Technology Fact Sheet

Development of cultivation engineering of beef cattle[i]

Cultivation of engineering technology of beef cattle is also as part of the development of community based cattle seedling. The breeders are traditional ones who follow a Village Breeding Center (VBC) pattern. To get superior calves, several ways could be conducted such as to implement embryo transfer (ET) technology or artificial insemination (IB) or natural insemination (INKA) of productively imported or local female cows with genetically low quality.

This technology has been in an implementation step and become an exploration product of local ability because the local calf will be one that is developed. Those local cattles are from Bali, Madura, Ongole cross-bred, Sumbawa Ongole, and Aceh. The common feed of the cow such as corned feed has ability to adapt dry condition because it can be stored or kept for months. This type of cow feed can be prioritized as a local wisdom.

From environmental criteria, it meets the resource conservation as local cattle seedling that has been innovated with embryo transfer using VBC implemented in location with vulnerable area due to climate change and location with integrated palm fields and crop. Dissemination of this technology involves groups of breeders and instructors of rice or palm agriculture known as VBC (Village Breeding Center) and CLS (Crops Livestock System).

The costs for operational and maintenance of this technology is approximately US$ 600,000 in the first year up to US$ 3,000,000 in the third year, with the price of Indonesian Rupiah 6,000,000 or around USD 600 per head of calf. Seedling can be carried out with step by step processes from 1000 female cows in the first year up to 5000 female cows in the third year. Therefore, the operational and maintenance costs are about US$ 100.000 per 1000 heads of calves. The market availability of the cattle seed is ready to be fattened.

Table 1 Technical criteria of beef cattle engineering development

Facts	Description
Short Description	Development of beef cattle engineering technology is the cow seedling of community based. The breeders are traditional farmers who implement “Village Breeding Center” pattern. This is a pattern of breeding that is specially located in designated area not in indvidual house of breeder. The superior calves must be used first local cattle seed that has employed embrio transfer (ET) technology or artificial insemination and natural insemination (INKA) with the use of imported female cows or productively local cattle but genetically low.
Technical Criteria	
Technology Maturity	Has been applied
Local Availability	Local beef cattle can be as seedling that can be developed. Those are cows of Bali, Madura, genetically Ongole cow (PO) and Sumbawa Ongole (SO), Aceh
Operational Flexibility	• Adaptation technology of cow green feed and concentrate production as well as adaptation technology for reproduction of cow with one calf per head of cow parent

	per year.
Climate suitability	Has ability to adapt on dry season condition by utilizing preserved greenish cattle feed (HMT).
Technology to be included in prioritization	• Production of HMT and concentrate uses local wisdom of technology • Embrio Transfer (ET) technology
Environmental criteria	
Resource Conservation	Seedling of local calf with its local parent through ET
Land	VBC at location of vulnerable to climate change impact and intergated with food plant or oil palm
Social Criteria	
Employment	Beef cattle farmers and field supervisors of rice farming and oil palm estate
Public perception	Public perception will be good because the farmers use VBC and CLS (Crops Livestok system)
Community Involvement	Beef cattle farming communities
Economic Criteria	
Capital Cost	USD 600 per head with capacity of 1000 heads in the first year up to 5000 heads in the third year and it costs US$ 600.000 up to US$3.000.000; respectively
Operational & maintenance costs	US$ 100.000 / 1000 heads
Market Availability	Domestic and export needs

[i] **This fact sheet has been extracted from TNA Report - Adaption for Indonesia. You can access the complete report from the TNA project website http://tech-action.org/**