Research collaboration between ICARD and AgResearch New Zealand

Research collaboration between AgResearch, New Zealand, Indonesia Centre for Animal Research and Development (ICARD) and IAARD was signed on May 2018 with the contract number of SOW29_RCR_Indonesia. The two year project will comprise three inter-linked themes that will be undertaken in parallel. The three themes cover: 1. the development of the inventory structure and population with the best available data, 2. the use of existing and new facilities to collect local and regionally relevant CH_4 emission factors and 3. additional local and regional capability building activities and fund raising activities to help sustain and strengthen the GHG accounting focus. Although working in depth in Indonesia, the project has strong regional elements; to specifically include developing Indonesia as a regional leader via training practitioners from other countries in the region with the use of existing inventory accounting tools, training in methane measurement techniques, training in livestock GHG accounting and the generation of emissions data that will have regional utility. More generally, the project will showcase what the move to a Tier 2 inventory entails, the data needs, the resource needs, and most importantly demonstrating the benefits for policy and science of having an advanced inventory accounting tool.

The collaborative project is expected to have the following outcomes and benefits:

- Structure of the inventory data for livestock using a Tier 2 approach
- Determined local CH_4 emission factor and Ym values
- Increased national and regional capacity and capability on GHG accounting methods
- Improved ability to access international finance
- Improved quantification of livestock emissions at the national and sectoral scale in Indonesia
- Improved quantification of the impact of current and planned changes in the efficiency of livestock production on GHG emissions
- Improved ability to demonstrate how livestock agriculture can support current and future NDC commitments at the local and regional level
- Demonstrated regional leadership by Indonesia and New Zealand
- Demonstrated value of the GRA.

Some activities undertaken during year 2018-2019 include:

1. Training on Alu Tool with Focus on Domestic Livestock was held in Bogor, 16-20 July 2018. Around 36 participants joined the four day training event. Participants included researchers from Assesment Institute for Agricultural Technology (BPTP) from 26 provinces, Indonesian Research Institute for Animal Production (IRIAP), ICARD, Assesment and Application Agency for Agricultural Technology (BPPT), Universities, Research instititut for Agricultural environmental. Three experts shared their knowledge during the training: Dr Leandro Buendia from Philiphines (expert in ALU tool sofware), Dr Stefan Muetzel from AgResearch New Zealand (expert in the measurement and calculation of methane using respiratory chamber) and Dr. Joel Gibbs from New Zealand Ministry for Primary Industries (expert on climate change and national inventory structure).

Director of IAARD, Director of ICARD, the experts and all participant on opening session

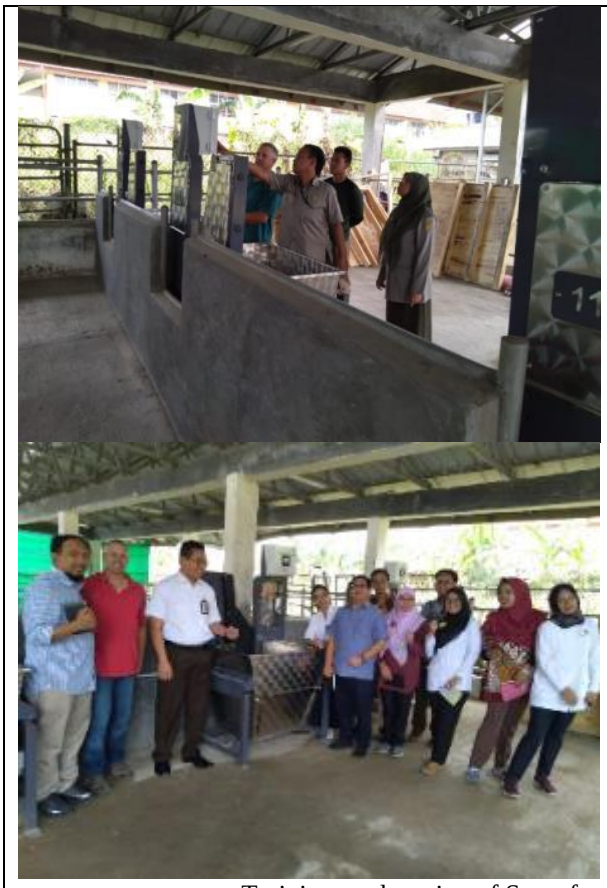
Participants had practice at methane laboratory IRIAP

2. A one day workshop was conducted at Bogor, 20 July 2018. The participants of the workshop included Tier 2 team members from five research institutes (ICARD, IRIAP, BPPT, Loka Sapo, Loka Kapo, Balingtan) and one university (Dipenogoro University). Dr Joel Gibbs shared his experience on developing the national inventory structure for livestock in New Zealand. A very constructive discussion occurred among the participants and Dr Joel Gibbs during the workshop.

Dr. Joel and participants after the workshop

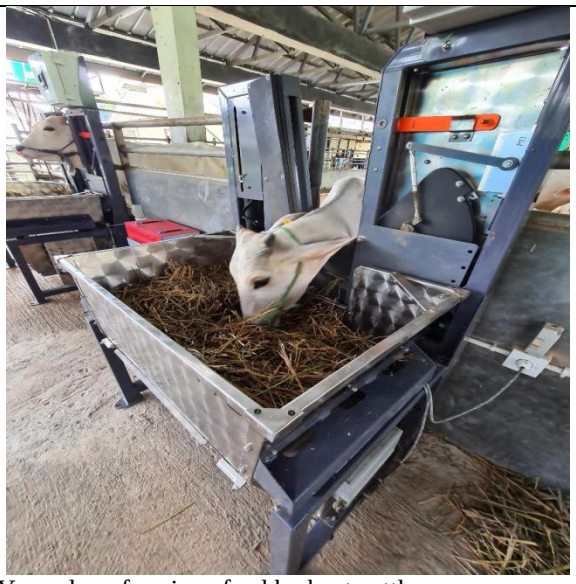
3. The installation of new equipment, training and preparing for an experiment to get the Ym value was conducted. The activity consisted of two steps: installation and training and were conducted for eight days, starting on 22 August and finishing on 29 August 2019. The installation and preparation for training was conducted for six days, the training was held one day, then data analyses was undertaken for one day. The activities were undertaken on the large ruminant facilities for experiment at Indonesia Research Institute for Animal Production (IRIAP), Ciawi Bogor Indonesia. Participants included researchers and technician from research institutes. Some participants were members of the national inventory for livestock team, who work with ICARD in developing Tier 2 approach for livestock inventory. Some researchers dealing with GHG experiments also attended. Young researchers were involved to encourage them in using new technology on the GHG experiment. Mr. Colin Murphy from C-Lock, USA helped the installation process and training on the use of these equipment. While Mr. Tom Zimmerman and Mr. Mike Billars also from C-Lock, USA gave virtual presentations about the mechanism of the units, data management etc. during the training.

One unit of greenfeed and three units of Smartfeed Pro has been installed at Indonesian Research Institute for Animal Production (IRIAP) at Bogor West Java



Training on the using of Smartfeed Pro and Greenfeed by Mr Colin

An experiment to determine Ym value (methane conversion ratio) for different type of feeds mostly used in Indonesia for cattle has been planned. A draft proposal has been written to display the design of experiment. It is planned to have nine different types of feed consisting of grass, agricultural and plantation byproducts as major sources of feed for ruminant animals in Indonesia. Local beef cattle (ongole cross breed) will be used as the major beef cattle population. The experiment will take around nine months using 24 head cattle. Smartfeed Pro and Greenfeed will be used to measure the feed consumption and methane enteric produced by each animal.

Preliminary of research to determine the Ym value of various feed by beet cattle