

Animal Welfare and the United Nations' Sustainable Development Goals – Broadening students' perspectives

Authors: Gabriela Olmos Antillón^{1*}, Håkan Tunón², Daiana de Oliveira³, Michael Jones², Anna Wallenbeck³, Janice Swanson⁴, Harry Blokhuis³, Linda Keeling^{3*}

*Correspondence: gabriela.olmos.antillon@slu.se; Tel.: +46702891055

Supplementary Material

Description of workshop assignments

Assignment 1 (A1 pre-course): Relationship between Animal Welfare and the Sustainable Development Goals

Specifications, assignment context:

- On the first day of the course, the students were presented with the course's learning objectives and the research aims. This presentation was followed by a one-hour discussion to reflect on key concepts from A1 pre-course reading, own experience on AW and SDGs, and identify concepts that required further elaboration during the course.
- This session was followed by three key lectures (45 minutes each plus 15 minutes discussion) related to the concepts of animal welfare, ethics and sustainable development & complex problems

Description (Individual work):

- Complete course mandatory pre-reading material to become acquainted with the sustainable development goals agenda and the concepts of: animal welfare, ethics, sustainability, and the planetary boundaries.
- As a follow-up task you are required to select at least 6 SDGs that you believe are most closely linked to animal welfare in either a positive or negative way. Prepare a short description as to why you have selected those, and be ready to present and discuss this assignment during a group work session on the first day of the course.

Mandatory pre-reading material details:

1. Keeling, L.J.; Rushen, J.; Duncan, J.H. Chapter 2: Understanding animal welfare. In *Animal Welfare*, 3rd ed.; Appleby, M.C., Olsson, I.A.S., Galindo, F., Eds.; CABI: Wallingford, U.K., 2018; pp. 16–39.
2. Pelluchon, C. Animal Ethics. In *Encyclopedia of Global Bioethics*; ten Have, H., Ed.; Springer International Publishing: Cham, Switzerland, 2017; pp 1–9 doi.org/10.1007/978-3-319-05544-2_19-1
3. Peterson, H.C. Sustainability: A Wicked problem. In *Sustainable animal agriculture*; Kebreab, E., Ed.; CABI: Wallingford, U.K., 2013; pp. 1–10 doi.10.1079/9781780640426
4. Raworth, K. Chapter 1: Change the goal – from GDP to the Doughnut. In *Doughnut economics seven ways to think like a 21st century economist*; Raworth, K., Praded, J.; Random House: Chelsea Green, USA, 2017, pp. 27–52.
5. UN Sustainable Development Goals. Available online: <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>
6. Weitz, N.; Carlsen, H.; Nilsson, M.; Skåberg, K. Towards systemic and contextual priority setting for implementing the 2030 agenda. *Sust. Sci.* **2018**, *13*, 531–548.

Assignment 2 (A2 *in-course*): Case studies - finding the links between SDGs and AW in specific cases

Specifications, assignment context:

- The students worked in case-groups for two hours on this assignment, and the case authors were available to the students throughout that period as a source of detailed and specialist knowledge about their case.
- Following the group work, there was a one-hour session in which each group prepared a 10-minute presentation of the relationship between AW and SDGs relevant to their case. The presentation included individual personal reflections on the extent to which their original views about this relationship changed compared to their initial selection in the A1 *pre-course*. Each group's presentation was discussed by all participants (up to 10 minutes for each presentation).
- Students received complimentary lectures (45 minutes each, followed by a question/discussion session of 15 minutes) from each case's authors. This presentation occurred after the A2 presentations by the students were completed.
- Lastly, and after students participated in A4 (rating) and A5 (assessment) activities, they received a closing lecture on social responsibility in the food sector (45-minute lecture).

Case/Group 1: Livestock - Improving welfare while reducing ammonia emissions from cattle holdings. Prepared by Prof. Christoph Winckler / BOKU, Austria

Case/Group 2: Working equines - Impact of donkey welfare in the livelihoods of brick-klin migrant workers and their families. Prepared by Kimberly Wells, Representative of The Brooke/International NGO, UK

Case/Group 3: Companion animals - Achieving a sustainable, ethically and responsible supply of companion dogs. Prepared by Prof. Candace Croney / Purdue University, USA

Description (Group work): Finding the links between SDGs and AW in specific cases

- Each person will be assigned to a working group where you as a group will be provided with an specific case study that deals with an animal welfare problematic. You and the peers in your work group are asked to seek agreement on the relationship between animal welfare and SDGs in the case you were given. Decide which SDGs are most important and why? Define, what are the areas of disagreement?
- Give a group presentation (max. 10 minutes) that summarises your discussion about animal welfare and SDG in relation to the case you were assigned.

Description (Guided personal reflexion): Extent to which their thinking about animal welfare in relation to SDGs has changed as the course has progressed

- Each member of the group ought to reflect on the following items and include a small summary in the presentation.
 - Compare the results of this selection based on a specific case with the results of the general selection that you did in Assignment 1
 - How different are the two sets of selected relationships?
 - What are the underlying reasons for the differences?
 - What are your reflections about the differences?
 - Have your ideas about the relationship between animal welfare and SDGs changed since your first selection of important relationships?

Assignment 3 (A3 post-course) Linking your research with SDGs and animal welfare.*Description (Individual work)*

- Your task is to apply what you have learned during the course to your own research, describing the relationship between animal welfare, the core elements of sustainability, the interactions with SDGs and the problem that you are investigating or seeking to solve. The assignment will have two parts:
- First part (End of course work): At the course you will be given time to prepare a three-minute speed-talk presentation about your research project, its contribution to sustainable development and the interactions between AW and SDGs as they relate to your project.
- Second part (Post-course work): Complete the description of your research in relation to AW and SDGs and your reflections on relevant gaps in knowledge as an essay of 1,200 to 2,400 words.