



4th PRME Report

PRME

This is our **Sharing Information on Progress (SIP)** Report on the Implementation of the **Principles for Responsible Management Education**



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List of Abbreviations

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List of Abbreviations

| | |
|--------|---|
| BCR | Bachelor Controlling, Finance and Accounting |
| BEL | Bachelor Purchasing and Logistics |
| BET | Bachelor Electrical Engineering |
| BIB | Bachelor International Business |
| BIM | Bachelor International Marketing |
| BMA | Bachelor Marketing |
| BMBPE | Bachelor Engineering / Product Development |
| BMBPT | Bachelor Engineering / Product Technology |
| BMF | Bachelor Market Research |
| BMFKP | Bachelor Market Research and Consumer Psychology |
| BMKWE | Bachelor Advertising |
| BMT | Bachelor Medical Technology |
| BMMWP | Bachelor Media Management and Psychology of Advertising |
| BPM | Bachelor Process Management |
| BREM | Bachelor Resource Efficiency Management |
| BSR | Bachelor Taxation |
| BSWP | Bachelor Taxation and Auditing |
| IMEP | International Master Exchange Program |
| ISP | International Study Program |
| MABL | Master Auditing, Business and Law |
| MAT | Master Auditing & Taxation |
| MBA IM | MBA International Management |
| MHRM | Master Human Resources Management |
| MLICS | Master Life Cycle & Sustainability |

***“We support innovation and envision ourselves
as a creative driving force.”***

Our Mission Statement

Preface

Since Pforzheim University joined the UN Principles for Responsible Management Education (PRME) in March 2008, we have already reported three times on our progress. We have presented successful steps such as our accreditation by AACSB International. Similarly we were able to present significant development in our curricula and even the implementation of new study programs.

As the “M” implies, our PRME engagement was initiated by our business school. However, nowadays not only do the principles extend to our entire university, but there are also concrete activities underway throughout all faculties.

Notable highlights include various developments such as a new M.Sc. program in “Life Cycle & Sustainability”, an increase of more than 29% in qualified publications concerning topics related to sustainability compared to the last reporting period, as well as the specific intensification of responsible education in all existing study programs.

Looking back, we are proud to report the 50th anniversary of our business school, whose published lecture program can serve as an example of our progress: Of a total of 50 articles in this special publication, seventeen discuss subjects concerning the broad field of corporate and social responsibility.

However, the integration of PRME into all aspects of our university is a process of continuous improvement. Our clear goal is to enable all students to competently and critically analyze ethical and sustainability issues

objectively within the specific context of their studies. Therefore, we are making a continuous effort to motivate our university staff (especially teaching colleagues) with respect to current and future corporate challenges in the field of sustainable development.

The preparation of the report at hand has been a major occasion to discuss the principles and their implications with all internal stakeholders. The new PRME Director Prof. Dr. Andrea Wechsler and the incoming PRME Coordinator Adrian Boos, who have replaced our honored colleagues Prof. Dr. Jürgen Volkert and Kerstin Anstätt, those responsible for the previous three reports, held conversations with all participants. This not only served to collect information necessary for drafting the fourth “Sharing Information on Progress” (SIP) report, but also provided a new foundation for dialogue on the successive development of PRME at Pforzheim University.

We hereby reaffirm our commitment to promoting responsible leadership and engaging with the international PRME community and welcome the periodic opportunity to outline the progress we have made in adhering to these principles.



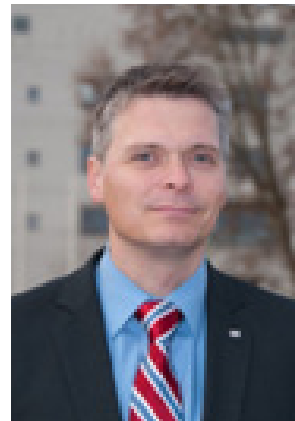
Prof. Dr. Ulrich Jautz
Rector of Pforzheim University



Prof. Michael Throm
Dean of the School of Design



Prof. Dr. Thomas Cleff
Dean of the Business School



Prof. Dr. Matthias Weyer
Dean of the School of Engineering

Executive Summary

In our fourth report in the context of “Sharing Information on Progress (SIP)” regarding the implementation of the six UN Principles for Responsible Management Education (PRME) we take a broader approach in order to provide our reader with an overview of PRME-related topics at Pforzheim University. We concentrate on themes and personalities we have not highlighted in our previous three SIPs and attempt to demonstrate the deeply rooted foundation we have established for the entire package of ethics, sustainability and CSR. Furthermore we use this report to describe advancements on previously implemented activities. For the first time we have utilized an academic scorecard with Key Performance Indicators (KPIs) to evaluate our achievements.

Similar to our most recent SIP report, we have developed a reader-friendly structure without single chapters for each principle. We have divided our contents into three sections following the six principles: Responsible education, research and partnerships and dialogue. In this manner, redundancies in each chapter have been avoided as different activities can correspond to several principles.

Each of these chapters contains one or more KPIs to measure our development in PRME-related fields. Since we are reporting in December 2015, all information has been obtained up to fall 2015, however we use the reporting periods 2013/14 compared to 2011/12 for our KPIs. Thereby, we have clearly defined periods that are comparable. In our next SIP we will compare these two periods with 2015/16. Until then we aim to enlarge our KPIs to better monitor the development of our PRME engagement.

This also applies to the methods of surveying the data for our KPIs. Currently all data is collected by different departments following a keyword system.

Thereby all lectures, publications, events, etc. count as PRME-relevant if they contain keywords such as sustainability, ethics, resource or energy efficiency in the title or main description. Naturally, this is a subjective matter dependent on the individual collecting this data. By our next SIP we plan to implement a central collection system with a consistent method at our department of quality management for these KPIs.

In the last SIP we reported in detail about our strategic commitments to responsible management education. This time we have dispersed these topics across the other chapters, since all activities are assignable to the three different classifications of the six principles. Therefore, we begin our SIP report with a short introduction on some strategic processes at the level of the entire university and a personal profile of our most active colleagues. Further profiles are interspersed throughout the report.

In our first chapter on principles, we describe the incorporation of PRME-related lectures in our curricula. Compared to the reporting period 2011/12 we can report an increase of 15% regarding total lectures offered with PRME reference. Additionally, the share of bachelor and master theses with PRME-related subjects increased by an impressive 175% from 2011/12 to 2013/14. In the best practice example we explain the study programs of our Institute for “Industrial Ecology” (INEC) in detail. Furthermore we show the development of PRME-related lectures in the curricula of our courses of studies, our elective module “Ethics and Social Responsibility” as well as the increasing popularity of our voluntary Ethics Certificate “Ethikum”.

Our second chapter reports on the status quo and development of PRME-related research at Pforzheim University. The share of publications concerned with “PRME topics” increased from 11% in the

reporting period 2011/12 to 19% in 2013/14. Additionally, the share of PRME-related research projects increased by 3.3% from 2011/12 to 2013/14. We report on the development of our publications and research in the last years, but focus especially on detailed examples of outstanding research. Some colleagues publishing on PRME topics are highlighted and some projects of our research institutes with PRME reference are described in detail.

In our last chapter “Partnerships and Dialogue” we report on PRME-related conferences, events, networks and initiatives. In 2013/14, the total amount of PRME-related events increased by almost 7% to 31. However, since the total number of events also grew, the proportion of those dealing with ethics, sustainability, corporate responsibility, or simply charity decreased slightly. Nonetheless we address the highlights and describe some examples in detail. The chapter finishes with two best practice examples of outstanding student initiatives.

PRME at Pforzheim University

In 2015, the year of our 4th SIP report, four new German universities joined PRME. Out of a total of 34 German members, 16 (47%) joined in the period since our last SIP. We actively support this development (e.g. in the DACH Chapter Steering Group) and benefit from this vibrant community. We have joined PRME as one of the first 100 participants worldwide in 2008. This considerably stimulated our activities focusing ethics, sustainability and corporate responsibility. These subjects will not only shape the working life of our graduates in the next decades, but will also become a standard in teaching.

The successful work of the PRME Regional Chapter DACH (Austria, Germany, and Switzerland) started

after the Rio+20 Summit with a workshop at Pforzheim University in January 2013. The official launch as an established chapter followed at MCI Innsbruck in February 2014. In October 2014 the Chapter organized its first research conference at the University of Chur, including presentations of Prof. Kurz (Green Growth) and Prof. Volkert (Motives for Sustainable Human Development and Resulting Challenges). At the 3rd DACH Meeting in November 2015 at the Frankfurt School of Finance, Prof. Kurz reported on “PRME and the Global Compact: Status Quo and Perspectives of Cooperation”.

He also attended the Global Forum for Responsible Management Education (6th PRME Assembly) in June 2015 in New York. Professor Kurz led discussions and, given his position in the Steering Group of the **PRME Chapter DACH**, joined the first meeting between the PRME Advisory Committee and the PRME Steering Committee. Discussions centered around organizational structures and strategic options, as Pforzheim University will assume responsibility to work with PRME on its further development. Therefore, we also renewed our engagement in the **PRME Champions** post-pilot phase, since we remain confident that PRME is and will continue to be an important tool to foster responsible decision making of our graduates throughout their careers. International cooperation to support the new “Sustainable Development Goals” (SDGs) especially requires a global teaching movement in our view.

Prof. Dr. Kurz is an excellent example of personal PRME engagement at Pforzheim University. In the following section and in separate boxes within the text we introduce additional colleagues active in PRME-related fields.

Faces of Sustainability at Pforzheim University

Characteristic of the broad diffusion of PRME at Pforzheim University is the fact that we are only able to present our core faces of sustainability.

We began with a complete overview (of our 180 professors), but quickly realized that we would need a special report to present all faculty members

engaged within the area of responsible management education. Therefore, in the following and throughout the report we introduce only a brief selection of our colleagues working in fields related to PRME.



Tobias Viere

Sustainability Manager

Tobias Viere is Professor of Energy and Material Flow Analysis at the Institute for Industrial Ecology and teaches in the Resource Efficiency Management program and the Master of Life Cycle & Sustainability. He studied environmental sciences and holds a doctoral degree in business studies from Leuphana University, Lüneburg. He has produced multiple publications in the areas of energy and resource efficiency, environmental and sustainability management and the like.

As **Sustainability Manager** he is responsible for the advancement of efforts in this field at Pforzheim University and furthermore coordinates the University's activities to integrate refugees. Together with his colleague Claus Lang-Koetz he organizes a public lecture series on "Resource Efficiency and Sustainability".



Simone Harriehausen

Ethics Officer

Simone Harriehausen holds a professorship at the department of law. She is a trained jurist and holds her LL.M. from Temple University, Philadelphia, as well as a doctoral degree in law from the University of Dresden. As Ethics Officer she is responsible for the so-called Ethikum, an additional qualification students from all degree programs can achieve by attending a supplementary lecture series in ethics and sustainability. She also manages the Ethics Mailing List, which provides information about events in this area and advice for students seeking the right balance of ethical content within their studies.



Andrea Wechsler

PRME Director

Andrea Wechsler is Professor for Private Business Law and concentrates on research in international commercial law and arbitration, law and technology and legal methodology. She cooperates among others with the Hanken School of Economics, another recognized member of PRME. Besides her doctoral degree in law she holds a M.A. from Oxford and two LL.M. from Columbia School of Law and the LMU Munich. As the responsible **PRME Director** she links the existing programs in ethics and sustainability with traditional curricula and aims at including PRME topics in all subjects. Prof. Dr. Wechsler is the official representative for responsible education at Pforzheim University and towards the PRME initiative.



Adrian Boos

PRME Coordinator

Adrian Boos is our newly appointed **PRME Coordinator**. He studied economics as well as peace and conflict studies and stands on the verge of completing his doctoral degree in resource and environmental economics. In recent years he worked as a consultant in the area of sustainability management and therefore brings a solid practical understanding of the current demands on responsible management education to the team. He has not only set the goal of supporting all actors to further integrate PRME into academic studies and research, but also to deeply embed the fundamentals of sustainability and responsibility in the workplace culture of Pforzheim University.



Rudi Kurz

International PRME Representative

Rudi Kurz has held his professorship in economics for almost thirty years and has published multiple books and papers in the area of sustainable development. For PRME-related topics in our curricula he makes essential contributions with lectures such as "Sustainable Development" and "Resource Economics". During his tenure as Dean of the Business School (2005-2012), he received the initial accreditation from AACSB and the University was therefore among the first signatories of PRME. He prepared, among other things, the official German version of the six principles. Professor Kurz is a member of the DACH Chapter Steering Group, works with the PRME Champions Group and represents this group in the UN Global Compact LEAD.

Jürgen Volkert

Former PRME Director and former Ethics Officer



Jürgen Volkert has been a professor of economics since 2000 and teaches primarily in the areas of Economics, Ethics and Sustainability. For more than twenty years, he has studied the interactions between ethics, economics and politics in the areas of poverty and sustainable development. From our initial participation in PRME in 2008 he was the PRME Director until the position passed to Prof. Dr. Wechsler in 2014. Furthermore, he was the Ethics Officer from 2001 to 2014. Meanwhile, he is responsible for the PROMOS grant program and is also one of the driving forces behind our university-wide initiative “Verantwortliches Denken und Handeln” (Responsible Thinking and Acting). Moreover, he has started to engage in developing an innovative teaching concept “Foundations of Ethics for Business Schools” and establishing our students’ research based learning opportunities with the NGO Project Child in Indonesia.

Guy Fournier

Responsible Professor at the School of Engineering



One of our most important „Faces of Sustainability“ is our colleague Prof. Dr. Guy Fournier from the School of Engineering. Professor Fournier worked primarily in the technology sector, especially focusing on internationalization, logistics, and the change of business models, prior to joining academia. His core interest and expertise, honed by many projects, rests within sustainable development and eMobility. Here he has guided municipalities towards more eco-friendly and sustainable approaches to energy consumption and mobility, engaging users and producers of cars. His approach is marked by a wide angle of tackling the issue of sustainability, realistic and based on scientific approaches. He is the author of many contributions to journals and books.

Strategy and Organization

In our last SIP reports, we already presented our **mission statement**, the **Ethics Code** of the Business School and our extensive **quality management**. Besides clear standards to promote excellence in educational performance and applied research and the transfer of expertise that enables our graduates to solve challenges in society, we emphasize the importance of the availability and cooperation of our faculty members. In our mission statement this is formulated as follows:

“Our success is due to the expertise and the innovation capability of our faculty members and staff. Our main objective is to establish an atmosphere of academic freedom and cooperation.”

We are concerned with the work-life-balance of our faculty and staff. All recruiting processes include gender and diversity aspects. For example, several **equal opportunity commissioners** are responsible for increasing the proportion of female employees, especially in the faculty. One best practice already mentioned in our last report is the following example of our engagement for the compatibility between a university career and a fulfilling family life.

In May 2015 Pforzheim University has been certified as a **family-friendly university** for the second time since 2012. Thereby, a new three-year cycle started after a review of the already implemented measures. The emphasis lies within building awareness of family-friendly working and studying conditions as well as strengthening the openness for these issues within the management culture of our university. Especially the university management is respon-



sible for a sufficient implementation of family-friendly conditions. Therefore, we offer trainings on the compatibility of family and work / studies for our managerial staff.

For our staff but also for our students, we offer child day care, even during school holidays, and further develop the possibilities for flexible care services. In addition to multiple kindergartens, we established a parent-child office at Pforzheim University. With the aid of multiple sponsors from the region we furnished an office not only with a desk and docking station, but also with a diaper-changing table, play mat and a wide range of toys. The room is open for all staff as well as students.

Our scheduling models are very flexible through part time, home office, and the possibility to bring children to work in our parent-child office in cases of emergency. This similarly applies to the care of family members, which is realized as an important topic in view of the age structure of our staff. In order to support care responsibilities, a variety of events are arranged continuously and information is published online.

Within the framework of our next topic and the following chapter, Pforzheim University offers all students with familiar liabilities flexible study arrangements. All schools have helpdesks to agree on mandatory but flexible study arrangements based on the individual situation of the student. An online guidebook and a specially trained project team support the helpdesks and affected students. Besides child day care and the parent-child office, we have a parent network to help each other as well as proposals such as free meals at the university restaurant for children of students. We aim at creating possibilities for parents to study in all situations that may arise. We see this as an integral part of responsible education.

Strategically, Pforzheim University seeks for a uniform / general approach to responsible education that is shared by faculty members in all three schools (business, design, engineering) and by the university administration. This is the common understanding of a process called **VDH (Verantwortliches Denken und Handeln = Responsible Thinking and Acting)** which is still in its initial phase. In 2014 more than 40 professors of all three schools attended workshops on VDH / PRME-related topics and developed their focus on VDH as a broader base than the management-centered PRME. The goal for future development is the establishment of awareness for responsible action in the areas of teaching and research as well as the strategic and operational management of the university. With this in mind, the working group on VDH has circulated the draft of a position paper explaining their motivation and goals. Emphasized is the development of an interdisciplinary center for learning experience to bundle all interests and activities in the area of VDH / PRME. This experiential learning center shall serve as a platform for joint forms of teaching and learning in the area of responsible thinking and action, interdisciplinary research projects and the implementation of quality standards in the area of responsible education.

The following chapter presents an overview of the status quo of our curricula in this area and our intentions to develop responsible education further.

Principles 1 to 3: Responsible Education

Teaching at Pforzheim University is to a great extent PRME-related. We offer our students more than 50 different lecture formats in the fields of ethics, sustainability and corporate responsibility. This has even increased by almost 15% since our last SIP report or from the reporting periods 2011/12 to 2013/14, respectively. Lectures such as “Sustainable Development” or “Business Ethics” are taught in German as well as in English. However, the increase is partly determined by our resource-related studies program including the brand new Master’s Degree in Life Cycle

& Sustainability closely related to our Institute for Industrial Ecology (INEC), which is presented in the following best practice example. Embedded in this introduction of INEC is the presentation of a further important face of sustainability at Pforzheim University, Prof. Dr. Mario Schmidt, director of INEC and program director of the Master’s program. Last but not least we are able to report an increase in the portion of PRME-related bachelor and master theses from 4% in the reporting period 2011/12 to 11% in 2013/14.

Best Practice:

In our previous SIP reports we highlighted the establishment of the “Institute for Industrial Ecology” (June 2010) and the initiation of a Bachelor’s Degree Program (B.Sc.) in “Resource Efficiency Management (REM)” beginning in the winter semester 2011/12 (national accreditation by AQAS e.V. in SS 2013). Since then the INEC has moved to its own representative bureau and expanded its team to eight professors and seven scientists.

Especially in the last two semesters, INEC has appointed three new professors with direct PRME-reference: Since summer semester 2015 Prof. Dr.-Ing. Claus Lang-Koetz holds the professorship of „Sustainable Technology and Innovation Management” and since winter semester 2015/16 Prof. Dr. Ingela Tietze is responsible for „Sustainable Energy Economics” and Prof. Dr.-Ing. Frank Bertagnolli for „Lean Production and Resource Efficiency”. Thus, the professorate around INEC is complete. In the last few years the professors Hendrik Lambrecht (Industrial Ecology), Nikolaus Thißen (Sustainable Process Systems Engineering) and Tobias Viere (energy and material flow analysis) have already joined the team and Professor Jörg Woidasky from the School

of Engineering teaches „Sustainable Product Development”. Prof. Dr. Mario Schmidt (Environmental Management) heads the INEC.

In summer 2015 a new Master’s Program (M.Sc.) “Life Cycle & Sustainability (MLICS)” started, building on the B.Sc. in REM. These Master’s courses are also open to interested students from other universities, as will be the planned Doctoral Graduate College “Energy Systems and Resource Efficiency” in cooperation with other universities. For our fourth SIP report we take these innovations as an occasion to provide a more detailed overview of the whole study program of INEC.



Bachelor of Science Resource Efficiency Management (REM)



Nikolaus Thißen is Professor of Process Systems Engineering and Quantitative Methods at the University of Pforzheim. He is Deputy Head of Institute of Industrial Ecology and Program Director of the **Bachelor's Degree Program Resource Efficiency Management**. He also teaches in the Master of Life Cycle and Sustainability. He studied Mechanical Engineering in Wuppertal and Duisburg and did his Ph.D. (Dr.-Ing.) at the Faculty of Mechanical Engineering of the RWTH Aachen University. After completing his PhD, he gained nearly 30 years of professional experience in research and development, plant engineering and technical consulting in the field of energy and environmental technology before being appointed to the University of Pforzheim to the winter term 2012. At the college he had the opportunity to expand his knowledge in the context of previous research, to develop projects and to put in industrial environments directly into practice.

The Bachelor's Degree program offers classical business studies with a detailed look at Industrial Ecology and Life Cycle Thinking. It combines business, engineering and the environment and is based on the idea that efficiency in production is associated with engineering, but especially that technological progress also depends on a solid understanding of management processes. The aim of the program is therefore to train future managers to be able to think in cycles and understand development in the field of resource efficiency. The degree qualifies our students to react to future economic challenges and originates from an extension program of the federal state to emphasize these aspects in an interdisciplinary study program. In addition to the core curriculum in business administration and general broad subjects such as "Ethics & Social Responsibility", the REM students are required to attend a series of ten special lectures concerning the topic of "Resource Efficiency Management".

The aim of the specific curriculum is to communicate a well-founded theoretical academic basis in resource efficiency as well as to qualify our stu-

dents to analyze and solve problems in this field. The orientation and contents of the study program were developed after extensive discussions with representatives from both the business community and representatives of science. The evident shortage in comprehensive knowledge on relationships between technological, ecological and managerial issues as well as their arrangements in companies serves as the base for this Bachelor's program. The degree enables our students to prepare analyses such as Life Cycle Assessments and Carbon Footprints and endows them with basic knowledge in technological subjects as well as in the energy and environmental sectors. The job profile of a graduate lies within overlapping themes and sections such as sustainability, the environment, controlling and also qualifies students for related Master's Degree programs.

Since REM only started in winter semester 2011/12 our first group of students completed their internships in winter semester 2013/14. Since then, 91 of our students have successfully completed their internships and 23 are currently in the process. We interpret the fact that our students have not had

problems finding internships as a positive indicator for the establishment of the Bachelor's Degree program. A high number of students worked directly in production as moderators with management, often in the field of Lean, Quality, Environmental or Sustainability Management. Other students worked in research, consulting or in political institutions.

We have evaluated our internships in order to receive feedback on the relevance of our study program and received positive results. Companies were satisfied with the performance of our students and confirmed that they have a very good command of Business Administration and specialized knowledge in the field of Resource Efficiency Management.

The study program for 1st to 7th semester:

| | | | | | | |
|----------|--|--|---|--|---|--|
| 7 | Bachelor Thesis | | | | | |
| | Management Seminar | | Other Finals | | Resource Efficiency Management Seminar | |
| 6 | Mngt. in Specific Industries Mngt. Electives | General Mngt. Strategic Management | Ethics & Social Responsibility | Markets & the Economics of Natural Resources | Environmental Law & the Law of Pollution Certificate Trading | Efficiency: Practical Applications Electives |
| 5 | General Mngt. Mngt. Simulation | Internship | | | | |
| 4 | General Mngt. Financial Accounting, Investments & Finance I | General Mngt. Financial Accounting, Investments & Finance II | Computer Based Mngt. Methods | Modelling in Industrial Ecology | Life Cycle Thinking Methods | Lean Management |
| | | | Seminar in Economic Policy | Methods of Project Organisation | Material Flow Cost Accounting | Environmental Engineering |
| 3 | Scientific Writing | General Mngt. Management Accounting | Economics International Economics | Inferential Statistics | Basic Environmental Issues | Process Engineering |
| | Cross-Cultural Competencies | | | Operations Research II | Introduction into Industrial Ecology | Introduction into Energy Engineering |
| 2 | Business Taxation | General Mngt. II Managerial Processes, Functions & Decisions II | Foundations of Economics II Macroeconomics | Descriptive Statistics | Law II: Business Law II & Property Law & Secured Transactions | Introduction into Production Engineering |
| | | | | Operations Research I | | Foundations of Physics |
| 1 | General Mngt. I Foundations of Accounting | General Mngt. I Managerial Processes, Functions & Decisions I | Foundations of Economics I Introduction & Microeconomics | Analysis & Linear Algebra | Law I Business Law I | Computers in Business |
| | Social & Methodical Competencies | | | Mathematics of Finance | | Computers in Business: Hands-on-Training |

Master of Science Life Cycle & Sustainability (MLICS)



Mario Schmidt has been Professor of Ecological Business Management at Pforzheim University since 1999. He studied physics and earned a doctoral degree in environmental material flow analysis. Between 2002 and 2014 he was the Director of the Institute for Applied Research, which coordinates the research work of the entire university. In this capacity, he fostered a research group on energy and material flow analysis, which became the Institute for Industrial Ecology in 2010. Currently, he is Head of the Institute of Industrial Ecology and leads the **Master's program in Life Cycle & Sustainability**. Since 2012, Prof. Dr. Schmidt is a member of the Advisory Board for Sustainable Development of the government of Baden-Wuerttemberg.

As a continuation of these topics at the Master's Degree level, our new Master's program "Life Cycle & Sustainability (MLICS)" successfully started in March 2015 with a first group of nine students from different universities and study programs. The program can accommodate up to 25 students, but for this initial phase we are satisfied with the intimate group size to test our curriculum. The planned group of 25 will also allow for effective and interesting learning conditions, additionally supported by the interdisciplinary mix of our students. Besides the possibility of studying for one semester abroad, the official length of the program is three semesters. Similar to the B.Sc. the focus of the M.Sc. lies within the topics of Sustainability Management, Life Cycle Assessment, Lean Production, Sustainable Product Development and Project Management.

Our Master's students learn to deal with methods, data and IT-tools necessary for sustainability assessments, such as Life Cycle Assessments, Climate Footprints or Life Cycle Costing, all at a more advanced level than in the Bachelor's program. They learn and work in interdisciplinary teams and cope with technical, ecological, economic and social questions. During the three semesters they are able to obtain practical experience through concrete ex-

amples of application, including company projects and case studies. One interesting example from the first year was a detailed Life Cycle Assessment of coffee capsules, which was performed in different lectures over the course of the semester. Graduates therefore are trained to understand the complexity of specific scientific and practical tasks in the field of Life Cycle Assessments. They will be able to apply suitable models and concepts under consideration of existing industry standards, analyze emerging problems using scientific methods and derive appropriate results and recommendations.

The entire Master's Degree studies in Life Cycle & Sustainability are related to topics in the direct environment of corporate responsibility and PRME. Sustainable Development is a main part of the Master's Program, from theories in modules 1, 2, 6 or 7 to the methodological background in practical Life Cycle Analyses; from business ethics in module 7 "Social Approaches of Sustainability" to basics in sustainable product design or energy systems in module 10 "Product and Technology". On the whole, our students gain skills in sustainability along the entire life cycle of a product (cradle to grave) and the methods to express them as concrete information.

Doctoral Graduate College “Energy Systems and Resource Efficiency”

To complete the possible education of our students in topics including industrial ecology, sustainability, and resource efficiency, the INEC has applied for a Doctoral Graduate College, headed by Prof. Dr. Mario Schmidt, Head of INEC. The proposal for this Graduate College has been submitted together with Prof. Dr. Armin Grunwald and Prof. Dr. Wolf Fichtner from the “Karlsruhe Institute of Technology” (KIT) and Prof. Dr. Ursula Eicker from the “University of Applied Sciences Stuttgart”. In the last phase of finalizing our SIP, this proposal was approved. Beginning in 2016 up to 12 scholarship holder will perform their research and write their dissertation in this new Graduate School „Energy Systems and Resource Efficiency (ENRES)“. In our next SIP we will report in detail on this new PRME-related program at Pforzheim University.

The aim is to establish a cooperative interdisciplinary Graduate College for topics similar to our B.Sc. and M.Sc., open to Doctoral Students from these three universities. Prof. Dr. Mario Schmidt has been awarded for his interdisciplinary approach as honorary professor at the University of Lüneburg, known for its expertise in the field of sustainability. This honor enables Prof. Schmidt not only to oversee doctoral theses, but he is also able to conduct examinations himself with the University of Lüneburg as a partner institution; a similar approach is planned with KIT. On balance, the Graduate College represents the last step of INEC for an overarching education ranging from a Bachelor’s Degree to a PhD.

| 1. Semester | 2. Semester | 3. Semester |
|---|--|---------------------------------|
| Concepts of Industrial Ecology (5 Credits) | Economic Approaches to Sustainability (6 Credits) | Advanced Seminar (5 Credits) |
| Intensification of Basics (6 Credits) | Social Approaches to Sustainability (5 Credits) | Advanced Seminar (5 Credits) |
| Life Cycle Assessment I (6 Credits) | Life Cycle Assessment II (7 Credits) | Master’s Thesis (25 Credits) |
| Products and Projects (7 Credits) | Life Cycle Assessment III (6 Credits) | |
| Independent Studies / Case Studies (6 Credits) | Product and Technology (6 Credits) | |

Current curriculum at Pforzheim University

As we reported in our last SIP, the integration of topics related to business ethics, sustainable development and CSR in the curricula of our courses of study is one of our main goals in implementing PRME. Our analysis of the overview of course content conducted at the time revealed room for improvement.

One major plan we presented in our third report was the incorporation of introductory ethics, sustainable development and CSR in the first study semester. As a result, we have introduced an entire day on **“Foundations of Sustainability and Business Ethics”** for first semester students in the first weeks of the new semester. This event is integrated in our program **“Social and Intercultural Competence”**, which has been successfully carried out for many years at the beginning of each semester. In this program multiple core competencies are provided for new students, from which they are required to earn 5 credits. This introductory lecture contains a complete overview of the foundations of theories and current discussions of business ethics, sustainable development and CSR. As this short introduction is limited to a brief overview of the themes, it also contains information on how to deepen one’s understanding of the different topics during the course of study.

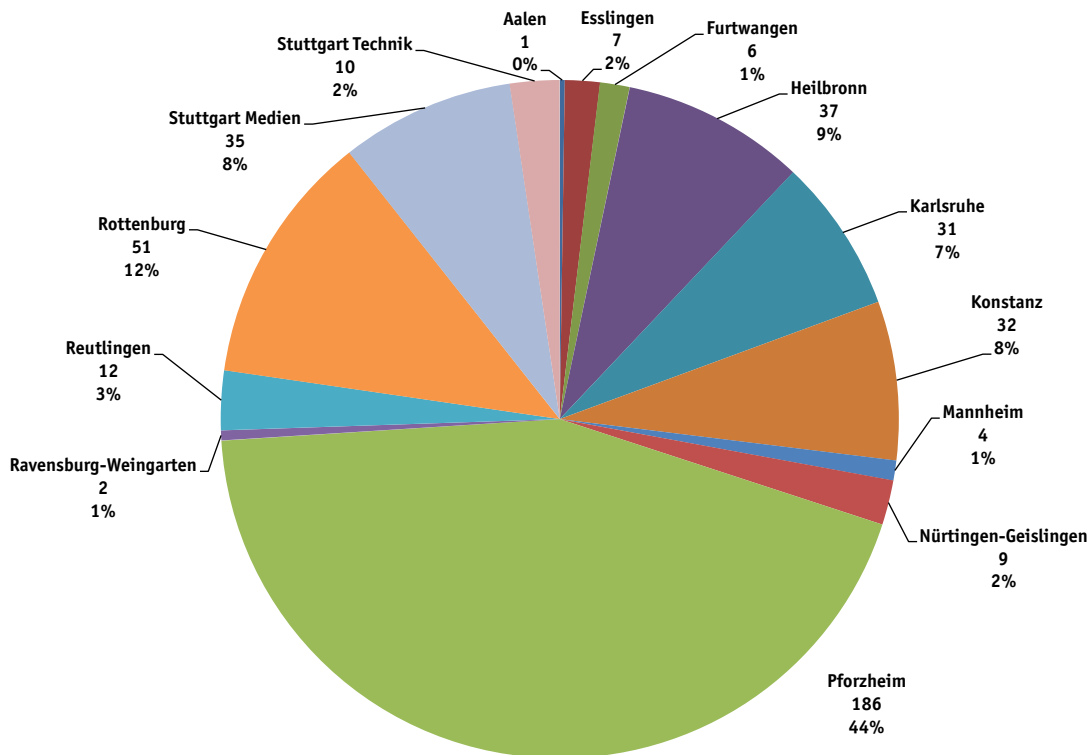
For the entire university (all three schools) this is possible within the so-called **Ethikum**, our successfully well-established **Ethics Certificate**. This certificate is a supplementary option for all students in addition to their core studies. In our last three reports we have already shown details of the ethics certificate, which is awarded by the “Department of Ethics in Technology and Science” for all Universities of Applied Sciences in Baden-Wuerttemberg.

The certificate is awarded to students who have worked intensively on ethical issues and questions related to business ethics, sustainable development, CSR and / or social and intercultural competencies.

Students are required to participate in voluntary activities of at least 200 hours in lectures, online seminars, projects or student initiatives such as SNEEP or UNICEF (see Student Initiatives in chapter 5). Three of the lectures have to be marked with a grade. Since Pforzheim University has a variety of options for potential lectures, we refer to the lecture overviews in the next faculty-specific sections. Overall, courses have to be selected from the wide field of ethics and sustainability. Pforzheim University maintained its leading position concerning the number of students qualifying for the Ethikum in comparison with other Universities of Applied Sciences in Baden-Wuerttemberg, as the figure below shows.

The **International Programs Office** (Akademisches Auslandsamt) of the university implemented and supported the UN PRME initiative from the beginning. International Programs supports students taking classes related to the scope of PRME via scholarship funding. Most of these scholarships are supported by the **PROMOS program of the German Academic Exchange Services** (DAAD). This national scholarship program started around the same time as the UN PRME initiative and the scholarships for studying abroad should especially support the implementation of PRME in Pforzheim. To date the International Programs Office has supported around 175 students with a total of around Euro 120,000. Students planning to study in developing or emerging countries are able to apply for a PROMOS scholarship, provided that they focus on issues of business ethics, corporate responsibility, sustainability, development or environmental economics in courses at one of our several partner universities. In our last two SIPs we reported in detail on the number of participants and course examples. However, since our last report, the popularity of the PROMOS program has especially grown in our School of Design. With this in mind, the following table lists some examples of partner universities for design studies and associated courses.

Distribution of Ethics Certificates at Universities of Applied Sciences in Baden-Wuerttemberg



Source: rtwe, date: 16. September 2015

Examples of PRME-related courses at partner universities of the School of Design

| | |
|---|--|
| University of Stellenbosch | Sustainable Development |
| Hongik University of Fine Arts Seoul | Contemporary Society & Ethics |
| Nanyang Technological University Singapore | Practical Ethics: Thinking About Right & Wrong |

One really good key performance indicator (KPI) to look at the implementation of PRME at Pforzheim University is the share of Bachelor's and Master's Degree theses with PRME reference. In the reporting period 2011/12 from a total of 1,218 theses 52 (4%) were PRME-related.

In the period 2013/14 these numbers increased impressively. From a total of 1,253 theses 138 and therefore 11% were PRME-related. This over two-fold increase is a clear success of motivated lecturers and a structure of responsible education, which is increasingly spreading through the whole university.

Key Performance Indicator PRME-related theses

| KPI | 2011/12 to 2013/14 | Increase 2011/12 to 2013/14 |
|---|--------------------|-----------------------------|
| Total theses offered with PRME reference | 52 to 138 | ↑ 165% |
| PRME-related theses/Total theses | 4% to 11% | ↑ 175% |

Business School

In our assessment of all PRME relevant courses, we presented detailed overviews of courses that have thus far incorporated PRME topics in our previous SIP reports.

As one result of this assessment we have further developed our elective module **“Ethics and Social Responsibility”** by implementing new lectures dealing with sustainable development and CSR. These compulsory elective courses mainly address Bachelor’s Degree students in their 6th semester and students of all semesters aiming to receive the Ethikum as described above. Currently students can attend the following courses:

- Business Ethics: Economic and Social Historical Perspectives
- Business and Corporate Ethics
- Environmental Management
- Sustainable Development
- Ethics, Business and Society
- Corporate Environmental and Sustainability Management

However, alongside this elective offer, additional new courses in PRME-related topics were added to our curricula. In terms of our examination of the status quo, in the following table we present all courses (title and degree program) conducted since the last SIP report. Naturally, some of these courses substitute each other and treat the same topic in a more extensive way. However, the table should only serve as an example of the variety that Pforzheim Business School offers its students in dealing with PRME topics.

In total, compared with the last reporting period, the number of courses increased by 15%. We aim to raise this key figure on a yearly basis.

Another step made since the last SIP report is the central theme of integrating PRME topics throughout the curricula of all our degree programs.

The Project “Integration of Business Ethics and Sustainability” in Courses of all semesters of the Business Studies Bachelor’s Degree Programs aims at incorporating PRME topics throughout the entire education of our business students. We use modules in individual courses, such as lectures on “Compliance” in courses on Financial Management, on “Corporate Culture and Governance” or “Fair Salaries” in Business Studies I & II, “Business Objectives” in Business Management or on “CSR and Public Relations” in corporate strategic planning simulations, and so on.

Teaching staff is encouraged to include such topics in their courses, but since this is a completely voluntary option within their professorship or teaching position, we are reliant on the engagement of our colleagues. A positive indicator is that almost all involved teaching staff members participate in this large project. As a result of the scope of this undertaking, we are still in the implementation phase. Modules are integrated in all semesters, but the central theme or a so-called leitmotif is still a work in progress.

Besides the previously highlighted new program in “Life Cycle & Sustainability”, our Master’s programs such as the MBA in International Management incorporate modules in areas such as “Sustainable Globalization”. As a complement to other courses that are clearly related to PRME listed in the tables above, students also participate in lectures on topics such as “Global Economic Integration”. We have not yet achieved a clearly visible thread through all Master’s Degrees, but in all of our degree programs at least one lecture series is related to PRME topics.

Bachelor's Degree Programs

| | | | | |
|--|--|--|---|--|
| Business and Corporate Ethics I & II | BREM, BSWP, BMMWP, BMFKP, BMKWE, BWMI, BWE, BSR, BIM, BEL, BWK, BIB, BCR, BMF, BMA & BPM | | Sustainable Development I | BREM, BSWP, BMKWE, BMFKP, BWMI, BWE, BSR, BIM, BEL, BWK, BIB, BCR, BMF, BMA, BPM & ISP |
| Business Ethics: economic and social historical perspectives | BREM, BSWP, BMMWP, BMFKP, BMKWE, BWMI, BWE, BSR, BIM, BEL, BWK, BIB, BCR, BMF, BMA & BPM | | Sustainable Development I: Challenges and Responsibilities | BMMWP, BWE, BSR, BIM, BEL, BWK, BIB, BCR, BMF, BMA, BPM & ISP |
| Ethics, Business and Society | BWE, BSR, BIM, BEL, BWK, BIB, BCR, BMF, BMA, BPM & ISP | | Sustainable Development II | BWE, BSR, BIM, BEL, BWK, BIB, BCR, BMF, BMA, BPM & ISP |
| Environmental Management I & II | BWE, BSR, BIM, BEL, BWK, BIB, BCR, BMF, BMA & BPM | | Sustainable Development II: Strategies in the European Union | BWE, BSR, BIM, BEL, BWK, BIB, BCR, BMF, BMA & BPM |
| Corporate Environmental and Sustainability Management | BREM, BSWP, BMKWE, BMFKP, BWMI, BWE, BSR, BIM, BEL, BWK, BIB, BCR, BMF, BMA, BPM & ISP | | Environmental Studies | BREM |
| Markets and the Economics of Natural Resources | BREM, ISP | | Environmental Engineering | BREM |
| | | | | |
| Legal Aspects of Environmental and Resource Conservation | BREM | | Computer-based Management Methods in Environmental Science | BREM |
| Seminar in Economic Policy with topics such as: - Economic and Political Problems in Resource Use and Sustainability - Mobility, the Automotive Industry and Sustainable Development - Environmental, Food and Energy Policies at a Crossroads | BREM, BSWP, BMKWE, BMFKP, BWMI, BWE, BSR, BIM, BEL, BWK, BIB, BCR, BMF, BMA, BPM & ISP | | Focal points of Environmental Protection | BREM |

Master's Degree Programs

| | | | | |
|---|-------------|--|--|-------------|
| Professional Rules and Ethics | MAT & MABL | | Sustainability and Metabolism of Industrial Society | MLICS |
| Sustainability and CSR in HRM | MHRM | | Environmental Impact | MLICS |
| Corporate Responsibility and Sustainability Management | MBA IM | | Environmental & Sustainability Accounting | MLICS |
| Responsibilities for Sustainable Development | MBA IM | | Business Ethics (incl. CSR) | MLICS |
| Sustainable Development | MBA IM | | Social LCA | MLICS |
| Environmental Economics | MBA IM | | Assessment of Energy Systems | MLICS |
| Sustainable Process Systems Engineering | MLICS | | Sustainable Energy Economics | MLICS |
| Resource Efficiency in Practice | MLICS | | Renewable energies and cogeneration (incl. Lab) | MLICS, IMEP |
| Sustainable Product Design (incl. Lab) | MLICS, IMEP | | | |

The following table gives an overview of the Master's Degree programs of our business school, each with one example of a lecture that touches on a PRME-related subject. In some cases, such as conflict management, the connection could seem far-fetched until one reflects on the contents of such topics in light of a comprehensively responsible education. We are looking forward to the incorporation of PRME topics within all development stages of our students, but in certain cases such as "Information Systems" or "Auditing, Business and Law" this is a complex task and, similar to our bachelor's degree programs, remains a work in progress.

| | |
|---|--|
| M.A. Auditing and Taxation | Professional Rules and Ethics |
| M.A. Auditing, Business and Law | Strategic Management and Organization |
| M.A. Controlling, Finance and Accounting | Conflict Management |
| M.A. Creative Communication and Brand Management | Ethic / Aesthetic Aspects of Brand Communication |
| M.Sc. Human Resources Management | Sustainability and CSR in HRM |
| MBA Human Resources Management & Consulting | Business Ethics / Corporate Social Responsibility |
| M.Sc. Information Systems | Cross Cultural Management |
| MBA International Management | Corporate Responsibility and Sustainability Management |

| | |
|--|--|
| M.A. Innovative Service Marketing | Resource Efficiency in Practice |
| MBA Management | Sustainability and Corporate Social Responsibility |
| International Master Exchange Program | Specialization "Sustainability" |

Examples of PRME-related lectures in all Master's Degree programs of the Business School

A special case is our legal education. While we only offer one Bachelor's program in "Business Law" and participate in the "M.A. Auditing, Business and Law", lectures in law are part of multiple graduate programs.

Courses in "Human Rights", "European and International Law" or "Employment Law" naturally contain PRME specific subjects. In courses such as the "Contract Law" or "International Business Law", individual topics such as the principles of the Global Compact or corruption are addressed. On the whole, the curriculum of the "Bachelor of Business Law" teaches all such principles, while lectures in law introduce these topics in other courses of study. The responsible legal educators see ethical behavior as the cornerstone of (international) law and therefore seek to motivate our students to think in this direction. The department is working on a deeper incorporation of PRME topics in the coming years. Amongst other things, a basic course in "International Law and Human Rights" will begin during the summer semester of 2016, which will be open for all courses of study.

Additionally, our International Study Program (ISP) is an integrated course platform, provided by the Pforzheim University's Business School, offering courses in the English language for (a) exchange students from partner universities and (b) students enrolled in a Bachelor's degree program at Pforzheim University's Business School who are taking these courses as mandatory electives. Within the ISP in 2011/12 two courses related to sustainability, ethics and social responsibility had been delivered in the English language ("Sustainable Development I – Challenges & Perspectives", "Sustainable Development II - Corporate and Global Perspectives". In 2013/14 this portfolio was enhanced by the courses "Markets and the Economics of Natural Resources", "Seminar in Economic Policy" (with subsequent topics, see PRME report page 19) and "Sustainable Product Development " (sourced by the department Business Administration and Engineering into the ISP).

School of Engineering



Jörg Woidasky is Professor for Sustainable Product Development at the School of Engineering and is also among the professors of the Institute for Industrial Ecology. He teaches and conducts his research in the field of sustainable product development and resource efficiency and has made considerable contributions towards designing products and production processes in an environmentally friendly manner. He studied technical environmental protection and completed his doctoral degree on a novel recycling method while he was working at the Fraunhofer Institute for Chemical Technology. At Pforzheim University he is responsible for the education of industrial engineers in sustainability.

In our last SIP we reported on significant progress in integrating PRME aspects in the degree programs of our School of Engineering. As we are proud to present in the following, this has developed further despite the challenge of incorporating associated topics in engineering studies.

As previously announced in the last two reports, the new module “Sustainable Product Development”, which started in the winter semester of 2011/12, has been expanded since the last report and meanwhile serves three Bachelor’s Degree programs as well as the international study program:

- Business Administration and Engineering / General Management
- Business Administration and Engineering / Global Process Management
- Business Administration and Engineering / International Management
- International Study Program

The module includes two basic courses in topics such as sustainability concepts, environmental impact and product life cycles. Experimental learning in specialized labs is included. “Sustainable Product Development III” offers the possibility to deepen one’s knowledge and to receive practical insights

into the exemplary development of sustainable products in cooperation with partner companies.

The study program “International Management and Engineering” has as its specific learning goal the development of future engineers’ international management skills, including intercultural competencies in engineering. The teaching approach for this goal is based on an interpretive perception of culture, built on the respect for cultural diversity and responsible management in an international context. Among others, Prof. Dr. Jasmin Mahadevan and Prof. Dr. Katharina Kilian-Yasin, both specialists in intercultural communication and cooperation, teach topics such as “Cross-Cultural Management”, “Cultural Awareness” or “Intercultural Engineering”.

In their research, both professors examine diversity and intercultural development with empirical methods in economic and technical study and work environments. The findings obtained contribute to the knowledge about the development and application of cultural competencies in education and practice in the field of engineering and beyond. Additionally, Professor Kilian-Yasin has introduced the term of “Interculturally Responsible Management Education” (ICRME) in her recent research. Both teaching

and research activities in this field fall under the initiative “Diversity and Intercultural Learning” (DIL) in the department of Management and Engineering in the School of Engineering of Pforzheim University.

However, most courses in the School of Engineering are only loosely related to PRME, but wherever possible subjects such as the personal responsibilities of engineers are discussed by the professors during both the standard and more technical courses. For example, the case of the Volkswagen emission fraud and the personal responsibility of engineers was discussed in various courses. Also, the responsibility of engineers in designing devices with a long lifetime (or not) is discussed regularly. Certainly, in courses of studies such as the “M.Sc. in Embedded Systems” it is more difficult to integrate PRME topics. However, there are multiple courses that touch on PRME. Since these were not highlighted in our last reports, we also illustrate some examples in the following table together with the corresponding degree program.

Examples of PRME-related lectures in degree programs of the School of Engineering

| | |
|-----------------------------------|----------------------|
| Sustainable Development | BMBPT, BMBPE |
| Future Energy Production | BMT, BET, BTI, BME |
| Applied Quality Management | BMBPE |
| Occupational Safety | BMBPT |
| Lean Manufacturing | BWIGEN |
| Energy Management | BWIGEN, BWIGLOB, ISP |

Courses such as “Supply Chain Management” are predestined to discuss international sustainability topics, but the decision to include these is left to the discretion of the lecturers. The faculty board of the School of Engineering requires all professors and lecturers to incorporate PRME-related topics in their courses, but the process is long and is based on the purely voluntary engagement of all participants. As highlighted above, regular topics of our lectures include the engineer’s responsibility to the final user of their products and to the law, as well as the development of more efficient processes, engines or similar.

Additionally, many engineering students access the elective module described in this report’s section on the Business School, namely “Ethics and Social Responsibility”. They can participate in a variety of lectures dealing with ethics, sustainable development and CSR to achieve the Ethikum or simply to broaden their course portfolio.

School of Design

After more and more students of the School of Engineering complete their Ethikum (currently nine students), we can report now that also two students from our Bachelor's program "Fashion" have completed the Ethikum. Prof. Dr. Simone Harriehausen, our Ethics Officer, is looking forward to incorporating this program more deeply into the School of Design.

Nevertheless, as reported in our last SIPs, Bachelor's Degree programs of the School of Design discuss sustainability as a new trend. However, the implementation is currently neither structured nor reaching all students. As in the case of the other two schools, we offer a table of example courses dealing with PRME topics.

Examples of PRME-related lectures in degree programs of the School of Design

| | |
|---|----------------------------------|
| Cultural Sciences and Studies | BAAD, IDAL, MODE, BAS, IDTD, BVK |
| Design and Business | BAAD, IDAL, MODE, BAS, IDTD, BVK |
| Ergonomics and Structural Design | IDTD |

As in the example of the School of Engineering above, lectures in the School of Design are only loosely related to PRME. Design mostly is a practical discipline and therefore there are countless examples of practical design projects or internships with relation to PRME. For example, in January 2014 eight of our students developed drafts for a more sustainable car on behalf of the major German weekly news magazine DIE ZEIT. However, these practical projects are not structurally monitored yet. For our next SIP

report we aim at presenting a complete list of all PRME-related design projects and for the following report we plan to present the new Key Performance Indicator "Total PRME-related design projects / Total design projects" to compare these two reporting periods.

Key Performance Indicator PRME-related lectures

| KPI | 2011/12 to 2013/14 | Increase 2011/12 to 2013/14 |
|---|--------------------|-----------------------------|
| Total lectures offered with PRME reference | 47 to 54 | ↑ 15% |

However, currently we have to exclusively rely on the lectures of the Business School and the School of Engineering for our newest KPIs above. There is an increase of 15% in our lectures related to PRME topics.

Principle 4: Research

Research at Pforzheim University is to a significant extent PRME-related. 18.5% of our total publications treat topics such as business ethics, sustainability, corporate responsibility and related fields. This key figure has increased by more than 70% since our last SIP report and we aim for continuous growth. We address these publications in the first part of the chapter, including a critique of PRME at Pforzheim University. In the second part of this chapter we discuss PRME-related research projects of our six practical orientated research institutes. We present an increase in the share of PRME-related research projects of 3.3% from 2011/12 to 2013/14. This share of total research projects reaching almost 35% in the reporting period 2013/14 shows the high value of PRME topics in research at Pforzheim University.

Best Practice: Interdisciplinary Approach to Obsolescence

One of our distinguished symposia in the reporting period serves as an exemplary case for the university-wide interdisciplinary research efforts within PRME-related topics. On November 28, 2014, about 150 scientists, representatives from consumer protection organizations, ministries, federal offices, industry and other associations discussed the phenomenon of obsolescence from a variety of academic perspectives. Early failure of products or the prevention of this obsolescence represents a rarely discussed core theme of corporate responsibility towards customers and end consumers. A study by the federal environmental agency noted that especially the life span of technical equipment is continuously declining, a trend clearly contradicting sustainable development and responsible management. In a variety of lectures and panel discussions, participants from economics, marketing, engineering, law and practitioners from companies and consumer protection organizations discussed the concept of the responsibility to crea-

te durable consumer products, the results of which were synthesized in a respected publication.

In “Obsoleszenz interdisziplinär. Vorzeitiger Verschleiß aus Sicht von Wissenschaft und Praxis” (Obsolescence from an Interdisciplinary Perspective. Early product failure from an academic and practical point of view), numerous authors from practice and different fields of research discussed the phenomenon that the life expectancy of products is increasingly declining. Scientists and academics of Pforzheim University and numerous other institutions completed the picture by analyzing the shorter product life cycles of consumer goods from different angles. The book, sponsored by the Federal Ministry of Justice and Consumer Protection, begins with obsolescence in the current, political and journalistic discourse. It addresses the subject from the view of business studies, economics, technical and natural science disciplines, design and law, and addresses social responsibility relating to consumer goods. For example, professors such as Rudi Kurz from the economics department of Pforzheim University and Christian Kreiß from the Industrial Management study program of Aalen University analyze the problem of early obsolescence in light of economic research. Professor Kurz, who is also responsible for multiple lectures on sustainable development at Pforzheim University, discusses the relationship between sustainability and corporate social responsibility and the different effects of obsolescence. The publication concludes, as did the preceding symposium, that companies should design their products for endurance and reparability, not least in the name of sustainable consumption.





Before **Prof. Dr. Tobias Brönneke** began as Professor for Business Law at Pforzheim University in 2001, he worked as legislative assistant and lawyer for the working group of the German consumer protection associations. He continues to be active in this field and has several publications concerned with consumer protection, including the book about interdisciplinary obsolescence presented above as well as a book on the new law of obligation - reform of consumer rights from 2014. Professor Brönneke is co-editor of the journal "Consumer and Law" and a member of the coordination committee of the network for consumer research at the Federal Ministry of Justice and Consumer Protection. In his policy consulting work, as member of the consumer commission of the federal state and as a participant at hearings of experts in the German Parliament, Professor Brönneke has affected the legislative process in consumer law on multiple occasions. His published positions are referenced by courts as high as the European Court of Justice (EuGH).

PRME-related research at Pforzheim University

Publications

As highlighted in our preface, the publications concerned with or at least related to PRME topics increased since the last reporting period. Since we are aiming to create key performance indicators, we can compare the periods 2011/12 and 2013/14. In our last SIP we reported on 2011/12 together with all information published up to September 2013, therefore there will be some overlaps in this SIP. Beginning with our next report, we will compare 2011/12, 2013/14 and 2015/16 and use closed periods, which are already processed in our sophisticated quality management system for accreditations, such as AACSB.

In the period 2011/12, of a total of 658 qualified publications, 71 were PRME-related (11%). In 2013/14, this increased strongly to 18.5%, while also increasing in total to 92 publications

within the periphery of PRME. However, the total number of publications decreased to 498, a decline that requires further consideration.

While we are able to present an increase in relevant publications, not only the total number of publications decreased. We also registered a decline of publications directly concerned with PRME as a key topic. In the 2011/12 period, our honored colleagues Prof. Dr. Jürgen Volkert and Kerstin Anstätt, those responsible for PRME at Pforzheim University from 2008 to 2014, directly published PRME-related papers or book chapters. These included examples such as the summary on potential, challenges and perspectives of the UN Principles for Responsible Management Education in an anthology on "Responsibility in a Global Economy". In our current reporting period 2013/14, only Prof. Dr. Rudi Kurz, our representative at the

PRME Champions and PRME Chapter DACH, published a short overview on PRME in an in-house publication.

This results from the transition in PRME responsibilities from Prof. Dr. Jürgen Volkert to Prof. Dr. Andrea Wechsler as well as from Kerstin Anstatt to Adrian Boos. In August 2012, Kerstin Anstatt moved from her official PRME-position to an engagement as sustainability researcher at INEC, the most PRME-related institute we have widely described in this report. Therefore, the position as PRME Coordinator was more or less only partially filled for the last three years (Adrian Boos started in June 2015), which resulted not only in a small decline of publications in this area, but also in all PRME-related activities such as events. We aim to halt this drop and raise our engagement in a directly PRME-related debate, while increasing our publication intensity in the next reporting period.

On the other hand, we are proud to recognize that several of our professors excel as leading experts at PRME-related topics in the fields of sustainable development and corporate responsibility. Due to space constraints, we only chose four conspicuous examples to show here.

Four Examples of Pforzheim experts

Prof. Dr. Guy Fournier, professor of Business Administration and Engineering at our School of Engineering, is an expert in the fields of Sustainable Mobility and therefore an excellent example for our interdisciplinary approach on PRME-related topics. In the following we highlight a selection of his publications from 2013/14:

- Fournier, G., Baumann, M., Dittes, S., Lindenlauf, F., Weil, M.: **V2G und P2G als Bindeglied zwischen Erneuerbaren Energien und zukünftiger Individualmobilität**, in: H. Proff

et al.: Decisions on the Path to Future Mobility, Wiesbaden 2015.

- Donada, C., Fournier, G.: **Stratégie industrielle pour un écosystème en émergence : le cas de la mobilité 2.0, décarbonée, intermodale et collaborative**, in : Revue d'économie industrielle n° 148, 4ème trimestre 2014, pp. 317 - 348 Fournier, Guy; Goehlich, Veronique; Seign, Rene; Bogenberger, Klaus (2014): **Car-sharing with electric vehicles: A contribution to sustainable mobility?** in: Interdisciplinary Management Research, Volume 11, pp. 955-975.
- Fournier, Guy; Baumann, Manuel; Seign, René; Lindenlauf, Frank; Weil, Marcel (2014): **Carsharing with Electric Vehicles and Vehicle-to-Grid: A future business model?** in: Heike Proff et al. (2014): Radikale Innovationen in der Mobilität - technische und betriebswirtschaftliche Aspekte , Wiesbaden: Springer, pp. 63-80.
- Fournier, Guy; Moczadlo, Regina (2013): **Sustainable Mobility and the Role of Electric Vehicles**, in: Josip Juraj Strossmayer, University of Osijek; Pforzheim University; 33th Scientific Symposium „INNOVATIVENESS AS A SOURCE OF COMPETITIVENESS“ Osijek, 2013, pp. 47-54.

Prof. Dr. Mario Schmidt, the director of the Institute for Industrial Ecology, who is separately highlighted in a special box above, is an internationally recognized expert on Resource Efficiency, Life Cycle Assessments and Material Flow Cost Accounting:

- Schmidt, Mario (2014): **The interpretation and extension of Material Flow Cost Accounting (MFCA) in the context of environmental material flow analysis**, in: Journal of Cleaner Production 2014, <http://dx.doi.org/10.1016/j.jclepro.2014.11.038>.
- Joa, Bettina; Hottenroth, Heidi; Jungmichel, Norbert; Schmidt, Mario (2014): **Introduction of a feasible performance indicator for cor-**



porate water accounting – a case study on the cotton textile chain, in: Journal of Cleaner Production, Volume 82, pp. 143-153.

- Schmidt, Mario; Nakajima, Michiyasu (2013): **Material Flow Cost Accounting as an Approach to Improve Resource Efficiency in Manufacturing Companies**, in: Resources, Volume 2, pp. 358-369.

Prof. Dr.-Ing. Heiko Thimm, professor of Quantitative Methods and Information Technology at our School of Engineering, stands for topics from the distant periphery of PRME that are dealt with in several forms at Pforzheim University. Professor Thimm is an expert in information systems to support corporate environmental compliance management:

- Thimm, Heiko (2015): **IT-Supported Assurance of Environmental Law Compliance in Small and Medium Sized Enterprises**, in: International Journal of Computer and Information Technology, Volume 4/2, pp. 297-305.
- Thimm, Heiko (2015): **A Continuous Risk Estimation Approach for Corporate Environmental Compliance Management**, in: Proc. IEEE 15th International Conference on Environmental and Electrical Engineering, 10-13 June 2015, Rome: IEEE Press, pp. 83-88.
- Thimm, Heiko (2015): **A Monitoring Framework for Guidance and Risk Control Assistance of Environmental Compliance Officers**, in: Douglas Cunningham, Petra Hofstedt, Klaus Meer and Ingo Schmitt (2015): **INFORMATIK 2015**. Springer Lecture Notes in Informatics (LNI), Bonn: Gesellschaft für Informatik, pp. 271-280.

Throughout both reporting periods, **Prof. Dr. Jürgen Volkert** continuously published on the Capability Approach by Amartya Sen. He was invited to write a chapter on the “Capability Approach Applications in Germany” in the anthology entitled

“The Capability Approach - from Theory to Practice” by Palgrave. Among other things, Prof. Volkert was involved in research teams by the Helmholtz-Centre for Environmental Research and the Forum for Progress: accompanying the work of the ‘Study Commission on Growth, Well-being and Quality of Life’ (Enquete-Kommission) set up by the German Federal Parliament (Deutscher Bundestag).

- Moczadlo, R.; Strotmann, H.; Volkert, J. (2015): **Corporate Contributions to Developing Health Capabilities**, Journal of Human Development and Capabilities, December, <http://dx.doi.org/10.1080/19452829.2015.1098595>
- Volkert, Jürgen (2014): **Capability Approach Applications in Germany: Official Poverty and Wealth Reporting and Beyond**, in: Solava Ibrahim and Meera Tiwari (2014): The Capability Approach - from Theory to Practice, London: Palgrave, pp. 171-205.
- Volkert, Jürgen (2013): **Governmental Poverty and Wealth Reporting based on the Capability Approach**, in: Hans-Uwe Otto und Holger Ziegler (eds.): Enhancing Capabilities. The Role of Social Institutions, Opladen and Farmington Hills: Barbara Budrich Publishers, pp. 89-108.

Key Performance Indicators PRME-related publications

| KPI | 2011/12 to 2013/14 | Increase 2011/12 to 2013/14 |
|---|--------------------|-----------------------------|
| Total PRME-related publications | 71 to 92 | ↑ 30% |
| PRME-related publications / Total publications | 11% to 19% | ↑ 73% |

While our Key Performance Indicators for publications only compare the periods 2011/12 and 2013/14, there are some publications from 2015, which we would like to introduce since they are significant for the development of topics related to PRME at Pforzheim University.

Our honored colleague Prof. Dr. Bernd Noll has for example published a paper on the relationship between corporate culture and ethical behavior, which he incorporates into his lectures on business ethics. In a German journal on mediation and ethics he additionally published a paper on the meaning of value change in entrepreneurship for capitalism. Our new PRME Coordinator Adrian Boos has participated in an international discussion on the development of indicators for sustainable development by publishing two papers on the so-called Genuine Savings of the World Bank. Together with others, Patrick Kraus, already recognized for his research in the field of CSR and sustainability in business in 2012 as we reported in our last SIP, published a paper on CSR in family firms.

Another paper was published by Prof. Dr. Rainer Maurer, which we present as an example for the critique of PRME at Pforzheim University. The paper discusses the logical contradiction between the PRME-commitment of Pforzheim University to incorporate values of global social responsibility as portrayed in international initiatives such as the United Nations Global Compact into academic activities and curricula and the legal obligation of the University to grant freedom of research and teaching as required by German constitutional law. The author argues that from a logical point of view, the University must breach at least one of both obligations. The paper also presents theoretical and empirical evidence that questions the PRME-doctrine that actual CSR engagement of private firms is possible under real world market conditions.

Altogether, the publication intensity of PRME-related discussions, namely business ethics, sustainability and corporate responsibility, is growing constantly. Our Key Performance Indicators show this and will be updated in our following SIP reports. The next part of this chapter will show similar KPIs for research projects related to PRME topics.

Research Institutions and their projects

Institute of Applied Research

The IAF (Institut für Angewandte Forschung) is the umbrella organization for research at Pforzheim University and the institutional base for professors who are actively engaged in research projects. Members are individual professors from different fields of research such as product development or marketing. However, members especially consist of other institutes, for which the IAF functions as the centerpiece:

Institute of Industrial Ecology (INEC)

Director: Prof. Dr. Mario Schmidt

Institute of Smart Systems and Services (IoS3)

Director: Prof. Dr. Thomas Greiner

Institute of Human Resource Research

Director: Prof. Dr. Stephan Fischer

Institute of Materials and Material Technologies (IWWT)

Director: Prof. Dr. Norbert Jost

These institutes conduct research projects either under the umbrella of IAF or independently. In the following section, we report on the PRME-related research projects of the individual institutes, which were conducted in the reporting period or are still in progress.

Institute of Industrial Ecology (INEC)

- **PCF-KMU - Product Carbon Footprint for SMEs** | 08/2010 – 10/2013

The objective of this project was to make the method of the "Product Carbon Footprint" (PCF) applicable for mid-sized manufacturing and commercial enterprises. Smaller firms could

be enabled to calculate the CO2 footprint of their products.

- **Material and Energy Flow Based cost and climate analysis (MEKKA)** | 11/2012-04/2014

The focus of this project was the material flow cost analysis (MFCA) and in particular ISO 14051, which has been created as a special evaluation tool for material and energy flows and their monetary value. The project worked on the lack of ISO on methodological integration into a comprehensive approach for modeling. In particular, such a methodological embedding was required to develop IT policies and IT products, which are implementable and have the necessary flexibility for operational use.

- **Consumers between subjective and objective evaluation of the climate impact of consumer products and risk-adverse consumer behavior (KosoK)** | 09/2011 – 09/2014

In KosoK consumer behavior was examined in the context of climate change. With respect to the climate impact of consumption, gaps between the perception of risk, the risk assessment and consumption behavior were identified and approaches were developed to fill those gaps.

- **WaPrUmKo - Basket-based price and environmental impact comparison of organic and conventional consumption (WaPrUmKo)** | 07/2012 – 06/2015

Within the research project WaPrUmKo, prices and environmental impacts of conventional and organic products were compared. The core part of the project was an empirical price survey. Therefore, criteria for the evaluation of environmental product and service alternatives were determined, according to which organic products were selected for the basket. The environmental impact of consumption was assessed

and the cost effects of greener consumption were examined.

- **Integrated Resource Efficiency Analysis for Reducing Climate Impacts in the Chemical Industry (InReff) | 04/2012 – 09/2015**

The InReff project seeks to enable companies to systematically identify efficiency potential and help companies to derive and assess technical measures and solutions. In the joint project three business and two academic partners collaborated to elaborate a platform that integrates different methods of modeling and assessment. The project results will be incorporated in concrete measures of the involved business partners that are likely to foster technological innovations for existing production processes.

- **Accompanying research on "100 companies for resource efficiency" | 12/2014 – 05/2016**

Companies from the federal state of Baden-Württemberg can propose already implemented or planned measures for resource efficiency. The 100 best practice examples will be presented publicly at the end of the project. The project "100 companies for resource efficiency" is an essential part of the "Alliance for more efficient use of resources", which was established by the federal government and the leading business associations. The project is supervised and coordinated by a collaboration of INEC, the Institute for Industrial Science and Technology Management (IAT) located at the University of Stuttgart and a technology and innovation center for environmental engineering.

- **Simultaneous optimization of energy and resource efficiency of heat transfer regenerators (SEROW) | 03/2015 – 02/2018**

Aim of this research project is the optimization of heat exchanger rotors by thermodynamic modeling approaches through the use of constructive-

manufacturing technology features. Rotor structures shall be developed, which, when adapted to each specific application, result in higher efficiency and can be manufactured with resource-conserving material inventory.

Institute of Smart Systems and Services (IoS3)

- **Development of dynamic systems for E-Bikes | 09/2013 – 08/2016**

This project analyzes the possibilities of preventing the blocking and the take-off of the back wheel in the case of full braking of E-Bikes. The innovative development of E-Bikes shall increase their efficiency and safety.

Institute of Human Resource Research

- **Beyond Business Partner: The new role of Human Resource Management through corporate sustainability | 11/2012 – 10/2015**

The project aims at defining the new role of HRM.

The following three questions were analyzed:

1. Positioning of HRM to act more sustainably
2. Support of other departments in the strategic orientation on sustainability goals
3. Integration through a common sustainability focus

Institute of Materials and Material Technologies (IWWT)

- **Investment in the recycling of strategic materials from used electrical equipment through an electrodynamic one-step recycling process (ARWEEEN) | 09/2013 – 02/2015**

In cooperation with two business and two academic partners, the IWWT follows a new approach to separating and recuperating materials even from products with a high variety of input materials.



- **Substitution of toxic raw materials for thermo-electric applications by manufacturing magnesium silicide from infiltrated metal foams (MagicMetal)**

01.01.2016 – 31.12.2017

This highly innovative project within the call for proposals on technological resource protection (Technologischer Ressourcenschutz) by the federal state of Baden-Württemberg deals with the problems of resource availability and effectiveness. It seeks to improve resource protection through the substitution of important raw materials. Hereby, the scientists of the IWWT contribute in terms of developing materials with the ability to generate electricity out of thermal waste. Its production is a challenging task which seeks to design open-pore metal foam structures and use intelligent infiltration techniques to achieve these smart thermo-electric alloys.

- **Development of alloys and the characterization of substitution materials for Cu-Be alloys** | **01/2016 – 12/2017**

Copper and its alloys have not decreased in importance, but the availability of some of the Copper-Beryllium alloys is scarce and their health risks are high. Therefore, their substitution is a high priority in the European Union. The IWWT together with another research institute from Schwäbisch Gmünd are working to develop a suitable substitute alloy within the same call for proposals as MagicMetal. Since this is a highly ambitious goal, the project team plans to develop initial raw materials for the individual application of Cu-Be alloys. Supported by thermo-dynamic simulations, alloy systems with the potential to comply with the required profile are selected. In the experimental part of the project, custom-designed mechanisms for solidification are analyzed and thermomechanical characterizations of raw materials are conducted.

Also our **“Schmucktechnologisches Institut” (Institute for Jewelry Technology)** at the School of Design handles PRME-related duties, but more in its everyday work than in special projects. Among other things it develops new products, performs analyses, measurements, etc. which refer sometimes to issues of material use or similar topics. However, it is more difficult to present directly PRME-related projects compared to the other institutes.

In total, we are able to proudly present a share of PRME-related research projects¹ of total research projects amounting to almost 35% in the reporting period 2013/14. From a total of 69 research projects carried out in these two years, 24 had a reference to PRME-related topics from resource efficiency to life cycle assessments, from recycling to mobility and from consumer behavior to the new role of sustainability in human resource management. In the comparable reporting period 2011/12 the share was 28 of 83 and therefore 34%.

Key Performance Indicators PRME-related research

| KPI | 2011/12 to 2013/14 | Increase 2011/12 to 2013/14 |
|---|--------------------|-----------------------------|
| Total PRME-related research | 28 to 24 | ↓ 17% |
| PRME-related research / Total research | 34% to 35% | ↑ 3% |

¹ Third-party funded projects from the official annual reports of the Institute of Applied Research.



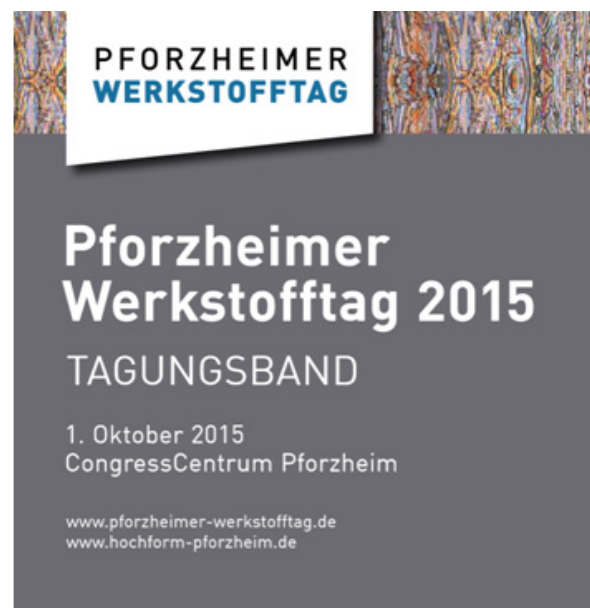
Principles 5 to 6: Partnerships and Dialogue

Best Practices: “Materials Day” and “Industry meets University”

As our reader could recognize, the best practice examples in other chapters focus on the Business School of Pforzheim University, even though cooperation with the other schools is intense. Our showcase example of encouraging interaction with corporations and promoting dialogue with society is in this case a distinguished series of symposia organized by the School of Engineering.

On October 1, 2015, more than 200 guests visited the 4th Pforzheim Materials Day. This event was launched in 2012 by the Institute of Materials and Material Technologies (IWWT) of Pforzheim University, the marketing department of the municipality, and the Pforzheim-based company Arthur Klink. As an event at which students meet companies and researchers meet practitioners, it creates a continuous interface between research and development, industrial application and teaching. Since 2012 this event has garnered highly positive feedback. Thematically, the Materials Day has evolved from a general overview and discussion on materials and material processing technologies to special detailed examinations of medical (2014) or surface engineering (2015).

In 2015, lectures such as “Resource-efficient Production of Nd-Fe-B Hard Magnets from Recycled Materials” were held. Topics such as the reduced and efficient use of raw materials and recycling of used materials are clearly themes in the sphere of sustainability.



The Materials Day does not treat subjects of PRME in its core mission, rather PRME-related topics pervade the entire day, from its lectures and discussions to its publications. The leading question behind Materials Day can best be summarized as “How can I solve my material problem quickly, efficiently and sustainably?”

In another event organized by the School of Engineering, representatives from industry meet professors and students from Pforzheim University. “Industry meets University” is a new format resulting from a collaboration between Pforzheim University and the Cluster-Initiative “Hochform” (top form), which began in January 2015. Already six events have been held at the School of Engineering, including themes such as “Avoiding Obsolescence: Analysis and Improvement of Technical Products”.

At this event, Prof. Dr. Brönneke, who was introduced in the previous best practice example, held a lecture about obsolescence from a legal perspective. He followed Prof. Dr. Peter Heidrich who examined the topic from an engineering angle.

On the whole, “Industry meets University” functions as a lecture series in which regional companies meet researchers and students to network and support the regional economy. Professors and researchers of Pforzheim University stand by to discuss with engineers and other practitioners.

PRME-related dialogue at Pforzheim University

Events

At Pforzheim University multiple events have been hosted. In the period 2011/12, 29 and therefore 32% of the 90 total events were PRME-related. One example is the “Day of Sustainability” organized by our PRME-Team. In 2013/14, the total amount of PRME-related events increased to 31. However, since the total number of events also grew to 115, the proportion of those dealing with ethics, sustainability, corporate responsibility, or simply charity decreased to 27%. One can overlook this small decrease in the proportion of PRME-related to total events, given that we only value our “Resource Efficiency Colloquium” as one event, and also considering that the current proportion of PRME-related events in 2015 again lies over 30%. Since it is not our wish to organize only events to discuss topics on the periphery of PRME, we aim to stabilize this KPI at around one third of our total events.

In the period from 2013 to the conclusion of this report in 2015, the following events especially supported the incorporation of PRME in our daily routine:

- **14th Conference for the Sustainability Commissioners of the Federal Universities of Applied Science**
2013/03/22
With thirty participants, nearly all of the sustainability commissioners of the universities of applied science in the federal state accepted the invitation of Pforzheim University. Three of our professors introduced the intentions of Pforzheim University to strengthen sustainability topics in research and teaching to an engaged audience. Prof. Dr. Jürgen Volkert presented the incorporation of PRME as one of our tools to achieve this goal.
- **Special Lecture Prof. Dr. Tobias Viere: Does Resource Efficiency go through our stomach**
2014/01/15
Prof. Dr. Viere introduced an important topic of sustainable development: The global food supply. He presented current figures on the allocation of the global food supply and especially on food waste in the industrialized world.
- **Awards Ceremony for Project and Graduation Theses covering Sustainability or Ethics**
2014/03/27 & 2015/04/30
At Pforzheim University multiple prizes are awarded every year by sponsors such as the psd Bank concerning PRME-topics. In 2014 and 2015 three examples should be emphasized, namely the project thesis by Elisabeth Schwenk and Sabrina Wirth about the impact of the financial crisis in developing countries that was recognized in 2014. Also, in her exam thesis Jessica-Elena Balzer examined sustainable management in the toy industry and Andreas Gerber looked at the possibilities of „Green Controlling“. Both were recognized in 2015.
- **Special Lecture Dr. Kurt Schmalz Corporate Responsibility and Economic Success**
2014/12/03
The entrepreneur Dr. Kurt Schmalz from J. Schmalz GmbH discussed the relationship between corporate responsibility and sustainable commercial success with students from Pforzheim University.

- **Special Lecture Prof. Dr. Bernd Noll: Change and diversity of values – How much pluralism of values can we tolerate? 2014/10/30**

Prof. Dr. Bernd Noll, Professor for Economics and Ethics at Pforzheim University, discussed the change of values in Germany in the last decade. On behalf of the German-Turkish society Professor Noll highlighted the conditions for a successful integration.

- **Special Lecture Dr. Michael Fürst: Creating Value through Responsible Business. Corporate Responsibility bei Novartis 2015/01/14**

Dr. Michael Fürst, Senior CSR Manager at Novartis, discussed how zero loss social entrepreneurial approaches in emerging markets can contribute to strategic CSR of multinational corporations like Novartis.

- **2nd International Aircraft Recycling Symposium 2015/03/11 & 2015/03/12**

The School of Engineering organized this second Symposium on Aircraft Recycling together with the Fraunhofer Institute for Chemical Technology. Manufacturers, suppliers and recycling companies discussed possibilities for the reutilization of airplane construction materials.

- **11th Life Cycle Assessment Workshop 2015/09/14 - 2015/09/16**

This annual workshop is organized by the network on life cycle data and gathers graduates, doctoral students and young researchers from the field of Life Cycle Assessment. Pforzheim University, represented by the Institute for Industrial Ecology (INEC) was honored to host the workshop for the first time and show its specialization in this topic through the research focus of INEC and the new master's degree program "Life Cycle & Sustainability".

As mentioned above, the **"Resource Efficiency Colloquium"** organized by INEC is only calculated as one event in our KPIs. However, this colloquium is a series of lectures held every second week from summer semester (SS) 2012 to SS 2014. It was on hiatus, but a relaunch is scheduled for the day this report is finalized. On 17 December 2015 the new INEC-Professor Ingela Tietze holds her accession lecture on the „Energy Transition in Germany“. While we only count one event per semester for our KPIs, in total 23 lectures were held in 2013 and 2014. Guests such as Reinhard Bütikofer, Co-Chair of the European Green Party; Werner Maas, assistant director of the VDI Centre for Resource Efficiency; or Sylvia Pilarsky-Grosch, president of German Association of wind energy especially demonstrate the reputation of INEC and Pforzheim University as the organizing institutions. However, these events are not only open for the whole university but also for the public.

In our previous report we only presented a short overview of the colloquium format. Therefore, in the following we highlight the last program from SS 2014 as an exemplary representation of the variety of themes addressed:

Dr. Andrea Thorenz (Augsburg University):

Transparency in the Resource Jungle: An Approach to a Resource-Oriented Life Cycle Analysis

Prof. Dr. Jörg Woidasky (Pforzheim University):

On the Recycling of Aircrafts and other small things

Philipp Paschen (Witzenmann GmbH):

Sustainability in Corporate Practice: From the UN Global Compact to Material Flow Cost Calculations

Dr. Alexandra Wilde (Robert Bosch GmbH):

Resource Efficiency – Factor of Success for Companies?



Dr. Wolfgang Koch (Allgemeine Gold- und Silberscheideanstalt AG):

The Technology of Gold Recycling

Dr. Stephan Krinke (Volkswagen AG):

Life Cycle Thinking and Resource Efficiency

Additionally, in our **Studium Generale** which has been organized since 1985, a PRME-related lecture is held intermittently. However, the relation to total lectures in the series is not very high: The share of 25% in the period 2011/12 decreased to 12% in 2013/14. Besides clearly PRME-related lectures such as the one on pathways to sustainability by the director of the German section of the CLUB OF ROME, interesting sessions on international politics, engineering, legal or other challenges are not far removed from PRME content. In 2015 already four lectures with PRME references have been held, for example the discussion on sustainable climate protection by Prof. Dr. Dr. Franz Josef Radermacher (Institute for Applied Knowledge Processing, University of Ulm) on the 4th of November.

Key Performance Indicators PRME-related events

| KPI | 2011/12 to 2013/14 | Increase 2011/12 to 2013/14 |
|---|--------------------|-----------------------------|
| Total PRME-related events | 29 to 31 | ↑ 7% |
| PRME-related events / Total events | 32% to 27% | ↓ 16% |

Networks

For the first time in our SIP report we are proud to present a few of our multiple business networks. We interpret both principles 5 and 6 as networking with stakeholders with the objective of promoting PRME-related topics. Therefore, in our previous reports we presented our alumni network as an important platform to keep in touch with our former students and to benefit from their practical experience and contacts. In terms of responsible and ethical behavior, this alumni network supports, for example, students in need or studying parents.

However, one important point of a University of Applied Sciences is the continuous interaction with companies. For example, regional and international companies such as DAIMLER AG, Ernst & Young GmbH or Witzenmann GmbH meet regularly as part of our Rector's Club and support Pforzheim University. The Rector's Club is an exclusive club that serves as a platform for informal discussions and expert exchange; the members fund activities of Pforzheim University. Our rector Prof. Dr. Ulrich Jautz uses this committee to inform these distinguished members of the regional business community about PRME and its implementation at Pforzheim University.

Other networks, such as our Human Resources or Controlling Forum, and especially our company contact fair X-Day, bring students together with representatives from companies and specialists with researchers. As we have shown above, the X-Day has always maintained a charitable purpose, but the day and most other networks are neither connected to PRME nor its topics. One could argue that close networks between universities, their students and the private sector have a value in and of itself, but we explicitly aim to increase the information on and the relation to PRME in our networks for the next reporting period. For example, we plan to institutionalize a stand with information on PRME for the next X-Days.

Additionally, in our last report we presented the new mentoring program “Tandem” launched by the Pforzheim Business School in 2013 and led by Prof. Dr. Elke Theobald together with our project manager Stephanie Henig. Since 2015, “Tandem” is also working with two pilot degree programs in the School of Engineering.

As part of the project "target group oriented academic counseling and care concept", funded by the German Ministry of Education and Research, this program aims to support high-potential Bachelor students with their career planning.

External mentors provide advice to our students on planning their academic development, career entrance and compatibility between their career and private life. Our mentors are mostly alumni of our university and work in executive positions at a variety of companies. The following table shows a brief selection of 62 mentors.

Examples of mentors in our “Tandem” mentoring program

| Company | Mentors Position |
|---------------------------------|---|
| Beiersdorf Shared Services GmbH | Senior Consultant |
| Daimler AG | Multiple managers in leadership positions |
| Deutsche Post DHL | Vice President |
| IBM Germany | Leadership position in Executive Briefing |
| Porsche AG | Leadership position Production Strategy |

Naturally, our motivated and engaged colleagues such as Prof. Dr. Jürgen Volkert or Prof. Dr. Mario Schmidt are members of a number of networks and committees which are PRME-related and reflect positively on the whole university. However, the allot-

ted space is too short to address those that go beyond the examples mentioned above. Additionally, our School of Engineering is especially active as a regular guest at fairs. For example, the Institute of Smart Systems and Services (IoS3) presented a flexible photovoltaic module construction for the production of more energy than traditional systems.

However, one network should be highlighted, as it has not yet been featured in this report: The Network of International Business and Economic Schools and its 19th Annual Meeting at Pforzheim University. The network itself follows the PRME-related motto “NIBES enhances programs in business, economics & management in terms of the development of expertise for students to act responsibly and successfully in a complex, interdependent and fragile global system” and supports the incorporation of PRME into the everyday life of universities.

Therefore, at the annual meeting held at Pforzheim University on June 11-12, 2015, a special session on PRME and PRME-related topics was conducted. Lectures such as “A Critique of the Business Case Logic for Sustainability: Consumer Attitudes towards Sustainability in Germany” by Prof. Dr. Bernd Britzelmaier examined different views on sustainability themes.

Initiatives

Last but not least, Pforzheim University features multiple student initiatives. Out of a total of 13 initiatives, 5 have a direct relation to PRME topics, while another 3 link their projects or events regularly to charity. The **sneep** and **UNICEF** groups at Pforzheim University as well as the individual initiative for resource efficiency entitled **remedy** have been presented in detail in our last SIP reports, therefore we have chosen two other best practice examples for this report.

On June 2, 2015, sneep organized a lecture by Prof. Dr. Rainer Maurer on his paper discussing our PRME-commitment from different perspectives (see the part on “Publications” in the chapter on research). Topic of the lecture was “Is CSR feasible under market conditions?”. The discussion focussed on the problem that the capital market value of firms practicing real CSR will fall under their potential market value, such that they might become victims of hostile take-overs. One potential solution to this problem, a change of financial market regulation laws to prevent hostile take-overs was weighed against the alternative solution, to implement the socially desired sustainability standards directly by general law.

Best Practice



In our last SIP we reported on the foundation of initiAID, which essentially emerged from a project in the South African township of Vrygrond. In 2012, students and professors of Pforzheim University built a Community Computer Center in cooperation with the University of Cape Town where volunteers from Pforzheim University offer basic and advanced computer courses. Due to personal engagement of students from Pforzheim University, especially by Johannes Klarmann, Julian Oser and Christian Walz, initiAID was founded to run and organize the Community Lab as well as fundraise the required capital to pay for rent, an Internet connection and the salary of a full time lab manager.

Meanwhile, initiAID has more than 100 members who ensure that 4 rotating volunteers are always on site guiding the classes. Besides the basic and ad-

vanced computer courses and individual help with computer problems, English courses are offered as well. Up to now, 28 volunteers visited Vrygrond for 3 to 6 months and interest continues to grow.

initiAID has already started another project to build a football pitch for the kids in Vrygrond. This project is still in the planning phase, but we are expecting to report in our next SIP on its successful realization. Furthermore, initiAID initiated the project “PERSPECTIVE” to support refugees in Pforzheim. The organization finances itself independently and sustainably, for which regular fundraising campaigns are organized. For the third time in this report, we use an example from the topic of obsolescence as a best practice.

Two of our students from the School of Engineering, Natalie Berweiler and Tanja Kicherer, developed the concept of a **Repair Café** as part of a project thesis. The idea is rather straightforward: In order to save resources, broken devices such as coffeemakers or sewing machines, dvd players or similar items are repaired instead of discarded.



Therefore, the team of 36 volunteers from engineering, but also interested private individuals, meet twice a month with owners of broken devices and repair them together. Spare parts are ordered and integrated together, so that both sides share in the learning experience. Meanwhile, the Repair Café is so popular that it moved onto the premises of the Pforzheim Society for Employment and Occupational Integration and continues its work under the auspices of the municipality.

Conclusions

Despite imprecise Key Performance Indicators whose development is exposed to inconsistencies such as the aforementioned share of initiatives with PRME reference to total initiatives at Pforzheim University, we have been able to construct and report on some very revealing KPIs:

Principles 1 to 3: Responsible education

The share of PRME-related lectures of the total is slightly imprecise, given that this is challenging to measure. However, the increase of total **lectures offered with PRME reference** of 15% from 2011/12 to 2013/14 and the current perspective that this growth will continue, is a success we are very proud to present.

↑ 15 %

One highly indicative KPI to examine the implementation of PRME at Pforzheim University is the **share of Bachelor and Master's Degree theses with PRME reference**. From the reporting period 2011/12 to 2013/14 this increased by an impressive 175%, since the total of theses offered with PRME reference increased from 52 to 138.

↑ 175 %

Principle 4: Research

A meaningful KPI on PRME-related research at a university is the **share of publications concerned with PRME topics**. In the period 2011/12, from a total of 658 qualified publications, 11% were PRME-related. In 2013/14, this increased to almost 19%, while also increasing in total from 71 to 92 publications within the periphery of PRME. This corresponds to a 73% increase in the share of PRME-related publications.

↑ 71 %

Additionally, we can present an **increase in the share of PRME-related research projects** of 3% from 2011/12 to 2013/14. This share of total research projects that reaches almost 35% in the reporting period 2013/14 shows the high value of PRME topics in research at Pforzheim University.

↑ 3 %

Principles 5 to 6: Partnerships and Dialogue

Last but not least, multiple **events with PRME reference** have been hosted. In the period 2011/12, 29 and therefore 32% of the 90 events were PRME-related. In 2013/14, the total amount of PRME-related events increased to 31. However, since the total number of events also grew to 115, the proportion of those dealing with ethics, sustainability, corporate responsibility, or simply charity decreased to 27%.

↑ 7 %

Altogether, our KPIs present an increase in importance of PRME-related topics at Pforzheim University, although we also recognize some negative values and some still imprecise figures. With the engagement and high motivation of all colleagues from Pforzheim University we aim at further developing this scorecard-system to further compare these KPIs in the coming years and successive SIP reports.

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