Proceedings of the Workshop

on Socio-economic and Cultural Values of Farm Animal Breeds

7th – 9th September 2011 in Reykjavik, Iceland

Organised by NORDGEN – THE NORDIC GENETIC RESOURCE CENTER in collaboration with the Agricultural University of Iceland and MTT Agrifood Research Finland
Workshop on Socio-economic and Cultural Values of Farm Animal Breeds
7th – 9th September 2011 in Reykjavik, Iceland

Organised by
NordGen – Nordic Genetic Resource Center
in collaboration with The Agricultural University of Iceland and MTT Agrifood Research Finland

Financed by
GENOMIC-RESOURCES Research Networking Programme of European Science Foundation and NordGen – Nordic Genetic Resource Center

Organizing Committee
Juha Kantanen, Benedicte Lund, Emma Eythorsdottir, Nina Sæther

Scientific Committee
Leo Granberg, Katriina Soini, Emma Eythorsdottir, Juha Kantanen, Nina Sæther

To obtain the Proceedings of the Workshop on Socio-economic and Cultural Values of Farm Animal Breeds published by NordGen please contact the Farm Animal Section of NordGen: farm-animals@nordgen.org

Edited by
Juha Kantanen and Benedicte Lund

Published by
NordGen – Nordic Genetic Resource Center, P.O. Box 115, NO-1431 Aas, Norway
www.nordgen.org

Layout by
Digijiiipee/Juha-Pekka Seppänen
www.digijiiipee.net

Printed by
Painotalo Casper Oy, P.O. Box 30, FI-61301 Kurikka, Finland
www.painotalocasper.fi

Workshop is financed by

The Nordic Genetic Resource Center – NordGen – is a joint Nordic institution, responsible for the conservation and sustainable use of plant, farm animal and forest genetic resources. NordGen is located in Sweden and Norway. The main office and NordGen Plants are in Alnarp, near Malmö, in southern Sweden. NordGen Farm Animals and NordGen Forest are located in Ås, near Oslo, in Norway. NordGen is mainly financed by the Nordic Council of Ministers.

www.nordgen.org

Advances in Farm Animal Genomic Resources (GENOMIC-RESOURCES) is a four-year Research Networking Programme of European Science Foundation. The project will contribute to the education of a new generation of scientists in cutting edge approaches to the characterization, evaluation, management and conservation of Farm Animal Genetic Resources. Eleven participants of the GENOMIC-RESOURCES Programme from ten different countries deliver a structured interdisciplinary research and training programme, covering different branches of genetics and breeding, animal physiology and husbandry, socio-economics and geographic analysis.

The European Science Foundation (ESF) provides a platform for its Member Organisations to advance European research and explore new directions for research at the European level. Established in 1974 as an independent non-governmental organisation, the ESF currently serves 75 Member Organisations across 30 countries.

http://genomic-resources.epfl.ch
http://www.esf.org
Welcome!

It is my great pleasure to welcome you to NordGen’s workshop on Socio-economic and Cultural Values of Farm Animal Breeds. The workshop agenda is diverse and deals with conservation and sustainable use, but also human-animal relationships which is however not an everyday topic for many us.

It is appropriate to discuss socio and cultural values of farm animal breeds in Iceland in September when the preparation of the roundup of the sheep is ongoing in Iceland. “Göngur og réttir“ - Roundup of the sheep – is old Icelandic tradition in sheep husbandry to sort sheep after collection from the grazing areas in late summer and autumn (mid-September). It is not only a gathering place for animals but also for whole communities, a venue for a major social event that combines many aspects of rural living.

NordGen – the Nordic Genetic Resource Center – is a Nordic organization dedicated to the safeguarding and sustainable use of plants, farm animals and forests. The Nordic countries have been co-operating for more than 30 years on conservation of genetic resources. NordGen was established in January 2008 as a result of a merger between the Nordic Gene Bank, the Nordic Gene Bank Farm Animals and the Nordic Council for Forest Reproductive Material.

NordGen’s primary task is to contribute to securing the broad diversity of genetic resources linked to food and agriculture. This is done through conservation and sustainable use, solid documentation and information work and international agreements. The efforts are costly and for this reason the Nordic countries have opted for a joint Nordic solution, although each country also maintains a national program.

Farm animals secure the livelihood of people all around the world, and they have great economic, social and cultural value. They provide food and can convert plant material that is inedible for us humans into protein with a high biological value. Through artificial selection and adaption to a multitude of local environments, the domestic animal species have developed into different breeds with a variety of characteristics. However, this diversity is currently threatened by the extinction of breeds as a result of agro-economic developments as well as very effective breeding techniques.

UN declared a famine in two regions of southern Somalia on July the 20th 2011, owing to the worst drought in the area in decades. This tragedy reminds us strongly that we need to ensure the preservation of genetic diversity and to promote sustainable use of genetic resources to meet the growing need for food and to be better prepared to endure and cope up with climate change.

The Workshop program is implemented in four sessions: 1) Human-animal relationships, historical perspectives, 2) Conservation of endangered farm animal breeds in the frame of sustainable development, 3) Methodological approaches to value farm animals and local breeds, and 4) Conservation policies and practices.

The aim of the Workshop is to inform about and to update the current state-of-the-art on the research fields, to help to find the tools to incorporate the scientific results in socio-economic and political processes, identify gaps in the scientific knowledge, to promote new scientific proposals and hopefully improve networking among us.

Árni Bragason, Director, NordGen.
Distinctive values of farm animal breeds

Domestic animals have been our partners for more than 10,000 years. During the domestication process, we have selected and bred animals according to different goals. Within each domesticated species, we have developed distinct breeds in different geographic regions and for different economic and socio-cultural purposes.

The genetic diversity within and between breeds and species forms the basis of our current animal genetic resources for food production and other purposes. Domestic animal breeds are an important resource for economic development. The historical global increase in food production was based on the genetic improvement of domesticated animals (as well as plants), greater farming inputs and the cultivation of more land. In addition to their economic value, domestic animals, especially locally developed native breeds, are part of cultural heritage. To estimate the socio-economic and cultural values of a farm animal breed, several aspects need to be considered. These factors include the agricultural production systems linked to the breed, the period when the breed has been raised in the traditional farming area, its historical role, its value for the maintenance of local traditions, the breed’s role in the formation of the landscape, and its place in folklore.

The genetic and cultural diversity of farm animal species is currently under threat. The continuing loss of breeds, particularly those of locally kept native but less productive breeds, will lead to a situation where only a few highly productive internationalized farm animal breeds remain within the species. To identify genetic, economic, social and cultural conservation values of breeds and promote and use of these distinct values through sustainable utilization of the breeds are basic measures to prevent genetic and cultural erosion of domestic animal diversity.

All these themes are discussed at our Workshop on Socio-economic and Cultural Values of Farm Animal Breeds. The Workshop is organised by NordGen – Nordic Genetic Resource Center in collaboration with the Agricultural University of Iceland and MTT Agrifood Research Finland. I thank our collaborators for all the help and arrangements. The workshop is funded by the Research Networking Programme Advances in Farm Animal Genomic Resources of European Science Foundation (ESF-GENOMIC-RESOURCES). I thank the Steering Committee of GENOMIC-RESOURCES –Networking Programme for the financial support.

Welcome to Iceland and to the NordGen-Workshop!

On the behalf of the organizing committee,

Juha Kantanen
The workshop program is implemented in four sessions: 1) Human-animal relationships, historical perspectives, 2) Conservation of endangered farm animal breeds in the frame of sustainable development, 3) Methodological approaches to value farm animals and local breeds, and 4) Conservation policies and practices.

Program

Tuesday, 6 September

Arrival of participants

Wednesday, 7 September

Session I: Human-animal relationships
Chairman: Emma Eythorsdottir

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:00-09:20</td>
<td>Opening (Director of NordGen Árni Bragason)</td>
</tr>
<tr>
<td>09:20-10:40</td>
<td>Introduction to the Workshop themes (Katriina Soini)</td>
</tr>
<tr>
<td>10:40-10:10</td>
<td>Ten thousand years of coevolution (Juha Kantanen)</td>
</tr>
<tr>
<td>10:10-10:30</td>
<td>Coffee break</td>
</tr>
<tr>
<td>10:30-11:00</td>
<td>Thousand years of domestic animal history in Iceland (Árni Daniel Júliusson)</td>
</tr>
<tr>
<td>11:00-11:45</td>
<td>The ambiguous boundaries between the wild and the domestic (Karl Benediktsson)</td>
</tr>
<tr>
<td>11:45-12:45</td>
<td>Presentations by Workshop participants</td>
</tr>
<tr>
<td>12:45-13:15</td>
<td>Lunch break</td>
</tr>
<tr>
<td>13:15-13:45</td>
<td>Cattle, reindeer and horse: the wild and domestic in Northern Siberia (Sakha Republic – Yakutia)</td>
</tr>
<tr>
<td>13:45-14:15</td>
<td>Animals in the changing society – domestic animals in Finland from Bronze Age onwards (Auli Tourunen)</td>
</tr>
<tr>
<td>14:15-14:30</td>
<td>Compassion in livestock keeping (Hilde Buer)</td>
</tr>
<tr>
<td>14:30-15:15</td>
<td>Coffee break</td>
</tr>
</tbody>
</table>

Session II: Conservation of endangered farm animal breeds in the frame of sustainable development
Chairman: Eva-Marie Stålhammar

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>14:30-15:15</td>
<td>Ecosocial approach: systems and diversity in society and ecology (Leo Granberg)</td>
</tr>
<tr>
<td>15:15-15:45</td>
<td>Genetic resources and the values of national conservation (Sakari Tamminen)</td>
</tr>
<tr>
<td>15:45-16:15</td>
<td>Dairy production or suckler cow production – what is the most future oriented production system for traditional dairy breeds? (Nina Sæther)</td>
</tr>
<tr>
<td>16:15-16:45</td>
<td>Supporting local breed conservation through the linkage with traditional products (Valerio Bondesan)</td>
</tr>
</tbody>
</table>

Closing Day 1
Thursday, 8 September

Session III: Methodological approaches to value farm animals and local breeds
Chairman: Juha Kantanen

Key note III
09:00-09:45 Socio-cultural approach: A typology on farmers raising local breeds (Katriina Soini)

Key note IV
09:45-10:30 Socio-economic approaches in the conservation of farm animal genetic resources (Eija Pouta)

10:30-10:45 Coffee break
Presentations by Workshop participants

10:45-11:20 Exploring SWOT analysis to identify strategies for conservation and development of local cattle breeds (Daniel Martin-Collado)

11:20-12:00 A case study: The Icelandic Cattle (Dadi Mar Kristofersson and Emma Eythorsdottir)

12:00-13:30 Lunch break

Session IV: Conservation policies and practices
Chairman: Leo Granberg

Key note V
13:30-14:15 Story-telling on Farmer’s Markets: How consumer alliances and direct sales can strengthen local breeds (Aina Bartman)
Presentations by Workshop participants

14:15-14:45 How research can enhance the utilization of local farm animal breeds in food markets? A case study of native cattle breeds in Finland (Tuomo Tupasela)

14:45-15:00 Coffee break

15:00-15:30 Importance of Zackel sheep breeds in development of Pirot and Chiprovtsi Kilim brand in the Stara Planina region (Sergej Ivanov)

15:30-16:00 Possible use of existing programs for stimulating business development within the agricultural sector to promote utilization of local and indigenous breeds in the south-eastern region of Norway (Benedicte Lund)

16:00-17:00 Final discussion and conclusions (Leo Granberg)

19:00 Dinner

Friday, 9 September

09:00 Excursion (Emma Eythorsdottir)

Saturday, 10 September

Departure
Keynote speakers and their topics:

**Aina Bartman**, Manager, The Farmer’s Market, Norway,
aina@bondensmarked.no, http://www.bondensmarked.no

*Story-telling on Farmer’s Markets: How consumer alliances and direct sales can strengthen local breeds*

**Karl Benediktsson**, Professor of Human Geography, University of Iceland, Iceland
kben@hi.is, http://www.hi.is/en/introduction

*The ambiguous boundaries between the wild and the domestic*

**Leo Granberg**, Professor of Rural Studies, Ruralia Institute Mikkeli, University of Helsinki, Finland
leo.granberg@helsinki.fi, http://www.helsinki.fi/ruralia/index_eng.htm

*Ecosocial approach: systems and diversity in society and ecology*

**Eija Pouta**, Professor of Environmental Economics, MTT Agrifood Research Finland, Finland
eija.pouta@mtt.fi, www.mtt.fi/english

*Socio-economic approaches in the conservation of farm animal genetic resources*

**Katriina Soini**, PhD, Principal Research Scientist in Cultural Geography, MTT Agrifood Research Finland, Finland
katriina.soini@mtt.fi, www.mtt.fi/english

*Socio-cultural approach: A typology on farmers raising local breeds*
Abstracts

Jon Eiriksson
Introduction to the Workshop themes

Katriina Soini

Economic Research, MTT Agrifood Research Finland, Latokartanonkaari 9, FI-00790 Helsinki, Finland
katriina.soini@mtt.fi

Conservation of genetic resources of farm animals has become an important topic especially in agricultural and environmental policy. However, it is increasingly understood that it is not only question of animals, but also that of people, who raise and live with the animals, who consume or who work with them one way or another. Here we face the question concerning the meanings these people and the society at large give to those farm animals, which are currently endangered (that is, rare farm animal breeds).

The values should be understood within a wider frame of human-animal relationship, which has had various forms since the domestication of animals: from production animals to companion, symbolic and ritual animals. The relationship between farm animals and human includes many tensions between wild and domestic, nature and culture, production and consumption. These tensions rise up ethical and moral concerns that affect the production, consumption and conservation practices of the endangered breeds.

Convention of Biodiversity and other international and national conventions give the general guidelines for the conservation. However, in order to be successful in the long term, the conservation policies and measures should not only focus on animals, or human-animal relationship, but the wider societal, cultural and political context, where the farm animals exist. It is the rural livelihood system, or food-chain, or the everyday life of consumers. Many studies suggest that conservation of farm animals provide options to promote locally sustainable development, but which are the theoretical arguments that make the local breeds more sustainable? What are the bottlenecks and limits of sustainable conservation and use of farm animal breeds?

It is a task of the scientific research to reveal the various values and meanings of endangered farm animal breeds. Each method and approach has its strengths and weaknesses, but together they depict different value dimensions and assist policy planning and marketing strategies of
local farm animal breeds.

To conclude, understanding the social and cultural values of rare farm animal breeds is a multidisciplinary research task, which is taking its very first steps internationally. There is already a lot of knowledge available. It is the aim of this workshop to bring this knowledge together, to discuss it within a wider spatial and temporal context through case studies from all over the world and share theoretical, methodological and practical experiences.
Ten thousand years of coevolution

Juha Kantanen

NordGen – Nordic Genetic Resource Center, NO-1431 Aas, Norway
juha.kantanen@nordgen.org
and Biotechnology and Food Research, MTT Agrifood Research Finland, FI-31600 Jokioinen, Finland
juha.kantanen@mtt.fi

The domestication of wild animal species led to many biological, social, cultural and economic implications. It had remarkable effects on human lifestyle. Domesticated animals and food production based on them have shaped Earth’s biodiversity and environmental circumstances. As a result of domestication and artificial selection done by human beings, genetic and phenotypic make-up of domestic animals differ from those of their wild ancestral species.

The first domestic animal was dog which has been man’s partner approximately for 14 000 years. The ancestral species of dog is wolf. After dog, the earlier domestic animal species were goat (the ancestral species Bezoar goat), sheep (Asiatic Mouflon), pig (Wild Boar) and cattle (Aurochs or Wild Ox). These animals were domesticated 8 000 – 11 000 years ago. The wild ancestral species of domestic animals had characters which are considered to be prerequisites for a successful domestication process: ability to live and breed in captivity, to live in groups of animals with a social hierarchy and to have a diet based on sources (e.g. grass and forage) which were not used by humans. The geographic region in Middle Asia and Near East (so called Fertile Crescent region) and in Anatolia, Eastern Turkey formed an important domestication centre for many farm animal species. From there, the animals spread along with human movements. In Europe, the main routes spanned from the Balkans along the Mediterranean coast to the west and along the riverbeds of Danube to central Europe. Animals arrived from their original domestication centre to other parts of Europe also through the Caucasus to north and along the north coast of the Black Sea to the west.

The domestication and dispersal of animals had a great impact on human societies all over the World. The hunter-gatherer lifestyle, where a migration to follow seasonal shifts was essential for food supply, was revolutionized to permanent living next to fields and grazing areas. This led to a more efficient food production and the expansion of human population. In addition, the
domesticated animals have had considerable socio-cultural, bio-cultural and socio-economic impacts. The domestication even influenced on genetic evolution of humans. For example, the dairying culture may have promoted the evolution of adult-persistent lactase in milk-consuming human populations. Moreover, human populations exposed to effects of epidemic human diseases originating from the domesticated animals which may have also influenced on human evolution.

Domestication and artificial selection have resulted in modifications of many morphological, physiological, behavioural, and reproduction characteristics of animals. The number and sex ratio of animals taking part in reproduction as well as their kinships have been controlled by man. The domestication has meant a relaxed natural selection in traits, which are important in nature, such as food finding, seasonal reproduction and predator avoidance. As a result, animals have adapted to man and the environment provided by man. The domestication process is still occurring and the genetic and phenotypic make-up of animals is changing.
The basis of human-domestic animal interaction in Iceland can be analyzed from the point of view of two main systems. Before 1800 the Christian worldview was all pervading, perhaps too seldom recognized in the study of Icelandic agriculture, and there is certainly lack of research into the consequences of this for the human-animal interaction. After 1800 the Christian worldview slowly broke down under the influence of enlightenment philosophy, with enormous implications for the human-animal interaction.

Further, there is the interesting source material from the 13th-14th centuries, the Sagas, which give some very unusual insights into how high medieval Europeans (or at least educated Icelanders familiar with a proto-European cultural package) imagined the interaction between domesticated animals and humans in Iceland some hundreds of years before, exactly at the junction between heathendom and Christianity, when Scandinavians had met Christianity and were absorbing it into their culture. Even here, there is lack of research, but the material is there and the present author has been doing research on the Sagas from the point of view of environmental and agricultural history.

Histories and anecdotes on the various kinds of animals abound in the Sagas, with horses getting special attention, but also cattle, sheep and even pigs. A second source of medieval material on domestic animals is charter material from the Catholic Church, giving details of husbandry on each farm with a parish church. This material shows the development of husbandry on farms with parish churches from the 12th to the 18th century, when the state started registering ownership of husbandry. An interesting cultural difference showing in the original state register of farms from the beginning of the 18th century is the difference between manorial demesnes and tenant farms on the manors.

This difference is given meaning by documents showing conflict between landowners and tenants because of rented animal husbandry, with examples of conflict of this kind from the 12th to the 19th centuries.
The ambiguous boundaries between the wild and the domestic

Karl Benediktsson

Department of Life and Environmental Sciences, University of Iceland, Sturlugata 7, IS-101 Reykjavik, Iceland
kben@hi.is

The conventional dualist conception of culture versus nature has been thoroughly critiqued – and discredited – in recent social sciences, together with a host of related dualisms. Once seen as ontologically separate realms, culture and nature are now more commonly understood as relational and inevitably hybrid constructions. A parallel development, starting in the 1990s, has been the so-called ‘animal turn’, involving greatly increased attention paid by social scientists to the often problematic relations between humans and non-human animals. The asymmetrical power relations and boundary work evident in human discourses of nature, humans and animals has been exposed and analysed thoroughly.

The farm animal is a particularly interesting subject for such an analysis. Located by its very definition in the sphere of the (agri)cultural and domestic, it nevertheless retains certain closeness to ‘wild’ nature – sometimes more closeness than humans would like. On closer inspection, the boundaries that separate the wild from the domestic are highly ambiguous. Recognition of this inescapable ambiguity, I contend, has profound ethical implications that need to be taken seriously in future development of farming.

Arguably, extensive sheep farming in Iceland is a particularly good case in point. Sheep were central to the traditional Icelandic farming economy, and in many ways still are, but their ubiquitous presence has invoked heated debates about fundamental values – concerning nature, culture, domesticity and wildness. Are Icelandic sheep indeed more ‘domestic’ than ‘wild’ animals? What, for instance, is one to make of those sheep that ‘opt out’ of the pastoral economy altogether and go feral? What do the responses of (human) Icelanders to such transgressions tell us about their own relations with the nature of which they are a part?

In October 2009, a small flock of feral sheep that had persisted for a number of years in an inaccessible part of the Westfjords of Iceland was rounded up by a team of men from the neighbouring communities. Some nineteen sheep were caught, but five more perished as they
ran off steep cliffs attempting to evade their captors. Those caught were sent to the abattoir the following day. A storm of controversy ensued in the Icelandic media, with competing visions of humanity, animality and ethics at stake. This example will be used in the talk for probing some issues that are important for all those concerned with human-animal relationships. Significantly, the tenacious dualism of science itself must be transcended: natural and social scientists need to join forces in order to work towards a progressive future for farming and for human-animal relationships in general.
Cattle, Reindeer and Horse: the Wild and the Domestic in Northern Siberia (Sakha Republic - Yakutia)

Emilie Maj

Centre for Landscape and Culture, Tallinn University, Narva mnt. 25, EE-10120 Tallinn, Estonia emiliemaj@hotmail.com

In the Sakha Republic situated in Russian Far East, Siberian people breed horses, cattle and reindeer in a large landscape made of deep forest, mountain and tundra. These animals, called “domestic” in opposition with animals from the forest or from the tundra, live in nature in a state very similar to that of wild animals. The contribution studies the original place of these three animals in the domesticating system of pastoral and hunting societies in Northern Siberian landscape. It takes into account the biological characteristics of the animals, the cultural constructions related with them and the interactions into the human-animals relationship.

Cattle, reindeer and horse have different biological characteristics. The first one, in the Yakut context, is the tolerance to the cold. Indeed if reindeer even dies from diseases if the temperature is too hot and it prefer the cold, the horse can support all the temperatures with the human support. In opposition, the cattle bred in Yakutia needs to be kept in houses to survive in winter.

Different peoples breed these three species. This implicates different geographic area. Indeed Even, Evenk, Chuchi, Dolgan, Yukagir peoples living in taiga or tundra (in mountainous space or not) are generally engaged in reindeer herding when Yakuts, installed in taiga and valleys usually breed horse and cattle. This localization is related with the biological needs of the animals: reindeer eat moth and lichen growing in taiga and tundra, when horse and cattle prefer grass growing mainly in valleys. People use the characteristics of the animals to use them. In the domesticating system of Siberian peoples, the three animals complement each other: for example, in Eveno-bytantaj region the reindeer is actually ridden during the winter period (from November to May) and is replaced by the horse during the rest of the year.

Another very important characteristic of these animals are their degree of domestication. The reindeer exist in wild state (or wild species) and domestic state (or domestic species) but this animal can always return to the savage. In parallel, Yakut horse breeders keep the wild character of horse to breed them in large space where grass and hey are not abundant. As a result, according to Yakut breeding technics, the horse is considered to be close to the reindeer because they live in “nature” and they contrast with the cattle, which remain in the village under the daily care of sedentary people.

Nobody can really tell what, between the biological constraint and the cultural construction, comes first and influences the second one. In Yakut Native oral traditions, the horse is seen like the reindeer as a wild
species, which gave up the liberty to receive the human help for driving the reindeer from the meadow out. Breeders of reindeer and horse are attached to the wildness of their animals and they criticize the maintenance of cattle by the villagers, a domestic animal for settlers. The way of behaving with the three animals is different, not only because of biological characteristics of those but also according to the symbolic significance attributed to them. For example, the fact that the different coats are less numerous for the reindeer than for the horse, seems to be related to the semi-domesticity of reindeer. Indeed, in many cultures the domesticated animal (or plant) are used by human beings, which diversifies their varieties. In addition, vocal commands, sometimes equated to a “dialogue with the animal”, are generally more numerous for the animals that have attained an important degree of familiarization.

The horse can be said to exist at the border between the wild and domestic spheres, between the wild reindeer and the domestic cattle. This is the result of a cultural construction of the figure of horse, which is used by human but is able to live in forest without human help. In this wild area of Siberia, the animal has an action of human: the reindeer is a migratory animal and for feeding large herds, the human has to change the place often, to preserve the hearth and vegetation. The species is migratory and the human is nomadic. Also, horse and cattle breeding are more productive than reindeer breeding because of the greater degree of domestication, which allows for more intensive methods of breeding. If the Yakuts quickly became more numerous than the Evens, this is probably because of their semi-sedentary lifestyle, which allowed them to survive without having to slaughter large numbers of their animals. At the same time, the human can have an impact on animals. In Eveno-Bytantaj region (Northern Yakutia), the horses that are already accustomed to nomadisation start it by themselves. People only push young horses, which have not yet learned. In conclusion, obviously the frontier between wild and domestic is very thin and depend together of the biology of animal and of the cultural representation of it by human.
Animals in the changing society – domestic animals in Finland from Bronze Age onwards

Auli Tourunen

Biotechnology and Food Research, MTT Agrifood Research Finland, FI-31600 Jokioinen, Finland and Department of Archaeology, University of Turku, FI-20014 Turku, Finland auli.tourunen@mtt.fi

The importance of different animals in human societies has varied through the history due to the changes in subsistence patterns, religious beliefs and social values. These changes can be explored through different sources, like historical documents and archaeological animal bone assemblages available in Finland. Adopting animal husbandry changed the relationship society had with animals and nature. This process did not only change the subsistence system but also the way societies saw themselves and the environment. This change was gradual and remnants of the old hunting-gathering mythology lived in Finland long to the Post-Medieval period.

During Bronze and Iron Age bones of domestic animals are dominating the animal bones find in burials, even if wild animals were still an important part of subsistence system. Thus, domestic animals had ritual significance beyond their economic importance. Increasing dependence on the field cultivation and, therefore, cattle manure, changed the role of cattle in the society in the Western Finnish field cultivation zone during the Medieval period. Now the very existence of the people was depending on the ability of the cattle to survive with minimum of winter feeding. During this period we have the first written documents describing the value of different types of animals and different types of cattle. The detailed division of cattle into different age and sex categories implies their importance in the economy.

The role of horse has been affected by different religious believes and attitudes in the course of history. During the Iron Age horse meat was regularly eaten and its bones are often found among settlement sites food refuse. After adopting Christianity horse meat was no longer considered edible and during the Post-Medieval period dead horse was considered impure, contaminating people and food coming in contact with it. However, the monetary value of horse was even greater than that of cattle’s. Animals were part of a complex network of practical solutions and ritual believes, society-based rules and personal opinions.
Sheep and man have at least 11,000 years of close common history. Herders have forever communicated with their livestock, studied their behavior and thereby understood their needs. Agricultural societies have throughout their history used livestock for a wide range of purposes and have valued them for wide variety of reasons. Mutual dependency and consequently respect are expressed by Roman writers, like for example: Giraldus Cambrensis who advised ox-drivers to drive their animals gently ”so as not to break their hearts” . Seebom reminds us that the man, who discovered that a fierce bull could be converted by emasculation into the patient and tractable ox, was the bringer of a great gift to mankind.

Thousands of years of common history was broken by the introduction of technology and the industrialization of farming. The contact between herder and farm-animals are vanishing as industrial ways of farming expands. The valuable dialog between the stockman and his livestock is about to be extinct. It is crucial in ethical livestock management, that this dialog is accepted as essential. In small-scale farming, often with indigenous animal breeds, we still keep this dialog alive and developing. Concerning dogs and horses, new thoughts about close communication is highly relevant and is today the main tools in training pets.

Intensive systems cannot always be equated with cruelty and extensive practices do not guarantee high ethical standards. Stockmanship is the key factor; only competent diligent stockman ship can secure ethical good standards. A good herder must be enabled to give necessary attention to all his animals, which means that there should be a limit in the number of animals per herder. Most farmers have inherited wisdom to communicate with their herd, these skills must be preserved. These traditions and skills give both stockmen and animals a better and more joyful life.
Eco-social approach: systems and diversity in society and ecology

Leo Granberg

*Ruralia Institute Mikkeli, University of Helsinki, FI-50100 Mikkeli, Finland
leogranberg@helsinki.fi*

This presentation is speaking for diversity – diversity in ecology, in society and in the relationship between humans and animals. Human – animal -relationship has since pre-historical times facilitated adaptation of human cultures to new circumstances, during human’s migration on the globe. The relationship has also caused the emergence of new animal breeds as an outcome of domestication processes, to the degree that most domesticated animals have lost their ability to return to any natural environment without human assistance.

Modern society with its methods of industrial farming brought an interruption to this relation, breaking the close dependence between humans and domestic animals. In industrial society human – animal -relationship was displaced with human – machine – animal -relationship. The objective of keeping domestic animals became understood as a one-sided ‘production-to-market’ -logic, animals being dependent on humans and, as it seemed to be, no more the other way round.

The presentation argues that such phenomena as global food shortage and climate change will remind us humans of the need of biodiversity, as also of the reappeared interdependence between humans and animals on global scale. The presentation discusses the concept of social system in sociological tradition, in order to suggest a possibility to reconnect society into the debate on biodiversity.

Social system is seen as analogical concept to ecosystem, and accordingly, socio-diversity is suggested to be the precondition for conserving bio-diversity in ecosystem, including animal breeds, which exist in the mediating zone between society and ecology.
Genetic resources and the values of ex situ conservation

Sakari Tamminen

Faculty of Social Sciences, P.O. Box 54, University of Helsinki, FI-00014 Helsinki
sakari.tamminen@helsinki.fi

This presentation takes a critical and empirically informed look at different values in play in national ex situ genetic conservation efforts.

The “critical” aspect here should be understood as an analytical take to the values behind biodiversity conservation efforts. These values (or actually value types) motivating the action come in two flavours. The first type stresses the intrinsic values of all nature’s variations of life. Diversity is valuable in itself even if it has no use for humans. In practice, when intrinsic values of biodiversity are defended the focus is on particular living entities (bio-objects) as fleshy embodiments of genetic resources – the corporeal variations of life forms that should be protected or conserved for the sake of being (alive). The second argumentative strand dealing with the value of genetic resources is based on an instrumental – economic – stance. The value theory behind this sees genetic resources as something that is needed to conserve in order to protect something else: the variations of (human) forms of life (tradition, culture, aesthetics, and economy).

The “empirically” observed part refers to section of the presentation where I take a detailed ethnographic look to practices of ex situ genetic conservation: How does cryopreservation happen when banking Finnsheep genes and how are values embedded in practical action? Ex situ banking by cryopreservation marks a total change in the object of knowledge in biodiversity politics and its material interest – it is founded in the move from the animal to its reproductive material. An ontological shift of the animal breed happens as it goes from ‘in situ’ to ‘ex situ’. This shift problematises the concept of the ‘animal’, or rather the ontological status of ‘animal life’, and the aims of nonhuman biopolitics understood as genetic conservation (as part of biodiversity politics propelled by the two underlying value theories).

Regarding the values of conservation, then, the question is not so much about particular value of living entities or bio-objects (animals) nor about the ecological or economic risk (evaluation of their worth for either ecology or economy) related to their extinction. Instead, the value
question(s) of ex situ banks is, and should be, articulated as a series of questions about the processes of genetic conservation at large and what these processes do to gene banked animal material (what it allows us to do with this material).

What I claim in this presentation is that while “intrinsic” (ecological) and “instrumental” (economic) might be opposed to each other in their theoretical sense, in conservation practice these two value types intersect and are subsumed to each other at multiple levels of the process. What is at question here are the values embedded into the processes of biodiversity politics, the values materialised in the historical trajectory of cryoconservation technologies and the local processes of gene banking of the vital materials of endangered nonhumanity, animals and their corporeality.
Dairy production or suckler cow production – what is the most future oriented production system for traditional dairy breeds?

Nina Sæther & Anna Rehnberg

Norwegian Genetic Resources Centre, PO box 115, N-1431 Ås, Norway
nhs@skogoglandskap.no

The total cow population in Norway in 2009 was 306 016, with 233 000 cows under a milk recording scheme. During the last ten years the total number of cattle in Norway has been reduced with 10 % whereas the number of suckler cows has increased with 152 %. As no beef cattle breeds are native to Norway, most of the suckler cows are of imported breeds. However, as many as 51 % of the cows from the native and endangered cattle breeds are today being kept as suckler cows, thus the breeds are traditionally dairy breeds, see Table 1.

Table 1. Utilisation of endangered dairy breeds native to Norway 2010 (Norwegian Genetic Resources Centre, 2011)

<table>
<thead>
<tr>
<th>Endangered dairy breed native to Norway</th>
<th>No of cows in herdbooks</th>
<th>No of cows under the suckling system</th>
<th>% of cows under the suckling system</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sided Trønder and Nordland (STN)</td>
<td>1096</td>
<td>326</td>
<td>30 %</td>
</tr>
<tr>
<td>Telemark</td>
<td>657</td>
<td>330</td>
<td>50 %</td>
</tr>
<tr>
<td>Western Red Polled</td>
<td>211</td>
<td>117</td>
<td>55 %</td>
</tr>
<tr>
<td>Western Fjord</td>
<td>848</td>
<td>565</td>
<td>67 %</td>
</tr>
<tr>
<td>Døla</td>
<td>211</td>
<td>153</td>
<td>73 %</td>
</tr>
<tr>
<td>Eastern Red Polled</td>
<td>174</td>
<td>138</td>
<td>79 %</td>
</tr>
<tr>
<td>Total</td>
<td>3197</td>
<td>1629</td>
<td>51 %</td>
</tr>
</tbody>
</table>

Some farmers dislike this development as they fear that using endangered and traditional dairy breeds as suckler cows will destroy the milk and udder traits, and that the traditional knowledge on dairy production based on these breeds will vanish. The farmers with suckler cows correspond to this concern that breeding work and utilisation of farm animals always have been a dynamic process and without finding new market for the endangered breeds they are much more threatened by extinction.
Nevertheless, as shown in Table 1, the share of suckler cows of the breed populations varies from 73 % (Døla) to 30 % (STN). The STN breeding association has during the last decade suggested several initiatives to prevent the breed from becoming a suckler breed, where as most of the other breeding associations or societies for these endangered breeds have had a more pragmatic attitude to the situation. The last attempt to secure the traditional dairy traits within the STN breed was in August 2010 when the breeding association of the Norwegian STN breed decided not to register in herd books breeding bulls that are sons of cows that are not a member of the milk recording system (www.STN-avl.no). The association finds it more important to keep the breed as a pure dairy breed than ensuring pedigree recordings for all animals of this endangered breed. The result might be that the original STN breed is split into two sub populations, which might be a severe threat to this already endangered breed.

According to the Convention on Biological Diversity (CBD) in situ conservation is the fundamental requirement for the conservation of biological diversity. Furthermore The Global Plan of Action for Animal Genetic Resources (FAO 2007) states that the cultural importance of animals is a key factor in in situ conservation. Both these documents stress the importance of in situ conservation, but there is no guidance on how to handle changes in markets and thereby utilisation of breeds. The study will discuss further threats and opportunities for breeds in a changing world.
Supporting local breed conservation through the linkage with traditional products

Valerio Bondesan

Veneto Agricoltura, Agripolis, Viale dell’Università, 14 – 35020 Legnaro, Padova, Italy
valerio.bondesan@venetoagricoltura.org

During the last four decades several animal breeds that have been used for centuries in the Veneto Region (northeast of Italy) have been abandoned due to the rapid change to intensive production systems. Unselected local breeds, normally less productive than cosmopolitan ones and synthetic hybrids, became very marginal, and only few of them could survive. Currently many such breeds are at a high risk of extinction because of small population. Regional subsides for biodiversity conservation (introduced by the CAP_EU Rural Developing Programme in the last ten years) have had an insufficient impact on stimulating farmers to breed these animals and, in many cases, endangered breeds could not stop the decrement of their population. As the public subsidies for biodiversity conservation will be reduced soon (CAP forecast for 2013-20) different strategies are needed to increase farmer income from local and less productive animals in order to prevent further reduction in population.

Several experiences which have been developed in Italy during the last twenty years demonstrate that a strong linkage between the endangered breeds and their traditional products (cheese, meat, eggs, etc.) represent a good strategy to increase the profit from the breeding of less productive animals since those products could be sold in a niche market at an higher price compared to the “not traditional” ones. Moreover, this approach is not easily implemented in every production realities; experience demonstrates that successful actions depend on many aspects such as the historical presence of the typical product, local farms structure, processing facility within the production area, local market, consumer knowledge about the product as well as cultural and economic conditions. Each single aspect could be very important and may play a relevant role on influencing the conservation action and its effects could not be defined “a priori”. Recently several actions focused on the linkage between breed and its traditional products, have been carried out in the Veneto area to support farmers on keeping local breeds, achieving different results.

Alpagota is one of four endangered sheep breeds that still survive from a dozen existing fifty years ago in the Veneto area; the increase of its population during the last five years (from about 1600 to just over 2400 animals) could be justified by the success of its traditional product “Agnello dell’Alpago” Alpago lamb. Overall, three main aspects explain the positive result obtained from this experience: the presence of motivated group of farmers; the definition of a quality standard and labelling of the product, and the development of promotion-marketing actions. The first factor is very important and suggests the added value of bottom-up actions when promoted and supported directly by the farmers, especially when they
understand the importance of biodiversity as part of a common cultural heritage of the local community. Choosing the right instruments for distinguishing, labelling and promoting the traditional product on local and regional market is essential. In this regard, an important support was obtained from Slow Food (a NGO for traditional food and biodiversity conservation) in order to define a quality standard in production and processing as well as to promote and inform consumers about it. In this case it is relevant to point out the joint marketing activities between farmers and high-quality local restaurants in the surrounding famous tourist Alpine area, in order to develop a niche market with profitable price.

The Padovana hen is one of most famous and characteristic poultry breed present in the Venetian area since the 15th century. Largely used in the past to provide good meat and eggs, recently this slow growing hen has been almost completely abandoned as many others breeds because of the development of the intensive poultry production systems. In the last ten years Padovana hen breed has survived with about few hundreds animals thanks to the precious work of few farmers and two public institutions who run a conservation programme which is granted by local regional government. Similarly to the above mentioned experience, motivated farmers have tried to increase their income from Padovana hen stockholding by linking that breed to a specific carcass and meat quality traits. Also in this case Slow Food support was easily obtained and the traditional product was included in the list of “Presidio” for animal biodiversity conservation with the consequent local marketing actions towards restaurants, butchery shops, etc.

Nevertheless, a few years from the start of the programme, the linkage between breed and its traditional product does not seem to have achieved the expected result. Probably some critical aspects were undervalued; for instance, the presence in the same area of a similar “competitor” breed well supported from other farmers, the high cost of carcass compared to the poor meat yield and the limited interest of local restaurants on promoting traditional dishes based on it. In addition, a common problem in very small breed populations is the limited amount of available traditional product also for a local niche market. The above mentioned experiences confirm the interesting potentiality of relation between endangered local breed and its traditional product in terms of improving the farmers’ income to keep local breed; however, the great variability of production and cultural situations may suggest that any action have to be carefully planned and all stakeholders, actively involved.
Socio-cultural approach: A typology on farmers raising local breeds

Katriina Soini

Economic Research, MTT Agrifood Research Finland, Latokartanonkaari 9, FI-00790 Helsinki, Finland
katriina.soini@mtt.fi

In situ on farm conservation has been considered as the most favourable way of preservation of genetic material. Therefore farmers that raise local breeds on their farms can be considered as key stakeholders in the in situ conservation. On the other hand, it implies special challenges for policies as the success of the conservation depends on individual farm and the farmers, who are basically to choose the breed they want to raise. Therefore, importance of intimate understanding of the farmers’ perceptions of the local breeds and breeding is crucial for in situ conservation policies.

The paper introduces a typology and profiles of local cattle breed farmers. The typology is designed based on the data collected within EURECA–project where we worked on a total of fifteen breeds from one to three breed cases from each countries distributed in eight countries. As a method we utilised qualitative content analysis, which has been characterized as a research method for the subjective interpretation of the content of textual data through the systematic classification process of coding and identifying themes.

From the data we defined three main types of farmers: production oriented, product and service oriented and hobby oriented farmers, which differed each other in particular by their economic orientation towards breeds and their raising. These main types were further divided into seven subtypes, based on the other attributes characterising the farmers. The subtypes were named as sustainable farmers, opportunists, multiusers, brand-makers, traditionalists, pragmatists, and newcomers.

The results of this study clearly show that there is a diversity of farmers, who keep local breeds within the European countries. This diversity of the farmers can be considered as strength for the future of the local breeds in the changing environmental and political conditions: If one type of the farmer will give up the breeds for one reason or another, there are other types, who may continue. The typology is useful when developing effective and sustainable policy measures for in situ conservation.
Economic value of farm animal genetic resources

Eija Pouta

Economic Research, MTT Agrifood Research Finland, Latokartanonkaari 9, FI-00790 Helsinki, Finland
eija.pouta@mtt.fi

Making informed decisions on the appropriate focus and extent of conservation efforts of animal genetic resources requires information on both the costs and benefits of conservation. Economic analyses involving the valuation of conservation benefits can guide resource allocation between the conservation of genetic resources and other efforts, as well as between various types of genetic resources. Furthermore, the valuation can assist in designing economic incentives for efficient conservation arrangements.

In the economic valuation of genetic resources it is typical to distinguish between use and non-use values. It has been argued that non-use values may be more important for animal than plant genetic resources. Particularly the non-use value of genetic resources is not typically revealed by markets. Thus the valuation of genetic resources requires the use of valuation methods designed for estimating non-market benefits typically with the concept of willingness to pay (WTP) to measure the value of desirable attributes or improvements in the conservation of genetic resources. Here we focus mainly on survey based methods of stated preferences such as contingent valuation, contingent behaviour and choice experiments.

First, we present the results of meta-analysis (Ahtiainen & Pouta 2011) to summarize the results of empirical valuation studies. Altogether, 22 studies were identified and used to describe current knowledge on the value of genetic resources. Furthermore, 14 studies with 93 value observations were examined with a meta-regression model to identify variables that explain the willingness to pay or willingness to accept for genetic resources. The meta-regression revealed that the grain genetic resources were valued lower compared to animal genetic resources and agrobiodiversity, and the values of breeds or varieties and conservation programmes were higher than the value of individual attributes. Future research should address the gaps in knowledge that are relevant for policy-making such as obtaining value estimates for maintaining the genetic diversity in Europe and the Unites States, estimating the relative magnitude of use and non-use values and determining the value consumers place on genetic resources and diversity in agriculture.
Second, we provide results from two Finnish case studies first of them focusing on consumers preferences for the meat of indigenous cattle breeds (Tienhaara 2011). Currently the chances of buying the indigenous cattle meat in Finland are very limited. Therefore instead of examining the actual consumer purchasing behavior we analyzed the consumer preference in survey based hypothetical market using contingent behavior method. The data of 1623 responses were collected in March 2010 with an online internet questionnaire. The results suggest that there would be demand for Finnish indigenous cattle meat, as 86 % of respondents would like to buy it. The majority of these respondents would buy it occasionally or to try it. About a tenth of the respondents intend to buy Finncattle meat on a regular basis. Among those respondents who are willing to pay positive price premium, the average willingness to pay for indigenous cattle meat is 26 % higher than for conventional meat.

The second case study is a choice experiment of conservation program of agricultural genetic resources in Finland. The online data of 1000 respondents was collected from a representative sample of Finnish internet users during summer 2011. The preliminary results of the relative importance of conserving animal and plant genetic resources in or ex situ are presented. The motivations for conservation interest are discussed.


Exploring SWOT analysis to identify strategies for conservation and development of local cattle breeds.

D. Martin-Collado ¹, G. Gandini ², S.J. Hiemstra ³, EURECA consortium ⁴ & C. Diaz ¹

¹Departamento de Mejora Genética Animal, INIA, Madrid, Spain
martin.daniel@inia.es

²Department of Veterinary Sciences and Technologies for Food Safety, UNIMI, Milan, Italy

³Centre for Genetic Resources, Wageningen University and Research Centre, Lelystad, The Netherlands

⁴www.regionalcattlebreeds.eu

The conservation of local breeds is a complex problem. The dynamics of farm animal production systems are driven by the interaction between many stakeholders interrelating variable economical, technical, genetic, environmental, social and political issues. When designing strategies towards the conservation of local breeds one has to be capable of integrating factors of different grounds. There are two key aspects to be considered; the identification of the driving factors and their evaluation. On the one hand, all the important factors have to be taken into account and, on the other, the relative importance of each of them for the development of the breeds has to be evaluated as objectively as possible.

The European project EURECA was designed and implemented to face this and other issues related to local breeds conservation. It focused on local cattle breeds and involved research groups of 8 countries Belgium, Estonia, Finland, France, Ireland, Italy, The Netherlands, Norway, Poland and Spain. As a part of the project, in order to illuminate the process of making decision in this complex system, a quantitative SWOT analysis was adapted to identifying strategies for the conservation and development of farm animal breeds. It has been divided in four phases, the definition of the system, the determination of the key driving factor, its evaluation and the determination of the strategies for the development of the breeds.

Focusing on the EURECA project study cases we show how to approach SWOT analysis from a multistakeholders perspective. This approach allows us to ensure a correct definition of the key driving factors of the problem to be analyzed. We show how to develop a weighting method of those factors that will finally drive us to the definition and selection of sound conservation strategies. We applied the SWOT analysis method proposed to develop conservation strategies
for two Spanish cattle breed cases; the Alistana-Sanabresa and the Avileña-Negra Ibérica. Finally, we compare the strategies derived from this method to those that have been and are being applied by the Breeders Associations.
Local breeds and varieties of agricultural species are valuable in many aspects. They have values due to specific properties important to consumers. This may be properties of the food produced, reflected in price premiums, as well as a local breed’s contribution to public goods, such as cultural landscape. Further, their existence contains an option value for future generations. Future farming conditions may require the properties of local breeds that are not considered useful today. Extinction of the local breed would mean that these properties were lost forever. The existence of local breeds maintains the possibility of using their genes in the future.

The global trend in extinction of breeds of farm animals has been clear for decades. This is a result of more intense farming and the homogenization of farming practices. The value of genetic diversity of agricultural species is however well known. Governments acknowledge of the importance of maintaining different breeds. Further, since genetic resources are to a large extent public goods property (only few copies of an organism are usually enough to preserve the existence of its genes), it may make economic sense for governments to preserve local breeds although it does not make sense for the individual farmer. For plants it has given rise to international collaboration to conserve different varieties e.g. in gene banks. Similar measures are very difficult for animal species. For example it is expensive to conserve animal breeds compared to plant varieties. It therefore requires much closer scrutiny to choose the breeds to conserve as well as decide how the conservation should be carried out.

In this presentation we look at a case of one small local breed, the Icelandic dairy cow. Icelandic dairy farming has developed in a similar fashion as dairy farming in the rest of the western world. Farms are getting bigger year by year as intensity and mechanization increase. This has lead to an ongoing debate for several years whether farmers should be allowed to import a dairy breed that is better suited for intense production systems than the local breed. Several reports and surveys have been conducted to assess the cost reduction attainable by importing breeds from Europe.
or New Zealand. The results show a significant cost reduction associated with importing a new breed. It is likely that commercial pressures would lead to a decline in the stock of the Icelandic dairy cow over time. This will make active breeding difficult and may even lead to the extinction Icelandic dairy cow. It is therefore necessary to consider all the consequences of such import carefully beforehand.

It must be clear that this cost reduction is not offset by revenue reduction, as consumer demand reduces due to loss of breed specific demand. A study has been conducted to assess consumer preference for the local breed using as economic valuation technique called contingent valuation. We will report the results from it. We discuss the problems associated with the contingent valuation method and suggest how methodological improvements in economic valuation techniques could be used to improve the estimation. Further, we consider some of the additional concerns associated with importing a new breed, both local and global.
Story-telling on Farmer’s Markets: How consumer alliances and direct sales can strengthen local breeds

Aina Bartmann

The Farmer’s Market, P. O. Box 9354, Grønland, NO-0135 Oslo, Norway
aina@bondensmarked.no

Farmers’ market is a place where consumers can buy food direct from producers. The produce must be local, traceable and small-scale processed. The benefits from direct sales are many; Consumers get fresher food and more influence on how food is produced. It provides an extra source of income for farmers through added values to products. It is better for the environment because of reduced food-miles and a more diversified production. The alliance between farmers and consumers is important in an increasingly urban world.

The basis for Farmer’s Market in Norway is that more diversity is needed from plough to plate to secure enough food and sustainable production systems for the future.

Local breeds are often better adapted to local eco-systems. But despite good efficiency in converting local, renewable resources into food, they often lose the competition when efficiency is only measured in production per hour.

Hence it is important to have a food policy that allows direct support to farmers, and market strategies that enable all added values to be detailed and included.

I will give two examples of farmers using our Farmer’s Markets for direct sales and as a show room for their total business activity.

Hans Brimi and Ola Tangvik at Brimi Mountain Farm: their main activity is tourism and cheese production in the Summer Dairy in Jotunheimen mountains. They have the native cattle breed Sidet Trønderfe, and a mixed flock of free-range pigs. Ola and Hans take the “right price”, both from tourism and for their produce, but no customers complain. They have succeeded in the marketing of their farm and products. Hans and Ola are so popular that I have already ordered my rib of pork for Christmas. I look forward to tell their story to my guests on Christmas Eve.
Else Thorenfeld own Korsvold Farm in the Hvaler archipelago close to Sweden. She produces organic vegetables, eggs from the old breed of Norwegian Jær hens, and furs and meat from Gammelnorsk spelsau, old Norwegian sheep breed. She supplies not only local restaurants but also MAAEMO Restaurant in Oslo. MAAEMO opened in December 2010, inspired by Noma Restaurant in Copenhagen. Their menu is based on locally produced organic food. They focus on seasonal food and ethical consumption, for instance grass-fed meat.

The chefs have become the best ambassadors and examples for the consumer and for farmers as they promote local food and exploit diversity in plant and animal resources. (New Nordic Cuisine)

It is crucial that farmers and fishermen worldwide join forces with consumers, chefs, politicians and NGOs who work for more sustainability in national and international food policies. Selling direct is an efficient tool to build alliances and increase knowledge on food production.
How research can enhance the utilization of local farm animal breeds in food markets? A case study of native cattle breeds in Finland

Tuomo Tupasela

Biotechnology and Food Research, MTT Agrifood Research Finland, FI-31600 Jokioinen, Finland
tuomo.tupasela@mtt.fi

How can we preserve the different breeds and livestock diversity in a small country? In Finland, there are still local farm animals breeds and their conservation and preservation are considered very important. This presentation focuses mainly on cattle, but partly also on goats.

At MTT, there are on-going projects, which focus on these farm animal species and their utilization in food production. The cattle projects aim at getting commercial utilization of the native cattle breeds. The projects are not purely research projects, but also will benefit small- and medium-scale food enterprises which are interested in branding of the Finnish native breeds. Projects will transfer know-how obtained from research experiments to practice.

In this presentation: 1) A brief review of the food chain from farm to fork will be given 2) MTT’s ongoing studies on native farm animal breeds will be presented 3) Six examples of dairy cattle farms and small-scale enterprises, which breed Finnish native cattle and process their milk, respectively, are given and 4) some results of the projects are shown e.g on milk coagulation, and milk fatty acid composition of milk of different cattle breeds. These research results confirm the already known fact that the Finnish native cattle breeds’ milk is more suitable for the manufacture of cheese than that of main commercial breeds in Finland. In addition, the first results show that the fatty acid composition in the milk of the native breeds follows the current dietary recommendations in a slightly better way. The project results obtained so far show how research can enhance the utilization of native farm animal breeds in Finnish food markets.
Importance of Zackel Sheep breeds in development of Pirot and Chiprovtsi Kilim Brand in the Stara Planina Region

Sergej Ivanov

*GEF Technical Support Team Leader, STAR Project, Ministry of Agriculture, Trade, Forestry and Water Management, Project Unit in Stara Planina Nature Park, Dimitrovgrad, Serbia star.staraplanina@gmail.com*

West Stara Planina Mountain, situated in the crossborder region between Serbia and Bulgaria, is rich in biodiversity, and especially in terms of indigenous varieties of sheep, adapted to the harsh conditions of high altitude grasslands. This area is a potential crossborder biosphere reserve, and in this moment the Serbian part is designated as a Nature Park, while Bulgarian is Natura 2000 site and proposed Nature Park. Sheep production used to be basis of local economy, delivering to local and regional markets variety of sheep products: kashkaval cheese (yellow cheese similar to cheddar cheese); white cheese; famous lamb meat and carpet/kilim/rugs.

Coarse wool of Zackel type breeds (Pirot Zackel Breed, Replyan Sheep Breed and Karakachan Sheep Breed) is essential in weaving of Pirot (Serbia) and Chiprovtsi (Bulgaria) kilims/carpets which used to be one of the most important economic and cultural features of the Stara Planina rural communities, especially for the female part of the population. However, in recent decades, many people have either left the area or shifted to more intensive livestock-rearing using high-yield breeds which has resulted in a decline of sheep population from 300,000 in the 1950s to only several thousand today – most of which are either exotic or mixed breeds, as well as decline of Stara Planina pastures biodiversity.

Socio economic and cultural changes resulted also in extreme decrease of rural women having weaving carpets/kilims as an source of income, from thousands before the Second World War to just 40 today in Pirot and almost the same number in Bulgarian part of the Mountain. Pirot and Chiprovtsi rugs/kilim is coloured in traditionally strong, saturated colours with dominant red, black, and some types brown, white or green. Ornaments, their shape and colors make Pirot’s and Chiprovtsi kilim recognizable everywhere in the world. They are full of symbolism and have Byzantine, Greek, Chinese and Turkish elements modified by Stara Planina Mountain spinners’ imagination and skills. Various geometric motifs are dominating on the Stara Planina rugs/kilims and one of the most often is a rhombus – ornament with pre-historic tradition that also appears
on ceramics, metal and bronze. In the beginning, the wool was painted by women's from the area in nut’s and ash’s barks, as well as in onion scales. It’s been painted with natural colors for a long time, but in the end of XIX century aniline – final colors appeared. There are several small scale projects in Chiprovtsi and Pirot which resulted in restoration of the natural colouring and technical guides/instructions.

Present attempts of Stara Planina Mt. stakeholders to increase the production of Pirot and Chiprovtsi kilim/carpet, requires conservation, and increase of population of endangered Stara Planina Zackel Type breeds in aim to preserve traditional quality and lifetime of the famous Pirot/Chiprovtsy Kilim/Carpet. Wool (obtained from the above mentioned breeds) is the most significant for a good quality of the kilim that is for its long duration, nice appearance and a high quality weaving. The wool of Pirot Zackel, Karakachan Sheep and primitive Repliana Sheep has coarse long fleece with fibre diameter between 30 and 40 microns, which is elastic and strong. Today, there are only 150 sheep of Karakachan sheep breed, 140 of Pirot Zackel in Serbia, and several hundreds of Repliana sheep breed in Bulgaria. This situation requires urgent measures in aim to increase population of these endangered breeds and create self sustainable production systems based on their cultural, environmental and economic potential. Stara Planina decision makers and stakeholders need to note close interaction between the preservation of traditional craft (weaving) and conservation of sheep breeds whose products affect the kilim quality.
Possible use of existing programs for stimulating business development within the agricultural sector, to promote utilization of local and indigenous breeds in the south-eastern region of Norway

Benedicte Lund

_NordGen – Nordic Genetic Resource Center, NO-1431 Aas, Norway, benedicte.lund@nordgen.org and County General’s Agricultural office of Østfold, Norway_

For a long time it has been important for the Norwegian authorities to create economic growth in the agricultural sector based on sustainable use and sensible utilization of local natural and agricultural resources as well as traditional knowledge and traditions.

Norway’s agricultural production is highly connected to the national policies for a scattered settlement pattern, and by that to achieve a full use of the whole country. This is considered necessary for a good exploitation of our country’s total resources as well as allowing us to remain as self sufficient as possible with regards to agricultural products.

This policy builds on the fact that our national food production can never be economical competitive with international products, as it is produced under conditions that can be quoted under the slogan “small, cold and scattered”, but with an often stunning scenery.

These facts form the grounds for the possibilities of developing local small and medium scaled businesses, and niche products based on local resources and traditions. Thus we can further build on a close connection between the agricultural sectors and the tourist based branch of trade, as well as the increasing awareness of and interest for good quality food. Sustainable use of farm animal breeds should and does fit very well into the political good will of this picture.

Several national and regional programs are put in place to stimulate further to this way of thinking. Some of these programs will be presented, with concrete examples of results from farms with local breeds and how their products are appreciated at the customer’s level.

The office of the County Governor ensures that national policies concerning agriculture are upheld in the municipal land use management.
Each year the office receives funds over the Rural District Development-program under the National Agricultural Agreement between the farmers and the Government. The funds are to contribute to development of business activities in the agricultural sector in our county, according to current national policies and strategies in general.

Other programs under the County Governor’s office are:
- Development programs for food specialities
- Development programs for green tourism
- Green care-programs
- Increase production and consumption of products from organic farming

The three keywords Mat, Verdier, Opplevelser, or Food, Values and Impressions describe the wish for the future agricultural production in Østfold. Indigenous farm animal breeds and their products should fit very well in to this picture.
WORKSHOP VENUE

Radisson Blu Saga Hotel, Hagatorg, 107 Reykjavik, Iceland http://www.radissonblu.com/sagahotel-reykjavik, Hotel telephone +354 5259900, Hotel fax +354 525 9909, Hotel email Reservations.saga.reykjavik@radissonsas.com

The welcoming and registration desk will be situated at the conference centre on the 2nd floor at the Radisson Blu Saga Hotel.

ACCOMMODATION

The accommodation is arranged at the Hotel Fosshotel Baron, Baronsstig 2, Reykjavik, http://www.fosshotel.is/en/hotel/reykjavik_hotels.php. Hotel telephone +354 562 3204, Hotel fax +354 552 4425

FROM THE HOTEL TO THE WORKSHOP VENUE

Walking from the Fosshotel to the Hotel Saga takes around 30 minutes.
Bus route no. 12 will take you from the Fosshotel to the Hotel Saga in 6 minutes.
See http://www.straeto.is/english/routes/route12/
Iceland was, for the most part, settled by people from Norway and the British Isles in the 9th Century. The newcomers brought livestock with them from their homelands: sheep, cattle, goats, pigs, poultry, dogs, cats and especially horses, which were invaluable as a means of transport in this vast land. Icelandic farm animals are the direct descendants of the settlers’ animals; the original stocks having been preserved. Through the centuries, Icelandic farm animals have had to cope with hard winters, famine and volcanic eruptions. They have had to adapt to difficult environmental conditions and are therefore unusually hardy, but by the same token, they are also susceptible to disease borne from abroad. Iceland is a food-producing country. For centuries, the country’s basic industries have been agriculture, fishing and fish processing. Iceland is self-sufficient in the production of meat, dairy products, eggs and to a large extent also in the production of certain vegetables.

Farming is based largely on traditional livestock. For centuries, Icelandic farmers have raised both cattle and sheep, so-called mixed animal husbandry. Specialization has, however, increased significantly in recent years and farms have become fewer and larger at the same time. One characteristic of Icelandic agriculture is the diversity in coat colour of its native livestock. Horses, cattle and sheep exhibit many colour varieties, no particular variety having been favoured except for sheep where white wool is more valuable than coloured wool. Organized breeding work is well established for all the native livestock species, cattle, sheep and horses and has resulted in more productive cows and sheep as well as horses that are known for good temperament and riding abilities.