Technology Fact Sheet

Sector	Agriculture. Animal breeding subsector.
Adaptation needs	Adaptation of animals to higher temperature conditions.
Technology Name	**Extensive system of animal husbandry.** [i]
How this technology contributes to adaptation	Currently the extensive system of animal husbandry is the most common in the Republic of Moldova. Approximately 96% of livestock are raised in the private sector, mostly in households with few animals (eg 1-2 cows) in primitive conditions, without observance of sanitary and veterinary requirements. At the same time it should be noted that only about 1% of the overall population is breeding animals, the other 99% are crossovers with no known origin and productive qualities. For these reasons the animal yields obtained under such circumstances in all species (cattle, swine, sheep, goats, poultry) are small and their quality is low.
Background/Notes, Short description of the technology option sourced from ClimateTechWiki, Seminars, etc	The absolute majority of animals raised in Moldova are now accommodated to environmental conditions, have a better adaptability, are less vulnerable than the breeds of high yield animals, but have low production indicators and breeding them is economically not cost-efficient. In this respect it should be noted that low quality is a factor that generally do not allow to penetrate into the European market.
Implementation assumptions, How the technology will be implemented and diffused across the subsector?	Currently used technologies in the livestock sector in Moldova, except for a few large farms, do not imply mechanization and automation of livestock industry processes. Along with the introduction of such procedures is necessary to improve the gene pool by implementing high yield breeds and creating such animals maintenance conditions that would ensure the possibility to control the parameters of the microclimate, including the temperature, in order to mitigate the environmental impact on animals.
Costs	If the extensive system of animal husbandry is further used without increasing prices for livestock production, one can not expect a considerable development of animal husbandry sector and the decreasing trend in livestock, well felt in recent years, will perpetuate because currently production is not profitable (eg kg of milk costs 2.50 to 3.50 lei, 1kg of live weight meat - 15 to 20 lei) and most livestock farmers, in fact, produce for own consumption. The cost of a heifer is 15,000 lei. The average milk production per country is 3000kg. Consequently, selling milk will yield 9,000 lei (3000 kg X 3 = 9000 lei lei). However, expenditures for animal feed, labor force, barn maintenance, electricity, veterinary services, etc must be included, so the sales price could be 5-6 lei, while the producer gets only half of it from sales. In conclusion, it should be said that other technologies, other animal husbandry systems are needed, which will be discussed later.

<table>
<tr><td>Country social development priorities</td><td>Development of animal husbandry sector contributes to:
• increase of welfare of population;
• improving human health;
• decrease of human mortality rate.</td></tr>
<tr><td>Country economic development priorities – economic benefits</td><td>• Food security.
• Dependence of the livestock sector on feed produced by crop husbandry branch.</td></tr>
<tr><td>Country environmental development priorities (Environmental benefits)</td><td>• Grazing outdoors means less accumulation of ammonia in manure.
• Extensive animal husbandry entails reduced environmental pollution
• Construction of manure storing platforms
• Fermented manure is a valuable organic fertilizer.</td></tr>
<tr><td>Social benefits</td><td>Acquiring knowledge for compliance with veterinary animal welfare and environmental requirements.
• Along with the disappearance of large livestock farms, ammonia emissions significantly reduced.
• Use of best practices.
• Identification and selection of genotypes with high potential for adaptation to climate change.
• Conservation of endangered gene pools.</td></tr>
<tr><td>Other considerations and priorities (such as market potential)</td><td>• Identification of genotypes of indigenous breeds with a high level of adaptability.
• Development of balanced diets that contribute to less greenhouse gas discharge.</td></tr>
<tr><td colspan="2">Costs</td></tr>
<tr><td>Capital costs (per facility)</td><td>
<table>
<tr><td>Sps</td><td>75% extensive</td><td>25% semi-intensive, intensive</td></tr>
<tr><td>Beef</td><td>375 000 anim. X 50 euro = 18 750 000 euro</td><td>125 000 anim.: 20 anim.= 6250 ferme X 53000 euro = 331 250 000 euro</td></tr>
<tr><td>Swine</td><td>375 000 anim. X 24 euro = 9 000 000 euro</td><td>125 000 anim.: 40 anim = 3125 ferme X 40000 euro = 125 000 000 euro</td></tr>
<tr><td>Sheeps, goats</td><td>1 000 000 anim. X 10 euro = 2 500 000 euro</td><td>_</td></tr>
<tr><td>horses</td><td>50 000 anim.X 50 euro = 2 500 000 euro</td><td>_</td></tr>
<tr><td>poutry</td><td>17 250 000 anim X 1 euro = 17 250 000 euro</td><td>5 750 000 anim.: 1000 anim. = 5 750 farms X 15 000 euro= 86 250 000 euro</td></tr>
<tr><td>Costs</td><td>57 500 000 euro</td><td>542 500 000 euro</td></tr>
</table>
</td></tr>
</table>

	Total: 600 000 000 euro
Operational and Maintenance costs (per facility)	Beef costs per capita – 500 euro. 300 000 anim X 500 euro= 150 000 000 euro. Swine costs per capita – 100 euro. 500 0000 anm X 100 euro= 50 000 000 euro. Sheep goat costs per capita – 50 euro. 1 000 000 anim X 50 euro= 50 000 000 euro. Horse costs per capita – 100 euro. 50 000 anim X 100euro=5 000 000 euro. Poultry costs per capita – 1 euro. 23 000 000 anim X 1 euro=23 000 000 euro. Total costs of animals – 578 000 000 euro. Total costs of feed – 622 000 000 euro. Labour – 200 000 000 euro. **Total operational costs -1 400 000 000 euro**

[i] This fact sheet has been extracted from TNA Report - Technology Needs Assessment for climate change adaptation - Republic of Moldova. You can access the complete report from the TNA project website **http://tech-action.org/**