Background: Mount Sasak and its biodiversity

Mount Sasak located in West Lombok District, West Nusa Tenggara Province on Indonesia was once a mountain covered by a lush forest, nurturing a complex and highly diverse bio-sphere. The native forest trees functioned as a storage of rainwater and sustained springs that provided clean water for local communities and ensured irrigation for their paddy fields.

But all this changed when economic crisis hit Indonesia during the Reformation Era, towards the end of 1990s. The crises affected the entire country, including people living in villages at the foot of Mount Sasak. The skyrocketing prices of basic commodities and the increasing burden of poverty pushed the communities living around the mountain to exploit the forests for immediate survival, with negative consequences for the environment, and ultimately – for the people.

Despite the tremendous value of forests and its ecosystem as source of food, water, energy and security from natural disasters, the forests came to be seen as unproductive lands that could be cleared for agricultural use to meet the practical needs of people living nearby. Forest trees were cut down and the

Future Steps towards Sustainability

Community Learning and Activity Center

In the effort to institutionalize this initiative, Mataram University will make use of University’s existing Field Work Programme (KKN) — mandatory for graduate students – to run the Community Learning and Activity Center. By deploying students particularly from thematic areas of forestry, as well as students from the faculty of agriculture and the faculty of food technology and agro-industry, technical assistance and mentoring for the beekeepers and forest farmers can be sustained. Mataram University also plans to establish Community Learning and Activity Center in other areas.

Marketing Plan

Kelompok Madu Sari plans to diversify to produce two types of honey (Avicenna and Trigona). They will also improve the packaging of the products. At present the honey is sold only in bottles. In the near future, honey will also be sold in small sachets to lower the price and make it more affordable, particularly for poor families.

Capacity Building

Mataram University will continue to work with Kelompok Madu Sari to enhance their capacity, particularly in farming Trigona bees, including planting sun flowers to attract the Trigona Bees to flock to their area, and implementing the marketing plan to diversify products and prices.

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The Intervention: Sustainability Science Design

The increasing hardship and the number of natural disasters served as a wake-up call for the people to realize the importance of forest conservation. Kelompok Madu Sari, an association of local bee farmers, for instance, began to see that less bees were sold as lumber for building houses. Natural resources began to be converted for other uses, such as plantation of annual crops which could be harvested in shorter period compared to timber or big forest trees. However, the destruction of forests did not resolve social and economic problems; in fact, it amplified them. With an onset of dry season, shortage of clean water for consumption and field irrigation became apparent to the people. The wells at their homes began to dry up with the decreasing number of trees shielding the spring water from the sun. The rainy season brought up with the decreasing number of trees shielding the spring water from the sun. The rainy season brought up with the decreasing number of trees shielding the spring water from the sun. The dry season brought up with the decreasing number of trees. They also had hands-on training on cultivation of forest trees and cash crops, cultivation of plants model in mix area, nursery and plot cultivation of seedlings of non-timber forest products. These components will support the livelihood for the beekeepers and forest farmers while applying forest conservation.

1. Community Forest Management: provided information on the principles of forest conservation, particularly to manage community forest areas which had been given freely by the government to local community. From the in-class activities, local farmers gained new understanding on how to allocate lands for different types of trees mixed with various types of crops. They also had hands-on training on cultivation of forest trees and cash crops, cultivation of plants model in mix area, nursery and plot cultivation of seedlings of non-timber forest products. These components will support the livelihood for the beekeepers and forest farmers while applying forest conservation.

2. Community Empowerment: was aimed to strengthen the local organizations that bring together the beekeepers and forest farmers. Mataram University provided technical assistance to develop the vision, mission and business plan which will serve as a road map for the development of these two organizations.

3. Establishment of Cooperative: to prepare the beekeepers and forest farmers with knowledge and skills to grow their organizations as a cooperative entity. The aim of this initiative is to transform their organizations into a cooperative of farmers.

Finding Solutions: Stakeholders and their Roles

University
Mataram University facilitated building the linkages between community, local government and private sector by conducting multi-stakeholder meetings for planning and implementation of the project, as well as resource mobilization. Mataram University has established a Community Learning and Activity Center (CLAC) at Tempos Village where the beekeepers and forest farmers of this project are located. Lecturers from the university have conducted trainings for local farmers. Students from Mataram University visit the CLAC at least once every two days to provide assistance and mentoring for the beekeepers and forest farmers. The University has also provided seedlings for local community.

Government
Local and national government, starting from Village Head up to Ministry for Forestry and Environment, played an important role in granting Community Forest Management Utilization Permit (IUP-HKm) to local community in Mount Sasak. This policy provided a win-win solution for local farmers to make use of the protected forest in sustainable way. The Provincial Government and District Office for Forestry played an active role from the start of the project, including the recommendation of Tempos Village at the foot of Mount Sasak as the project site, based on their knowledge of the distribution of existing funding from international assistance initiatives in the wider region. In addition, these local government agencies have provided seedlings and beehives for local farmers.

Local Community
Men and women of the local community acquired new knowledge about forest conservation and put this knowledge into practice. They have also contributed their time and labor in the planting of trees for reforestation. Their willingness to change from the old to the new way of managing the forest, and play an active role in reforestation have created positive results for the forest and its ecosystem. Local community actively engaged in exchanges with the government, university and other stakeholders to explain their needs.

Private Sector
A Local Corporate Social Responsibility Forum contributed in this initiative by linking farmers with business networks. The networking helped create new demand of market products, and facilitated the transfer of knowledge and technology. A company named Eco Leaf Indonesia, for instance, shared results from their Research & Development Unit that can be used as an alternative energy source, and that this non-timer by-product is in demand. Eco Leaf Indonesia has expressed interest to purchase waste shells of the local farmers, and to transfer to them the knowledge and technology on processing this by-product into coal, providing added value and increasing the income for local community.

The Impact
In order to enable a sustainable use of various non-timber products from the protected forest, the local community had applied for the Community Forest Management Utilization Permit (IUP-HKm). Mataram University and other local partners supported the application for the permit as a win-win solution and assisted in the process. In 2016, the permit was granted with the validity of 35 years, conditional on the results of evaluations to be conducted every five years. The Permit outlines the rights and obligations of local farmers in managing the forest sustainably. Now forest farmers are relieved that they can make use of forest legally, as long as they follow the regulation. The reforestation initiative has already shown result. At the beginning of the project, only two out of six original water springs contained water. After new trees had been planted, one of the four dry water springs has recovered. Farmers have also planted candlenut trees. After the harvest, they can sell the peeled candlenuts as well as the waste shells of the candlenuts for alternative energy, increasing profit.

Firmansyah, Staff for Land Rehabilitation from West Nusa Tenggara Provincial Office for Forestry
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Firmansyah, Staff for Land Rehabilitation from West Nusa Tenggara Provincial Office for Forestry appreciated the collaboration between UNESCO and Mataram University to assist local community at Tempos Village. "Local government, just like other stakeholders, has limitations. For us in the local government, it is the limited number of human resources. It is not possible to reach out to all of our constituencies at all times, to know their pressing issues and to provide solutions. Therefore, we have to work with universities, NGOs and other organizations."

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