Enhancing Agroland For Agrotourism Planning Through Cultural Ecosytem Services

SBEZ4516 01
Research Board

Prepared by:
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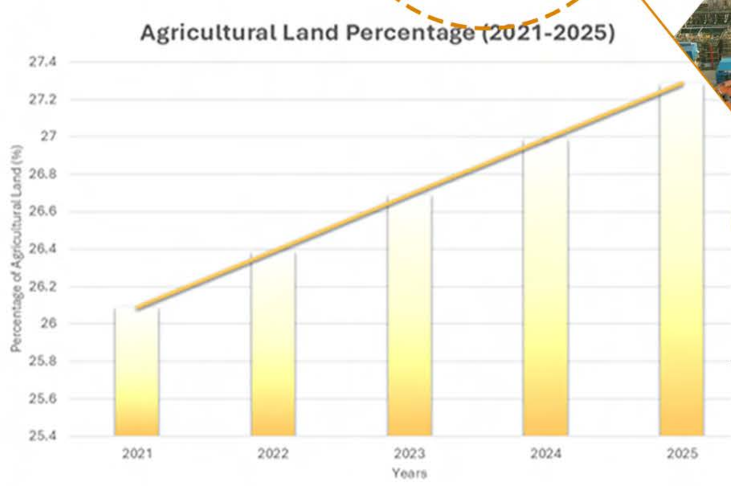
STUDY BACKGROUND

Agricultural Land Percentage %



Occupied about 26.09 %. Agricultural land was increased by 1.2% from 2021 to 2025.

Cultural Ecosystem Services (CES)

Parameters — Chracteristics & Benefits

Sustainable Agricultural Landscape

Results — Parameters

Agrotourism Planning

SIGNIFICANCE OF STUDY

- Cultural Engagement
- Agricultural Awareness
- Social Well-being
- Environmental Preservation
- Explore CES and agrotourism initiative

SCOPE OF STUDY

RESEARCH PROBLEM STATEMEENT

- Low appreciation for agriculture and underutilized agroland.
- Lack awareness and training leads to food insecurity.
- Insufficient comprehensive planning strategies.

RESEARCH AIM

To explore and enhance the agroland for agrotourism planning through cultural ecosystem services in order to promote cultural enhancement, social economic well-being and environmental sustainability.

RESEARCH OBJECTIVES

01 To identify the land characteristics and measures of agroland.

02 To study and underline the main initiatives and principle of CES and agrotourism.

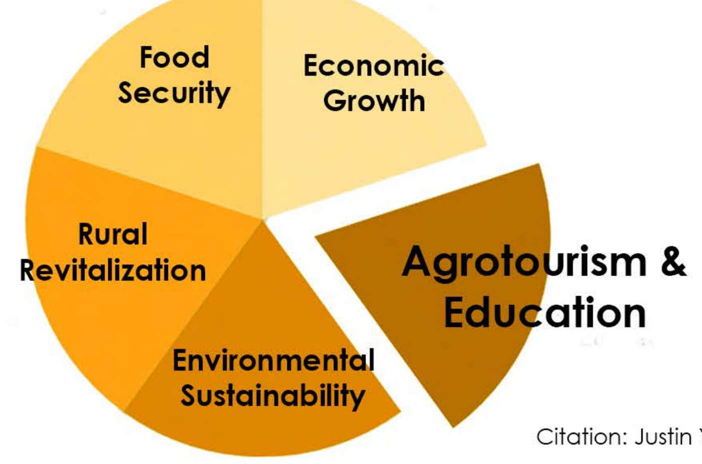
03 To develop the design guidelines and framework of CES model for agrotourism planning.

Citation: PLANMalaysia Johor, 2020

1 AGROLAND

Citation: OECD, 2024; Czúcz, 2022

Importance of Agroland Development



Citation: Justin Yifu Lin, 2018

2 CULTURAL ECOSYSTEM SERVICES

Refer to the intangible benefits that ecosystems provide to humans, enriching their quality of life through experiences, knowledge, cultural connections and emotional well-being.

Nature + Human's Cultural

Citation: Millenium Ecosystem Assessment (MEA), 2005, Trainor 2006, Daniel, 2012, Chan, 2012, Hirons, 2016)

Key Contributions Of CES

1. Cultural ecosystem services contributions to well-being.
2. Changing histories of cultural ecosystem services access.
3. Cultural ecosystem services to improve management of ecosystems.

Citation: McElwee, 2022

Characteristics

Recreation and Ecotourism
- Provide opportunities for outdoor activities, leisure and tourism to allow people to engage with agriculture.

Educational Value
- Serve as outdoor classrooms, providing knowledge about agriculture and environmental sustainability.

Cultural Value
- Strengthens local identity, preserves cultural heritage and hold agriculture significance.

Aesthetic Value
- Inspirie artistic expression on agriculture and enhancing landscape appreciation.

Social Relations
- Foster social interactions and community engagement.

Spiritual and Religious Values
- Provides emotional and spiritual fulfillment.

3 AGROTOURISM PLANNING

Citation: Man, 2020; Mansor, 2015

Agrotourism is the concept of visiting a working farm related to any agricultural, horticultural or agribusiness operations.

Rural / Agricultural Environment
+
Farm Commodities
+
Tourism Services
= Agrotourism

Tourism Chain

A structured flow from agricultural production to agrotourism experiences,

- Farm Level
- Processing Level
- Promotion
- Benefits (Cultural, Social, Environment)
- Agrotourism Destination
- Activities, Program and Experience
- Cultural & Education Enhancement

Principles of Agrotourism

Citation: Justin Yifu Lin, 2018

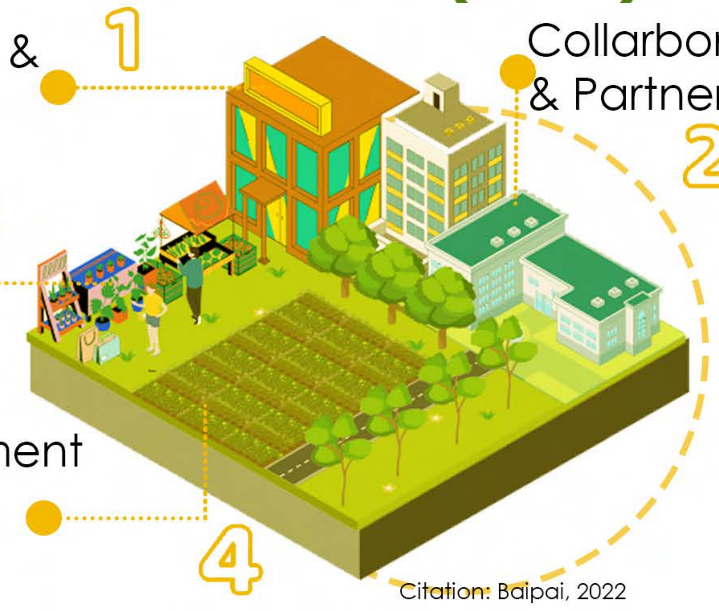
Scopes

Education & Experience — Direct Market — Recreational & Event

Citation: Justin Yifu Lin, 2018

Critical Success Factors (CSFs)

1. Education & Training
2. Collarboration & Partnership
3. Funding & Marketing
4. Tourism Environment / Agrotourism Products



Citation: Balpai, 2022

4Ps People Preferences

- Products
- Price
- Place
- Promotion

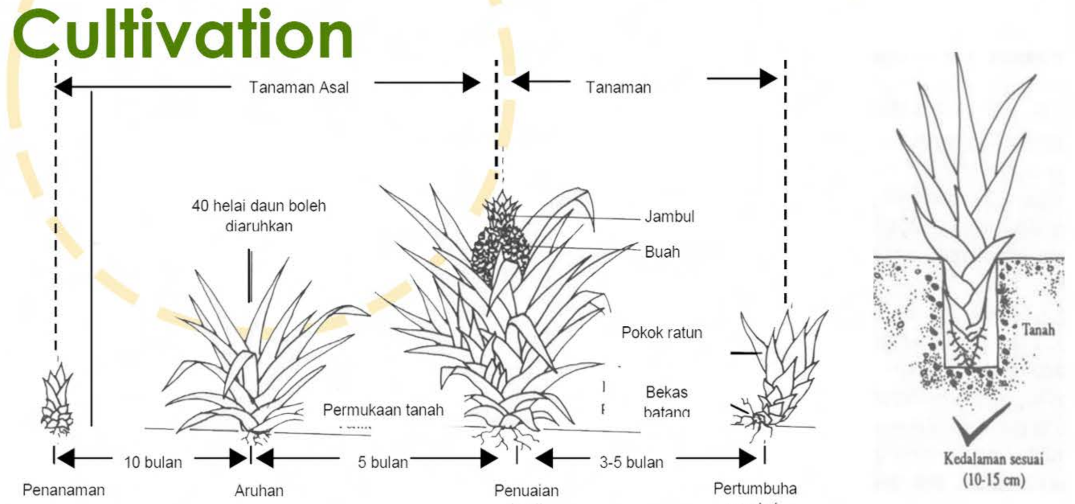
Citation: Kotler, 2016 in Man, 2020

4 PINEAPPLE

Johor is the largest contributor to Malaysia's agriculture GDP.

Citation: RSN Johor 2030; Lynette Lee, Mazlina Abdul Rahman, 2020

Cultivation



Soil Medium

- Peat Soil
- Organic Soil
- Sandy Soil

Irrigation

1,000 mm of water annually.

Citation: PLANMalaysia Johor, 2020

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METHODOLOGY

- Research Problem
- Aim
- Objective
- Research Methodology
- Literature Review
  - •Agroland
  - •Pineapple
  - •Cultural Ecosystem Services
  - •Agrotourism Planning
- Case Study
- Reference Study
- Primary Data
  - Observation
  - Survey
  - Interview
- Secondary Data
- Comparative Analysis
- Findings & Discussion

Adoption of CES on agroland while creating agrotourism landscape.

Model Parameter

Aesthetic Value	Cultural Value	Educational Value
Physical Planning	**Socio-Cultural Integration** (Local Farmers, Tourists, Students)	**Sustainability Measures**
•LULC •Topography •Soil Type •Forest level •Site Accessibility	•Cultural Services & Experience •Recreational Programs	•Eco-friendly Practices •Waste Management

Reference

1. Organization for Economic Cooperation and Development. (n.d.). Agricultural land. OECD. Retrieved October 20, 2024, from https://www.oecd.org/en/data/indicators/agricultural-land.html bin Aliakbar, A. B., & bin Abdullah, A. I. The Role and Challenges of Kejora in Rural Economic Development.
2. Amanda Siddharta. (2024). Agriculture in Malaysia - statistics & facts | Statista. https://www.statista.com/topics/10680/agriculture-in-malaysia/
3. Ammirato, S., Felicetti, A. M., Raso, C., Pansera, B. A., & Violi, A. (2020). Agritourism and sustainability: What we can learn from a systematic literature review. Sustainability (Switzerland), 12(22), 1–18. https://doi.org/10.3390/su12229575
4. Baipai, R., Chikuta, O., Gandiwa, E., & Mutanga, C. N. (2022). Critical Success Factors for Sustainable Agritourism Development in Zimbabwe: A Multi-Stakeholder Perspective. African Journal of Hospitality, Tourism and Leisure, 11(SpecialEdition), 617–632.
5. BPEN Johor. (2022). Data Asas Negeri Johor 2022.
6. FAO. (2024). Land statistics 2001-2022 Global, regional and country trends.
7. Jaunis, O., Russel Mojiol, A., & Kodoh, J. (2022). Agrotourism in Malaysia: A Review on Concept, Development, Challenges and Benefits. In 2022. Transactions on Science and Technology (Vol. 9, Issue 2). http://tost.unise.org/
8. Justin Yifu Lin. (2018). Agriculture is key for economic transformation, food security, and nutrition | IFPRI. https://www.ifpri.org/blog/agriculture-key-economic-transformation-food-security-and-nutrition/
9. Karthik, D., & Gajanand, P. (2019). AGRI-TOURISM: AN OVERVIEW.
10. Lembaga Perindustrian Nanas Malaysia. (n.d.). Formal Portal of Pineapple Industry. Retrieved November 15, 2024, from https://www.mpib.gov.my/en/history/
11. Lembaga Perindustrian Nanas Malaysia. (2021). Laporan Tahunan 2021.
12. OECD. (2024). Agricultural land | OECD. https://www.oecd.org/en/data/indicators/agricultural-land.html
13. PLANMalaysia Johor. (2020). RSN Johor 2030_FULL.

COMPARATIVE ANALYSIS

PHYSICAL PLANNING

Concept
Eco- friendly Agriculture

Topography
Flat Area

Soil Type
Organic Soil

Case Study 1: Zen Xin Organic Park

Design Strategies

Educational Tourism Experience

Educational Trail | Farming Workshop | EM Mud Balls Workshop | Soil Learning Workshop | Educational Corner

Facilities & Amenities

Event Space | Organic Mart

- •Organic fertilizers from farming waste
- •Natural predators - pest sticker
- •Waste as animal feeds

Concept
Harmony Integration

Topography
Flat Area & Low Land

Soil Type
Paddy Soil

Reference Study 1: Rayong Cultural Center, Thailand

Design Strategies

Educational Tourism Experience

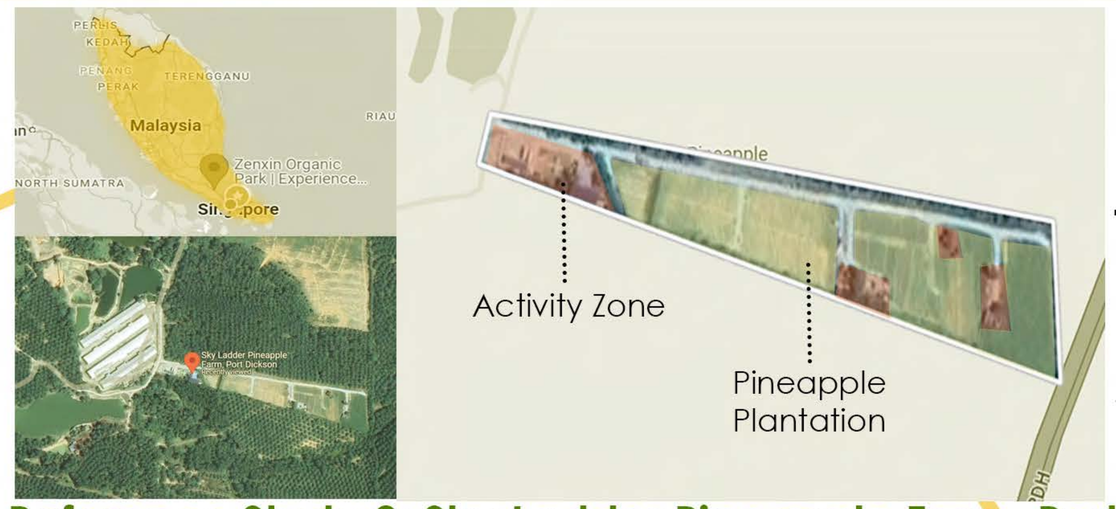
Jungle Trekking | Experience Village Life | Paddy Workshop | Bird Watching | Nature Interaction

Cultural Integration

Cultural Food Experience | Cultural Dance

Eco-friendly Practices

- •Recycling and source separation
- •Renewable energy sources
- •Responsible tourism practices



Concept
Zero Waste Agrotourism

Topography
Flat Area

Soil Type
Peat soil & organic soil

Reference Study 2: Sky Ladder Pineapple Farm, Port Dickson

Design Strategies

Educational Tourism Experience

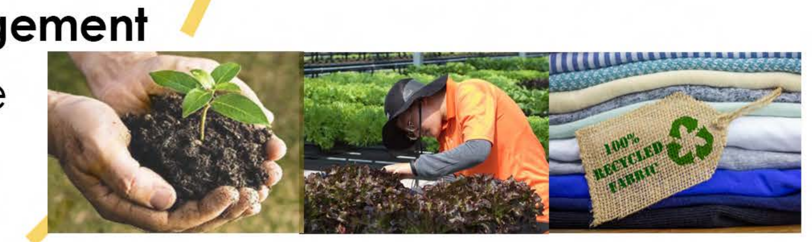
Tour Guide Van | Pineapple Nursery | Pineapple Fiber Workshop | Educational Corner | Mini Zoo

Cultural Integration

Traditional Malay House

Eco-friendly Practices & Waste Management

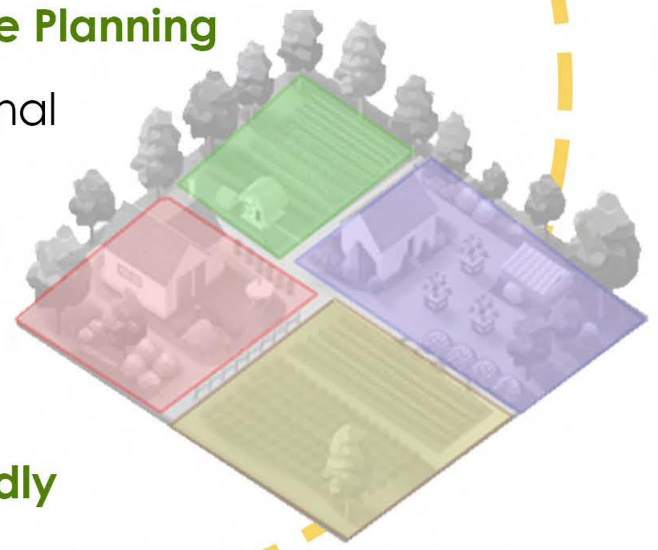
- •Organic fertilizers from farming waste
- •Pesticide-free farming
- •Eco-textile



RECOMMENDATION

1 Sustainable Planning

Create functional zoning.



2 Eco-friendly Practices

- •Waste Management
- •Eco-Workshops
- •Infrastructures

3 Enhance Visibility and Accessibility

- •Attractive signage
- •Promote local identity

4 Community Engagement and Participation

Create pineapple agrotourism packages including:

- •Pineapple harvesting
- •Workshops
- •Culinary experiences

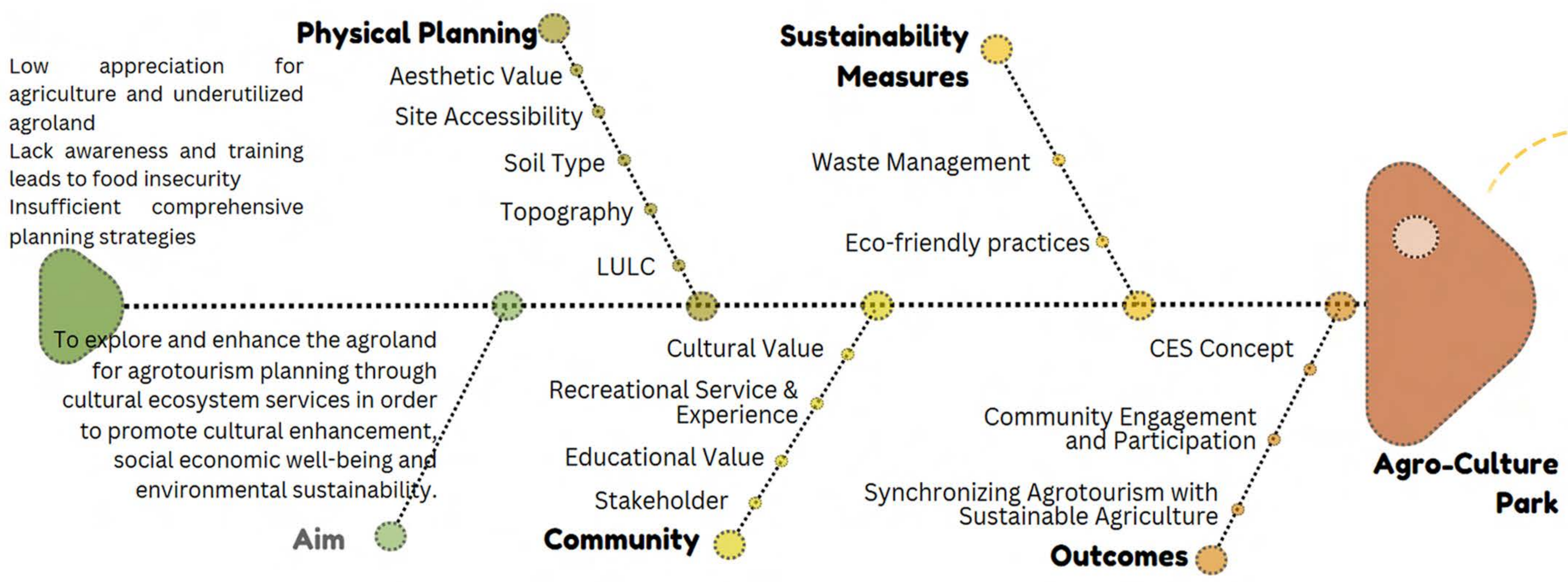
5 Synchronizing Agrotourism with Sustainable Agriculture

Align with sustainability goals to enhance both productivity and ecological health.

- •Recreational Program
- •Educational Value
- •Cultural Events

SUMMARY

- Low appreciation for agriculture and underutilized agroland
- Lack awareness and training leads to food insecurity
- Insufficient comprehensive planning strategies



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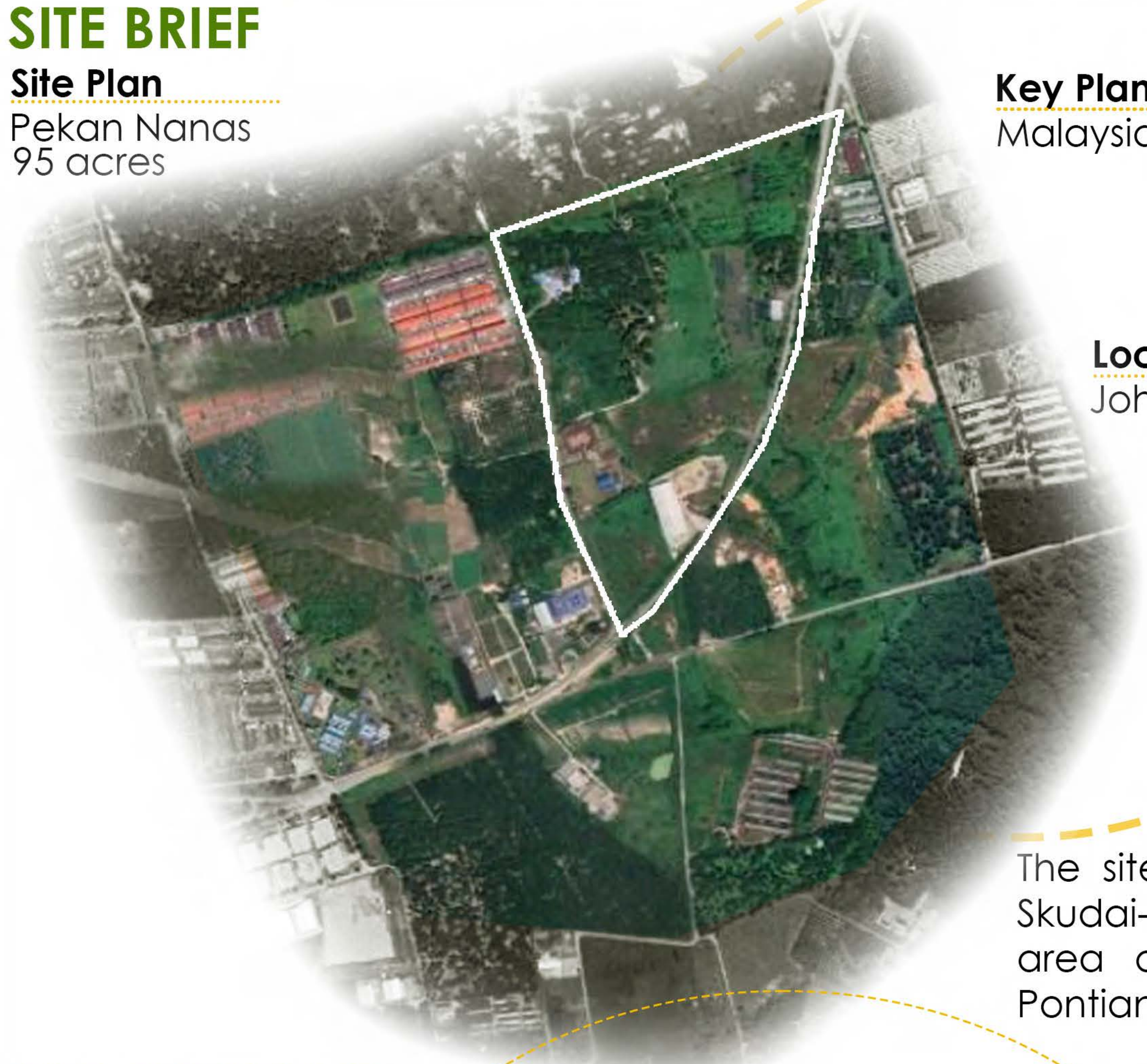
SITE BRIEF

Site Plan
Pekan Nanas
95 acres

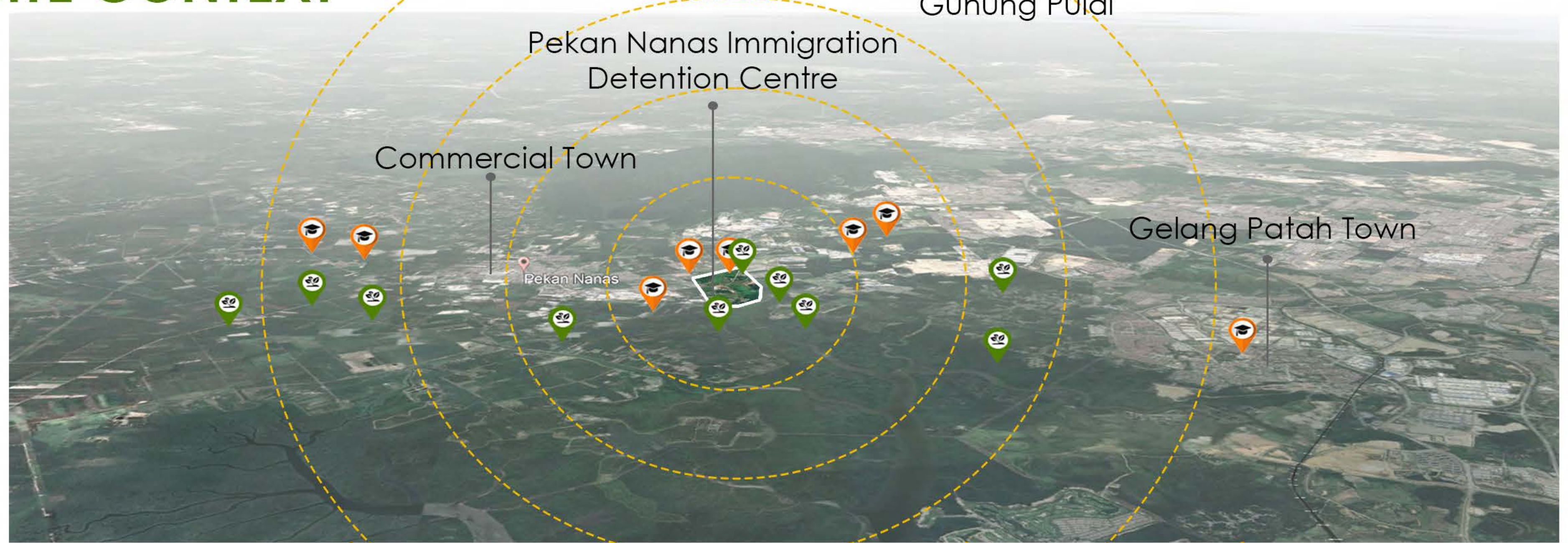


Key Plan
Malaysia

Location Plan
Johor Bahru

The site is located beside the Skudai-Pontian main road in the area of Pekan Nanas under Pontian district.

SITE CONTEXT



REGIONAL CONTEXT (TOURIST SPOTS)

AGROTOURISM


Nictar Pineapple Park
0 km


Nurfa Farmstay
8.7 km


Pineapple Museum
13.2 km

OTHERS TOURIST SPOTS


Pekan Nanas Vilage Resort
2 km


Sinar Eco Resort
10.6 km


Pontian Seaside
24 km


Mount Pulai
22 km

Kukup Island
29.3 km


Taman Negara Johor Tanjung Piai
37 km

AIM

To explore and enhance the agroland for agrotourism planning through cultural ecosystem services in order to promote cultural enhancement, social economic well-being and environmental sustainability.

SITE ISSUES

1. Low appreciation on agriculture & underutilized spaces.
2. Low level of awareness.
3. Insufficient comprehensive planning strategies

OBJECTIVES

01 To identify the land characteristics and measures of agroland in supporting the development of agritourism in terms of cultural ecosystem services.

02 To study and underline the main initiatives and principle of CES and agrotourism planning.

03 To develop the design guidelines and framework of CES model for agrotourism planning in agroland enhancement project.

CLIENT BRIEF

- Owner of the site - Mr Haleen
- Seeks to improve the agriculture land into sustainable and multifunction landscape that showcases the local agriculture.

STAKEHOLDER INVOLVED

Majlis Perbandaran Pontian

Lembaga Perindustrian Nanas Malaysia

HISTORY OF PEKAN NANAS

Pre-Colonial Era
A rural area with subsistence farming and fishing.

1700s
The Thai King sought refuge in Pekan Nanas and built a palace, he also introduced pineapples as a cash crop.

1900s
Part of Johor's plantation economy, known for fertile land and settlements.

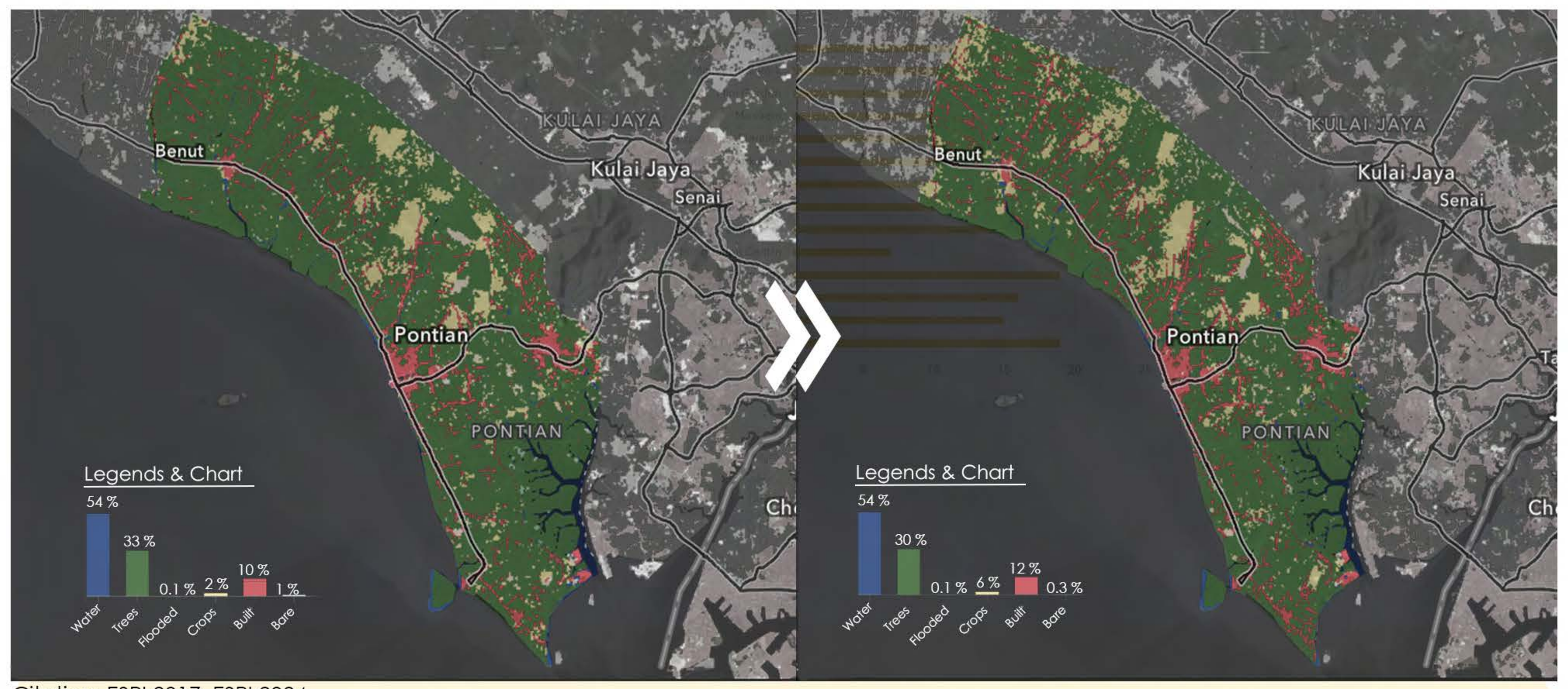
1920s
Pineapple cultivation began to thrive and establish Pekan Nanas as key agricultural hub.

1970s
Pekan Nanas became a major contributor to Malaysia's pineapple export industry.

1980s
Improved town's connectivity by enhancing infrastructure.

2000s
Agrotourism and diverse agriculture boosted the economy.

LAND CHANGES FROM 2017 TO 2024



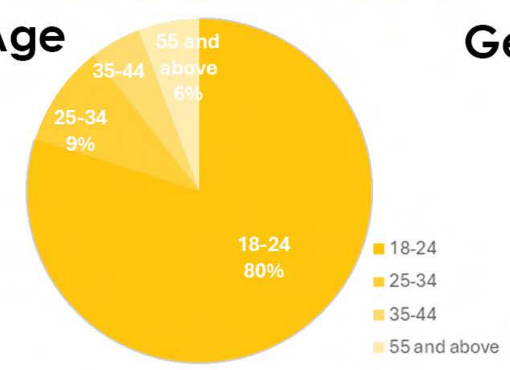
Citation: ESRI 2017, ESRI 2024

Based on the maps shown, tree cover decreased while cropland expanded reflecting intensified agriculture. The rise in agriculture boosts local economy but the loss of natural cover raises ecological concerns.

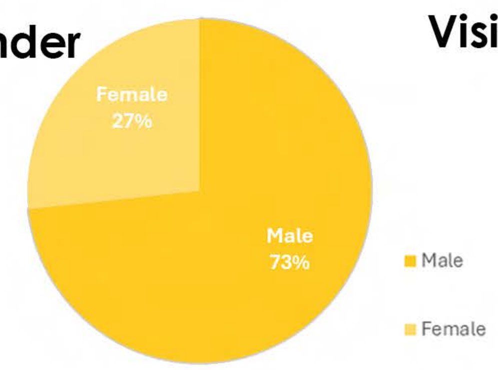
RESULT DEMOGRAPHIC

A questionnaire was conducted among 30 respondents in Pekan Nanas.

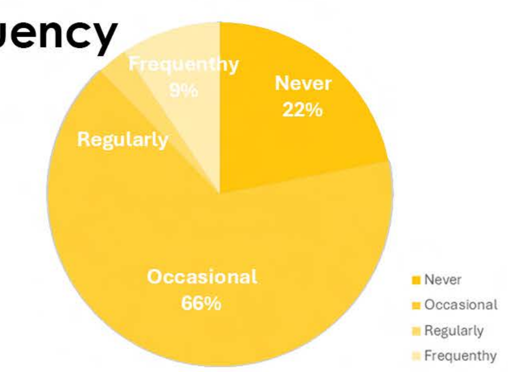
Age



Gender

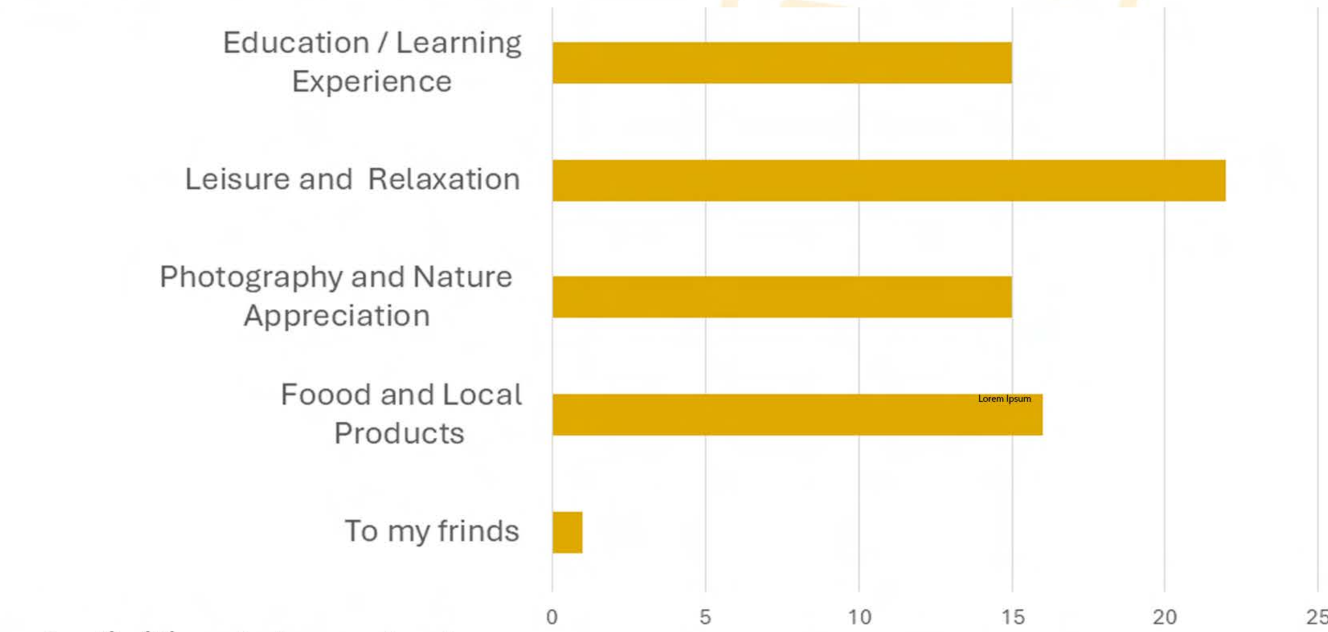


Visit Frequency

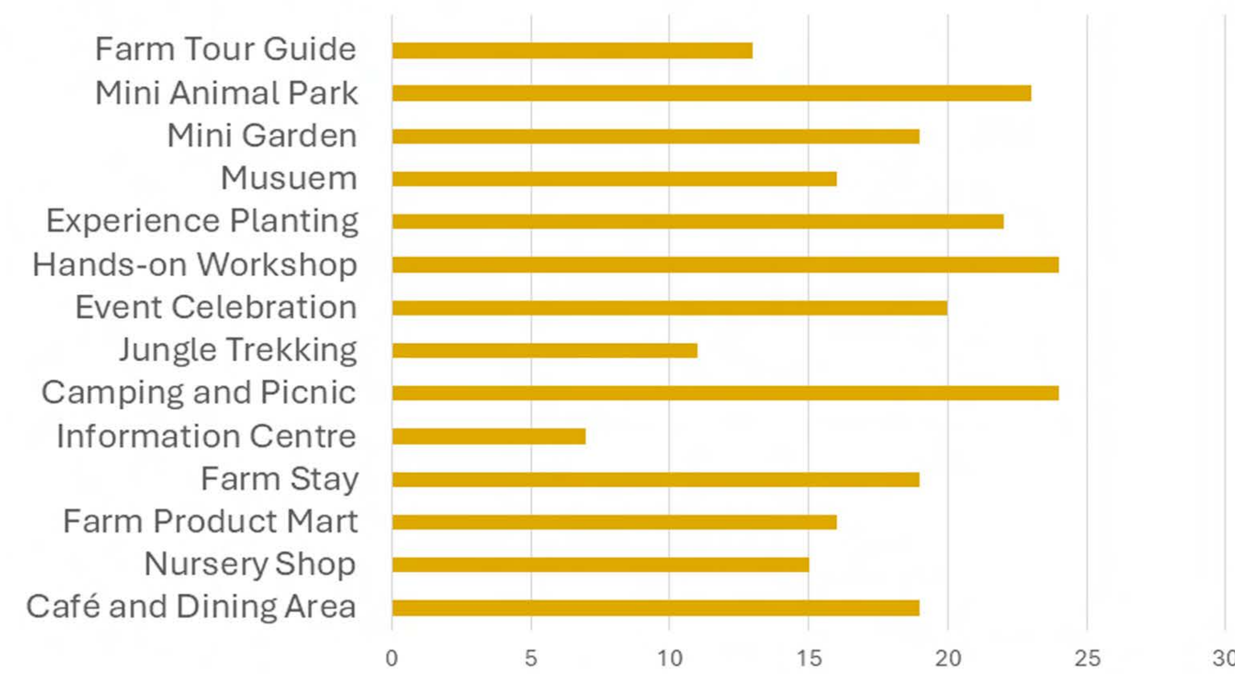


Perception on Agrotourism

Reason of Visiting



Activities Interested



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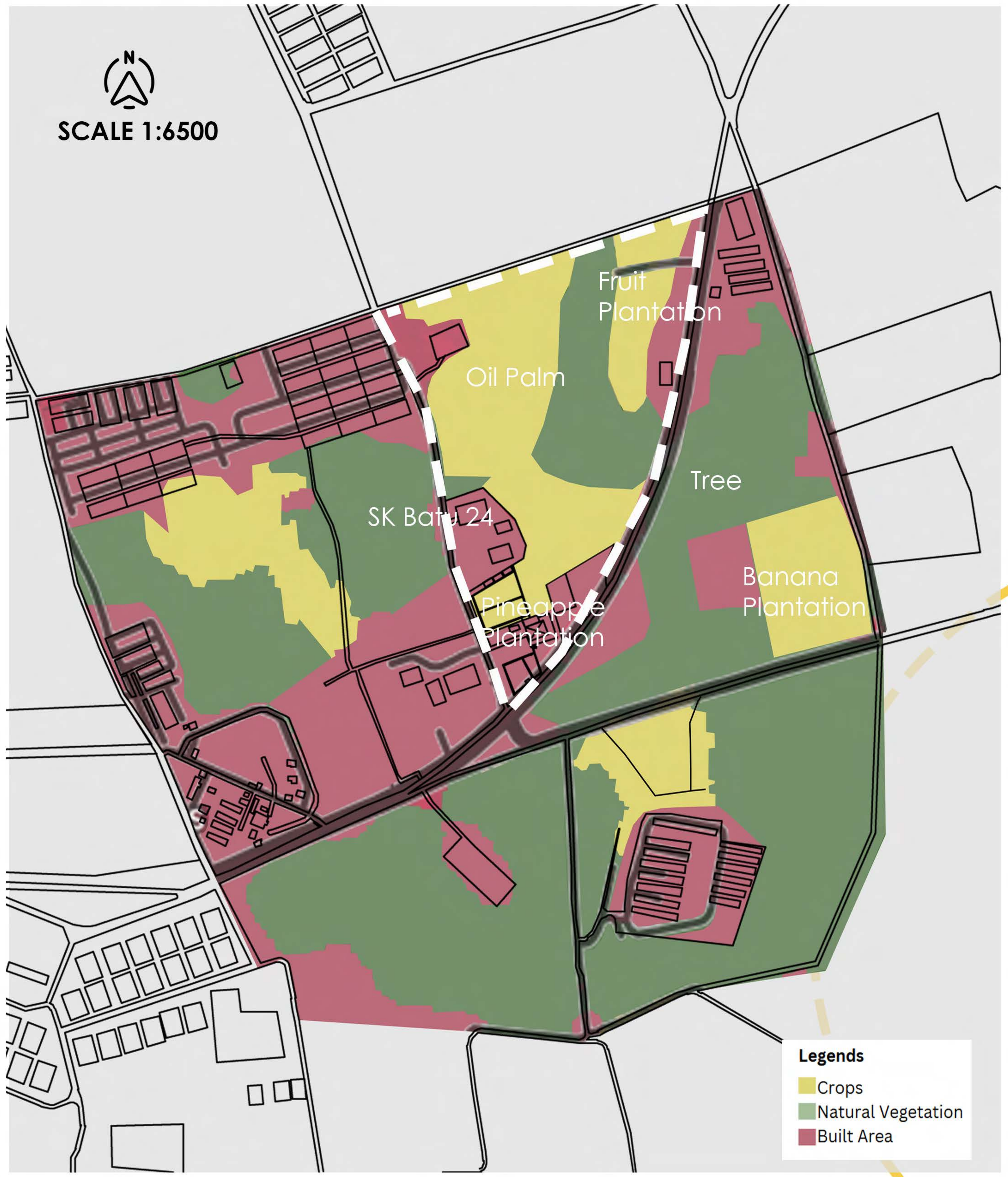
LAND COVER AND LAND USE

LAND COVER



Crop Percentage

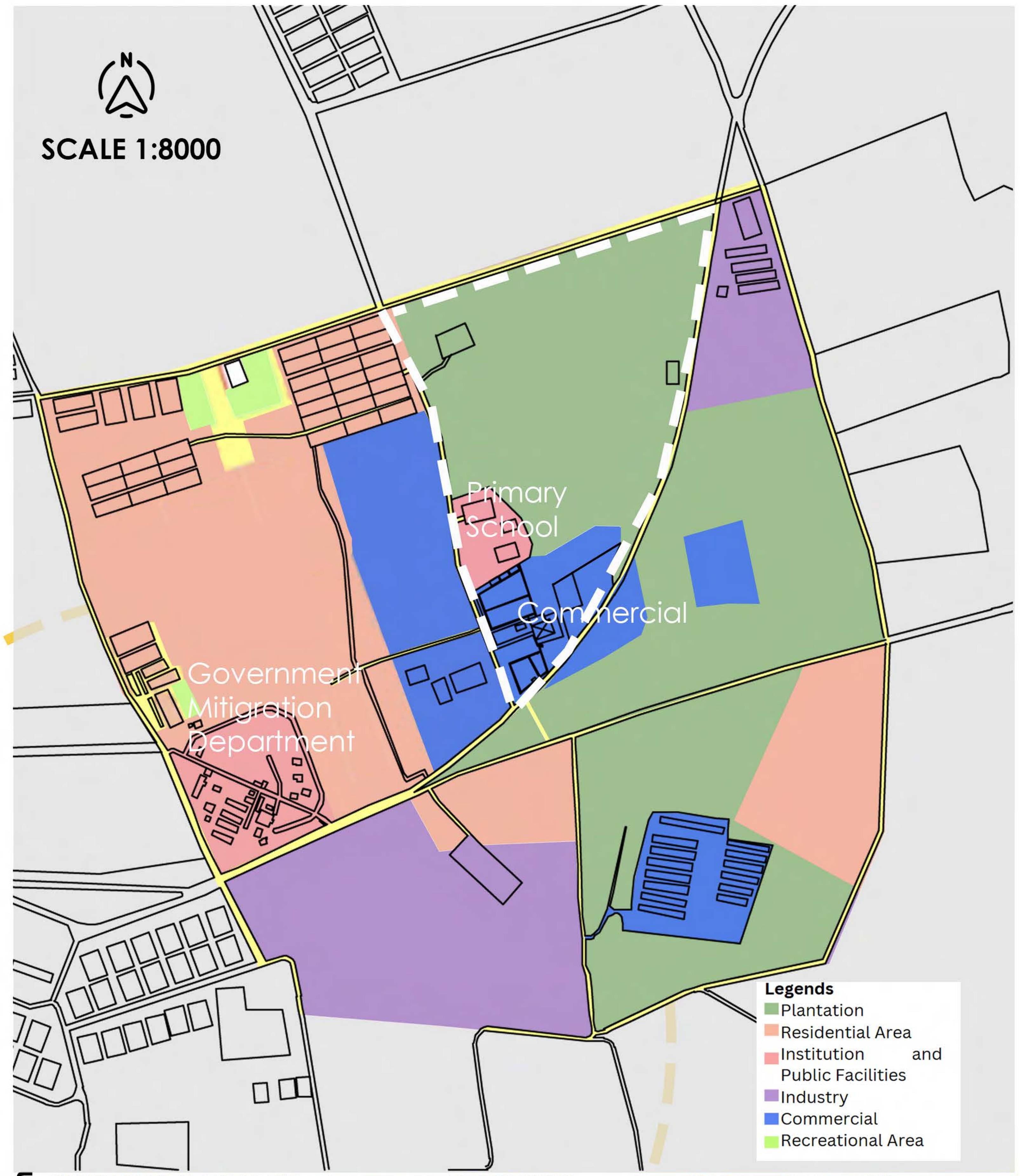
50%	12%	17%	5%
Oil Palm	Rubber Tree	Pineapple	Banana

Analysis

Lower percentage of pineapple cultivation, has potential to make it a strong identity marker for Pekan Nanas which is widely recognized for its pineapple industry. However, current pineapple plantation areas are limited,

There is lack of connectivity between different crop types. Resource sharing through cultural ecosystem services can offer a richer educational and tourism experience.

LAND USE



Plantation

Pineapple Oil Palm Orchard Rubber

Industry

Agri Resource Industry
Furniture Industry

Residential

Taman Kiara *Taman Emas* *Taman Intan*

Commercial

Nursery
Nictar Park

Institution

SK Batu 24
Immigration Detention Centre

Recreational

Taman Permainan Kiara

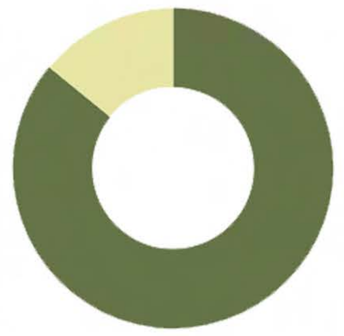
S •Strong foundation for agrotourism development.
•Diverse Agricultural Activities.

W •Underutilized agricultural lands.

O •High opportunities for expansion and diversification.

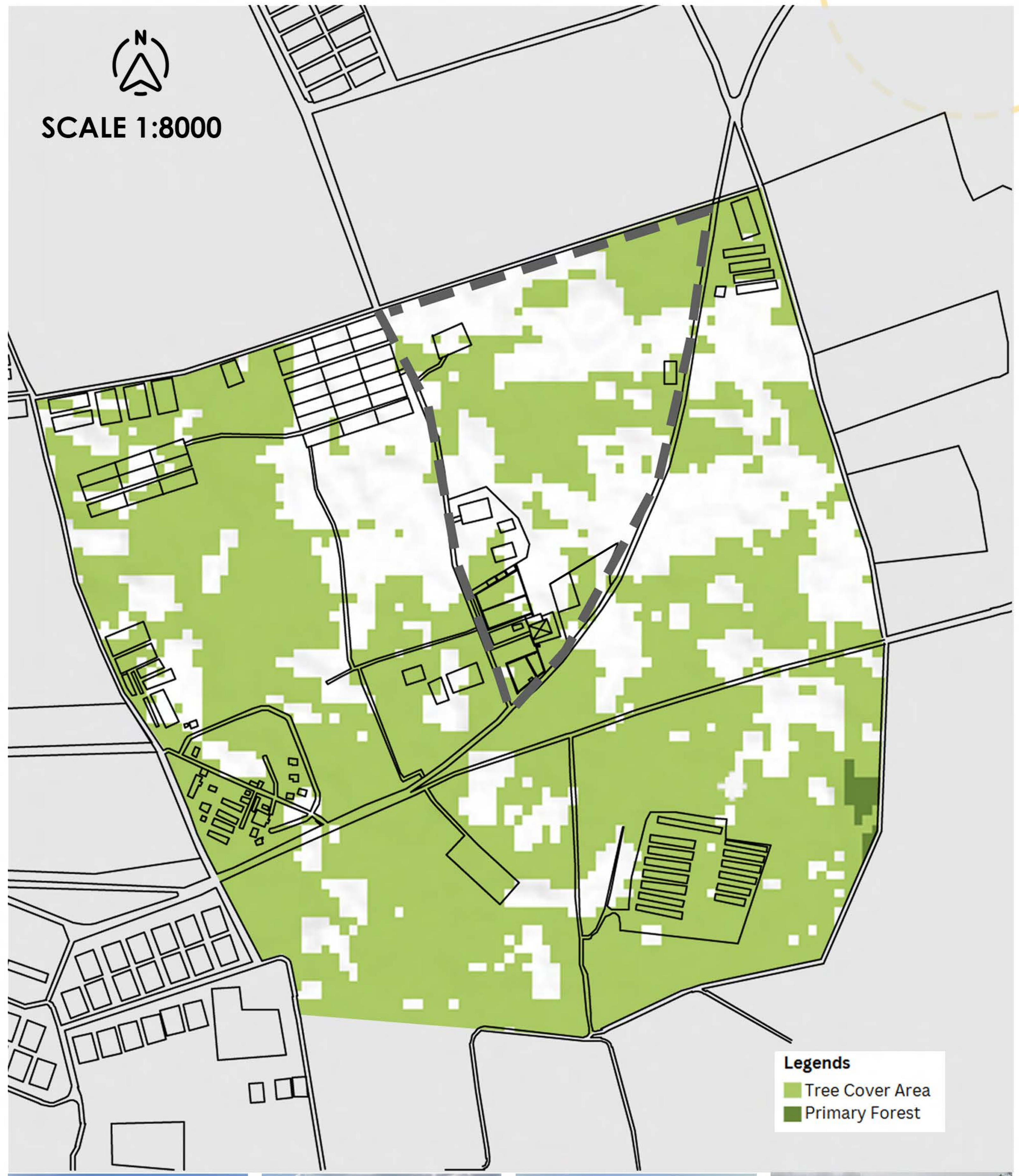
T •Rapid conversion of agricultural land.

Forest Type



Analysis

The mostly tree cover area are considered as secondary forests. Have more flexibility in terms of land use compared to primary forest area.



O •The natural setting provides opportunities to promote cultural and education about sustainable agricultural practices.
•Sustainable land management practices that restore soil quality and encourage agroland potential

T •Reduction of green space and consists of abundent built area.

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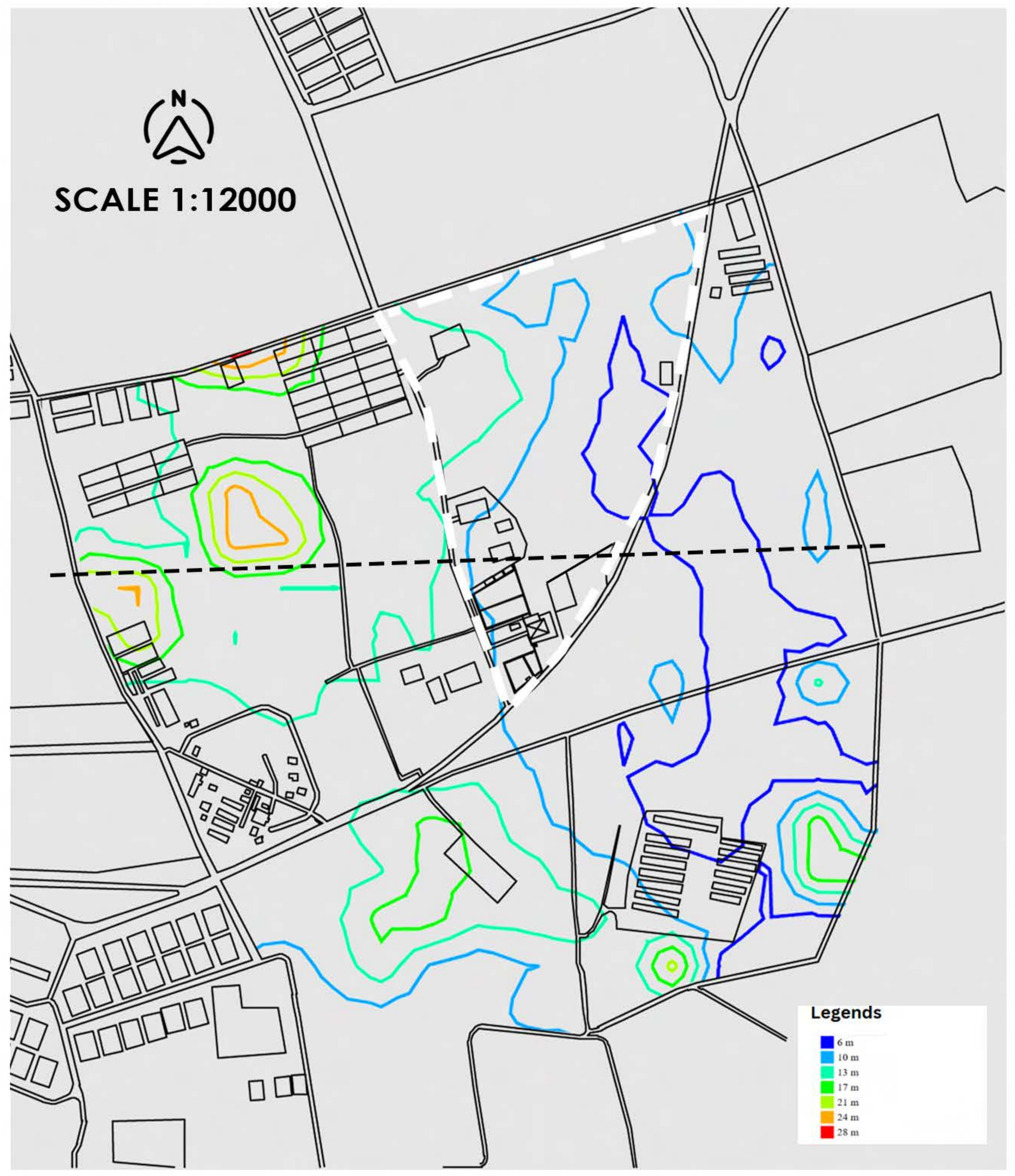
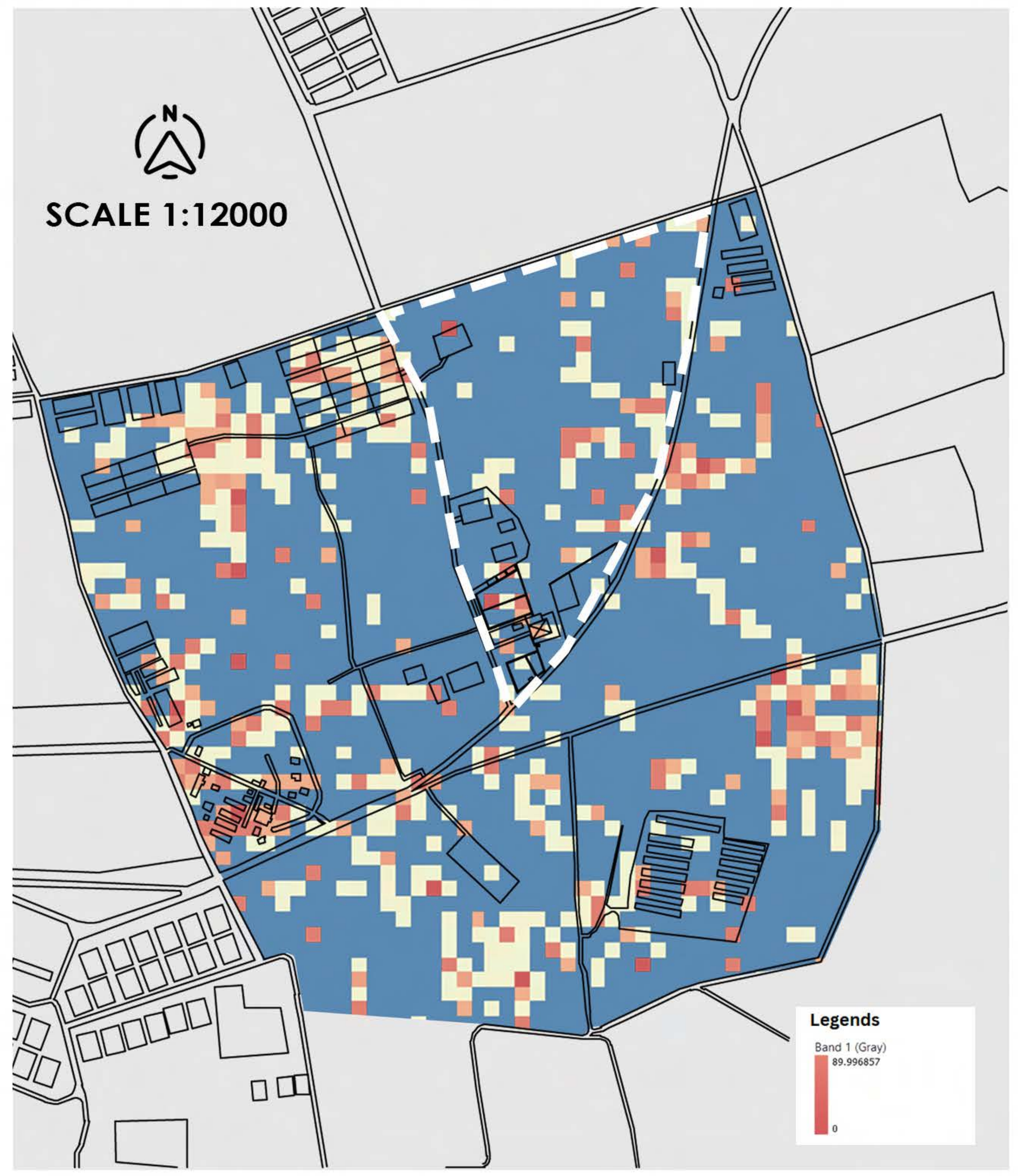
TOPOGRAPHY ANALYSIS

SLOPE MAP



CONTOUR MAP



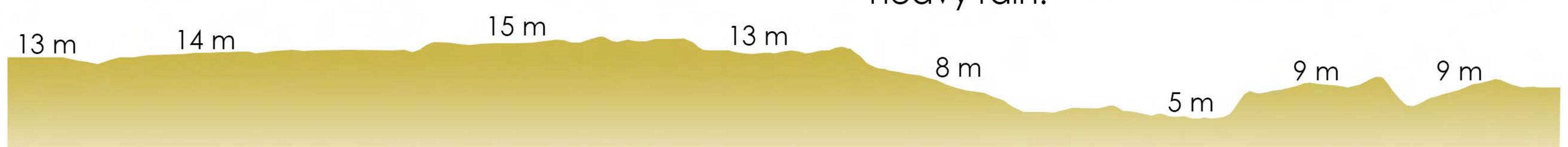
Analysis

Average slope percentage ≈ **2 - 3%**

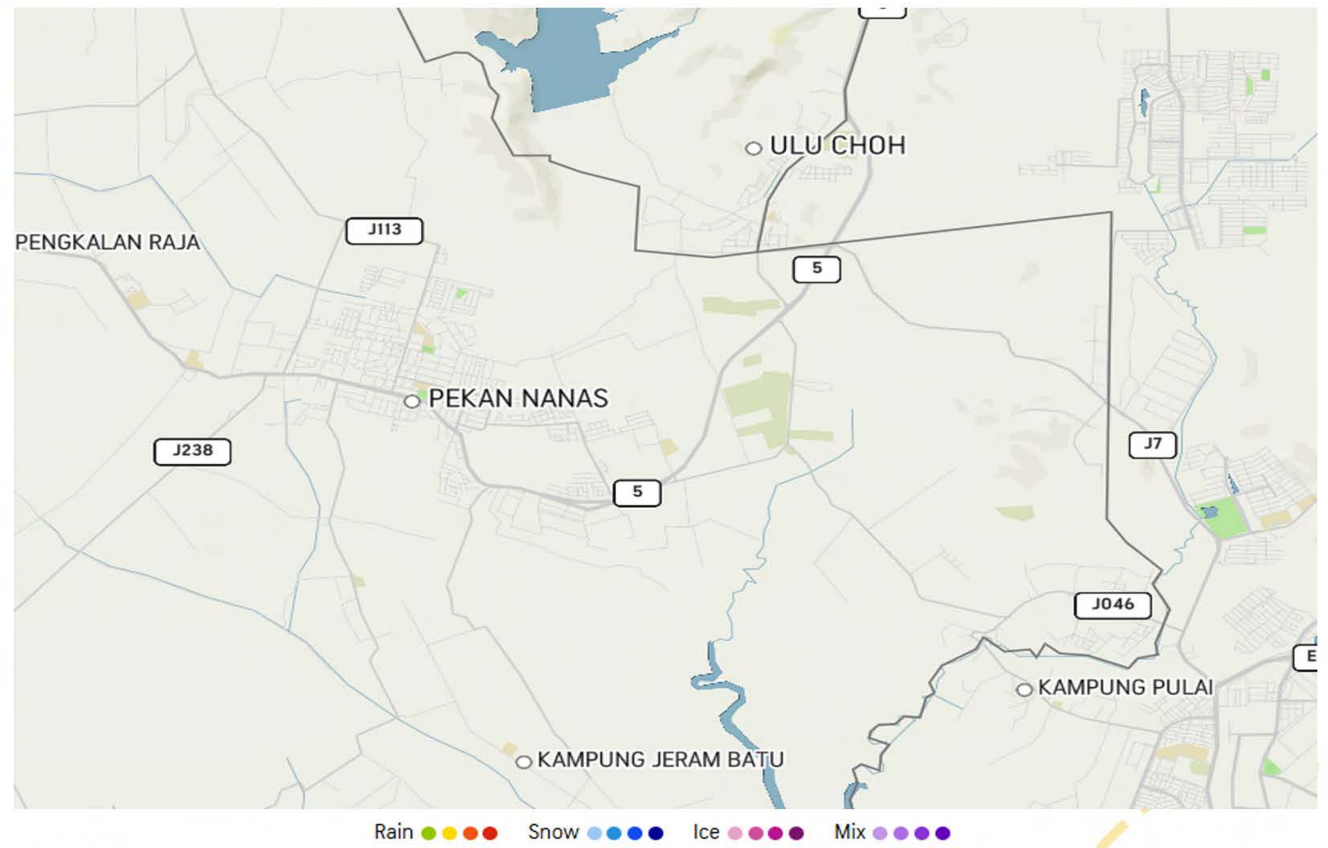
Low slope percentage **< 5%**

Elevation range from the map is well within the suitable range; Ideal for preventing waterlog while maintaining good drainage.

- **S** •The zoning is flat areas and low land.
- **W** •Wind exposure.
- **O** •Ease to support multi-agricultural planation.
- **T** •Certain area has risk of flooding during heavy rain.

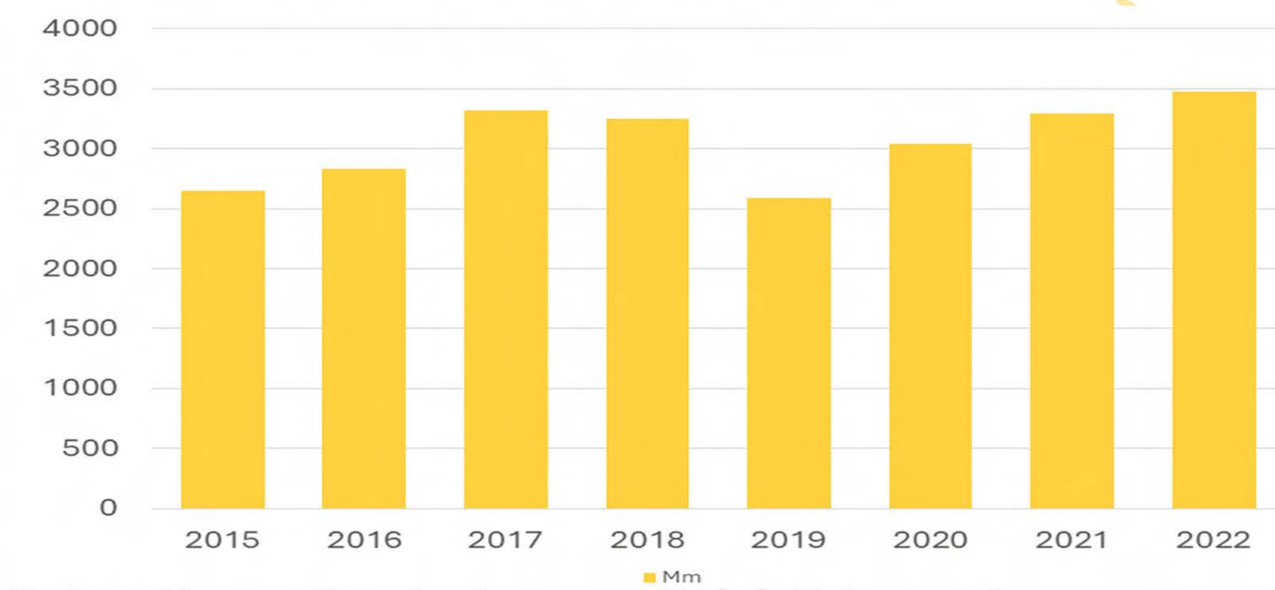


CLIMATE & RAIN ANALYSIS

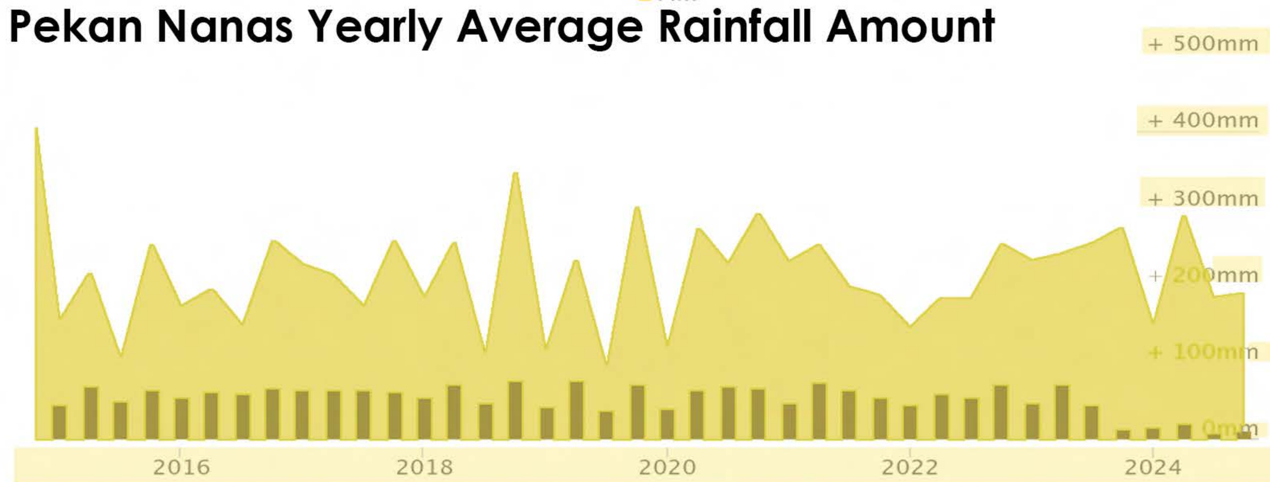


Analysis
The water requirement is naturally meet. This affects the need for frequent manual irrigation, making the plantation more sustainable and cost-efficient.

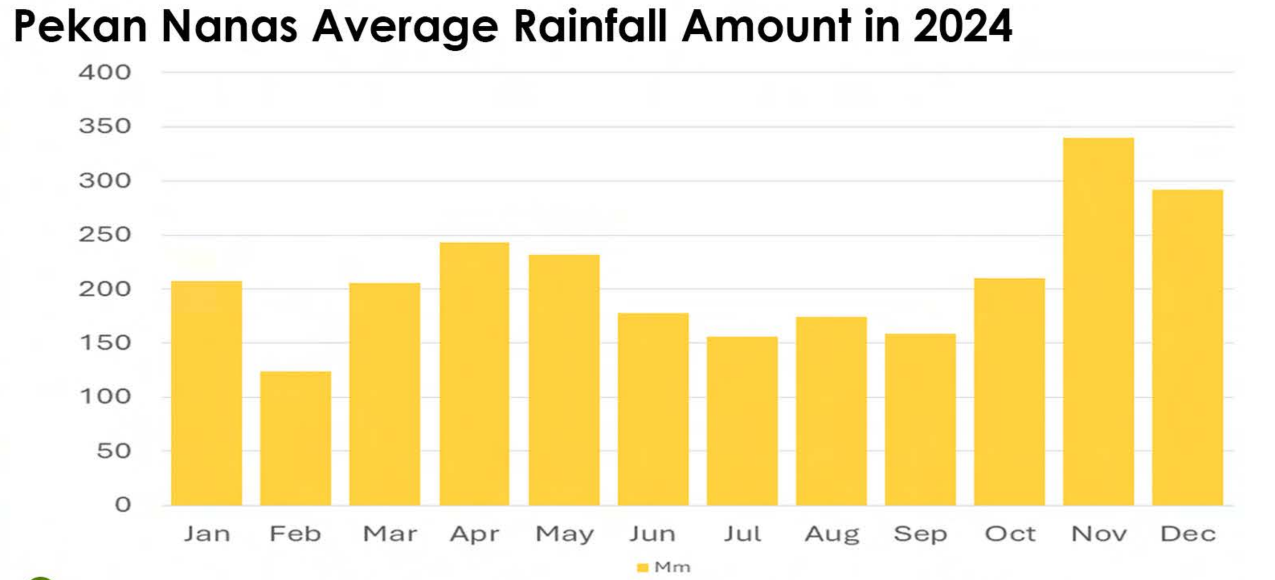
Malaysia Average Rainfall Precipitation



Pekan Nanas Yearly Average Rainfall Amount



Pekan Nanas Average Rainfall Amount in 2024



- **S** •The plantation's irrigation needs were naturally met.
- **W** •Require sustainable drainage management.
- **O** •Have an integration with other crops.
- **T** •Land degradation.

SOIL ANALYSIS

Analysis
Mostly soil type in Johor is peat soil, peat soil consists of high organic matter content about 60 to 90%, pH value in the range of 3.5–5.0, high water retention capacity which can hold 200–300% of water and low bulk density provides good aeration.

Requirement of Pineapple:
- •pH 3.5 - 4.5
- •1000 mm of water in a year

Requirement of Oil Palm:
- •pH 4.0 - 6.5
- •1500 - 2500 mm of water in a year

Requirement of mostly tropical fruit plantation :
- •pH 4.5 - 6.5
- •1200 - 2500 mm of water in a year

No	Types of Soil	Suitability of Soil
1	Peat Soil	Pineapple, oil palm and short term crops.
2	Selangor-Kangkong	Coconut tree, oil palm, coco, short term crops and fruits plantation.
3	Keranji	Coconut, fruits adn short term crops.
4	Kualai-Yong Peng	Oil palm, coco, rubber, coconut, fruits and short term crops.
5	Holyrood-Lunas	Oil palm, sago, vegetables and paddy.

- **S** •The agroland fulfills the requirement for diverse agricultural cultivation.
- **W** •May nutrient depletion.
- **O** •Potential for integrated agropark and cultural conservation.
- **T** •Land degradation.

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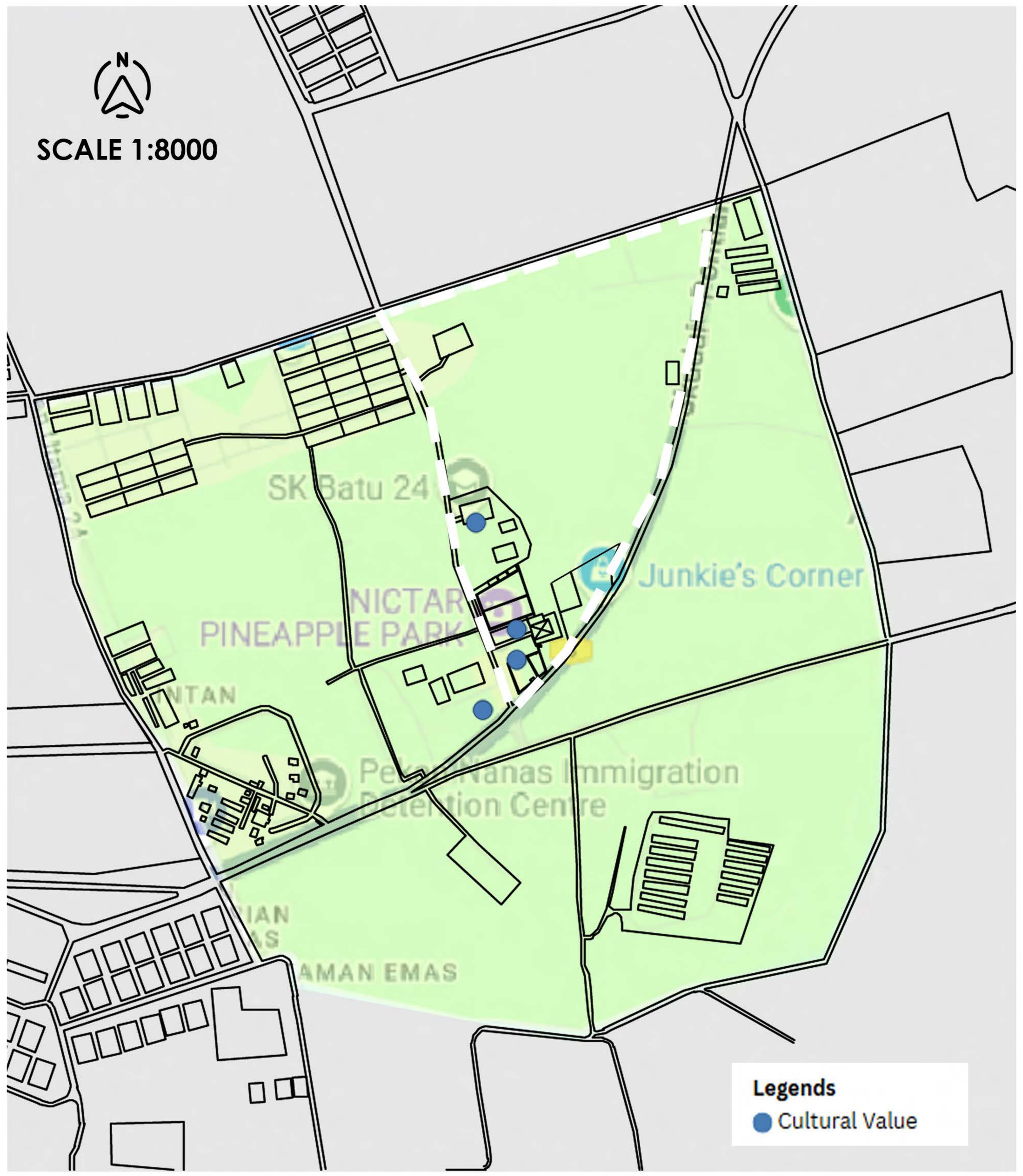
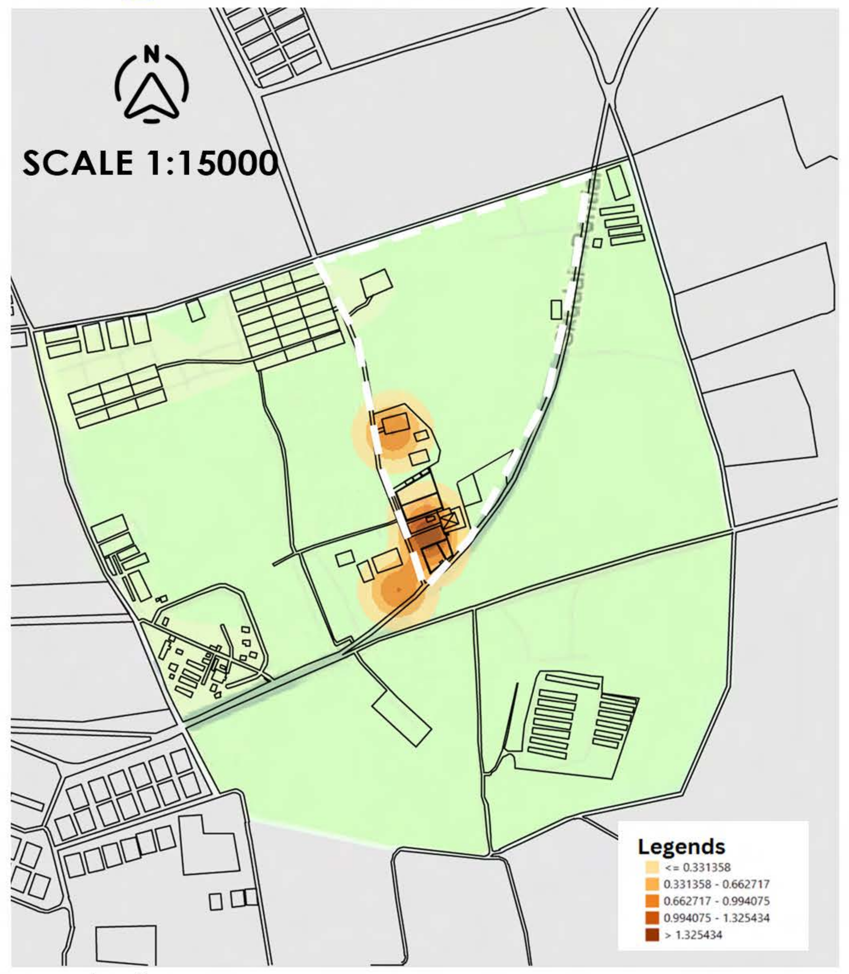
CULTURAL VALUE ANALYSIS



Density Map of Cultural Integration & Cultural Value



Analysis
The cultural map highlights the traditional farming practices, offers opportunities for interactive workshops and visitor engagement.

S •Diverse cultural elements.

W •The current cultural value is limited and need to be conserved.

O •Propose cultural education programs.

T •Declining interest among the community.

Local Traditions and Practices


Pineapple Plantation


Pineapple Processing


Aquaculture


Javanese Cultural

Art and Handicrafts

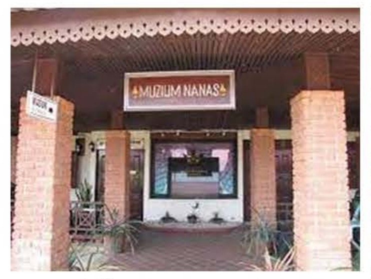

Pineapple Sculpture


Pineapple Fabric


Pineapple Leaf Baskets


Pineapple Shell Crafts

Educational Value


Pineapple Musuem


Waste-to-Product Learning

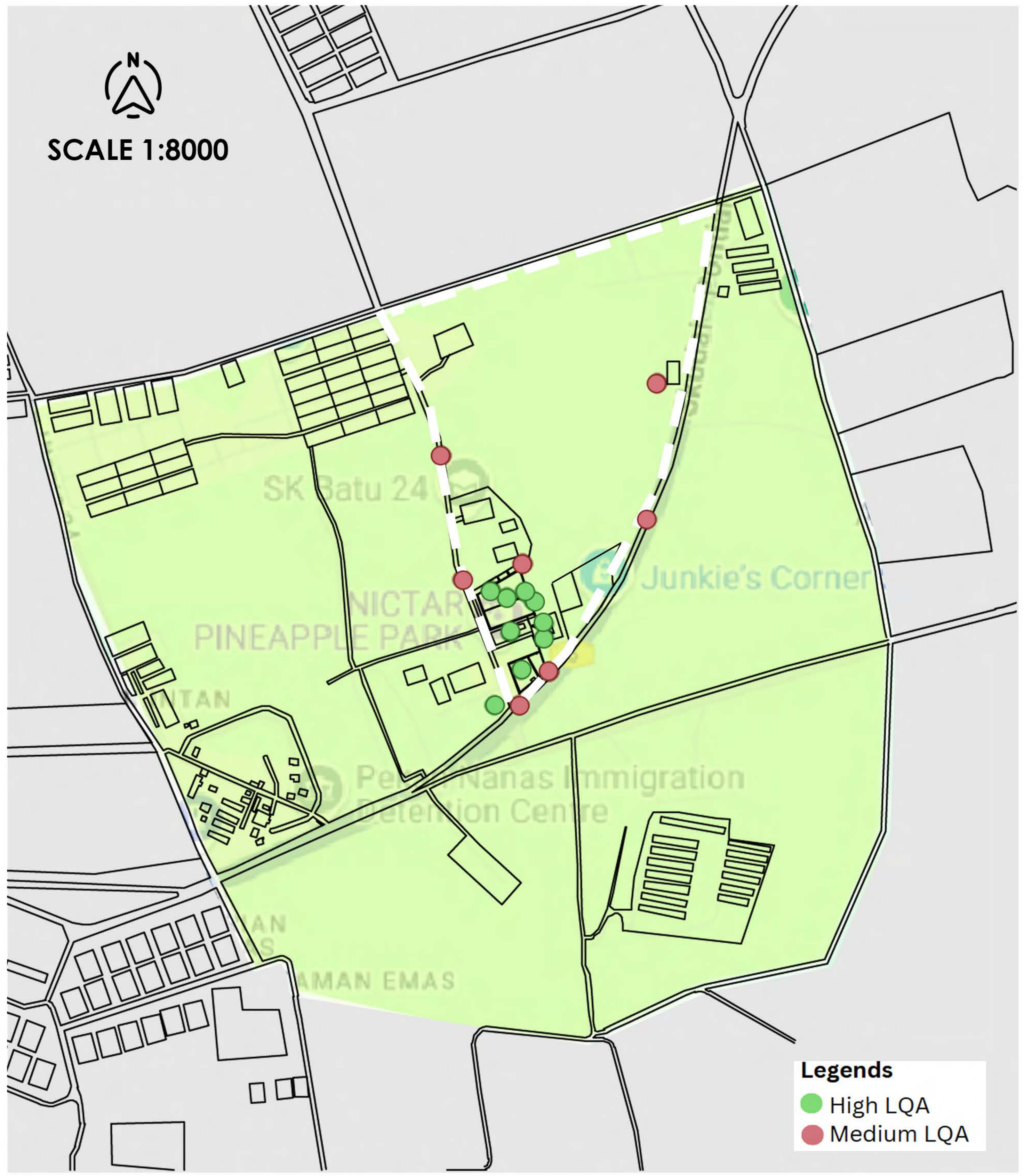

Organic Fertilizer & Compost


Bromelain Enzyme Extraction

SOCIAL ECONOMY

Analysis
The economy is driven by pineapple farming, agrotourism and local businesses that add value to agricultural products.

LANDSCAPE VISUAL QUALITY ANALYSIS

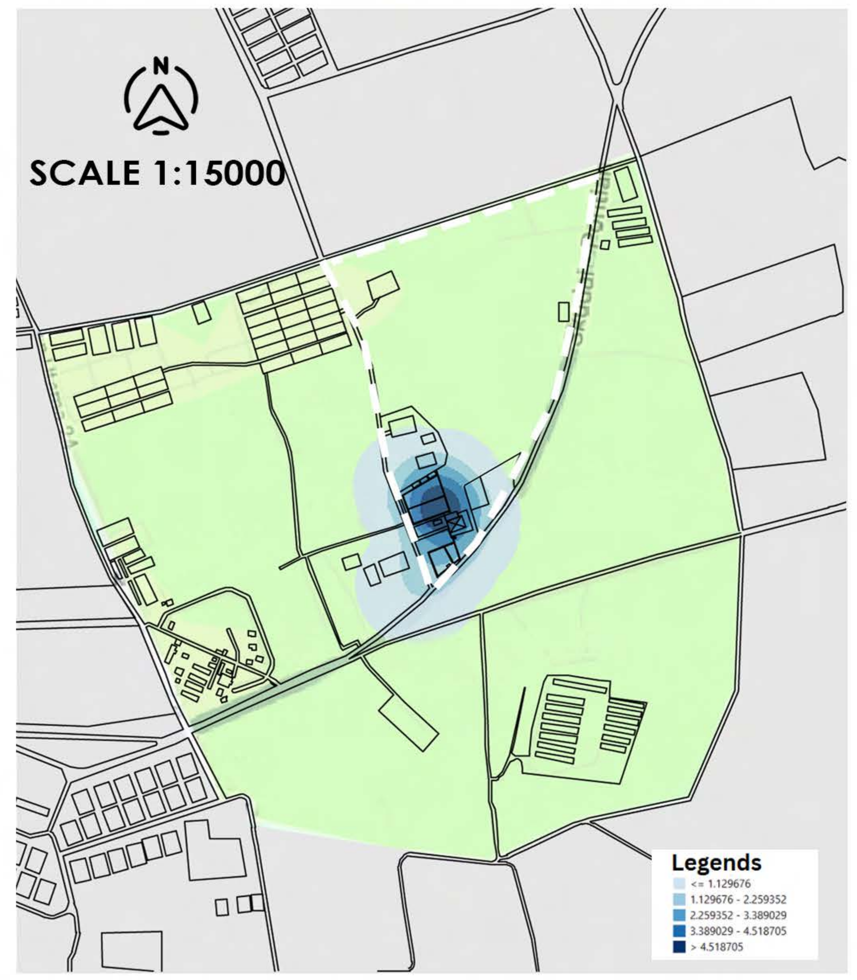


Criteria of Landscape Visual Quality

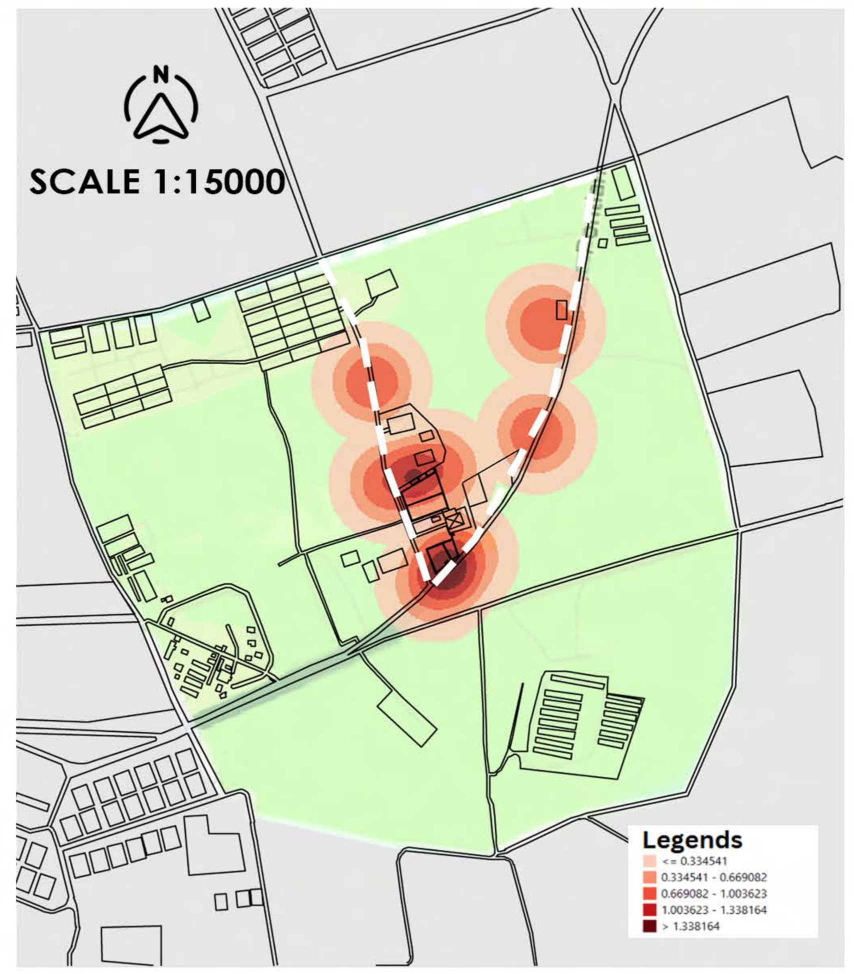
Item	≥70% (High LVQ)	40% to 69% (Moderate LVQ)	≤39%(Low LVQ)
Historical Value	Variety of Heritage	Average in Historical Value	No Historical Value
Naturalness	High diversity of green spaces	Moderate diversity of green spaces	Low diversity of green spaces
Imageability	Recognize and memorable	Average clear image in memory	Lack sense identity of place
Unity	Harmony and Neat	Decent	No unity
Vividness	Striking, Aesthetic and uniqueness	Moderate view of landscape	Boredom and unattractive

Site Photos (High LQA)

DENSITY MAP OF HIGH LQA



DENSITY MAP OF HIGH LQA



$$\text{Percentage} = \left(\frac{\text{Total Score}}{\text{Maximum Total Rating}}\right) \times 100$$

Analysis
Highly location-specific demonstrates remarkable aesthetic potential while others require improvements.

Site Photos (Medium LQA)

S •Natural scenic view.

W •Imbalance LQA value.

O •Improve the visual and experiential quality.

T •Lack of design integration.

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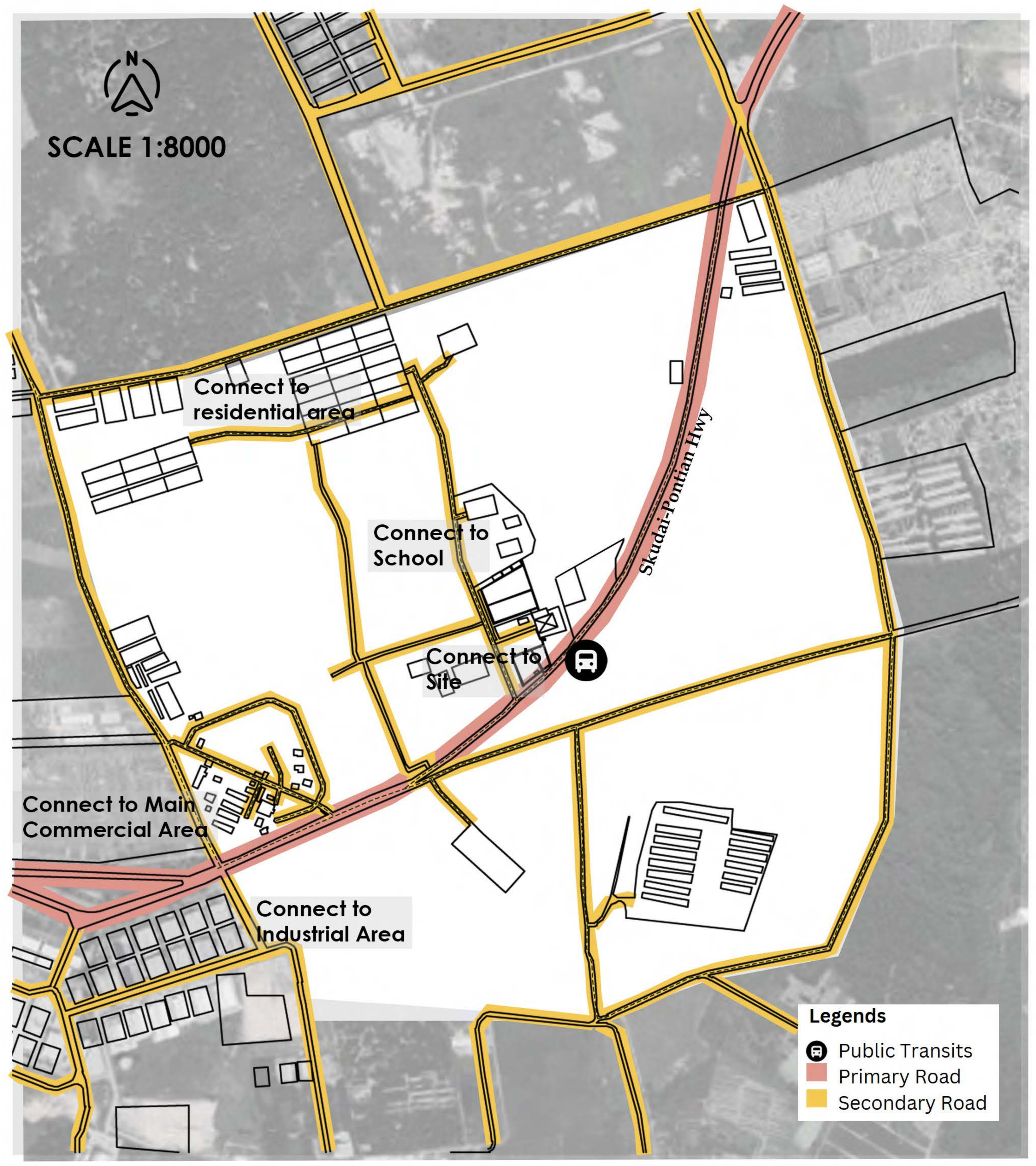
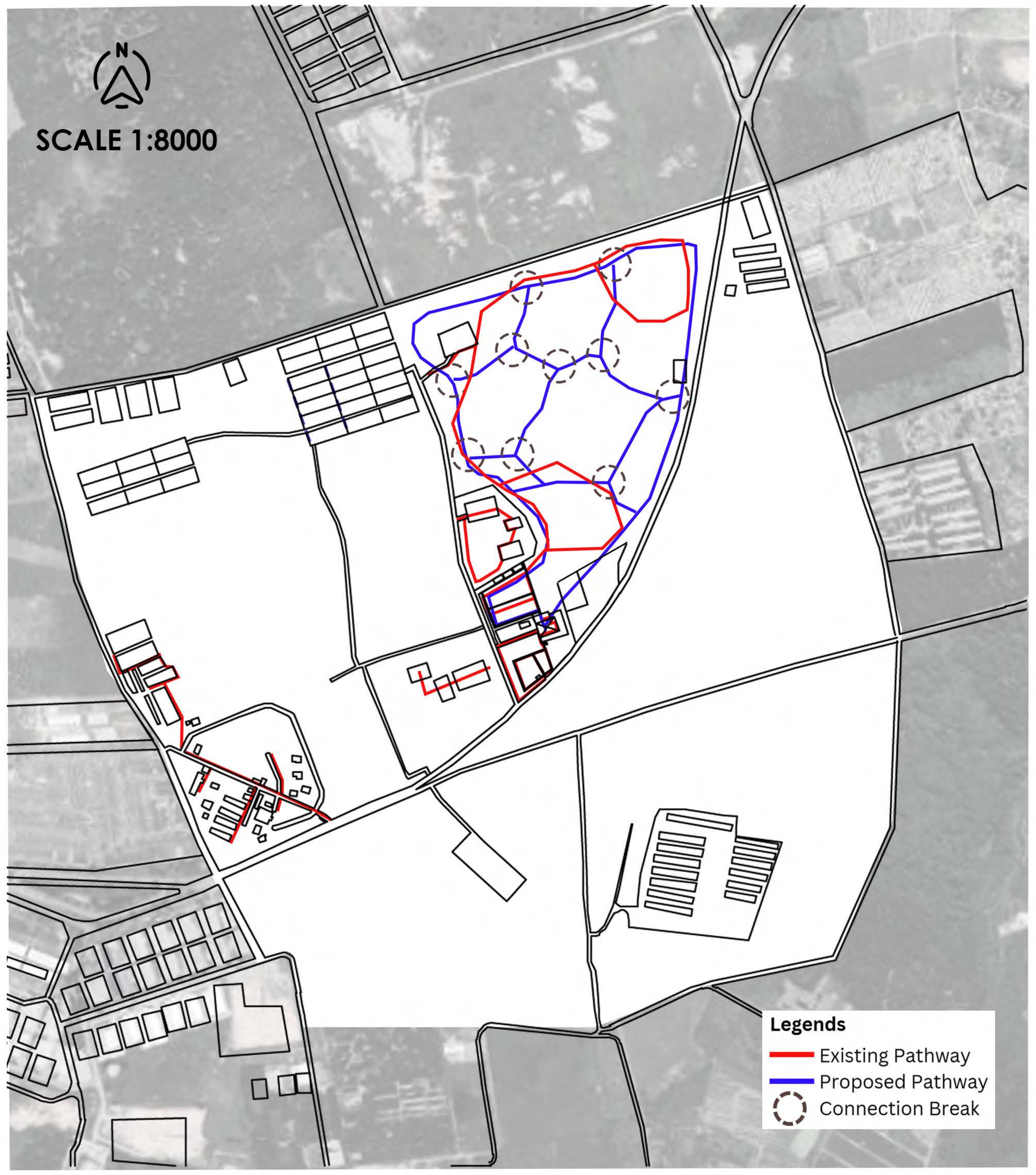
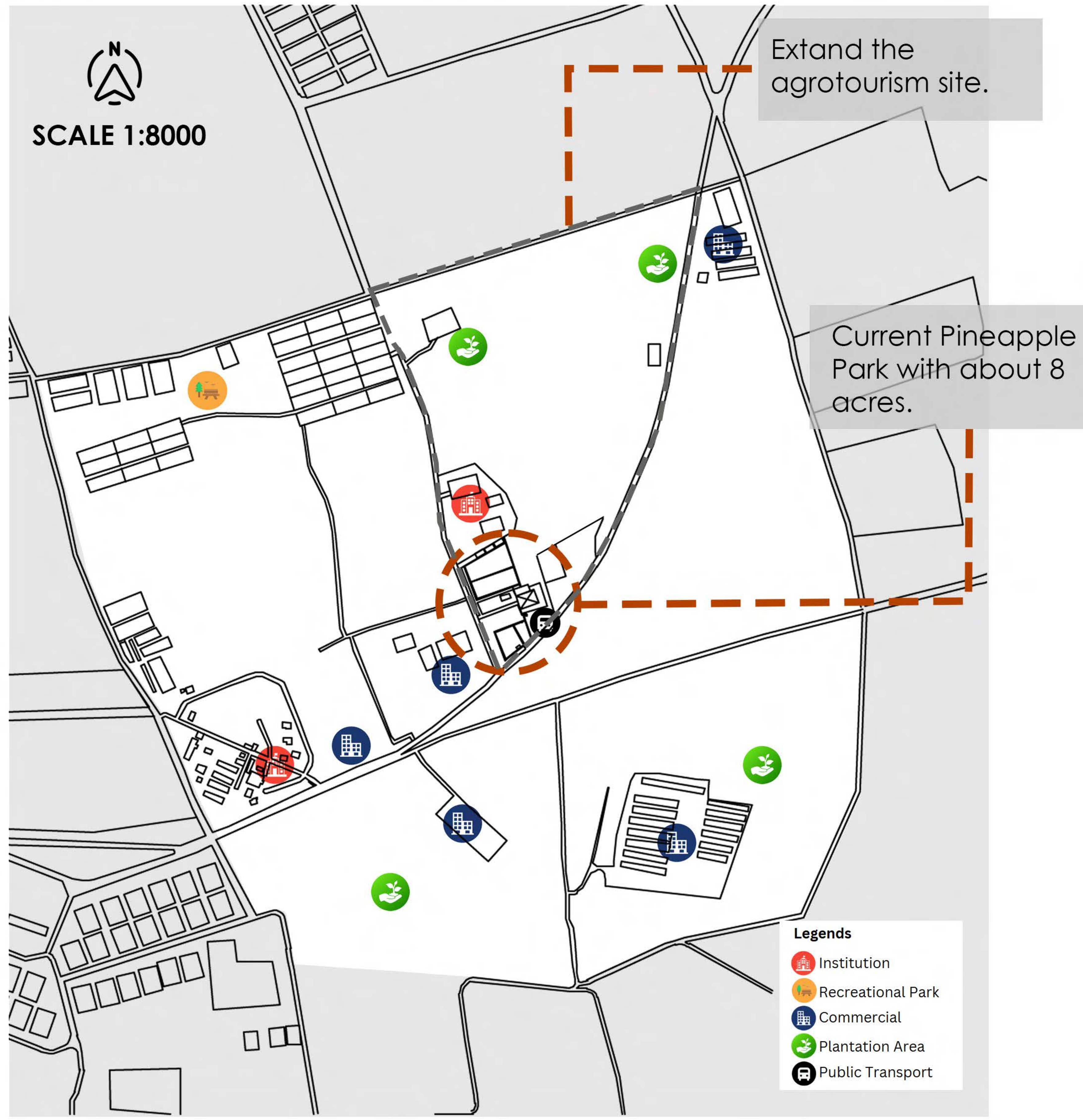
CIRCULATION ANALYSIS - VEHICLES



CIRCULATION ANALYSIS - PEDESTRIAN

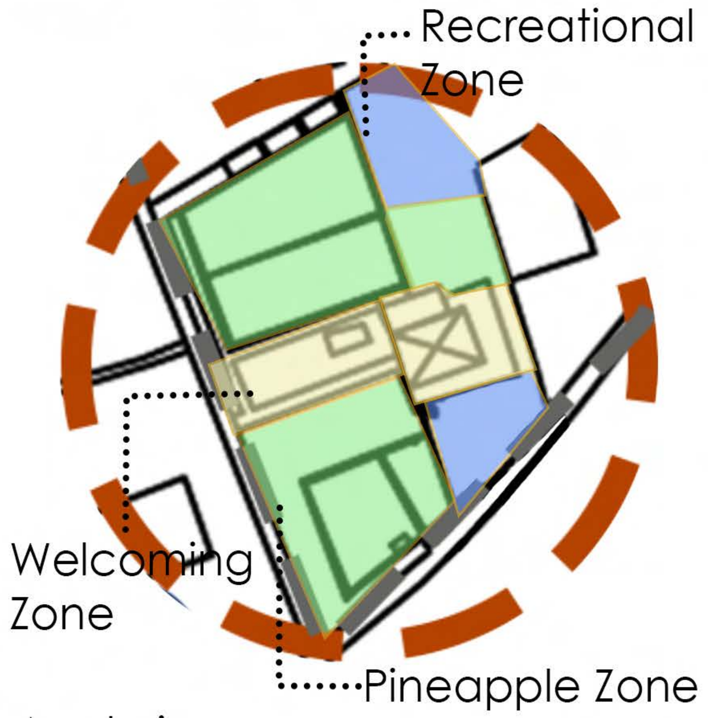


FACILITIES AND BUILT AREA ANALYSIS



Institution

Plantation



Nictar Pineapple Park

A pineapple farm developed into an agrotourism destination. The park promotes local agriculture and offers educational farm tours. The park reflects the identity of Pekan Nanas as a pineapple town.

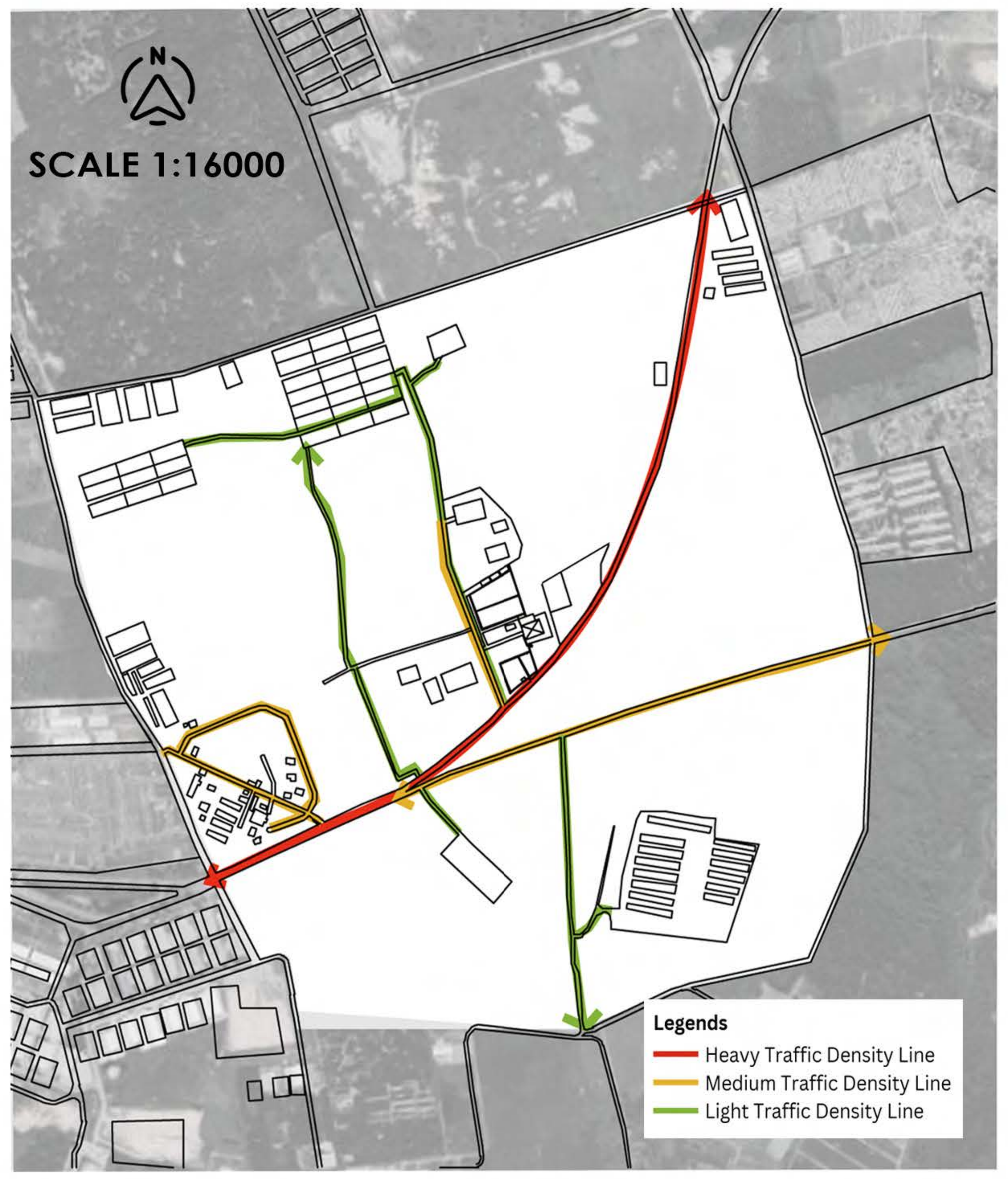
Public Transport

- **S** •Strong pineapple identity.
- **W** •Limited agrotourism facilities.
- **O** •Have agrotourism intention.
- **T** •Pineapple pests.

Analysis

Although the area is surrounded by commercial area but the facilities that support agrotourism should be improved.

CIRCULATION ANALYSIS - TRAFFIC DENSITY



Analysis

The circulation analysis analyze the site by optimizing accessibility, movement and functionality. Based on the maps, the site is accessible but the connection between the space can be improved.

- **S** •Beside the main public road and show the visibility.
- **W** •Mixing pedestrian, vehicular and service circulation on site.
- **O** •Can be accessed easily by public transport.
  •Potential to connect the agricultural resouces on site.
- **T** •The nearby primary school may cause peak-hour congestion, leading to increased traffic.

Enhancing Agroland For Agrotourism Planning Through Cultural Ecosytem Services

SBEZ4516 01
IAS
Board

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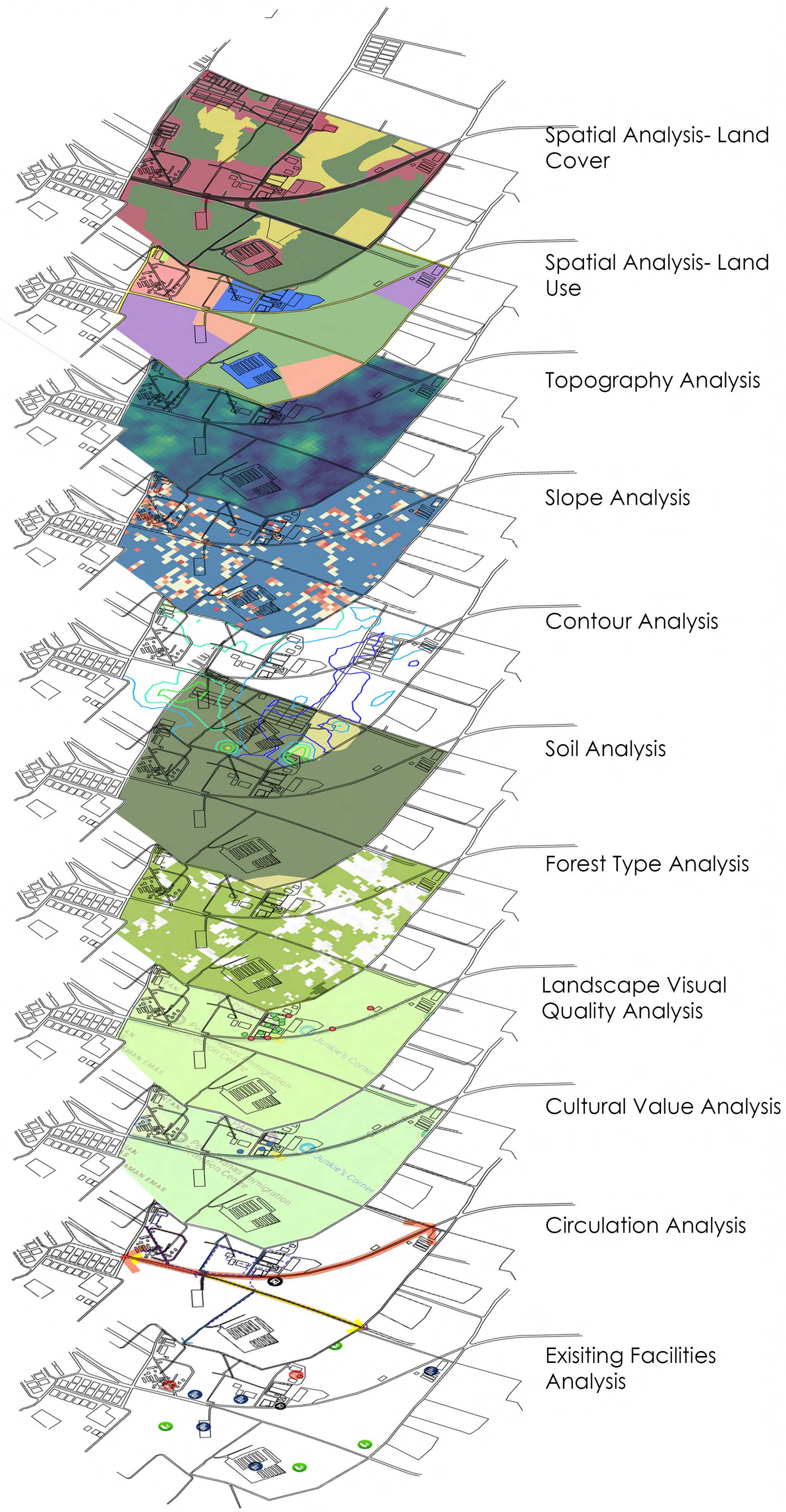
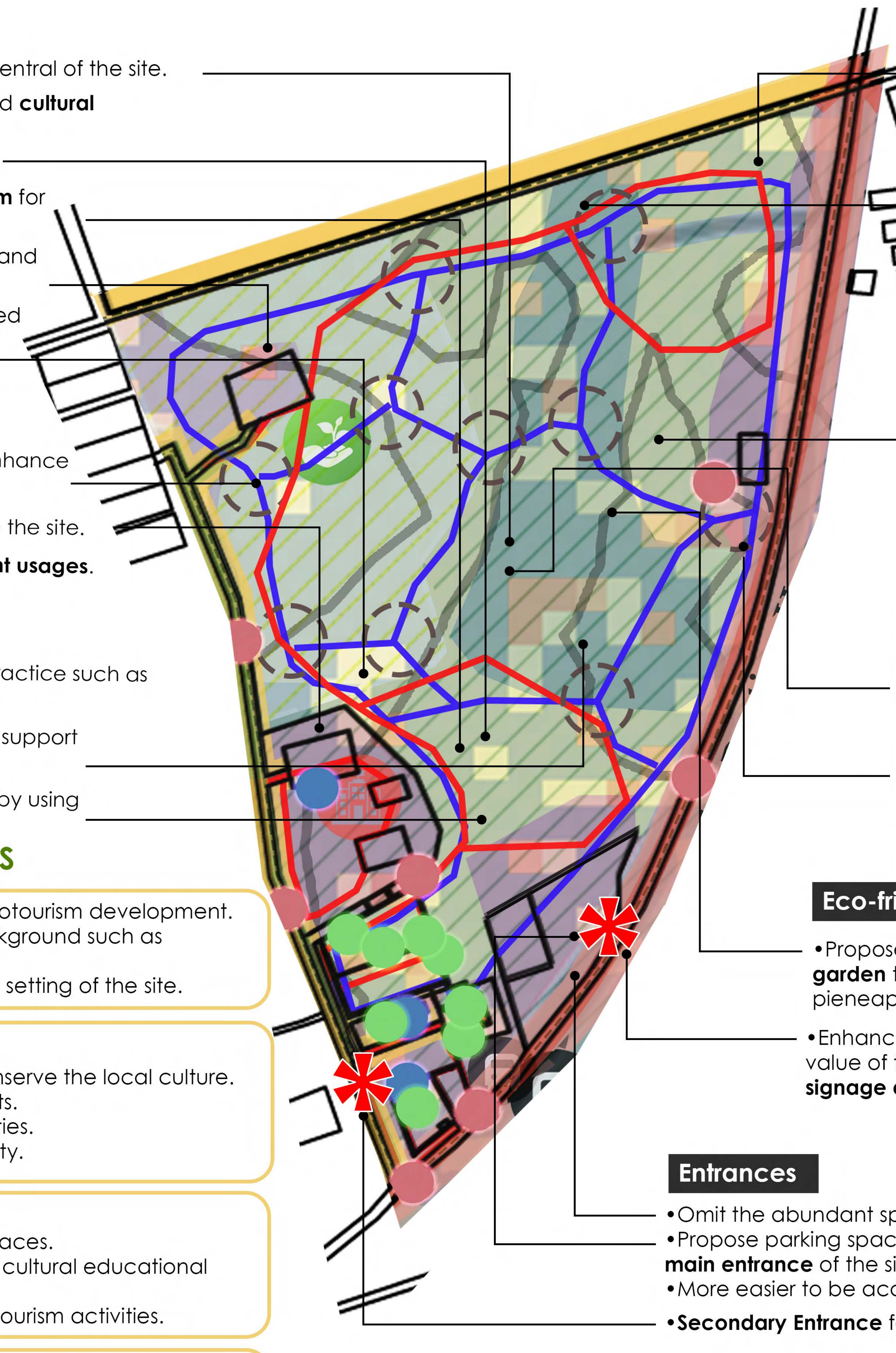
FUNCTIONAL DIAGRAM



SYNTHESIS PLAN



Cultural Enhancement

- Propose **one stop edu hub** at the central of the site.
- Promote **educational workshop** and **cultural events.**
- **Expand** pineapple field.
- Propose **outdoor learning classroom** for educational purpose.
- Showcase the oil palm processing and demonstrations.
- Propose a vibrant pineapple-inspired café that offers a relaxing **farm-to-table dining experience**.

Connectivity

- Propose **permeable pathway** to enhance the connectivity.
- Also connect the primary school to the site.
- Plan different **entrances for different usages**.

Sustainable Design

- Promote sustainable agricultural practice such as **waste management**.
- Implement **rainwater harvesting** to support irrigation and reduce water use.
- Adopt **organic pest management** by using biological controls.

Experiential Tourism

- Introduce **seasonal programs and interactive experiences** that allow visitors to engage with the site.
- Propose **campsite** for those who want to stay more than one day. (High privacy)
- Utilize the oil palm field to create an agrotourism attraction with an **agro-cafe**.
- Propose **foraging trail** by utilizing the original natural setting.
- Information centre to achieve sense of welcoming.

Potential Nodes

- **Center node**: Serves as the accessible heart of the site which connect all directions.
- **Resting node**: Provides a comfortable pause for pedestrians and shuttle buggies along the route.

Eco-friendly Design

- Propose **aesthetic pineapple floria garden** to give another scenic view of pieneapple.
- Enhance the visibility and the aesthetic value of the site by designing the **letter signage and pineapple sculpture.**

Entrances

- Omit the abundant spaces.
- Propose parking space and this area will be the **main entrance** of the site.
- More easier to be accessed from main road.
- **Secondary Entrance** for accessibility of trunk services.

OVERALL SWOT ANALYSIS

S
- Strong foundation for agrotourism development.
- High cultural identity background such as pineapple agriculture.
- Integrate with the natural setting of the site.

W
- Underutilized agroland.
- Lack of awareness to conserve the local culture.
- Imbalance aesthetic spots.
- Limited agrotourism facilities.
- Poor pathway connectivity.

O
- Educational potential.
- Create multifunctional spaces.
- Spread and promote the cultural educational program.
- Propose interactive agrotourism activities.

T
- Urbanization.
- Reduction of green spaces.

Enhancing Agroland For Agrotourism Planning Through Cultural Ecosytem Services

SBEZ4516 01
Conceptual Board

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PROJECT INTRODUCTION

This project transforms agricultural land into a multifunctional space by integrating Cultural Ecosystem Services (CES) to support agrotourism.

It highlights the cultural, educational, recreational and aesthetic values throughout the project, while preserving its agricultural and natural identity.

SITE BRIEF

Pekan Nanas, in Pontian, Johor, is known for pineapple farming and rich agricultural heritage.

AIM

To propose a CES-based agro-cultural park that enhances the value of agroland while promoting interactive and engaging agrotourism experiences.

SITE ISSUES

1. Low appreciation on agriculture & underutilized spaces.
2. Low level of awareness.
3. Poor agrotourism planning leads to loss of identity.

OBJECTIVES

01 To enhance the cultural and heritage value of local agricultural land, reinforcing its identity through place-based experiences.

02 To promote environmental education by integrating sustainable agricultural practices through community learning.

03 To create an agro-cultural park that offers immersive and diverse agrotourism programs.

DESIGN APPROACH

Cultural Ecosystem Services (CES)

Cultural Preservation

- Create **cultural immersion** on agriculture displays such as planting skills, art, crafts and performances.
- Provide **hands-on learning programs** and implement **sustainable eco-friendly practices.**

Recreational Engagement

- Enhance **community involvement** through recreational activities.
- Propose **interactive agro-leisure area** which support with agrotourism facilities.

Aesthetic and Natural Interpretation

- Propose **natural immersed** designs such as woodland walk and trail that offer natural views.
- Install **instagrammable spots** to enhance pineapple identity.

Cultural Value
Educational Value
Aesthetic Value
Recreational
Community Engagement
Sustainable Eco-friendly Design

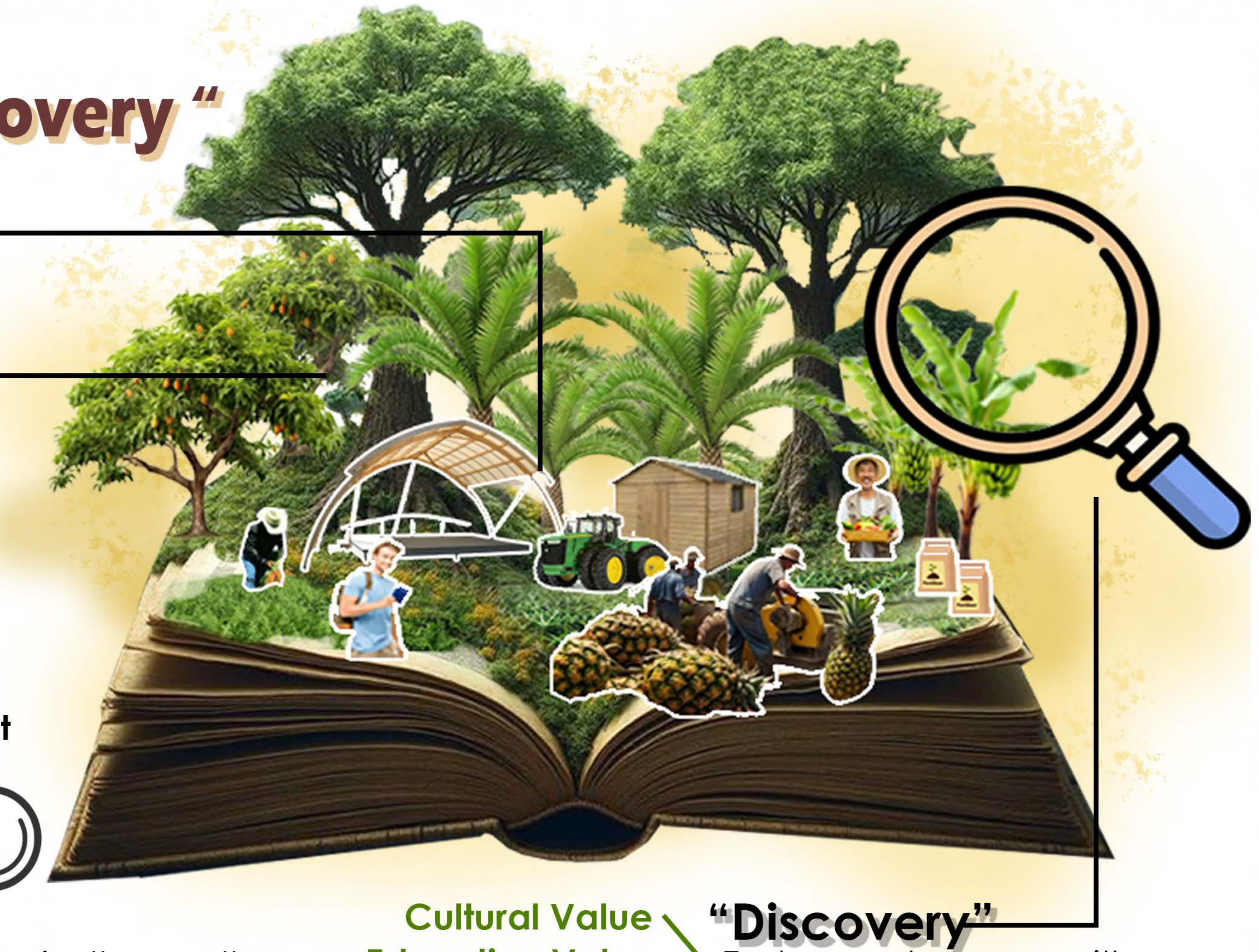
DESIGN CONCEPT

"Cultigrow Discovery "

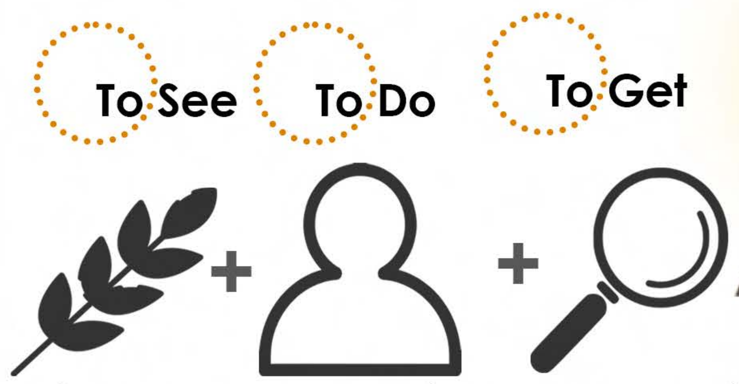
"Culti"
Representing CES and agriculture

"Grow"
Growth, sustainability, knowledge and experience.

Symbolizes the parallel growth of culture, agriculture and community.



To See To Do To Get



Thies concept that integrates agriculture, culture, education and recreation, fostering a deeper connection between people and the agroland.

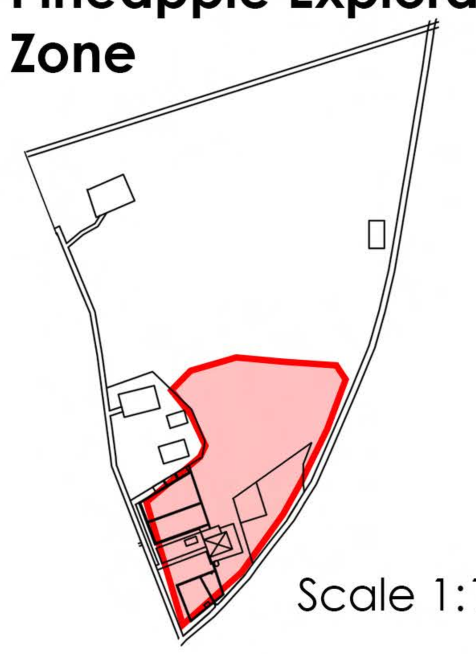
Cultural Value
Education Value
Recreational Tourism
Aesthetic Value

"Discovery"
Explore and engage with agricultural programs and activities.

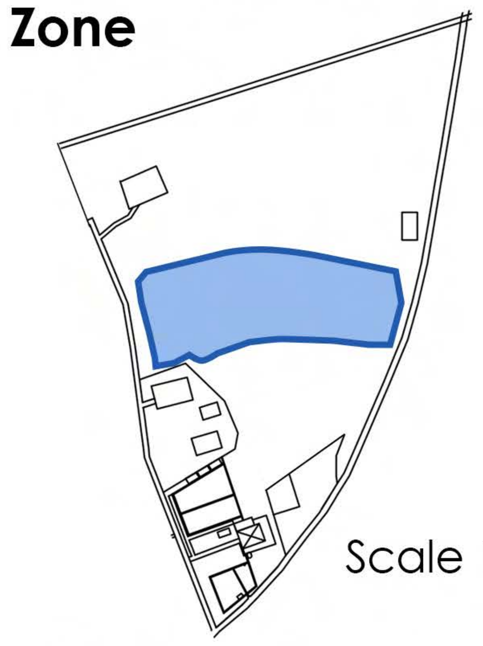
Cultigrow Discovery	Pineapple Exploration Zone	Family Recreational Zone	Agropark Experience Zone
Educational Purpose	Hands on Learning	Workshops Experience	Recognizing
Aesthetic Purpose	Scenic Eye Level View	Elevated Trail and View	Natural Setting
Recreational Purpose	Tour Guide	Farm and Garden	Woodland Path
Leisure Purpose	Historical Garden	Picnic	Relaxation

CONCEPT DEVELOPMENT

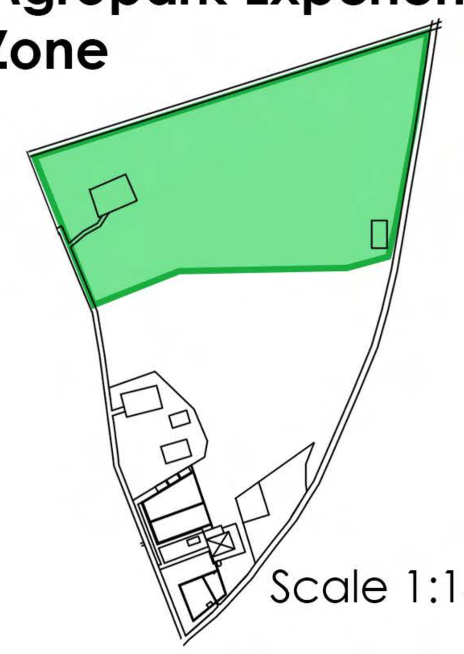
Pineapple Exploration Zone

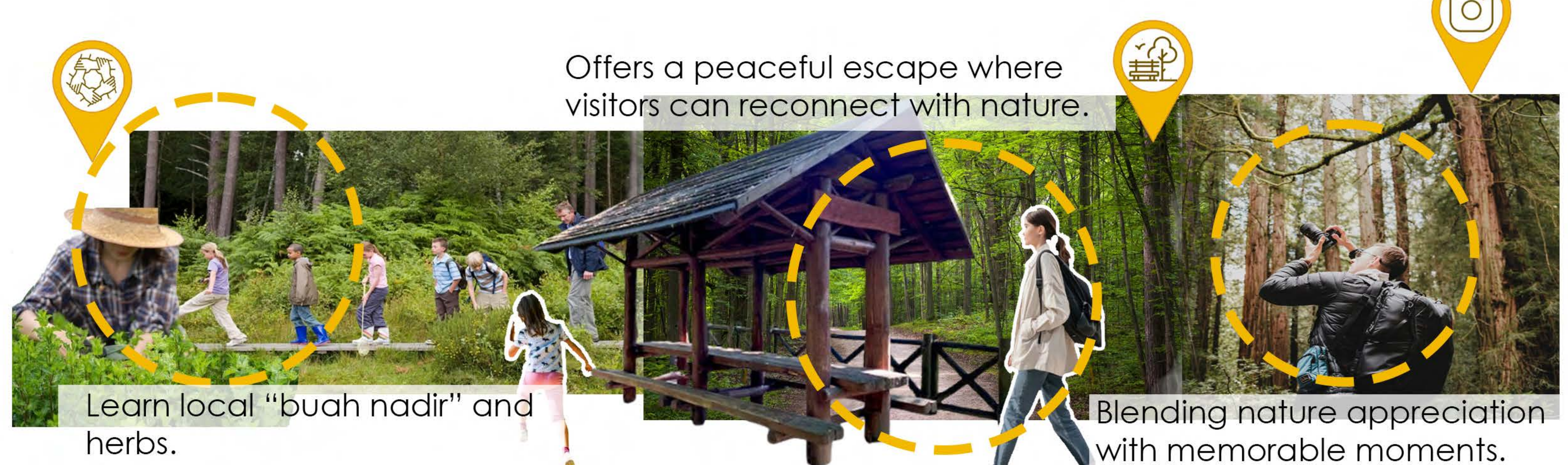


Family Recreational Zone



Agropark Experience Zone





Enhancing Agroland For Agrotourism Planning Through Cultural Ecosytem Services

SBEZ4516 01
Schematic Board

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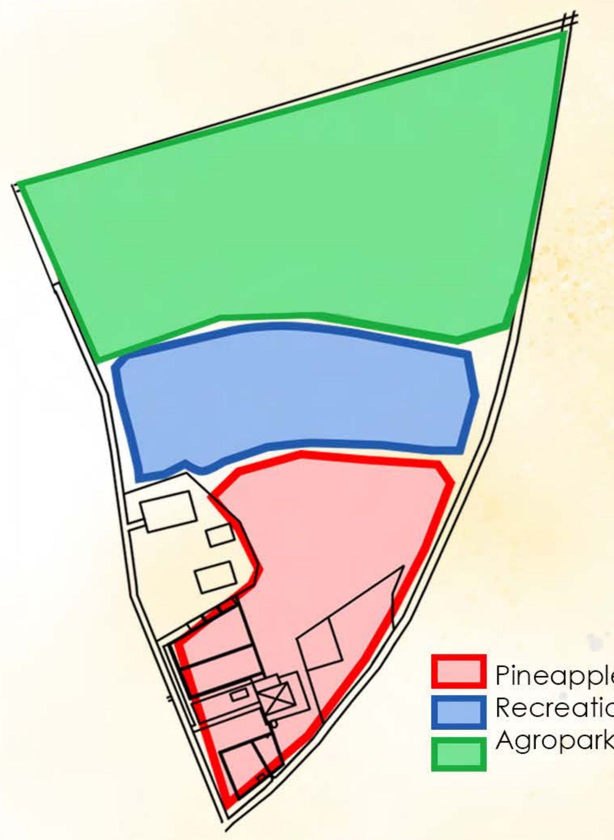
CONCEPTUAL PLAN



Cultigrow Discovery

- **Pineapple Exploration Zone**: Demo-field, Historical Garden, Pineapple Maze, Welcoming Area, Outdoor Classroom, Pineapple Field
- **Family Recreational**: Rain Harvest Garden, Culinary Pavilion, Workshop Zone, Zoo Area, Bromeliad Garden, Open Lawn, Playground
- **Agropark Experience**: Woodland Walk, Campsite, AgroCafe, Organic Farm

EXPERIENCES & PLACE

1 Day Program: Nature, Heritage & Hands-On Discovery

2 Day Program: Explore, Learn & Create

AGROTOURISM PLANNING SCHEDULE

	JAN FEB MAR	APR MAY JUN	JUL AUG SEP	OCT NOV DEC
Hands-on Activities				
Pest Control Showcase				
Pineapple Flower Festival				
Harvest Festival	Mar–May (MD2)	Apr–Jul (Sarawak)	Jun–Aug (N36, Morris)	
Handcraft Festival				
Culinary Festival				

MANAGEMENT PLAN

01 **Site Maintenance (Monthly)**
Landscape upkeep, pest control & waste management.

03 **Program & Events (Monthly)**
Organize workshops, tours & cutural shows.

05 **Feedback & Evaluation (Bi-monthly)**
Visitor survey, team debrief & improvement plan.

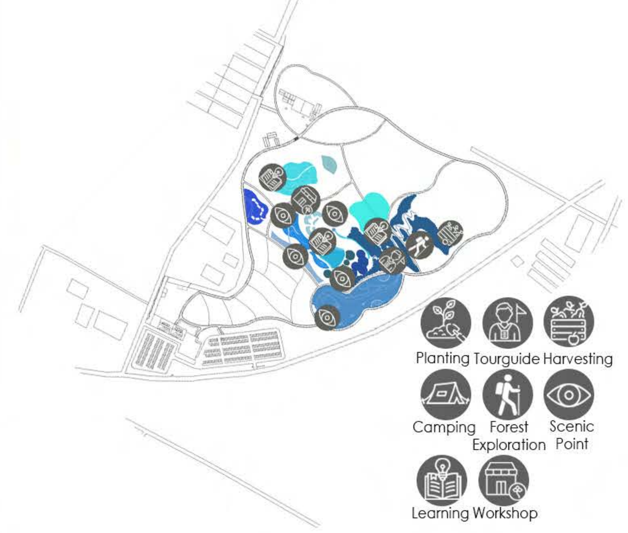
02 **Visitor Services (Monthly)**
Provide staff training, signage & guide.

04 **Safety & Security (Quarterly Review)**
Emergency access, lighting & facilities.

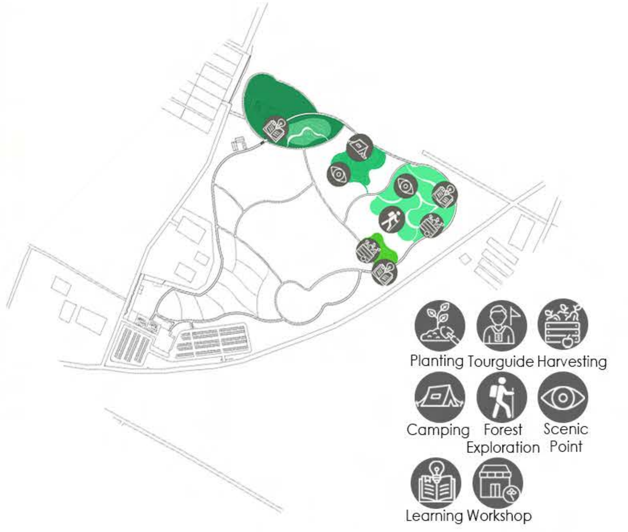
FUNCTIONAL DIAGRAM

Pineapple Exploration Zone

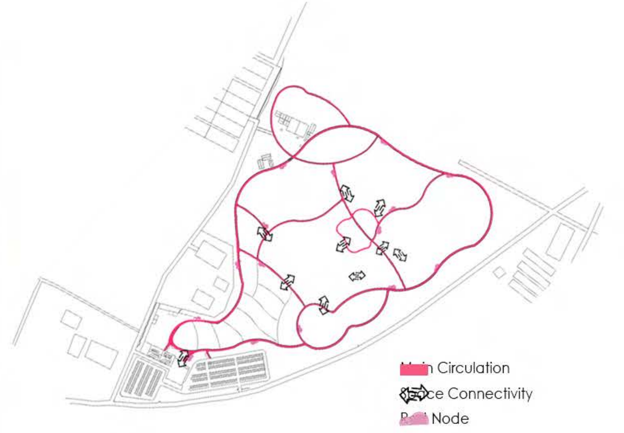
Family Recreational Zone



Agropark Experience Zone



Circulation & Connectivity



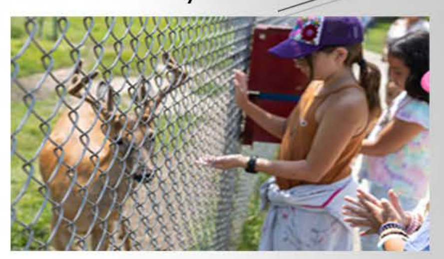
SCHEMATIC PLAN

1 **Oil Palm Field- Canopy Trail & Agro Cafe**
A canopy walk with an agro-café offers scenic views and a relaxing experience within the oil palm field.

2 **Agro-Camp**
Allows visitors to stay overnight and experience agricultural culture in a natural setting.

3 **Tropical Orchard**
Offering interactive and educational farm experiences.

4 **Mini Zoo**
A family-friendly activity zone that attracts children and families and enhances experiential continuity.



11 **Foraging Forest Trail**
A nature-based trail that introduces foraging experiences within the existing forest.

10 **Bromeliad Garden**
A vibrant garden featuring diverse bromeliads for visual and educational value.

5 **Pineapple Culinary Pavilion**
Showcases pineapple-based cuisine and gives farm-to-table experiences.

9 **Rain Harvest Zone**
A lower area designed to collect rainwater and support irrigation.

6 **Pineapple Field & Demo Field**
A productive pineapple field showcasing local agricultural heritage.

7 **Historical Garden**
Showcasing traditional architecture and local history within the pineapple field setting.

8 **Educational One-Stop Centre**
Providing integrated learning, workshops and hands-on agro-sustainability activities.

Proposed Agro-cultural Park FOR AGROTOURISM DEVELOPMENT USING Cultural Ecosytem Services AT PEKAN NANAS, JOHOR

SBEZ4526 01
Master Plan

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LEGENDS

1. Pineapple Field
2. Pi-Demo Field
3. Pi-Historical Garden
4. Pi-Maze
5. Pi-EduOne Stop Centre
6. Bromeliad Garden
7. Eco-workshop Hub
8. Research Centre
9. Pi-culinary Pavilion
10. Rain Harvest Garden
11. Mini Zoo
12. Open Lawn
13. Foraging Forest Trail
14. Organic Farm
15. Orchard Woodland Loop
16. Scented Agrocafe
17. AgroCamp Grove

N

SCALE 1:1000

PEKANAS Agro-Cultural Park

Proposed Agro-cultural Park For Agrotourism Development Using Cultural Ecosytem Services At Pekan Nanas, Johor

SBEZ4516 01
Section Board

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SECTION A-A'
SCALE 1:450

PI-CULINARY PAVILION	TREES	WELCOMING GARDEN		GATHERING LAWN	PLAYGROUND	BROMELIAD GARDEN	FOREST	RAIN HARVEST GARDEN
A dining space showcasing pineapple-based cuisine that connects food, agriculture and local culture.		Act as a secondary arrival space that signals a transition and create a sense of entering a new experiential layer of the park.		Provides an open flexible space for guided tours and demonstrations to support educational and cultural activities.	Offers a playful learning environment for children.	A themed garden showcasing bromeliads species related to pineapple.	Provide an educational foraging trail.	A garden that collects rainwater for irrigation while demonstrating sustainable design.

SECTION B-B'
SCALE 1:500

PINEAPPLE FIELD	PINEAPPLE MAZE	RESEARCH CENTRE	WELCOMING GARDEN	GATHERING LAWN	VIEWING TOWER	TREES	OPEN LAWN		TREES	AgroCamp Grove
Demonstrates pineapple cultivation and preserves agricultural heritage.	Offers interactive and playful exploration of pineapple, also enhancing engagement.	Serves as an educational hub.	Creates a first impression of the park and give the sense of welcoming.	Provides an open flexible space.	Provides elevated views of the landscape, offering a unique perspective of the scenery.		Flexible space for recreation and picnics, also accommodating a wide range of visitor activities.		Offering immersive exploration and educational experiences of local flora.	Shaded grove that provides overnight, night-time learning experiences and showcases local agricultural practices.

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SECTION C-C'

SCALE 1:200

INFORMATION CENTRE	MINI ZOO	BEE FARM		RECREATIONAL FLORIA GARDEN
Provide visitors with guidance, educational materials and insights into the mini zoo.	A small scale animal exhibit that introduces visitors to local fauna, promotes awareness of biodiversity and offers an engaging and enjoyable tourism experience.	Bee farm showcasing sustainable beekeeping practices while supporting cultural ecosystem services. It also enriches agrotourism experiences.		Provides a relaxing environment for the visitors while supporting pollinators.

SECTION D-D'

SCALE 1:250

ORGANIC FARM	NATURAL FOREST ZONE	DECKING	ORCHARD WOODLAND LOOP
Demonstrate organic farming practices while promoting sustainable agriculture and food awareness.	Preserved natural forest zone that protects existing ecosystems and supports ecological balance within the agro-cultural park.		Existing orchard enhanced with learning and experiential activities. It allows visitors to engage with fruit cultivation.

Proposed Agro-cultural Park For Agrotourism Development Using Cultural Ecosytem Services At Pekan Nanas, Johor

SBEZ4516 01
Perspective Board

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Pineapple Field + Maze
Pineapple field with hands-on demo on one side, also integrated with a fun exploration maze on the other field.

Pi-Historical Garden
Integrate the history of Pekan Nanas with pineapple field, showing the traditional buildings and traditional dishes related to pineapple.

Rain Harvest Garden
Rain Harvest Garden designed for sustainable irrigation of plantings, also complete with a viewing deck for observation and relaxation.

Mini Zoo
Mini zoo featuring friendly farm animals, offering fun, educational encounters for all ages.

Pi-culinary Pavilion
Pineapple Culinary Pavilion offering unique dishes, tastings and crafts that celebrate the flavors and versatility of pineapple.

AgroCamp Grove
A nature-based camping zone designed for immersive agro-experiences which surrounded by farmland and greenery.

Proposed Agro-cultural Park For Agrotourism Development Using Cultural Ecosytem Services At Pekan Nanas, Johor

SBEZ4526 02
Detailed Area Development

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KEY PLAN

The selected detailed area is located at the middle part of the master site approximately 12 acres.

AIM

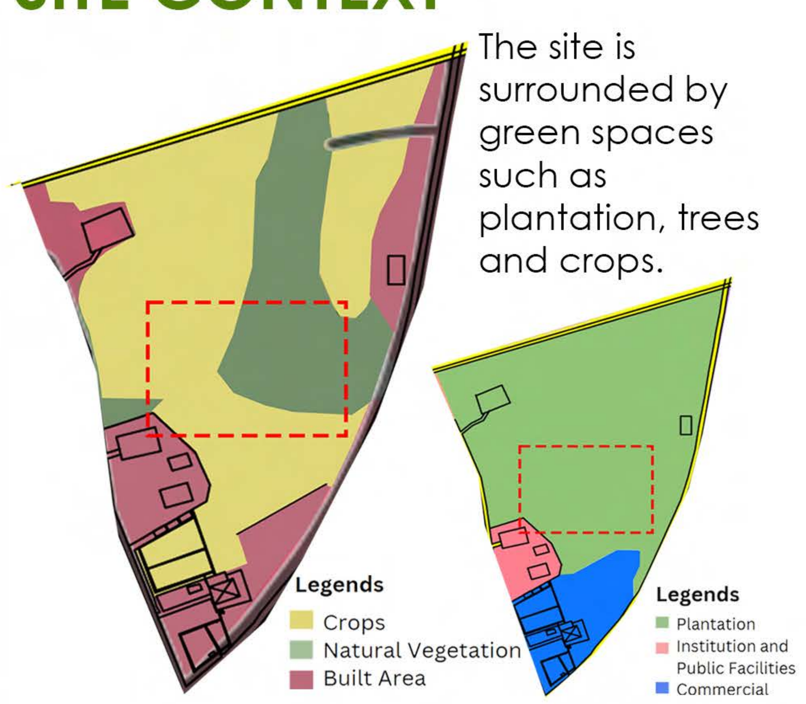
To design a vibrant and interactive edu-cultural hub that harmonioulsy integreates cultural value, educational value and aesthetic value.

OBJECTIVE

1. To design hands-on learning spaces in order to preserve agricultural and cultural heritage.
2. To design a educational hub that provide recreational tourism experience for visitors of all ages.

INVENTORY, ANALYSIS AND SYNTHESIS

SITE CONTEXT

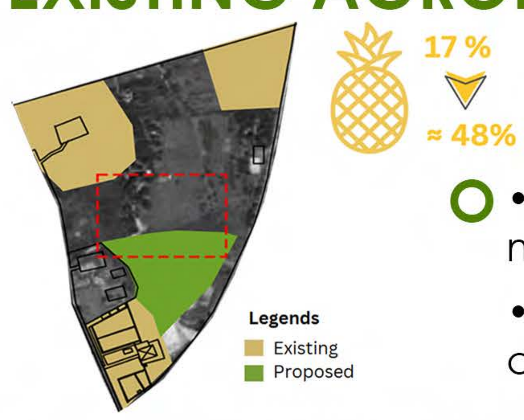


The site is surrounded by green spaces such as plantation, trees and crops.

S •Integrate the garden with the natural settings.

O •Enhance the plantation on the crop land.

EXISTING AGROLAND



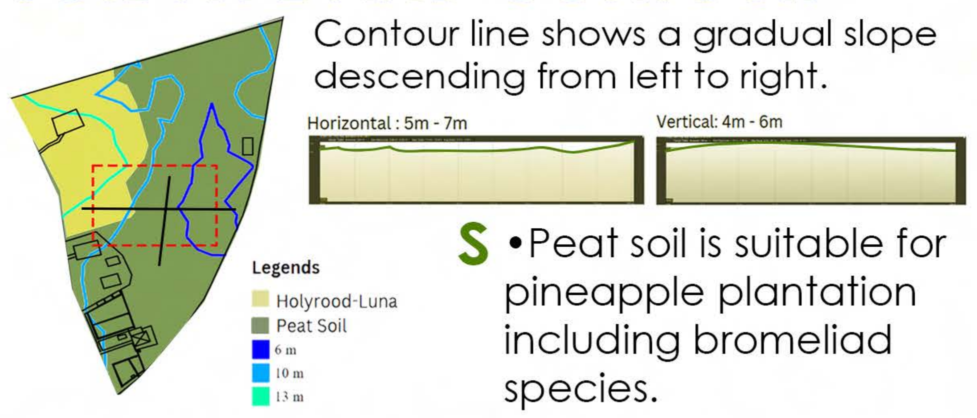
Enhance and extend the identity of pineapple crop on site.

O •Turn the cropland into multifunctional spaces.

•Provide more agricultural activities.

SOIL TYPE AND CONTOUR

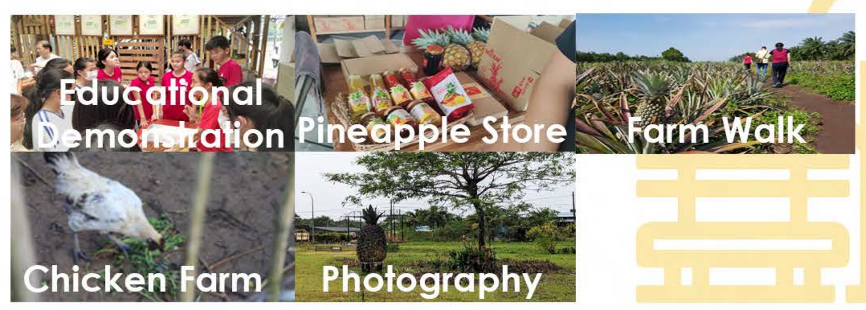
Contour line shows a gradual slope descending from left to right.



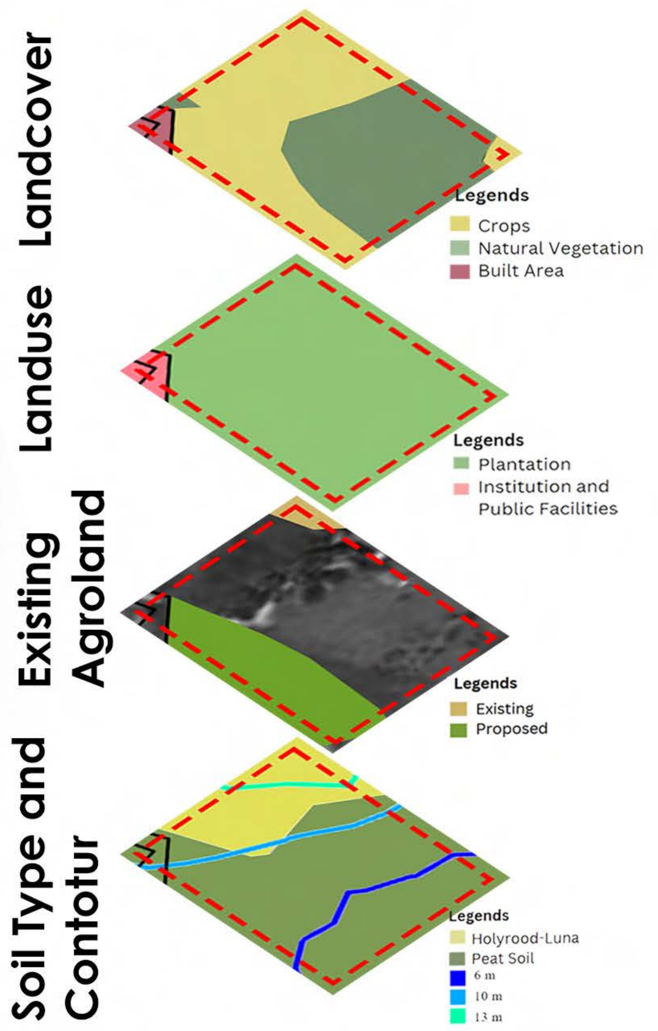
S •Peat soil is suitable for pineapple plantation including bromeliad species.

EXISTING CULTURAL HERITAGE

EXISTING RECREATIONAL ACTIVITIES



SITE ANALYSIS

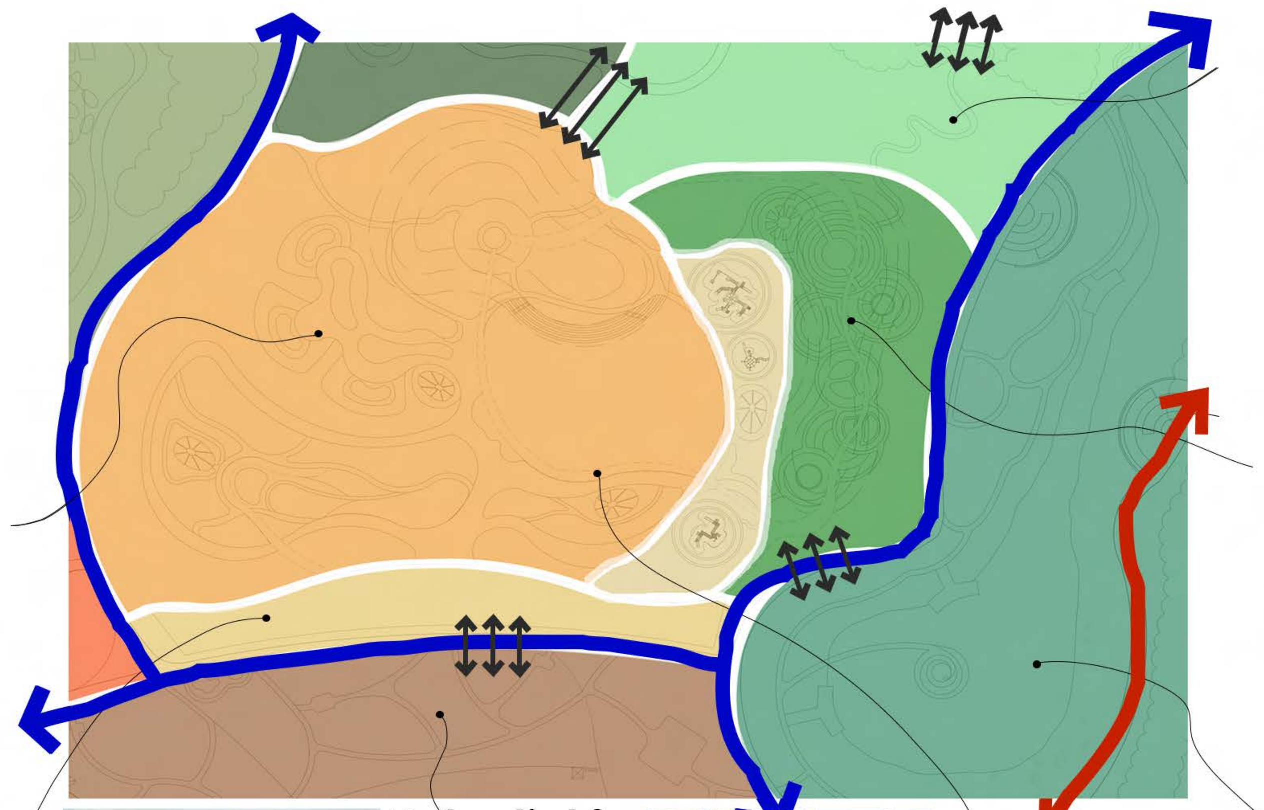


SITE SYNTHESIS

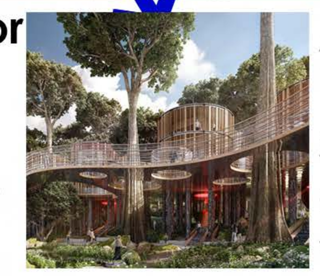
Potential for **edu-cultural hub** which serve as the "heart" in the middle of the park.

Various of workshops and experience to promote the sustainable cultural practices.

Research centre is positioned to connect learning, research and on-site agricultural landscapes.



Potential for extending pineapple agriculture identity.



A elevated bridge is suggested to give different view of point.

Potential for **foraging trail** to enhance natural and cultural appreciation.

Bromeliad garden enhancing cultural and aesthetic value while educating visitors on its botanical relationship to pineapple.

Implement eco-friendly **rain harvest** practices at the low contour region.

CONCEPT DEVELOPMENT

From Soil to Memory

Preserve the agriculture practices and local cultural heritage.

Embrace the agriculture by involving variety of functions such as tourism.

SCHEMATIC PLAN

1 **Eco-workshops**
Support cultural ecosystem services through education.

2 **Bromeliad Garden**
Enhance cultural value and aesthetic value.

3 **Research Centre**
Act as a knowledge centre for public sharing knowledge.

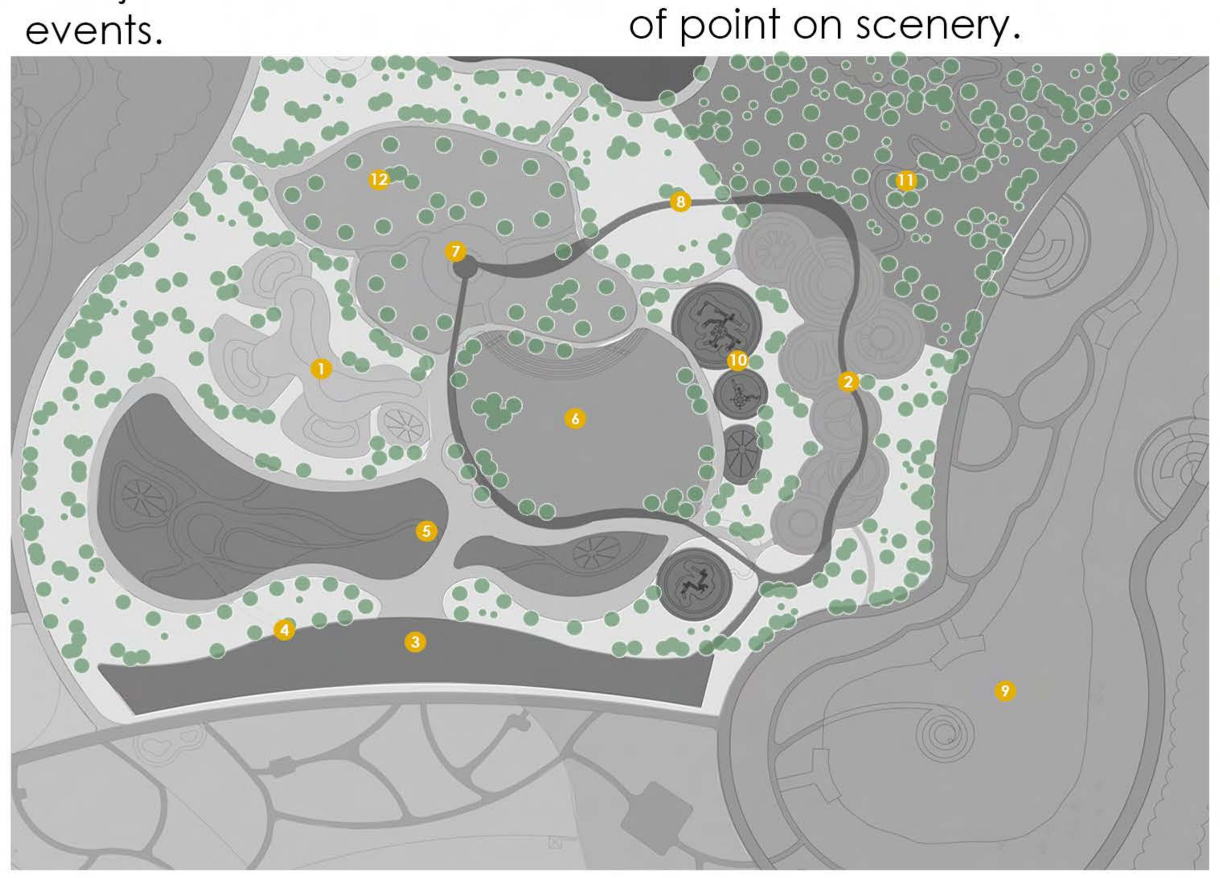
4 **Roof Top Garden**
Connect with elevated bridge.

5 **Welcoming Garden**
Various color of flowers that act as arrival gateway.

6 **Gathering Lawn**
Support group activities who join the cultural events.

7 **Viewing Tower and Bridge**

8 Provide a different view of point on scenery.



9 **Rain Harvest Garden**
Support irrigation system while providing recreational function.

10 **Playground**
Pineapple-themed playground that introduces fun and interactive play.

11 **Foraging Forest Trail**
Enhance natural and cultural appreciation.

12 **Plumeria Garden**
Enhance tropical character and cultural identity.

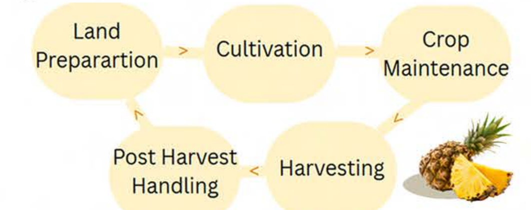
APPROACH & STRATEGIES FRAMEWORK

1. Cultural Preservation

Memory From Past

(a) Living Cultural Practices

•Agricultural



•Culture Demonstration

Showcase culinary experiences featuring pineapple.

(b) Cultural Landscape Design

•Architectural Building

(c) Sustainable Agriculture

•Waste-management

•Water Management

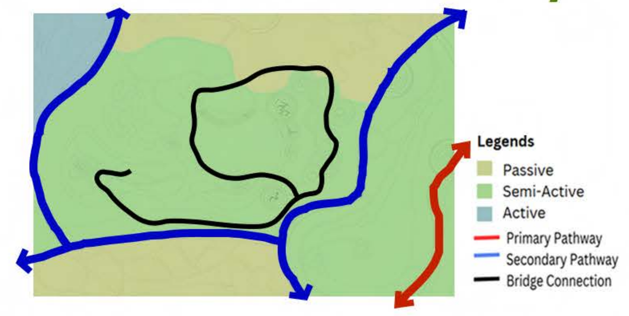
2. Agrotourism Experience

Memory For Future

(a) Recreational Programs

•Propose interactive educational activities and programs.

(b) Spaces and Connectivity



(c) People Engagement Parks

•Productive Open Field

•Cultural Open Spaces

Proposed Agro-cultural Park FOR AGROTOURISM DEVELOPMENT USING Cultural Ecosytem Services AT PEKAN NANAS, JOHOR

SBEZ4526 02

Detailed Area Plan

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SECTION A-A'
SCALE 1:200

FLORIA GATEWAY	PATHWAY	GATHERING LAWN	PLAGROUND
Floral gateway with a variety of flower colours, creating a welcoming atmosphere and memorable arrival experience.		Open gathering lawn supporting cultural events, community celebrations and shared social traditions.	Offers a playful learning environment for children.

SECTION B-B'
SCALE 1:200

VIEWING POINT	GATHERING LAWN	FLORIA GATEWAY	RESEARCH CENTRE
Viewing point offering panoramic views that celebrate the cultural agricultural landscape and local identity.	Open gathering lawn supporting cultural events, community celebrations and shared social traditions.	Create a welcoming atmosphere and memorable arrival experience.	Research centre for agro-cultural research and knowledge sharing while integrated with a rooftop garden.

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SECTION C-C'
SCALE 1:100

VIEWING POINT	ECO-WORKSHOP HUB
Viewing point offering panoramic views that celebrate the cultural agricultural landscape and local identity.	Eco-workshop hub enhancing cultural ecosystem services through sustainability education and community engagement.

SECTION D-D'
SCALE 1:100

PLAYGROUND	BROMELIAD GARDEN	FORAGING TRAIL
Pineapple-themed playground offers a playful learning environment for children.	Bromeliad garden enhancing cultural and aesthetic value while educating visitors on its botanical relationship to pineapple.	Foraging trail planted with local fruit trees, also offering recreational exploration and cultural learning.

Proposed Agro-cultural Park For Agrotourism Development Using Cultural Ecosytem Services At Pekan Nanas, Johor

SBEZ4526 02
Perspective Board

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SOFTSCAPE DETAILING

Legends

- Ethnobotany Culture
- Edible Planting
- Ornamental Planting

SOFTSCAPE CONCEPT AND SCHEME

AgroGreen Narratives

1 Ethnobotany Culture

- Reflects native plant and local agricultural knowledge.
- Strengthens cultural identity while providing shading.

2 Edible Planting

- Demonstrates productive landscapes and local food systems.
- Supports agro-tourism and sustainable agriculture learning.

3 Ornamental Planting

- Enhances visual quality and visitors' interest.
- Creates sensory experiences and clear spatial identity.

Ethnobotany Culture

Native Trees

Cinnamomum Iners
Terminalia catappa

Shade Providing

Syzygium polyanthum
Adenanthera Pavonina

Shade Providing

Xanthostemon chrysanthus
Cassia fistula
Tabebuia Rosea
Fagraea Fragrans
Dwarf Poinciana

Edible Planting

Fruit Trees "Buah Nadir"

Anona Kapri
Mangifera Foetida
Garcinia Atroviridis
Nephelium Mutabile
Cocos Nucifera

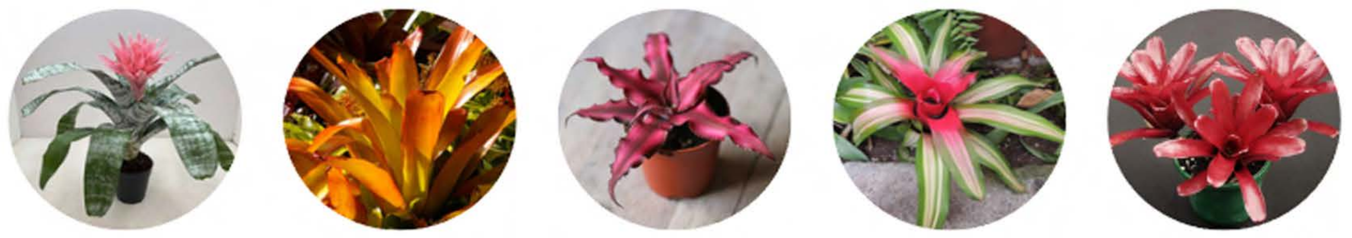
Pineapple Farming

Ananas comosus (L.) Merr.

- Pineapple Gandul
- Pineapple Maspine
- Pineapple Josapine
- Pineapple Yankee
- Pineapple MD2
- Pineapple Madu Kaca
- Pineapple Morris
- Pineapple Sarawak

Ornamental Planting

Bromeliad Species



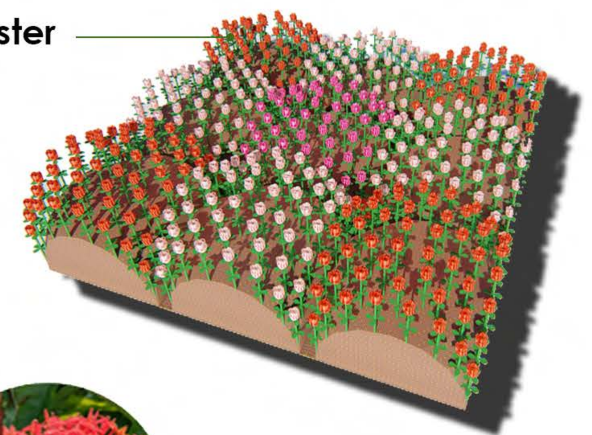
Aechmea Fasciata
Aechmea Blanchetiana
Cryptanthus 'Pink Star'
Neoregelia Carolinae
Neoregelia 'Fireball'

Vriesea Splendens
Ananas Bracteatus
Guzmania Lingulata

Groundcover

Axonopus Compressus
Zoysia Matrella

Bromeliad Cluster



Ornamental Plants

Juniperus chinensis
Plumeria Obtusa
Plumeria Rubra
Jasminum Sambac
Ixora Javanice

Asclepias Curassavica
Calathea Lutea
Loropetalum chinensis
Acalypha Siamensis
Ruellia Angustifolia

Planter Box

HARDSCAPE DETAILING

HARDSCAPE CONCEPT AND SCHEME

AgroEco Scape

1 Sustainable Eco-Materials

- Utilises environmentally friendly materials to reduce carbon footprint.
- Supports long-term sustainability.

2 Cultural Expression

- Incorporates local patterns and forms inspired by agricultural and cultural heritage.
- Strengthens place identity through landscape elements.

3 Low Maintenance

- Uses durable materials and simple construction details.
- Reduces maintenance cost while ensuring functional and aesthetic quality.

Paving

Outdoor Furniture

Lighting