**Energy management: Bioenergy**

**Required reading**

* Rosillo-Calle, F., A review of biomass energy - shortcomings and concerns. Journal of Chemical Technology and Biotechnology 2016, 91, (7), 1933-1945.

**Extra reading**

* Westerman, P. W.; Bicudo, J. R., Management considerations for organic waste use in agriculture. Bioresource Technology 2005, 96, (2), 215-221.
* Kluts, I.; Wicke, B.; Leemans, R.; Faaij, A., Sustainability constraints in determining European bioenergy potential: A review of existing studies and steps forward. Renewable and Sustainable Energy Reviews 2017, 69, 719-734.
* Sawatdeenarunat, C.; Nguyen, D.; Surendra, K. C.; Shrestha, S.; Rajendran, K.; Oechsner, H.; Xie, L.; Khanal, S. K., Anaerobic biorefinery: Current status, challenges, and opportunities. Bioresource Technology 2016, 215, 304-313.

**Water management**

**Basic reading**

* GWP Technical Advisory Committee (TAC), 2000. Integrated Water Resources Management. Global Water Partnership, TAC Background papers No. 4.
* Pahl-Wostl, C., & Sendzimir, J. 2005. The relationship between IWRM and Adaptive Management. NeWater Report Series No. 3. NeWater project. *Osnabrueck: University of Osnabrueck*.

**Required reading**

* Lautze, J., De Silva, S., Giordano, M., & Sanford, L. 2011. Putting the cart before the horse: Water governance and IWRM. In *Natural Resources Forum* Vol. 35, No. 1, pp. 1-8. Blackwell Publishing Ltd.
* Pahl-Wostl, C., Craps, M., Dewulf, A., Mostert, E., Tabara, D., & Taillieu, T. (2007). Social learning and water resources management. *Ecology and society*, *12*(2).

**Advanced/extra reading**

* Pahl-Wostl, C., et al. 2010. "Analyzing complex water governance regimes: the management and transition framework." *Environmental Science & Policy* 13.7: 571-581.
* Cossío, V. & Wilk, J. 2017. A paradigm confronting reality: The river basin approach and local water management spaces in the Pucara Basin, Bolivia. *Water Alternatives* *10*(1), 181.
* Wilk, Julie, et al. "From forecasts to action–What is needed to make seasonal forecasts useful for South African smallholder farmers?." *International Journal of Disaster Risk Reduction* 25 (2017): 202-211.
* Milly, Paul CD, et al. "Stationarity is dead: Whither water management?." *Science* 319.5863 (2008): 573-574.

**Urban water and sanitation**

**Base reading**

* McGranahan, G., & Satterthwaite, D. (2006). A developing world perspective: Health and deficiencies for provision for water and sanitation in urban areas of Africa, Asia, and Latin America and the Caribbean. Cities and Population Health, 194-205.
* Water AidOverflowing cities: The State of the World's Toilets 2016 <https://washmatters.wateraid.org/sites/g/files/jkxoof256/files/Overflowing%20cities%20%20The%20State%20of%20the%20Worlds%20Toilets%202016.pdf>
* WHO & UNICEF Progress om Drinking Water, Sanitation and Hygiene 2017 <https://washdata.org/sites/default/files/documents/reports/2018-01/JMP-2017-report-final.pdf>

**Required reading**

* Jessica Budds and Gordon McGranahan Are the debates on water privatization missing the point? Experiences from Africa Environment and Urbanization 2003 15: 87; DOI: 10.1177/095624780301500222
* Black & Fawcett (2008) The Last Taboo – Opening the door to the global sanitation crises. Earthscan; London

**Extra reading**

* Jenny Appelblad Fredby & David Nilsson (2013) From “All for some” to “Some for all”? A historical geography of pro-poor water provision in Kampala, Journal of Eastern African Studies, 7:1, 40-57, DOI: 10.1080/17531055.2012.708543
* Banana et al (2015) Sharing reflections on Inclusive sanitation Environment & Urbanization Vol 27(1): 1–16. DOI: 10.1177/0956247815569702
* Bohman & Raitio (2014) How frames matter – common sense and institutional choice in Ghanas urban water sector. Journal of Environment & Development 2014, Vol. 23(2) 247–270 DOI: 10.1177/1070496514525405
* Bohman (2012) The presence of the Past: A retrospective view on urban water supply and sanitation in Ghana. Journal of Water History. 4:137-154. DOI: 10.1007/s12685-011-0047-2

**Food security/management**

**Basic reading**

* FAO (2014). Building a common vision for sustainable food and agriculture.  <http://www.fao.org/3/a-i3940e.pdf> (annex optional)
* Seufert & Ramankutty (2017). Many shades of gray—The context-dependent performance of organic agriculture . *Science Advances.* 10 Mar 2017: Vol. 3, no. 3 DOI: 10.1126/sciadv.1602638 <http://advances.sciencemag.org/content/advances/3/3/e1602638.full.pdf>

**Required reading**

* P.J.A.Withers, K.C. van Dijk, T.-S. Neset, T. Nesme, O. Oenema, G.H. Rubæk, O. Schoumans, A.L.. Smit, S. Pellerin (2015).  Stewardship to tackle global phosphorus inefficiency: The case of Europe. AMBIO 2015 (44): 193-206.
* Neset, T-S S and Cordell, D. (2012) Global Phosphorus Scarcity – identifying synergies for a sustainable future. Journal of the Science of Food and Agriculture. Vol 92 (1) 2012

**Extra reading**

* Cordell, D and Neset, T.-S. (2014). Phosphorus vulnerability: A qualitative framework for assessing the vulnerability of national and regional food systems to the multi-dimensional stressors of phosphorus scarcity. Global Environmental Change, Vol. 24: 108-122
* Cordell, D; Drangert, JO; White, S (2009). The story of phosphorus: global food security and food for thought. Global Environmental Change, Vol. 19(2): 292-305
* Schröder, J.J, Smit, A.L., Cordell, D. Rosemarin, A. (2011). Improved phosphorus use efficiency in agriculture: A key requirement for its sustainable use. Chemosphere. Vol. 84 (6): 822-831.
* Bennett, E.; Elser, J. (2011) A Broken biogeochemical cycle. Nature. 2011 <http://www.nature.com/nature/journal/v478/n7367/pdf/478029a.pdf>
* Mekkonen & Hoekstra (2011). The green, blue and grey water footprint of crops. Hydrol. Earth Syst. Sci., 15, 1577–1600, 2011
* Herrero et al., 2010. Smart investments in sustainable food production. *Science*, Vol. 327: 822-825
* Davis et al., 2014. Land grabbing: quantification of economic impact on rural livelihoods. *Popul Environ* Vol. 36: 180–192.
* Levitt et al., 2009. Revisiting the UNICEF malnutrition framework. Food Policy 34: 156–165
* Godfray et al (2010). Food Security: The Challenge of feeding 9 billion People. Science, Vol. 329 (5967).
* Chinsinga et al., 2013. The political economy of land grabs in Malawi*. J Agric Environ Ethics* Vol. 26: 1065–1084
* Cotula et al., (2009). Land grab or development opportunity? Agricultural investment and
* international land deals in Africa.
* https://www.ifad.org/documents/10180/a2ea06a0-d0b2-4e99-a9b4-1f23e0491afb
* Hanjra and Qureshi, 2010. Global water crisis and future food security in an era of climate change. *Food Policy* 35: 365–377

**Seminar: How can we address food insecurity?**

**Required reading:**

* Chapter 8 ‘’The Return of Neo-Malthusianism’’

Linnér, B.-O. (2003). The return of Malthus: environmentalism and post-war population-resource crises. White Horse press, UK.

**Additional reading:**

* Chapter 7: ‘The Green Revolution’ in the same book as above

**Soil management**

**Required reading**

* McBratney A et al (2014) The dimensions of soil security. Geoderma. 213: 203-213.
* Glaesner et al (2014) Do Current European Policies Prevent Soil Threats and Support Soil Functions? Sustainability, 6(12), 9538-9563

**Extra reading**

* Gomiero T. (2016) Soil Degradation, Land Scarcity and Food Security: Reviewing a Complex Challenge Sustainability 2016, 8(3), 1-41.