

Survey, Investigation and Design (Sid) of Agricultural Land Explanation and Opening of Kaliki Village , Kurik District as Efforts to Improve the Economy for Native Papuans

Biatma Syanjayanta¹, Budi Dologsaribu², Mega Ayu Yusup³

¹Department of Architecture, Musamus University Merauke

²Engineering, Musamus University Merauke

³Agricultural Engineering, Musamus University Merauke

ABSTRACT: With the stipulation of Merauke Regency as one of the national food barns, Merauke Regency continues to improve, especially to increase the productivity of lowland rice. This is also expected to have an impact on increasing farmers' income, especially Papuan natives (OAP) which in turn improves the welfare of the OAP community in Merauke Regency.

The aims of this study are (1) to conduct an Investigational Survey of Paddy Fields in Kaliki village, Kurik district, Merauke district, by observing and measuring the field, so that it can be a technical reference in the implementation of new rice fields. (2) Designing rice field printing in Kaliki village, Kurik district, Merauke district, based on the norms of technical standards and criteria for rice field printing. (3) Plan and determine the area of land that can be used as rice field farming land that is adjusted to the CPCL OAP in Kaliki village.

The results of this study are: (1) Based on the results of the analysis of geological maps, topographic maps, demographic surveys (CPCL) as well as customs and culture that have been carried out in the work area, the results are: the location of paddy fields in the work area shows alluvial soil types with characteristics soil. (2) In connection with the very thick existing local wisdom, which is closely related to customary laws, in terms of planning for land clearing in Kaliki village, a traditional approach will be needed, so as to obtain solutions that can benefit all parties, especially the village community. kaliki. (3) The area at the location of the SID rice field printing work in the Kaliki village which is adjusted to the CPCL data and the needs of the village is 127 Ha.

KEYWORDS: surveying, identification, design, kaliki kurik, merauke

INTRODUCTION

The growth of development in all fields, especially industry and settlements, has a very negative effect on the development of the agricultural sector, especially rice production, because it causes the conversion of agricultural land, especially rice fields to non-agricultural land. This will threaten the independence, security and sovereignty of national food.

With the stipulation of Merauke Regency as one of the national food barns, Merauke Regency continues to improve, especially to increase the productivity of lowland rice. This is also expected to have an impact on increasing farmers' income, especially Papuan indigenous farmers (OAP) which in turn improves the welfare of the OAP community in Merauke Regency.

In this regard, efforts to expand agricultural land standards in Merauke Regency are very important by utilizing and managing existing land and water resources. food crops by increasing the area/standard land, through the expansion of the area of food crops which is often referred to as the expansion of agricultural land or the expansion of rice fields.

Agricultural land expansion or rice field expansion activities are technically starting from identification of prospective farmers and prospective locations, investigation surveys and design (SID), location determination to the implementation of rice field expansion construction and utilization. SID expansion of paddy fields needs to choose a truly potential location whose land criteria are not problematic both in terms of ownership and also from the level of land suitability for rice commodities in order to provide maximum benefits so that it can actually be a source of income increase for OAP farmers.

In connection with this activity, it is very necessary to conduct survey, investigation and design activities for the expansion and clearing of agricultural land or rice field expansion in Kaliki village, Kurik district, Merauke district in order to increase OAP's economy in rice farming land processing skills.

LITERATURE REVIEW

Location and Demographics

This research was conducted in Kaliki village, Kurik district,

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Merauke district, Papua province. Where this village is a local village inhabited by indigenous Papuans (OAP)

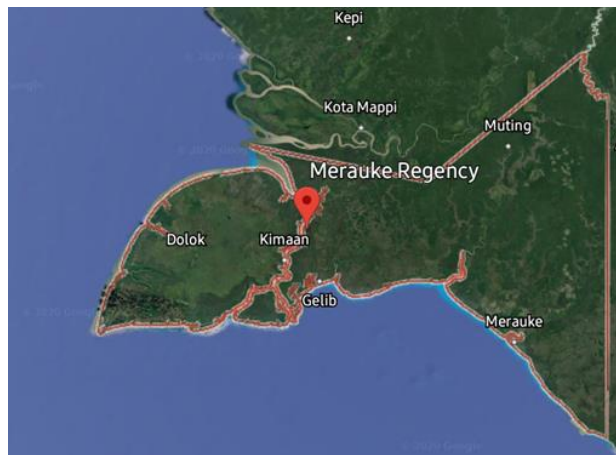


Figure 1. Research location map

Merauke Regency is one of the regencies in Papua Province which is geographically located between 137⁰ – 141⁰ East Longitude and 5⁰ – 9⁰ South Latitude. With an area of up to 46,791.63 km² or 14.67 percent of the total area of Papua Province, it is a Regency. Merauke as the largest district not only in Papua Province but also among other

districts in Indonesia. Administratively, Merauke Regency has 20 districts, of which Waan District is the largest district, reaching 5,416.84 km² while Semangga District is the smallest district with an area of only 326.95 km² or only 0.70 percent of the total area. Merauke Regency. Meanwhile, the water area in Merauke Regency is 5,089.71 km².



Figure 2. Merauke district administration map

Kaliki village has a total population of 500 people divided into 127 families, 5 (five) clans namely, Gebze,

Kaize, Mahuze, Ndiken and Balagaize, with 2 (two) traditional leaders namely Imoh and Mayo



Figure 3. Layout of Kaiki Village

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Figure 4. Research location layout

Climatology

Climate is one of the determining factors for plant growth and other environmental factors. In land evaluation, climate becomes one of the determining parameters, in addition to soil and terrain factors. In 2021 the average air temperature in Merauke Regency is 27.058⁰C with the lowest temperature of 22.5⁰C occurring in August and the highest temperature occurring in November of 32.6⁰C. The relative humidity in Merauke Regency is 81.583 percent. The most humid conditions occur in January at 99 percent. In 2021 the average air pressure is 1,009.127 mb. The average wind speed in 2021 is 5.08 knots. In total during 2021 the number of rainy days in Merauke Regency is 211 days. The highest rainfall occurs in January with a size of 310.00 mm with 28 rainy days. On the other hand, the lowest rainfall occurs in September with 2.4 mm with 10 rainy days.

Prediction of rainfall accumulation for 24 hours in the territory of Indonesia based on numerical weather prediction model data. The colors on the map indicate the amount of rainfall in millimeters. One millimeter of rain means that

rainwater that falls on an area of one square meter will have a height of one millimeter if the rainwater does not seep, flow, or evaporate. The threshold values used to determine the intensity of rain are as follows:

- 0 mm/day (grey): Cloudy
- 0.5 – 20 mm/day (green): Light rain
- 20 – 50 mm/day (yellow) : Moderate rain
- 50 – 100 mm/day (orange): Heavy rain
- 100 – 150 mm/day (red): Very heavy rain
- >150 mm / day (purple): Extreme rain

Based on rainfall patterns and rainfall data from the BMKG of Merauke Regency, it shows that Merauke Regency is quite good for the growth of various agricultural commodities. Another climate element, namely the average temperature of the Merauke Regency area based on data from the Merauke Regency BMKG shows a variation between 25.60 Celsius to 28.40 Celsius. Meanwhile, the humidity will vary from 76 to 86 percent in 2021. Meanwhile, the intensity of solar radiation in 2021 on average varies between 30.0 to 70.4 percent and air pressure between 1008.1 to 1010.8 mb.

Table 1. Air Temperature and Air Humidity

Month	Air Temperature (°c)			Humidity (%)		
	Max	Min	Average	Max	Min	Average
Januari/January	31,3	24,7	27,4	99	61	84
Februari/February	31,2	24,5	27,3	98	58	85
Maret/March	31,2	24,8	27,6	98	60	84
April/April	30,9	24,8	27,3	98	55	86
Mey/May	30,8	24,7	27,1	96	51	83
Juni/June	29,2	23,9	26,0	97	61	84
Juli/July	29,4	23,5	25,7	92	48	82
Agustus/August	29,5	22,5	25,6	98	38	79
September/September	30,5	24,0	26,6	95	54	79
Oktober/October	31,1	24,3	27,7	95	43	79
November/November	32,9	24,6	28,0	97	36	78
Desember/December	32,6	24,6	28,4	96	43	76

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Table 2. Air pressure, duration of sun exposure and wind speed

Bulan	Air pressure (mb)	Sunshine Length (jam)	Average Wind Speed and Direction (knot)
Januari/January	1007,3	144,0	5
Februari/February	1008,0	141,0	5
Maret/March	1008,1	185,0	4
April/April	1008,9	142,8	4
Mey/May	1009,6	176,4	5
Juni/June	1011,0	127,0	6
Juli/July	1011,2	116,7	6
Agustus/August	1011,1	192,1	6
September/September	1010,5	125,0	6
Oktober/October	1008,3	207,8	5
November/November	1006,8	191,3	5
Desember/December	1006,9	226,2	4
Average			

Source: BMKG Merauke Regency 2021

Table 3. Rainfall

Mounth	Number of Rainy Days (Day)	Amount of Rainfall (mm)
Januari/January	28	310,1
Februari/February	23	288,7
Maret/March	27	219,1
April/April	26	480,8
Mey/May	17	149,0
Juni/June	22	38,6
Juli/July	19	22,9
Agustus/August	8	4,6
September/September	10	2,4
Oktober/October	11	34,7
November/November	9	57,6
Desember/December	11	136,7
Total number	211	1715,2

Geology

The south coast is formed by sedimentary forest, including allivium deposits, in the north quartz sand and pumice. Based on the data the level of soil fertility is classified as low to moderate. Mining/mineral materials suspected of containing oil and gold.

Type of soil

The type of soil found in Merauke Regency consists of organosol, alluvial and gray hydromorphic soils found in swamp and brackish areas. This type of soil is formed from sedimentary artificial parent material that spreads in the districts of Okaba, Merauke and Kimaam.

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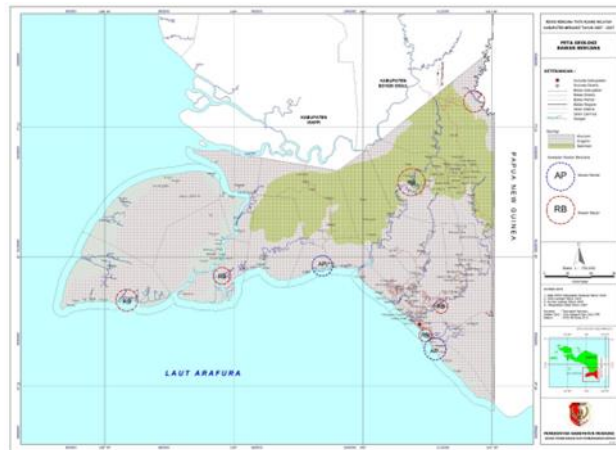


Figure 5. Geological Map of Merauke Regency and its surroundings

The scope of research

Definition

a. Field expansion

Rice field expansion is an effort to increase the standard area of rice fields in various land typologies that have never been cultivated for agriculture with a rice field system.

b. Ricefield

Rice fields are agricultural land that physically has a flat surface, limited by bunds, so that rice can be planted with a puddle system and other secondary crops/crops.

c. Irrigation Paddy

Irrigated rice fields are rice fields whose main water source comes from irrigation water, both technical irrigation, semi-technical irrigation, and village irrigation.

d. Rice field swamp

Swampy rice fields are rice fields whose main water source comes from swamp water.

e. new rice field

Barua rice fields are fields that have just been printed/constructed and have not yet experienced the formation of a plow layer.

f. Survey/investigation of potential sites

Survey/investigation of prospective locations is research activities on potential locations for expansion of rice fields in irrigation and tidal/swamp areas, aiming to obtain suitable candidate locations.

g. Rice field expansion design

Rice field expansion design is a design on a plot of land that will be used as a guideline or technical benchmark in the implementation of rice field expansion construction.

h. Light vegetated land

Lightly vegetated land is a plot of land that is overgrown by shrubs/reeds or woody vegetation with a relatively sparse density.

i. Medium vegetated land

Medium vegetated land is a plot of land overgrown by woody vegetation with a relatively medium density with or without shrubs and nipa palms.

j. Heavy vegetated land

Heavy vegetated land is a plot of land overgrown by woody vegetation with a relatively dense population with or without palm

k. Saprotan is a means of agricultural production consisting of fertilizers, pesticides, seeds, agricultural machinery.

l. Pyrite (pyrite) is a FeS₂ compound usually found in poorly drained land.

m. Survey/investigation is a series of identification and research activities on CP/CL expansion of rice fields with the aim of obtaining feasible CP/CL.

n. Rice field expansion design is a planning document consisting of a rice field expansion design map that is used as a guide or technical reference in the implementation of rice field expansion construction and is equipped with a budget plan (RAB).

Scope of SID

a. Investigative Survey of Potential Farmers in Prospective Locations (SI-CPCL)

The scope of activities of SI-CPCL for rice field expansion includes:

1. Compilation of proposed rice field expansion
2. Preparation of data and supporting materials
3. Implementation of situational mapping surveys and Area investigations
4. Conducting socio-economic surveys and investigations
5. Implementation of land suitability evaluation surveys for paddy fields
6. Conducting irrigation potential survey
7. Tabulation and data processing of SI -CPCL results of rice field expansion
8. Reporting on the results of SI-CPCL rice field expansion

b. Rice Field Expansion Design and Mapping

“Survey, Investigation and Design (Sid) of Agricultural Land Explanation and Opening of Kaliki Village , Kurik District as Efforts to Improve the Economy for Native Papuans”

The scope of mapping activities for the design of rice field expansion includes:

1. Compilation and detailing of sites that have been declared eligible in the SI-CPCL . results
2. Preparation of work maps
3. Setting up a situation map
4. Appropriate land measurement for design e. Vegetation analysis in the field
5. Design of Rice Field Expansion
6. Land tenure map making

Eligibility Criteria for Candidate Rice Field Expansion Locations

The implementation of rice field expansion planning focuses on developing new rice fields that have water sources, both surface and ground water sources and there are human resources (farmers) as potential cultivators.

a. Location/Land

The location criteria that can be proposed are as follows:

1. The status of land ownership is clear, for example: owned land or people's land (marga) or state land that is allowed to be cultivated by farmers.
2. The boundaries of land ownership are clear (no dispute).
3. The location has never been used as rice fields before.
4. The slope of the land is prioritized < 8%.
5. In one stretch of at least 5 hectares or according to the economy of scale for new land clearing.
6. If the type of land is peat, then the maximum thickness of the peat is 1 meter and the depth of pyrite is at least 60 cm.
7. The soil is suitable for lowland rice and is not directed to rainfed rice fields.
8. In the RTRW, the prospective location is included in the area of agricultural cultivation or the development of agricultural cultivation. Prospective locations may not be in forest areas (whether HPK, HP, HPT, HL, HVCA), moratorium areas for peat development, HGU areas or areas that have been encumbered with other rights and permits.
9. The land is not flooded for 3 consecutive months.
10. Farmers exist and are domiciled in the village of the prospective location or adjacent to the prospective location and are committed to rice fields.

b. Water sources

1. There is a sufficient amount of water available for irrigated rice fields to irrigate at least once for one planting and gradually twice in two growing seasons.
2. Wet month for at least 3 consecutive months.

3. For tidal swamp land, it must be equipped with a drainage network and a circular embankment, and preferably a macro water system has been built

c. Cultivator

There are existing and sufficient sharecroppers or smallholders who are domiciled in the village of the prospective location or adjacent to the prospective location and are committed to rice fields.

3. Research Method

Materials and tools

The materials that will be used in testing soil and water samples are a chemical solution of Phenol Red to measure the acidity of the water and Orthotolidine to measure the chlorine content.

The tools that will be used to make observations at the research site include measuring instruments such as: theodolite, PH tester, meter, camera and drone. The tools or media that will be used for design simulation are using civil 3D graphic simulation programs, Autocad, and other computer programs.

Implementation Stage

Identification of Prospective Farmers and Potential Locations (CPCL)

Identification is carried out based on data, information and field observations aimed at determining potential locations for rice field expansion which are generally designated in accordance with the RTRW or applicable spatial planning documents, technical standards and established criteria. Identification of potential locations is carried out by officers from the Regional Agriculture Service (provincial and district/city) assisted by the community/local officials. Site selection is prioritized on land with the lowest level of difficulty.

The determination of prospective farmers and prospective locations is carried out by the Head of the Merauke Regency Agriculture Service based on the results of identification carried out by Kaliki village officials together with Merauke Regency Agriculture Service officers.

3.2.2. Surveys and investigations

- a. Preparation in the form of duplicating situation maps, maps of irrigation network design, swamp irrigation, making a list of questions and tables for implementation. In addition, the necessary materials and equipment are prepared in the field.
- b. Socialization and coordination with relevant agencies and the community on the preparation plan for the implementation of rice field expansion activities in the prospective locations to be developed. Coordination is mainly carried out with Bappeda or the Public Works Agency for RTRW certainty, the Forestry Service for area certainty, BPN for clarity of ownership status and the

“Survey, Investigation and Design (Sid) of Agricultural Land Explanation and Opening of Kaliki Village , Kurik District as Efforts to Improve the Economy for Native Papuans”

- Irrigation Service for coordination of the irrigation network system in the planned location.
- c. Primary and secondary data collection. Primary data in the form of parameters and characteristics of the land that will be used as a reference for determining criteria for land suitability, water discharge, soil physical properties, land ownership status, peat depth, economic value of vegetation, farmers' willingness, list of names of farmers and land area, location measurement and mapping. Secondary data in the form of farming patterns, analysis of farming, supply of agricultural crops, marketing of products, area of paddy fields in the location and rainfall either daily or monthly for one year.
 - d. Tabulation and data processing of survey results. The survey data are tabulated and processed for the preparation of a survey report which aims to determine the feasibility of the prospective location and design.
 - e. The survey activity report is made as the basis for determining the paddy fields to be constructed. The results of the survey of prospective locations for rice field expansion will be in the form of a report book containing a list of locations that are declared suitable for design which are then printed into rice fields and a list of locations that are not suitable for design. For each location of irrigated rice field expansion (DI), a report book is made which aims to compile and collect the results of activities that are easy to read and know by all parties involved in making the report.
- ### Design
- a. Preparation of technical base maps
A technical base map is a basic map for making situation maps of potential locations, topographic maps and design maps with global/national coordinates. The technical base map can be in the form of an Indonesian Earth Map (RBI) which includes the prospective locations to be designed
 - b. Location situation map
A situation map of the location of rice field expansion is made on a present land use map with a scale of 1: 10,000. This location situation map contains the following data:
 - Boundary of the tertiary plot of the potential location for rice field expansion.
 - Limits of each farmer's land ownership before it is planned to be plots of rice fields.
 - Land use, for example rice fields, protected forests and so on.
 - Boundaries of government administration, for example, boundaries of villages, sub-districts, districts, and so on.
 - Land use/vegetation boundaries such as heavy forest, light forest, moor and weeds.
 - The entire river channel, layout of irrigation networks, irrigation buildings, drainage and other buildings.
 - The layout of the existing road network, especially state roads, provincial roads, district roads, sub-district roads, village roads, and trails to the location of rice field expansion.
 - f. Making topographic maps per land area 10 Ha.
 1. The topographic map of the irrigation area is made per block of expanses based on the slope of the land.
 2. The topographic map of the swamp area is made per expanse block based on the tertiary block of the area concerned.
 3. Measuring nets as well as measurement results points equipped with elevation values.
 4. Contour lines, with contour intervals tailored to the needs of the design, map scale and shape of the land surface.
 5. Natural boundaries: villages, existing rice fields, areas that can be developed and areas that cannot be developed along with land vegetation.
 6. Limits of land ownership for each farmer, serial number of owner farmers and area of ownership.
 7. Farming road network and irrigation network if it already exists.
 - g. Making a design map (design) scale 1:1000.
The making of the design map (design) in the irrigation area must contain the following data:
 1. The layout of the rice fields to be designed is as parallel as possible to the contour lines. The design of the paddy fields is made according to the land ownership limit by taking into account the wishes of the farmers.
 2. The design of the rice fields is made in accordance with the conditions and the area of land ownership.
 3. The layout of the irrigation network in the expanse of rice fields by taking into account the water management system at the location (if any or planned for irrigation areas), as a tie point the water level can be used at the tertiary channel gate.
 4. The layout of the farm road in the expanse of rice field expansion. e) Number of tertiary plots, serial number of farmers who own the fields, number of plots of rice fields per farmer and area of plots of rice fields.
 5. Elevation of each corner of the rice fields that have been designed. g) Boundaries of vegetation types between heavy forest, light forest, dry fields and reeds and land use limits.
 6. Cross section of land leveling plan.
 - h. Making a design map (design) in a swamp area must contain the following data:
 1. The layout (layout) of rice fields designed in accordance with land ownership limits by taking into account the wishes of farmers and paying attention to the high tide level with daily average variations and

“Survey, Investigation and Design (Sid) of Agricultural Land Explanation and Opening of Kaliki Village , Kurik District as Efforts to Improve the Economy for Native Papuans”

the highest tide at full moon, so that it can be estimated that the location can be irrigated but not flooded.

2. The layout (layout) of the tertiary and quarter drainage networks complete with drainage channels, in the expanse of rice fields expansion. If the layout of the tertiary and quarterly networks does not yet exist, then a layout design must be made complete with drainage channels and gates and culverts.
 3. The layout (lay out) of the farm road in the expanse of the expansion of the rice fields with the provisions that the farming road is designed in such a way that it not only functions as a road, but also functions as a tidal safety embankment. For this reason, the minimum road width is 3 m with the ability to carry a load of approximately 1 ton.
- i. Calculation of construction costs for rice field expansion. Things that must be taken into account in the construction cost plan are:
1. Land clearing costs that are adjusted to the type of land vegetation.
 2. Land leveling costs, which consist of, among others, the cost of removing and returning top soil, excavating backfill, compacting and leveling the soil according to the topography of the land.
 3. Making galleys.
 4. Construction of farm roads in the expanse of rice fields expansion.
 5. Construction of irrigation/drainage/micro water systems in the expansion of rice fields.
 6. The cost of making the bund of ownership boundary.
 - g) Costs for other supporting work

RESULTS AND DISCUSSION

Results of Surveys and Investigations of Prospective Locations

Candidate Locations come from farmers' proposals. Identification is carried out based on data, information and field observations with the aim of determining the location of the rice fields which are generally designated in accordance with the RTRW or applicable spatial planning documents, 20.

technical standards and established criteria. Site selection is prioritized on land with the lowest level of difficulty. The data collected are as follows:

1. The land is in one stretch with an area of > 10 hectares
2. The topography of the land is relatively flat with a slope of <5%
3. The condition of the land location is close to settlements
4. Availability of sufficient irrigation water for at least one growing season
5. The land is suitable for lowland rice crops based on the applicable provisions and criteria.
6. There are no farmers in a group forum.
7. The status of the farmer can clearly be as a tenant owner or cultivator
8. Land ownership status is clear and does not conflict/overlap with other programs/activities
9. Maximum land ownership area is 2 Ha/ KK.
10. Location is easily accessible or near village roads.
11. Light to moderately vegetated land, from shrubs to trees with a diameter of 5cm to 20cm
12. Have wet months > 3 months, especially when water is available for 1 planting a year
13. Irrigation/drainage network has not been built and will be built which will be completed simultaneously with the completion of the printed rice fields except for rainfed rice fields
14. There is sufficient water available to ensure rice growth at least once a year.
15. Soil conditions are suitable for rice plant growth
16. The status of land ownership is clear, namely: land belonging to or people's land (marga) or state land that is permitted to be cultivated by farmers.
17. Clear boundaries of land ownership (no dispute).
18. Prospective locations do not overlap with other programs/projects and/or similar programs/projects in the previous year.
19. Farmers are present and domiciled in the village of the prospective location or adjacent to the prospective location and wish to cultivate rice fields.



Figure 6. Aerial Photos of Prospective Locations (CL) of Kampung Kaliki

Results of Surveys and Investigations of Prospective Farmers

From the results of surveys and investigations in Kaliki village, based on the results of meetings with village communities with traditional leaders, 127 prospective farmers were found/proposed with an area of 1 ha each. So the proposed land candidates in Kaliki village are 127.

Meanwhile, at the location of the prospective land for the Sumber Mulya village, 94 prospective farmers were

proposed by the village and related officials, divided into 4 farmer groups and each prospective farmer got an area of 0.75 Ha. So the total area of the candidate for paddy fields from the source village of Mulya is 70.5 ha.

The total area of the prospective work area for the preparation of the Print SID for the Kaliki and Sumber Mulya rice fields for the 2020 fiscal year is 197.5 ha. The list of prospective farmers and potential locations is attached.

Results of Surveys and Investigations of Vegetation Types

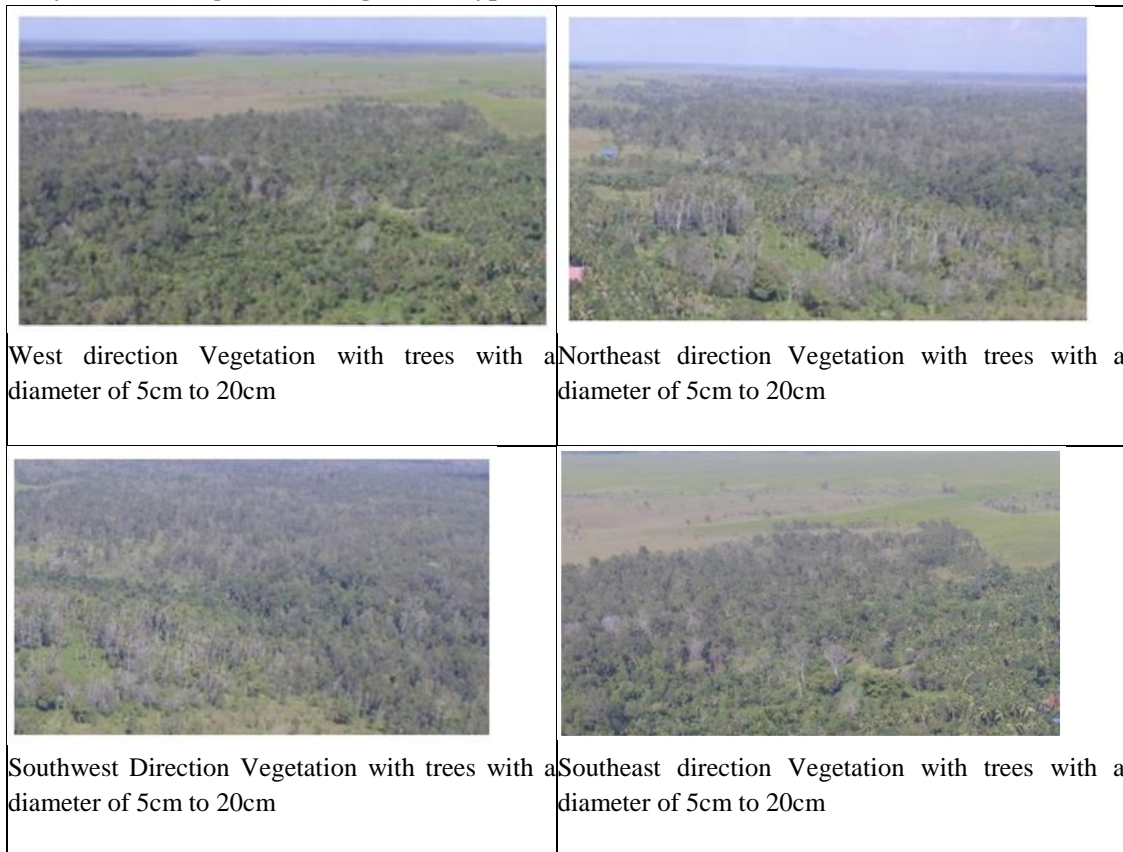


Figure 7. Types of Vegetation for Candidate Locations in Kampung Kaliki

“Survey, Investigation and Design (Sid) of Agricultural Land Explanation and Opening of Kaliki Village , Kurik District as Efforts to Improve the Economy for Native Papuans”

Location Candidate Digitizing Results

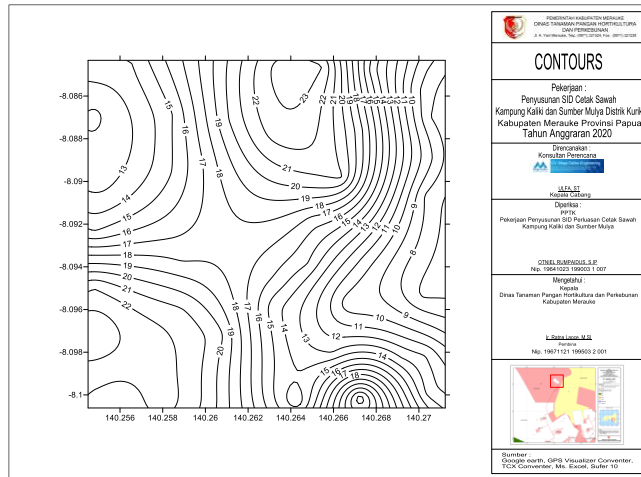


Figure 8. Digitizing the land contour of the prospective location for Kaliki village

Planning Results

Planned Drawing of Paddy Field Plan Area

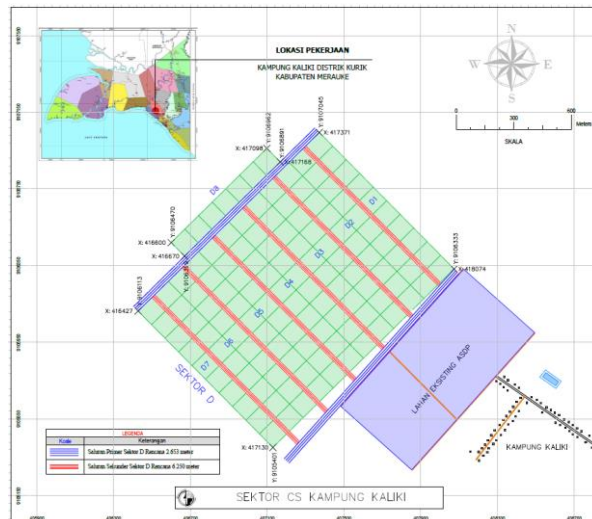


Figure 9. The results of the Kaliki village rice field print design

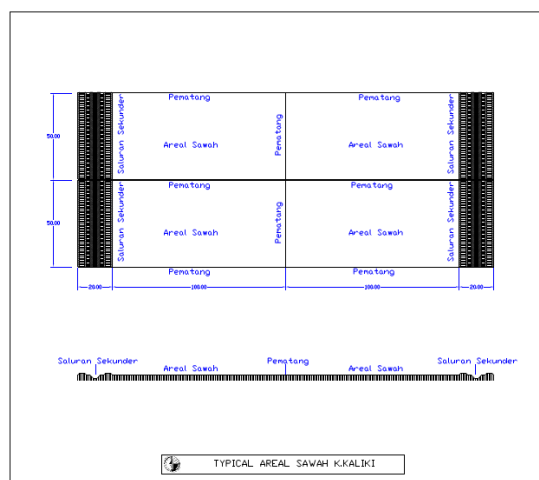


Figure 10. Typical rice field area of Kaliki village

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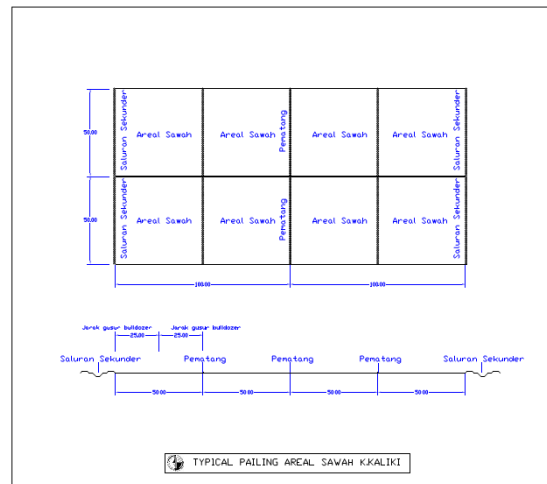


Figure 11. Typical pailing of Kaliki village rice fields

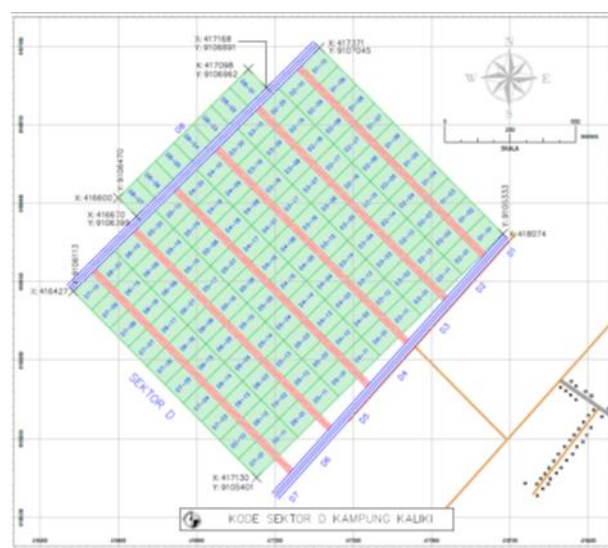


Figure 12. The results of the coding design for the rice field printing sector in Kaliki village

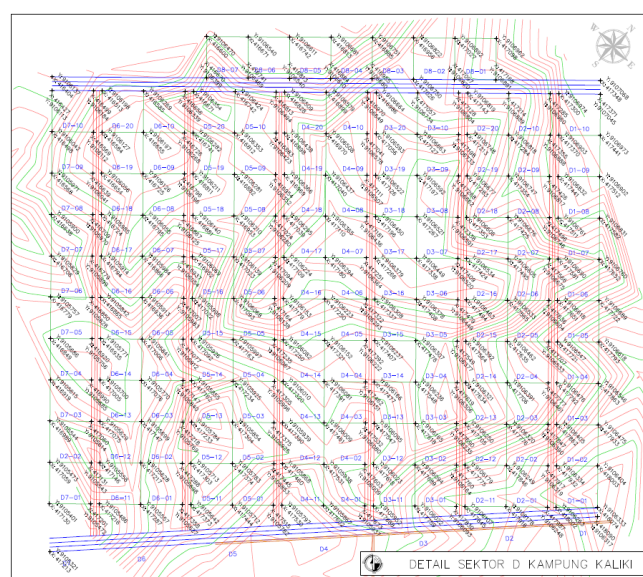


Figure 13. Detailed design results of the Kaliki village rice field printing sector

“Survey, Investigation and Design (Sid) of Agricultural Land Explanation and Opening of Kaliki Village , Kurik District as Efforts to Improve the Economy for Native Papuans”

Planning drawings of Primary and Secondary Channels

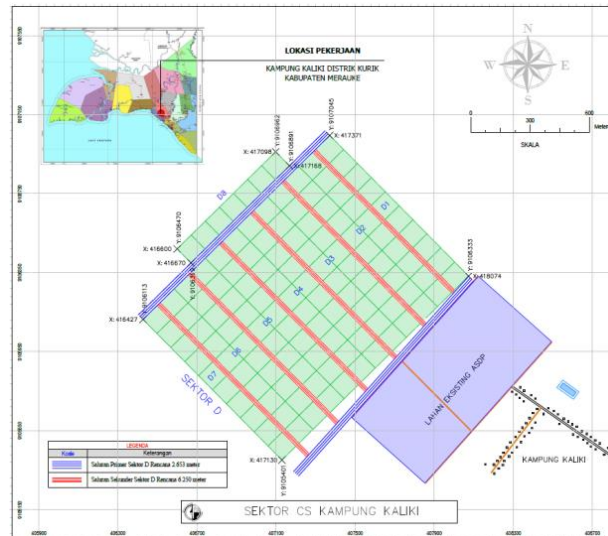


Figure 14. The results of the design of the print channel for the Kaliki village rice field

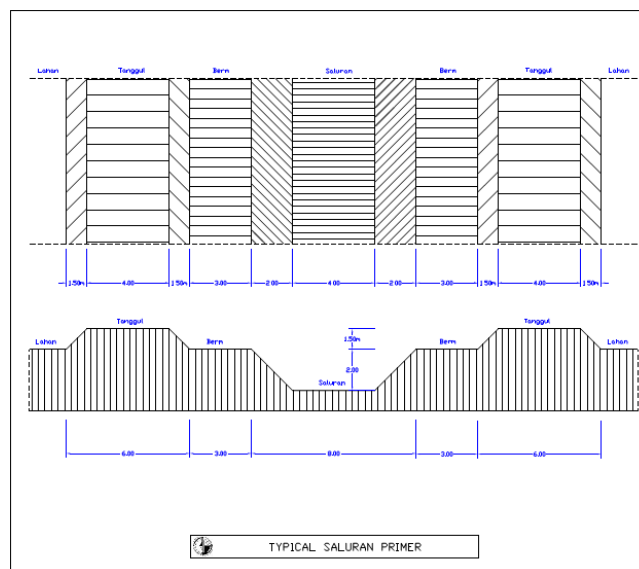


Figure 15. Typical primary channel for rice field printing in Kaliki village

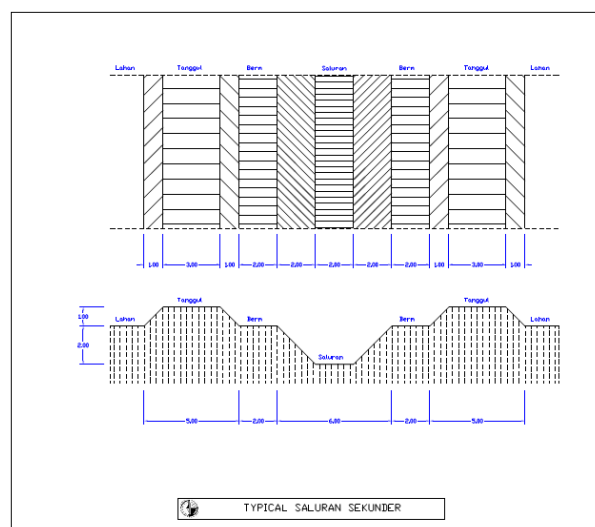


Figure 16. Typical secondary channel for rice field printing in Kaliki village

CONCLUSION

Based on the results of field surveys, analysis of geological maps, topographic maps, previous surveys that have been carried out in the work area, the location of paddy fields in the work area shows alluvial soil types with soil characteristics:

1. The parent material of the sediment is homogeneous, the color is light brown – yellowish to grayish yellow.
2. Fine texture, undeveloped structure

In general, the condition of the plot of land for paddy fields in Kaliki village is a swamp overgrown with vegetation in the form of shrubs and part of a forest with trees with a diameter of 10 to 20 cm. The land that will be planned as a rice field printing location is land that has not been touched or worked on for rice field printing. So the condition is still natural which has been a place for residents as a source of their livelihood.

A. The results of the design from the SID Print for the Kampung Kaliki rice fields stated:

1. In connection with the very thick existing local wisdom, which is closely related to customary laws, in terms of planning for land clearing in Kaliki village, a traditional approach will be needed, so that a solution can be obtained

that can benefit all parties, especially the village community kaliki.

2. The area of the SID rice field printing job site in Kaliki village is 127 ha.

REFERENCES

1. Directorate of Land Expansion and Protection, Ministry of Agriculture, technical-guidelines-survey-and-investigation-prospective-farmers, 2016
2. Directorate General of Agricultural Facilities and Infrastructure Technical Guidelines for Rice Field Expansion SID, 2017
3. Directorate of Land Expansion and Protection, Ministry of Agriculture, technical-guidelines-survey-and-investigation-prospective-farmers, 2018
4. Minister's Decision! Agriculture of the Republic of Indonesia, NUMBER 02/ /Kpts/SR.040/B/01/2019, Technical Guidelines for Printing Sa Wah Patterns of Self-Management for Fiscal Years
5. Merauke Regency Public Works and Spatial Planning Office, 2020