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**Science, Technology, Research and Innovation for Development  
(STRIDE)**

**PHASE I**

**Developing a Sustainable Dairy Cattle Genetic Stock in the Philippines: Phase 1: Establishing the Base for Future Breeding**



**PHASE II**

**Developing a Sustainable Dairy Cattle Genetic Stock in the Philippines: Phase II: Crossbreeding with Aussie Red**

**GRANTEE:** University of the Philippines Los Baños Foundation, Inc. (UPLBFI)

**PRINCIPAL INVESTIGATOR:** Dr. Agapita J. Salces

**INDUSTRY PARTNER:** Philippine Asian Biotechnology Research and Development Corporation (PABRDC), Catulayan Community Multi-Purpose Cooperative, Bohol Dairy Producers Association, ACDI Multipurpose Cooperative

**COLLABORATING PARTNER:** Bohol Island State University (BISU)

**GRANT PERIOD:** Phase I: June 1, 2015 to June 30, 2016  
Phase II: September 20, 2016 to December 19, 2017

**GRANT AMOUNT:** Php 10,510,291.52 (approximately USD223,600)

**Developing the local cattle**

The Philippines imports 99% of its dairy needs. Most imported liquid milk is ultra-heat treated (UHT) to prolong shelf life. However, UHT processed milk is not suitable for children due to nutrient loss. Thus, locally produced milk is still the ideal and recommended choice for consumption. The Philippines produces only 1% of its milk supply due to continued use of the imported Sahiwal-Holstein hybrid cattle, which are not fertile and cannot thrive in tropical countries due to high heat, humidity, and the presence of local parasites. In addition, the breed is very expensive and can only produce a maximum of 10 liters of milk per day.



*The Siquijor Native Cattle found to have the good qualities of a dairy cattle*

On top of this, the Philippines lacks a national breeding strategy for the development and supply of productive local dairy animals, resulting in the cyclical importation of Sahiwal-Holstein cattle.

To address the low productivity of dairy animals in the Philippines, UPLB, with support from USAID STRIDE, has started developing a local dairy cattle breed with a Filipino bloodline through the Siquijor native cattle. Although small, it is docile and possesses strong traits showing adaptation to tropical climates, such as heat tolerance and disease resistance, which is an ideal trait of milking cows.



*Researchers collect hair samples from native cattles in different municipalities of Siquijor for genetic analysis*

### **Milestones**

In Phase I of the project, it was discovered that the Siquijor native breed can produce an average of 5 liters of high quality milk per day. Milk production is expected to double through the heterosis and breeding complementarity. The 10 liters of milk from the native cattle is more profitable due to the higher quality of milk and lower production cost than the 10 liters produced from hybrid cattle.

In collaboration with the Province of Siquijor and the Department of Agriculture Region 7, the research team was able to devise a participatory breeding program to transform the Siquijor native cattle into a milking cow. The ACIDI Multipurpose Cooperative has ensured the sales of milk from the 300 native female cattle that will be impregnated. The team has likewise finalized arrangements that the 300 cows be insured by the local government of Siquijor, the Department of Agriculture Region 7, and the ACIDI Multipurpose Cooperative so that the breeding program will progress even when farmers decide to withdraw.

### **Moving forward**

To further sustain the gains and accomplishments of the project, a Phase II was awarded with the aim of developing a coherent breeding strategy that takes into consideration Philippine management conditions with respect to climate and availability of feeds and space for grazing. Utilization of local cattle as part of a three-way crossbreeding strategy that has not been considered in the past is explored for the Philippine setting. This opportunity to utilize the local native cattle through genomic technologies is recognized to fast track breed development. Upgrading the native animal with Aussie Red breed through heterosis will double the milk production up to 10 liters per day. The incorporation of the Jersey breed, known for high fat content, will retain the 4–6% fat level through breed complementarity. Once this strategy materializes, the goal to produce additional liquid milk for Filipino children and a specialty cheese product for the niche market so that marginalized dairy farmers can capture more value will be realized.