Newsletter **AgFor** SULAWESI

Agroforestry and Forestry

January 2014

In this issue:

Newsletter AgFor
published by:
Agroforestry and Forestry
in Sulawesi (AgFor Sulawesi)

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Agroforestry and Forestry in Sulawesi (AgFor Sulawesi) is a five-year project funded by the Department of Foreign Affairs, Trade and Development Canada. The World Agroforestry Centre is the lead organization of the project, which operates in the provinces of South Sulawesi, Southeast Sulawesi and Gorontalo.

Bringing innovation from West Africa to Sulawesi

By: Enggar Paramita

Alain Tsobeng explaining cutting processes to participants. (Photo by: World Agroforestry Centre/AgFor Southeast Sulawesi Team)

AgFor Sulawesi's Bantaeng and Kendari offices welcomed visits from Alain Tsobeng of the World Agroforestry Centre's West Africa program in November 2013. Mr Tsobeng's visited to share knowledge and train field staff in vegetative propagation using a technique called 'non-mist propagation'.

'Our objective is to introduce an effective technology for vegetative propagation that can multiply difficult-to-propagate species or individual trees with superior characteristics', said Dr James M. Roshetko, AgFor Sulawesi Senior Project Leader. 'The training is actually a test, to see if the technology works well under the conditions in Bantaeng and Konawe. Our colleagues in West Africa have been successful in introducing the technology to farmers, hence, we believe seeking their assistance was the best approach'.

Non-mist propagation uses common techniques, such as bud grafting or air layering. The technique requires a propagator consisting of a wooden structure covered with clear plastic, a water sprayer, temperature regulator

Left: Mr Tsobeng demonstrating different cuttings processes to be used in the technique. Right: Female farmers plant cuts in propagator. (Photo by: World Agroforestry Centre/ AgFor Southeast Sulawesi Team and Pratiknyo Purnomosidhi)

and electricity. However, the technology has been simplified in order to make it applicable in areas with inadequate facilities as well as to amplify farmers' adoption rate.

In Southeast Sulawesi, training was held in Lawonua village, Besulutu sub-district, Konawe, involving AgFor Sulawesi team farmers' groups from Lawonua, Wonuahua and Onembute and AgFor's local partner, Operation Wallacea Terpadu.

Initial preparation involved observing the species to be used as sources of seedling cuttings. Mr Tsobeng recommended that seedlings should be collected from species growing in the vicinity. In this way, the group would be able to identify which local species were suitable for the non-mist propagation technique. Following the observation, the group decided to select durian, cocoa, bitter bean, rubber and rambutan as sources.

Subsequently, Mr Tsobeng and the group worked together to build a simple propagator. The propagator was covered with clear plastic and filled with growing medium for the cuttings. The medium consisted of three different layers: a bottom layer, which was filled with larger-sized gravel (more than 3 cm); a middle layer, consisting of gravel of 2–3 cm size; and a top layer that was a mix of sand, soil and sawdust.

To complete the structure, plastic pipe work was attached to the side of the propagator. The pipes will help to water the cuttings and measure the water height. The cover and pipes allow evaporation and help to maintain the moisture of the growing medium.

Participants enthusiastically cut the seedlings and planted them in two different treatments: one with root stimulants and the other without. The procedure aimed to measure the growth rate for each seedling under the different treatments.

After the seedlings were planted, the propagator was covered with plastic and placed under shade.

In South Sulawesi, the training was conducted in Bantaeng and attended by the AgFor Sulawesi team and representatives from Campaga 1 farmers' group. Similar to Southeast Sulawesi, the first step was identifying the best source of seedlings. In this case, the group decided to gather cuttings from clove, soursop, nutmeg, longan and candlenut trees.

Mr Tsobeng mentioned that it is crucial to collect cuttings early in the morning in order to maximize freshness, which contributes directly to the success rate.

Sahabuddin from Campaga 1 farmers' group expressed his excitement at participating in the training. 'Usually it takes 1–2 years for cocoa to grow from seeds until it produces fruits while this technique allows us to accelerate the whole process', he said.

Asep Suryadi, an agroforestry specialist with the AgFor Bantaeng team, said that the non-mist propagation technique can be developed by testing various growing mediums in order to know which one best matches local conditions.

The training by Mr Tsobeng was the initial step to disseminate the non-mist propagation technique. The AgFor teams in both South and Southeast Sulawesi provinces are observing progress of the seedlings while at the same time identifying and testing other species to test their adaptability to local conditions before conducting larger-scale training of other farmers' groups.

'We think that this propagation technique training will also serve as a way to conserve hard-to-propagate indigenous species that are threatened by over-utilization, such as "biti" (*Vitex cofassus*)', said Dr Roshetko.

Four districts in South and Southeast Sulawesi initiate livelihoods' conservation strategies

By: Shinta Purnama Sarie and Enggar Paramita

One of the AgFor team leads discussion during the workshop. (Photo by: World Agroforestry Centre/Asep Suryadi)

The 'Environment' component is one of three linked components that make up the AgFor Sulawesi project. Staff of the component organized a workshop in December 2013 to present the results of their vulnerability assessment. The workshop provided details of village profiles, including analyses of the strengths, weaknesses, opportunities and threats of each village. The assessments were conducted in four districts where AgFor Sulawesi operates: Bantaeng, Bulukumba, Konawe and East Kolaka.

Ni'matul Khasanah, a researcher with the World Agroforestry Centre who facilitated the event, said that the workshop aimed to improve sustainable agroforestry and forestry-based livelihoods while at the same time bringing together communities with other stakeholders to develop a land-use management and conservation livelihoods strategy based on the vulnerability assessment.

The vulnerability assessments were conducted using a method developed by the Centre, called Capacity Strengthening Approach to Vulnerability Assessment (CaSAVA). Compared to other vulnerability assessments that usually focus on risks caused by climate change, CaSAVA combines risks of biophysical changes (including climate change) with socio-economic and policy factors, which can

A workshop participant presents the strengths and weaknesses of one cluster. (Photo by: World Agroforestry Centre/Asep Suryadi)

lower productivity and profits, along with agroforestry practices and forestry.

Data were collected from July 2012 until May 2013, employing several techniques, such as direct observation, literature studies, focus-group discussions and interviews with key informants.

Villages in the four districts were categorized based on geographical location, topography and biophysical conditions then analyzed according to five assessment topics: 1) changes to land-use and land-cover; 2) biodiversity; 3) water sources and usage; 4) farming systems; and 5) markets. The data were used to develop a cluster profile or aggregation of villages.

In August and September 2013, the cluster profile was discussed in focus groups at the sub-district level. The discussions were attended by community members, local government officers, extension agents, representatives of village-owned enterprises, indigenous leaders, local legislative members and community-owned enterprise staff. They served as a chance to analyze the potential and problems in each village, identify the opportunities that might be useful in the future to develop the strategy, and recognize the threats.

The assessment results were extrapolated to district level and discussed in the workshop. During the event, the participants verified the analysis and set the vision and mission of each cluster profile by using an outcome-mapping method.

Ms Khasanah explained that outcome mapping was used to focus the participants on achieving results. She also added that outcome mapping prioritizes behavior changes.

Data interpretation revealed that each cluster had its own unique strengths, weaknesses, opportunities and threats. For example, in Kajang village the strengths were its fertile soil and strong customary rules while

Participants of CaSAVA workshop in Southeast Sulawesi. (Photo by: World Agroforestry Centre/Yulius Bari) decreasing water resources and limited agricultural knowledge were the main weaknesses. Based on this assessment, the community was asked to set the vision and mission to address them. After much discussion the village decided their vision was, 'A prosperous Kajang community with healthy behaviour and environmentally friendly based on local wisdom'. The discussion also identified potential partners to help achieve their vision.

Taufik SH, the head of Bulukumba Cultural and Tourism Office, who participated in the workshop, said that, 'The workshop is a good opportunity to accommodate inputs and identify crucial problems, which enables us to find the right solutions for Bulukumba'.

In the future, the strategy formulated in the workshop will be a fundamental framework for a working group consisting of many district stakeholders to manage land and livelihoods in an environmentally friendly way.

AgFor Sulawesi participates in Konawe district fair and agricultural exhibition

By: Hendra Gunawan and Shinta Purnama Sarie

The head of Konawe district visits AgFor Sulawesi's booth. (Photo by: World Agroforestry Centre/Hendra Gunawan)

AgFor Sulawesi participated in Konawe District Fair and Agricultural Exhibition at the Konawe Extension, Agriculture, Livestock and Forestry Office in Unaaha, Southeast Sulawesi, 16–17 December 2013. The event was held to appreciate farmers' active role in the district's development.

Aside from exhibiting local products and agricultural commodities from 19 sub-districts in Konawe, the event also hosted a discussion with the district head and staged various competitions.

During the event, AgFor Sulawesi was able to spread the word about the project's activities through brochures, information sheets and a presentation session. Together with the project's team, a farmers' group from Lawonua village that had been assisted by AgFor, shared information about the group's activities to visiting farmers and other visitors. The farmers' group was also involved in a discussion relating to development of the agricultural sector as part of the drafting process for Konawe district's medium-term development plan.

The popular AgFor Sulawesi booth. (Photo by: World Agroforestry Centre/Hendra Gunawan)

For the past two years, AgFor Sulawesi has been providing assistance to numerous villages in Konawe district so they can better manage prioritized commodities, such as cocoa, coffee, pepper and clove. Kerry Saiful, the district head, expressed his support for AgFor Sulawesi and emphasized the need for a follow-on from the current collaboration.

'The district fair and exhibition is a platform for AgFor to showcase the result of activities we have carried out in Konawe in the past two years', said Mahrizal, AgFor's provincial coordinator for Southeast Sulawesi. 'This includes producing high-quality seedlings from grafting and improving farmers' skills in vegetative propagation. We want to promote AgFor's work so that we can continue to contribute even more widely to agricultural development in Konawe and maintain a good relationship with local government'.

AgFor Southeast Sulawesi team explains the project's activities. (Photo by: World Agroforestry Centre/AgFor Southeast Sulawesi Team)

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