

BY CHARLES MKOKA

AGRICULTURE with a business perspective is what the late Dr Hastings Kamuzu Banda had in mind when 50 years ago an agricultural training centre was opened on 29 July, 1966 at Bolero, Rumphu. This was part of the Turkish Tobacco Development Scheme financed by the Federal Republic of Germany.

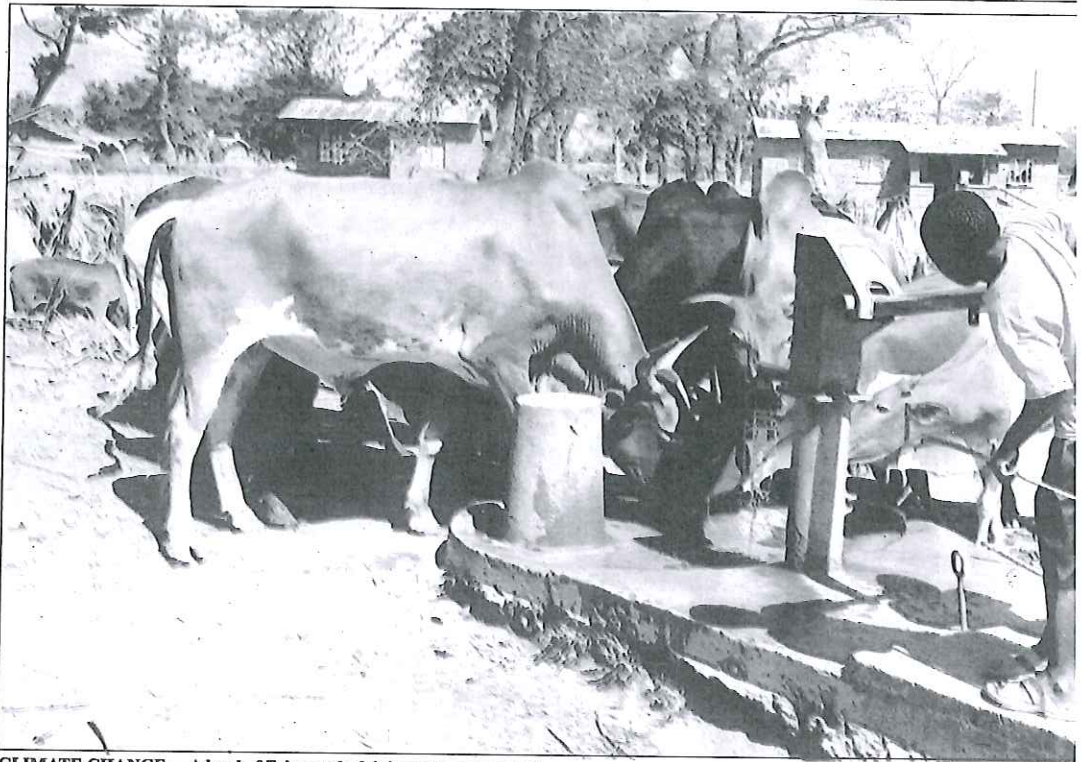
Bolero located at an estimated 15 kilometres north-west of Rumphu boma, along the dusty road to Hewe and Nyika National Park is known for those species of trees good in nitrogen fixation in the soil – one of them is a leguminous that shades more leaves – a symbol of rich organic material that mulch the soils with leaves to improve soil texture with lots of humus. These indigenous tree species associated with abundant savanna grassland and plenty of water have been of benefit to the local populace and domestic animals, particularly cattle as a source of forage over the years.

Today, a sharp contrast of the past scenario exists, according to Paramount Chief Chikulamayembe who holds the 13th mantle of the chieftainship. He acknowledges that there are problems now because of the increased human footprint as a result of population boom. According to Chief Chikulamayembe, more people now means more land originally reserved as catchment area is being cleared for cultivation. In essence, it means land for grazing cattle is slowly being choked and hence putting the animals at a huge disadvantage. Not surprising, that those hard hit in terms of water access as climate change takes its toll are domestic animals. Animals have to travel long distances to access water – a development negatively affecting related products such as milk, meat and calves.

Tapp in livestock value chain research

Professor Leonard Kamwanja, Director of Trustees Agriculture Promotion Programmes (Tapp), a local non-governmental organisation with a focus on scaling up crop and animal husbandry, explains how his organisation is changing the landscape and shared insights about the genesis of their own innovative thinking. According to Kamwanja, the Royal Norwegian Embassy, in the wake of emerging challenges brought by climate change, supported the Lilongwe University of Agriculture and Natural Resources (Luanar) on knowledge enhancement through research as part of cushioning some of the challenges. The higher institution of learning then called for proposals on initiatives that are geared towards addressing climate change as part of a broader national component. Tapp was one of the organisations that were funded under the Capacity Building for Managing Climate Change in Malawi (CABMACC).

"We are trying to find out how things have changed in terms of livestock productivity over the years due to climate change and also the use of indigenous knowledge by local communities," Kamwanja gives insights in an exclusive interview after a crew of Norwegian students from University of Life Sciences (NMBU) went to the project site to collect samples for laboratory analysis on Malawi Zebu at the Central Veterinary Laboratory in



CLIMATE CHANGE —A herd of Zebu cattle drinks water at borehole

Resilience for cattle fa

Lilongwe.

He explained that Tapp, other than working alone, recognise the need for synergies with other stakeholders on the "livestock value chain, food security and environmental quality sustainability: transforming rural livelihoods through community-based resilience indigenous livestock management" which aims to develop, test and validate community-based indigenous livestock management practices. This initiative tackles community resilience with consideration of the significance of indigenous knowledge as a tool for adaptation to climate change.

"We have several partners that are working with us. These include NMBU in Norway with Professor Olav Reksen and School of Veterinary there. Locally, we are working with Find Your Feet, Department of Agricultural Research Services, Social Scientists from Luanar and the Department of Animal Science which assist us on this particular project. We also have

another strategic partner, Central Veterinary Laboratory, who will be analysing some of the samples collected from Zebu cattle to find out what pathological infestations the animals possess," Kamwanja said.

Scope of the livestock value chain Reksen, Professor at the Department of Production Animal Clinical Sciences at NMBU, said the two tertiary education institutions are working on the optimisation of health and production in cows, and the underlying mechanisms are quite similar in both countries. Besides the objectives of the project related to improving milk yield, calves growth, reproductive function and milk composition, Norwegian students have participated in obtaining blood samples to determine the disease situation in Malawi Zebu population in the area.

Reksen said the general idea of the current activities is to empower farmers with knowledge such that the dry period has less impact on the Zebu cattle. After all, a

significant part of meat and milk in Malawi comes from Zebu. In the course of the research, scientists use community-based resources such as leaves from leguminous trees and maize bran for feeding of zebu cows during the months of October and November. Additional feeding will help to maintain the body condition and thereby production of the cows during a prolonged dry period.

"There is a need to build a robust population of Zebu to encounter prolonged periods of drought and healthy animals are a prerequisite for robustness. The Central Veterinary Laboratory has been kind enough to take on the task to train the students in certain diagnostic techniques that they seldom encounter in Norway, so knowledge exchange goes both ways," explained Reksen during a recent visit to Malawi.

"Currently, farmers do not have leguminous trees but seedlings are being distributed by our project," said Reksen, adding, "We have purchased dried leaves from leguminous trees

and we are training as a feed additive. Co feed that we bring in farmers become mo their own trees. So I we are already seer our activities," elab

Researchers are the effect of distan the parameters; mil growth, reproductiv composition and mo

"This way, we wi the farmers scientif on the best approach Zebu cattle, and we of knowledge with community. Also of the fact that we car makers with know production and health animals, such that v being restored and le are being planted on and with adequate cap Reksen when asked t some of the paramet

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KAMWANJA — We have several partners that are working with us

Building Farmers



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associate professor of environmental sustainability at Luanar David Mkwambisi told the media that CABMACC is jointly coordinated together with NMBU supported by the government of Norway. The livestock value chain, he said, is one of the research activities in the quest to manage climate change ills through innovative ideas. Mkwambisi further indicated that building resilience and productivity of the livestock sector can be the innovative way of sustaining the crop farming sector. "The initiative tackles community resilience with consideration of the significance of indigenous knowledge as a tool for adaptation to climate change. Outputs will assist in reducing dependence on conventional practices and promote the use of local knowledge," he said when asked to explain more on the outputs. One example is use of locally available materials to produce disinfectants like dip that can treat ticks in cattle.

Mphatso Chipandula, Tapp Field Officer at Bolero, said results based on fecal and stool samples taken for diagnostics to the Central Veterinary Laboratory confirms that at least every Zebu cow is rarely de-wormed by farmers. Such treatment even passes more than two years without being administered. This has a bearing on productivity leading to low income and hence food insecurity. The cumulative years without administering drugs means more chemicals which farmers cannot afford in the long term. Another observation is that during periods of food scarcity cattle simply go grazing anywhere without any restrictions. This makes the animals prone to ticks compared to those fed in confinement. The situation further leads to land degradation that might affect crop production and also transmission of diseases can have an impact on human beings. "To address the prevalence of worms, the drug Ivermectin injection BP, which treats gastro-intestinal

nematodes, lungworms, eye worms, warbles and ecto-parasites like mites and lice in cattle will be administered on cattle weighing between 50 and 250 kilogrammes," said Chipandula who is in constant touch with farmers providing the technical expertise on the ground. Blood samples have also been collected for anti-body check against various diseases. Plans are underway to run microscopic tests of various organisms that transmit diseases with the help of a specialised veterinary specialist. CABMACC approach, therefore, fit well in the National Adaptation Programmes of Actions for the Least Developed Countries to identify priority activities that respond to urgent and immediate needs to adapt to climate change — those for which further delay

would increase vulnerability and cost at a later stage. The approach coupled with continuous provision of training provides an opportunity for farmers to change their farming practices and adopt interventions that can build the resilience of their households. Lessons from the initiative suggest it is pertinent to build partnerships to exchange knowledge and ideas at institutional level in the education sector in order to solve global challenges exacerbated by climate change now. This way, enabling technologies in one part of the world may be made available for a larger scientific community to combat food insecurity and reduce the impacts of unpredictable weather patterns worldwide.

Results lead to action