

Women in Natural Resource Management Scheme

In practice, the utilisation of natural resources by women are often overlooked and not calculated, while in reality, women work to meet their everyday's needs (food and water) and to gain economic gains.

In the natural resource management scheme, women play an important role in farming and non-timber forest products management. With the majority of women working as farmers, both as farm workers and land owners, they contribute to the preparation of land, stocking of seedlings, controlling of fertilisers and pests, and marketing of products among their relatives as well as in the market. Also, in the management of non-timber forest products, women are involved in the cultivation of herbs and spices such as cinnamon and gambir, a typical commodity of Nagari Alam Pauh Duo. People in the area also grow orange trees.

The fact that women participate in natural resource management necessitates acknowledgement and consideration of their contribution. This should be translated into efforts to fulfil women's social needs in terms of their rights to land and other assets, women's right to equal education, and acknowledgement of their productive work as well as their domestic work.

Environmental Problems

The main problem in the area is illegal logging within Area IV Kerinci Seblat National Park. In total, Solok Selatan District has lost its tree cover as much as 36.218 hectare or 10% of its total area.

Environment risks within the region are made even worse with the conversion of land into thermal power plant area in Nagari Alam Pauh Duo. This tree cover loss will carry the risk of environmental impacts such as loss in biodiversity and food crops, changes in temperature, and inavailability of clean water. Also, as water absorption area is narrowed down, the risk of landslide and flood gets higher.

As the area is located in the upstream of Batang Hari River, people around the area are also affected by water pollution resulting from waste mismanagement. This can be observed from the pile of garbage in the riverbank and the fact that landfills are absent. This affects the availability of clean water to meet people's daily needs and to irrigate their land.

The Impact of Resource Management on Women's Life

While resources are abundant in Nagari Alam Pauh Duo, this does not necessarily benefit women. Early marriage, bad roads, loss of tree cover, and water pollution are among the things that add to the burden of women. Regarding this, important things to note are:

1. Women's low productivity due to inadequate road access

Women, who are often the one tasked with water collection, spend more energy and longer time to access water due to lack of road access. Their productivity in managing natural resources is also hampered by this condition.

2. Poverty and early marriage

The presence of thermal plantation plant does not immediately carry positive impact on people's economy. Cases of early marriage in Nagari Alam Pauh Duo due to the high rate of poverty are an obvious fact in the area.

3. Uncertainty about their future

Women in Nagari Alam Pauh Duo worry about their future supply of foods and water from the forest. Inadequate supply of electricity, water pollution, and lack of public infrastructure are among the things that concern women in Nagari Alam Pauh Duo.

End notes

1. Statistics of Pauh Duo Subdistrict Year 2015. Badan Pusat Statistik-Statistics Agency, Solok Selatan District. 2015.

2. *Letak geografis dan topografi. Pemerintah Kabupaten Solok Selatan.* Accessed from <http://www.soloselkab.go.id/post/read/154/letak-geografis-dan-topografi.html>

Natural Resource Management & its Impact on Women's Life in Solok Selatan



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Introduction

Solok Selatan District consists of 7 subdistricts with varied topography, ranging from undulating valley to hilly areas as part of Bukit Barisan. As much as 60% of Solok Selatan's total area lies in the slope gradient of more than 40%. Solok Selatan is also the home of 13 watersheds, making it one among the four districts that are located in the upstream area of Batang Hari river.

Most of Solok Selatan's areas is constituted of forest area which makes up 72,70% of its total area. The rest of Solok Selatan's area is formed of rice fields, plantations, and residential areas. Its protected forest is as much as 83.404 hectares, or 23% of the total area of Solok. From 2010 to 2014, Global Forest Watch (GFW) recorded tree cover loss in Solok Selatan's protected forest. This condition is described by GFW as fluctuating in trend but is likely to increase every year.



Pauh Duo is a subdistrict located at the end of the upstream area and is one of the three subdistricts to indicate growth point in terms of education, health, trade, and tourism. The subdistrict is also the centre for food production in the area. With four nagari (villages) within its boundary, Nagari Alam Pauh Duo is the largest nagari in Pauh Duo district. It is Pauh Duo's large area that leads to its greater growth point concentration.

Social Dynamics in the Area

Road Infrastructure

The distance between residential areas is quite far in which people have to travel for up to 30 minutes to reach other residential area. This hampers the access to daily needs such as food, water, education and health.

Furthermore, the roads in the area are usually winding and even the main roads are rocky. This is made even worse by the fact that a natural resource company is operating at the end of the road with trucks and heavy-duty vehicles operating on daily basis. Though these trucks and vehicles pass residential area all the time, there has not been any effort of the company to maintain the condition of the road.

Means of Transportation

Even though Nagari Alam Pauh Duo is the largest nagari in Pauh Duo,¹ public transportation is non-existent. The only available means of transportation are motorcycle taxi or chartered car, which help people travel from nagari to other cities/districts. This conditions leads to high cost of transportation. To go to school and access health facilities, market, and city centre, people have to spend around IDR 30.000-50.000.

Food Access

Tree cover loss has impacted the access of women, whose livelihood depends greatly on forest, to food and water. As women's gardening area is narrowed down, the availability of food is decreasing. This shifts people's reliance on natural products to market products while at the same time, nearby markets are an hour drive from people's residential area.

Access to Clean Water

Rivers flowing in the area supply clean water in Nagari Alam Pauh Duo. Accessing clean water is, however, expensive and difficult. Middle-class people are usually able to buy pipes that are directly connected with the water source. For this, they have to spend around IDR 100.000-300.000 (for 30-50 metres of pipe). This doesn't guarantee that the access will be

easy as problems like pipe leaks are quite common. On the other hand, people who cannot buy pipes, those of low-income families, have to directly take water from the water source. They have to travel for about an hour twice a day for this. Women are usually tasked to access this clean water.

Access to Health Service

Based on Pauh Duo statistics (2015), the available health facilities in Nagari Alam Pauh Duo are 1 community health centre, 4 supporting community health centres, 2 village polyclinics, and 11 integrated early childhood care. This number is deemed insufficient as they only provide early treatment for problem such as diarrhea, dengue fever, typhoid, non-communicable disease, family planning service, and birth service. Surgery, however, cannot be performed due to lack of facility.

To access comprehensive health service, people have to access it in the district, where health workers like doctors and nurses are often lacking as well.

Access to Education

To access secondary education, including SMP and SMA, people have to travel to Solok Selatan District and this means extra cost of around IDR 750.000-1.000.000 for parents. Also, due to the inavailability of public transportation from each nagari to school, kids have to live close to the district and this adds to the total cost of education. Consequently, a lot of kids, especially girls, drop out of school. This is also one of the factors that contributes to the high number of early marriage cases in Jorong Pekonina, Nagari

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Alam Pauh Duo. Families marry their daughters to lift up their economic burden. We found three cases of early marriage, within our six months observation (2015), that are motivated by economic reason and parent's inability to send their kids to school.

Natural Resource Potential

Based on geological map, natural resource potential in Solok Selatan District includes mineral resources which are 1) metallic mineral: copper, gold, and silver; 2) geothermal energy; 3) extractives: limestone, sand, and river stones.² This potential is developed by people outside of community with the coming of outside investment. One of the most desired potential is the geothermal energy in Pauh Duo Subdistrict, Nagari Alam Pauh Duo, Jorong Pekonina. Starting in 2008, a company is managing geothermal energy generated from hot spring to generate electricity as an alternative energy.

Thermal Power Plant Management and Land Conversion

With a company managing the thermal power plant, lands are converted into thermal power plant location. Lands that were previously forest area were converted and hence, the width of forest area is narrowed. Activities of the company, involving heavy-duty vehicles, also lead to road damage.

The company does not keep its promise to contribute to community's welfare by hiring local people. A small number of local people are only employed as security and administrative personnels. This indicates a gap of access even when natural resource potential of the area is managed. The coming of big investors does not result in local community receiving benefits from companies.

Solok's soils are high in fertility and nutrients, making the area a perfect location for farming activities, especially for horticultural products. This has been proven as farming sector is one of the strongest sectors in the region to contribute to community's welfare. Pauh Duo Subdistrict is among the areas in Solok Selatan with a relatively high productivity rate of community's crops. Suitable commodities for Solok Selatan are tea, cocoa, and coffee.