, *Managing the transition to resource-efficient and low-carbon industries*, UNIDO 2009.
- [20] Leuenberger, H.: *Resource Efficient and Cleaner Production (RECP) Programme Document*, UNIDO 2009.
- [21] ProDoc: *Promotion of New, Second-Phase Cleaner Production Services in Vietnam through the VNCPC*, Leuenberger and Tran Van Nhan 2004.
- [22] *Business plan VNCPC 2005–2007*, 2004.
- [23] ProDoc: *CP programme in Laos and Cambodia*, Clarence-Smith and Leuenberger 2004.
- [24] ProDoc: *PCB elimination technology evaluation in Vietnam*, Leuenberger and Wunderlin 2004.
- [25] Leuenberger et.al: *Switzerland’s Commitment towards Chemicals management*, SDC, Seco, BUWAL-Brochure (English, French and Spanish) 2003.
- [26] Tran Van Nhan and Leuenberger H. “Cleaner production and Industrial Pollution Control in Vietnam”, in *Greening Industrialization in Asian Transitional Economies*, Ed. By Arthur P.J.Mol and Joost C.L.van Buuren, Lexington Books (2003)
- [27] Grütter and Leuenberger: *Pre-feasibility and feasibility study, Cleaner Technology Promotion in India 2001/02*.
- [28] Leuenberger and Tran Van Nhan: *Business plan VNCPC 2001-2003*, 2000.
- [29] Leuenberger and Klebnikoff: *Pre-feasibility and Feasibility Study, Centre for Clean and Environmental Technology in Indonesia*, (1996/97)
- [30] *Water management concept*, Kt. Solothurn, 1998
- [31] Krusir G., Chernyshova O., Leuenberger H.: *Grain Products and Mixed Fodder’s*, 2016,62 (2), 23.
- [32] Sagdeeva O. A., Krusir G. V., Tsykalo A. L., Shpyrko T. V., Leuenberger H.: *Food Science and Technology*, 2018,12 (1), 45. <http://dx.doi.org/10.15673/fst.v12i1.842>
- [33] Sagdeeva O., Krusir G., Tsykalo A., Leuenberger H.: *Technogenic and ecological safety*, 2018, 3,95.