

The Development of Isolated and Underdeveloped Silalahi II Village to be A Developed Village in The Aspect of Agriculture and Tourism

Budi Utomo^{1,*}, Marheni Sembiring², Kasmir Tandjung³

¹⁾Faculty of Forestry, University of Sumatera Utara

²⁾Faculty of Agriculture, University of Sumatera Utara

³⁾Faculty of Engineering, University of Sumatera Utara

Abstract. Silalahi II Village is located at the end of Silahisabungan Sub-district which borders with Toba Samosir Regency. As the main road access to other villages is blocked because of landslide and erosion in many places, the village becomes isolated and underdeveloped. The only possible access to the village is through water by using boats or canoes. Difficult access to the village increases burden that have to be borne by local people; thus, they cannot rise from prolonged poverty to the present. To develop this village, assistance from higher institutions which collaborate synergistically in one series of PPM activities would be required. Based on the priority of the problem, the implementation team of PPM would focus on opening and improving 11 km road access that was blocked for a long time in the village. The work was performed using excavator and bulldozer. In addition, a training which aimed to increase income of the farmers in the village was also conducted by the PPM team. High quality of red onion seeds which was expected to be one of the village's mainstay products were introduced to the farmers in the training. The village would also be promoted as an alternative tourism village because of its potential of natural beauty. Finally, this village is expected to be established as an assisted village partnered with University of Sumatera Utara (USU) to be the icon and the major driver of the village's development, and one of the science-techno and tourism park models.

Keywords: Access, Agriculture, Isolated Village, Onion, Roadwork

Abstrak. Desa Silalahi II terletak di ujung Kecamatan Silahisabungan yang berbatasan dengan Kabupaten Toba Samosir. Putusnya akses jalan utama ke desa lainnya akibat longsor dan erosi di banyak tempat mengakibatkan desa ini menjadi terisolir dan tertinggal. Satu-satunya jalan keluar masuk dusun ini hanya melalui jalan air menggunakan boat/sampan. Sulitnya akses menuju desa menimbulkan rentetan beban yang harus ditanggung masyarakat sehingga masyarakat tidak mampu bangkit dari kemiskinan

*Corresponding author at: Jalan Tri Darma, Kampus USU, Padang Bulan Medan 20155, Indonesia

E-mail address: utomobud@yahoo.co.id

berkepanjangan hingga saat ini. Untuk mengejar ketertinggalannya perlu bantuan ipteks perguruan tinggi yang saling bersinergis dalam satu serie kegiatan PPM. Sesuai dengan prioritas permasalahan maka pada kesempatan ini Tim pelaksana PPM melaksanakan pembukaan dan perbaikan akses jalan darat sepanjang 11 km yang terputus sejak lama. Pekerjaan dilakukan menggunakan peralatan excavator dan bulldoser. Selain itu untuk meningkatkan pendapatan petani maka Tim PPM akan melaksanakan pelatihan dan introduksi bibit bawang merah berkualitas ke kelompok tani sehingga komoditi ini diharapkan menjadi salah satu produk andalan desa. Potensi keindahan alam akan dimanfaatkan menjadikan desa sebagai desa wisata alternatif. Diharapkan akan terbangun desa binaan mitra USU yang memiliki keunggulan sebagai icon dan penggerak utama pembangunan desa sekaligus sebagai salah satu model sains-techno and tourism park.

Kata kunci: Akses, Pertanian, Desa Terisolir, Perbaikan Jalan, Bawang Merah

Received 29 October 2017 | Revised 2 January 2018 | Accepted 19 March 2018

1. Introduction

Majority of people in Indonesia would know Lake Toba which becomes the pride of people in North Sumatra, even Indonesia. The lake which surrounds Samosir Island with an area of approximately 1,103 km² has a beautiful scenery [1]. One regency which is adjacent to Lake Toba is Dairy Regency. This regency is one of 22 regencies or cities in North Sumatra Province with an area of 192,780 hectares which is about 2.69% of the total area of North Sumatra Province (i.e. 7,160,000 hectares). Dairy Regency, which is in the northwest of North Sumatra, is at an average altitude of 700 to 1250 metres above the sea level with 15 sub-districts. One of the sub-districts which borders with Lake Toba is Silahisabungan Sub-district consisting of five villages, namely Silalahi I Village, Silalahi II Village, Silalahi III Village, Paropo I Village, and Paropo II Village [2;3].

In fact, not all water catchment areas in Lake Toba receive revenue from the tourism sector. People who live in villages in this region cannot rely on this sector because of the lack of visits from local and international tourists. Unfavorable conditions of the road (e.g. a dead end, only to certain villages) also become another reason of the lack of tourist visits. As a result, the local community inevitably depend their lives on farming and fishing with various limitations in the area [4].

Silalahi II Village consists of four hamlets in which Hamlet I and Hamlet IV are the farthest and the most isolated hamlets because there is no road access to these hamlets. The only possible access to this region is using a motor boat which takes about one hour. In the past, there was a road made to connect to this region, but the steep condition of the cliffs and a high potential for erosion and landslides caused the road which connected these villages and hamlets was blocked. As there is no road access, the local community cannot expect the entry of electricity into their region from

the State Electricity Company (known as PLN). The hamlets which are adjacent to Toba Samosir Regency eventually become an isolated and underdeveloped region. To date, the livelihood of the local community is still derived from the agricultural sector, particularly rice. The limited land with a flat topography causes much abandoned land. Because of this situation, the PPM team took the initiative to cultivate red onion plants in this area. According to Utomo (in press), red onions can thrive in water catchment areas of Lake Toba, such as Simalungun, Karo, and Tobasa [5]. The local community used to be reluctant to plant this commodity because the price of the seeds is relatively expensive. Moreover, they do not understand the cultivation technique of this commodity, so it is highly prone to failure. Therefore, the PPM team planned to conduct a series of activities, including socialization, training, and implementation of the red onions' cultivation. In the future, this commodity is expected to be the mainstay commodity of this region.

2. Methods

The proposed PPM program was planned to be conducted in Silalahi II Village, Silahisabungan Sub-district, Dairi Regency, North Sumatra Province.

2.1. Implementation of science and technology in the program of IbDM and problem solving

Schematically, the implementation of science and technology of university in the program of IbDM and the pattern of the problem solving can be described as follows. The implementation of science and technology in the program of IbDM was planned in advance based on priority scale. Urgent activities which support the next program will be conducted first.

2.2. Improvement of the road access

Road access is essential for the economic growth in one region; therefore, this activity becomes the priority of the program. The road improvement includes cleaning the landslide materials caused by the erosion on the road using a bulldozer. In some locations of the road which underwent erosion and landslide, the roadwork includes making gabions or landfilling with soil. The perforated sections in the road was filled with *sirtu* sand and trimmed using a motor grader. The technique of the roadwork was planned and implemented according to a team of experts from USU [6].

2.3. Introduction of red onion as the village's mainstay product

To date, the limited field was utilized by the farmers to plant rice, *palawija*, and coffee. The research results of the PPM team showed that red onions can grow and produce well in the water catchment area of Lake Toba. The high selling price, the high market demand, and the mastery of this cultivation technique will be utilized by the PPM team to make red onions as the

main stay product of the farmers and are expected to improve the economy of the farmers in this village.

3. Results and Discussion

3.1. Opening the road access

Opening the road access became the main priority of the PPM's activities this year. Because the village is an isolated and remote area, the roads have to be opened and repaired, so that the local community and people in general (e.g. visitors) can visit this area easily. This would invite more local and foreign tourists to visit this region. The process of opening the road access and the road improvements are currently in progress. The road which is opened and repaired is a 8 km village road. This road connects Hamlet I, Hamlet II, and Hamlet III with Hamlet IV (Figure 1).

As this region is isolated and remote, the myths and the belief in the existence of a subtle spirit still exist. Therefore, the local community would determine the day of the opening the road based on that belief. Besides, the local community performed a ritual of praying for this activity to run smoothly without any obstacles from the spirits (Figure 2).

Until the time that this report was made, the process of opening the road access is still in progress and has been completed 50%. The road access which has been opened and can be passed by 2-wheel vehicles and 4-wheel vehicles is about 4 km. This activity has lasted for 1 month using heavy equipments, such as a bulldozer and a wheel loader (Figure 3). The process of opening and improving the road access was expected to finish in the middle of September 2017. The most difficult and time-consuming work in this activity was cleaning the road which was struck by a landslide at 3 points along 1 km. However, this road has been improved and it can be passed by vehicles nowadays (Figure 4).



Figure 1. The footpaths to be built (left); One of the landslide roads which would be opened, seen from a boat (right)



Figure 2. The ritual ceremony performed by the local community



Figure 3. The process of repairing the landslide roads and opening the road access (top); supervision and test for 4-wheel vehicles (bottom)

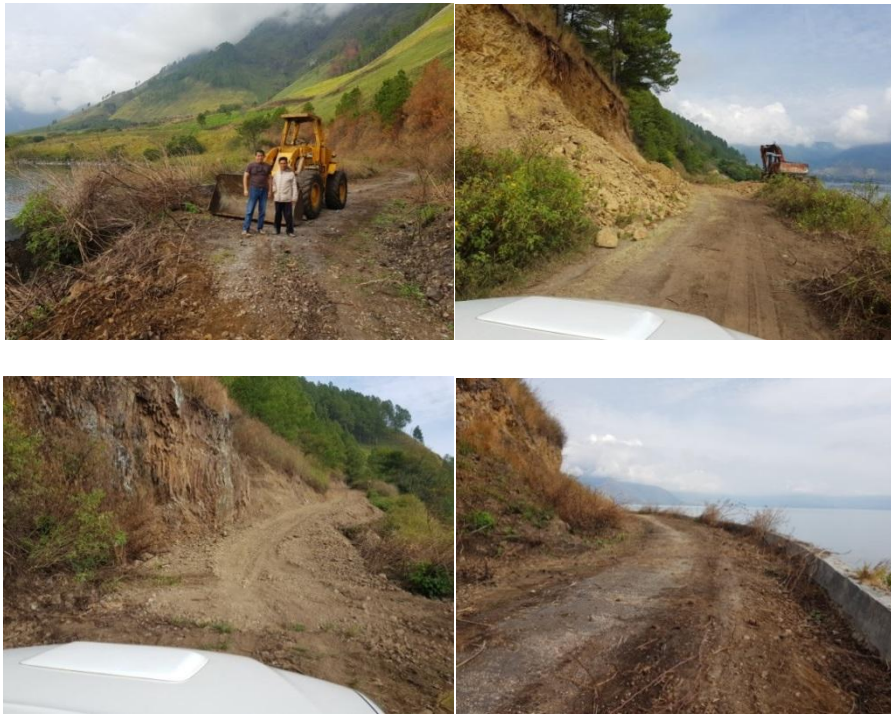


Figure 4. The road that has been opened and can be passed by 2-wheel vehicles and 4-wheel vehicles

The process of cleaning the landslide was quite difficult because the area consisted of large rocks. Therefore, 2 units of heavy equipments were used, such as excavator to clean rocks and cliff walls to avoid another landslide, and a wheel loader to open and widen the road access that was previously a footpath for pedestrians.

As the road access has been opened in Silalahi II Village, the local community feel happy because they can come and leave the village at any time more easily. In the future, the local community hope that the local government will continue this program by paving the road which has been opened to facilitate and invite more visitors to this region.

3.2. Introduction and cultivation red onion plants

In some water catchment areas of Lake Toba, the red onion commodity has been introduced by the implementation team of PPM through many ways. This plant has been proven to grow and produce well in this region. Thus, local people in other water catchment areas of Lake Toba also started to cultivate these plants in their region, such as Simalungun, Dairi, Samosir, Toba Samosir, and others. Currently, this commodity was introduced by the PPM team in Hamlet IV named Sitio-Tio. This plant was expected to grow and produce well in this region and could be the mainstay commodity of the local community.

The activities conducted was socialization and training about red onion cultivation (Figure 5). Further, activities were continued with planting. As dry season in this region would last until August this year, climate should be a special concern to increase the success rate of growing. According to the plan and considering the high public interest to cultivate this commodity, 1000 kg red onion seeds were provided by the team. These seeds were distributed evenly to all village farmers in accordance with the results of community meetings.



Figure 5. Socialization and training with the local community about red onion plants

Red onion plants are plants which need sufficient amount of water for a long time during its growth. However, this plant is known as susceptible to puddle which might result in decay. Therefore, the ground should be raised up to 30 cm and a sufficient drainage ditch should be made. The local community were asked to prepare their agricultural field until August.

To accelerate the process of transportation, the introduction of red onion seeds was conducted without waiting for the roadwork was completed. Therefore, the process of transporting the seeds was done using 125 HD diesel colt type of truck and followed by water transportation namely boat (Figure 6).



Figure 6. The process of transporting high quality red onion seeds using truck and boat

In accordance with this activity, the most important thing was preparing the planting field. The field used to cultivate onions should be prepared before the seeds arrived in the region. Thus, the field was cleaned and was raised up to 30 cm to avoid tubers submerged in water during the growth period which could cause the decay of the tubers (Figure 7). After the seeds arrived at the planting field, the seeds were directly planted on the agricultural field by the local community. The process of planting the seeds was performed in accordance with the right procedure of onion cultivation for a maximum production. Therefore, the local community were trained first in terms of cultivation and maintenance of red onions. To date, the red onion plants of the local community which are one month old grow well. It is expected that these onions would produce optimally, so it can improve the economy of the local community.



Figure 7. The planting field for the cultivation of the red onion plants

4. Conclusion

The implementation of the community service in Silalahi II Village, Silahisabungan Sub-district, Dairi Regency was held successfully. The local community welcomed the activities with great enthusiasm. The previously isolated village has now been accessible by 2-wheel vehicles and 4-wheel vehicles. As a result, the village also becomes a new tourist destination, such as a nature tourism and an *ulayat* custom of people in Silahisabungan. In addition, red onions which were planted in the village currently grow well and are expected to produce optimally.

5. Acknowledgements

The PPM team from University of Sumatera Utara (USU) would like to thank Ministry of Research, Technology, and Higher Education for the grant awarded through a multi-year grant scheme that is “Science and Technology Grants for Partner Villages (known as IbDM).”

References

- [1] Siagian B. 2006. Selamatkan Ekosistem Danau Toba. http://www.hariansib_com.htm. [23 November 2006].
- [2] PIK USU dan BPK P. Siantar. 2000. Laporan Penelitian Kajian Penurunan Muka Air Danau Toba. Kerjasama Program Ilmu Kehutanan USU dan Balai Kehutanan P.Siantar.
- [3] Utomo, B. 2008. Degradasi Daerah Tangkapan Air Danau Toba. Media UNIKA 66: 294-308.
- [4] [LPPM USU] Lembaga pengabdian pada masyarakat. 2014. Program kegiatan. <http://usu.ac.id/id/> (diakses pada 05 April 2014).
- [5] Utomo, B. *Inpress*. Bawang merah produk andalan Desa Haranggaol di Daerah Tangkapan Air Danau Toba. Media UNIKA.
- [6] [USU]. Universitas Sumatera Utara. 2014. Fasilitas dan sumber. <http://lppmusu.ac.id/id/> (diakses pada 05 April 2014).