Community Carbon Accounting Action Research Project, Yogyakarta, Central Java, South Sumatra – Fy2010 Summary Report

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Background

The National Forestry Council of Indonesia (DKN), ARuPA and the Institute for Global Environmental Strategies (IGES) collaborated to launch the action research on community carbon accounting (CCA) in Yogyakarta, Central Java and South Sumatra in 2010. The purpose of this action research is to elaborate and demonstrate approaches to engage communities in Indonesia in forest carbon stock estimation and monitoring that builds their capacity to participate in REDD+ policy dialogues and to participate in the design and implementation of REDD+ activities.

The specific research questions to be addressed in the first phase were:

- To what extent can the communities absorb the messages (related with climate change and REDD+) being socialized by the research team?
- To what extent can community members be trained to measure carbon and to record the measurements?
- What are the best capacity building approaches in community carbon accounting (CCA)?
- Could the research findings be applicable to adjacent villages?
- If community related forest management can be transformed into a REDD+ project, what would be the best unit of implementation (sub village, village, sub district, or district)?

Activities

The determination of research sites in Indonesia was carried out by considering forest type (private forest dominated by plantations and agricultural crops, and state-owned forestland consisting of natural forest), type of communities (indigenous people and local communities), and the possibility of securing support from the local authorities. These considerations led the CCA Research Team to select the districts of Gunung Kidul (Yogyakarta), Wonosobo (Central Java), and Musi Banyuasin (South Sumatra).

Consultations

Consultations with local authorities and communities were conducted through a series of meetings in Gunung Kidul, Wonosobo, and Musi Banyuasin. In Gunung Kidul, consultations led to the selection of Semoyo Village as the site for the CCA research. In Wonosobo, consultations were conducted at Bogoran Village. The villagers felt that they were not ready to undertake CCA as their efforts were directed towards dealing with a fungus that is affecting their sengon trees. In Musi Banyuasin, consultations were initially undertaken with the GIZ REDD+ Project and later with the villagers. The Action Research

Team visited a sub-village of Kepayang Village that is a partner of the Project, and then called for a meeting with village leaders including the Head of the village and 2 leaders of farmer groups. A second round of community consultations was carried out at Muara Merang Village, which had been awarded a village forest by the Central Government. The management of the village forest is still at an early stage, and the institutional setting is still developing. More socialisation activities are needed before CCA action research can begin.

Sign Board of village forest at Merang Village

Training and capacity building

The curriculum for the training of trainers included ice breaking and rule setting for participation; introduction to climate change and CCA; measurement techniques; and data recording. Capacity building based on a similar curriculum was conducted with the land owners where the plots were to be established and measured, through both classroom and field exercises.

Sampling and measurement

The design of the sampling was formulated through:

1. Determination of sampling frame;
2. Stratification of sampling units;
3. Determination of variables to be measured;
4. Determination of sampling shape;
5. Determination of sampling size – number of sample plots;
6. Packaging into a sampling manual in Indonesian.

This design was introduced and discussed with key community persons to obtain their input.

The sampling and measurement of carbon stocks was done initially in Semoyo following a multi-stage, stratified random sampling approach. The sampling covered all 5 sub-villages at Semoyo. 10 households in each sub-village were selected randomly. Stratification was used to differentiate between trees planted on dryland and in home gardens, and trees planted in clumped and linear formations.

Through a series of discussions the number of the total sample units in Semoyo Village was determined as 100. The number of plots was obtained after the selection of 10 households in each sub-village (10*5=50), where every household is represented by dryland and home garden (50*2=100).

The plot shape and dimensions are based on the spatial distribution of trees on the unit of land owned by the individual farmers. For the clumped/continuous distribution type, the plot is square with a dimension of 20x20 m^2. For trees that are spatially distributed along the borders of individual land holdings, trees were selected and measured at 10 meter intervals.

At the beginning of the consultation series it was agreed that the following carbon pools would be measured: trees (above ground woody biomass), litter, and non-tree carbon pools (non-woody biomass: banana, grass, other herbal plants, food crops). During the training session it was found that measuring the non-tree carbon pool involved various methods of measurement that may not be comprehensively understood by the community within the research program period. Thus, it was decided that the measurement of the non-tree carbon pool would be conducted after the extension of the research program.

Variables that were measured at every sample unit were diameter at breast height (DBH), total tree height, and thickness of the litter. Currently, the capacity of the community is limited to measuring the tree trunks; additional measurements for branches and leaves were undertaken by ARuPA.

Calculations

Field measurements were recorded in pre-designed tally sheets and then entered into an electronic spreadsheet using MS Excel. Carbon calculations were undertaken for main stem, branches and leaves by applying regression estimates produced by Brawijaya University on carbon measurements in home gardens and community dryland forests.

Reflection: Major challenges, overall progress and lessons learned

Awareness

- Securing the commitment of community members is a challenge as CCA is not part of their daily routine. For people to feel enthusiastic about CCA, there must be strong commitment from local authorities and intensive consultations with community members.
- The community institutional setting is still weak and ineffective in some cases. There was an expectation that DKN, through the CCA project, may assist in strengthening the local institutions.

Research design

- Action research was found to be the suited to CCA. However, the researchers have to adhere to the research cycle (plan – action – monitor/evaluate – revise) in fully iterative processes, while recording and documenting.

- The sampling frame will be different in different types of forests and the sampling design has to be adjusted accordingly.

- Research design, sampling and measurement techniques have to be intensively discussed with the people to get their maximum participation in the research process.

Capacity building

- In designing capacity building it is necessary to take stock of the local situation and to consider the needs for competencies. Training of trainers will only be successful (effective in producing "trainers") if the selection of participants is proper in the sense of producing a list of true leaders in the community.

- The combination of classroom and outdoor/field exercises proved effective for the training. The training schedule matters. Training sessions must be fitted to the daily activities of community members. As a result, the man-days for the trainers may exceed those of normal training hours.

The second phase of the action research in 2011 will continue to engage with the villagers of Semoyo (Gunung Kidul District, Jogjakarta) on carbon accounting. Further socialization of the community carbon accounting concept will be conducted in Muara Merang village (Musi Banyuasin District, South Sumatra). An exploratory visit to Jambi will be conducted to explore the feasibility of CCA at selected sites.

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CCA awareness and consultation