Assessment of the threats to the Heritage Sheep breeds in Europe using a Geographical Information System

Ch. Ligda, Ch. Mizeli, D. Tsiokos and A. Georgoudis
Partners

UK
University of York / Dianna Bowles
The Sheep Trust / Amanda Carson

France
Institut d’Elevage / Delphine Duclos

Greece
Aristotle University of Thessaloniki / Andreas Georgoudis
National Agricultural Research Foundation / Christina Ligda

Netherlands
Centre for Genetic Resources / Lucia Kaal, Henri Woelders,
Yvette de Haas, Sipke Joost Hiemstra

Slovenia
University of Ljubljana / Drago Kompan
HERITAGE SHEEP

• genetically distinct
• geographically concentrated
• adapted to their environments
• commercially farmed to economically support the local communities in which they are raised
Questionnaire

Developed and translated into local languages, data collected data from their local breeders associations

• Origin and history
• Factors affecting the population trends
  – Political, social, environmental
• Values
  – Contribution to the environment, adaptation, local economy etc
• Current situation and future trends
  – Promotional activities, breeding programs, conservation programs etc
Major Threats

- decrease in public funding
- lack of political will to support rural communities
- policies and legislation, including environmental schemes
- disease
- predators
- urbanisation
- poor return on product
- ageing population of farmers
- lack of marketing support
- inbreeding
- loss of skills
Geographical isolation

It was estimated that there are 26/45 where 90% or more of the total number of animals is actively farmed in the region associated with the breed and 19/45 breeds where >95% of the breed is concentrated.
Geographical Representation of the data collected

• Combine the information on the breeds, threats, values, trends etc with the geographical location
  – deeper understanding of the current situation and the perspectives
  – wider dissemination of the outputs to stakeholders
  – tool for decision making
• Completing the database with geographical data fields at NUTS3 level
• Modification of the database format to geodatabase
• Creation of a dynamic application running under ARCGIS server
Results

Social
Environmental
Political
Disease Threats

Removal of headage payments
Environmental scheme changes
Need to increase farm productivity
Need to make management easier
Non farming uses of land
Decreasing number of actively farmed land
Decreasing farm labour
Decreasing the use of inputs
Going organic
Diversification into non-farming enterprises on the farm
Ceasing farming altogether
HERITAGESHEEP BREED GIS PROJECT

Results

Clear All

- Non farming uses of land (1)
  - FACTORS (1)
    - Rough Fell
- Non farming uses of land (3)
  - FACTORS (3)
    - Lone
    - Lone
    - Lone

Map Contents

Done

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100%
Breeders
Sheep

Total estimate number of sheep
Percentage of breed located in the region stated
Total number of sheep since 2000
Biology size since 2000
Future estimation of sheep number
HERITAGESHEEP GIS PROJECT

Results
- Breeders & Sheep (50)
  - Records 1 - 25 of 50
    - North Holland
    - Veluwe Heath
    - Veluwe Heath
    - Shetland
    - Cheviot
    - Cheviot
    - Cheviot
    - Rough Fell
    - Herdwick
    - Dalesbred
    - Dalesbred
    - Lak
    - Lak
    - Lak
    - Derbyshire Gritstone
    - Derbyshire Gritstone
    - Derbyshire Gritstone
    - Walsh Hill Speckled
    - Derbyshire Gritstone
    - Derbyshire Gritstone
    - Brecknock Hill Cheviot
    - Brecknock Hill Cheviot

Map Contents

Done
Further developments

• Include in the database
  – population data / location across years
  – environmental data / social etc from the relevant databases

• Review and update the information collected

• Develop an index for the assessment of the current status and the trends

• Include more countries / breeds
Thank you for your attention!