



## ES/SO 352 SUSTAINABILITY: CHALLENGES AND RESPONSES

IES Abroad Barcelona

**DESCRIPTION:** Sustainability is widely regarded as one of the key challenges facing humanity in the new millennium. Having achieved great success in attaining prosperity for a large proportion of mankind through industrial development, the consequences of unfettered growth have begun to catch up with us. A diverse array of crises has begun to make itself felt, threatening many of the environmental and social support systems we take for granted.

The course comprises four sections. In the first section (Sessions 1 to 3), we introduce some key concepts that we will use along the whole course. In the second section (sessions 4 to 6), some methodologies are discussed after presenting some real experiences implemented elsewhere and the final project to be implemented by students in groups during this course. In the third section (Sessions 7 to 15) we will examine some of the tremendous challenges that we face, all around the globe: we will identify key problem areas, recognize their consequences, and attempt to understand the reasons for their persistence. In the last section (Sessions 16 to 24), we will discuss various responses born at different levels involving policies, technologies and social initiatives that may help us change course to a more promising and fulfilling future.

The course includes an extra full-day session of a course related trip to be held on a FRIDAY with mandatory attendance.

*"We cannot solve our problems with the same thinking we used when we created them"* (Albert Einstein)

**CREDITS:** 3 credits

**CONTACT HOURS:** 45 hours

**LANGUAGE OF INSTRUCTION:** English

**PREREQUISITES:** One prior course in one or more of the following disciplines: Political Science, Social Science, History, Environmental Sciences.

### **METHOD OF PRESENTATION:**

- **LECTURES:** Delivery of core course content.
- **Class discussion:** Sustainability spans scientific knowledge and personal belief systems. Class discussion enables us to probe the validity and strength of scientific knowledge and argumentation, as well as analyze how our thought processes and behavioral patterns are influenced by, and in turn influence, various sustainability practices.
- **Reader:** Key texts designed to develop general understanding of the subject matter and foment discussion. The readings listed for a particular session must be completed BEFORE coming to class that day.
- **Videos:** Many sessions include viewing small excerpts from some documentaries or some short videos from key experts related to the readings of each session.
- **Analysis:** Rudimentary system diagrams and SWOT analysis are powerful tools for identifying mechanisms of cause and effect, interaction, feedback, and eventual areas of improvement for new actions and projects. By preparing them, students will be able to better understand key aspects of sustainable and unsustainable action.
- **On site classes:** On site classes enable experiential learning of innovative technologies and practices relating to sustainability, as manifested in the city of Barcelona.
- **Course-related trips:** One course-related trip will complement the topics covered in class. See more information below.
- **Class Project:** Over the duration of the course, we will design and implement actions that will improve the sustainability of IES community.

### **REQUIRED WORK AND FORM OF ASSESSMENT:**

- Class participation (20%)
- Mid-term exam (20%)
- Assignments and pop quizzes (20%)
- Class project (20%)
- Final exam (20%)

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- **Class participation:** I will need your cooperation to make our time together interesting and beneficial for us all. This shouldn't be too hard, since sustainability is not a dogmatic topic, and it begs for discussion and analysis. I will challenge you to closely examine many assumptions, and to think critically about the concepts, tools and practices we will discuss in class.
- **Assignments and pop quizzes:** Homework (assigned only for certain sessions) provides an effective means for translating reading assignments into knowledge. They may be transforming text into graphical interpretations of processes called systems diagrams, which link various issues not always viewed as interrelated, and provide a fresh analytical perspective on the topics being studied. Other assignments might comprise class presentation on a current hot topic of your choice, or SWOT Analysis (Strengths, Weaknesses, Opportunities and Threats), as well as pop quizzes with questions of short answers related to the reading or videos seen in class which need to be answered at the beginning of the session and again at the end after the class discussion.
- **Course related trips:** A course related trip of mandatory attendance is organized on a Friday within the scope of this course, to extend the topics covered in the other course sessions. You will be able to visit and work in an Organic Farm within a Local Community Network. You may get a question in an assignment or final exam about the topics covered in this activity. This trip is also open to a reduced number of IES Abroad Barcelona students from other courses (on a "first come – first serve" basis at the registration level for the trip for those other students).
- **Mid-term exam:** The exam will assess students' knowledge of the basic principles of sustainability covered in the first section of the course.
- **Class project:** An assessment of the efforts and outcomes of the IES sustainability project undertaken by the class. At the final document submitted to the instructor, students will write down their names next to the document sections where they contributed, as well as other ways to report the individual contribution of each student to the class project along the term (team organization, retrieval of information, document structure, etc.).
- **Final exam:** The exam will assess students' knowledge of the basic obstacles to sustainability, with special emphasis in the topics learned in the second section of the course.

#### LEARNING OUTCOMES:

By the end of the course students will be able to:

- recognize the fundamental principles of social, environmental and economic sustainability;
- identify problem areas where unsustainable practices are prevalent and destructive;
- analyze complex problems utilizing the precepts of systems analysis;
- apply a critical sustainability lens to current events; governmental and inter-governmental policy, and other institutions of modern life;
- reflect on their own values regarding a sustainable life-style, and integrate meaningful sustainable practices in their lifestyle.

#### ATTENDANCE POLICY:

Attendance is mandatory for all IES Abroad classes, including course-related trips. Any exams, tests, presentations, or other work missed due to student absences can only be rescheduled in cases of documented medical or family emergencies. If a student misses more than three classes in any course 3 percentage points will be deducted from the final grade for every additional absence. Seven absences in any course will result in a failing grade.

#### CONTENT:

Session	Content	Assignments
Session 1	Session 1: What IS sustainability, anyway?	
Session 2	Session 2: Systems Thinking: A Primer	<ul style="list-style-type: none"> <li>● Capra, F., Luisi, P.L. (2014). The ecological dimension of life. In <i>The Systems View of Life: A Unifying Vision</i> (Ch. 16, p. 341-362).</li> </ul>
Session 3	Session 3: The Sustainable Development Goals: a global assignment	<ul style="list-style-type: none"> <li>● United Nations (2017). The Sustainable Development Goals Report 2017. (p. 3-14) Available online at: <a href="https://unstats.un.org/sdgs/files/report/2017/TheSustainableDevelopmentGoalsReport2017.pdf">https://unstats.un.org/sdgs/files/report/2017/TheSustainableDevelopmentGoalsReport2017.pdf</a></li> </ul>

<b>Session 4</b>	<p>Session 4: Invited Speaker from a Local Coop. committed with the Agenda 21 in Barcelona</p>	<ul style="list-style-type: none"> <li>● Franquesa, T. (2012). Barcelona's Agenda 21. 10 Years of Citizen Commitment to Sustainability. City, Environment and Education. Monograph: p.66-70. Available online at: <a href="http://www.sostenibilitatbcn.cat/attachments/article/413/TFranquesa_A21L_Barcelona%20LA21Experience_Educating%20Cities.pdf">http://www.sostenibilitatbcn.cat/attachments/article/413/TFranquesa_A21L_Barcelona%20LA21Experience_Educating%20Cities.pdf</a></li> <li>● Barcelona City Council, 2012. Citizen Commitment to Sustainability 2012-2022. Ed. Barcelona City Council. (p.5-9, p.30-31). Available online at: <a href="http://www.sostenibilitatbcn.cat/attachments/article/413/Commitment_22_UK_web.pdf">http://www.sostenibilitatbcn.cat/attachments/article/413/Commitment_22_UK_web.pdf</a></li> </ul>
<b>Session 5</b>	<p>Session 5: Sustainability Action Plan for IES Abroad – Barcelona</p>	<ul style="list-style-type: none"> <li>● Various Authors. (2009-2014). <i>Sustainability Action Plans</i>. Final papers from previous semesters of ESSO350. Edited by X. de Pedro. cc-by-sa. Available online at: <a href="http://sustainability.seeds4c.org">http://sustainability.seeds4c.org</a></li> </ul>
<b>Session 6</b>	<p>Session 6: Policy, Regulations, Incentives and Voluntary Programs for Sustainability</p>	<ul style="list-style-type: none"> <li>● Brown, L. R. (2009). Can We Mobilize Fast Enough?. In <i>Plan B 4.0: Mobilizing to Save Civilization</i>. Norton, W. W. &amp; Company, Inc. (Ch. 10, p.143-167). Available online at: <a href="http://www.earth-policy.org/images/uploads/book_files/pb4ch10.pdf">http://www.earth-policy.org/images/uploads/book_files/pb4ch10.pdf</a></li> </ul>
<b>Session 7</b>	<p>Session 7: The Human Factor: Demographics and Social Trends</p>	<ul style="list-style-type: none"> <li>● Bowerman, T. (2014). How much is too much? A public opinion research perspective. <i>Sustainability: Science, Practice, &amp; Policy</i>. Volume 10, Issue 1, p.1-15. Available online at: <a href="http://sspp.proquest.com/static_content/vol10iss1/1209-044.bowerman.pdf">http://sspp.proquest.com/static_content/vol10iss1/1209-044.bowerman.pdf</a></li> <li>● Ehrlich, PR. (2010). The MAHB, the Culture Gap, and Some Really Inconvenient Truths. <i>PLoS Biol</i> 8(4):e1000330. (3 pp). Available online at: <a href="http://www.plosbiology.org/article/fetchObject.action?uri=info%3Adoi%2F10.1371%2Fjournal.pbio.1000330&amp;representation=PDF">http://www.plosbiology.org/article/fetchObject.action?uri=info%3Adoi%2F10.1371%2Fjournal.pbio.1000330&amp;representation=PDF</a></li> </ul>
<b>Session 8</b>	<p>Session 8: Water resources management</p>	<ul style="list-style-type: none"> <li>● WWAP (United Nations World Water Assessment Programme)/UN-Water. 2018. <i>The United Nations World Water Development Report 2018: Nature-Based Solutions for Water</i>. (P. 21-36 and 79-87) Paris, UNESCO. Available online at: <a href="http://www.unwater.org/publications/world-water-development-report-2018/">http://www.unwater.org/publications/world-water-development-report-2018/</a></li> </ul>
<b>Session 9</b>	<p>Session 9: Forests, Fisheries and Disappearing Species</p>	<ul style="list-style-type: none"> <li>● Brown, L. R. (2009). Restoring the Earth. In <i>Plan B 4.0: Mobilizing to Save Civilization</i>. Norton, W. W. &amp; Company, Inc. (Ch. 8, p.192-215). Available online at: <a href="http://www.earth-policy.org/images/uploads/book_files/pb4ch08.pdf">http://www.earth-policy.org/images/uploads/book_files/pb4ch08.pdf</a></li> </ul>
<b>Session 10</b>	<p>Session 10: Energy: Sources, Trends, and their Implications</p>	<ul style="list-style-type: none"> <li>● Brown, L. R. (2009). Stabilizing Climate: Shifting to Renewable Energy. In <i>Plan B 4.0: Mobilizing to Save Civilization</i>. Norton, W. W. &amp; Company, Inc. (Ch. 5, p.109-142). Available online at: <a href="http://www.earth-policy.org/images/uploads/book_files/pb4ch05.pdf">http://www.earth-policy.org/images/uploads/book_files/pb4ch05.pdf</a></li> </ul>
<b>Session 11</b>	<p>Session 11: Agriculture: Our Relationship with the Land</p>	<ul style="list-style-type: none"> <li>● FAO (2016). In brief: The state of food and agriculture. Climate change, agriculture and food security. Available</li> </ul>

		<p>online at:  <a href="http://www.fao.org/publications/sofa/2016/en/">http://www.fao.org/publications/sofa/2016/en/</a></p> <ul style="list-style-type: none"> <li>FAO (2016). Food and Agriculture. Key to achieving the 2030 Agenda for Sustainable Development. Available online at:  <a href="https://sustainabledevelopment.un.org/content/documents/2313foodandagriculture.pdf">https://sustainabledevelopment.un.org/content/documents/2313foodandagriculture.pdf</a></li> </ul>
	<i>DiscoverIES: Course-related trip to an Organic Farm</i>	(on a FRIDAY; full day)
<b>Session 12</b>	Session 12: Waste management	<ul style="list-style-type: none"> <li>Hoorweg, D.; Bhada-Tata, P. (2012). What a Waste : A Global Review of Solid Waste Management. Urban development series;knowledge papers no. 15. World Bank, Washington, DC. © World Bank. <a href="https://openknowledge.worldbank.org/handle/10986/17388">https://openknowledge.worldbank.org/handle/10986/17388</a> License: CC BY 3.0 IGO.</li> </ul>
<b>Session 13</b>	<b>MID-TERM EXAM</b>	
<b>Session 14</b>	Session 14: <i>Climate Change</i>	<ul style="list-style-type: none"> <li>GreenFacts (2007). <i>Scientific facts on Climate Change. 2007 Update</i>. Source document: Intergovernmental Panel on Climate Change (IPCC): "Fourth Assessment Report (AR4)" (2007). Summary &amp; Details: GreenFacts (2007) (Level 1 – 2007 Update, 16 pp). Available online at: <a href="http://www.greenfacts.org/en/climate-change-ar4/climate-change-ar4-foldout.pdf">http://www.greenfacts.org/en/climate-change-ar4/climate-change-ar4-foldout.pdf</a></li> </ul>
<b>Session 15</b>	Session 15: Environmental Systems, Social Systems and Human Health	<ul style="list-style-type: none"> <li>World Health Organization (2005). <i>Ecosystems and Human Well-Being Health Synthesis</i>, (Overview, p. 1 – 10). Available online at: <a href="http://www.who.int/globalchange/ecosystems/ecosys.pdf">http://www.who.int/globalchange/ecosystems/ecosys.pdf</a></li> <li>Ewing, D. (2006). The Pollution Within. <i>National Geographic</i> (7 pp) Available: <a href="http://www7.nationalgeographic.com/ngm/0610/feature4/index.html">http://www7.nationalgeographic.com/ngm/0610/feature4/index.html</a></li> <li>Cohen, M. J., When sustainability bites back: Cautionary lessons from the field of public health, <i>Sustainability: Science, Practice, and Policy</i>, 10(2), ProQuest, pp. 1–3, 2014.</li> </ul>
<b>Session 16</b>	Session 16: Urban Planning, Architecture and Transportation	<ul style="list-style-type: none"> <li>Brown, L. R. (2009). Designing Cities for People. In <i>Plan B 4.0: Mobilizing to Save Civilization</i>. Norton, W. W. &amp; Company, Inc. (Ch. 6, p.143-167). Available online at: <a href="http://www.earth-policy.org/images/uploads/book_files/pb4ch06.pdf">http://www.earth-policy.org/images/uploads/book_files/pb4ch06.pdf</a></li> </ul>
<b>Session 17</b>	Session 17: Permaculture Ethics & Design Principles	<ul style="list-style-type: none"> <li>Holmgren, D. (2007). <i>Essence of Permaculture</i>. 23pp. Ed. Holmgren Design Services. Available online at: <a href="http://www.holmgren.com.au/DLFiles/PDFs/Essence_of_PC_eBook.pdf">http://www.holmgren.com.au/DLFiles/PDFs/Essence_of_PC_eBook.pdf</a></li> </ul>
<b>Session 18</b>	Session 18: Class on site: 'Can Masdeu' (squatted farm house)	<ul style="list-style-type: none"> <li>Cordingley, L. (2004). Can Masdeu: Rise of the Rurbano revolution. p53-68. Available online at: <a href="http://www.inthefield.info/rurbano_revolution.pdf">http://www.inthefield.info/rurbano_revolution.pdf</a></li> </ul>
<b>Session 19</b>	Session 19: Ecological economics & Circular Economy	<ul style="list-style-type: none"> <li>Fournier, V. (2008). Escaping from the economy: the politics of degrowth . <i>International Journal of Sociology</i></li> </ul>

		<p>and Social Policy, Vol. 28 No. 11/12, (pp. 528-545). Available online at: <a href="http://www.web.ca/~bthomson/degrowth/fournier_the_politics_of_degrowth_13mar08.pdf">http://www.web.ca/~bthomson/degrowth/fournier_the_politics_of_degrowth_13mar08.pdf</a></p> <ul style="list-style-type: none"> <li>• Kennedy, M. (2008). If money rules the world – who rules money? A case for complementary currencies. Forum CSR international, Vol 28. pp 66-69. Available online at: <a href="http://www.margritkennedy.de/media/art_forum_csr_international_1_2008_28.pdf">http://www.margritkennedy.de/media/art_forum_csr_international_1_2008_28.pdf</a></li> <li>• Ellen MacArthur Foundation (2012). Towards the Circular Economy Vol. 1: an economic and business rationale for an accelerated transition. Available online at: <a href="https://www.ellenmacarthurfoundation.org/assets/downloads/publications/Ellen-MacArthur-Foundation-Towards-the-Circular-Economy-vol.1.pdf">https://www.ellenmacarthurfoundation.org/assets/downloads/publications/Ellen-MacArthur-Foundation-Towards-the-Circular-Economy-vol.1.pdf</a></li> </ul>
<b>Session 20</b>	Session 20: Local Community Networks – Time banks, Fair trade and other social-based initiatives	<ul style="list-style-type: none"> <li>• Wheeler, D. et al. (2005) Creating Sustainable Local Enterprise Networks. <i>Sloan Management Review</i>, 47(1):33-40. Available online: <a href="http://www.honeycareafrika.com/PDF/Sustainable_Local_Enterprise_Networks.pdf">http://www.honeycareafrika.com/PDF/Sustainable_Local_Enterprise_Networks.pdf</a></li> <li>• Shuman, Michael (2006). The Small-Mart Revolution. San-Francisco: Berrett-Koehler (Ch. 2, p.39-62).</li> </ul>
<b>Session 21</b>	Session 21: Class on site: Clean Technology and Design	<ul style="list-style-type: none"> <li>• Brown, L. R. (2009). Stabilizing Climate: An Energy Efficiency Revolution. In <i>Plan B 4.0: Mobilizing to Save Civilization</i>. Norton, W. W. &amp; Company, Inc. (Ch. 4, p.79-108). Available online at: <a href="http://www.earth-policy.org/images/uploads/book_files/pb4ch04.pdf">http://www.earth-policy.org/images/uploads/book_files/pb4ch04.pdf</a></li> </ul>
<b>Session 22</b>	Session 22: Free Software, Knowledge & Creativity	<ul style="list-style-type: none"> <li>• Sowe, S.K., Parayil, G. &amp; Sunami, A. (2012). Introduction. In <i>Free and Open Source Software Technology for Sustainable Development</i>. United Nations University Press. (p. 1-3). Available online at: <a href="http://i.unu.edu/media/unu.edu/publication/27948/12-17-FOSS-SAMPLE-CHAPTER.pdf">http://i.unu.edu/media/unu.edu/publication/27948/12-17-FOSS-SAMPLE-CHAPTER.pdf</a></li> <li>• Lessig, L. (2004). Free culture, How Big Media Uses Technology and the Law to Lock Down Culture and Control Creativity. The Penguin Press. (p.170-173 + p.282-286). <a href="http://www.free-culture.cc/freeculture.pdf">http://www.free-culture.cc/freeculture.pdf</a></li> <li>• Pearce, J.M. (2012). The case for open source appropriate technology. <i>Environ Dev Sustain</i> (2012) 14:425–431. Available online at: <a href="http://link.springer.com/article/10.1007%2Fs10668-012-9337-9">http://link.springer.com/article/10.1007%2Fs10668-012-9337-9</a></li> </ul>
<b>Session 23</b>	Session 23: Business, Biomimicry and Sustainable Development	<ul style="list-style-type: none"> <li>• Senge, P. &amp; Carstedt, G. (2001) Innovating Our Way to the Next Industrial Evolution. <i>Sloan Management Review</i>, 42(2): 24-38. Available online at: <a href="http://www.ci.oswego.or.us/plan/Sustainability/Steering_Committee_Handouts/Innovating%20Our%20Way%2">http://www.ci.oswego.or.us/plan/Sustainability/Steering_Committee_Handouts/Innovating%20Our%20Way%2</a></li> </ul>

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<b>Session 24</b>	Session 24: FINAL PROJECTS PRESENTATION	
<b>Session 25</b>	<b>FINAL EXAM</b>	

## Final Exam

### REQUIRED READINGS:

- Barcelona City Council, 2012. Citizen Commitment to Sustainability 2012-2022. Ed. Barcelona City Council. (p. 5-9, p.30-31). Available online at: [http://www.sostenibilitatbcn.cat/attachments/article/413/Commitment\\_22\\_UK\\_web.pdf](http://www.sostenibilitatbcn.cat/attachments/article/413/Commitment_22_UK_web.pdf)
- Bowerman, T. (2014). How much is too much? A public opinion research perspective. Sustainability: Science, Practice, & Policy. Volume 10, Issue 1, p.1-15. Available online at: [http://sspp.proquest.com/static\\_content/vol10iss1/1209-044.bowerman.pdf](http://sspp.proquest.com/static_content/vol10iss1/1209-044.bowerman.pdf)
- Brown, L. R. (2009). Can We Mobilize Fast Enough?. In Plan B 4.0: Mobilizing to Save Civilization. Norton, W. W. & Company, Inc. (Ch. 10, p.143-167). Available online at: [http://www.earth-policy.org/images/uploads/book\\_files/pb4ch10.pdf](http://www.earth-policy.org/images/uploads/book_files/pb4ch10.pdf)
- Brown, L. R. (2009). Designing Cities for People. In Plan B 4.0: Mobilizing to Save Civilization. Norton, W. W. & Company, Inc. (Ch. 6, p.143-167). Available online at: [http://www.earth-policy.org/images/uploads/book\\_files/pb4ch06.pdf](http://www.earth-policy.org/images/uploads/book_files/pb4ch06.pdf)
- Brown, L. R. (2009). Restoring the Earth. In Plan B 4.0: Mobilizing to Save Civilization. Norton, W. W. & Company, Inc. (Ch. 8, p.192-215). Available online at: [http://www.earth-policy.org/images/uploads/book\\_files/pb4ch08.pdf](http://www.earth-policy.org/images/uploads/book_files/pb4ch08.pdf)
- Brown, L. R. (2009). Stabilizing Climate: An Energy Efficiency Revolution. In Plan B 4.0: Mobilizing to Save Civilization. Norton, W. W. & Company, Inc. (Ch. 4, p.79-108). Available online at: [http://www.earth-policy.org/images/uploads/book\\_files/pb4ch04.pdf](http://www.earth-policy.org/images/uploads/book_files/pb4ch04.pdf)
- Brown, L. R. (2009). Stabilizing Climate: Shifting to Renewable Energy. In Plan B 4.0: Mobilizing to Save Civilization. Norton, W. W. & Company, Inc. (Ch. 5, p.109-142). Available online at: [http://www.earth-policy.org/images/uploads/book\\_files/pb4ch05.pdf](http://www.earth-policy.org/images/uploads/book_files/pb4ch05.pdf)
- Capra, F., Luisi, P.L. (2014). The ecological dimension of life. In The Systems View of Life: A Unifying Vision (Ch. 16, p. 341-362).
- Cohen, M. J., When sustainability bites back: Cautionary lessons from the field of public health, Sustainability: Science, Practice, and Policy, 10(2), ProQuest, pp. 1–3, 2014.
- Cordingley, L. (2004). Can Masdeu: Rise of the Rurbano revolution. p53-68. Available online at: [http://www.inthefield.info/rurbano\\_revolution.pdf](http://www.inthefield.info/rurbano_revolution.pdf)
- Ehrlich, PR. (2010). The MAHB, the Culture Gap, and Some Really Inconvenient Truths. PLoS Biol 8(4):e1000330. (3 pp) Available online at: <http://www.plosbiology.org/article/fetchObject.action?uri=info%3Adoi%2F10.1371%2Fjournal.pbio.1000330&representation=PDF>
- Ellen MacArthur Foundation (2012). Towards the Circular Economy Vol. 1: an economic and business rationale for an accelerated transition. Available online at: <https://www.ellenmacarthurfoundation.org/assets/downloads/publications/Ellen-MacArthur-Foundation-Towards-the-Circular-Economy-vol.1.pdf>
- Ewing, D. (2006). The Pollution Within. National Geographic (7 pp) Available: <http://www7.nationalgeographic.com/ngm/0610/feature4/index.html>
- FAO (2016). In brief: The state of food and agriculture. Climate change, agriculture and food security. Available online at: <http://www.fao.org/publications/sofa/2016/en/>
- FAO (2016). Food and Agriculture. Key to achieving the 2030 Agenda for Sustainable Development. Available online at: <https://sustainabledevelopment.un.org/content/documents/2313foodandagriculture.pdf>
- Fournier, V. (2008). Escaping from the economy: the politics of degrowth . International Journal of Sociology and Social Policy, Vol. 28 No. 11/12, (pp. 528-545). Available online at: [http://www.web.ca/~bthomson/degrowth/fournier\\_the\\_politics\\_of\\_degrowth\\_13mar08.pdf](http://www.web.ca/~bthomson/degrowth/fournier_the_politics_of_degrowth_13mar08.pdf)
- Franquesa, T. (2012). Barcelona's Agenda 21. 10 Years of Citizen Commitment to Sustainability. City, Environment and Education. Monograph: p.66-70. Available online at: [http://www.sostenibilitatbcn.cat/attachments/article/413/TFranquesa\\_A21L\\_Barcelona%20LA21Experience\\_Educating%20Cities.pdf](http://www.sostenibilitatbcn.cat/attachments/article/413/TFranquesa_A21L_Barcelona%20LA21Experience_Educating%20Cities.pdf)

- GreenFacts (2007). Scientific facts on Climate Change. 2007 Update. Source document: Intergovernmental Panel on Climate Change (IPCC): "Fourth Assessment Report (AR4)" (2007). Summary & Details: GreenFacts (2007) (Level 1 – 2007 Update, 16 pp). Available online at: <http://www.greenfacts.org/en/climate-change-ar4/climate-change-ar4-foldout.pdf>
- Holmgren, D. (2007). *Essence of Permaculture*. 23pp. Ed. Holmgren Design Services. Available online at: [http://www.holmgren.com.au/DLFiles/PDFs/Essence\\_of\\_PC\\_eBook.pdf](http://www.holmgren.com.au/DLFiles/PDFs/Essence_of_PC_eBook.pdf)
- Hoorweg, D.; Bhada-Tata, P. (2012). *What a Waste : A Global Review of Solid Waste Management*. Urban development series; knowledge papers no. 15. World Bank, Washington, DC. © World Bank. <https://openknowledge.worldbank.org/handle/10986/17388>
- Kennedy, M. (2008). If money rules the world – who rules money? A case for complementary currencies. *Forum CSR international*, Vol 28. pp 66-69. Available online at: [http://www.margritkennedy.de/media/art\\_forum\\_csr\\_international\\_1\\_2008\\_28.pdf](http://www.margritkennedy.de/media/art_forum_csr_international_1_2008_28.pdf)
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