

## Coastal Settlement Sanitation Facilities In an Effort to Alleviate Environmental Factors to Overcome Stunting In Paluh Sibaji Village

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**Abstract.** Sanitation of the residential environment, people in Paluh Sibaji village experience limited basic sanitation in the form of limited clean water facilities and minimal toilet facilities far from health requirements. Based on this, the community of Paluh Sibaji village is experiencing health problems related to environment-based diseases and stunting was found to be 60 cases of stunting in Pantai Labu sub-district in 2023. The methods used in handling the problem are atmosphere building, action diagnosis, socialisation, education and intervention to revitalise latrines and clean water sources in hamlet IV of Paluh Sibaji Village. The latrines and clean water sources that have been renovated have met the requirements of healthy latrines and clean water. Evaluation continues to be conducted regularly to improve and maintain the sustainability of the programme.

**Keywords:** Revitalisation, Latrine, Water source.

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### 1. Introduction

Paluh Sibaji Village, located in Pantai Labu Sub-district, Deli Serdang Regency, has an area of 320 hectares with four hamlets. In 2022, the population of Paluh Sibaji Village was recorded at 4,525 people with a distribution of 2,299 men and 2,226 women [1]. Paluh Sibaji Village has hamlets that are directly adjacent to the coastline and generally the livelihood of the population is in the fisheries sector as fishermen (80%), agriculture, traders, livestock, labourers and private employees. Most of the population only graduated from elementary school (179 people, 42.4%), with an average family head income below the Deliserdang Regency minimum wage of Rp3,505,076 [2]. The majority of clean water sources use PDAM water as many as 533 households (58.6%), pump wells 198 households (21.7%), and dug wells 178 (19.5%) [3].

The coastal community of Paluh Sibaji Village faces health problems related to environmentally-based diseases such as skin diseases, diarrhoea, and degenerative diseases (heart disease, diabetes, hypertension, rheumatism). Data from Pantai Labu Community Health Centre and Paluh Sibaji Village Pustu show hypertension as the biggest disease, followed by diarrhoea and skin diseases. Stunting is still a big problem because there were 60 cases of stunting in Pantai Labu sub-district in 2023 [4]. Poor sanitation conditions and do not meet the requirements in accordance with Permenkes RI No. 3 of 2014 concerning the Community-Based Total Sanitation Program (STBM) which focuses on the third pillar, namely Household Drinking Water and Food Management, which is an indirect risk factor for stunting. Residents of Hamlet IV, Paluh Sibaji Village, the majority have boreholes in their respective homes. However, the water produced from these wells is yellow, smelly, and salty, so it cannot meet the needs of clean water for bathing, washing, cooking, and drinking. To obtain clean water, residents usually take water

from the next hamlet for bathing and washing, and buy clean water for Rp5,000 per 5 litres for cooking and drinking.

According to an interview with the Head of Hamlet IV, Mr M. Kurniawan (Kukun), there was assistance from Regional House of Representatives (DPRD) members in the form of public toilets equipped with latrines, water machines, and reservoirs. However, it has not been functioning for the past three years because the water quality is yellow, smelly and salty and does not meet the requirements for clean water, and the water reservoir is leaking and the water pump is broken. Residents also reported that the quality of the water caused itching and was not suitable for use.

Therefore, it is necessary to revitalise the latrines and clean water sources. This is the background of the community service programme that aims to improve the quality of settlement sanitation and increase knowledge, management of settlement environment management as well as the formation of organisations at the hamlet level as managers of clean water facilities and healthy latrines as a model of small communities that care about the environment in a sustainable manner.

## 2. Method

Revitalisation of boreholes and latrines was carried out in Hamlet IV of Paluh Sibaji Village, Pantai Labu Subdistrict. The determination of this service location is based on findings regarding health problems caused by improper sanitation at the service location, namely the problem of clean water availability with the incidence of stunting. Revitalisation of boreholes and latrines will be implemented with the principle of 'Healthy Euastary settlement'. environmentally sound development is a planning and construction process aimed at reducing negative impacts on the environment, so as to create a balance between environmental sustainability and human life needs, both for current and future generations.

The data sources in this service are interviews, observations, and literature review.

### 1. Environmental Quality Survey Stage

At this stage, an environmental quality survey was conducted with the hamlet head and posyandu cadres to identify environmental quality problems including the existence of clean water sources, proper latrines, and sanitation in Paluh Sibaji Village. From this stage, health problems were found as many as 5 cases of stunting, as well as inadequate clean water facilities in Paluh Sibaji Village.

### 2. Determining the Intervention Method

Based on the results of the environmental quality survey, a method of revitalising boreholes and latrines was found. The aim of this revitalisation is to produce a usable sanitation environment to prevent the incidence of infections in children under five.

### 3. Action Diagnosis Stage

This stage is divided into four forms of activities, namely:

#### a. Socialisation

Conducting socialisation to the community regarding the purpose of revitalising boreholes and latrines to overcome stunting problems. This stage also explains the vision and mission and expectations of the borehole and latrine revitalisation activities.

#### b. Revitalisation of boreholes and latrines

The borehole and latrine revitalisation plan is carried out at points where there is no access to clean water, and healthy latrines. Gotong royong as the initial stage of revitalising boreholes and latrines was carried out to realise community concern, participation and commitment in improving health status in Paluh Sibaji Village [5].

#### c. Establishing a borehole and latrine management organisation

In order to maintain the sustainability of the borehole and latrine revitalisation program, a community-based organisation was formed to clean and turn off the water machine.

#### d. Evaluation

The evaluation was conducted at the initial stage, the process and at the final stage of borehole and latrine revitalisation.

### 3. Result and Discussion

Community service is carried out in Paluh Sibaji Village involving students. The location of the service in hamlet IV, the stages of implementing the service are as follows:

#### 1. Building an atmosphere

Building harmonious cooperation with the Head of Paluh Sibaji Village Mr Nasri, Head of Hamlet IV Mr Kurniawan (Kukun), community leader Mrs Suryah, and the community in an effort to increase access and understanding of the importance of access to clean water and latrines to reduce stunting rates. Discussing the location of the borehole and latrine revitalisation, the timing of implementation, and the role of the community in the borehole and latrine revitalisation program.



Fig 1. Foster an atmosphere with partners.

#### 2. Location survey

Conduct a direct survey to the location where the revitalisation of boreholes and latrines will be carried out. Reviewing the priorities and needs of the borehole and latrine revitalisation work.



Fig 2. Survey of Borehole and Latrine Revitalisation Sites.

#### 3. Focus Group Discussion (FGD) with residents of Dusun IV Paluh Sibaji Village

Explaining to the community about the purpose of the activity and the importance of borehole and latrine revitalisation activities in efforts to alleviate environmental factors on stunting. This FGD is carried out with the hope that the community can work together so that activities can be carried out properly.



Fig 3. Focus Group Discussion (FGD) with residents of Dusun IV Paluh Sibaji Village.

#### 4. Mutual Cooperation



Mutual cooperation is carried out with the community to clean the borehole and latrine revitalisation sites using simple tools such as brooms, hoes, and shovels to clean the revitalisation sites. This activity also aims to form a sense of community responsibility to maintain the wells and latrines after revitalisation.



**Fig 4.** Mutual cooperation with the community to clean the borehole and latrine revitalisation sites.

#### **5. Purchase of tools and materials for the revitalisation of boreholes and latrines**

Arrange for the purchase of tools and materials required for the revitalisation of boreholes and latrines. Ensure there is no damage and completeness of tools and materials.



**Fig 5.** Purchase of tools and materials for the revitalisation of boreholes and Latrines.

#### **6. Construction phase**

Revitalisation of boreholes and latrines was carried out on 15 June - 05 July 2024.

- a. Drilling process. The drilling process aims to clean the waterway in the borehole from sand and silt so that clean water can come out of the spring.



**Fig 6.** Drilling process.

- b. Cut 20 PVC pipes. PVC pipes that have been cut are inserted into the ground 120 metres deep.



**Fig 7.** Cutting PVC pipe as many as 20 rods.

- c. Making a septic tank. Digging a hole with a predetermined depth and width. Making sure the walls are sturdy and not prone to landslides.



**Fig 8.** The process of making a septic tank.

- d. Replacing the old zinc with a new one. This zinc replacement is done to prevent leakage during the rainy season and to increase the safety of the latrine users.
- e. Painting the walls of the public toilet. The purpose of this painting is to beautify the appearance of the public toilet and protect the toilet walls from moisture, which can cause damage to the walls such as cracking, erosion, or mold. The painting was done by one of the community members of Dusun IV Paluh Sibaji Village, Ibu Iyud.



**Fig 9.** Process painting process of public bathroom.

- f. Application and arrangement for an increase in electricity power. Request for an increase in electricity power from 900 Watts to 1300 Watts submitted to UP3 PLN Lubuk Pakam. The increase in electrical power was carried out to support the water pump machine to operate optimally.





**Fig 10.** Application and management of electricity power increase.

## 7. Post-construction stage

Post-construction stages are as follows:

- a. Inauguration of borehole wells and latrines. Inauguration of the borehole wells and latrines and community testimonials on the existence of the borehole wells and latrines.



**Fig 11.** Inauguration of borehole wells and latrines.

- b. Organisation formation. The formation of a community organisation in the management of clean water facilities *Pantau dan Rawat Air Bersih (PANRAIR)* from the community and by the community, the formation of this organisation aims to create a more sustainable and integrated solution in clean water management.



**Fig. 12.** Formation of the organisation.

- c. Socialisation and Training on Clean and Healthy Living Behaviour (PHBS). Conducting Clean and Healthy Living Behaviour (PHBS) Training to the community of Dusun IV Paluh Sibaji Village. This training explained the concept of PHBS and why it is important to do so. Through this training, it is hoped that the community will understand about PHBS, its benefits, and be able to apply the concept of PBHS in their daily lives.



**Fig 13.** Socialisation and Training on Healthy and Clean Living Behaviour.

- d. Evaluation and monitoring of the sustainability of boreholes and latrines. The monitoring and evaluation process is carried out with a frequency of 1 time for 2 weeks to review the cleanliness and utilisation of boreholes and latrines, as well as the commitment of the community in maintaining and safeguarding the boreholes and latrines that have been revitalised.



**Fig 14.** Sustainability Monitoring and Evaluation.

#### 4. Conclusion

The community service activity in Paluh Sibaji Village, Pantai Labu Subdistrict is the revitalisation of latrines and clean water sources in coastal areas which aims to increase knowledge, skills and community awareness in revitalising the construction, use and maintenance of clean water facilities and latrines that have not been used for 3 (three) years. This program also aims to improve the health status of the community by adopting the ‘Healthy Euastary Settlement’ model, including socialisation, assistance, and community organisation in sanitation management. The revitalisation resulted in latrines that met the requirements of healthy latrines, and clean water sources that met the requirements of clean water.

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#### References

- [1] Bappenas, Rencana Pembangunan Jangka Menengah Nasional (RPJMN) 2020-2024. Jakarta, 2020.
- [2] Kemenkes RI, “Buku Saku Hasil Survei Status Gizi Indonesia (SSGI) 2022,” 2023. [Online]. Available: <https://kesmas.kemkes.go.id/assets/uploads/contents/attachments/09fb5b8ccfd088080f2521ff0b4374f.pdf>.
- [3] S. M. Indirawati, U. Salmah, T. Ashar, A. M. Panjaitan, R. F. Ropita, and A. R. Lestari, “Analysis of Fulfillment of Four Aspects in Drinking Water and Incidence of Stunting in Coastal Areas: Case Study of Paluh Sibaji Village, Pantai Labu Sub-district,” *Contag. Sci. Period. Public Heal. Coast. Heal.*, vol. 6, no. 1, 2024, doi: <http://dx.doi.org/10.30829/contagion.v6i1.19143>.
- [4] A. Hasan and H. Kadarusman, “Akses ke Sarana Sanitasi Dasar sebagai Faktor Risiko Kejadian Stunting pada Balita Usia 6-59 Bulan,” *J. Kesehat.*, vol. 10, no. 3, pp. 413–421, 2019, doi: 10.26630/jk.v10i3.1451.
- [5] United Nations, *The Sustainable Development Goals Report 2023*. United States of America, 2023.