Minor Sustainability: Management and Innovation
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Grand Challenges for Sustainability

**Vakcode**  
E_IBA3_GCS ()

**Periode**  
Periode 1

**Credits**  
6.0

**Voertaal**  
Engels

**Faculteit**  
School of Business and Economics

**Coördinator**  
dr. G.C. van der Meijden

**Examinator**  
dr. G.C. van der Meijden

**Lesmethode(n)**  
Hoorcollege, Werkcollege

**Niveau**  
300

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### Doel vak

**Academic skills / Knowledge**

- the biophysics behind global environmental problems such as climate change and biodiversity loss;
- the importance of the 17 Sustainable Development Goals (as agreed upon in 2012 by the UN General Assembly) for achieving sustainable development;
- the determinants of economic growth and development;
- why the management of natural resources cannot be left to the free market;
- the role of good governance, both by governments and multinational firms, for achieving sustainable development;
- whether the government can, and, if so, how the government should intervene to obtain sustainable development and how to combat poverty, climate change, biodiversity loss, and resource depletion;
- the role of cities, in which more than half of the world population currently lives, for achieving sustainable development

**Research skills / Quantitative skills**

After successfully completing this course, you are able to explain:

- will be acquainted with theoretical and empirical methods necessary to study economic growth, the effects of market failures, the optimal management of natural resources, the potentially adverse effects of resource abundance, and the effects of different policy interventions

**Bridging theory and practice**

- you can explain how the management of renewable natural resources, such as fisheries, works in practice (through the experiences you have gained from a game you have played an interactive in-class setting)

**Social skills**

After successfully completing this course, you able to

- present and actively discuss themes relevant to this course

**Broadening your horizon**

After successfully completing this course, you able to explain

- the interactions of the world economy, global society, and the natural environment that are important for sustainable development;
- why sustainable development calls for socially inclusive and environmentally sustainable economic growth.

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### Inhoud vak
Sustainable development is the central challenge of our days. Currently, the Earth is inhabited by 7.2 billion people (9 times more than at the start of the Industrial Revolution in the 18th century) who together produce more than 90 billion US dollars of output (200 times more than at the start of the Industrial Revolution). Both population and output are projected to keep on growing during the next decades. Furthermore, our world is increasingly interconnected through trade, migration, technology diffusion, knowledge flows, and social networks. As a result, human influence on the Earth’s physical processes has been increasing. Nowadays, in the Anthropocene, human activity is even deemed to be the dominant influence on the Earth’s climate and natural environment. Although two decades of economic development have brought widespread prosperity, more than a billion people are still living in extreme poverty. Moreover, by crossing planetary boundaries human activities may plunge the world into a gigantic environmental crisis caused by climate change and biodiversity loss. In order to eradicate poverty and to prevent environmental catastrophes, a transition needs to be made from the business as usual (BAU) to a sustainable development (SD) path. Making this transition requires good governance, not only by governments, but also by citizens and businesses. The objective of this course is to characterize a path of sustainable development and to identify the Grand Challenges that the world faces in making the transition from BAU to the SD path.

The course is organized around the Sustainable Development Goals as adopted by the UN in 2015. The first week will start with a general introduction that sketches several important sustainability issues, illustrated by empirical evidence. During the course, we pay attention to the scientific as well as to the economic and societal dimensions of the identified challenges for sustainability. Furthermore, both the positive or analytical side (i.e., how to make sense of the interactions of the economy, society and the environment?) and the normative or ethical side (i.e., what should be the objectives of a well-functioning society?) of sustainable development will be discussed during the course. The topics that will be dealt with during the course are:

1. Growth and development: capital accumulation and technological change;
2. Ending global poverty, education, and health;
3. Management of natural resources and planetary boundaries;
4. Climate change: climate science and environmental policies;
5. Biodiversity and land-use change;

Onderwijsvorm
Lectures (with interactive elements)
Tutorials (including presentation and discussion sessions)
MOOC (to prepare at home for the lectures and tutorials)

Toetsvorm
Written exam – Individual assessment
Interim Assignments – Group assessment

Literatuur
Collection of articles.

Aanbevolen voorkennis
Microeconomics

Internship Minor Sustainability and Innovation

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**Doel vak**

**Academic Skills**
- Ability to examine and understand problems from different perspectives;
- Ability to put forward well-founded, substantiated points of view, both in spoken and written format;
- Ability to apply acquired knowledge to other problems and in other contexts.

**Research Skills**
- Ability to translate practically relevant problems into (academically) relevant research questions;
- Ability to design and execute a project using a systematic, analytical approach in a real business environment (of profit or not-for-profit organizations).

**Knowledge**
- Have specialized, in-depth knowledge and insights about the minor theme;
- Ability to make connections between theories, models, and concepts of that specific minor theme/discipline.

**Bridging Theory and Practice**
- Ability to apply theoretical knowledge in a specific organizational context;
- Ability to formulate relevant recommendations for practice based on your knowledge acquired;
- Have a better understanding of what the expectations of the academic and professional field are in terms of knowledge and skills needed;
- Have awareness of the various career opportunities the field offers.

**Social Skills**
- Have a better understanding of roles and needs of different types of stakeholders that you need to interact with as a professional;
- Ability to work well in a team and reflect on your own role in the team.

**Self-awareness**
- Ability to reflect on your own responsibilities as well as others;
- Ability to reflect on your personal development;
- Ability receive and are able to deal with feedback from others.
Inhoud vak
Increasingly organizations and maybe even your future employer are looking for experience as well as academic credentials. The School recommends doing an internship, because it is an excellent way to apply the knowledge and (academic) skills which you acquired during your studies. Your most important learning goal as a student-intern is to familiarize yourself with professional and market-related skills in a real and new organizational environment. With the job market becoming increasingly competitive, gaining relevant experience will give you a good start into your professional career.

Companies offer a wide range of internships in various disciplines. What is crucial in obtaining approval for your internship and eventually obtaining your study credits, is that there is a clearly defined project that allows you to fulfill the learning objectives. Also, the project needs to allow for an individual assessment.

Finally, note that in order to obtain your internship credits, your internship has to be pre-approved by the minor coordinator and supervised by a School member that is assigned to you by either the minor coordinator.

Onderwijsvorm
On-site Internship

Toetsvorm
Written report – Individual assessment

Literatuur
Literature relevant to the theme of the minor and internship should be used to develop a solution to the problem that is investigated with the internship project.

Aanbevolen voorkennis
Courses related to the minor, specifically those of period 1.

Doelgroep
Students of the Minor Sustainability & Innovation.

It is possible to replace two of the courses for an internship that will be supervised by one of the lecturers of the courses. The courses to be replaced are one out of the two courses “Organizing sustainable innovation” and “Sustainable supply chain management” (both in period 2) in combination with “Marketing sustainable innovations” (in period 3). Internships should be aligned with a topics addressed in the minor and should be initiated by students. Proposals for an internship need approval from the minor coordinator.

Overige informatie
IMPORTANT:

• Subscription to the internship through VUnet is not possible.

• CONTACT THE MINOR COORDINATOR as soon as you have an INITIAL proposal for the internship. Approval of the minor coordinator is essential in order to be able to do a minor internship.

• The general internship manual will be available through VUnet
(including more details on a time plan and practical matters). CAREFULLY READ THE MANUAL ON VUNET (go to Services > Degree programme > Internship, or Serviceplein > Opleidingsprogramma > Stage). The manual will provide more insights in what is exactly expected in terms of your internship proposal, the concrete requirements, and the related time line of activities.

- After completing the internship the subscription to the course as well as the registration of the result will be done by the back office.

# Marketing Sustainable Innovations

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<td>dr. M.H.P. Kleijnen</td>
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**Doel vak**

Marketing sustainable innovations is a subject that is truly interdisciplinary in nature. You will study various perspectives of marketing (Knowledge), driven from an innovation, psychology, value and behavioural economics point of view. As a result, this course will challenge you to exam and understand sustainability issues from different perspectives, to abstract those insights relevant to specific consumer-related problems when marketing such innovations and to build a well-argued case for successfully launching sustainable innovations (Academic Skills).

Being the last subject in a series of five, this course brings together insights from previous courses, not just from a theoretical but also a practical point of view. Building upon the previous period where you learned about developing and designing sustainable innovations, this course takes you to final stage in effectively launching that innovation into the market (Bridging Theory and Practice).

This assignment is completed in a bootcamp-style setting, where you work intensively during a short time period in a team setting (Social Skills). Such ‘pressure-cooker’ situations challenge you to source various skills to create not only optimal content (a marketing plan) but also an effective team, where tasks and time are managed well and you can constructively reflect on your own as well as your team members’ performance (Self-awareness).

**Inhoud vak**

Building on the preceding subjects in the minor Sustainability and Innovation, this course analyzes the final element in the value chain: bringing sustainable products and services to the market. The course will end with a boot camp in which the students are challenged to combine the insights gained in previous courses, into a an attractive marketing plan that takes all stakeholders into account.
The course starts with a stakeholder marketing perspective, specifically focusing on the consumer and how that consumer acts within a network of stakeholders. It discusses the psychological and behavioral aspects that come into play when bringing sustainable innovations to the market. Despite efforts involving consumers in early stages of innovation, sustainable products and services in often struggle with limited take-off. As an (international) business professional, but also as a sustainability consultant or policy maker, it is crucial to understand the mechanisms that drive the adoption of sustainable innovations. We discuss relevant insights from innovation, psychology, behavioral economics, and consumer value research to gain a better understanding of what affects actual consumer behavior. Based on these insights, students will develop a marketing plan. This will challenge students to connect and integrate knowledge and insights from different subjects and help to recognize how various elements of the value chain and value network need to be aligned to create a successful sustainable product or service.

**Onderwijsvorm**
Lectures
Tutorials

**Toetsvorm**
Group project assignment – Group assessment
Group and in-Class participation – Individual assessment

**Literatuur**
This course is article based.
Readings will be announced on Canvas.

**Aanbevolen voorkennis**
This course is part of the Minor Sustainability and Innovation. This course builds on the courses of the minor in period 1 and 2. Additionally, knowledge of basic marketing principles or marketing management is recommended

**Doelgroep**
This course is part of the Minor Sustainability and Innovation. This minor can be followed by all SBE bachelor students. In addition, advanced bachelor students (third year) from other faculties as well as other universities are welcome to join. Particularly those with in an interest in Business and Organization Studies, Economics, Social Sciences, Social Psychology, Healthcare, Media and Communication Studies, Engineering, Technology Management, Operations Management and Education.

It is especially interesting for:
- Future managers who want to understand how sustainability can be implemented in existing business
- Entrepreneurs / intrapreneurs that want exploit the opportunities sustainability offers
- Future consultants in sustainability, strategic business consultants, of government policy consultants
- Students that want to be active in NGO’s or other societal organizations

**Organizing Sustainable Innovation**
Doel vak

Academic skills: ability to critically evaluate innovations and innovation approaches from the perspective of sustainability
Knowledge: theoretical understanding of the management of innovation processes and understanding of specific challenges and approaches for developing and adopting sustainable innovations
Bridging Theory and Practice: developing skills for applying creative and analytical methods for new product, service, and business model development
Social Skills: working in teams for idea development

Inhoud vak

This course concerns the development and commercialization of sustainable innovations. Organizing for sustainable innovation implies a shift away from a reactive approach (i.e. organizations responding to economic, societal and regulatory pressure) to a pro-active system oriented approach: by relying on creativity and a systematic (re)design of their business processes and interaction with stakeholders, organizations are now developing innovative products, services and business models that have sustainability at their core. Organizing for sustainable innovation involves many of the general processes and methods for the development of new products and services, yet also offers particular challenges and approaches, which this course addresses by building upon the stakeholder perspective developed in the earlier courses.

The following topics will be covered:
• Innovation management for sustainability, including innovation in an ecosystem of stakeholders; types of innovation (incremental/radical; product, service, process and business model innovation); innovation processes;
• The business case for sustainability, including why sustainability can be framed as an opportunity (as opposed to a threat or disruption to current business), potential pitfalls and how these can be surmounted
• Templates and principles for sustainable innovation, including key approaches (e.g. circular business model, product servitization, base of the pyramid) and how they can be facilitated by digital technologies and innovative financing
• Developing ideas for sustainable innovation, including creativity and opportunity identification, and specific sustainability oriented approaches such as frugal innovation and reverse innovation
• The development of ideas into products, including co-creation with users and other stakeholders, design for sustainability, impact
assessment, and the role of digitalization and dematerialization.

• Embedding sustainable innovations in value networks, including the important role that various stakeholders (e.g. suppliers, competitors, regulators, consumers) play in stimulating or inhibiting the adoption of sustainable innovations such as renewable energy.

**Onderwijsvorm**
Lectures
Tutorials

**Toetsvorm**
Individual assessments
Group assessment

**Literatuur**
Collection of academic articles (will be announced on Canvas).

**Aanbevolen voorkennis**
First two courses of the minor program “Sustainability and innovation.”

**Shared Value Creation**

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<tr>
<td>Coördinator</td>
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**Doel vak**

Academic skills:
Understanding and applying theories related to shared value and sustainable development.

Knowledge:
Understanding the complex theoretical, empirical and societal debate on the relationship between organizations, technological dynamics, society, and the natural environment and the implications for the transition in the direction of sustainable development; Knowing which stakeholders have which stakes, and how to act- react and report on those.

Bridging theory and practice:
Experiencing how concepts (shared value, sustainability, cicular economy) translate into concrete actions, policies and products (integral accounting, innovation, adoption, lobby).

Social Skills:
Active debates will develop social skills and logic argumentation.

**Inhoud vak**
This course examines the fundamental technological and organizational transitions that are ahead of companies and that are required to deal with the grand challenge of sustainable development. A shift from narrow profit maximization to shared value creation seems eminent. But how is shared value created? With which stakeholders? How does value creation change the way companies report to their stakeholders? And how does financing and reporting accelerate sustainable transitions?

This course will give you insight into what strategic reorientation is needed to create shared value: what technologies, products and markets to focus on, whom to work with, how to report on performance? After completing the course, you will understand which fundamental changes are needed in business operations, how governments can successfully intervene to change firm behavior into a more sustainable direction, and how these changes are embedded within the wider stakeholder network.

Part 1 of the course presents the theoretical and empirical framework that will be used to analyze innovation and adoption behavior of firms. It includes a discussion of the context within which the company behaves and an analysis of the effectiveness of policy instruments. How can companies create shared value? How does this influence their strategy and performance? What are the challenges the firm and government face in the transition towards a sustainable future? Attention will also be devoted to the shift from financial, to sustainability and integral reporting and on how reporting influences a firm's legitimacy. Also the transition from linear to circular production processes will receive ample attention.

Part 2 focuses on how the paradigm shift from a shareholder to a stakeholder approach as shared value creation is a multi-stakeholder challenge. Who are key stakeholders? What challenges do companies face in integrating stakeholder knowledge? And how can the collaboration with stakeholders help the company succeed?

Onderwijsvorm
Lectures
Tutorials

Toetsvorm
Written exam – Individual assessment
(Interim) Assignment(s) – Group assessment
Class participation

Literatuur

Additional selection of articles will be announced at the start of the course.

Sustainable Supply Chain Management

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After successfully completing the course Sustainable Supply Chain Management you are able to

Academic Skills:
- Analyze supply chain problems taking into account interests of different stakeholders (economic, ecological, societal and others) and evaluate (future) performance effects of supply chain policy options. This type of analysis will support sustainable decision-making.

Quantitative Skills:
- Quantify the economic, ecological and societal objectives for supply chain management cases by applying and master commonly used techniques to tackle real life sustainable supply chain management problems.

Knowledge:
- Understand the transition from a linear to a closed loop (circular) economy and its implications for Supply Chain Management

Bridging Theory and Practice:
- Use a sustainable supply chain analysis framework to assess contemporary topics in sustainable supply chain management and to analyze supply chain management cases.
- Formulate recommendations for improvement of supply chains from a sustainable perspective

This course aims to introduce students in operationalizing sustainability in supply chains. We define sustainability as the combined economic, environmental, and social optimum of supply chain alternatives that take into account constraints, such as technological limits or legislation, also known as the triple bottom line (TBL) approach of People-Planet-Profit optimization. Life Cycle Assessment (LCA) is presented as a methodology to quantify the environmental impact of products and processes and Analytic Hierarchy Process (AHP) to quantify social impact. Multi Criteria Decision Analysis is introduced as a concept to operationalize the TBL approach for practical sustainable supply chain problems. Next we discuss systems thinking using Systems Dynamics for understanding and evaluating the complex and interactive behaviour of systems, such as sustainable supply chains. Finally the sustainability evaluation of chains and the management of reverse supply chains will be addressed.

Lectures and computer tutorials

Written exam – Individual assessment
(Interim) Assignment(s) – Group assessment
Literatuur
Readings will be announced via Canvas.

Aanbevolen voorkennis
It is recommended that students are familiar with key concepts and techniques from business or operations management and (business) mathematics.