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Mountain Cattle Breed for Coping with Climate Change: Needs for Conserving and Reintroducing the Achai in the Hindu Kush Mountain of Northern Pakistan

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Abstract

In the past 30 years better market access in the Hindu Kush Mountains of Northern Pakistan led to land use changes. The extending of high payoff and off-season vegetable cultivation by mountain communities replaced staple crops and vegetable fields even encroached over grazing areas on mountain slopes. This led to increasingly limited crop residues and grazing land that reduced cattle herd sizes and shifted livestock production from extensive to intensive. Artificial insemination and a growing demand for dairy products have favoured heavy milk cattle breeds. This led to the rapid erosion of the indigenous livestock breeds, in particular the Achai cattle, well adapted to both sedentary and mobile extensive production systems in the Hindu Kush mountain valleys. Considering that with climate change the shrinking of glaciers and erratic rainfalls are limiting off-season vegetable cropping and livestock rearing on pasture seems to be again a rational form of agriculture in this region. The Achai cattle breed, currently being endangered due to the earlier erosion process explained, has excellent adaptation capacities to the changing climate. This study documents the phenotypic, productive and reproductive characteristics of the Achai cattle breed. The results shows that it is one of the smallest cattle breed, only weighing 207.13 ± 2.59 kg, an important characteristic for steep slope grazing and has reasonable milk output considering the size of the animal. The breed has excellent fertility traits, with an average as high as 70% conception rate at first service. The pastoral communities in the less accessible marginal mountain valley still have a sizable Achai population and can provide space for its conservation. This paper elaborates a strategy for conservation of the Achai cattle breed

Keywords: Achai, adaptation, cattle breed, climate change, extensive production system, genetic resources, mountain communities