

# Ministers' Brief

## Jamaica

*In Celebration of*  
CARDI Day 2020



Aerial and close up of sweet potato validation plot for resilience to weather extremes



Weaning and hardening facility for production of planting material for climate resilience

## Investigating climate resilience in sweet potato for food security under changing climate

Under the Pilot Program for Climate Resilience (PPCR) funded by the Climate Investment Funds (CIF) through the Inter-American Development Bank (IDB), sweet potato is among the commodities being evaluated for climate resilience. CARDI in implementing the Agriculture component of the programme, has partnered with the Mona Office of Research and Innovation (MORI) and Department of Biological and Chemical Sciences, Cave Hill Campus of the University of the West Indies, to characterise sweet potato varieties through molecular techniques and to validate climate resilience through

field and pot studies. In tandem with these activities, the project has built capacity with the provision of laboratory equipment for processing samples and protected structures for weaning and hardening of planting material. It is expected that these initiatives will lead to the increased production of tolerant varieties and facilitate emergency response post disasters.

Jamaica has benefitted from these initiatives. Of samples taken from five local sweet potato varieties for molecular characterisation, popular varieties,

'Ganja' and Fire-on-Land have been characterised as drought tolerant. This knowledge can empower producers to select suitable varieties for prevailing weather conditions. A webinar was held to share the results with approximately 100 stakeholders. In ongoing field studies, plots have been established to compare performance (above and below ground development parameters) of four sweet potato varieties during the wet and dry seasons, to determine suitability of these varieties to withstand varying extremes in weather conditions. Complementary pot studies will also be conducted.



Model goat housing at Sam Motta Demonstration and Training Centre

## Sam Motta Demonstration and Training Centre adds value to small ruminant production through dissemination of improved breeding technology

The Sam Motta Demonstration and Training Centre (SMDTC) is celebrating 20 years. Since its inception in February 2000, the Centre has been providing improved sheep and goat breeding stock for the Manchester Plateau in the first instance and later to farmers in the wider Jamaica. CARDI through the centre, operates a joint initiative with ALPART Mining Venture, which has supplied improved Alpine, Nubian and Boer goat breeding stock to producers. The breeding and multiplication of sheep (Dorper & Katahdin), came years later, as the thrust and demand for the sheep products has heightened. To date, over 450 heads of improved breeding stock have been distributed from the station to over 150 farmers. The SMDTC has also been integral to the small ruminant improvement programme in Jamaica through its role in the introduction of and training in the assisted breeding techniques of Artificial Insemination (AI) and Embryo Transfer (ET). The efforts have seen some 65 persons being trained in AI and 16 Officers being trained and certified in ET. The impact of this capacity building has been far reaching such that both assisted techniques are now routinely

practiced in Jamaica. Additionally, the station has provided sire service to over 650 farmers in the community to improve the stock they already have.

SMDTC serves as a research station, a repository of knowledge and a centre for technology transfer through the demonstration of best practices as it relates to an integrated production system using small ruminants and cash crops on mined-out bauxite lands. Students across the education system have used the centre in preparation for exams and on-the-job training attachments.



Alpine Buck



White Dorper Sheep

## Phase 2 Coconut Project underway with continued focus on nurseries

Access to good planting material is a major constraint to coconut production across CARICOM. Under the Phase 1 (2015-2018), *Coconut Industry Development for the Caribbean Project*, funded by the European Union, Jamaica, among 11 countries in the region, has benefited from a pool of € 4 million. The country stands to benefit from a further € 5,880,000 under the second phase (2019- 2023), *Alliances for Coconut Industry Development, Expansion and Enhance Support for the Caribbean*, geared towards capacity building to address developmental gaps. In partnership with the Executing Agency, International Trade Centre, CARDI works with key partners, Coconut Industry Board (CIB) and Scientific Research Council (SRC), and other stakeholders to produce quality planting material and provide training and infrastructure along select coconut value chains.

Under the project, a new coconut nursery was established at Knockalva Polytechnic College with a capacity of 3,500 seed nuts. One batch of approximately 2,000 seedlings (approximately 30 acres) has already been distributed to farmers in the four parishes under Phase 1 and a second batch of 3,200 seed nuts has been sown. Interventions have also continued to enhance capacity of the CIB's Spring Garden nursery operations in Portland. In Phase 1, the irrigation system in Spring Garden was improved and shade houses expanded and since the start of Phase 2, seed beds have been improved with the construction of concrete bins to better contain the seed nuts and resist erosion during heavy rains and floods.

At the Knockalva nursery, a second season of study is being conducted to optimize germination rates and increase seedling production. In the trial, orientation and grade of seed nut are factors being investigated. Data trends from the first

season of the trial, showed a significantly higher/ faster germination rate and more robust growth (collar circumference, height and leaf formation) among slanted (seed nuts placed at a 45° angle) compared to horizontally placed seed nuts > vertically positioned (embryo pointing up) seed nuts. Higher quality nuts also performed better than seed nuts with greater damaged surfaces and reduced size although not statistically significant. Conclusions and recommendations will be made at the end of the second season.

Also, among the initial activities in Phase 2 of the project, have been:

1. The installation of Climate Smart, drip irrigation systems on farmers' fields, by CIB. This is to assist coconut farmers in times of drought, a priority issue for most farmers;
2. Product development workshops, focussed on soap making, conducted by SRC.

These activities will target producers in ten Alliances that were formed in Phase 1, with attendant spin-off benefits to the wider industry.



Seedlings at Knockalva nursery being produced for coconut growers in the west of the island



Study being conducted to optimize germination rate and increase vigor

#### Different orientations of seed nuts



Diagonal



Horizontal



Vertical