MSC Economics of Sustainability Programme

1. Profile of the programme

In recent decades the world economy has undergone profound transitions in terms of globalization, industrialization, and economic development. However, major environmental problems such as climate change and biodiversity losses, threaten the sustainability of global welfare. This MSc program focuses on the interactions between economic actors and the natural environment. You are trained as a quantitative economist who is able to analyze real-world problems in food systems, natural resources and the living environment, and to provide economic solutions that promote transitions to a sustainable future. Besides a strong training in quantitative economic techniques, you are confronted with relevant economic theories at micro, behavioral, and institutional level to help you understand the nature of these problems and solutions. Topics include environmental degradation and pollution, climate change, sustainable markets, the bio-economy, and urban and rural development in light of pressing issues such as environmental tipping points, unequal access to resources, and rising inequality.

2. Unique selling points

- This is an MSc in economics that combines in depth knowledge on economic theories and state of the art quantitative methods that will contribute to a sustainable future
- In a world drowning in data but starving for knowledge, you will learn how to analyze and interpret different forms of data to provide evidence on pressing real-world questions
- You will evaluate policies related to food, the environment, and economic development and how they affect different actors (e.g. firms, citizens) in different locations and sectors
- You will learn how to apply your quantitative skills to real world problems and contribute to the finding of practical solutions
- You are trained to collaborate effectively in an intercultural, multidisciplinary environment to use your skills as an economist to have societal impact

3. WU-BSc-programmes with unconditional admission

Students from the WUR BSc programmes BEB have unconditional admission to this MSc programme.

4. Main target groups next to unconditionally admitted students

- Nationally: Students who graduate from economics BSc/BA programs at Dutch Universities that find our solution-oriented approach and focus on sustainability appealing; graduates from applied universities (HBO) with a programme in economics and an interest in deepening their economic skill set.
- Internationally: Students with an economics background at the Bachelor level that want to advance their economic knowledge and be equipped with the latest tools to tackle sustainability challenges.

These students need to have knowledge in economics and statistics. Any deficiencies can be covered by inclusion of relevant courses in the free choice part of the BSc-programme (e.g. by including a WUR BSc minor) or by following a pre master programme.

5. Admission requirements for students not unconditionally admissible

a. Required number of credits in economics in BSc programme: 60
b. Required number of credits in Statistics: 15
c. A GPA for the BSc study programme of at least 70% of the maximum scale
d. Fluency in English, both written and spoken.

6. Information on the 30 credits specialization courses

This specialization starts with the 'core cluster' which lays the foundation of the program. The first course will discuss pluralistic economic theories and help students to reflect how a rethinking of economics can contribute to a sustainable future. Then, the students will be trained to use the toolbox of modern economics by following courses on advanced econometrics (course 2) and economic modelling (course 3) to work on sustainability challenges. Next, students will move to the 'deep learning cluster' that comprises a course on 'Philosophy and ethics in economics' and the option to choose from two thematic courses on 'Political Economy' and 'Behavioral Economics', deepening their understanding on the role of economics in societal processes. Finally, the thesis specialization cluster offers students to choose one thematic course which is centered around the sustainability challenges arising around (i) food, (ii) environment, and (iii) development.

1. Rethinking economics (6 ECTS, new course, Compulsory, Period 1)

Thus course will contrast neoclassical and heterodox economic theories on sustainability, economic transformations, and growth. Various theories will be discussed based on economic articles, such as inclusive wealth different welfare measures (Green National accounting), economic growth and degrowth. Students will discuss how various economic theories relate to sustainability challenges and economic thinking may enable or pose obstacles towards a sustainable future.

2. Advanced Econometrics (6 ECTS, existing course, compulsory, period 2)

In this course, students will learn how to analyze sustainability problems with real world observational data. This is a continuation of the existing course YSS34306 (Advanced Econometrics). Examples and assignments in the course will put emphasis on sustainability, e.g. time series analysis of climate data, panel data time series modelling of economic growth.

3. Economic modeling of sustainability challenges (6 ECTS, Revised course, compulsory, P4)

This is a adapted version of the existing course YSS35306 (Theories and Models in Economics). In this course the interaction between economic and natural science processes has a central position (i.e. beta-gamma integration). This course is also followed by students of the MSc of Environmental Sciences and MSc Climate Studies. Therefore, students from economics will team up with students from environmental /natural sciences to tackle sustainability challenges, such as climate change or agricultural applications. In this course students learn how to build and apply various economic simulation methods to analyze the effects of interventions aimed at greening the future. Students also learn to code economic models.

4. Philosophy, ethics, and economics (3 ECTS, new course, compulsory, P3)

In this course students will critically reflect on ethical issues that may arise in the work of professional economists in different roles (policy adviser, researcher, working for companies). We will also reflect on the role of ethics in economic as a discipline. Examples are (taboo) trade-offs in cost-benefit analysis, morals and markets, valuing nature, and welfare criteria for evaluating public policies

RO1: Deep learning cluster (3 ECTS, choose 1 out of 2)

5. **Behavioral Economics and Sustainability** (3 ECTS, new course, restricted option 1, P3)
   Economic theories make assumptions about human behavior, such as rationality, self-control, self-interest, etc. This course analyzes how behavioral economics may inform and help to revise some of those theories, and how behavioral insights can inform policies designed to address sustainability challenges.

6. **Political economy** (3 ECTS, new course, restricted option 1, P3)

This course looks into how the different political forces of societal actors (governments firms, citizens, NGOs) use their power to affect public policies. The course will look specifically into the role of winners and losers of transformative processes and how distributional outcomes and inequality affect sustainability challenges and vice versa.

RO2: Thesis preparation courses (choose 1 out of 3)

7. **Central Themes Economics of Development** (6 ECTS, existing course, restricted option 2, P5)

Development economics deals with economic and social issues in low-income countries. The international agenda pays permanently attention to issues such as "poverty", "food security", and "missing markets ", but additionally issues such as "consequences of aids for development", "structural adjustment", and "globalization and technology" gain importance. This course deals with a combination of permanent and current issues.

8. **Economics of EU policies for sustainable transitions** (6 ECTS, existing course, restricted option 2, P5)

Agri-food markets worldwide have been fundamentally challenged in recent decades by changes in economic, political, societal and natural conditions such as climate change and pressure on natural resources. This course focusses on the economic analysis of policies designed to support the transition of agri-food markets towards a biobased economy for ensuring a sustainable future of food systems. The course discusses the economic implications of such policies which include at the EU level the Green Deal, the Farm-to-Fork strategy and the Biodiversity strategy. Relevant aspects that are addressed include circular agriculture, viability of rural areas and sustainable food provision. The course analyses the economic implications and changing incentives for farmers and consumers that result from these public instruments. It trains participants in applying micro-economic tools such as welfare analysis to understand and quantify policy effects on stakeholders and in assessing the quality of policy designs.

9. **The economics of sustainable and fair use of the environment and natural resources** (6 ECTS, new course, restricted option 2, P5)

This course applies economic theories, econometric, and /or modelling skills on real world problems related to human-environment interactions and natural resources. Potential key topics are (i) economics of climate change (e.g. intergenerational ethics, evaluating policy instruments, climate mitigation and adaptation), (ii) economics of social-ecological systems (e.g. biodiversity, fisheries, forestry), (iii) environmental behavioral economics (e.g. social norms, framing of policy options)

7. Chair groups that offer a major thesis in this programme

Agricultural Economics and Rural Policy (AEP), Development Economics (DEC), Environmental Economics and Natural Resources (ENR), Rural and Environmental History (RHI) , Urban Economics (UEC)