

A PhD course in animal genetics based on the Sustainable Development Goals

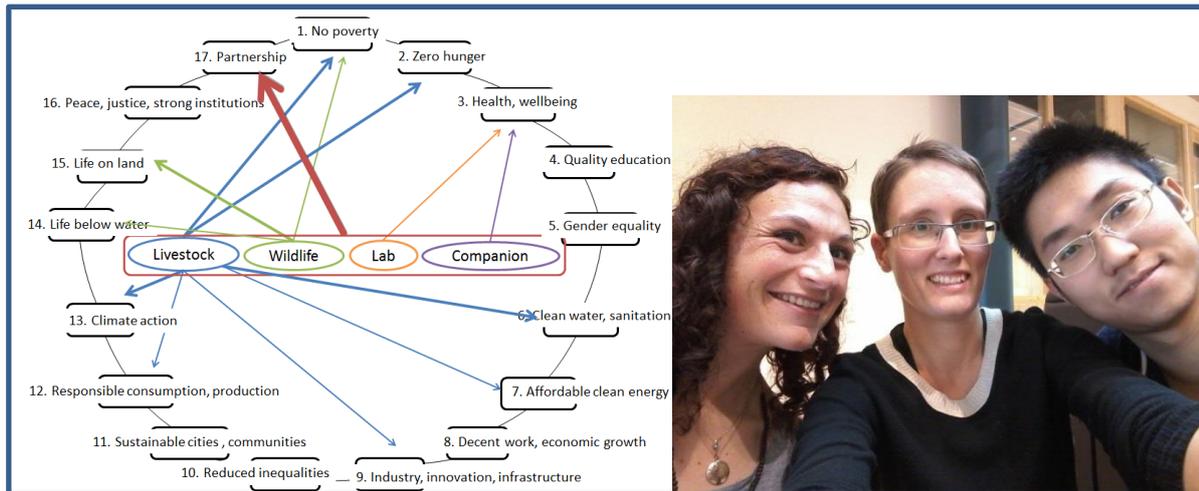
In the European Graduate School in Animal Breeding and Genetics (EGS-ABG) the course "The sustainability concept in animal breeding" was given at the Swedish University of Agricultural Sciences in October 2015. UN's Sustainable Development Goals (SDG) were the base for this PhD course. It started with a broad perspective on sustainable use of animals, and a presentation of the SDG. During the course week the lectures became more specific, dealing with e.g. breeding goals, economic weights and feed efficiency, but the SDG were referred to during the whole course. The last lecture was given by a geneticist from the industry and had the title "What can a breeding company geneticist do for sustainability?"

The sustainability concept in animal breeding, a course for EGS-ABG PhD students, 19-23 Oct 2015

<i>Monday 19 Oct</i>	
Livestock in sustainable agriculture	Ulf Magnusson
Sustainability assessments of agricultural production systems	Elin Rööf
<i>Tuesday 20 Oct</i>	
UN's Sustainable Development Goals (SDG)	Alan Atkisson
Group discussion: How do animals matter for the achievement of SDG?	
Breeding for sustainable use of animals	Lotta Rydhmer
<i>Wednesday 21</i>	
Genetic improvement of feed efficiency for a more sustainable production	Freddy Fikse
Sustainable pelt production with blue fox, a matter of breeding goals	Jussi Peura
Production and consumption of insects	Anna Jansson
Horses on natural pasture – producers of biodiversity and meat	Carl-Gustaf Thulin
<i>Thursday 22 Oct</i>	
Farm visit, Stabby gård – dairy farmers aiming for low climate impact	Elisabeth Gauffin
Domestic animals, antibiotics and resistance	Lotta Berg
Group exercise	
Group 1: Insect breeding for sustainable production of protein	A Jansson, L Rydhmer
Group 2: Horse breeding for sustainable production of biodiversity and meat	CG Thulin, S Eriksson
Group 3: Animal breeding for less use of antibiotics	L Berg, F Fikse
Code EFABAR - a code of good practise for responsible breeding	Anne-Marie Neeteson
<i>Friday 23 Oct</i>	
What can a breeding company geneticist do for sustainability?	Sijne van der Beek
Discussion about course assignment, with v d Beek and Neeteson	L Rydhmer, F Fikse
Summing up and farewell	Lotta Rydhmer

In one exercise the participants discussed in small groups "How do animals matter for the achievement of SDG?" and they summarized their thoughts in short texts. They concluded that many of the goals are related to each other and, although 'animal' is mentioned only once in the 17 SDG, animals have direct or indirect influence on all goals.

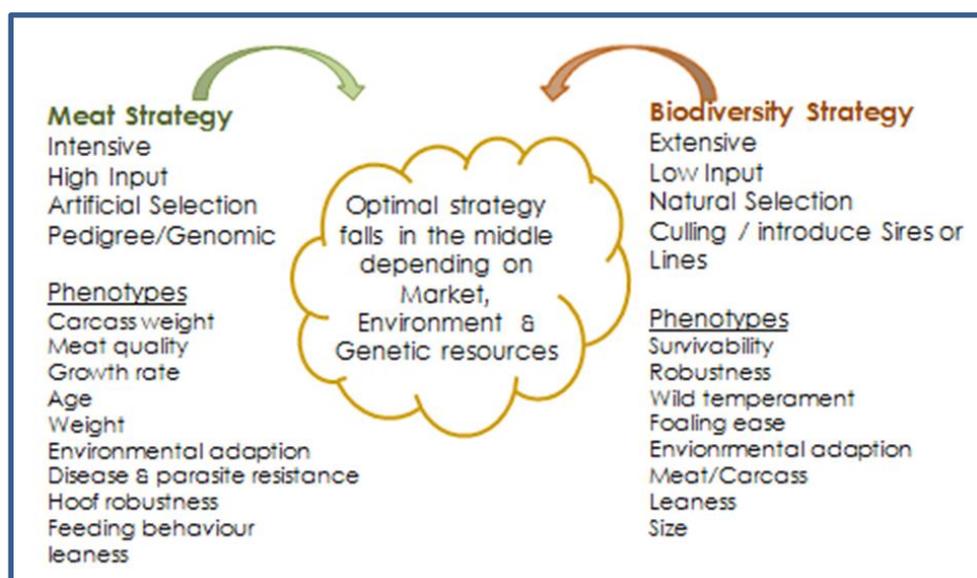
Many landless farmers in low income countries rely on livestock for their livelihood. Several groups mentioned the 'white revolution' in India as an example. Dairy farmers from small and large farms have been involved to improve management systems on the farm and the milk distribution system has also been developed. Animal breeding is an important part of the success. In this example, animals have contributed not only to reduced poverty and hunger but also to increased gender equality.



Sonia Eynard, Shizhi Wang and Johanna Karlsson made a diagram showing how animals are associated with SDG.

Some groups highlighted that companion animals contribute to wellbeing and a healthier life style for their owners. The role of animals as a model in human medicine research was also mentioned. Many wild animal populations are fundamental for various ecosystems. One group mentioned that ecotourism based on wildlife is a way to maintain biodiversity and at the same time giving an income to people in rural areas. Several groups highlighted that animals do not only have positive effects with regard to SDG. Animal production is also associated with land erosion, greenhouse gases, use of antibiotics and nutrient leakage; challenges that some of the participants could work with in the future. More efficient production systems, including more efficient animals, are needed to reduce the negative impact of farm animals. By the way, different meanings of ‘efficiency’ were discussed in one of the lectures.

Another exercise was introduced by three short lectures on insects for food production, horses for meat production and biodiversity, and (mis)use of antibiotics in animal production. The participants discussed problem solving and breeding activities related to these three topics.



Notes taken by Gareth Difford during the discussion “Horse breeding for sustainable production of biodiversity and meat”.

The last part of this course was an individual assignment where the participants wrote a short essay on the subject “How my PhD project relates to SDG”. The idea is that this text can be reused in their theses later on.



Twenty-one smiling PhD students learning about sustainability at SLU.

In the course evaluation one question was: “Our aim was that this course should make a difference in your professional life. Do you think it will make a difference?” It was answered with a “Yes” by 19 of the 21 participants. Common motivations for this yes was that the course had given them a broader perspective and thoughts about their own role, as geneticists, for a more sustainable use of animals.

For more information about the course, please contact the course leader Lotta Rydhmer Lotta.Rydhmer@slu.se.