

# 05

## ENDEAVOR TOWARDS 2035: SELANGOR STATE STRUCTURE PLAN

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### ABSTRACT

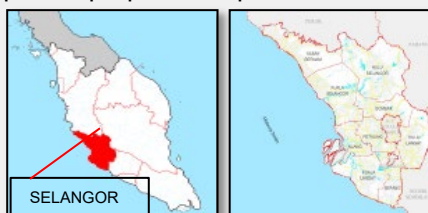
Selangor is the most developed state in Malaysia. The state thrives on the balance of progressive economic growth with its carrying capacity and social inclusivity. The process of preparing a State Structure Plan following the manual of state structure plan stated in the PlanMalaysia 2020 Edition is to propose a new development idea and direction for Selangor State Structure Plan based on the current key of complex issues. The proposals and design of the selected district for the planning period between 2021 and 2035 are developed. The study was conducted as part of the Urban and Regional Planning student's studio work, which consists of the plan's process, stages followed by the situation and sectoral-based analysis. The study proposed finger and linear development concepts, strategies, high-impact projects, implementation plans, and estimations of the cost of each major project. The proposed plan of the Selangor State Structure Plan 2035 promotes three (3) development thrusts, five (5) strategies, and twelve (12) high-impact projects for Selangor to thrive in its new development plan. The project provides experiential learning for the students as part of their training as future urban and regional planners.

**Keywords:** State Structure Plan plan, development plan, development concept, development

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### INTRODUCTION

A *State Structure Plan* is a gazette planning document that guides and directs a state's physical development. A structural plan, as defined by Subsection 8 (3) of the Town and Country Planning Act, is a written statement that explains the policies and strategic proposals at the state level on development and land use in urban and rural areas; environmental measures; traffic communication and management; and in improving the level of well-being, both socio-economically and economically. The state of Selangor lies on Peninsular Malaysia's west coast, bordered on the north by the state of Perak, on the east by Pahang, on the south by Negeri Sembilan, and on the west by the Straits of Melaka. Selangor, also known as Darul Ehsan or "Abode of Sincerity", is also one of Malaysia's 13 states. Gombak, Klang, Kuala Langat, Kuala Selangor, Petaling, Sabak Bernam, Sepang, Hulu Langat, and Hulu Selangor are the nine districts that make up the state of Selangor (Maps 1 and 2). In addition, the federal territories of Kuala Lumpur and Putrajaya are also located geographically within the state of Selangor. The new structure plan is proposed to provide solutions to the complex current issues in Selangor.



Maps 1 and 2: Location Plan of Kuala Selangor District

### METHODOLOGY

Figure 1 explain the procedure to produce the Plan which involves process and stages support by detail method and its analysis.

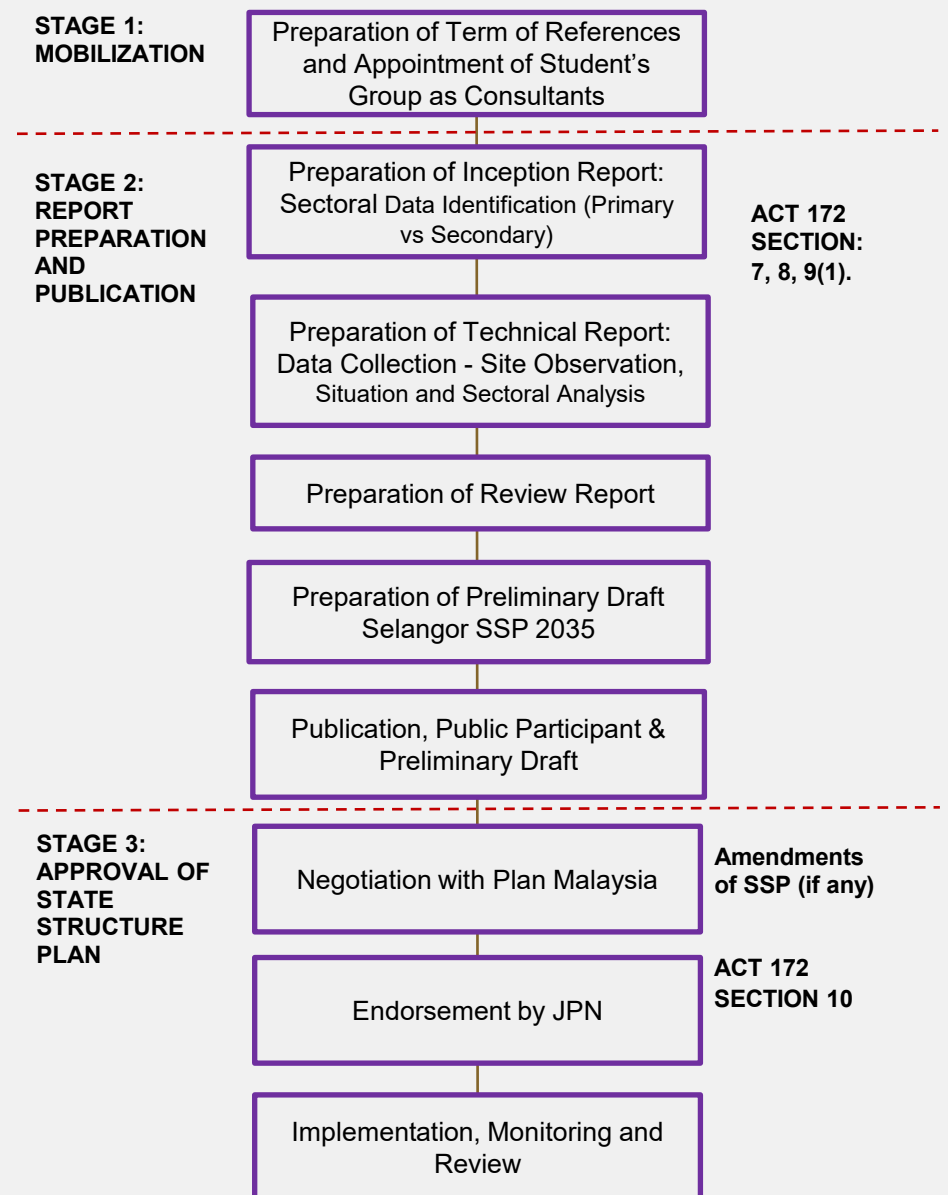


Figure 1 : Process and Stages involved in the preparation of Draft State Structure Plan

## DEVELOPMENT CONCEPT

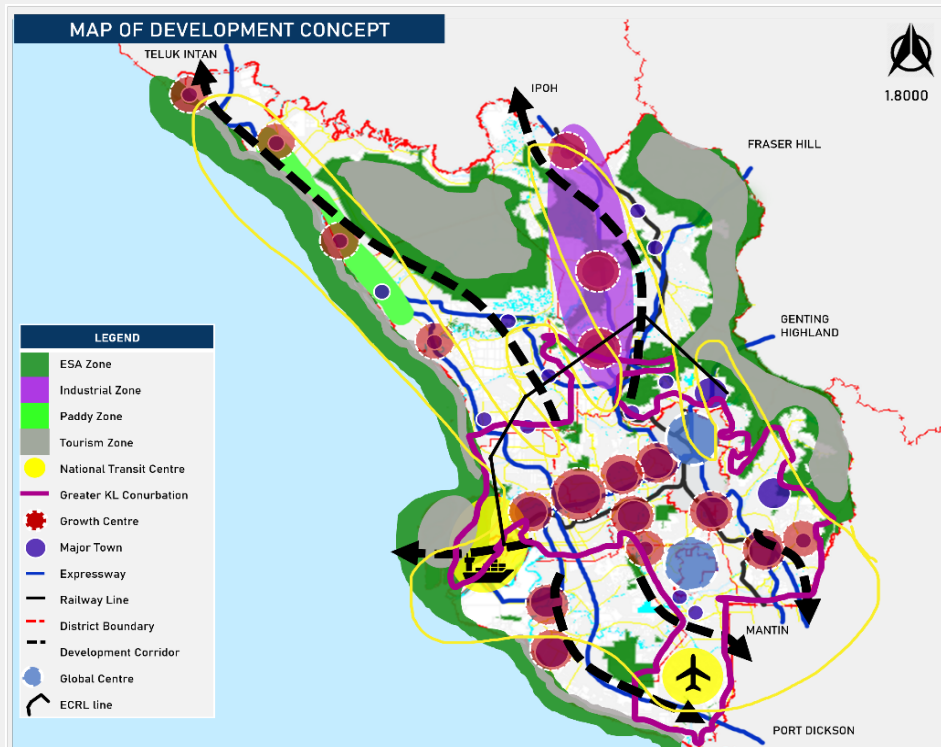


Figure 2: Development Concept Plan for Draft Selangor State Structure Plan 2035.

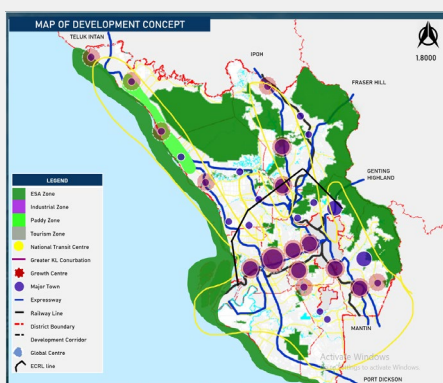


Figure 2.1: Growth Centre

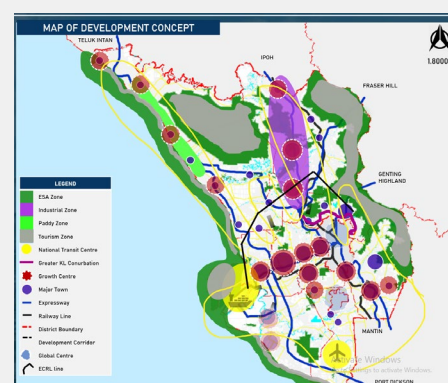
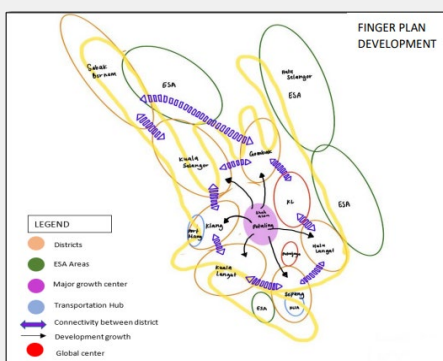


Figure 2.2: Development Corridor

## FINGER AND LINEAR DEVELOPMENT PLAN THEME: 30-MINUTES SETTLEMENT



The development plan's concept, '**Finger & Linear Development – 30-Minutes Settlement**', focuses on holistic development through centralised development, which includes economic resilience, livable society, heritage values, a sustainable environment, and adequate infrastructure. Then development prioritises five main development zones and growth centres.

## MAIN FEATURES OF 'FINGER & LINEAR DEVELOPMENT – 30 MINUTES SETTLEMENT':

1. Main development zones
2. Growth centres
3. Secondary development corridors.
4. Retention and preservation zone
5. Settlement hierarchy

## GROWTH CENTRE'S STRATEGIES

1. Enhance commercial zone development based on demand
2. Formation of sufficient knowledgeable and skilled human capital to meet the needs of various fields of the economy.
3. Develop Selangor as a centre of high-tech activities and a regional centre of production excellence.
4. Develop small and medium industries will be empowered by creating industrial chains in manufacturing and high-tech industries.
5. Promotes agricultural productivity is enhanced commercially.
6. Strengthen the potential of tourism products and their development will be implemented in an integrated

## DEVELOPMENT THRUST & ISSUES



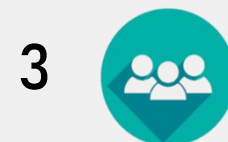
### STRENGTHEN THE ECONOMIC PROSPERITY

**Issues :** Unoccupied commercial units, Lack of creativity and innovation, Overhang Commercial Property, Low participation of STEM backgrounds



### PURSUE SUSTAINABLE DEVELOPMENT

**Issues :** Inadequate First- and, Last- Mile Connectivity, Uncompetitive Transport and Logistic Industry, Clean water problems, Flood issues, Deforestation of forest area, Car-based city, Coastal area polluted by the people



### ENHANCE A LIVABLE, RESILIENT AND INCLUSIVE COMMUNITY

**Issues :** Abandoned housing project, Inadequate school, health, safety facilities, Overhang Housing Property, Mismatch of supply and demand, Lack of land availability.

## HIGH IMPACT PROJECT

About 12 high-impact projects are proposed to overcome key strategic issues in the study area. The selection was made based on the size of the area, predicted impact on the new development proposed, and 'scalability', which involves multi-scale organisations in the implementation and estimated project.

## PROJECT FINDINGS

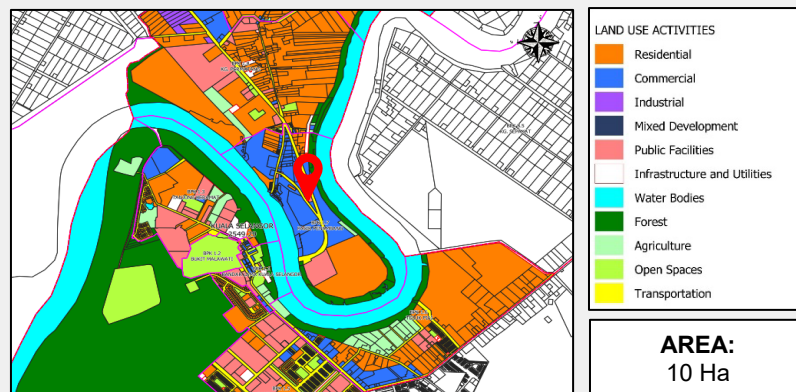
### PROJECT 1: KUALA SELANGOR RETAIL PARK

Kuala Selangor Retail Park is proposed as a centre for commercial activities to enable the community of Kuala Selangor to get and purchase daily things and essentials.



#### ISSUES

- 1) Scattered distribution of land use
- 2) increase in unemployment and decrease in labour force participation
- 3) Non-strategic location of a commercial area.



Map 3: Location of Kuala Selangor Retail Park

## PROJECT COMPONENT

- Designing a welcoming and enjoyable vibes gateway with a mix of brickworks and greenery as the first view;
- A green and environmentally friendly landscape preserves the environment and stays healthy, will also contribute to healthy surroundings for the community;
- Premier retail showcase, featuring new designs and the modern-eco concept of retail;
- An adequate community-based parking system to ease parking issues in the commercial area, thus overcoming insufficient parking spaces.



Figure 3: Welcoming gateway



Figure 3.1 : Greenery landscaping

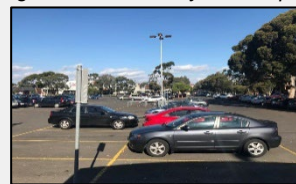


Figure 3.2 : Parking

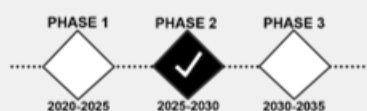


Figure 3.3 : Retail Park

## IMPLEMENTATION AGENCY

Co-implementation strategy covers multilevel government agencies, i.e. Selangor State Council and Kuala Selangor District Council as well as private agencies.

## IMPLEMENTATION PHASE



## PROJECTED COSTING

RM 300M

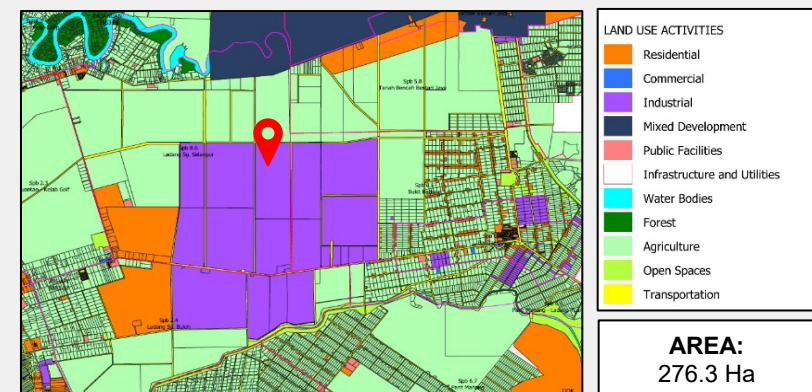
## PROJECT 2: KUALA SELANGOR BUSINESS PARK

This proposal potentially increases the quality of industrial production and tourist admissions. In addition, Kuala Selangor Business Park will be located in the middle of the Kuala Selangor district, putting it within easy reach of each of the planning blocks that stretch out to all corners of Kuala Selangor.



#### ISSUES

- 1) Scattered distribution of land use
- 2) Increase of unemployment and decrease in labour force participation
- 3) Non-strategic location of commercial area.



Map 4: Location of Kuala Selangor Business Park

## PROJECT COMPONENT

- Green Industry: A wide range of environmentally friendly features.
- These components help businesses save energy and resources and reduce the overall carbon footprint.
  - 1-Ample green pockets or lungs
  - 2-Extensive use of LED street lamps
  - 3-Rainwater harvesting systems
  - 4-Heat-reducing aluminium louvres



Figure 4: Green Industry

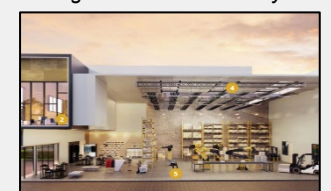


Figure 4.1: Interior of the industry

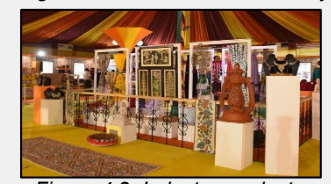


Figure 4.2: Industry product

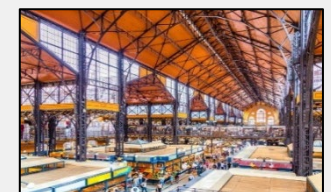


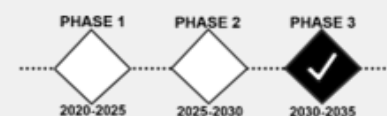
Figure 4.3: Business Park

Superior Security Features with the various uses of security features that endure peace of mind for unit owners while optimising business efficiency.

## IMPLEMENTATION AGENCY

Co-implementation strategy covers multilevel government agencies, i.e. Selangor State Council and Kuala Selangor District Council, as well as private agencies.

## IMPLEMENTATION PHASE



## PROJECTED COSTING

RM 10M

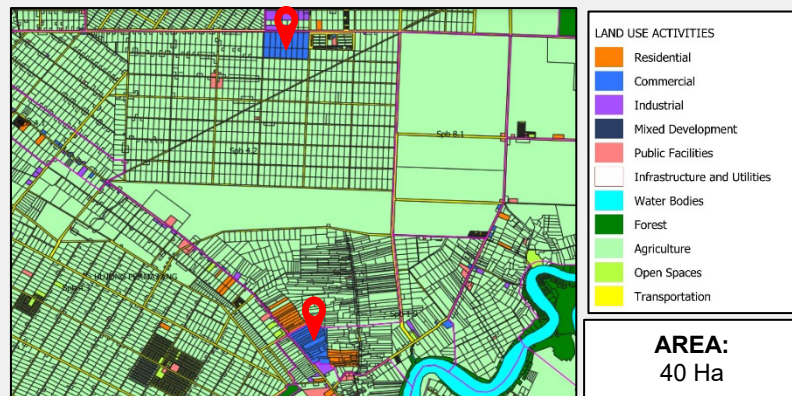
## PROJECT 3: T2 STORE

The project proposals for this section suggested two-storey and three-storey shop lots were located at two different focus locations. The location is strategised within the residential radius coverage as the target customers come from the immediate surrounding area to buy the basic needs within the walking distance radius catchment.



ISSUES

- 1) Scattered distribution of land use
- 2) Increase of unemployment and decrease of labour force
- 3) Abandoned shop lot from the abandoned project



Map 5: Location of T2 Store

## PROJECT COMPONENT

### • Two-storey and three-storey shop lots

New designs and a revolution in development. The two different types will help the buyers to rent or buy appropriate size shops within their budget for their own commercial activity categories.

### • Parking spaces

Providing sufficient parking spaces is vital for commercial development.

### • Landscaping

Having a good and healthy environment will not only save the environment but can give buyers a good vibe, which will indirectly attract more buyers forward.



Figure 5: Two-storey shop



Figure 5.1: Three-storey shop



Figure 5.2: Landscaping

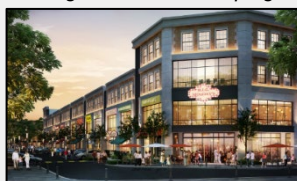
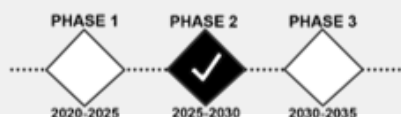


Figure 5.3: T2 Store

## IMPLEMENTATION AGENCY

Co-implementation strategy covers multilevel government agencies, i.e. Selangor State Council and Kuala Selangor District Council as well as private agencies.

## IMPLEMENTATION PHASE



## PROJECTED COSTING

RM 200M

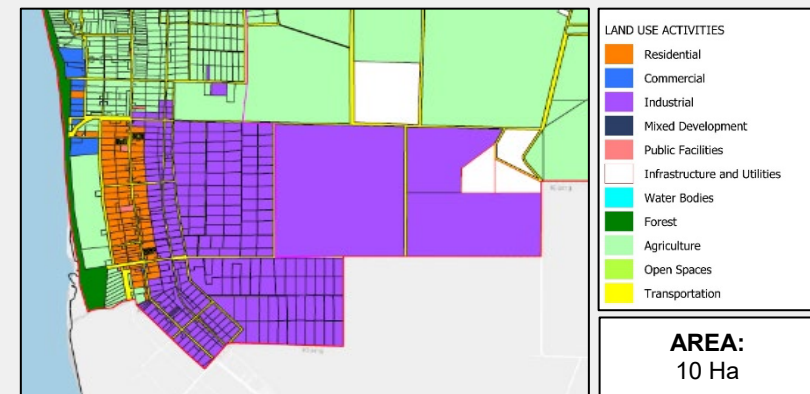
## PROJECT 4: SMEs TRAINING CENTRE

The objective of this proposal is to train entrepreneurs to have special skills or knowledge for a particular job or product. SMEs are highly accessed by instructional designers to extract intelligence when developing courseware and learning programs.



ISSUES

- 1) Difficulties for buyers to receive services
- 2) Increase of unemployment and decrease of labour force
- 3) Unlicensed industry consists of small-sized workshop.



Map 6: Location of SMEs Training Centre

## PROJECT COMPONENT

- The SME Training Centre is located in a medium-industry zone, enabling entrepreneurs to adapt to the medium-heavy industrial working style quickly. In this centre, the expert will test the products or services towards the end of the project or program, using and evaluating them for accuracy and usability, providing feedback to the entrepreneurs.
- Specific training sectors provide the knowledge and expertise in a specific subject, business area or technical area for entrepreneurs to follow and adapt. Flexible, interactive, and effective learning solutions include online classes, instructor-led training, assessments, books, videos, and more will be made available.



Figure 6: Industry



Figure 6.1: Training activities



Figure 6.2: Medium-heavy industry

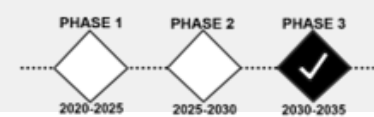


Figure 6.3: SMEs Training Programme

## IMPLEMENTATION AGENCY

Co-implementation strategy covers multilevel government agencies, i.e. Selangor State Council and Kuala Selangor District Council as well as private agency such as SME Corp Malaysia.

## IMPLEMENTATION PHASE



## PROJECTED COSTING

RM 65M

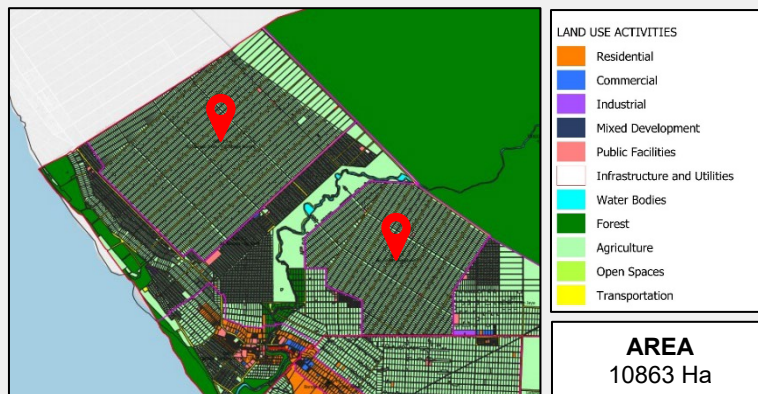
## PROJECT 5: DRIP IRRIGATION SYSTEM

Drip irrigation is proposed as the most effective way to supply water and nutrients to crops. It provides water and nutrients straight to the root zone of the plant in precise amounts and at the correct times, ensuring that each plant receives exactly what it needs, when it needs it, for maximum growth. It helps farmers to increase yields while conserving water, fertilizers, energy, and even crop protection goods.



### ISSUES

- 1) Increase of unemployment and decrease of labor force
- 2) Shortage of young people involvement
- 3) Pollution of drainage system effect to the water quality and odor



Map 7: Location of Drip Irrigation System

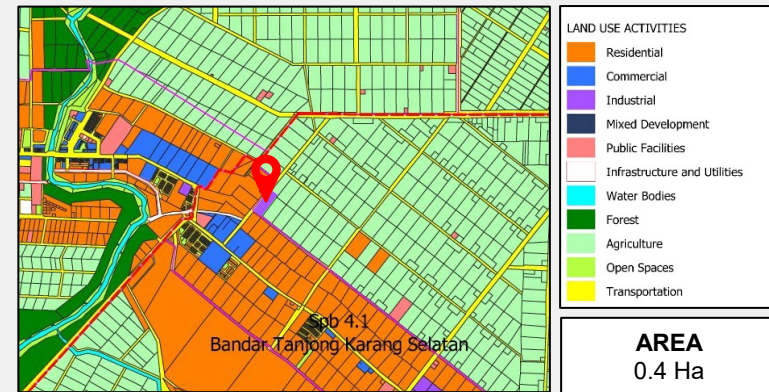
## PROJECT 6: LESTARY VERTICAL FARM

The innovators for self-employed in productive economic activities proposed multi-storey farming. The business has also provided job possibilities for the youth in the area. Over time, entrepreneurs have progressed from providing low-cost gardens that maximise available land by tenfold output to seeing innovation as a means of launching new enterprises for the young and all farmers.



### ISSUES

- 1) Increase of unemployment and decrease of labor force
- 2) Scattered distribution of land use
- 3) Shortage of young people involvement



Map 8: Location of Lestary Vertical Farm

## PROJECT COMPONENT

### Water Delivery System

Constructed of PVC pipe for subterranean delivery or polyethylene tubing for above-ground delivery makes up most drip irrigation systems.



Figure 7: Water Delivery System

### System Controller

Controls the amount of time the water is delivered to the fields through the delivery lines.



Figure 7.1: System Controller

### Chemical Injectors

The ease with which fertilizers and pesticides are delivered to the plants, as well as anti-clogging agents to the drip nozzles

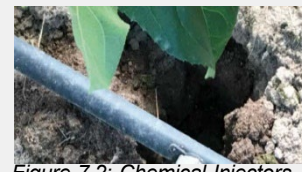


Figure 7.2: Chemical Injectors

## IMPLEMENTATION AGENCY

Co-implementation strategy covers multilevel government agencies, such as Federal Agricultural Marketing Authority (FAMA), Integrated Agricultural Development Area (IADA), Northwest Selangor

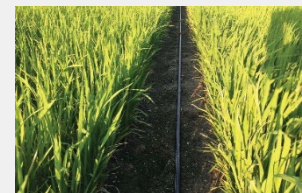
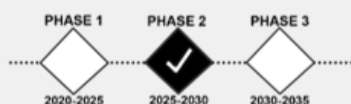


Figure 7.3: Drip Irrigation System

## IMPLEMENTATION PHASE



## PROJECTED COSTING

RM 44M

## PROJECT COMPONENT

### 1<sup>st</sup> Level: Closed Coop System

Equipped with a temperature and humidity control system to help speed up the growth of chickens.



Figure 8: Closed Coop

### 2<sup>nd</sup> Level: Covered Pond Using Biofloc Farming System

Innovative and cost-effective technology in which toxic materials to the fish and shellfish can be converted to useful product



Figure 8.1: Biofloc Farming System

### 3<sup>rd</sup> Level: Greenhouse

Aquaponics is a system of soil-less growing that can be recycled continuously throughout the growing system.



Figure 8.2: Greenhouse

### 4<sup>th</sup> Level: Mini Market

Sell the goods produced by the multi-storey farming system.

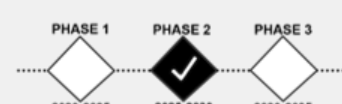
## IMPLEMENTATION AGENCY

Co-implementation strategy covers multilevel government agencies, such as Federal Agricultural Marketing Authority (FAMA), Department of Agriculture, Kuala Selangor and Ministry of Agriculture and Food Industries as well as private agencies.



Figure 8.3: Vertical Farm

## IMPLEMENTATION PHASE



## PROJECTED COSTING

RM 10.3M

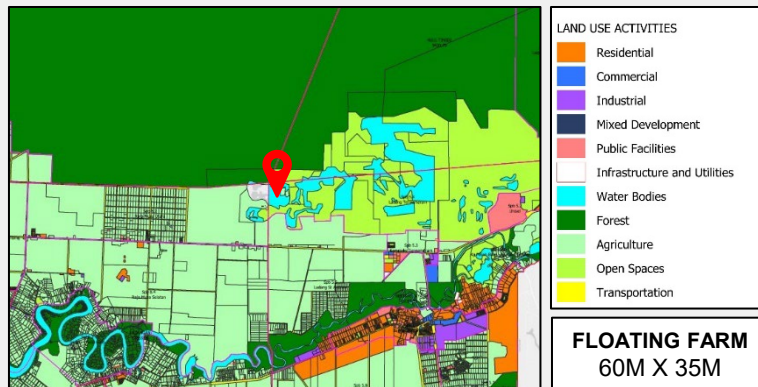
## PROJECT 7: LESTARY FLOATING FARM

Lestary Floating Farms is proposed as a commercially viable offshore farming opportunity that would provide raw, organic goods to families. The semi-automated, sustainable network, they hope, will drive communities towards healthier diets, as the concept does not include the production of red meats or poultry, as well as reduce environmental destruction and aid in food security and resilience..



### ISSUES

- 1) Increase of unemployment and decrease of labour force
- 2) Scattered distribution of land use
- 3) Shortage of young people involvement



Map 9: Location of Lestary Floating Farm

## PROJECT COMPONENT

### • 1<sup>st</sup> Level: Fish Farming

This offers a more environmentally friendly alternative to building on the sea surface than the traditional land reclamation method, as it does not damage the ecosystem.



Figure 9: Fish Farming

### • 2<sup>nd</sup> Level: Greenhouse Hydroponics

Lestary Floating Farm uses vertically stacked hydroponic systems with market existing “A” frame hydroponic structures and standing aeroponic walls, which hold vegetables at different levels



Figure 9.1: Greenhouse Hydroponics

### • 3<sup>rd</sup> Level: Solar Power

The whole rooftop is covered with solar panels to satisfy the energy requirements of the various fans, misters, microclimate controls, and irrigation tools of the “farm”.



Figure 9.2: Solar Power

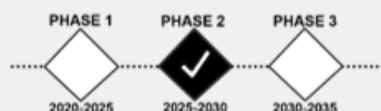


Figure 9.3: Lestary Floating Farm

## IMPLEMENTATION AGENCY

- Federal Agricultural Marketing Authority (FAMA)
- Department of Agriculture, Kuala Selangor
- Ministry of Agriculture and Food Industries

## IMPLEMENTATION PHASE



## PROJECTED COSTING

RM 65.9M

## PROJECT 8: D'TANJUNG LESTARI

The new resort is proposed to overcome the lack of resorts in Kuala Selangor to attract tourists. The proposed new resort near Pantai Sungai Kajang Baru has the potential to accelerate tourism along the coastal area in Tanjung Karang. This details resort covers accommodation, street furniture, a food court, a commercial area, and a promenade by the beach. Tourists can enjoy water sports, as well as beautiful beach scenery.



### ISSUES

- 1) Increase of unemployment and decrease of labor force
- 2) Scattered distribution of land use
- 3) Illegal hawkers



Map 10: Location of D'Tanjung Lestari

## PROJECT COMPONENT

- Provision of resort components such as cabins and public toilets.
- Water sports activities.
- Commercial area souvenir shops, water sports shops.
- Street and beach furniture, benches, and promenade streetlights.



Figure 10: Commercial Area



Figure 10.1: Street and beach furniture



Figure 10.3: D'Tanjung Lestari



Figure 10.2: Water sport activity

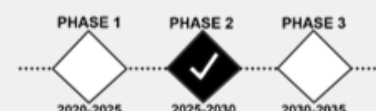
## IMPLEMENTATION AGENCY

- Kuala Selangor District Council (MDKS)
- Tourism Selangor



Figure 10.4: D'Tanjung Lestari

## IMPLEMENTATION PHASE



## PROJECTED COSTING

RM 6M

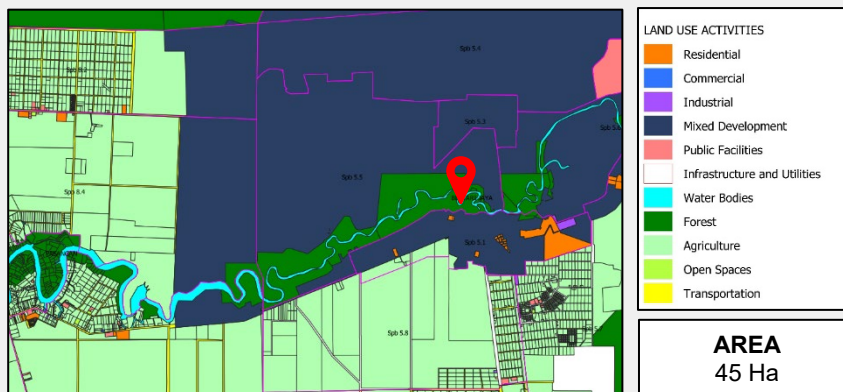
## PROJECT 9: BALE PARK

Due to the high production of rice straws, farmers can sell them to make them into miniature houses to prevent open burning. The proposed project of collective creations will be displayed at "Bale Park". This proposal will improve and sustain the environment. The location of this proposal is at SPB 5.5 Ladang St Andrew.



### ISSUES

- 1) The increment of rice straw open burning
- 2) The increment of air pollution in Kuala Selangor
- 3) Causing forest fires



Map 11: Location of Bale Park

## PROJECT COMPONENT

- Farmers, talented local artists, and related agencies are to collaborate in creating a nice park to display local creative artworks made from bales of rice straws.
- Farmers can benefit by selling unused bales of rice straws. Local artists and artisans can share their talent by showcasing their artwork in this park. Therefore, the move benefits the more significant cause in reducing greenhouse gases emitted from the open burning of the rice straws.
- Softscapes and hardscapes will be included to enhance the visual image of the area and attract both locals and tourists.



Figure 11: Example of hay sculpture



Figure 11.1: Example of hay sculpture

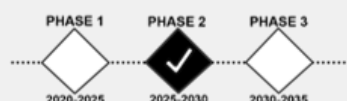


Figure 11.2: Hay Sculpture in park

## IMPLEMENTATION AGENCY

Co-implementation strategy covers multilevel government agencies, such as Kuala Selangor District Council, Federal Agricultural Marketing Authority (FAMA), the Malaysia Palm Oil Board (MPOB) and private agencies.

## IMPLEMENTATION PHASE



## PROJECT COSTING

RM 200 M

## PROJECT 10: SUNGAI BULOH FOR RIVER OF LIFE PROGRAMME

The River of Life Initiative is proposed to improve the current condition of the river intensively and improve the visual image of the river. This project is to beautify and clean the Sungai Buloh River, turning SPB 6.2 and 6.3 into a marvellous new breath full of luxurious landscapes.



### ISSUES

- 1) Sungai Buloh is the most polluted river in Kuala Selangor
- 2) The river is in poor condition
- 3) Locals throw waste into the river



Map 12: Location of Sungai Buloh For River of Life Programme

## PROJECT COMPONENT

- Phase 1: Various cleaning activities like gotong-roiyong and intensive cleaning involving the above-mentioned groups will be conducted. not only in the river but also 100 metres extending out of the river.
- Phase 2: The beautification phase involves setting up fountains, landscapes, lights, and other cosmetics to enhance the image. It will be followed by regular maintenance and regulations to ensure the cleanliness is preserved.



Figure 12: River cleaning activities



Figure 12.1: River cleaning activities

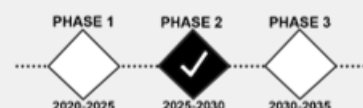


Figure 12.2: Illustration of how Sungai Buloh would look like

## IMPLEMENTATION AGENCY

Co-implementation strategy covers multilevel government agencies, such as Kuala Selangor District Council, Department of Irrigation and Drainage Malaysia, ROL-POP, private agencies, non-government organisations, NGOs.

## IMPLEMENTATION PHASE



## PROJECT COSTING

RM 500 M

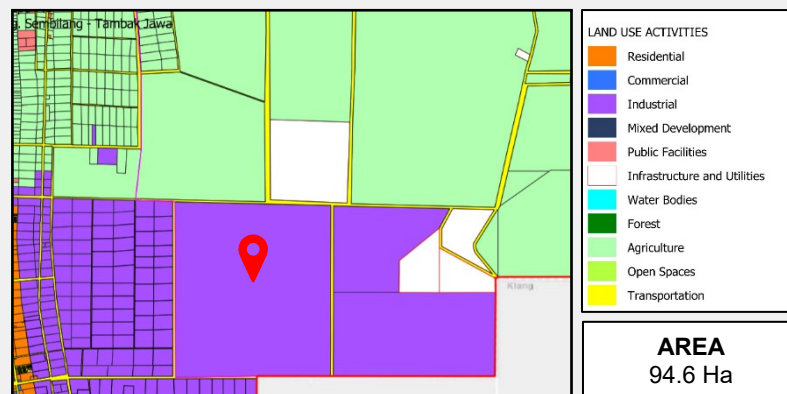
## PROJECT 11: PROVISION OF NEW SANITARY LANDFILL

Landfills are very important not only for the land use in Kuala Selangor but also for Petaling, Gombak and Klang. To accommodate the population growth, the proposed area for new landfill is at SPB 7.3 Bukit Kucing - Simpang Tiga Jeram.



### ISSUES

- 1) Insufficient disposal area (sanitary landfill)
- 2) No centralize landfill for solid waste
- 3) Replacing Kubang Badak Sanitary Landfill which has been closed



Map 13: Location of Sanitary Landfill

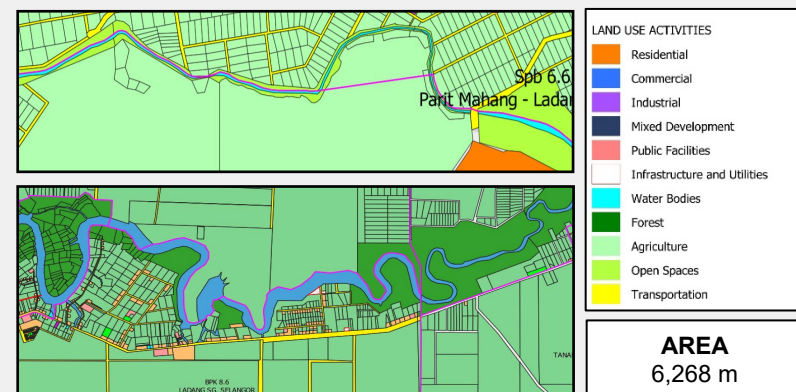
## PROJECT 12: FLOOD MITIGATION SYSTEM

Kuala Selangor has areas at risk of flooding, where most of the areas are near Sungai Selangor and Sungai Buloh. Therefore, two areas have been identified for the proposed flood mitigation projects: SPB 6.7 Parit Mahang (Sungai Buloh) and SPB 8.6 Ladang Sungai Selangor (Sungai Selangor).



### ISSUES

- 1) The residential area always having floods annually
- 2) Causing damage to agriculture products
- 3 (Sungai Selangor).damage to public facilities



Map 14: Location of Flood Mitigation System at Sungai Buloh and Sungai Selangor

## PROJECT COMPONENT

- 1ST Layer (Liner System). It is the lowest layer and the first to lay the basis of sanitary waste disposal.
- 2nd Layer (Drainage System). The drainage system is responsible for the fluid created by decomposing certain waste products.
- 3rd Layer (Gas Collection System). Methane is a highly volatile and poisonous gas hydrocarbon that contributes to climate warming and can damage the overall health of the environment when released into the environment.
- 4th Layer (Contains Waste Itself). It's the largest layer, whereas different waste-collection companies generate waste and discard it periodically from diverse sources.



Figure 13: sanitary landfill in Jeram Kuala Selangor



Figure 13.1: Sanitary landfill level 3

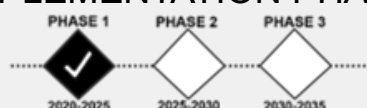


Figure 13.2: Sanitary Landfill

## IMPLEMENTATION AGENCY

Co-implementation strategy covers multilevel government agencies, such as KDEB Waste Management Sdn. Bhd., Kuala Selangor District Council and private agency.

## IMPLEMENTATION PHASE



## PROJECTED COSTING

RM 122 M

## PROJECT COMPONENT

- 1st Component (River Embankment) When reclaiming rivers in areas that have been identified, the river can hold more water when floods occur. At the same time, areas identified as flooded areas can also be reduced, or there is no risk of flooding.
- 2nd Component (Deepen the Riverbed) Deepening the riverbed is also one way to mitigate floods. This is because of the ability of the river to accommodate a large amount of water.
- 3rd Component (Clear the Main Drainage Monthly Program) Program is a proactive action to clean up major drainage systems in areas identified as flood-prone. This is to avoid building a new drainage system by cleaning an existing one which has a very positive effect.



Figure 14: River embanking



Figure 14.1: Main drainage cleaning program

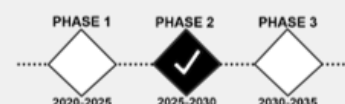


Figure 14.2: River embanking

## IMPLEMENTATION AGENCY

Co-implementation strategy covers multilevel government agencies, such as Kuala Selangor District Council, Drainage and Irrigation Dept at the State level.

## IMPLEMENTATION PHASE



## PROJECTED COSTING

RM 200 K



## CONCLUSION

In conclusion, as mentioned in Town and Country Planning Act 172, the creation of a State Structure Plan is critical. The proposed Selangor State Structure Plan 2035 was produced to provide an alternative route for rapid development to replace the previous document published in 2017. Selangor state is Malaysia's largest contributor to GDP and has been at the forefront of new technological progress in the country. The draft Kuala Selangor 2035 Local Plan is developed by following the procedure involved, which begins with an inception report and then progresses to a technical report. The data, results, issues, and prospects collected and assessed in Selangor were used to develop the goal, goals, thrust, policies, strategies, and suggestions.

The state's mission was to empower Selangor as a resilient and capable state on a global scale by 2035. As part of the draft State Structure Plan 2035, various high-impact initiatives on economic, social, environmental, and infrastructural matters were suggested to achieve this aim. The suggested Finer and Linear Development Concept was also found to be an appropriate alternative for Selangor's strategic and geographical proximity near the sea, local resources, and Malaysia's capital city of Kuala Lumpur and Putrajaya.

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