

Technology Fact Sheet for Adaptation

A.4 Technology: Livestock Breedingⁱ

Sector: Agriculture

Subsector: Rangeland

A.4.1 Introduction

Sudan possesses a large number of animal species, breeds, strains and types of indigenous animals which results in high emission of methane (CH₄). Methane is produced primarily by enteric fermentation and manure management voided by eructation. All livestock generate N₂O emission from manure as a result of excretion of Nitrogen in urine and feces.

A.4.2 Technology Characteristics

The technology: improved animal breeding includes artificial insemination, improved feeding practices and dietary additives.

A.4.3 Country Specific Applicability and Potential

Animal breeding requires improved bulls, artificial insemination units at veterinary centers and high density of livestock. The veterinary staff needs to be trained and to develop skills in the area of insemination. Improvement of animal production departments and local communities are also identified. Moreover, proper maintenance of the artificial insemination apparatus is essential.

A.4.4 Status of Technology in Country

Livestock production in Sudan plays a pivotal role in national food security, farming operations, animal traction, rural and suburban transport and recreational shows attractions in addition to hard currency earnings from export. With the exception of some incidental efforts there are no tangible official policy strategies and programmes targeting the preservation of animals, market value improvement and herd development by genetic breeding. On the other hand, herders subjected to frequent and wide spread ecological changes and environmental effects (desertification, drought, famine, rainfall failure, pasture shortages etc) were obliged to adopt new strategies to cope with large discrepancies between rising demands for livestock products and the slow growth of this sector in Sudan. Adverse impact and long term dismal implications of this livestock sector predicament has prompted recent changes of policies. Technology intervention in the sector is now a recognized imperative.

A.4.5. Opportunities and Barriers

In recent years, a great proportion of animal herders have realized the importance of the quality of livestock, no longer simply focused on quantity. Animal rearing in Sudan has traditionally aimed at big herds for social prestige and herders are rarely attracted by market demand. Veterinary services provide vaccination free of charge and try to change the attitudes of nomads through awareness development. Eighty percent (80%) of Sudan's livestock is under the traditional production system. Nonetheless, the livestock sector provides all the meat required and is a major contributor to the country's exports. There are several production systems in the country, mainly: (1) the Nomadic agro-pastoral system or transhumance system (2) migratory agro-pastoral system (3) sedentary and (4) semi-sedentary system. Commercial farming systems include: dairy farming, feedlot and fattening systems, commercial poultry farming system, and the backyard system. Thus, government policies have to be structured to include all these systems.

A.4.6 Benefits to Economic/Social and Environmental Development

Economic Benefits: Providing more jobs and increased incomes of the east, west and central communities

A.4.7 Climate Change Adaptation Benefits¹

Resilience of the local communities to climate change is strengthened through improved economic conditions.

A.4.8 Financial Requirements and Costs

Cost to implement adaptation technology: The cost of establishing one center for artificial insemination is equal to 2 million US dollars

ⁱ **This fact sheet has been extracted from TNA Report – Technology Needs Assessment for Climate Change Adaptation - Sudan. You can access the complete report from the TNA project website <http://tech-action.org/>**
