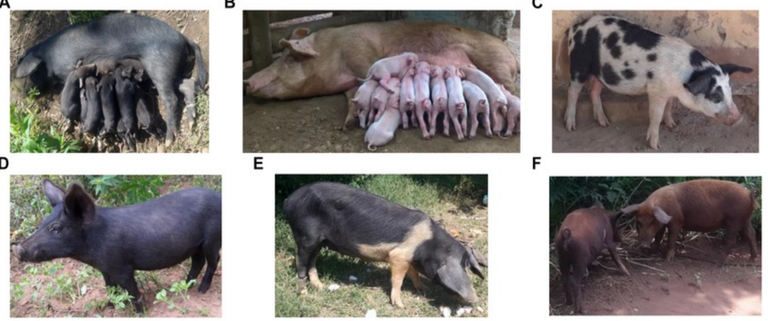
Conservation of tropical local and indigenous Suidae genetic resources using the induced pluripotent stem cells (iPSC) derived from somatic cells



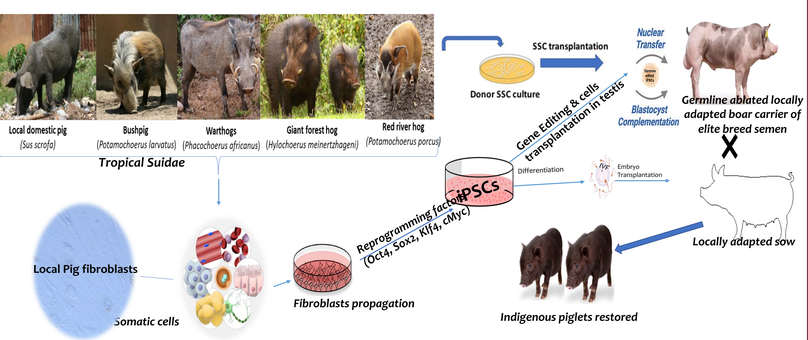
Photographs of Pigs of different breed or cross breed types in Uganda. Photo credit Babigumira Brian Martin ILRI/ BOKU.

The challenge

- No conservation program leading to high risk of extinction.
- Pig skin biopsies were collected from indigenous pigs in Western part of Kenya. That is Busia and Migori counties where there is still good population of indigenous pigs.
- Soon in Uganda. Beneficiaries: National Institutes and Farmers

Our innovative approach

Combining the iPSCs and the surrogate host technology is the game changer for conservation and restoration of tropical Suidae breeds without their genetic integrity being affected



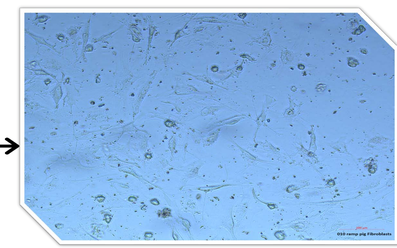
Christian K. Tiambo, Christine K. Muhonja, Moses Ogugo, Sally K. Mueni, Ascah Jesang, Karen Marshall, Tom Burdon

C.tiambo@cgiar.org

- Local Suidae provide a large contribution to the genetic diversity of the domestic stock.
- Their genetic variability is related to adaptation to the harsh environments, disease resilience, and meat quality characteristics.
- They are part of the cultural heritage of local communities, having an important socio- economic value.

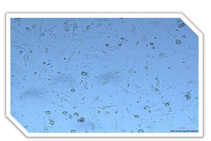
Outcomes

Harveting skin somatic cells



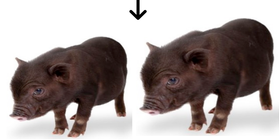
Skin fibroblast propagated

Next steps



Reprogramming to obtain the induced pluripotent stem cells

Gene Editing & cells transplantation in testis



Restoration of local and Indigenous piglets

Partners

The International Livestock Research Institute thanks all donors & organizations which globally support its work through their contributions to the CGIAR Trust Fund. cgiar.org/funders