**Schedule Sustainable Development: Big Issues New Answers 15 ECTS 5 September – 14 November 2016**

**Week 1 Introduction and start of Module Sustainability and Governance**

<table>
<thead>
<tr>
<th>Date Time</th>
<th>Topic</th>
<th>Literature/assignments</th>
<th>Lecturer / Guest speaker</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday 5 September</td>
<td>Signing in, picture taking</td>
<td></td>
<td>Minor coordinator</td>
<td>E001 Van Steenis building</td>
</tr>
<tr>
<td>09.00 – 09.30</td>
<td>Opening and Welcome speech</td>
<td></td>
<td>Lucas Simons (NewForesight)</td>
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<tr>
<td>09.30 – 10.15</td>
<td>Coffee &amp; Tea</td>
<td></td>
<td>Ellen Cieraad /Marloes van Kuppevelt</td>
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<tr>
<td>10.15 – 10.30</td>
<td>General Introduction to the minor</td>
<td></td>
<td>Marloes van Kuppevelt</td>
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<tr>
<td>10.30 – 11.15</td>
<td>Group picture</td>
<td></td>
<td>Arnold Tukker</td>
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<tr>
<td>11.15 – 11.45</td>
<td>Oration ‘circular economy as a recipe for sustainability’</td>
<td>26 February 2016</td>
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<tr>
<td>11.45 – 12.45</td>
<td>Lunchtime (you can buy lunch at the canteen)</td>
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<td>12.45 – 13.30</td>
<td>Discussion groups: Sustainability propositions</td>
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<td>13.30 – 15.30</td>
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<tr>
<td>Tuesday 6 September</td>
<td>TRIP NOORDWIJKERHOUT STAYOKAY HOSTEL</td>
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<tr>
<td>Wednesday 7 September</td>
<td>TRIP NOORDWIJKERHOUT STAYOKAY HOSTEL</td>
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<tr>
<td>Afternoon</td>
<td>Start Self Study Literature (see Thursday)</td>
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<tr>
<td>Thursday 8 September</td>
<td>Overview of the course</td>
<td>Lecture: Introduction to Sustainable Development</td>
<td>Arnold Tukker</td>
<td>E004 Van Steenis Building</td>
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<td>12.00 – 12.30</td>
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<tr>
<td>Friday 9 September</td>
<td>Lecture Stories of survival</td>
<td>Lecture Indigenous People and Sustainability</td>
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<td>E001 Van Steenis Building</td>
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<tr>
<td>09.30 – 12.00</td>
<td></td>
<td></td>
<td>Arnold Tukker</td>
<td></td>
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<tr>
<td>Afternoon</td>
<td></td>
<td>- Diamond (2005) Chapter 11 on Hispaniola (20p.)</td>
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<td>- Wilkinson (1973) Chapter 6 on the UK (24 p)</td>
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<td></td>
<td></td>
<td>- Tiffen et al. (1994) Chapter1 Machakos then and now and Chapter 11 conclusions (18 p)</td>
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</table>
## Week 2 Module Sustainability and Governance

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Topic</th>
<th>Lecturer / Guest speaker</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td><strong>Monday</strong></td>
<td>12 September</td>
<td>Paaseiland: sustainable development from a historical perspective</td>
<td>Jan Boersema</td>
<td>E001</td>
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<tr>
<td></td>
<td>09.30 – 11.30</td>
<td>Factors for Survival I: introduction</td>
<td>Arnold Tukker</td>
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<td></td>
<td>11.45 – 12.45</td>
<td>Self study:</td>
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<tr>
<td></td>
<td>afternoon</td>
<td>- Malthus, an Essay on the Principle of Population (8p)</td>
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<td>- Hardin, Tragedy of the Commons (5p)</td>
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<td>- Ostrom, Revisting the Commons (5p)</td>
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<td></td>
<td>- Turner, Hyden, Kates: Population growth and agricultural change in Africa (5p)</td>
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<td></td>
<td>- Boersema, Revisiting the Collapse of Rapa Nui (Easter Island) through a Voyage of 18th-Century Journals (2012) (15 p)</td>
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| **Tuesday**  | 13 September | Self study                                                            |                           |          |

| **Wednesday** | 14 September | Factors for Survival II                                               | Arnold Tukker             | E001     |
|              | 09.30 – 12.30 | Footprint and other WWF strategies                                    | Natascha Zwaal           |          |
|              | 13.00 – 14.30 | **Preparation:** Calculate your own footprint!                       |                           |          |
|              |               | ([http://voetafdruktest.wnf.nl/](http://voetafdruktest.wnf.nl/), in Dutch) |                           |          |
| afternoon    | Self study literature (see Tuesday)                                   |                           |          |
|              | - Living Planet Report 2014 WWF                                      |                           |          |

| **Thursday** | 15 September | Self Study                                                            |                           |          |

| **Friday**   | 16 September | Lecture IPBES                                                          | Peter van Bodegom         | E001     |
|              | 09.30 – 10.30| How to come into action for sustainability                             | Marjan Minnesma, director Urgenda |          |
|              | 10.30 – 12.00| Introduction Presenting                                                 | Kick Moors                |          |
|              | 12.30 – 14.00| Open session: if you have questions about writing the opinion paper    | Arnold Tukker             |          |
|              | 14.00 – 15.00| Self study:                                                           |                           |          |
|              | afternoon   | - Hajer, The Energetic Society chapter 4 (p39-60)                    |                           |          |
|              |             | - Tukker, Butter (2006): Governance for sustainability- about the 4(0) ways to change the world (10 p) |                           |          |
|              |             | - Diaz et al., The IPBES Conceptual Framework — connecting nature and people |                           |          |
## Week 3 Module Sustainability and Governance

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Topic</th>
<th>Literature/assignments</th>
<th>Lecturer / Guest speaker</th>
<th>Location</th>
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<tbody>
<tr>
<td>Monday</td>
<td>19 September</td>
<td>09.30 – 11.00</td>
<td>Sustainability: Trends in Corporate Social Responsibility and Ethical Consumption</td>
<td>Sabine Luning</td>
<td>E001</td>
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<td></td>
<td>11.00 – 12.30</td>
<td>11.00 – 12.30</td>
<td>Sustainability and Governance</td>
<td>Arnold Tukker</td>
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<tr>
<td>Tuesday</td>
<td>20 September</td>
<td>Uploading opinion paper to Blackboard before 18.00</td>
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### Week 3 Start Module Biodiversity

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Topic</th>
<th>Literature/assignments</th>
<th>Lecturer / Guest speaker</th>
<th>Location</th>
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<tbody>
<tr>
<td><strong>Wednesday</strong></td>
<td>21 September</td>
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<td>E001</td>
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<tr>
<td>09.30 – 10.30</td>
<td></td>
<td>Lecture: Introduction Module Biodiversity</td>
<td></td>
<td>Krijn Trimbos</td>
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<tr>
<td>10.45 – 11.45</td>
<td></td>
<td>Lecture: Theory of Biodiversity I (species)</td>
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<td>Kees Musters</td>
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<tr>
<td>12.00 – 13.00</td>
<td></td>
<td>Lecture: Theory of Biodiversity II (populations &amp; ecosystems)</td>
<td></td>
<td>Kees Musters</td>
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<tr>
<td>13.30 – 14.30</td>
<td></td>
<td>Lecture: Threats of biodiversity</td>
<td></td>
<td>Krijn Trimbos</td>
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<tr>
<td>Afternoon</td>
<td></td>
<td>Self study:</td>
<td>- Pereira et al. 2010; Mora et al. 2011</td>
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<td><strong>Thursday</strong></td>
<td>22 September</td>
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<td>Self study:</td>
<td>- Miller (14th ed.) 3.1, 3.2, 4.1,4.2, 4.4 &amp; 4.5 + review questions on core case studies of the relevant sections (= 22 pg. incl. questions) (see literature System Earth &amp; Climate Change)</td>
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<td></td>
<td>- Millennium Ecosystem Assessment: Preface and Summary for decision makers (= 21 p.)</td>
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<td>- McDonald et al. 2013, Van der Velde 2013, Mitchell et al. 2014</td>
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<td><strong>Friday</strong></td>
<td>23 September</td>
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<td>09.30 - 10.30</td>
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<td>Lecture: The psychological experience of nature</td>
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<td>Henk Staats (LU)</td>
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<td>10.45 - 11.45</td>
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<td>Lecture: Urban Biodiversity: Paradox or Paradigm?</td>
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<td>Rene van der Velde (TUD)</td>
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<td>12.00 – 13.00</td>
<td></td>
<td>Presentation students: Pereira et al. 2010</td>
<td></td>
<td>Students</td>
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<tr>
<td>Afternoon</td>
<td></td>
<td>Presentation students: Mora et al. 2011</td>
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<td>Self study:</td>
<td>- Van de Heide en Ruuijs 2010; Triall et al. 2007</td>
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<td></td>
<td>- Van Bodegom and Price: A trait-based approach to quantifying ecosystem services</td>
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<td></td>
<td>- Environmental law literature, to be determined</td>
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</table>
**Week 4 & 5 Module Biodiversity**

<table>
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<tr>
<th>Date</th>
<th>Time</th>
<th>Topic</th>
<th>Literature/assignments</th>
<th>Lecturer / Guest speaker</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td><strong>Monday</strong></td>
<td>26 September</td>
<td>09.30 - 10.30</td>
<td>Lecture: Ecosystem Services: combining economic values to ecological resilience</td>
<td>Peter van Bodegom</td>
<td>E001</td>
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<td></td>
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<td>10.30 - 11.30</td>
<td>Lecture: Ecosystem services: a tool to translate biodiversity and ecosystem functioning into policy relevant metrics</td>
<td>Peter van Bodegom</td>
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<td>11.30 - 12.30</td>
<td>Lecture: Biodiversity and ESS governance / Environmental Law</td>
<td>Bibi Krot (HABITAT)</td>
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<td></td>
<td>13.00 – 13.30</td>
<td>Presentation students: Van de Heide en Ruituijs 2010</td>
<td>Students</td>
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<td>Afternoon</td>
<td>Self study:</td>
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<td></td>
<td>- White and Walker 1997, White 2013</td>
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<tr>
<td><strong>Tuesday</strong></td>
<td>27 September</td>
<td>9.30 – 11.30</td>
<td>Introduction to discussing &amp; debating</td>
<td>Kick Moors</td>
<td>Huygens zaal 204</td>
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<td>11.30 – 12.00</td>
<td>Debate instructions</td>
<td>Krijn Trimbos</td>
<td>Niels Bohrweg 2 (behind Gorlaeus building)</td>
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<td>12.00 – 13.00</td>
<td>Presentation students: White and Walker 1997</td>
<td>Students</td>
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<td></td>
<td>Afternoon</td>
<td>Self study:</td>
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<td></td>
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<td></td>
<td>- Pletz et al. 2012</td>
<td>Kick Moors</td>
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<td></td>
<td>- Triall et al. 2007</td>
<td>Krijn Trimbos</td>
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<tr>
<td><strong>Wednesday</strong></td>
<td>28 September</td>
<td>9.30 – 10.30</td>
<td>Presentation students: Pletz et al. 2012</td>
<td>Students</td>
<td>E001</td>
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<td></td>
<td>10.30 - 12.30</td>
<td>Presentation students: Triall et al. 2007</td>
<td>Matthijs Schouten (WUR)</td>
<td>Start van Steenis room</td>
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<td>13.00 - 15.30</td>
<td>Lecture: Ethical aspects of biodiversity / nature conservation</td>
<td>Li An Phoa (BEAR)</td>
<td>E001</td>
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<td>Outside lecture – Experiencing nature</td>
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<tr>
<td><strong>Thursday</strong></td>
<td>29 September</td>
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<td>Self study: Preparation of the pitch and literature reading about the statement</td>
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<td>E001</td>
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<tr>
<td><strong>Friday</strong></td>
<td>30 September</td>
<td>9.30 - 12.00</td>
<td>Active discussion on biodiversity related statements Group 2A</td>
<td>Kick Moors/Krijn Trimbos</td>
<td>E001</td>
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<td>Group 2B</td>
<td>Ellen Cieraad/Hermen Visser</td>
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<tr>
<td><strong>Wednesday</strong></td>
<td>5 October</td>
<td></td>
<td>Excursion ‘Meijendel’ a case of ecosystem restoration for biodiversity and Ecosystem Services</td>
<td>Bart van Engeldorp (Dunea)</td>
<td>E001</td>
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**5**
Week 5 Start Module System Earth & Climate Change

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<tr>
<th>Date</th>
<th>Topic</th>
<th>Literature / Assignments</th>
<th>Lecturer / Guest speaker</th>
<th>Location</th>
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</table>
| Friday 7 October | Start module System Earth and Climate Change | Intro module and brainstorm session climate change  
Lecture: Climate change  
The use of climate models in environmental policy  
Earth system geo-engineering/ (documentary BBC)  
including short discussion and instructions for the poster and pitches (debate) | Wil Tamis  
René Kleijn  
Andries Hof (PBL)  
Wil Tamis | E001 |

Week 6 Module System Earth & Climate Change

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<tr>
<th>Date</th>
<th>Topic</th>
<th>Literature / Assignments</th>
<th>Lecturer / Guest speaker</th>
<th>Location</th>
</tr>
</thead>
</table>
| Monday 10 October | Presentation paper by students (gr. 1)  
Film: The Great Global Warming Swindle¹  
Short discussion on film  
Presentation paper by students (gr. 2) | students  
Wil Tamis students | E001 |
| Tuesday 11 October | Self study: reading Obligatory literature from  
Blackboard (folder course documents/folder  
Obligatory literature) and preparing pitches | students | E001 |
| Wednesday 12 October | Presentation paper by students (gr. 3)  
Lecture: Energy fluxes  
Presentations paper by students (gr. 4)  
Lecture: Energy  
Lecture: Complex systems and biogeochemical cycles | students  
René Kleijn students  
Gert Jan Kramer (UU)  
Nadia Soudzilovskaia | E001 |
| Thursday 13 October | Self study: continuation reading and preparing pitches | students | E001 |
| Friday 14 October | Presentation paper by students (gr.5)  
Lecture: Resources and scarcity  
Presentation paper by students (gr. 6)  
Lecture: Introduction lecture to GIS workshop | students  
René Kleijn students  
Maarten van ‘t Zelfde | E001 |

¹ Please prepare yourself to watch the film “An inconvenient truth” from Al Gore.
## Week 7 Module System Earth & Climate Change

<table>
<thead>
<tr>
<th>Date Time</th>
<th>Topic</th>
<th>Lecturer / Guest speaker</th>
<th>Location</th>
</tr>
</thead>
</table>
| **Monday 17 October**  
 09.30 – 10.00  
 10.00 – 12.00  
 12.30 – 13.00  
 13.00 – 15.00 | Presentation paper by students (gr. 7)  
 Lecture: Resources: impacts and linkages  
 Presentation paper by students (gr. 8)  
 Lecture: Geopolitics and scarcity of resources | students  
 René Kleijn students  
 Michel Rademaker (HCSS) t.b.c. | E001 |
| **Tuesday 18 October** | Self study: continuation reading and preparing pitches | | |
| **Wednesday 19 October**  
 09.30 – 12.30  
 13.00 – 16.00 | GIS practical / lab: Introduction to ARCGIS 10 - Plotting species distributions on a map part II  
 GIS practical / lab: Introduction to ARCGIS 10 - Plotting species distributions on a map part II | Maarten van ‘t Zelfde / Wil Tamis  
 Maarten van ‘t Zelfde / Krijn Trimbos | GIS-room  
 F101 |
| **Thursday 20 October** | Self study: continuation reading and preparing pitches and exam | | |
| **Friday 21 October**  
 09.30 – 12.30 | Pitches and debates on Earth system geo-engineering, see instructions manual and Blackboard | Kick Moors/Wil Tamis  
 Hermen Visser/  
 CML teacher | E001  
 E003B |
<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Topic</th>
<th>Literature/assignments</th>
<th>Lecturer / Guest speaker</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td>Monday</td>
<td>24 October</td>
<td>Introduction to the module &amp; “story of stuff”</td>
<td></td>
<td>Sebastiaan Deetman</td>
<td>E001</td>
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<td>09.30 – 10.30</td>
<td>Break</td>
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<td>10.30 – 10.45</td>
<td>Economy, technology and environment relations</td>
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<td>Sebastiaan Deetman</td>
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<td>10.45 – 11.45</td>
<td>Break</td>
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<td>11.45 – 12.00</td>
<td>Brainstorm on Packaging</td>
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<td>Lauran van Oers</td>
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<td>12.00 – 13.00</td>
<td>Lunch-break</td>
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<td>13.00 – 13.30</td>
<td>Introduction to LCA</td>
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<td>Valentina Prado</td>
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<td>13.30 – 14.30</td>
<td>Break</td>
<td></td>
<td>Sebastiaan Deetman</td>
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<td></td>
<td>14.30 – 14.45</td>
<td>Mapping global trade</td>
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<td>14.45 – 15.45</td>
<td>Wrap-up &amp; Introduction to the role-play game</td>
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<td>Tuesday</td>
<td>25 October</td>
<td>Reading: literature on the Roundtable on Sustainable Palm Oil</td>
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<td>Students</td>
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<td>+ Preparation for the role-play game</td>
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<td>Wednesday</td>
<td>26 October</td>
<td>Influencing palm oil policy, theory and practice</td>
<td></td>
<td>Willemijn de Iongh (Guest speaker, Oxfam)</td>
<td>E001</td>
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<td>09.30 – 10.30</td>
<td>Break</td>
<td></td>
<td>Students</td>
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<td>10.30 – 10.45</td>
<td>RSPO Pitches</td>
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<td>10.45 – 11.45</td>
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<td>Role-play game: policy negotiations</td>
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<td>Summary &amp; Outlook</td>
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<td>28 October</td>
<td>Redefining progress: Historical context</td>
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<td>Ludo van Oyen/ Rob Boeree (Guest speakers, Energiek Leiden)</td>
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<td>Sustainable industrial transformations (pt I)</td>
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<td>Arjan de Koning</td>
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<td>Summary &amp; outlook</td>
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## Week 9 Module Economy & Technology – life-cycle approaches to sustainability

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<th>Date</th>
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<td>Introduction to scenarios towards 2050</td>
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<td>Backcasting scenarios: the ‘Bulgarian’ lifestyle</td>
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<td>Forecasting scenarios: 9 Billion people by 2050</td>
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<td>15.45 – 16.00</td>
<td>Intro to the assignment: Scenarios &amp; Storylines</td>
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<td>09.30 – 10.30</td>
<td>Group assignments (whole day!!)</td>
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<td>10.45 – 11.45</td>
<td>Suggested meeting schedule:</td>
<td>9.00-10.00: action plan + division of tasks 16.00-17.30: drafting of presentation</td>
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<td>Presentations &amp; discussion: scenario assign.</td>
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<td>Presentations &amp; discussion: scenario assign.</td>
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<td>Scenario evaluation &amp; role of tools</td>
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<td>13.30 – 15.00</td>
<td>Positive scenario’s</td>
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<td>09.30 – 10.30</td>
<td>Self study / preparation for exam</td>
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<td>Measuring impacts of consumption in Sweden</td>
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<td>Betram de Boer (PhD student)</td>
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<td>Coen van der Giesen (PhD student)</td>
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<td>Renewable energy: Biosolar systems</td>
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<td>Angelica Mendoza (PhD student)</td>
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<td>Modelling the carbon uptake of a tree</td>
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<td>Anne Uilhoorn (PhD Student)</td>
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<td>Wrap-up &amp; Response session</td>
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