Context

Africa is home to over 150 indigenous cattle breeds that possess unique genetic attributes, such as a special adaptation to heat and drought, tolerance to tropical diseases and unprecedented utilisation of low quality forages. These cattle play a key role in the livelihoods of their owners by providing food, draft power, hides and other services. However, several of them are endangered and a significant portion have already gone extinct. Inyambo cattle are one of the ecotypes derived from Ankole cattle and is reared mostly in Rwanda and parts of northern Burundi. The other ecotypes of the Ankole sub-group are: Kigezi cattle kept in south-western highlands of Uganda, Bahima cattle also called Nsagalla kept in Ankole region of western Uganda, parts of Rwanda and northern Tanzania, Ntuuku cattle of the Albertine Rift Valley of Uganda, Bashi cattle in Democratic Republic of Congo, and Ankole-Watusi found in United States of America. These cattle putatively evolved in present day Ethiopia and were dispersed by Hamitic tribes about six centuries ago who brought them into present east Africa, where they become rulers/demi-gods or “Bachwezi” according to popular mythology. The Inyambo population (Fig. 1) is considered the most prized and highly selected over the centuries for the royal rulers of areas occupied by the former Rwanda-Urundi kingdom.
**Habitat**

Inyambo cattle are reared under pastoralism, agro-pastoralism and crop-livestock mixed farming systems. The key features of the pastoral system (semi-nomadism and transhumance) are range grassland vegetation mainly in the dry areas and migratory herding areas that border with Tanzania in the Akagera river basin part of which is protected as the Akagera National Park. Crop-based livestock production systems are characterised by the use of crop-by-products as animal fed, while the cattle provide their waste that is used as manure to fertilise crop fields; in addition to giving milk and meat. Agro-pastoralism (communal grazing) is slowly dying out due to government policy that emphasises land registration and hence sedentarisation, hence use of fallow lands and crop land after harvest for communal grazing is becoming rare in Rwanda, though still found in pockets in areas bordering with Uganda in the North-east of the country. Instead, Inyambo cattle now predominantly are reared under crop-based livestock production systems with the regular use of crop by-products as animal feed, as well as use of planted fodder (Fig. 3) and very limited pasture grazing (Fig. 2). Farms under crop-livestock systems are small, with average sizes of one hectare in eastern Rwanda, and much less in the southern part of the country.

![Fig. 2: Inyambo cows at the conservation farm, Nyagatare district, Eastern Rwanda; note the typical landscape and lay out of the traditional paddocks in the background](image1)

![Fig. 3: Inyambo cows being given fresh napier grass at the Urukari – The former Rwanda-Urundi Kingdom Palace, Nyanza, Rwanda](image2)

**Presentation of the breed**

In appearance, Inyambo cattle are elegant, well-bred and graceful; have a straight backline and an evenly sloping rump (Fig. 4). Bulls also have a characteristic cervico-thoracic hump, which is much smaller than that in Zebu cattle. Inyambo are spotted sometimes but single coat colour is dominant, with the dark brown “Ruhogo” being the most desired. Preferred horns are characteristically long, white in colour and symmetrical with a large base that is proportional to horn length (Fig. 4). Male Inyambo cattle are significantly bigger, taller and heavier than females of the same age, as is typical of sexual dimorphism of most livestock species. An adult Inyambo bull weighs an average of 650 kg while a cow weighs 480 kg. The mean body morphometric measurements for Inyambo bulls and cows respectively are: 244 cm, 217 cm (body length); 144 cm, 134 cm (height at withers); 194 cm, 176 cm (heart girth); 80 cm, 74 cm (leg height); 120 cm, 89 cm (dewlap length); 53 cm, 44 cm (muzzle circumference); 125 cm, 107 cm (horn length); 93 cm, 82 cm (distance between horns); 40 cm, 22 cm (hump length); 100 cm, 92 cm (tail length).

![Fig. 4: Inyambo bull (left) The bull standing in a crush shows its facial features (right)](image3)
Rwanda is comparatively a small country with the average land holding per household dropping consistently due to the concomitant human population growth. This combined with the national goal of increasing productivity per head of cattle as well as sedentarisation and intensification of cattle rearing means that the space available for Inyambo cattle will become less and less. In recent years, the Rwanda government has had an ambitious “one cow per poor household” program popularly known as “Girinka” in which it is distributing a cow to each of 300,000 resource-poor households. The breed of choice is the Friesian and in very few cases, the Jersey. Despite this scenario which paints a bleak picture for the Inyambo, there is a strong Rwanda government effort to conserve the Inyambo breed. At the National Bull Stud at Masaka, Kigali, two high grade Inyambo bulls are being used to produce semen which is being stored as part of the in vitro cryopreservation program. Also, under the National Gene Bank, Rwanda maintains a 750 Inyambo cattle herd in Nyagatare district in Eastern province (Fig. 2). A recent nationwide survey (Fig. 5) characterised all the indigenous cattle breeds of Rwanda and information has been used in formulating a sustainable conservation program based on the mapping of demand of the breed and demand for conservation support services.

Why keep the breed?

The Inyambo breed is of significant importance mainly due to its great adaptation to the conditions of east Africa in general and Rwanda in particular. It is highly preferred by pastoralists for cultural and aesthetic reasons. Inyambo cattle are reared for income from sale of live animal and milk; milk for home consumption; meat when slaughtered for home use, and or traditional ceremonies; aesthetic value particularly colour, shape and orientation of the characteristic long horns; body coat colour and patterns. The cattle are also valued for maintenance of the Banyarwanda cultural heritage (Fig. 6, 7)) which includes use as dowry and gifts in marriage ceremonies and paying fines for various cultural offences. In addition to the beauty aspect, the long horns are valued for enabling the cattle to graze in thickets and difficult terrain particularly in dense shrub savannahs. The milk and meat of Inyambo cattle has been found to be very low in certain fats and to have lower cholesterol than exotic breeds (http://www.ansi.okstate.edu/breeds/cattle/ankolewatusi).
Conclusion
The Inyambo is a critical component of the livestock improvement strategy of Rwanda. It is very important that the current conservation activities for the breed are streamlined further, improved and strengthened. Farmers who are rearing this breed should be mobilised further, and encouraged to form a breeders association which could immediately benefit from the low hanging fruits such as grade Inyambo semen available under the auspices of Rwanda Agriculture Board. Some of the farmers may also be invited to buy the bulls produced at the Inyambo conservation farm at Nyagatare, instead of the regular practice of selling them off for slaughter. The Inyambo is still threatened due to the dynamics presented in this paper. An effective crossbreeding program to maximise hybrid vigour must maintain pure parent lines with a robust selection program for each of the breeds of interest to improve the genetics and maintain the specific traits of that line.

References