

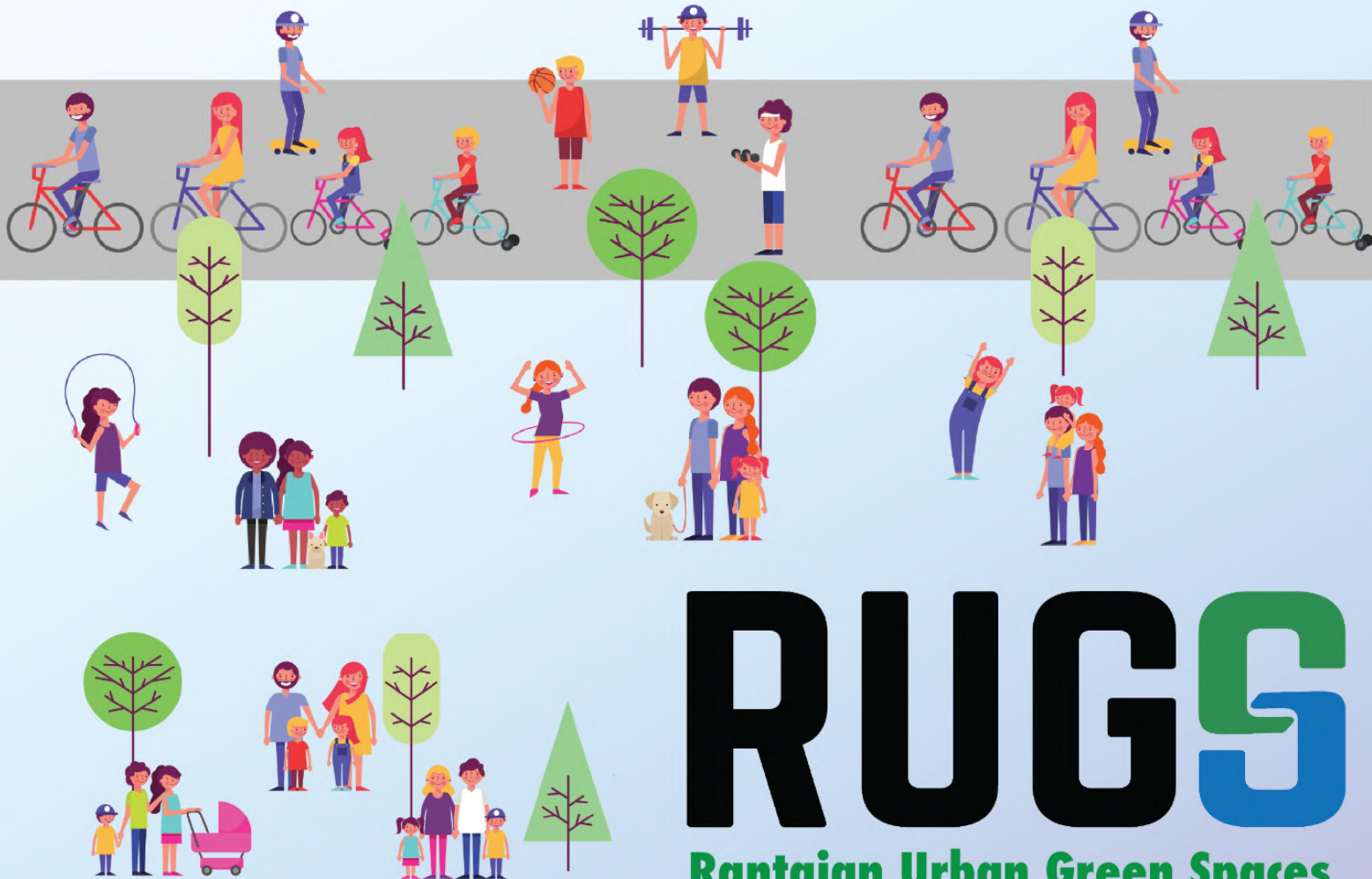


**SGP** The GEF  
Small Grants  
Programme



GEF-SGP OP7

# LANDSCAPE *Klang Valley* STRATEGY



# RUGGS

Rangkaian Urban Green Spaces  
Klang Valley Green Connector

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## 1. BACKGROUND

### 1.1. Overview

The Small Grants Programme (SGP) offers grants to back conservation, restoration, and sustainable livelihood projects by NGOs, CBOs, and local communities. Malaysia is now part of the Upgraded Country Programme (UCP) in OP7 (2021-2025), emphasising a landscape-based approach for community-led planning and management of socio-ecological landscapes and seascapes. The SGP will target three landscapes: Crocker Range in Sabah, Middle and Upper Baram River Basin in Sarawak, and the Klang Valley in Peninsular Malaysia.

SGP OP7 aims to combat threats to biodiversity, climate change, land degradation, and local community well-being through participatory land and resource management across these landscapes. This will be accomplished via grant-funded projects, led by NGOs, CBOs, and local communities, targeting 10,000 beneficiaries, with 50% being women.

*Rantaian* Urban Green Spaces (RUGS) is a project led by the Malaysian Nature Society (MNS) that aims to steward and support community-led conservation efforts to safeguard, rehabilitate and connect the isolated green spaces within the Klang Valley. Specifically, RUGS strives to create a green refuge that offers recreational opportunities and ecosystem benefits such as mitigating the impact of heat island effect, in addition to improving water and air quality for the city folks of Klang Valley. Driven by the desire to create a sustainable, healthy, and livable urban environment, MNS ambitioned to emulate and showcase the ecological connectivity of the Central Forest Spine (CFS) in the heart of Klang Valley, and to rehabilitate the landscape.

### 1.2. Objective & Targets

**Overall Objective:** To enable community organisations to take collective action for adaptive landscape management in building socio-ecological resilience in the Klang Valley, Peninsular Malaysia for global environmental benefits and sustainable development

The RUGS strategy, as an alternative to traditional approaches, seeks to reach this objective by pursuing four target outcomes that work together harmoniously: land restoration, improving landscape management, mitigating greenhouse gas emissions, and giving direct benefits to individuals. The specific targets to be achieved by 2026 are as follows:<sup>1</sup>

1. 400 hectares of land restored;
2. 9,000 hectares of landscapes under improved practices;
3. Greenhouse gas emissions mitigated equivalent to 150 tonnes of carbon dioxide; and
4. 10,000 individuals directly benefiting.

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<sup>1</sup> These targets correspond to the GEF-7 Core Indicators 3, 4, 6 and 11. The landscape targets are from the SGP Malaysia Project Document Annex 15 (Estimations of GEF 7 Core Indicator end targets).

The overarching objective of the RUGS project, (in line with GEF-SGP OP-7), is to generate multiple benefits for biodiversity, climate change, land degradation, and the well-being of local communities through participatory, integrated land and resource management approaches implemented across the Klang Valley landscape. Details on the intervention strategy to achieve these targets are provided in Section 3.

### 1.3. Location

Klang Valley is an urban conglomeration in Malaysia that is centred in Kuala Lumpur, including its adjoining cities and towns within the state of Selangor. There are no official borders drawn, so in general it encompasses the Federal Territories and several other districts in its vicinity, namely Federal Territory of Kuala Lumpur, Federal Territory of Putrajaya, and the adjacent Selangor districts. The soft boundary delineation of this OP7 landscape is shown on the map below in Figure 1.

The Klang Valley is predominantly urban yet adorned with forests and green spaces, with several NGOs, CBOs, and local communities dedicated to conserving these areas. Despite this, most of these entities work independently, lacking collaborative landscape-based planning and management. This landscape strategy aims to identify synergies among these entities to foster collaboration to achieve participatory, integrated landscape-based management.

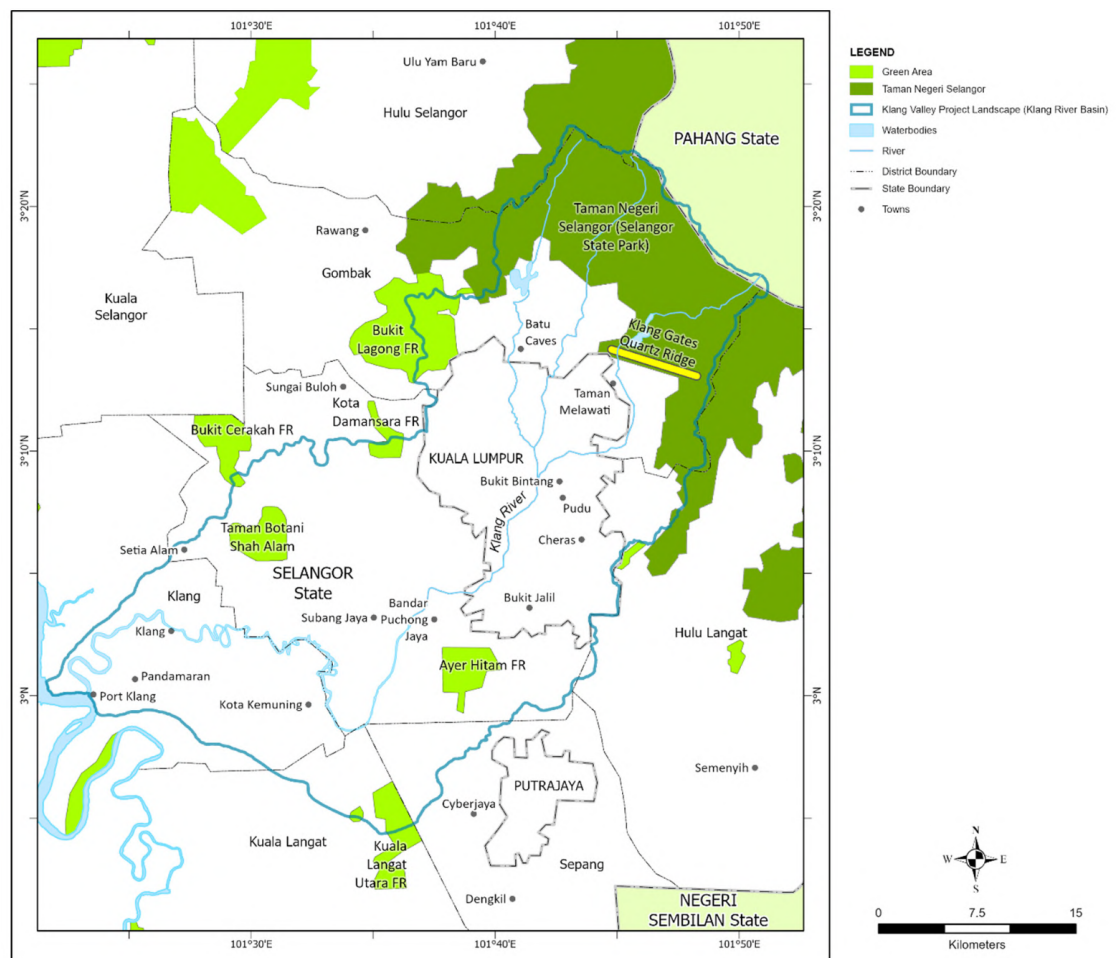


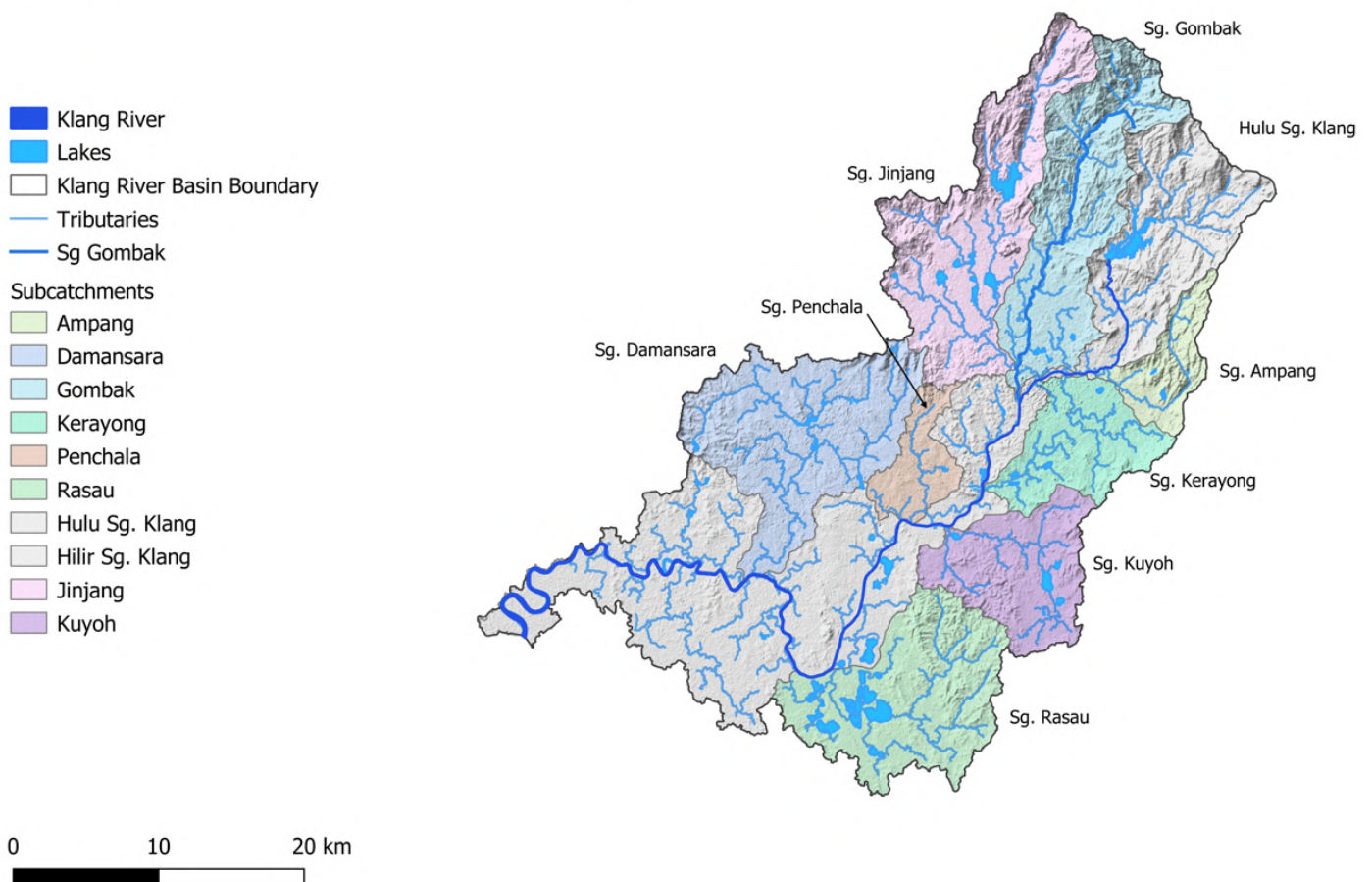
Figure 1. Klang Valley landscape map.



#### 1.4. Geographical Conditions and Characteristics of Klang Valley

The Klang Valley landscape is geographically delineated by Titiwangsa Range to the north and east and the Strait of Malacca to the west. It borders Rawang in the northwest, Semenyih in the southeast, and Klang and Port Klang in the southwest. The greater Klang Valley conurbation is the heartland of Malaysia's administration, industry and commerce.

The Klang River Basin, encompasses a catchment area spanning roughly 1,288 square kilometres (Figure 2). Its elevational range stretches from sea level to approximately 1,275 metres above sea level. Annual average precipitation in the Klang Valley fluctuates between 2700 mm in the elevated mountainous regions upstream to 1850mm along the course of the main Klang River. Among the upper basin tributaries are Sungai Batu and Sungai Gombak, which conjoin prior to their convergence with Sungai Klang in the city centre (the estuary known as “Kuala Lumpur”). The river then gently meanders as it flows through the lower basin.



**Figure 2:** Major hydrological sub-catchments of the Klang River Basin.

The geological composition of the region includes several formations: Hawthornden Formation, Kuala Lumpur Limestone, Kajang Formation, Kenny Hill Formation, granite and its variations, as well as alluvium.

The Klang Valley features four main forest landscapes: (i) Selangor State Park, (ii) coastal mangrove forests, (iii) peat swamp forests, and (iv) remnants of lowland dipterocarp forest. Situated in the eastern edge of Selangor, the Selangor State Park spans 108,000 hectares, making it Peninsular Malaysia's third-largest park. Managed by Selangor's Forestry Department and gazetted in 2007, it covers districts from Hulu Selangor to Hulu Langat. Classified as Environmentally Sensitive Area Rank 1, it permits eco-tourism, research, and education only.



**Figure 3.** The forests of Klang Gates Quartz Ridge leading up to the Ulu Gombak Forest Reserve of the Selangor State Park (Source: Treat Every Environment Special (Trees)).

The mangrove forests are located in the Klang estuary and cover several islands as well as the lower reaches of the Klang river. These carbon-sequestering and carbon-storing forests play a critical role in protecting coastlines from erosion, offering income opportunities, and act as nursing grounds for a myriad of marine fauna.

The ecologically unique peat swamp forests encompass about a third of Selangor's forest reserves. However, these forests are rapidly giving way to commodities plantation. Some peatlands are found in and adjacent to the lower stretches of the Klang Valley. The proposed degazettement of a peat swamp forest, the Kuala Langat North Forest Reserve was met with fierce resistance from NGOs and CSOs back in 2021 (Liu 2022). This swampy biome is essential



for biodiversity conservation and carbon storage. From the biodiversity perspective, the Kuala Langat North Forest hosts the endemic *Betta livida*, also known as the Langat Red Fighting Fish. This species thrives in the acidic peat swamp waters and is categorised as Endangered in IUCN's Red List of Endangered Species in 2019 (Hussain 2021; Tan 2022).

Urbanisation has fragmented the once-dominant lowland dipterocarp forests in the Klang Valley. Patches like Kota Damansara Community Forest, Shah Alam Community Forest, and others offer valuable refuge for biodiversity and recreational opportunities amidst the grey and drab urban surroundings. Although some of these forests had already been degraded, they still possess the capacity for ecosystem services such as carbon sequestration and flood mitigation. Some notable species found in the lowland dipterocarp forests of Klang Valley include the Malayan tapir (*Acrocodia indica*), sun bear (*Helarctos malayanus*), Sunda pangolin (*Manis javanica*), white-handed gibbon (*Hylobates lar*), and long-tailed macaque (*Macaca fascicularis*).



**Figure 4.** The elusive Sunda pangolin (*Manis javanica*) is classified as Critically Endangered in the IUCN Red List of Threatened Species (Photo by Steven Wong).

#### ***Population, Economic activities, Infrastructure***

Based on the data from 2020, the Klang Valley was home to roughly 8.5 million people (26% of total Malaysia population). The metropolis remains as the economic and administrative hub of the country. Kuala Lumpur is the centre for finance, insurance, real estate, media and the arts of Malaysia. The infrastructure development in the surrounding areas such as the Kuala Lumpur International Airport at Sepang, the creation of the Multimedia Super Corridor and the expansion of Port Klang further reinforce the economic significance of the city.

### 1.5. Political divisions

The greater Klang Valley landscape encompasses two federal territories: Federal Territory of Kuala Lumpur and Federal Territory of Putrajaya; as well as six districts in the State of Selangor: Petaling, Klang, Gombak, Hulu Langat, Sepang and Kuala Langat (Figure 5). The built-up area within this landscape is known as the greater Kuala Lumpur conurbation. The landscape includes the cities of Shah Alam, Petaling Jaya, and Subang Jaya, as well as the municipalities of Klang, Selayang, Ampang Jaya and Kajang.



**Figure 5.** Federal territories and districts of Klang Valley.

#### ***Petaling***

Situated in the southern part of the Klang Valley, Petaling is a dynamic district known for its extensive urbanisation and vibrant commercial activities. Home to the city of Petaling Jaya, a bustling urban centre, Petaling showcases a blend of residential neighbourhoods, business hubs, shopping complexes, and educational institutions. Despite its urban character, efforts have been made to preserve green spaces and recreational facilities.

#### ***Klang***

To the west of Petaling lies Klang, a district steeped in historical significance as a key port and trading centre during Malaya's colonial days. Its heritage is reflected in landmarks like the Sultan

Abdul Aziz Royal Gallery and the Klang Heritage Walk. While embracing modern advancements, Klang maintains its cultural essence through traditional markets, events, and old neighbourhoods. The Klang River estuary enhances an ecological touch to the district's diversity.

### ***Gombak***

Situated in the northern part of the Klang Valley, Gombak offers a captivating blend of urban lifestyle and natural beauty. It is home to the iconic Batu Caves, a Hindu temple complex nestled within limestone caverns. Gombak District encompasses urban spaces as well as verdant areas, including forest reserves and recreational parks.

### ***Kuala Langat***

Kuala Langat, located in the southwestern region of Selangor, is primarily known for its agricultural activities, particularly in the cultivation of oil palm. Furthermore, the district boasts a rich natural landscape with numerous forest reserves, such as the renowned Kuala Langat North and South Forest Reserves. These protected areas play a crucial role in safeguarding the diverse range of plant and animal species found within the region, making Kuala Langat an important hub for conservation efforts.

### ***Hulu Langat***

Found in the eastern part of the Klang Valley, Hulu Langat is characterised by its undulating landscapes and lush surroundings. The district is known for its potential for ecotourism, with attractions such as the Sungai Gabai Waterfall and the Sungai Congkak Recreational Forest. Agriculture is also prominent, contributing to the district's rural charm.

### ***Sepang***

Part of the southern reaches of the Klang Valley is located in the district of Sepang, which is widely known for housing both the Kuala Lumpur International Airport (KLIA) and the Sepang International Circuit, a globally recognized Formula One racing track, making it a hub for aviation and motorsport enthusiasts. The district also contains scenic attractions such as the Sepang Gold Coast and the Paya Indah Wetlands.

### ***Kuala Lumpur (Federal Territory of Kuala Lumpur)***

At the heart of the Klang Valley lies Kuala Lumpur, Malaysia's capital and a thriving metropolis. Kuala Lumpur is the epitome of modernity, featuring towering skyscrapers, extensive commercial centres, cultural landmarks, and a diverse culinary scene. The city's attractions include the Petronas Twin Towers, KL Tower, vibrant street markets, and a mix of cultural neighbourhoods. Kuala Lumpur reflects the nation's urban spirit while hosting a multitude of international events and being a melting pot of cultures.



### **Putrajaya (Federal Territory of Putrajaya)**

Nestling outside the Klang Valley, Putrajaya stands as a modern and meticulously planned city that serves as the federal administrative centre of Malaysia. This innovative urban hub, often referred to as the "Intelligent Garden City," showcases a harmonious blend of cutting-edge architecture, sustainable design, and abundant green spaces. Putrajaya demonstrates Malaysia's vision for a smart and eco-friendly future.

## **2. SITUATION ANALYSIS**

### **2.1. Baseline Assessment**

#### ***Overview***

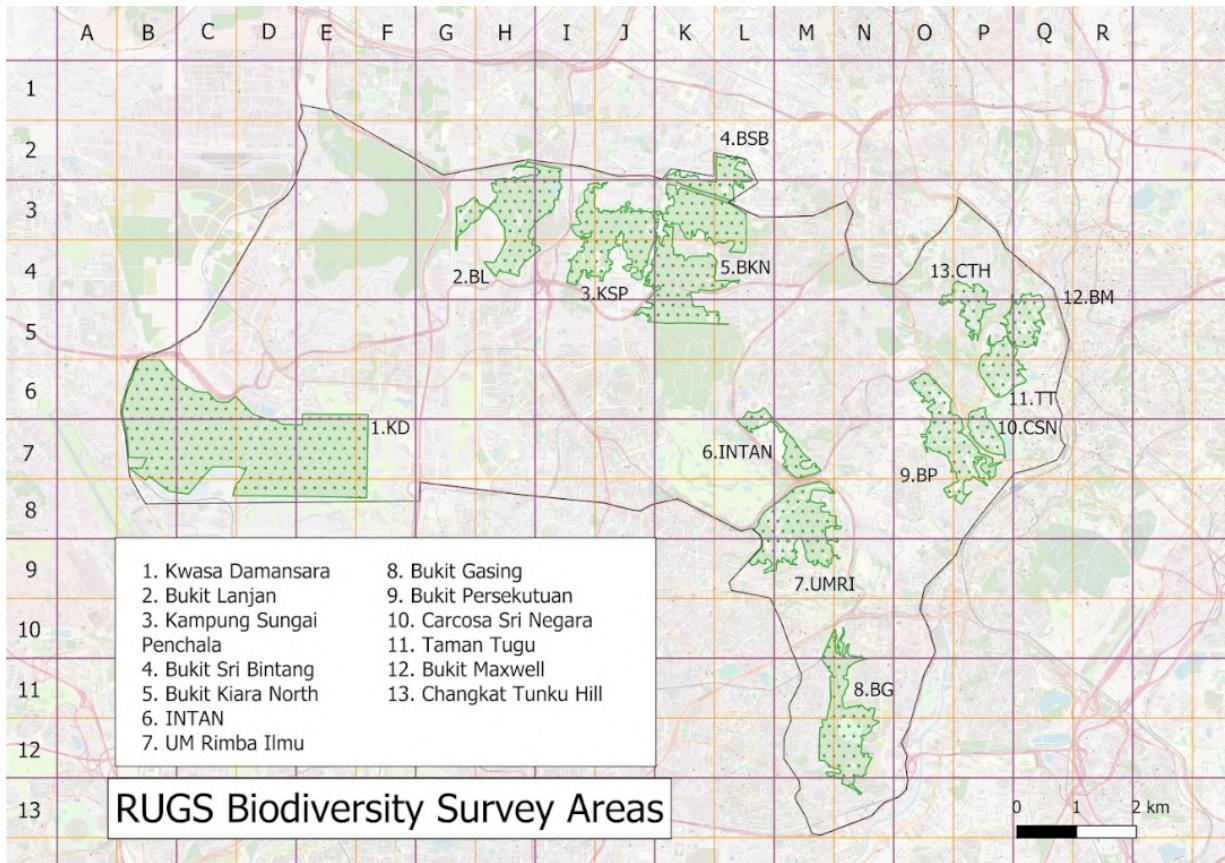
In 2023, a baseline assessment was carried out in the heart of Klang Valley, namely: Federal Territory of Kuala Lumpur and Petaling district. The Damansara-Pantai Arc, a selection of closely located forested areas (i.e., Kota Damansara Community Forest, Bukit Lanjan, Sungai Penchala Forests and Bukit Kiara). This focal area comprised viable patches of forested areas to undertake ecological linkage as part of RUGS. A biodiversity assessment was carried out looking at the plants and animals in the green spaces of the focal area.

#### ***Methodology***

The identification of potential linkages was done via overlaying 1 km by 1 km quadrants over the Damansara-Pantai Arc, observing the percentage of tree cover between the forested areas via recent satellite imagery (GIS) within each quadrant, and identifying the quadrants with the optimal balance of tree cover, current land use, and other factors.

From this, a total of 21 green spaces were identified for the facilitation of ecological linkage as part of RUGS (Annex I). A team of experts and experienced nature enthusiasts was assembled to undertake flora and fauna surveys within 13 selected green spaces (Figure 6) to assess its richness in biodiversity, as well as to identify potential routes in establishing the ecological linkages between the patches. The *in-situ* work was carried out between the 4th of July to 9th of August 2023.

The landscape data were collected through both direct observations (i.e. on-the-ground survey) and indirect observations (i.e. satellite imagery, GIS, online data). Biodiversity within the landscapes were also recorded through direct observation (e.g. on-the-ground survey) and secondary data (i.e. past studies, online data – iNaturalist, eBird). The population and demographic data of Klang Valley was obtained from available sources provided by the Department of Statistics Malaysia.



**Figure 6.** Selected green spaces surveyed for flora and fauna.



**Figure 7.** A team of experts and experienced nature enthusiasts conducting landscape and biodiversity assessment in the green spaces of Klang Valley (Photos by Peter Leong).



## **Fauna**

From the assessment, it is evident that the ecological linkage between the fragmented green spaces persists. For example, the oriental pied hornbill was spotted in the Perdana Botanical Garden. Hornbills require a large home range due to its varied diet (fruits, amphibians, birds, small mammals, etc.). As such, it is highly likely that the Oriental Pied Hornbill spotted in the Perdana Botanical Garden will have to travel between the forested patches in the vicinity to fulfil its dietary needs. This form of ecological linkage is also utilised by the wide range of avifauna and volant species found during the biodiversity survey. These species are adept at travelling from treetops to treetops in search for food, shelter, and partners.

Although the green spaces may be scattered, Klang Valley still harbours several significant green spaces that contribute to the overall greenery and serve as important green lungs for the urban landscape. These green spaces feature diverse biodiversity, although are mostly common, non-threatened species. Still, there are some species of conservation importance too. For instance, previous studies have found Lesser Mouse-deer (*Tragulus kanchil*) and Sunda Flying Lemur (*Galeopterus variegatus*) at Kota Damansara Community Forest Reserve. Shah Alam Community Forest is known to harbour Malayan tapir (*Acrocodia indicus*), White-handed Gibbons (*Hylobates lar*), Dusky Leaf Monkey (*Trachypithecus obscurus*) and Spiny Hill Turtles (*Heosemys spinosa*).

The fauna survey at the 13 selected sites recorded more than 52 species of mammals, 527 bird species, 231 herpetofauna species and 189 butterfly and dragonfly species. Additionally, the review of existing literature further revealed the existence of an additional 51 mammal species, 40 bird species, and 16 herpetofauna species. Some notable records include the charismatic fauna such as the critically endangered Sunda Pangolin (*Manis javanica*), Sunda Slow Loris (*Nycticebus coucang*) and Southern Pig-tailed Macaque (*Macaca nemestrina*), where the former two species are Endangered according to the IUCN Red List of Threatened Species.



**Figure 8. Left:** Southern pig-tailed macaque. **Right:** Asian small-clawed otter is listed as Vulnerable in the IUCN Red List of Threatened Species. (Photos by Steven Wong).





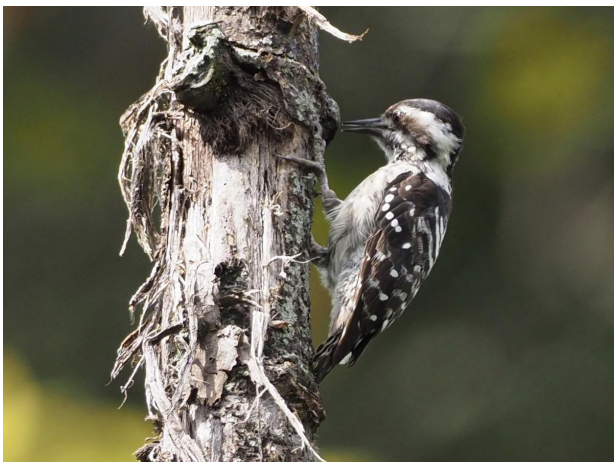
**Figure 9.** The endangered Sunda slow loris (Photo by Steven Wong).

In addition to this, the survey also documented the endangered Blue-winged Leafbird (*Chloropsis cochinchinensis*) and Javan Myna (*Acridotheres javanicus*), which is Vulnerable. Other notable bird species include the Banded Broadbill, Black-bellied Malkoha, Painted Stork, and Lesser Green Leafbird. Among the herpetofauna species observed, three species were identified as Endangered – Tanah Rata Wart Frog (*Limnonectes nitidus*), Malayan Box Turtle (*Cuora amboinensis*) and Black Marsh Turtle (*Siebenrockiella crassicollis*).



**Figure 10.** The vibrant Blue-winged Leafbird. (Photo by Ashraf).





**Figure 11. Top:** The forest-associated Black-bellied Malkoha (Photo by Steven Wong). **Middle left:** Ruby-cheeked Sunbird (Photo by Ashraf). **Middle right:** Scarlet-backed Flowerpecker eating the fruits of *Clidemia hirta* (Photo by Ashraf). **Bottom left:** Grey-capped Pygmy Woodpecker (Photo by Roselyn Chua). **Bottom right:** Banded broadbill (Photo by Ashraf).





**Figure 12. Top left:** The Blue bronzeback (*Dendrelaphis cyanochloris*) occurs primarily in lowland primary forest and adjacent mature secondary forests. **Top right:** The highly adaptable four-lined tree frog (*Polypedates leucomystax*). **Bottom:** Green crested lizards (*Bronchocela cristatella*) can be found in forests as well as disturbed areas (Photos by Teo Eng Wah).

### **Flora**

The flora survey of the 13 sites in the 2023 focal area identified 746 species of plants to species level, with several other specimens identified to genus level. These plants included the Critically Endangered (IUCN CE) agarwood (*Aquilaria malaccensis*) and four Endangered (IUCN EN) species, and 10 Vulnerable (IUCN VU) species. The forest patch with the most plant species was Bukit Gasing (222 spp.). The patch with the least plant species was Rimba Ilmu (76 spp. - noting that the survey did not cover the plants in the Rimba Ilmu arboretum).





**Figure 13.** Left: The critically endangered agarwood (*Aquilaria malaccensis*) or known as *gaharu*. Right: *Curculigo latifolia*, or known locally as *Lemba* is among the effective traditional medicine for diabetes (Photos by Siti Khadijah Rambe).



**Figure 14.** Left: *Artocarpus integer*, or commonly known as *cempedak*; Right: The unique and showy bloom of the white bat lily (*Tacca integrifolia*). (Photos by Vivian Soon)



## 2.2. Issues and Threats to Green Spaces In Klang Valley

Malaysia is known for its rich biodiversity, with diverse flora and fauna in its terrestrial, coastal, and marine habitats. However, the country's population growth and socioeconomic changes have put pressure on its biodiversity, leading to the vulnerability and potential extinction of many species. This is particularly evident in the Klang Valley, which is a crucial region in Peninsular Malaysia. Threats include habitat fragmentation, pollution, competition for land, and climate change. There is also a lack of awareness and knowledge about the importance of biodiversity in Malaysia, as well as a need for better management and funding to effectively conserve its biodiversity.



**Figure 15.** Urbanisation and development fragmented forested areas in Klang Valley into pockets of green spaces (Photo by Ng Sean Fong).

### ***Habitat fragmentation and biodiversity conservation***

As urbanisation continues to expand, the expansive growth and development within the Klang Valley region poses a significant and overbearing threat to the green spaces and its biodiversity. The loss of habitat due to land clearing and extensive development for infrastructure and commercial purposes severely reduces the availability of suitable environments necessary for the remnants of biodiversity. Consequently, this detrimental impact on the local ecosystems leads to the decline in native flora and fauna species, ultimately disrupting the ecological balance that once prevailed.

### ***Competition for land***

Klang Valley has undergone rapid land use changes brought on by immigration, industrialisation, and commercialisation. It was found that between 1999 to 2017, there was an increase in built-up land cover by 608.8 km<sup>2</sup>, while natural vegetation has decreased by 831.8 km<sup>2</sup> in the state of Selangor (Azari *et al.* 2022). Hence, empty and undeveloped land in the Klang Valley is highly prized. The same applies to existing green spaces such as state land, parks, and agricultural land. Such abated land conversion has already resulted in the fragmentation of the green landscape that once sprawled across the Klang Valley, dividing natural habitats and disrupting wildlife movement patterns and biological processes. This not only leads to the loss of native biodiversity, but also decreased resilience of ecosystems, which is made all the more vulnerable due to climate change (Romero & Kovaleski 2023).

### ***Weak legal framework and policies***

At the root of the loss of green spaces in the Klang Valley are weaknesses in conservation policies, laws, and procedures. Malaysia has national policies for forestry, biodiversity and environment. However, these policies are ambiguous when it comes to conservation of green spaces in an urban environment. In particular, while Malaysia is committed to retaining at least 50% of its land area under forest and tree cover, no specific target has been set for the Klang Valley. The state of Selangor as a whole is only committed to retaining 30% forest, while Kuala Lumpur has no target set.

Similarly, in terms of protected areas, the national target has not been adopted by local authorities. Malaysia as a whole has committed to conserving 20% of its land area under protected areas. However, to date, only the state of Sabah has adopted this pledge. Neither states such as Selangor or the federal territory of Kuala Lumpur have a similar percentage-based target for creating or maintaining protected areas.

In terms of the legal framework (whether laws or administrative procedures), there is a lack of safeguards for the protection of green spaces. The law provides for limited transparency regarding public land governance. This means that the fate of public green spaces such as forest reserves is in the hands of a few individual decision makers. In practice this has led to such reserves being excised and developed with limited consultation.

There are also issues regarding procedural accountability and transparency regarding the fate of green spaces. In Kuala Lumpur, there is no Freedom of Information (FOI) Act. Decisions on forest reserves in Selangor require a prior public hearing, although these have been criticised for being just a token exercise.<sup>2</sup> In the case of reserves under the National Land Code, proposals for excising areas are seldom given adequate publicity. Notifications under the state government *Gazette* are presently behind a pay-wall of RM1500.

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<sup>2</sup> The case of Kuala Langat Utara Forest Reserve provides an interesting example of how the state proceeded in excising the reserve despite widespread public backlash.

### ***Climate change vulnerability***

Unsustainable land use practices in Klang Valley, mainly driven by clearing of forests, draining of peat swamp forests, and prevalence of build-up areas have made Klang Valley extremely vulnerable to the effects of climate change. The destruction of carbon sequestering and storing sites not only releases carbon dioxide and other potent greenhouse gases, but also robs Klang Valley of vital green areas that reflect instead of absorbing the Sun's radiant energy. The ubiquitous man-made structures such as roads, buildings, and storm drains restrict the percolation of surface runoff into the subsurface layers, which limits the recharge of aquifers, but also contributes to the regular occurrence of floods that plagues Klang Valley.

### ***Urban heat island effect***

The urban heat island effect is a well-known phenomenon where urban areas typically have higher temperatures compared to surrounding rural areas. The gradual replacement of green areas with built-up areas in Klang Valley has culminated in the phenomenon of the urban heat island effect, whereby in the absence of sunlight-reflecting trees, the concrete and glass structures instead absorb the Sun's radiant energy during the day, and releasing it gradually during the night, leading to sustained high ambient temperatures even during the night. This effect also leads to higher energy consumption for cooling, discomfort for residents, and increased heat-related health problems.

### ***Stormwater management***

The Klang Valley has an extensive network of drains and waterways designed to channel surface runoff away from the urban areas. However, the existing infrastructure may not have the capacity to handle the increased surface runoff arising from urban development and climate change. This results in Klang Valley experiencing periodic flooding, especially during the intermonsoon seasons (Malaysian Meteorological Department 2023). The potential of former mining ponds to act as buffers for stormwater management was wasted when they were filled in for development (Wong 2023). Floods not only result in financial losses of the masses, disruption of daily activities, but it also inflict mental trauma to those living in flood-prone areas (Amir Yusof 2022).

### ***Pollution***

The Klang River and its tributaries, a major water body in the landscape, faces pollution from industrial discharge and untreated sewage (Sharif *et al.* 2015). Water pollution has negative impacts such as mass fish deaths, impedance of raw water treatment systems, and rendering waterways unsuitable for recreational purposes. In addition, the prevalence of cars, industrial activities, and ongoing urban development greatly magnify the problem of air pollution in Klang Valley. Pollutants such as particulate matter (PM<sub>2.5</sub> and PM<sub>10</sub>), nitrogen dioxide (NO<sub>2</sub>), and volatile organic compounds (VOCs) contribute to poor air quality and pose substantial health hazards to the public. Transportation activities also contribute to noise pollution, which can have adverse effects on physical and mental well-being.



### ***Recreational and leisure space***

The densely developed and populated Klang Valley is scant with sizable green areas that are publicly accessible. These recreational and leisure spaces are much needed avenues for the inhabitants of Klang Valley to improve their overall quality of life and to promote physical and mental well-being. The scarcity of green areas within Klang Valley not only deprives its residents of the numerous advantages of being with nature, but may instead contribute to higher stress levels (Nath *et al.* 2018). These spaces must be made widely available and accessible to the public to educate them about the importance and benefits associated with forests. The irreplaceable ecosystem services performed by natural forests are not widely promulgated amongst the masses, is a pertinent issue that needs to be addressed. By fostering a better understanding and appreciation for forests in Malaysians, only can the natural heritage of Malaysia be meaningfully conserved.

### ***Culture conservation***

As urban lifestyles change, there has been a significant decline in traditional cultural practices and crafts. Younger generations are less inclined to pursue traditional arts and crafts, leading to a potential extinction of cultural knowledge and skills if there is no documentation of this knowledge. This is particularly evident in the Orang Asli communities, who are experiencing a loss of their traditional knowledge and source of food and income (Paul *et al.* 2021) due to deforestation. They are facing difficulties locating necessary resources for their crafts, such as *mengkuang* (*Pandanus* spp.) and rattan for weaving. For instance, the Temuans were initially forest-dwellers. They have since relocated to urban and suburban areas like Bukit Lanjan, Bukit Cheeding, Paya Lebar, Kuala Pangsoon, Sungai Kelubi and Kemensah. This came about as a result of their forested land being utilised for development projects initiated by the federal and state government (Paul *et al.* 2021).

### ***Heritage conservation***

As Kuala Lumpur experiences rapid urban growth, older traditional structures and neighbourhoods may be demolished to make way for new developments. The architectural and historical importance of older buildings in cities cannot be overstated. Heritage quarters such as Brickfields, have suffered from a deterioration of their unique identity. This decline in character is primarily attributed to the planning and design of new infrastructure and high rise buildings, which often disregard the established characteristics of the area and fail to contribute to the preservation of the city's identity (Bachek *et al.* 2014). Additionally, not all culturally significant sites and structures are legally protected as heritage sites. This lack of protection makes them vulnerable to demolition, alteration, or neglect.

### 2.3. Socioeconomic Conditions of the Klang Valley Community

#### Population

Based on the National Census data in 2020, the Klang Valley was home to roughly 8.5 million people (26% of Malaysia’s total population), including non-citizens. The mean population density of Klang Valley was 1,965 individuals per square kilometre.

The population aged 0 to 14 years (young age) in Klang Valley in 2020 recorded 21.7% (1.8 million), 15 to 64 years (working age) was 71.5% (6.0 million) and 65 years and over (senior age) was 6.8% (574.3 thousands).

The urbanisation rate in Malaysia increased to 75.1% in 2020 compared to 70.9% in 2010. The population distribution within Klang Valley is highly uneven, with most of the population concentrated in the Federal Territory of Kuala Lumpur and Petaling. 98.8% of the Klang Valley population are in urban areas and only 1.2% are in rural areas.

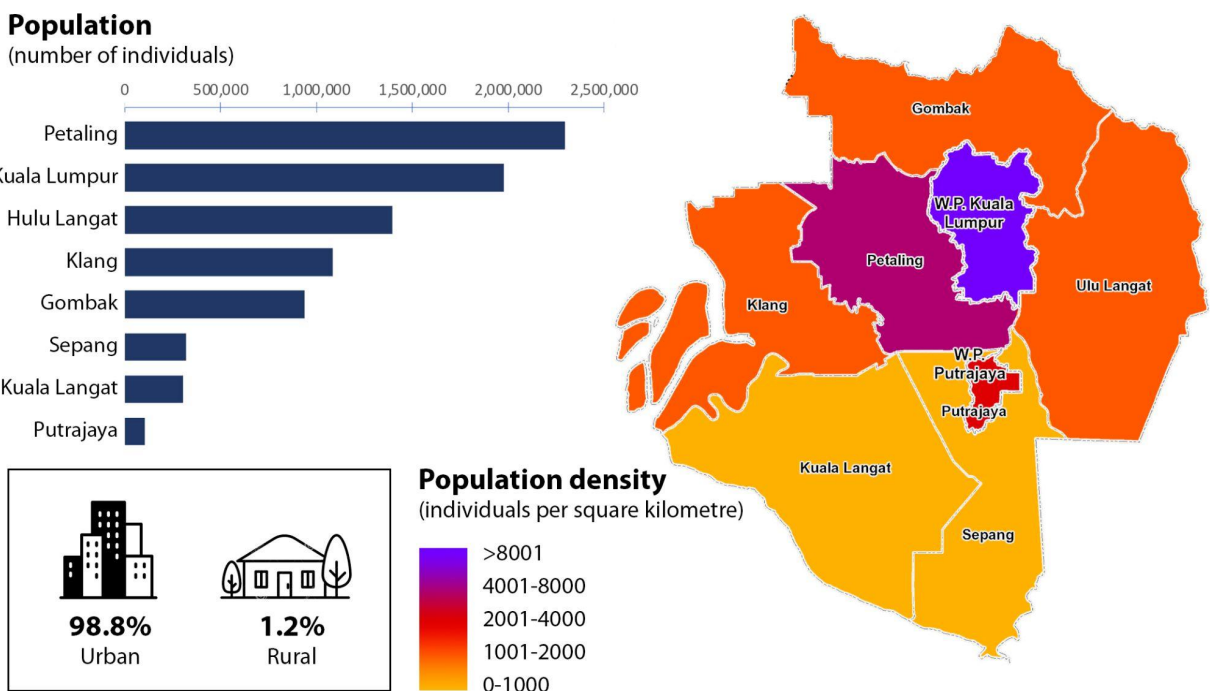


Figure 16. Statistics of Klang Valley’s population.

## Household

In 2020, the total number of households for Klang Valley was 2.27 million with an average size of 3.7 household members. The mean household gross income was RM11,068.

**Table 1.** Number of households in Klang Valley on census year 2020.

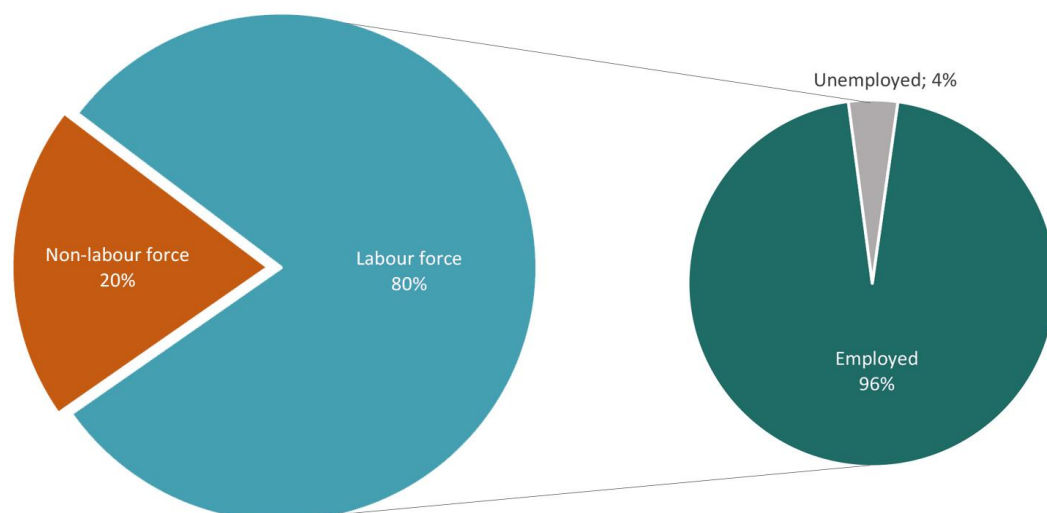
District	Number of household (thousands)	Average size of private household	Household gross income (mean) <sup>a</sup>
Kuala Lumpur	573.5	3.5	RM13,257
Putrajaya	29.7	3.7	RM 12,840
Petaling	617.7	3.8	RM 12,145
Klang	263.4	4.1	RM 7,888
Hulu Langat	387.5	3.6	RM 10,252
Gombak	222.5	4.2	RM11,536
Selangor	99.8	3.1	RM 12,254
Kuala Langat	79.9	3.7	RM 8,375
<b>Total</b>	<b>2274.0</b>	<b>3.7</b>	<b>RM11,068</b>

<sup>a</sup>Household gross income in 2019

Source: Department of Statistics Malaysia (2020)

## Employment

Klang Valley has a labour force of 4.23 million individuals in 2020. Labour force refers to the population aged 15 to 64 years (working age), who are either employed or unemployed. Of these, 4.05 million (95.7%) are employed individuals, and 4 in 100 individuals in Klang Valley are unemployed. Meanwhile, 1.6 million individuals are categorised as non-labour force, which consists of those who are not classified as employed or unemployed, such as housewives, students, retirees, disabled persons and those not interested in looking for jobs.



**Figure 17.** Employment status of Klang Valley population.

### ***Economic activities***

The Klang Valley serves as an essential economic and business hub in Malaysia. Its contribution to the country's economy is significant, with a wide range of economic activities. These activities encompass various sectors such as services (e.g., tourism, retail, real estate, and entertainment), manufacturing and industry (e.g. electronics, automotive, pharmaceuticals, and consumer goods), and agriculture (e.g. oil palm and rubber plantation).

The strategic location of the Klang Valley also established it as a crucial transportation and logistics hub, with Port Klang being one of the busiest seaports in the region and Kuala Lumpur International Airport (KLIA) serving as a major international transportation. Furthermore, the Klang Valley is home to multiple universities, research institutions, and educational centres, such as the University of Malaya, University Putra Malaysia, Institute for Medical Research and many more, which contribute to education-related activities and research initiatives.

When it comes to the economic activities of the Orang Asli in Klang Valley, forest and agriculture remains the prime focus of their livelihood, with particular emphasis on the cultivation of rice and rubber. In addition to cultivating vegetables and tropical fruits in their backyard gardens, they also gather non-timber forest products from the nearby forest, and raise livestock (e.g., goats and ducks) to supplement their income. This includes medicinal plants, wild fruits, and other forest products (Paul et al. 2021). Despite their dedicated efforts in sustaining their economic livelihoods, it is unfortunate to note that the Orang Asli groups continue to face challenges in overcoming poverty. It is a sobering reminder of the existing socio-economic disparities and the need for greater support and opportunities for the Orang Asli to uplift their living standards.

However, it is important to note that not all members of the Orang Asli community adhere to the same lifestyle. The Temuan natives residing in Bukit Lanjan live a very different way of life from their former practice. No longer do they partake in nomadic patterns of migration, hunting, gathering fruit, fish, or search for forest products, all of which once sustained their livelihoods. Instead, they have transitioned into becoming officers in the government and private sectors. Remarkably, many have managed to climb the professional ladder and achieve entrepreneurial success.

## **2.4. Ethnic and Culture**

### ***Ethnicity***

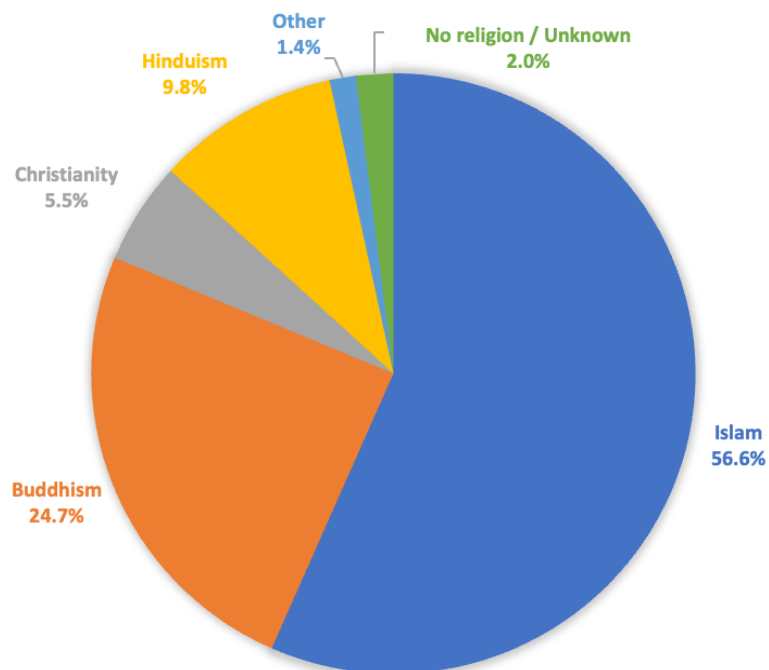
The population in Malaysia is a diverse mix of individuals from various ethnicities, religions and cultural backgrounds. Among the Malaysian population, the largest group comprised three major ethnicities, namely the Malays, Chinese and Indians. Additionally, there are also the Orang Asli, who are the indigenous people of Peninsular Malaysia. The Orang Asli can further be classified into three significant subgroups: the Negrito (or Semang), Senoi and Proto-Malay. Together with the Malays, they are often categorised as Bumiputera.

From the National Census 2020 by Department of Statistics Malaysia, the Klang Valley population comprised Bumiputera (56.8%), Chinese (31.5%), Indian (11.0%), and other ethnicities (0.8%). According to the 2018 census by the Department of Orang Asli Development (JAKOA), the Orang Asli population within Klang Valley is 15,602 (Annex III).

The Orang Asli population hails predominantly from the Temuan (Proto-Malay), Mah Meri (Senoi) and Semai (Senoi) subgroups. The Temuan subgroup can be found residing across most districts within the Klang Valley, while the Mah Meri subgroup has established their settlement along the coastal region of Kuala Langat and Sepang districts. As for the Semai subgroup, they have made their dwelling in the Hulu Selangor district, near the border of neighbouring Perak state. It is worth noting that despite their geographical locations, the Semai subgroup also engage in various occupations within the bustling heart of Klang Valley.

### **Religion**

In Klang Valley, a multitude of faiths thrive among its populace. Islam, embraced by a substantial 4.79 million individuals or 56.6% of the population in Klang Valley, stands as the prevailing religion. Following that is Buddhism, practised by 2.09 million individuals or 24.7%, Hinduism (9.8%), Christianity (5.5%), and various other religious affiliations (1.4%). Almost 2.0% of the population does not practise any religion. While the predominant religions observed by the Orang Asli are Islam and Christianity, it is worth noting that the practice of animism persists among certain inhabitants.



**Figure 18.** Religions practised by the Klang Valley population.



## **Languages**

Malaysia is a multilingual and multicultural country with a diverse population. The national language of Malaysia is Malay, which is not only the official language but also the mother tongue of the majority Malay ethnic groups. English is widely understood and spoken within the urban areas of Malaysia. Malay and English are the dominant languages used on a day-to-day basis by the Klang Valley population.

Going beyond just Malay and English, the Chinese community in Klang Valley also speaks various Chinese languages and dialects, including Mandarin, Hokkien, Cantonese, Hakka, and Teochew. Mandarin and Cantonese, in particular, hold a prominent place in the Klang Valley Chinese community. Additionally, Klang Valley is also home to a significant Indian community, with a particular focus on those of Tamil ethnicity. The Tamil language holds great importance and is widely spoken, especially in religious, cultural, and social contexts.

The languages of the Orang Asli are distinct between the groups and tribes. For instance, the Temuan natives speak an Austronesian language that shares close similarities with the Malay language. Meanwhile, the Mah Meri language, known as Besisi, belongs to the Austroasiatic language family. Unfortunately, this language is in great danger of disappearing, with only an estimated 3,000 people still speaking the language. The Semai subgroup, on the other hand, speaks another Austroasiatic language specifically belonging to the *Mon-Kmer* root.

## **Culture**

The Klang Valley is a melting pot of cultures, reflecting Malaysia's diverse population and rich heritage. As the majority ethnic groups, Malay, Chinese, and Indian cultures all play a significant role in shaping the region's identity, from traditional ceremonies and attire to religious practices and culinary delights. Traditional elements such as language, music, dance, and clothing are widely embraced and celebrated. Various cultural festivals, such as Hari Raya, Chinese New Year, Deepavali (Festival of Lights) and Thaipusam, are widely observed and celebrated with great enthusiasm and bring the community together. Additionally, the presence of mosques, Islamic art, and religious practices further exemplify the important role of Islamic culture in the lives of many residents in Klang Valley.

The Klang Valley is also home to several indigenous communities, each with its own unique cultural practices and traditions. The vast majority of the Orang Asli population in Klang Valley reside within the urban areas that are in close proximity to the remaining forests. They remain faithful to the traditional lifestyle which is heavily influenced by their environment and ancestral knowledge and wisdom. One example of this is the Temuans, who hold strong belief in the power of nature and spirits. This belief system encompasses various elements such as taboos, use of herbal remedies, performance of ritual ceremonies and practice of magic. Within the community, there are spiritual healers known as *dukun* and village *bomoh*, who communicate with nature spirit while in a trance-like state (Paul et al. 2021). However, in modern times, a significant Orang Asli population have converted to Islam and Christianity. As a result some individuals no longer partake in these traditional rituals.

The Temuans have managed to uphold numerous customs that bear significance even in contemporary times. These customs encompass various aspects of their daily lives and revolve around showing respect to elders, observing silence during thunderstorms, refraining from praising babies, avoiding places believed to be haunted and adhering to a strict code of non-violence. Likewise, the Semai natives hold a belief in *Punan*, which is the notion that causing unhappiness to others is a taboo and increases the likelihood of facing physical harm themselves. The importance of *Punan* in Semai culture is evident in their practice of sharing food, leadership style and method of raising children, among other aspects.

In the Semai's traditional culture, womenfolk take on the responsibility of catching fish, using basket traps to scoop the fish. The task of hunting falls primarily on the shoulders of men, who employ various tools and techniques such as blowguns, poison darts and spears to catch their prey. This division of labour not only showcases the specific roles and expertise of each gender within the Semai culture, but also emphasises the significance of these activities in sustaining their community's food sources.

Another note-worthy culture that deserves attention is the Mah Meri's wood carvings. The Mah Meri community has gained fame for their rich carving traditions, which have become an integral part of their cultural heritage. These carvings are made from *nyireh batu*, a rare and vibrant red mangrove hardwood from the mahogany family. The skilled artisans carve the material into intricate figurines of deities, humans, as well as flora and fauna. The handicraft produced by the Mah Meri community in Sungai Bumbun, Kuala Langat not only possess a high artistic value, but also hold potential to be acknowledged on a global scale. The tradition of wood carving, particularly the creation of masks, is predominantly practised by the male members of the Mah Meri community, with knowledge and skills passed down from father to son. Each carver specialises in specific spirits, resulting in a diverse range of masks, none of which are identical. Overall, the Orang Asli's commitment to preserving their customs serve as a reminder of their strong cultural heritage.

## 2.5. Gender

Of the total population in Klang Valley, 53.2% are men while 46.8% are women. The gender ratio was 113 males for every 100 females.

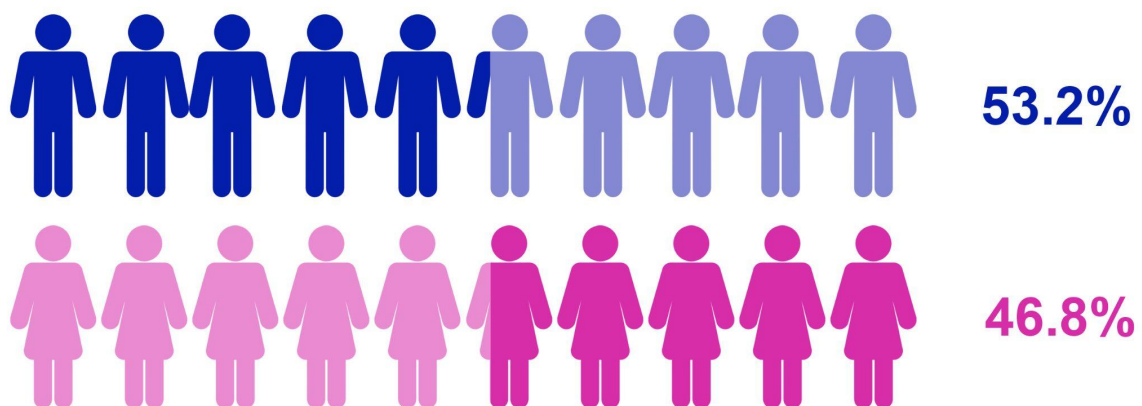


Figure 19. Male to female ratio comparison.

**Table 2.** Female and male population in Klang Valley according to districts.

<b>District</b>	<b>Female (thousand individuals)</b>	<b>Male (thousand individuals)</b>	<b>Ratio of female to male</b>
Kuala Lumpur	923.2 (46.6%)	1,058.9 (53.4%)	100 : 115
Putrajaya	55.6 (50.9%)	53.6 (49.1%)	100 : 96
Petaling	498.2 (45.8%)	590.7 (54.2%)	100 : 113
Klang	1076.6 (46.8%)	1221.5 (53.2%)	100 : 119
Hulu Langat	658.9 (47.0%)	741.6 (53.0%)	100 : 113
Gombak	450.6 (47.8%)	491.8 (52.2%)	100 : 109
Selangor	150.7 (46.3%)	174.6 (53.7%)	100 : 116
Kuala Langat	146.1 (47.5%)	161.4 (52.5%)	100 : 110
<b>Total</b>	<b>3,959.9</b>	<b>4,494.1</b>	<b>100 : 113</b>

Source: Department of Statistics Malaysia (2020)

Gender roles in the Klang Valley have undergone significant changes over the years, primarily driven by a combination of social, economic, and cultural forces. While remnants of traditional gender roles may persist in certain domains, the region has experienced a notable transition towards more equitable and forward-thinking perspectives on gender roles.

In terms of education, both men and women have equal opportunities to pursue academic endeavours in Klang Valley. Women have made significant progress in pursuing higher education and professional degrees, with nearly 62% of the Malaysian undergraduate students in 2022 being female (Azuar 2022). Despite more women participating in higher education and being more likely to graduate, they are still under-represented in the labour force. According to the Department of Statistics Malaysia, female graduates make up more than half the unemployment rate (54.2%) compared to males (45.8%) in Malaysia.

Women are increasingly participating in the workforce across various sectors, and many have managed to climb the professional ladder and achieve entrepreneurial success. However, certain industries and leadership roles may still exhibit gender disparities, such as in manufacturing and business sectors as well as aircraft piloting, for example.

While traditional gender norms that dictate women's roles primarily as homemakers and caregivers still exist to some extent, there is a notable shift towards a more equitable sharing of household and parenting duties among couples. Many families in the Klang Valley are adapting to modern lifestyles, where both partners contribute to both work and home life.

In addition, numerous entities including NGOs and government initiatives in the Klang Valley actively promote gender equality, women's empowerment, and awareness of gender-related issues. Some of these organisations include the All Women's Action Society (AWAM), Women of Will (WOW), Ibupreneur, Women Photographers Malaysia and many more. These collective efforts have a common objective of challenging stereotypes and creating a more inclusive and equitable society.

## 2.6. Ecological Linkages

The concept of green connectivity in an urban setting is not an exclusive idea that was solely developed by MNS. In fact, it has been the topic of discussion among local naturalists and conservationists since the late 1980s, about the need for preservation of nature and green lung areas in Klang Valley. This idea was first brought up during a seminar held by DBKL in 1989. The proceedings of this seminar were later compiled into a booklet about urban green spaces in Klang Valley, titled *Conservation and Management of Urban Green: The Case of Kuala Lumpur*. This publication further emphasised the importance of preserving nature and green lungs in the Klang Valley.

Since the last three decades to present, the rapid rise of population into Klang Valley has led to a bigger townships expansions beyond its borders, once quiet residential townships in Selangor and Kuala Lumpur are mushrooming into satellite townships into bustling metropolis, and much of these developments are encroaching into these green spaces converting into mixed urban residential and commercial developments, thus leaving these once dense lush green landscapes into isolated fragments, ignoring the much needed ecological services it could have provided, and while creating an island heat effect in the city.

Despite the dense urban area in Klang Valley, especially in Kuala Lumpur, this region harbours pockets of green spaces, water bodies and natural features that can form ecological linkages. Upon careful examination during the survey, it becomes evident that the ecological connections between green spaces within the Klang Valley remain intact, despite the fragmented distribution of these areas. There are several ecological connections in Klang Valley that contribute to its overall environmental health and sustainability:

### ***Green spaces – Forest Reserves and Urban Parks***

The borders of Klang Valley is surrounded by forested areas, such as the Selangor State Park, Bukit Lagong and the Forest Research Institute Malaysia (FRIM), as well as pockets of green spaces within the landscape like the Shah Alam Community Forest, Kota Damansara Community Forest Reserve, Bukit Lanjan, Bukit Kiara and its northern counterparts, Bukit Dinding, Bukit Gasing, Ayer Hitam Forest Reserve, Bukit Besi, and Kuala Langat North Forest Reserve. Klang Valley also boasts a variety of urban parks, such as Perdana Botanical Gardens, Taman Tasik Titiwangsa, and Taman Tugu.

These forested areas not only provide habitats for a variety of plants and animals, but also play a crucial role in promoting biodiversity. In fact, the Damansara Pantai Arc forested areas have gained reputation among the local community as being particularly favourable habitats for the pangolins. These globally threatened creatures have been observed by hikers in different sections of the forested areas and presumed to utilise the underground drainage systems to navigate between the green spaces, highlighting the significance of the interconnectedness of these habitats in supporting their survival.



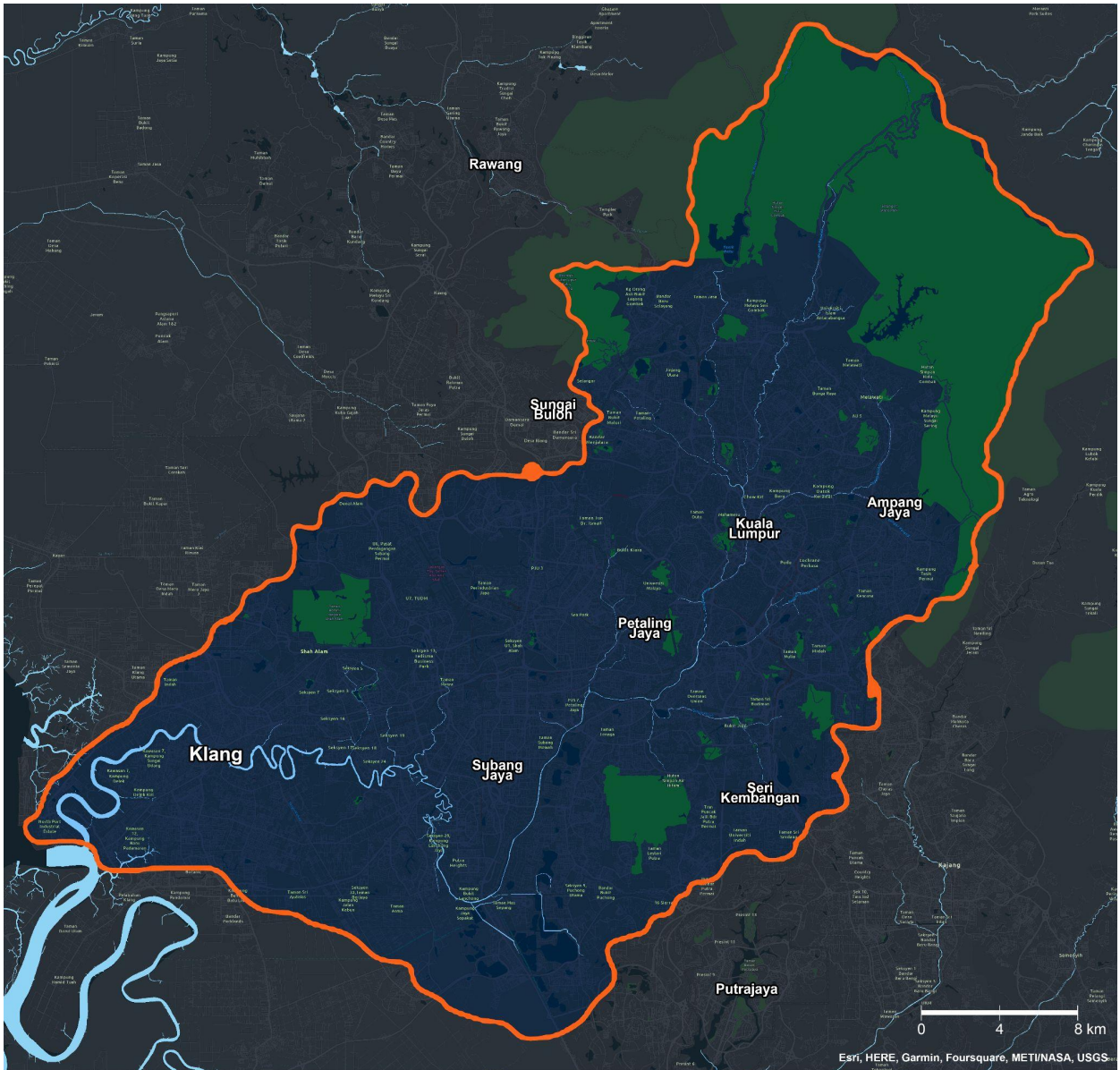
**Figure 20.** Wildlife could pass under an intersecting roadway through culverts and drainages (Photos by Vivian Soon).

### ***Rivers and waterways***

The region is intersected by numerous rivers, waterways and lake systems, including the Klang River and its tributaries. The Klang River originates from the Klang Gates Quartz Ridge in Gombak, approximately 25 kilometres northeast of Kuala Lumpur. Then the river flows downward alongside the Ampang-Kuala Lumpur Elevated Highway until it reaches the heart of Kuala Lumpur, where Gombak River converges with the Klang River behind Masjid Jamek. From there, it meanders in a south-western direction through Brickfields, Bangsar, Lembah Pantai, Old Klang Road, and Jalan Puchong. Continuing its course, the river becomes the natural border of Petaling Jaya and Subang Jaya. From PJS 7, the Klang River runs through UEP Subang Jaya before making a U-turn in Puchong and Putra Heights. Moving further downstream, the river flows through Shah Alam and Klang before reaching Port Klang, which is situated at the estuary of Klang River. Eventually, it merges with the Straits of Malacca.

At present, there are two significant initiatives that are being implemented in the Klang River Basin, namely the Selangor Maritime Gateway (SMG) and River of Life (Annex IV). These initiatives have a shared objective of rehabilitating the waterways in order to improve the water quality and structural integrity, while also placing a strong emphasis on enhancing the aesthetic appeal of the Klang River (e.g. creation of public pathways and recreational facilities along the riverbanks). Furthermore, these projects have the overarching goal of transforming the surrounding landscapes into areas with significant economic values. In light of these developments, the Klang Valley landscape strategy can play a complementary role by incorporating vital elements of ecological linkage, biodiversity and social well-being.





**Figure 21.** Klang River and its tributaries within the OP7 Klang Valley landscape boundary.

Despite being altered by urban development, these water bodies still serve as important water catchment areas for facilitating water flow and maintaining hydrological cycle in Klang Valley. The water bodies also serve as habitats for aquatic life and breeding ground for migratory waterbirds. During the baseline assessment survey, a diverse assemblage of waterbirds were observed, including the Little Egret, Intermediate Egret, Great Egret, Purple Heron, Grey Heron, Striated Heron, Black-crowned Night-Heron, and Painted Stork.

Additionally, raptors such as the Oriental Honey-Buzzard, Crested Serpent-Eagle, Changeable Hawk-Eagle, Brahminy Kite, White-bellied Sea-Eagle and Buffy Fish-Owl are often observed near water bodies. The smooth-coated otter and Asian small-clawed otters have also been observed using these water bodies to hunt and travel between green spaces.





**Figure 23. Top:** A congregation of Painted Storks in Lake Cova, Kota Damansara (Photo by Ashraf); **Bottom left:** A juvenile Brahminy Kite hunting for fishes in the lake; **Bottom right:** Smooth-coated otter utilising the lake as hunting ground. (Photo by Steven Wong).

Preserving the ecological connections between rivers and their quality is of utmost importance in order to maintain the continuous flow of water. Along these rivers is the Damansara River, which runs from Sungai Buloh to the mouth of Shah Alam, where it joins the main waterway, the Klang River. About 70% of the flow rate of the Klang River basin meets the Damansara River here. This area is also prone to flooding, where Taman Sri Muda, Shah Alam Stadium and Taman Batu 3 are particularly vulnerable. The high impervious surfaces from the dense infrastructures such as stadiums, parking lots, cement pavements and buildings, prevent rainwater from seeping into the soil or entering drainage systems (Zulkifli 2021).

It is vital to recognise that despite the presence of these ecological linkages, the ever-present urbanisation and development can still pose challenges to their preservation. Therefore, it becomes crucial to adopt a holistic approach that encompasses participatory conservation



initiatives, sustainable urban planning and designing strategies, active involvement from both the government and community, and policy support.



**Figure 22. Top:** Sungai Rumput connects the RRIM Detention Pond and Sungai Tambul Detention Pond; **Bottom:** The dried up Lake Cova in Kota Damansara has the potential to be re-established as a green connector, serving as a stormwater detention basin and recreational park.

(Photos by Vivian Soon)



The strategic team has completed a baseline analysis of the current state of the Klang Valley landscape. Following this assessment, the team engaged in an extensive brainstorming session to explore various possibilities for establishing a more resilient green connectivity between the existing green spaces within the Klang Valley. This conceptualisation is visually represented in Figure 27, which showcases the proposed potential linkages for the green spaces in Klang Valley. Additionally, Figure 28 specifically showcases the potential linkages (Annex V) within the Damansara Pantai Arc to Federal Hill region within the heart of Klang Valley (the focal area for the RUGS first phase).

### ***Ways to enhance ecological linkages***

The RUGS project recommends two main approaches to enhance ecological linkages between urban green spaces: (1) land-based corridors and (2) riparian corridors. The land-based corridors would utilise existing roadside vegetation, green spaces in utility reserves (such as beneath electricity transmission cables), and neighbourhood playgrounds. The land-based corridors would also involve establishing wildlife crossings over/under roads, highways and other barriers. The riparian corridors would involve increasing the protection of vegetation alongside drains, flood retention ponds, lakes and river reserves. The riparian corridors would also involve enhancing the ability of wildlife to move across, down to and up from the steep canalised banks of waterways.

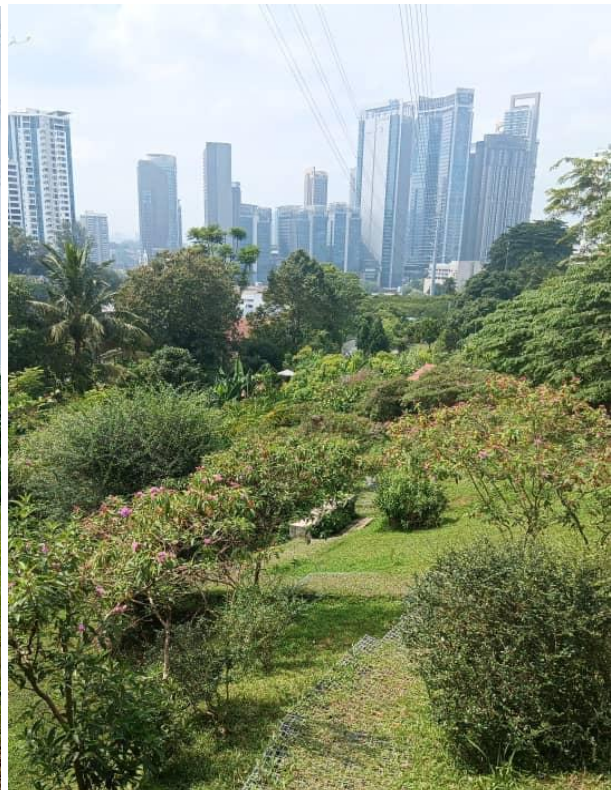


**Figure 24.** Existing culverts and drainage networks serve as ecological linkages for wildlife.





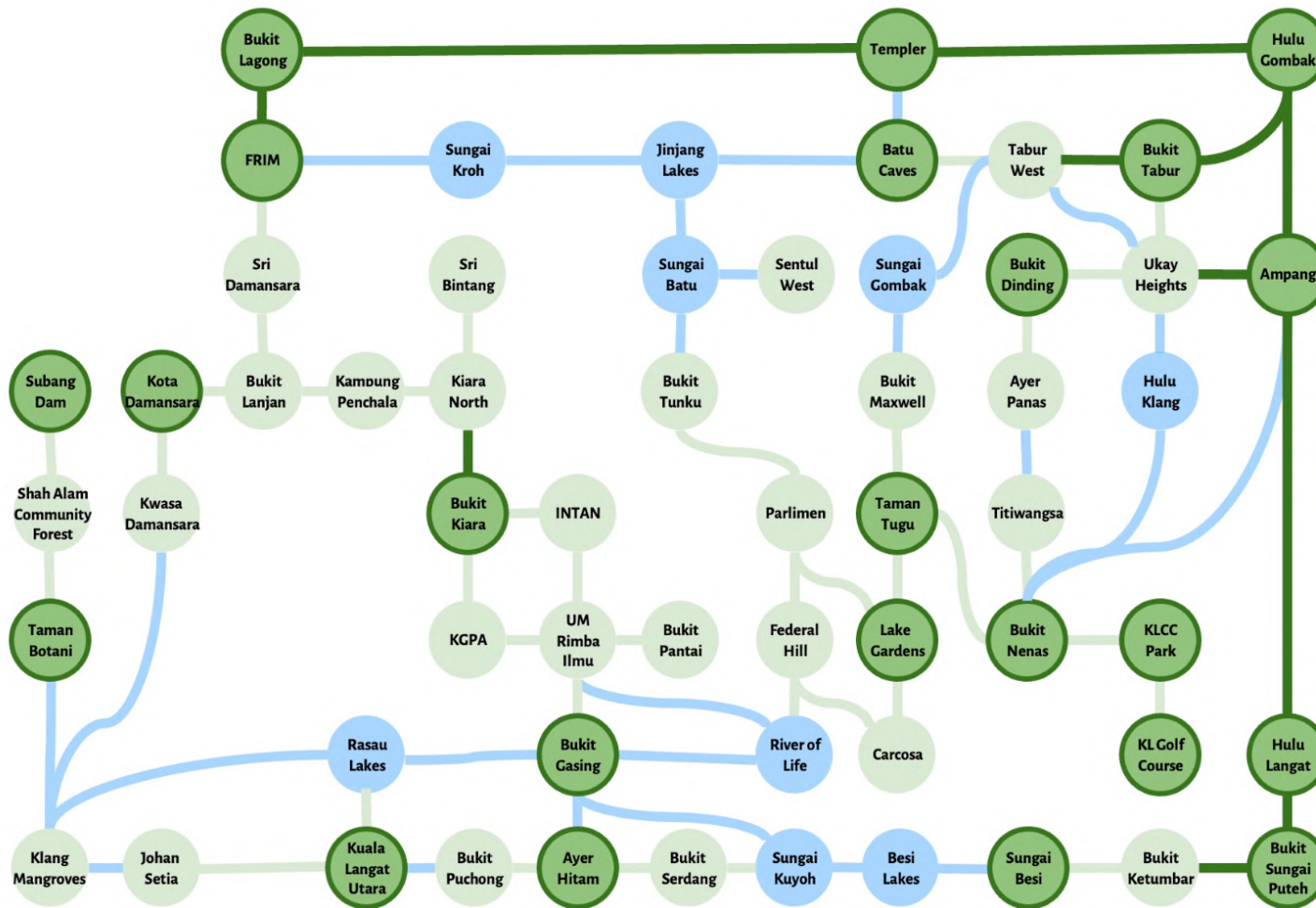
**Figure 25.** Spaces under highways can be rehabilitated to be used as viaducts.



**Figure 26.** Areas beneath the TNB powerline can be rehabilitated into urban farms or gardens, such as the Kebun-Kebun Bangsar (left) (Photos by Peter Leong).



# DRAFT Landscape Strategy



**Key**

- Protected urban green space\*
- Unprotected urban green space
- Adjoining/protected corridor
- Unprotected land-based corridor
- Unprotected riparian corridor

\* Gazetted protected areas, recreational reserves and similarly safe green space.

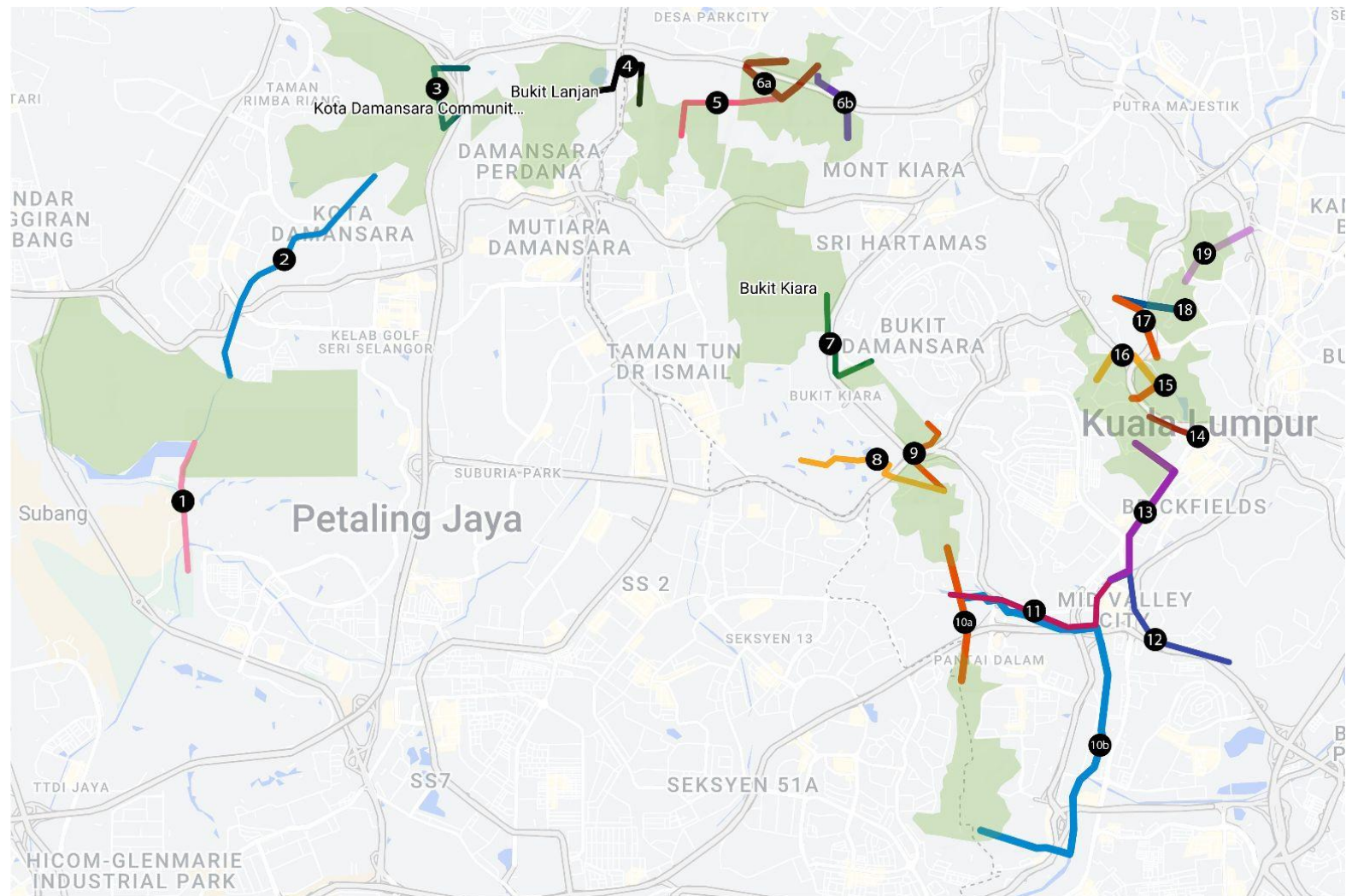
**Central Forest Spine (CFS) network link:**

**RUGS**  
Rantian Urban Green Spaces  
Klang Valley Green Connector

Figure 27. Potential linkages between the green spaces and waterways in the Klang Valley landscape.



- 1 Kwasa Damansara to Sungai Damansara
- 2 KDCF to Kwasa Damansara
- 3 Bukit Lanjan to KDCF
- 4 Kampung Sungai Penchala to Bukit Lanjan
- 5 Bukit Kiara North to Kampung Sungai Penchala
- 6a Bukit Kiara North to Sri Bintang - Culverts 1 & 2
- 6b Bukit Kiara North to Sri Bintang - Culvert 3
- 7 INTAN to Bukit Kiara
- 8 UM Rimba Ilmu to Kiara (KPGA)
- 9 UM Rimba Ilmu to INTAN
- 10a UM Rimba Ilmu to Bukit Gasing - Federal Highway
- 10b UM Rimba Ilmu to Bukit Gasing - Sungai Klang
- 11 Mid Valley to UM Varsity Lake
- 12 Mid Valley to Bukit Seputeh
- 13 Federal Hill to Brickfields to Mid Valley
- 14 Federal Hill to Muzium Negara
- 15 Federal Hill to Carcosa Sri Negara to Lake Gardens
- 16 Federal Hill to Ledang to Lake Gardens
- 17 Parliament to Lake Gardens
- 18 Parliament to Taman Tugu
- 19 Taman Tugu to JPSM to Sungai Gombak/Batu



**Figure 28.** Potential linkages between the major green spaces in Damansara Pantai Arc – Federal Hill region within Klang Valley.<sup>3</sup>

<sup>3</sup> Issues related to these sites are highlighted in Annex V.

## 2.7. Stakeholders Analysis

Below is a broad outline of the potential stakeholders that could be involved in the Klang Valley.

**Table 3.** Identified stakeholders in Klang Valley

<p><b>Government Agencies</b></p>	<ul style="list-style-type: none"> <li>● Ministry of Natural Resources, Environment and Climate Change (NRECC) <ul style="list-style-type: none"> <li>○ Forest Research Institute Malaysia (FRIM)</li> </ul> </li> <li>● Ministry of Housing and Local Government Development (KPKT)</li> <li>● Ministry of Rural and Regional Development</li> <li>● Ministry of Tourism, Arts, and Culture (MOTAC)</li> <li>● Ministry of Federal Territories (KWP)</li> <li>● Department of Town and Country Planning (PLANMalaysia) <ul style="list-style-type: none"> <li>○ Malaysian Town Planning Board</li> </ul> </li> <li>● Department of Environment (DoE)</li> <li>● Department of Irrigation and Drainage (DID)</li> <li>● Department of Orang Asli Development (JAKOA)</li> <li>● Forestry Departments</li> </ul>	<ul style="list-style-type: none"> <li>● Department of Wildlife and National Parks (DWNP) Peninsular Malaysia</li> <li>● Human Rights Commission of Malaysia (SUHAKAM)</li> <li>● Local councils and municipalities <ul style="list-style-type: none"> <li>○ DBKL (Kuala Lumpur)</li> <li>○ MBSA (Shah Alam)</li> <li>○ MBPJ (Petaling Jaya)</li> <li>○ MBSJ (Subang Jaya)</li> <li>○ MPK (Klang)</li> <li>○ MPS (Selayang)</li> <li>○ MPAJ (Ampang Jaya)</li> <li>○ MPKj (Kajang)</li> </ul> </li> </ul>
<p><b>Environmental and Conservation Groups / Organisations</b></p>	<p>Environmental conservation</p> <ul style="list-style-type: none"> <li>● Malaysian Nature Society (MNS)</li> <li>● Global Environment Centre (GEC)</li> <li>● Greenpeace Malaysia</li> <li>● Wildlife Conservation Society (WCS)</li> <li>● World Wildlife Fund for Nature (WWF) Malaysia</li> <li>● Environmental Protection Society Malaysia (EPSM)</li> <li>● Friends of Earth Malaysia (<i>Sahabat Alam</i>)</li> </ul>	<p>Protection of urban forest and landscape</p> <ul style="list-style-type: none"> <li>● Selamatkan Kuala Lumpur</li> <li>● Taman Tugu Project</li> <li>● Save Taman Rimba Kiara</li> <li>● Collective of Applied Law and Legal Realism (CALR)</li> <li>● Coalition to Save Selangor's Forest</li> <li>● Batu Caves Protection Association</li> </ul>

*Malaysia)*

- Wetlands International Malaysia
- Urban Biodiversity Initiative (UBI)
- Treat Every Environment Special (TrEES)
- GRASS Malaysia
- Friends of Nature Activist Society (KUASA)
- Centre for Environment, Technology and Development (CETDEM)
- Environmental Protection Society, Malaysia
- The Habitat Foundation
- District Action Group on Environmental Sustainability (DAGES)

Urban planning, green technology and practices

- Eats, Shoots & Roots
- Malaysian Green Building Council (MGBC)
- ThinkCity
- Zero Waste Malaysia
- RISE Foundation
- Malaysian Institute of Planners
- Energy Action Partners (ENACT)

Sustainable agriculture and urban farming

- Global Platform for Sustainable Natural Rubber
- Kebun-Kebun Bangsar
- Kebun Komuniti Hartamas

Biodiversity

- Animal Neighbours Project
- Langur Project Peninsular Malaysia
- MY Bee Savior Associations
- Justice for Wildlife
- Titiwangsa Bird Biodiversity Society

Climate Change

- MyClimate Action
- UM Water Warriors
- Klima Action Malaysia (KAMY)
- Gabungan Darurat Iklim Malaysia (GDIMY)

Outreach and education

- Free Tree Society
- EcoKnights
- Green Smiths
- Biji-Biji Initiative
- MySkills Foundation

Langit Collective

- Malaysian Agroecology Society (SRI-Mas)

<b>Elected Officials and Policy Makers</b>	<ul style="list-style-type: none"> <li>● YB Hannah Yeoh (Segambut MP)</li> <li>● YAB Dato' Seri Amirudin Shari (Gombak MP)</li> <li>● YB Rodziah Ismail (Ampang MP)</li> <li>● YB Mohd Rafizi Ramli (Pandan MP)</li> <li>● YB Mohd Sany Hamzan (Hulu Langat MP)</li> <li>● YB Syahredzan Johan (Bangi MP)</li> <li>● YB Yeo Bee Yin (Puchong MP)</li> <li>● YB Wong Chen (Subang MP)</li> <li>● YB Lee Chean Chung (Petaling Jaya MP)</li> <li>● YB Wong Chen (Subang MP)</li> </ul>	<ul style="list-style-type: none"> <li>● YB Gobind Singh Deo (Damansara MP)</li> <li>● YB Dato' Ramanan Ramakrishnan (Sungai Buloh MP)</li> <li>● YB Azli Yusof (Shah Alam MP)</li> <li>● YB Dr Hajah Halimah Ali (Kapar MP)</li> <li>● YB Ganabatirau Veraman (Klang MP)</li> <li>● YB Datuk Seri Haji Mohamad Sabu (Kota Raja MP)</li> <li>● YB Dato' Dr Ahmad Yunus Hairi (Kuala Langat MP)</li> <li>● YB Aiman Athirah Sabu (Sepang MP)</li> <li>● YB Lee Chean Chung (Petaling Jaya MP)</li> </ul>
<b>Local Community Representatives</b>	<ul style="list-style-type: none"> <li>● Kota Damansara Community Forest Society</li> <li>● Shah Alam Community Forest Society</li> <li>● Friends of Bukit Kiara</li> <li>● Friends of Klang River Basin</li> <li>● Friends of Sungai Klang Taman Melawati River Three</li> <li>● Friends of Mid Valley River Three</li> <li>● Friends of AU2 Keramat</li> <li>● Friends of Bukit Dinding</li> <li>● Friends of Bukit Gasing</li> <li>● Friends of Bukit Cherakah</li> <li>● Save Bukit Kembara</li> <li>● Friends of Sungai Kayu Ara</li> <li>● Persatuan Komuniti Hutan Wawasan</li> <li>● Persatuan Sahabat Taman Pudu Ulu</li> </ul>	<ul style="list-style-type: none"> <li>● Sahabat Taman Rimba Bukit Kerinchi</li> <li>● Kuala Lumpur Residents' Association (KLRA+)</li> <li>● Bukit Tunku Residents' Association (BTRA)</li> <li>● Bukit Bandaraya Residents' Association</li> <li>● Amansiara Residents' Association</li> <li>● Persatuan Penduduk Laman Gahal (PELAGA)</li> <li>● Kelab Pendaki Bukit Sri Bintang</li> <li>● Kelab Basikal Lasak Scarfox, Bukit Dinding</li> <li>● Bukit Desa Petaling Hiking Trail</li> <li>● Bukit Pudu Ulu Hiking Trail</li> <li>● Bukit Ketumbar Hiking Trail</li> <li>● Bukit Besi Hiking Trail</li> <li>● Persatuan Pendaki Bukit Ampang</li> <li>● Trails Association of Kuala Lumpur &amp; Selangor (TRAKS)</li> </ul>



<b>Youth and Women Groups</b>	<ul style="list-style-type: none"> <li>● Malaysian Youth Delegations (MYD)</li> <li>● Youths United for Earth (YUFE)</li> <li>● IDEAS Academy</li> <li>● Youth Environmental Living Labs (YELL)</li> <li>● Buku Jalanan Chow Kit</li> <li>● Women for Equality Association (WEA)</li> </ul>	<ul style="list-style-type: none"> <li>● Tenaganita</li> <li>● EMPOWER</li> <li>● ARROW</li> <li>● All Women’s Action Society (AWAM)</li> <li>● Women of Will (WOW)</li> <li>● Apa Kata Wanita Orang Asli</li> </ul>
<b>Indigenous Groups</b>	<ul style="list-style-type: none"> <li>● Centre for Orang Asli Concerns (COAC)</li> <li>● Jaringan Orang Asal SeMalaysia (JOAS)</li> <li>● Persatuan Mahasiswa Orang Asli</li> <li>● Indigenous Peoples Network of Malaysia (JOANGOHutan)</li> <li>● Persatuan Dayak Kuala Lumpur and Selangor (DAYAK)</li> <li>● Extraordinary People Impacting Communities (EPIC)</li> <li>● Native Discovery</li> </ul>	<ul style="list-style-type: none"> <li>● Yayasan Kajian dan Pembangunan Masyarakat (YKPM)</li> <li>● JKKK Kg Orang Asli Bukit Lagong</li> <li>● JKKK Kg Orang Asli Hulu Kemensah</li> <li>● Gerai OA</li> <li>● Apa Kata Wanita Orang Asli</li> <li>● MyChangkul</li> <li>● Pusat KOMAS</li> <li>● Gerimis Art Project</li> </ul>
<b>Academic and Research Institutions / Professional Bodies</b>	<ul style="list-style-type: none"> <li>● Tropical Rainforest Conservation and Research Centre (TRCRC)</li> <li>● Institute of Medical Research (IMR)</li> <li>● UKM Lestari</li> <li>● Rimba Ilmu@Universiti Malaya</li> <li>● Universiti Teknologi MARA (UiTM)</li> </ul>	<ul style="list-style-type: none"> <li>● Faculty of Built Environment &amp; Surveying, Tourism Planning Research Group @ University Teknologi Malaysia (UTM)</li> <li>● UM Sustainable Development Solutions Network Unit @Universiti Malaya</li> <li>● The International School@ParkCity</li> </ul>
<b>Professional Bodies</b>	<ul style="list-style-type: none"> <li>● Malaysian Institute of Planners</li> <li>● Kuala Lumpur Bar</li> </ul>	<ul style="list-style-type: none"> <li>● Selangor Bar Association</li> </ul>

<b>Businesses and Industries</b>	<ul style="list-style-type: none"> <li>● Tenaga Nasional Berhad (TNB)</li> <li>● Air Selangor Holdings Berhad</li> <li>● Bursa Malaysia</li> </ul>	<ul style="list-style-type: none"> <li>● YTL Corporation Berhad</li> <li>● Michelin Malaysia Sdn. Bhd</li> </ul>
<b>Media and Communication Outlets</b>	<ul style="list-style-type: none"> <li>● Macaranga</li> <li>● Mongabay</li> <li>● BFM</li> <li>● World of Buzz</li> <li>● SAYS</li> <li>● The Star</li> <li>● New Strait Times</li> <li>● Free Malaysia Today</li> </ul>	<ul style="list-style-type: none"> <li>● Berita Harian</li> <li>● Utusan Malaysia</li> <li>● SinChew Daily / Sin Chew Jit Poh</li> <li>● Nanyang Siang Pau</li> <li>● China Press</li> <li>● Malaysia Nanban</li> <li>● Makkal Osai</li> <li>● Tamil Malar</li> </ul>
<b>International Organisation and Donors</b>	<ul style="list-style-type: none"> <li>● BirdLife International</li> <li>● Michelin Foundation</li> <li>● Microsoft Foundation</li> <li>● Yayasan Khazanah</li> <li>● Global Peace Foundation</li> </ul>	<ul style="list-style-type: none"> <li>● Sime Darby Foundation</li> <li>● Petronas Foundation</li> <li>● Habitat Foundation</li> <li>● National Conservation Trust Fund for Natural Resources (NRECC)</li> </ul>

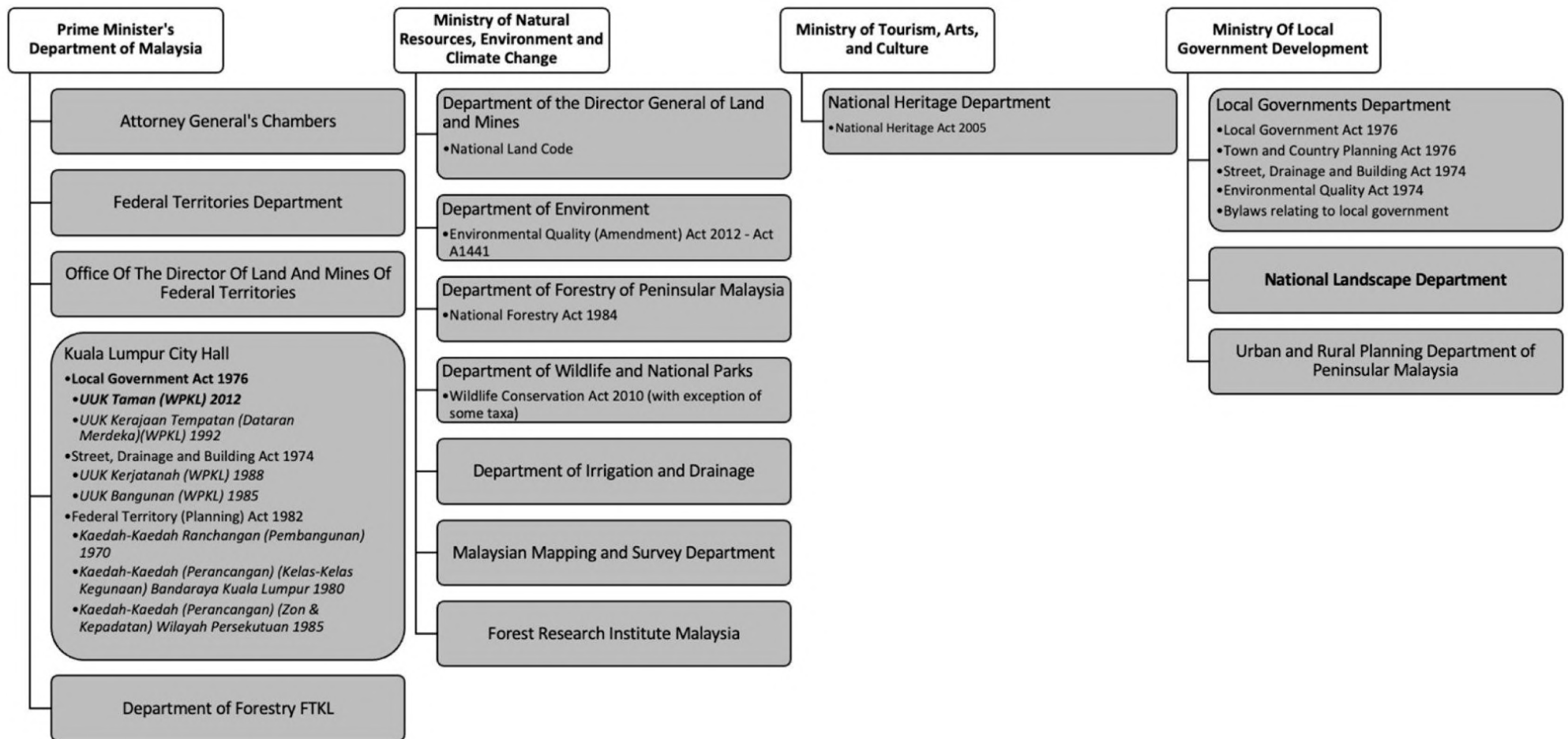


Figure 27. Governmental agencies and related laws and frameworks (Source: Justice for Wildlife Malaysia).



### 3. INTERVENTION STRATEGY

#### 3.1. Interventions

The intervention strategy and detailed targets of the Klang Valley landscape are set out as follows:

<i>Intervention</i>	<i>Notes</i>	<i>Total target</i>
<b>1. 400 hectares of land restored</b>		
1.1 Restoration of degraded agricultural lands via reforestation, creation of urban community gardens, or rehabilitation of degraded soils (improved management of peatlands)	UM & Section 12 PJ: 10ha KL (Buku Jalanan Chow Kit, Kiara,): 100 ha Johan Setia: 200 ha (mostly just outside Klang Valley) SACF, KDCF, Gombak, Batu Caves: 100 ha	100 ha
1.2 Participatory restoration of degraded forest land as part of improved landscape management / avoided deforestation / degradation	CCAs (community forests) next to Selangor State Park Potential: 150 ha/CCA x 2 sites SACF: 150 ha Bukit Kiara: 150 ha Bukit Lagong: 100 ha Bukit Dinding: 100 ha Ampang: 300 ha Gombak: 500 ha Batu Caves: 20 ha Johan Setia: 100 ha Total Potential: ~1300 ha	300 ha
<b>2. 8,000 hectares of landscapes under improved practices</b>		
2.1 Landscapes under improved management to benefit biodiversity (qualitative, non-certified)		
2.1.1 Securing and strengthening legal protection over the existing and proposed community forests and green spaces in the Klang Valley	1000 direct beneficiaries	3000 ha
2.1.2 Promoting volunteerism such as in planning and building of biking and hiking trails in community forests, producing campaign and promotional materials, organising community-based events such as outings and gotong-royong	500 direct beneficiaries	900 ha
2.1.3 Demonstrating the benefits of green spaces to the well-being of urban poor and how promotion of urban biodiversity can go hand in hand with initiative to alleviate urban	200 direct beneficiaries	100 ha

<b>Intervention</b>	<b>Notes</b>	<b>Total target</b>
poverty		
2.1.4 Developing and implementing sound management plans and master-plans for the co-management of community forests and green spaces	1000 direct beneficiaries	3000 ha
2.2 Sustainable land management in production systems: promoting improved management and participatory restoration of degraded agricultural ecosystems in the Klang Valley	200 direct beneficiaries	1000 ha
<b>3. Greenhouse gas emissions mitigated equivalent to 150 tonnes of carbon dioxide</b>		
3.1 Energy-efficient (EE) roofing and walls in urban areas: Thermal insulation for roof and wall materials together with cool roofs (white roofs) or green roofs (rooftop gardens) could lower heat wave maximum temperatures by >2°C or >2% of the energy required for air-conditioning. Assume 4 people per HH in the urban landscape.	Urban a/c averages around 3000 kWh/year/home x 2% x 10 homes x 10 years = 6000 kWh x Peninsular Malaysia grid emissions factor 0.585 tCO <sub>2</sub> e/MWh = ~3.5 tCO <sub>2</sub> e + Albedo effect (2) 0.05 tCO <sub>2</sub> e/m <sup>2</sup> x 100 m <sup>2</sup> /home x 10 homes = ~50 tCO <sub>2</sub> e over 10 years  40 direct beneficiaries, 10-year lifetime <sup>4</sup> , 10 tCO <sub>2</sub> e annual reduction	100 tCO <sub>2</sub> e lifetime reduction
3.2 Renewable Energy (RE): Off-grid solar CCHP for urban communities	Installation of off-grid solar-powered combined cooling, heating and power (CCHP) systems in 10 households (assume 4 people per HH), with average lifespan of 10 years; 20 kW x 10 = 200 kW total; 0.2 kWh/hour x 10 years x 10 HHs = 175 MWh;  Peninsular Malaysia grid emission factor 0.585 tCO <sub>2</sub> e/MWh x 175 MWh 40 direct beneficiaries, 10-year lifetime <sup>5</sup> , 10 tCO <sub>2</sub> e annual reduction	100 tCO <sub>2</sub> e lifetime reduction
3.3 Sustainable transportation: Encouraging, lobbying, advocating, policy	300 direct beneficiaries No emissions targets for the SusTrans	N/A

<sup>4</sup> Indirect benefits of energy efficient technologies being introduced, adapted, piloted and disseminated would include adoption of similar technologies by other communities; a factor of 4x is used to estimate these indirect benefits for RE and EE interventions.

<sup>5</sup> Indirect benefits of energy efficient technologies being introduced, adapted, piloted and disseminated would include adoption of similar technologies by other communities; a factor of 4x is used to estimate these indirect benefits for RE and EE interventions.

<i>Intervention</i>	<i>Notes</i>	<i>Total target</i>
	project are calculated as these are not expected to be significant	

### 3.2. Components & outcomes

**Component 1:** Resilient landscapes for sustainable development and global environmental protection.

- **Outcome 1.1:** Strengthened conservation of biodiversity and protection of ecosystem services through community collaborative management and sustainable livelihood interventions.
  - **Indicator 5:** Sustainable management of common resources, as indicated by the number of new partnerships between CBOs and enabling stakeholders (including with NGOs, protected area management entities, private sector enterprises, government departments, etc.) for participatory conservation and restoration initiatives, disaggregated by gender.
  - **Indicator 6:** Strengthening gender equality and women’s empowerment in control of natural resources, as indicated by the number of projects that are contributing to equal access to and control of natural resources by women and men.
  - **Indicator 7:** Documentation of traditional knowledge related to biodiversity, as indicated by the number of systems developed or strengthened where traditional biodiversity knowledge is documented, stored and made available to local people (e.g., traditional knowledge recordings, resource classification systems, etc.).
- **Outcome 1.2:** Increased adoption of renewable energy and energy efficient technologies and mitigation solutions at community level.
  - **Indicator 8:** Livelihood co-benefits, as indicated by the number of households benefiting from alternative livelihoods supported by clean energy solutions.
  - **Indicator 9:** Strengthened resilience and increased energy security, as indicated by the number of community level renewable energy solutions operationalized.

**Component 2:** Durable landscape resilience through participatory governance, partnership building and knowledge management.

- **Outcome 2.1:** Strengthened community institutions for participatory governance to enhance socio- ecological resilience.
  - **Indicator 10:** Participatory landscape management, as indicated by the number of landscape strategies developed or strengthened through participatory consultation and based on the socio-ecological resilience landscape baseline assessments endorsed by multi-stakeholder landscape platforms.
  - **Indicator 11:** Empowering women in natural resource governance, as indicated by the number of projects that improve the participation and decision-making of women in natural resource governance.
  - **Indicator 12:** Strengthening socioeconomic benefits for women, as indicated by the number of projects that target socioeconomic benefits and services for women.



- **Indicator 13:** Landscape priority actions mainstreamed into local planning instruments, as indicated by the uptake priority actions outlined in the landscape strategies into local development plans.
- **Outcome 2.2:** Enabling environment for upscaling and replication strengthened through effective knowledge management of best practices and approaches.
  - **Indicator 14:** Mainstreaming gender equality and women’s empowerment, number of women-led projects supported.
  - **Indicator 15:** Upscaling initiated, as indicated by the number of dialogues organised with government entities on upscaling best practices.
  - **Indicator 16:** Knowledge shared, as indicated by the number of project and portfolio experiences and lessons systematised and codified into case studies produced and disseminated, and cumulative number of views of the case studies from the SGP website, social media, or through direct dissemination.

**Component 3:** Monitoring and evaluation.

- **Outcome 3.1:** Sustainability of project results enhanced through participatory monitoring and evaluation.

**3.3. Preparation and Supervision Strategy of Lead Organisation**

The comprehensive Monitoring and Evaluation (M&E) process, in relation to the implementation of the GEF SGP OP-7 program, will be carried out meticulously in various stages.

Firstly, at the organisation level, this crucial task will be entrusted to the strategic team led by Malaysian Nature Society (MNS). Secondly, at each respective location, the host organisation/institution will diligently conduct M&E, engaging closely with the community groups directly involved in project implementation. Lastly, to guarantee the ongoing success and effectiveness of the project, regular M&E will be conducted with the National Coordinator of GEF SGP.

## 4. COMMUNITY-BASED PROJECTS

### 4.1 Criteria for Community-based Projects

The primary criterion for the community-based project selection is the ability to fulfil one or more objectives outlined in this Landscape Strategy. Additionally, the capacity and competence of the organisations/institutions and individuals involved in mobilising efforts play a crucial role in mitigating the risks of project failures.

As the lead organisation, Malaysian Nature Society (MNS) is responsible for overseeing the planning and execution of programs in accordance with this Landscape Strategy. To attain the desired outcomes, certain activities have been identified. These activities will serve as a blueprint for selecting projects in the Klang Valley landscape.

**Mandatory Indicator, GEF-7 Core Indicator 3:** Area of land restored (400 hectares)

Activities:

- **Vegetation restoration and reforestation:** Plant native trees, shrubs or grasses that are adapted and suitable to the microclimate and soil condition of the degraded site; invasive species management. This will be particularly important in degraded peatland areas such as the Johan Setia site, to the south of the landscape.
- **Erosion control and soil stabilisation:** Terracing, contour bunding, vegetation/cover crop; soil improvement.
- **Physical intervention and enhancement:** Create diverse habitats such as wildlife corridors, wildlife crossings and wetlands; provide suitable breeding, nesting site and food source for both native and migratory wildlife.
- **Water management and restoration:** Restore natural hydrology to regulate water flow and improve water quality; control soil erosion and sedimentation. This is an important issue for the peatlands to the south of the landscape, including the Kuala Langat and Johan Setia sites.

**Mandatory Indicator, GEF-7 Core Indicator 4:** Area of landscapes under improved practices (excluding protected areas) (8,000 hectares)

Activities:

- **Habitat complexity:** Create diverse and resilient ecosystems; planting a mix of species with different ecological functions within the green spaces and corridors of Klang Valley.
  - Set up nature trails, interpretive centres and signages that provide educational opportunities for visitors to learn about the local ecosystems and conservation efforts.
  - Establish community-based education centres that offer workshops, seminars and hands-on activities.

- Sustainable land use planning: Develop land use policies and regulation that promote sustainable practices within the Klang Valley landscape.
- Policies and law reformation for sustainable development: Advocate for policies and law reform that encourage protection of green spaces, and sustainable urban planning, land use and development practices:
  - Develop new subsidiary legislation for protecting green spaces including rules, regulations and by-laws related to strengthening transparency and accountability to prevent the downgrading, downsizing and degazettement of protected green spaces.
  - Develop new legislation and/or procedures to enable co-management of urban green spaces, involving public-private and civil-society partnerships. This should include developing rules governing community/social forestry inside green spaces (such as permanent forest reserves). This can also apply to co-management of green spaces that are claimed and/or occupied by Orang Asli (e.g. Hulu Kemensah, Kuala Langat).
  - Develop a system of transferable development rights (TDR), to provide financial incentives (compensation) for landowners affected by conservation proposals.
  - Develop legal provisions for implementing RUGS on private land, including land administrator's right-of-way (LAROW) and easements for public access and/or conservation of nature.
  - Recognising the position of Islam as Malaysia's official religion, explore the potential for protected areas in line with Islamic principles ('wakaf').
- Urban farming, rooftop gardens, and urban forestry: Develop urban farming initiatives, rooftop gardens or vertical farms in existing infrastructures within Klang Valley.
  - Promote local food production and sustainable land use.
  - Provide opportunities for local communities to actively engage in landscaping, gardening and habitat restoration.
- Agroforestry: Integrate tree planting with agricultural and livestock activities.
- Climate-resilient landscaping: Design and integrate landscapes that are resilient to climate change impacts (e.g. increased temperature, changing precipitation patterns, natural disasters, etc.) into the future urban planning of Klang Valley.
- Holistic soil management: Soil conservation practice such as cover cropping, crop rotation; application of organic matter, compost and mulch.
- Innovative water management: Encourage collaboration between local communities and local authorities to improve water management of the riparian landscapes within Klang Valley.
  - Rainwater harvesting and retention techniques
  - Engage residents to organise community river cleanups and discussions about long-term solutions to reduce pollution, with a focus on the RUGS riparian corridors
  - Document types and quantities of waste collected for raising awareness about pollution issues and support future advocacy efforts.
  - Advocate for policies and practices that support clean water and healthy river ecosystems.



**Mandatory Indicator, GEF-7 Core Indicator 6:** Greenhouse gas emission mitigated (150 metric tons of CO<sub>2</sub>e + 260,000 metric tons of CO<sub>2</sub>e with Crocker Range and Baram)

Activities:

- **Renewable energy and energy efficiency:** Invest in grid modernisation and energy storage technologies; retrofit buildings with energy-efficient technologies such as LED lighting and high-efficiency appliances.
- **Enhanced forest and land management:** Promote afforestation and reforestation for carbon sequestration (particularly on peatlands).
- **Green building design:** Design energy-efficient and resilient buildings using green materials and technologies; incorporate passive design principles to minimise heating and cooling requirements.
- **Carbon offset:** Carbon pricing and taxes; cap-and-trade systems to incentivise emissions; Carbon capture and storage system in industrial sectors.
- **Waste reduction and management:** Methane capture and utilisation systems in landfills; Composting; organic waste diversion to reduce landfill methane emission; waste reduction and recycling programmes.
- **Sustainable transportation:** Invest in charging infrastructure; transition to electric and hybrid vehicles; improved public transportation network.

**Mandatory Indicator, GEF-7 Core Indicator 11:** Number of direct project beneficiaries disaggregated by gender as a co-benefit of GEF investment (~10,000 individuals)

Activities:

- **Community engagement and capacity building:** Involve local communities, stakeholders and land owners (with the emphasis on participation of women, youth, indigenous people and other marginalised groups); provide training and education on sustainable land management practices.
- **Collaborate with local organisations, schools, businesses, community groups or government agencies:** Provide additional resources and support for local communities, especially for women, youth, indigenous people and other marginalised groups.
- **Gender-inclusive planning:** Conduct gender-responsive assessments; tailored outreach and engagement; address sociocultural barriers.
- **Research and Innovation:** Opportunities for research and development of new / alternative technologies and solutions for improving biodiversity, green connectivity, carbon sequestration, land restoration techniques, etc.; with equal opportunities for women, youth, indigenous people and other marginalised groups.
- **International cooperation and agreements:** Participate in global climate agreement; collaborate with other nations to address landscape issues on a larger scale.
- **Citizen science initiatives:** Involve local residents in biodiversity monitoring and citizen science projects (with equal participation opportunities to women, youth, indigenous people and other marginalised groups).
  - Contributing to scientific research and conservation efforts.
  - Opportunities for learning about scientific concepts, research methods and data analysis.

**Component 1: Resilient landscape for sustainable development and global environmental protection.**

- ❖ **Outcome 1.1:** Strengthened conservation of biodiversity and protection of ecosystem services through community collaborative management and sustainable livelihood interventions.

**Indicator 5:** Sustainable management of common resources, as indicated by the number of new partnerships between CBOs and enabling stakeholders (including with NGOs, protected area management entities, private sector enterprises, government departments, etc.) for participatory conservation and restoration initiatives, disaggregated by gender.

Activities:

- **Community engagement and capacity building:** Involve local communities, stakeholders and land owners (with the emphasis on participation of women, youth, indigenous people and other marginalised groups); provide training and education on community collaborative management of common resources.
- **Collaborative planning:** Identify key conservation areas and common resources, and develop action plans that reflect local values; Provide additional resources and support for local communities, especially for women, youth, indigenous people and other marginalised groups.

**Indicator 6:** Strengthening gender equality and women's empowerment in control of natural resources, as indicated by the number of projects that are contributing to equal access to and control of natural resources by women and men.

Activities:

- **Gender-inclusive participation:** Facilitate inclusive and meaningful participation of women in decision-making processes relating to resource allocation; tailored outreach and engagement; address sociocultural barriers.
- **Support and collaborate with women groups and networks:** Provide a platform for women to share experiences, share ideas, and collectively advocate for their rights.
- **Awareness and capacity building:** Conduct workshops, community meetings, and/or educational campaigns to raise awareness among women about their property and land rights;
- **Access to financial resources:** Promote access to financial resources, and microcredit services for women engaged in resource-based livelihoods or sustainable resource management projects.

**Indicator 7:** Documentation of traditional knowledge related to biodiversity, as indicated by the number of systems developed or strengthened where traditional biodiversity knowledge is documented, stored and made available to local people (e.g., traditional knowledge recordings, resource classification systems, etc.).

Activities:

- **Participatory mapping:** Engage with local communities, especially the Orang Asli, to visually represent places of significance (e.g. habitat or resource locations); documentation of traditional names and landmarks to enrich maps with local cultural context.
- **Art and culture integration:** Combine art and cultural activities with landscape conservation initiatives to showcase the traditional knowledge of the local communities within the Klang Valley.
  - Public art installation, street art and murals, site-specific art to engage with the community and raise awareness on biodiversity and landscape conservation.
  - Eco-friendly exhibitions that showcase works that address issues such as climate change, biodiversity loss and pollution.
- **Visual and audio documentation:** Document traditional practices and knowledge (e.g. stories, songs, rituals associated with the environment)
  - Through photography, videography or audio;
  - Capture images of flora, fauna, landscapes and cultural activities that reflect the relationship between communities and their environment.
  -

- ❖ **Outcome 1.2:** Increased adoption of renewable energy and energy efficient technologies and mitigation solutions at community level.

**Indicator 8:** Livelihood co-benefits, as indicated by the number of households benefiting from alternative livelihoods supported by clean energy solutions.

Activities:

- **Community engagement:** Conduct assessment to understand the needs and skills of target households for alternative livelihoods.
- **Training and workshops:** Provide training to equip households with skills to operate, maintain and repair clean energy solutions (e.g. solar panels, LED lightings, etc); workshops to teach households to assemble or install clean energy products.
- **Access to financing and market:** Facilitate access to funds or markets to help households invest in clean energy technologies or alternative livelihood ventures

**Indicator 9:** Strengthened resilience and increased energy security, as indicated by the number of community level renewable energy solutions operationalised.

Activities:

- **Diversification of energy sources:** Promote the use of a hybrid energy source (e.g. solar, hydro, battery storage) to reduce reliance on non-renewable energy.
- **Community energy efficiency programmes:** Implement energy-saving measures in community buildings (e.g. LED lighting, energy-efficient appliances, etc.)

**Component 2: Durable landscape resilience through participatory governance, partnership building and knowledge management.**

- ❖ **Outcome 2.1:** Strengthened community institutions for participatory governance to enhance socio-ecological resilience.

**Indicator 10:** Participatory landscape management, as indicated by the number of landscape strategies developed or strengthened through participatory consultation and based on the socio-ecological resilience landscape baseline assessments endorsed by multi-stakeholder landscape platforms.

Activities:

- **Stakeholder workshops:** Bring together stakeholders from different sectors, NGOs, local communities, and experts to collectively identify areas of significance, vulnerabilities, resources, and opportunities within the landscape; mapping the interconnectedness of social and ecological components within the landscape.
- **Community-based ecological restoration:** Involve local communities in planning and implementing ecosystem restoration projects (e.g. reforestation, habitat protection, etc.)
- **Community exchange and learning:** Facilitate knowledge exchange between experienced communities and/or communities facing similar challenges to learn from each other's experiences and strategies.

**Indicator 11:** Empowering women in natural resource governance, as indicated by the number of projects that improve the participation and decision-making of women in natural resource governance.

Activities:

- **Gender-sensitive mentorship and training programs:** Training and mentorship programs that pair experienced women leaders with emerging leaders to provide guidance and support; and address gender-specific needs and challenges related to resource governance.
- **Participatory decision-making:** Promote inclusive decision-making processes that involve women at all levels, from local community discussions to higher-level governance bodies.
- **Recognition and awards:** Recognise and celebrate women's contribution to resource governance through awards and public acknowledgements.

**Indicator 12:** Strengthening socioeconomic benefits for women, as indicated by the number of projects that target socioeconomic benefits and services for women.

Activities:

- **Capacity building and training:** Provide training in various skills including entrepreneurship, financial literacy, vocational skills and leadership to enhance women's



economic capabilities; mentorship with experienced women leaders to network and provide resources to support women entrepreneurs in launching and growing their businesses.

- **Access to financial resources:** Promote access to financial resources, and microcredit services for women to invest in business or economic growth.
- **Access to markets:** Facilitate women in connecting with markets by providing training in marketing, branding, packaging and product quality improvement.

**Indicator 13:** Landscape priority actions mainstreamed into local planning instruments, as indicated by the uptake priority actions outlined in the landscape strategies into local development plans.

Activities:

- **Stakeholder workshops:** Identify and bring together stakeholders from different sectors (e.g. forestry, water management, agriculture, town planning, etc.), NGOs, local communities, and experts in the landscape planning process.
- **Policy review:** Review existing policies and regulations to identify gaps and opportunities for aligning local planning with landscape actions.
- **Public consultation:** Involve local communities in providing their views and feedback on local development plans to ensure their involvement in the planning and implementation process.

❖ **Outcome 2.1:** Enabling environment for upscaling and replication strengthened through effective knowledge management of best practices and approaches.

**Indicator 14:** Mainstreaming gender equality and women's empowerment, number of women-led projects supported.

Activities:

- **Gender-inclusive participation:** Facilitate equal participation into planning and decision-making processes, ensuring their perspectives are considered.
- **Participatory decision-making:** Promote inclusive decision-making processes that involve women at all levels, from local community discussions to higher-level governance bodies.
- **Gender-sensitive mentorship program:** Mentorship programs that pair experienced women leaders with emerging leaders to provide guidance and support.
- **Knowledge sharing and learning:** Create platforms for sharing experiences, best practices and lessons learned between original project and the new context.

**Indicator 15:** Upscaling initiated, as indicated by the number of dialogues organised with government entities on upscaling best practices.

Activities:

- Stakeholder engagement and partnership: Identify and engage with key stakeholders including government agencies, NGOs, local communities, and partners, to gain support and input for upscaling; establish partnership to leverage on their expertise and resources.
- Funding and resources: Secure additional funding and resources (e.g. financial, technical and human) required for the expanded project.

**Indicator 16:** Knowledge shared, as indicated by the number of project and portfolio experiences and lessons systematised and codified into case studies produced and disseminated, and cumulative number of views of the case studies from the SGP website, social media, or through direct dissemination.

Activities:

- Online collaboration tools and platforms: Utilise online platforms to facilitate real-time knowledge sharing (e.g. shared documents, forums, chat platforms); establish a centralised platform to store project documents, reports and resources that can be accessed by partners.
- Knowledge-sharing events: Host events, conferences, symposiums or seminars to provide opportunity for partners to present their work, findings and insights to a larger audience; arrange informal gatherings or open spaces to have casual conversations and share ideas.
- Art and culture integration: Combine art and cultural activities with landscape conservation initiatives to showcase the traditional knowledge of the local communities within the Klang Valley.
  - Public art installation, street art and murals, site-specific art to engage with the community and raise awareness on biodiversity and landscape conservation.
  - Social media posts.

## 4.2 Upscale projects

GEF SGP Malaysia has been replicating and up-scaling successful projects by providing follow-up grants to GEF SGP grantees that have demonstrated excellent results in their first project and have organised themselves to upscale their impact into other communities. Examples of upscale projects in-line with RUGS include:

### 1. Green space expansion and restoration

- Collaborate with government agencies and like-minded conservation organisations to expand and restore the existing green spaces (e.g., forest reserves, community forest, urban parks, protected areas and wildlife corridors).

- Implement habitat restoration, reforestation and biodiversity conservation programs on a larger scale.
- Work with the authorities to develop an online spatial register of protected green spaces. This can be a component of or pilot for a national protected-area database (building on the existing protected-area master list). The register could be mandated as an update of the Director General of Land & Mines circular of the 1970s.

## 2. Green infrastructure

- Collaborate with city planners and architects to integrate green infrastructure solutions into urban design and development. This should focus on modifying existing infrastructure solutions to increase ecological connectivity (e.g. enhancing existing pedestrian crossings with supplemental functionality as wildlife-crossings).
- Explore the potential for enhancing RUGS corridors by creating more urban forest parks, green roofs, permeable pavements, etc. This can also include repurposing existing infrastructure such as decorative archways and giant billboards to enhance their value as wildlife stepping stones (e.g. for bird roosting) as well as wildlife crossings (e.g. to allow movement of city-friendly wildlife).
- Explore the potential for green building design with the twin objectives of providing wildlife habitat (for connectivity) as well as improving energy efficiency (e.g. green roofs that serve as wildlife habitat as well as cooling buildings).
- Work with the relevant water-way management authorities (Department of Drainage & Irrigation; local authority; and land office) to review the guidelines for the protection of riparian vegetation, allow for natural stream meander, and enhance access for wildlife mobility down to water, across water, and up from water.
- Work with the relevant utility management authorities (e.g. electricity transmission, telephone cables) to review the potential for utility reserves and infrastructure to function as wildlife corridors and crossings.

## 3. Transboundary conservation

- Collaborate with neighbouring states to establish transboundary conservation areas that protect shared ecosystems and biodiversity.
- Neighbouring countries for issues such as transboundary haze. This is particularly important for smoke originating from agricultural burning of peatlands, such as the Johan Setia area that is in the south of the Klang Valley landscape..

## 4. Wildlife conservation

- Identify and promote 'city-friendly' wildlife (i.e. plants and animals that are appropriate to have living alongside people in an urban setting). This can include iconic and charismatic species that can serve as flagship species for RUGS.
- Develop and implement guidelines for managing wildlife that is of conservation interest but is not 'city-friendly' (e.g. Long-tailed Macaques, civets, etc.).
- Create dedicated wildlife corridors, connecting fragmented habitats to allow for wildlife movement.
- Maintain wildlife population and ensure genetic diversity.

## 5. Eco-tourism development

- Design and develop sustainable eco-tourism projects that provide economic benefit to the local communities.
- Promote responsible travel and environmental stewardship.

## **5. STAKEHOLDER ENGAGEMENT**

### **5.1 Multi-stakeholder platform**

A multi-stakeholder platform is needed to ensure a voice for all key stakeholders, including government agencies along with local communities, NGOs, private sector, academia, and other relevant parties. These stakeholders have been identified in Section 2.8.

The governance of the protected areas in the Klang Valley landscape presently falls under various federal, state, or municipal laws and is overseen by public agencies that have been given the authority to enforce these laws. The Selangor State Park, for instance, is governed by the Selangor National Forestry Act (Adoption) (Amendment) Enactment 1985, and its day-to-day operations are managed by the Selangor State Forestry Department. However, there is room for improvement in the management structure of these protected areas. There is a particular need for establishing a co-management platform that includes representatives from local communities. Such a platform could then develop and implement a community-based forest management plan. Community members on the management committee could include representatives of residents associations, NGOs and Orang Asli representatives.

Moving forward, it is important to understand the interests, needs, concerns and influence of each stakeholder group. Subsequently, well-defined goals and objectives will be established, taking into account various factors such as the sharing of information, decision-making processes, collaborative problem-solving efforts and capacity building.

### **5.2 Stakeholder engagement principles**

The project stakeholder engagement plan is designed in accordance with the stakeholder engagement policies and guidelines set by the United Nations Development Programme (UNDP) and the Global Environment Facility (GEF):

- i. Promoting an inclusive and diverse stakeholder engagement with a tailored approach for constructive, responsive, accountable, and transparent stakeholder engagement.
- ii. Engaging stakeholders early on (in the designing stage) and throughout project implementation for ensuring fair, balanced, and inclusive participation in project governance and operation
- iii. Ensuring clear and transparent communication with relevant stakeholders.
- iv. Ensuring project's commitment for effective and meaningful stakeholder engagement by allocating sufficient budgetary resources.
- v. Respect for socio-cultural values and ethics of diverse stakeholders as one of the core principles of the engagement approach for ensuring effective participation and better results.
- vi. Developing skills and capacities of the stakeholders through project activities for sustaining the project initiatives and results.
- vii. Adapting collaborative approaches for safeguarding interests and concerns of all the stakeholders.



### **5.3 Stakeholder engagement methods**

1. Capacity development
  - a. Practical implementation of project-supported interventions to enhance learning
  - b. Organised training programmes aimed at developing specific technical and financial management skills
  - c. Stakeholder workshops
  - d. Networking with potential partners
  
2. Project knowledge management and communications
  - a. Face-to-face discussions
  - b. Social media
  - c. Website

**Table 4.** Stakeholder engagement plan in Klang Valley across the GEF-SGP OP7 project outputs.

Output	Stakeholder roles
<p><b>GEF-SGP Project Objective:</b> To enable community organisations to take collective action for adaptive landscape management in building socio-ecological resilience in the Klang Valley, Peninsular Malaysia for global environmental benefits and sustainable development</p>	
<p><b>Component 1:</b> Resilient landscapes for sustainable development and global environmental protection</p>	
<p><b>Outcome 1.1 : Strengthened conservation of biodiversity and protection of ecosystem services through community collaborative management and sustainable livelihood interventions</b></p>	
<p><b>Output 1.1.1:</b> Community level small grant projects on strengthening participatory conservation, restoration, and sustainable use of biodiversity resources and ecosystem services</p> <p><b>Output 1.1.2:</b> Capacities of CBOs for participatory conservation, restoration and nature-based livelihood initiatives developed through learning-by-doing, skills training, and financial management mentoring</p>	<ul style="list-style-type: none"> <li>● <b>Local CBOs:</b> Developing and implementing project interventions.</li> <li>● <b>NGOs:</b> Providing technical assistance in project development and introduction of innovative approaches, policy reform and advocacy.</li> <li>● <b>Federal ministries:</b> Advocating for policy reform regarding participatory conservation, e.g., community forest management; cooperating on participatory conservation initiatives with local CBOs and communities.</li> <li>● <b>Government agencies:</b> Providing technical assistance; cooperating on participatory conservation initiatives with local CBOs and communities.</li> <li>● <b>Local government units:</b> Facilitating community development and conservation initiatives, sustainable livelihood initiatives, solid waste management, gender mainstreaming, inclusion of Indigenous Peoples, etc.</li> <li>● <b>Academic institutes:</b> Providing technical assistance in introduction of innovative approaches and novel technologies.</li> <li>● <b>Private sector enterprises and associations:</b> Strengthening or establishing new partnerships with CBOs in collaborative management and sustainable livelihood interventions.</li> <li>● <b>UNDP (and other bilateral and multilateral agencies):</b> Exploring synergies, sharing experiences and lessons learned.</li> </ul>

**Outcome 1.2: Increased adoption of renewable energy and energy efficient technologies and mitigation solutions at community level**

**Output 1.2.1:** Community level small grant projects on increasing adoption of renewable energy and energy efficiency technologies and applications

**Output 1.2.2:** Capacities of CBOs for community-level climate change mitigation interventions developed through learning-by-doing, skills training, and financial management mentoring

- **Local CBOs:** Developing and implementing project interventions.
- **NGOs:** Providing technical assistance in project development and introduction of innovative approaches, policy reform and advocacy.
- **Federal ministries:** Advocating for policy reform regarding low-emission development at the community level.
- **Government agencies:** Providing technical assistance.
- **Local government units:** Facilitating community-level low-emission development, gender mainstreaming, inclusion of Indigenous Peoples, etc.
- **Academic institutes and government agencies:** Providing technical assistance in introduction of innovative approaches and novel technologies.
- **Private sector enterprises and associations:** Strengthening or establishing new partnerships with CBOs in collaborative management and mitigation solutions at community-level.
- **UNDP (and other bilateral and multilateral agencies):** Exploring synergies, sharing experiences and lessons learned.

**Component 2: Durable landscape resilience through participatory governance, partnership building and knowledge management**

**Outcome 2.1: Strengthened community institutions for participatory governance to enhance socio-ecological resilience**

**Output 2.1.1:** Multi-stakeholder platforms established and/or strengthened for improved governance of target landscapes

**Output 2.1.2:** Landscape strategies for effective governance developed based on results of participatory socio-ecological resilience baseline assessments in the selected intervention landscapes

- **Local CBOs:** Participating in the development of landscape strategies, representing the interests and concerns of local communities.
- **NGOs:** Providing technical assistance in the landscape baseline assessments and development of landscape strategies.
- **Government agencies:** Providing technical assistance and participating in the development of landscape strategies.
- **Local government units :** Participating in the development of landscape

<p><b>Output 2.1.3:</b> Partnership building and policy advocacy among governmental stakeholders, civil society, financial institutions, and private sector for facilitating broader adoption of participatory approaches</p>	<p>strategies and mainstreaming the strategies into local development plans; Promoting and assisting in ensuring equitable participation and generation of benefits for women, Indigenous Peoples and other vulnerable groups.</p> <ul style="list-style-type: none"> <li>● <b>Academic institutes and government agencies:</b> Providing technical assistance in the development of landscape strategies.</li> <li>● <b>Private sector enterprises and associations:</b> Participating in the landscape approaches.</li> </ul>
<p><b>Outcome 2.2: Enabling environment for upscaling and replication strengthened through effective knowledge management of best practices and approaches</b></p>	
<p><b>Output 2.2.1:</b> Knowledge from innovative project interventions compiled, systemized, and disseminated across the landscapes, across the country, and to the global SGP network</p>	<ul style="list-style-type: none"> <li>● <b>Local CBOs:</b> Receiving capacity building support and participating in skills training, financial management mentoring, networking with enabling stakeholders, and management of knowledge products.</li> <li>● <b>NGOs:</b> Delivering training and other capacity building support services to local CBOs.</li> <li>● <b>Federal ministries, government agencies and local government units:</b> Facilitating policy reform and knowledge sharing for strengthening community involvement in sustainable development, biodiversity conservation, etc.</li> <li>● <b>UNDP (and other bilateral and multilateral agencies):</b> Facilitating knowledge management and replication through linkages with other projects and initiatives; promoting knowledge management across the global portfolio, sharing best practices, lessons learned, and innovative approaches.</li> </ul>



## 6. CAPACITY BUILDING PLAN

The purpose of the Capacity Building Plan is to facilitate the development of knowledge, skills, and resources of the stakeholders from different sectors, organisations, indigenous people and local communities involved in the Klang Valley landscape interventions. To further empower and equip them with the needed skills, a range of activities can be undertaken:

**Table 5.** Capacity building activities.

Key areas for capacity building	Related topics for training	Outcomes
1. Project planning and management	<ul style="list-style-type: none"> <li>● Grant preparation</li> <li>● Project budgeting and resource allocation</li> <li>● Monitoring and evaluation</li> </ul>	Civil society actors or local communities have confidence and capacity for developing concepts and proposals for community-based projects.
2. Technical skill development	<ul style="list-style-type: none"> <li>● Management, implementation, reporting, monitoring and evaluation of landscape-based conservation projects</li> <li>● Data collection – Community biodiversity survey</li> <li>● Monitoring methods – Habitat assessment via GIS and remote sensing technique</li> <li>● Gender mainstreaming and inclusivity of marginalised groups in conservation initiatives and decision-making processes</li> </ul>	Participants are well-equipped with skills to initiate and implement participatory conservation projects; and are able to objectively measure the impacts associated with the protection and enrichment of landscape.
3. Landscape management	<ul style="list-style-type: none"> <li>● Participatory conservation initiatives</li> <li>● Landscape restoration technique – Tree planting (with a focus on ecological connectivity)</li> <li>● Good agroecological practices – urban greening, urban farming, etc.</li> </ul>	<p>Participants are well-equipped with skills to initiate and implement participatory conservation projects.</p> <p>Participants learn to assess, analyse and plan landscape interventions holistically, while considering the interconnected ecosystems, land</p>

	<ul style="list-style-type: none"> <li>● Water and green landscape management (particular in peatland areas)</li> <li>● Renewable energy and energy-efficient technologies</li> </ul>	uses, and needs of various stakeholders within the landscape.
4. Monitoring and Evaluation	<ul style="list-style-type: none"> <li>● Methods for monitoring and evaluating progress and outcomes of the projects</li> </ul>	Participants learn how to use monitoring tools to assess the health of the ecosystem, track progress and can objectively measure the impacts associated with the protection and enrichment of the landscape.
5. Policy and advocacy	<ul style="list-style-type: none"> <li>● Governance framework and policy</li> <li>● Policies related to landscape conservation at local, regional and national level</li> <li>● Laws, regulations and permits related to landscape conservation, land use and PAs</li> </ul>	Enables participants to engage with policy-makers, advocate for sustainable practices and influence landscape-related policies.
6. Stakeholder engagement	<ul style="list-style-type: none"> <li>● Guidance on effective engagement with local communities, landowners, indigenous groups and other stakeholders</li> <li>● Partnership and collaboration building</li> <li>● Participation in government programmes and schemes, and initiatives sponsored by private sector and other stakeholders</li> </ul>	Participants are able to network with other actors to collaboratively manage the landscape; brainstorm and resolve their challenges in implementing a conservation project; and share experiences or novel techniques.
7. Financial sustainability	<ul style="list-style-type: none"> <li>● Financial management – organisational and personal</li> <li>● Access to microcredit opportunities</li> <li>● Marketing</li> <li>● Partnership building</li> </ul>	Participants are empowered to enhance their livelihood and have knowledge in managing their finances more efficiently.

8. Knowledge management	<ul style="list-style-type: none"> <li>● Techniques for collecting, recording, documenting and reporting tacit and explicit knowledge from experts</li> <li>● Methods for creating knowledge repositories, databases and documentation systems</li> </ul>	Participants foster an appreciation for and integration of indigenous and traditional knowledge.
9. Knowledge sharing and communication	<ul style="list-style-type: none"> <li>● Communication and outreach</li> <li>● Tools and platforms – social media, photography, videography, press release, engaging with mainstream media</li> </ul>	Participants obtain necessary skills to exchange knowledge efficiently.

It is suggested that all the CBOs allocate a specific amount (RM 2,000 – 4,000) in the proposed budget to participate in capacity building activities organised by the lead organisation or/and SGP. This funding will cover travel expenses, accommodation, and meals. Additionally, it can be utilised to attend other training programs, such as agroecological courses conducted by other grantees in Sabah or Sarawak.

## 7. DELIVERING ADVOCACY FOR POLICY REFORM

A person’s access to a safe, clean, healthy, and sustainable environment is now recognised as a universal human right, following a historic resolution by the UN General Assembly on 26 July 2022. Malaysia voted in favour of the resolution, together with 160 other nations. However, Malaysia’s Federal Constitution does not expressly recognise one’s right to a clean, healthy, and sustainable environment (“environmental rights”). Article 5(1) of the Malaysian Constitution (right to life) can be interpreted to include the right to live in a reasonably healthy and pollution-free environment. Suhakam is drafting a report to address this fundamental right to live in a reasonably healthy and pollution-free environment.

In this case, especially green landscapes like recreational parks, green spaces or any forested area plays an integral part to be recognised and included in the sphere of public decision-making, this will elevate environmental rights from the realm of discretion to something that a decision-maker has a duty to consider. This newly adopted amendment would compel the re-prioritisation of environmental rights in the course of governance, thus safeguarding these available green spaces in a long run.

### *Existing Legal and Policy Frameworks*

**Table 6.** Legal and policy frameworks in Klang Valley.

Legal and Policy Frameworks	Administration	Description
National Land Code	Federal Authority and State Authority  → Department of Director General of Lands and Mines under the Ministry of Natural Resources, Environment and Climate Change (NRECC)	Laws relating to land and land tenure, registration of title to land and of dealings therewith and the collection of revenue therefrom within the Federal Territories and States of Peninsular Malaysia.
National Forestry Act 1984	State Authority (excluding Sabah and Sarawak)  → Department of Forestry of Peninsular Malaysia under the Ministry of Natural Resources, Environment and Climate Change	Administration, management and conservation of forests and forestry development within the States of Malaysia.



	(NRECC)	
Wildlife Conservation Act 2010	Federal Authority and State Authority (excluding Sarawak)  → Department of Wildlife and National Parks under the Ministry of Natural Resources, Environment and Climate Change (NRECC)	Provide for the protection and conservation of wildlife.
Environmental Quality Act 1974	Federal Authority and State Authority  → Department of Environment under the Ministry of Natural Resources, Environment and Climate Change (NRECC) → Local Governments Department under the Ministry of Local Government Development	Prevention, abatement, control of pollution and enhancement of the environment.
Local Government Act 1976	Federal Authority and State Authority (excluding Sabah and Sarawak)  → City Council, Municipal Council or District Council → Commissioner of the City of Kuala Lumpur	Laws relating to local government; outlines the form, organisational structure, functions and responsibilities of a local council.
<ul style="list-style-type: none"> <li>● Parks By-Laws <ul style="list-style-type: none"> <li>○ <i>Undang-undang Kecil Taman (WPKL) 2012</i></li> <li>○ <i>Undang-undang Kecil Taman (MBPJ) 2005</i></li> <li>○ <i>Undang-undang Kecil Taman (MPSJ) 2005</i></li> <li>○ <i>Undang-undang Kecil Taman (MPK) 2005</i></li> </ul> </li> </ul>		For administration of local authorities, officers and employees of local authorities; conduct of business; constitution of the Local Authority Fund; accounts to be kept by the authority; further powers of local authorities.

<ul style="list-style-type: none"> <li>○ <i>Undang-undang Kecil Taman (MBSA) 2005</i></li> <li>○ <i>Undang-undang Kecil Taman (MPS) 2005</i></li> <li>○ <i>Undang-undang Kecil Taman (MPAJ) 2005</i></li> <li>○ <i>Undang-undang Kecil Taman (MPKj) 2005</i></li> <li>○ <i>Undang-undang Kecil Kerajaan Tempatan (Dataran Merdeka) (WPKL) 1992</i></li> </ul>		
<p>Town and Country Planning Act 1976</p> <ul style="list-style-type: none"> <li>● National Physical Plan</li> </ul>	<p>Federal Authority and State Authority (excluding Sabah and Sarawak)</p> <p>→ National Physical Planning Council from the Department of Town and Country Planning under the Ministry of Local Government Development</p>	<p>For proper control and regulation of town and country planning in Peninsular Malaysia.</p>
<p>Federal Territory (Planning) Act 1982</p> <ul style="list-style-type: none"> <li>● <i>Kaedah-kaedah Rancangan (Pembangunan) 1970</i></li> <li>● <i>Kaedah-kaedah (Perancangan) (Kelas-Kelas Kegunaan) Bandaraya Kuala Lumpur 1980</i></li> <li>● <i>Kaedah-kaedah (Perancangan) (Zon &amp; Kepadatan) Wilayah</i></li> </ul>	<p>Federal Authority</p> <p>→ Federal Territory Planning Advisory Board</p> <p>→ Commissioner of the City of Kuala Lumpur</p>	<p>Provisions for the control and regulating of proper planning in the Federal Territory and for the levying of development charges.</p>

<p><i>Persekutuan 1985</i></p> <ul style="list-style-type: none"> <li>● Kuala Lumpur Structure Plan (2020)</li> </ul>		
<p>Street, Drainage and Building Act 1974</p> <ul style="list-style-type: none"> <li>● <i>Undang-undang Kecil Kerjatanah (WPKL) 1988</i></li> <li>● <i>Undang-undang Kecil Bangunan (WPKL) 1985</i></li> </ul>	<p>State Authority (excluding Sabah and Sarawak)</p> <p>→ Local Governments Department under the Ministry of Local Government Development</p>	<p>Amend and consolidate the laws relating to street, drainage, and building in local authority areas in Peninsular Malaysia.</p>
<p>National Heritage Act 2005</p>	<p>Federal Authority and State Authority</p> <p>→ Department of National Heritage under the Ministry of Tourism, Arts, and Culture</p>	<p>Conservation and preservation of National Heritage, natural heritage, tangible and intangible cultural heritage, underwater cultural heritage, treasure trove and related matters.</p>
<p>Social Forestry Strategic Plan of Malaysia 2021-2025</p>	<p>Federal Authority and State Authority</p> <p>→ Ministry of Natural Resources, Environment and Climate Change (NRECC)</p>	<p>Provides direction and framework for implementing social forestry programmes in Malaysia, including strategy for empowering indigenous people and local communities.</p>
<p>National Landscape Policy</p>	<p>Federal Authority and State Authority</p>	<p>Operational guide based on the approach of a sustainable ecosystem, taking into consideration existing policies and sectors.</p>
<p>National Forestry Policy</p>	<p>Federal Authority and State Authority</p>	<p>Protection and conservation of forests through systematic forest development programmes with appropriate silvicultural practices and managed based on principles of sustainable product management to maximise the socio-economic benefits and the environment.</p>

National Urbanisation Policy	Federal Authority and State Authority (excluding Sabah and Sarawak)	Formation of city image and identity that is appropriate with local functions and culture, and translated through landscape developments and preparation of comprehensive Landscape Master Plans.
National Biodiversity Policy	Federal Authority and State Authority	Conservation of Malaysia's biodiversity and ensuring the Nation's biodiversity resources are wisely managed for future generations.
Green Technology Policy <ul style="list-style-type: none"> <li>Green Technology Master Plan Malaysia 2017-2030</li> </ul>	Federal Authority and State Authority → Ministry of Natural Resources, Environment and Climate Change (NRECC)	Providing direction and outlines strategic plans for green technology development to create a low-carbon and resource efficient economy.

### **Way Forward**

Existing legislation can be enhanced by enacting a framework to recognise urban forest parks and to provide clearer administrative mechanisms. This would include more transparency and avenue for public participation related to the gazettelement and degazettelement of green spaces. In particular, this legislation could include new by-laws accompanying National Land Code Section 62; and the amendment of the existing Parks By-Laws (*Undang-undang Kecil Taman*) under the Local Government Act 1976. It is also possible to enhance existing protection by creating hunting prohibited areas on top of existing green lungs by using the provisions of the Wildlife Conservation (Hunting Prohibited Areas) (Amendment) Order 2020.



## 8. MONITORING AND EVALUATION PLANS

The progress of the project, including corresponding indicators as well as mid-term and end-of-project targets, will be monitored on an annual basis. This monitoring will allow for periodic evaluations throughout the project's implementation. The structured outline for the M & E plan is envisioned in Annex V.

**Component 3:** Monitoring and evaluation.

- **Outcome 3.1:** Sustainability of project results enhanced through participatory monitoring and evaluation.

Activities:

- Establishment of a mentoring M&E system to enable two-way active interaction between lead organisation and community groups.
- Lead organisation prepares supporting M&E guidelines with community groups implementing the project.
- Lead organisation undertakes capacity building efforts for the community groups implementing the project.
- Lead organisation provides assistance and monitoring to ensure that community groups implementing the project fulfil the program indicator.

## 9. KNOWLEDGE MANAGEMENT PLAN

The programme's implementation will provide valuable experiences and lessons that can greatly benefit various stakeholders, particularly in relation to enhancing the resilience of urban communities and their efforts in landscape and biodiversity management. The lead organisation, MNS along with various community groups and institutions (grantees), will thoroughly record and document every stage of the project, from its inception to its completion. This comprehensive documentation will encompass not only the progress, but also capture the valuable insights and narratives shared by the local communities of the Klang Valley.

To ensure that a wider audience can access this information, the documentation will be provided in both English and Bahasa Malaysia. Hence, all NGOs or CBOs (under the SGP grant) are required to allocate a certain amount for the translation and production of knowledge products. Community groups who may not have a strong command of the English language may be required to allocate approximately RM2,000 for the translation of the final report into English (if the report is in Bahasa Malaysia). Furthermore, the budget for knowledge products may range from RM5,000 to RM10,000, depending on the content and scope of knowledge products.

Establishing effective collaboration and cooperation with various stakeholders who share the common interest for biodiversity, landscape and cultural preservation is of utmost importance. By participating in such communities, individuals can tap into a collective pool of knowledge and gain insights from various perspectives.

The project will actively encourage and support the participation of youths, women and indigenous groups within the Klang Valley in the documentation effort. Involving local communities in the documentation process is essential as it fosters a sense of ownership and responsibility for their landscape, ultimately enhancing the project's effectiveness and ensuring its long-term sustainability. MNS had initiated a preliminary discussion with the Political Secretary of the Ministry of Sports Youth Minister, Ms Yap Yee Vonne, in late June about the project. As a result of this meeting, the team members received support and guidance to incorporate RUGS into the Ministry's 'Rakan Muda' campaign, which aims to engage the youth of Malaysia in various sports and recreational activities.

### **Communication Plan**

The RUGS concept via its external communication shall be positioned strategically to feature some of these novel studies from nature conservation especially emphasising the unique biodiversity of flora and fauna species found and still thriving in the expanding development city landscapes by optimising the various media communication channels available.

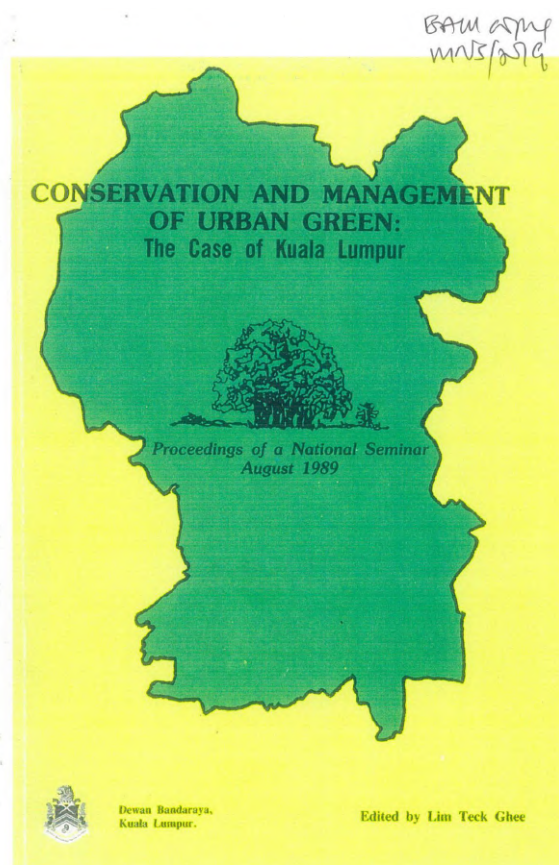
Cases and stories of these unique biodiversity findings shall deliver the key message of ecological importance towards habitat protection within the city landscapes and its relation to the well-being living in harmony with nature. MNS shall engage, consult and seek participation of the various conservation action groups from the Klang Valley communities championing towards these nature protection cause, namely SACF, FOBK, KDCF, Friends of Bukit Gasing, other NGO/CSOs and even DWNP/Perhilitan, to present their wildlife encounters and learned experiences contributing to the RUGS concept overall, emphasising about the importance of biodiversity and landscape protection undertaken since the project incepted in April 2023.

One of the prime media vehicles today trending in Klang Valley is the BFM radio station, a talk radio station aired in the Klang Valley and which have initiated a campaign drive to stress the importance of green spaces and ecological connectivity by exclusively highlighting issues faced within the Central forest Spine (CFS) and the threat of biodiversity loss namely on Tigers, Malyan Tapir, etc. BFM has also a vast collection of podcast specials with topics concerning heritage, environmental issues, health and living, even towards perception about parks and recreations. Few recently aired podcasts pertinent to the RUGS concept showcased topics such as *Park Divide* by Lim Sheau Yun in November 2022, and *It Takes a Village - The Story of Saving Taman Rimba Kiara* in May 2023. These podcasts were aired within its late night segment of 'I Love KL' and for weekdays afternoon show 'Earth Matters'. The target audience of BFM comprises mostly Klang Valley listeners due to a wide range of hard pressing issues affecting the city and nation, governance to policies subjects, and had conducted prominent interviews with stakeholders; prominent biz leaders and including federal ministers.

Other media platforms to pitch for media publication optimisation shall be the newsprints and digital websites and with different language mediums, conducted in stages, depending on the timeframe of the RUGS project to be rolled out until 2026. MNS has initially pitched its press release [W RUGS The Star draft.docx](#) to the Star publication in May 2023, but was embargoed by the environment desk editor, due to the political climate in

Malaysia for the coming General Elections in August and overwhelming post paid advertorial from many biz clientele on their ESG services. MNS was advised by the Star publication editorial desk to resend anew in September 2023. The Star publication exclusively features comprehensive news feature coverage on their weekend segments such as Star Ecowatch, Star Metro and Star Lifestyle. The other Star publication that is currently trending is the Star Biz7 that features an in-depth series of Environment Social and Governance(ESG) services provided from the corporate sectors.

MNS is strategically pursuing prime media coverage for RUGS to showcase its master plan to the Klang Valley audience. This includes other media vehicle owners from print and digital; New Straits Times, The Sun, Harian Metro, Malaysiakini, Sin Chew and while hosting a dedicated social media account on Facebook, Instagram, TikTok. MNS is also collaborating with *Creative 126 & Samasana Studio*, a group of ingenious talented ladies that showcased the endangered traits and cultural stories of Orang Asli into visual communication and artforms. One of their notable works is *Gerimis Art* which compliments the true essence of RUGS concept and its knowledge management.



**Figure 29.** The front cover of Conservation and Management of Urban Green: The Case of Kuala Lumpur. From the proceedings of a National Seminar organised by the Institute for Advanced Studies, University of Malaya. August 1989. Published by DBKL 1992.

The importance of knowledge management lies in its ability to preserve critical information and ensure that it is easily accessible to the public and decision-makers. There are several ways to effectively capture and record this valuable knowledge. The approach

and documentation media are vast, from traditional methods such as note-taking or writing, to more modern techniques like audio-visual documentation. Interviews or consultations with subject matter experts are another effective way to capture knowledge. By engaging in conversation with individuals who possess valuable expertise and knowledge, one can extract insights and best practices that may not be available through formal documentation. For instance, the traditional knowledge of the Orang Asli in landscape restoration techniques. These interviews can take the form of one-to-one discussion, group session, or even recorded conversations. Additionally, artistic forms of expression such as drawings, poetry and songs can also serve as effective means of communicating this knowledge to a wider audience.

Once the knowledge has been captured, it needs to be organised and stored in a way that facilitates easy retrieval and dissemination. With the advancement of technology, digital platforms and databases have become popular for storing and accessing knowledge. These platforms also provide collaborative features, allowing multiple users to contribute, update and access in real-time. To ensure effective dissemination of information, it is imperative that selected platforms are user-friendly to a wide range of audience.

**Table 6.** Communication strategy.

Stages of communication	Communication medium
<b>CONSOLIDATE</b> – Gathering information	<ol style="list-style-type: none"> <li>1. Case study review <ul style="list-style-type: none"> <li>● Extract information from individual case studies produced by grantees’ projects</li> <li>● Concept development, planning process, best practices, lessons learned, traditional knowledge, etc.</li> </ul> </li> </ol>
<b>ESTABLISH</b> – Building the base	<ol style="list-style-type: none"> <li>1. Website <ul style="list-style-type: none"> <li>● Information architecture</li> <li>● Populate with content</li> </ul> </li> <li>2. Social media platforms <ul style="list-style-type: none"> <li>● Setting up dedicated pages</li> <li>● Facebook, Instagram, Twitter, Tik Tok, etc.</li> </ul> </li> <li>3. Prints <ul style="list-style-type: none"> <li>● Multi-representative report</li> <li>● Informative booklet &amp; leaflet</li> <li>● Can be replicated digitally</li> </ul> </li> <li>4. Journal <ul style="list-style-type: none"> <li>● Scientific article</li> </ul> </li> </ol>
<b>AWARENESS</b> – Activation	<ol style="list-style-type: none"> <li>1. Social media campaigns <ul style="list-style-type: none"> <li>● Introducing the projects</li> </ul> </li> </ol>

	<ul style="list-style-type: none"> <li>● Introducing the partners</li> <li>● Can be static media or video</li> </ul> <ol style="list-style-type: none"> <li>2. Press conference and media coverage <ul style="list-style-type: none"> <li>● Reach a wider audience</li> <li>● E.g., BFM, Malaysiakini, Macaranga</li> <li>● Podcast</li> </ul> </li> <li>3. Outreach events <ul style="list-style-type: none"> <li>● Public talks</li> <li>● Workshops</li> <li>● Symposiums</li> <li>● Knowledge fair</li> </ul> </li> <li>4. Partnership <ul style="list-style-type: none"> <li>● Community groups with common interest</li> </ul> </li> <li>5. Journal publication <ul style="list-style-type: none"> <li>● Sharing of scientific information</li> </ul> </li> </ol>
<p><b>ENGAGEMENT</b> – Retaining audience</p>	<ol style="list-style-type: none"> <li>1. Website content <ul style="list-style-type: none"> <li>● Community stories</li> <li>● Articles</li> <li>● Podcast</li> <li>● Open source dat</li> <li>● Booklet – about the project, lessons learned, traditional knowledge and folklore of the Orang Asli, etc.</li> </ul> </li> <li>2. Social media <ul style="list-style-type: none"> <li>● Posts showing the day-to-day behind the scenes</li> <li>● Updates on project</li> <li>● Idea sharing</li> </ul> </li> <li>3. Regular journal publications</li> <li>4. Engaging schools</li> <li>5. Merchandising</li> </ol>

## 10. RISK MANAGEMENT PLAN

UNDP’s Enterprise Risk Management (ERM) System defines risk as “the effect of uncertainty on organisational objectives, which could be either positive and/or negative”. This includes the



influence of UNDP activities on external factors, such as the well-being of people and the environment. UNDP ERM focuses on mitigating and managing the potential negative effects, but seeks to maximise positive effects wherever possible. The purpose of this risk management is to enhance the effectiveness and relevance of the programme through adapted and informative decision-making; enable exploration of innovative solutions and safeguard the people and environment. The risks, impact and probability as well as mitigating measures are highlighted in Annex VII.

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**ANNEX I: LANDSCAPE AND BIODIVERSITY SURVEY SITES FOR GREEN CONNECTIVITY WITHIN KLANG VALLEY.**

**Table 1.** Sites surveyed for potential connectivity.

No.	Sites	District	GPS Coordinate
1.	Bukit Changkat Tunku	Federal Territory of Kuala Lumpur	3.16130, 101.67888
2.	Bukit Dinding	Federal Territory of Kuala Lumpur	3.19161, 101.74982
3.	Bukit Gasing (Taman Rimba Bukit Kerinchi)	Federal Territory of Kuala Lumpur	3.09705, 101.66343
4.	Bukit Kiara	Federal Territory of Kuala Lumpur	3.14587, 101.63433
5.	Bukit Kiara North	Federal Territory of Kuala Lumpur	3.17707, 101.63724
6.	Bukit Maxwell	Federal Territory of Kuala Lumpur	3.15822, 101.68799
7.	Bukit Persekutuan	Federal Territory of Kuala Lumpur	3.13814, 101.67887
8.	Bukit Sri Bintang	Federal Territory of Kuala Lumpur	3.18444, 101.64304
9.	Carcosa Seri Negara	Federal Territory of Kuala Lumpur	3.14314, 101.68127
10.	INTAN	Federal Territory of Kuala Lumpur	3.14087, 101.65339
11.	Kampung Sungai Penchala	Federal Territory of Kuala Lumpur	3.17321, 101.62672
12.	Kebun-Kebun Bangsar	Federal Territory of Kuala Lumpur	3.12413, 101.66890
13.	Perdana Botanical Garden	Federal Territory of Kuala Lumpur	3.14332, 101.68498
14.	Rimba Ilmu, University Malaya	Federal Territory of Kuala Lumpur	3.13074, 101.66010
15.	Taman Tasik Titiwangsa	Federal Territory of Kuala Lumpur	3.17738, 101.70707
16.	Taman Tugu	Federal Territory of Kuala Lumpur	3.15392, 101.68405
17.	Urban Orchard Kuala Lumpur	Federal Territory of Kuala Lumpur	3.13505, 101.63162
18.	Bukit Gasing (Petaling Jaya)	Petaling	3.09541, 101.65625
19.	Bukit Lanjan	Petaling	3.17887, 101.61083
20.	Kwasa Damansara	Petaling	3.14238, 101.57221
21.	TNB Corridor along Tropicana	Petaling	3.12702, 101.57686

**Table 2.** Cumulative species count at each surveyed site.

	KD	BL	KSP	BSB	BKN	IN	RI	BG	BP	CSN	TT	BM	CTH	TOTAL
<b>Plants</b>	120	212	194	181	90	101	76	222	163	100	109	158	213	<b>1939</b>
<b>Mammals</b>	4	5	5	4	5	2	4	5	5	2	3	4	4	<b>52</b>
<b>Birds</b>	69	52	48	39	59	23	51	42	47	23	24	28	22	<b>527</b>
<b>Reptiles</b>	12	13	15	9	14	6	8	10	5	2	5	6	4	<b>109</b>
<b>Amphibians</b>	10	16	11	9	11	6	10	10	10	6	7	6	10	<b>122</b>
<b>Butterflies</b>	21	32	18	4	11	6	9	7	7	2	9	8	6	<b>140</b>
<b>Dragonflies</b>	6	6	10	0	8	1	5	3	4	0	1	0	5	<b>49</b>

\*KD = Kwasa Damansara; BL = Bukit Lanjan; KSP = Kampung Sungai Penchala; BSB = Bukit Sri Bintang; BKN = Bukit Kiara North; IN = INTAN; RI = Rimba Ilmu; BG = Bukit Gasing; BP = Bukit Persekutuan; CSN = Carcosa Seri Negara; TT = Taman Tugu; BM = Bukit Maxwell; CTH; Changkat Tunku Hill

## ANNEX II: POPULATION AND DEMOGRAPHY OF KLANG VALLEY

**Table 1.** Population in Klang Valley on census year 2020.

District	Population	Area (km <sup>2</sup> )	Population density (individual per km <sup>2</sup> )
Kuala Lumpur	1,982,112	243.0	8,157
Putrajaya	109,202	49.3	2,215
Petaling	2,298,130	487.0	4,719
Klang	1,088,942	631.6	1,724
Hulu Langat	1,400,461	832.9	1,681
Gombak	942,400	652.7	1,444
Selangor	325,244	551.6	590
Kuala Langat	307,449	855.4	359
<b>Total Population</b>	<b>8,453,940</b>	<b>4,303.4</b>	<b>1,965</b>

Source: Department of Statistics Malaysia (2020)

**Table 2.** Population in Klang Valley on census year 2020.

District	Age	Population (thousands)		Stratum	Population (thousands)	
<b>Kuala Lumpur</b>	0-14 years	395.8	20.0%	Urban	1,982.0	100.0%
	15-64 years	1,455.9	73.5%	Rural	0.0	0.0%
	> 65 years	130.4	6.6%			
<b>Putrajaya</b>	0-14 years	41.5	38.0%	Urban	109.2	100.0%
	15-64 years	66.2	60.6%	Rural	0.0	0.0%
	> 65 years	1.5	1.4%			
<b>Petaling</b>	0-14 years	495.0	21.5%	Urban	2,298.1	100.0%
	15-64 years	1,638.2	71.3%	Rural	0.0	0.0%
	> 65 years	164.9	7.2%			
<b>Klang</b>	0-14 years	231.2	21.2%	Urban	1,084.6	99.6%
	15-64 years	780.4	71.7%	Rural	4.4	0.4%
	> 65 years	77.3	7.1%			
<b>Hulu Langat</b>	0-14 years	307.2	21.9%	Urban	1,367.6	97.7%
	15-64 years	993.2	70.9%	Rural	32.8	2.4%
	> 65 years	100.0	7.1%			
<b>Gombak</b>	0-14 years	216.5	23.0%	Urban	937.0	99.4%
	15-64 years	664.8	70.5%	Rural	5.4	0.6%
	> 65 years	61.1	6.5%			
<b>Selangor</b>	0-14 years	74.9	23.0%	Urban	309.1	95.1%
	15-64 years	231.0	71.0%	Rural	16.1	5.0%
	> 65 years	19.3	5.9%			
<b>Kuala Langat</b>	0-14 years	72.5	23.6%	Urban	226.8	86.8%
	15-64 years	215.1	70.0%	Rural	40.7	13.2%
	> 65 years	19.8	6.5%			

Source: Department of Statistics Malaysia (2020)



**Table 3.** Statistics of employment in Klang Valley.

District	Labour type <sup>6</sup>	Number of individuals (thousands)	Employment status	Number of individuals (thousands)	Unemployment rate
Kuala Lumpur	Labour force	910.6	Employed	874.6	4.0%
	Non-labour force	N/A	Unemployed	36.0	
Putrajaya	Labour force	36.7	Employed	36.2	1.4%
	Non-labour force	13.9	Unemployed	0.6	
Petaling	Labour force	1,212.5	Employed	1,159.7	4.4%
	Non-labour force	363.4	Unemployed	52.7	
Klang	Labour force	570.6	Employed	549.7	3.7%
	Non-labour force	176.6	Unemployed	20.9	
Hulu Langat	Labour force	745.4	Employed	706.4	5.2%
	Non-labour force	251.8	Unemployed	39.0	
Gombak	Labour force	454.7	Employed	432.7	4.8%
	Non-labour force	153.9	Unemployed	22.0	
Sepang	Labour force	151.3	Employed	144.8	4.3%
	Non-labour force	48.2	Unemployed	6.5	
Kuala Langat	Labour force	149.1	Employed	144.9	3.8%
	Non-labour force	55.0	Unemployed	4.2	

Source: Department of Statistics Malaysia (2020).

**Table 4.** Ethnicity of the Klang Valley population.

District	Ethnicity	Population (individuals)	Percentage (%)
Kuala Lumpur	Bumiputera	846,339	47.7
	Chinese	737,161	41.6
	Indian	178,099	10.0
	Others	12,067	0.7
Putrajaya	Bumiputera	104,144	97.9
	Chinese	670	0.6
	Indian	1,303	1.2
	Others	264	0.2
Petaling	Bumiputera	1,096,926	52.6
	Chinese	762,735	36.5
	Indian	211,756	10.1
	Others	15,881	0.8
Klang	Bumiputera	541,913	54.7
	Chinese	251,530	25.4
	Indian	189,552	19.1
	Others	7,701	0.8

<sup>6</sup> Labour force refers to the population aged 15 to 64 years, who are either employed or unemployed. Non-labour force consists of those who are not classified as employed or unemployed, such as housewives, students, retirees, disabled person and those not interested in looking for jobs.

Hulu Langat	Bumiputera	812,440	63.0
	Chinese	362,293	28.1
	Indian	106,092	8.2
	Others	8,462	0.7
Gombak	Bumiputera	565,310	64.6
	Chinese	200,496	22.9
	Indian	95,503	10.9
	Others	14,121	1.6
Sepang	Bumiputera	201,683	68.8
	Chinese	58,160	19.8
	Indian	30,468	10.4
	Others	2,892	1.0
Kuala Langat	Bumiputera	205,011	70.5
	Chinese	53,101	18.3
	Indian	31,624	10.9
	Others	1,045	0.4

Source: Department of Statistics Malaysia (2020)

**Table 5.** Religion of the Klang Valley population

District	Religion	Population (individuals)	Percentage (%)
Kuala Lumpur	Islam	897,637	45.3
	Buddhism	639,619	32.3
	Christianity	127,695	6.4
	Hinduism	162,926	8.2
	Other	35,045	1.8
	No religion / Unknown	119,190	6.0
Putrajaya	Islam	106,132	97.2
	Buddhism	553	0.5
	Christianity	880	0.8
	Hinduism	1,152	1.1
	Other	98	0.1
	No religion / Unknown	407	0.4
Petaling	Islam	1,227,247	53.4
	Buddhism	625,077	27.2
	Christianity	175,618	7.6
	Hinduism	222,562	9.7
	Other	26,215	1.1
	No religion / Unknown	21,411	0.9
Klang	Islam	606,824	55.7
	Buddhism	232,623	21.4
	Christianity	41,352	3.8
	Hinduism	184,432	16.9
	Other	18,048	1.7
	No religion / Unknown	5,663	0.5

Hulu Langat	Islam	889,562	63.5
	Buddhism	317,630	22.7
	Christianity	64,196	4.6
	Hinduism	101,610	7.3
	Other	18,939	1.4
	No religion / Unknown	8,524	0.6
Gombak	Islam	627,052	66.5
	Buddhism	172,400	18.3
	Christianity	38,928	4.1
	Hinduism	89,997	9.5
	Other	8,261	0.9
	No religion / Unknown	5,762	0.6
Sepang	Islam	221,158	68.0
	Buddhism	51,919	16.3
	Christianity	10,544	3.2
	Hinduism	31,214	9.6
	Other	4,612	1.4
	No religion / Unknown	4,797	1.5
Kuala Langat	Islam	210,834	68.6
	Buddhism	47,634	15.5
	Christianity	5,316	1.7
	Hinduism	31,983	10.4
	Other	7,595	2.5
	No religion / Unknown	4,087	1.3

Source: Department of Statistics Malaysia (2020)

**ANNEX III: ORANG ASLI VILLAGES AND THEIR POPULATION SIZE AND AROUND THE KLANG VALLEY.**

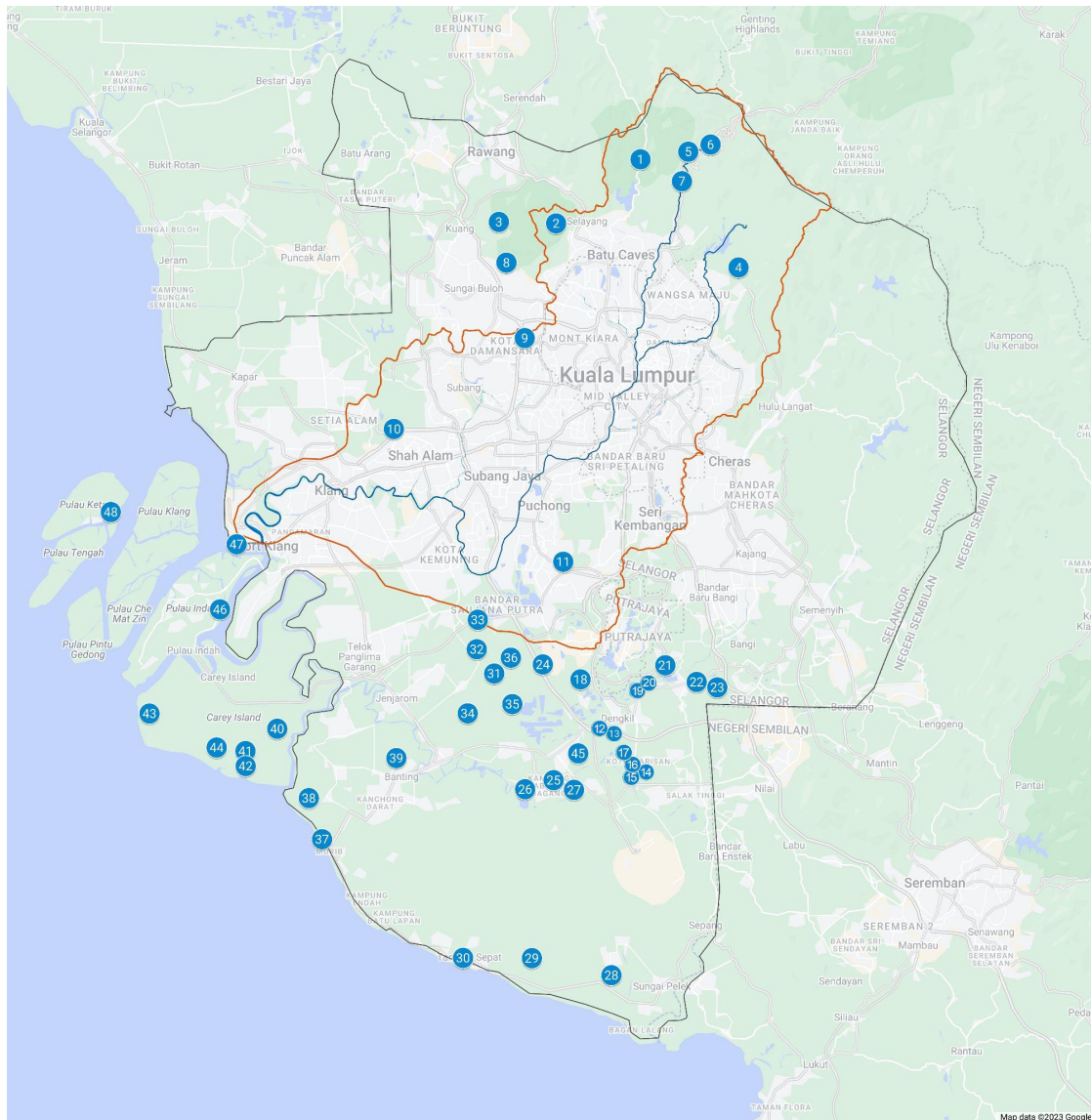
<b>No.</b>	<b>Village</b>	<b>District</b>	<b>Parlimen</b>	<b>DUN</b>	<b>Population (individuals)</b>	<b>Area (ha)</b>
1.	Kampung Orang Asli Ulu Batu	Gombak	Selayang	Taman Templer	124	18.66
2.	Kampung Orang Asli Bukit Lagong	Gombak	Selayang	Taman Templer	125	26.58
3.	Kampung Orang Asli Hulu Kuang	Gombak	Selayang	Kuang	425	29.95
4.	Kampung Orang Asli Hulu Kemensah	Gombak	Gombak	Hulu Kelang	102	25.85
5.	Kampung Orang Asli Sungai Relang	Gombak	Gombak	Gombak Setia	10	16.53
6.	Kampung Orang Asli Batu 16	Gombak	Gombak	Gombak Setia	74	7.97
7.	Kampung Orang Asli Km 24, Gombak	Gombak	Gombak	Gombak Setia	1253	56.76
8.	Kampung Orang Asli Sungai Buloh	Gombak	Subang	Paya Jaras	169	16.00
9.	Kampung Orang Asli Bukit Lanjan	Petaling	Subang	Bukit Lanjan	683	16.82
10.	Kampung Orang Asli Air Kuning	Petaling	Shah Alam	Kota Anggerik	209	3.16
11.	Kampung Orang Asli Sungai Rasau Hilir	Petaling	Puchong	Seri Serdang	393	52.32
12.	Kampung Orang Asli Kolam Air Bangkong, Dengkil	Selangor	Selangor	Dengkil	438	188.38
13.	Kampung Orang Asli Bukit Tampoi	Selangor	Selangor	Dengkil	342	31.53
14.	Kampung Orang Asli Kelinsing	Selangor	Selangor	Dengkil	161	65.84
15.	Kampung Orang Asli Jambu	Selangor	Selangor	Dengkil	42	54.64
16.	Kampung Orang Asli Bakok	Selangor	Selangor	Dengkil	82	3.68

No.	Village	District	Parlimen	DUN	Population (individuals)	Area (ha)
17.	Kampung Orang Asli Sungai Melut	Selangor	Selangor	Dengkil	267	54.95
18.	Kampung Orang Asli Air Terentang	Selangor	Selangor	Dengkil	127	41.94
19.	Kampung Orang Asli Bukit Jenuk	Selangor	Selangor	Dengkil	86	160.42
20.	Kampung Orang Asli Batu 28 Jenderam Hilir	Selangor	Selangor	Dengkil	164	47.74
21.	Kampung Orang Asli Bukit Dugang	Selangor	Selangor	Dengkil	164	156.78
22.	Kampung Orang Asli Bukit Tunggul	Selangor	Selangor	Dengkil	50	20.69
23.	Kampung Orang Asli Sungai Buah	Selangor	Selangor	Dengkil	177	22.74
24.	Kampung Orang Asli Bukit Baja	Selangor	Selangor	Dengkil	303	268.15
25.	Kampung Orang Asli Bukit Tadam	Kuala Langat	Selangor	Dengkil	456	35.46
26.	Kampung Orang Asli Mutus Tua	Kuala Langat	Selangor	Dengkil	18	24.13
27.	Kampung Orang Asli Paya Rumput	Kuala Langat	Selangor	Dengkil	198	68.42
28.	Kampung Orang Asli Bukit Bangkong, Selangor	Selangor	Selangor	Tanjong Sepat	782	104.80
29.	Kampung Orang Asli Sungai Belankan	Selangor	Selangor	Tanjong Sepat	76	66.06
30.	Kampung Orang Asli Tanjung Sepat	Kuala Langat	Selangor	Tanjong Sepat	246	58.34
31.	Kampung Orang Asli Bukit Cheeding	Kuala Langat	Kuala Langat	Teluk Datuk	306	113.17
32.	Kampung Orang Asli Bukit Kechil	Kuala Langat	Kuala Langat	Teluk Datuk	105	19.83
33.	Kampung Orang Asli Bukit Kemandul	Kuala Langat	Kuala Langat	Teluk Datuk	731	47.18
34.	Kampung Orang Asli Bukit Perah	Kuala Langat	Kuala Langat	Teluk Datuk	190	166.54



No.	Village	District	Parlimen	DUN	Population (individuals)	Area (ha)
35.	Kampung Orang Asli Pulau Kempas	Kuala Langat	Kuala Langat	Teluk Datuk	332	194.79
36.	Kampung Orang Asli Busut Baru	Kuala Langat	Kuala Langat	Teluk Datuk	529	164.71
37.	Kampung Orang Asli Telok Tongkah	Kuala Langat	Kuala Langat	Morib	267	43.04
38.	Kampung Orang Asli Permatang Buah	Kuala Langat	Kuala Langat	Morib	121	27.62
39.	Kampung Orang Asli Pulau Banting	Kuala Langat	Kuala Langat	Morib	151	115.37
40.	Kampung Orang Asli Sungai Bumbun, Pulau Carey	Kuala Langat	Kuala Langat	Sijangkang	542	133.32
41.	Kampung Orang Asli Sungai Rambai, Pulau Carey	Kuala Langat	Kuala Langat	Sijangkang	86	40.46
42.	Kampung Orang Asli Kepau Laut, Pulau Carey	Kuala Langat	Kuala Langat	Sijangkang	164	37.82
43.	Kampung Orang Asli Sungai Kurau, Pulau Carey	Kuala Langat	Kuala Langat	Sijangkang	211	64.59
44.	Kampung Orang Asli Sungai Judah, Pulau Carey	Kuala Langat	Kuala Langat	Sijangkang	495	194.43
45.	Kampung Orang Asli Bukit Serdang	Kuala Langat	Kuala Langat	Sijangkang	233	104.88
46.	Kampung Orang Asli Pulau Indah	Klang	Klang	Pandamaran	262	10.51
47.	Kampung Orang Asli Bagan Hailam	Klang	Klang	Pandamaran	181	12.92
48.	Kampung Orang Asli Pulau Ketam	Klang	Klang	Pelabuhan Klang	48	2.81
				<b>TOTAL</b>	<b>12,700</b>	<b>3,239.28</b>

(Source: PLANMalaysia 2020).



**Figure 1.** Locations of the Orang Asli Villages in Klang Valley. The red border delineates the soft boundary of the OP7 Klang Valley.

## ANNEX IV: Existing river rehabilitation projects in Klang River Basin.

### 1. [Selangor Maritime Gateway \(SMG\)](#)

- Landasan Lumayan Sdn. Bhd. (a subsidiary of MBI Selangor) : Klang to Port Klang
- [Sungai Klang Link Sdn. Bhd.](#) : Mid Valley to Taman Sri Muda, Shah Alam

**Location** : 120 km stretch of Klang River (Mid Valley to Port Klang)

#### Objectives:

- I. *Land reclamation*: This purposed for future development that is gradually beneficial for the non-monetary which will increase the employment rate and population growth as well as jobs creation for citizens.
- II. *River front development, rehabilitation*: Consisting mainly river recreation activities and river cruise or commonly presumed as water taxi which will enhance the importance of ecotourism, the amount of jobs creation, quality lifestyle, businesses creation and better service.
- III. *Tidal control/flood mitigation*: Good for the tourism sector that will provide better service for the people as well as reducing flood risk and asset protection in flood-prone areas.
- IV. *Water treatment plan*: Increase the clean water reservoir and water quality index
- V. *Utility lines*: Providing better infrastructures and coverage for people.

#### Maps of Project Area:



**Figure 2.** Master Plan of Phase II of the Selangor Maritime Gateway project.



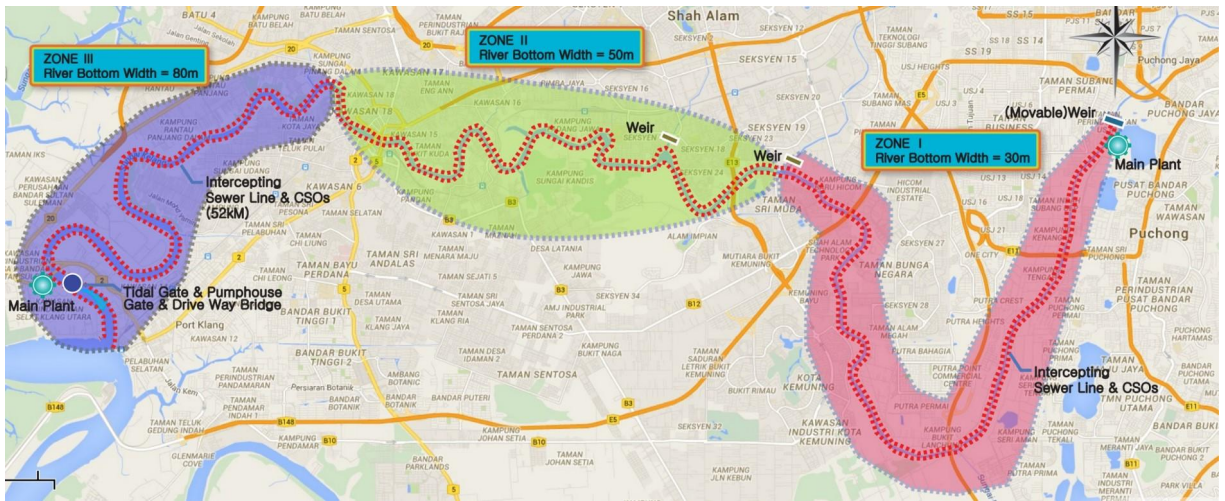


Figure 3. River rehabilitation plan of the Selangor Maritime Gateway project.

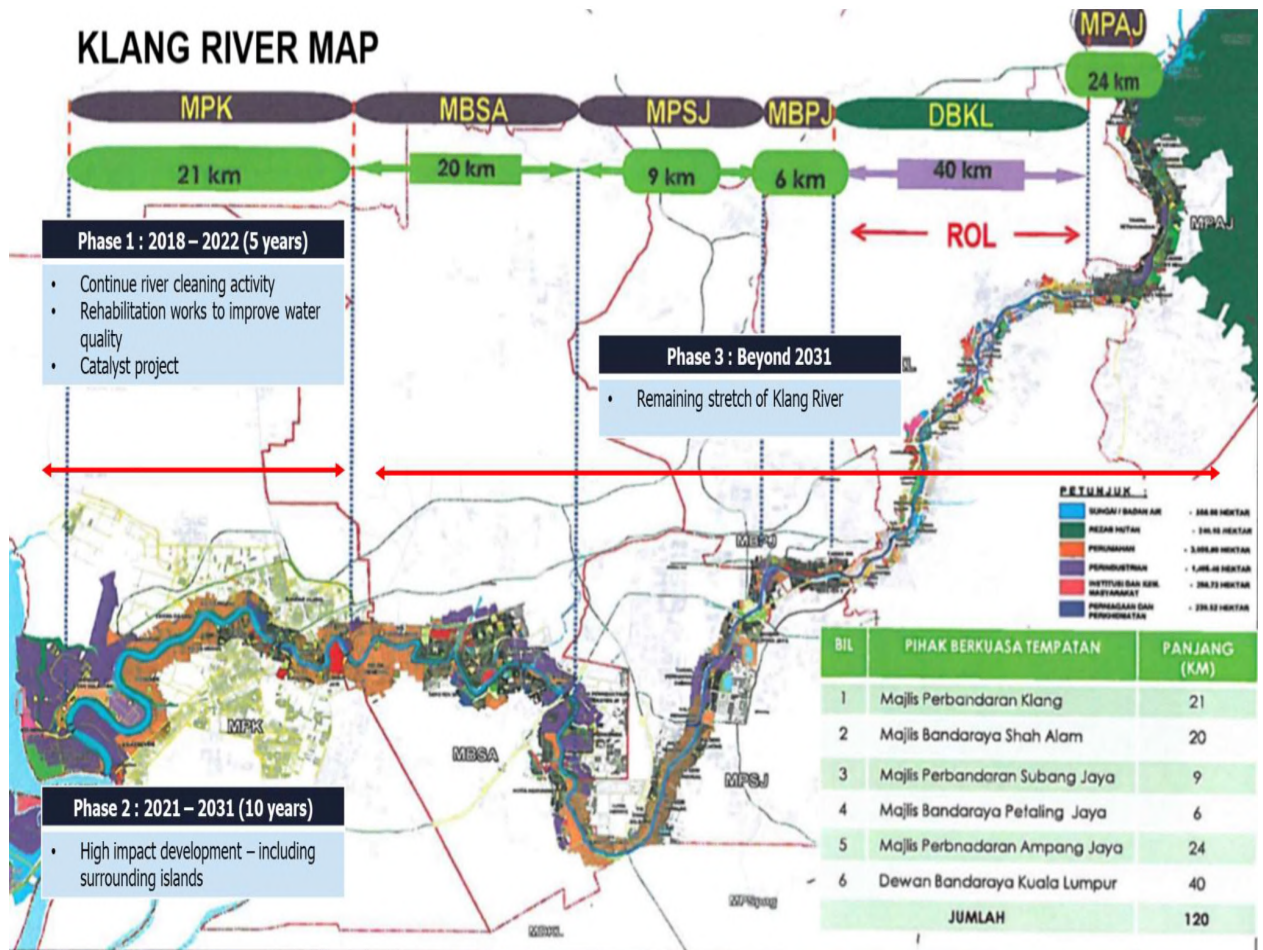


Figure 1. Implementation phases of the Selangor Maritime Gateway project.

2. River of Life – DBKL

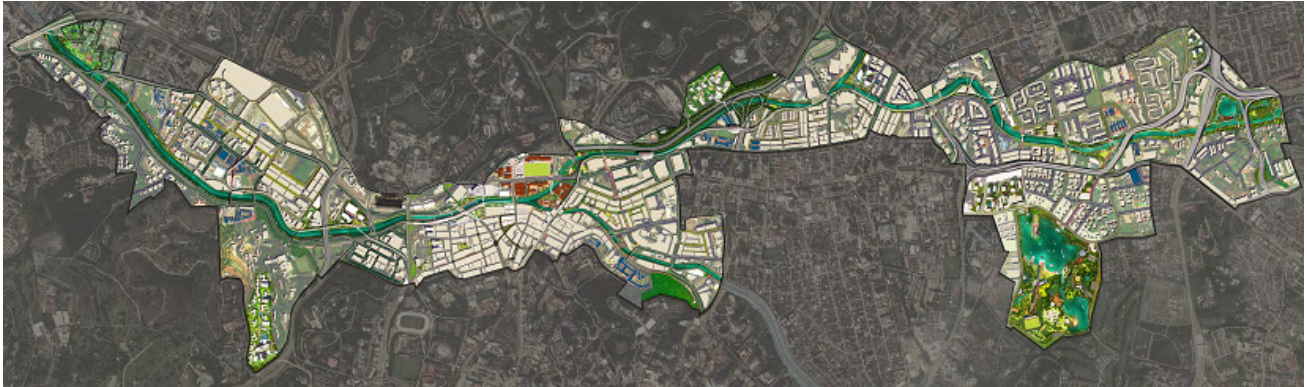
Location: 10.7km along Sungai Klang and Sungai Gombak



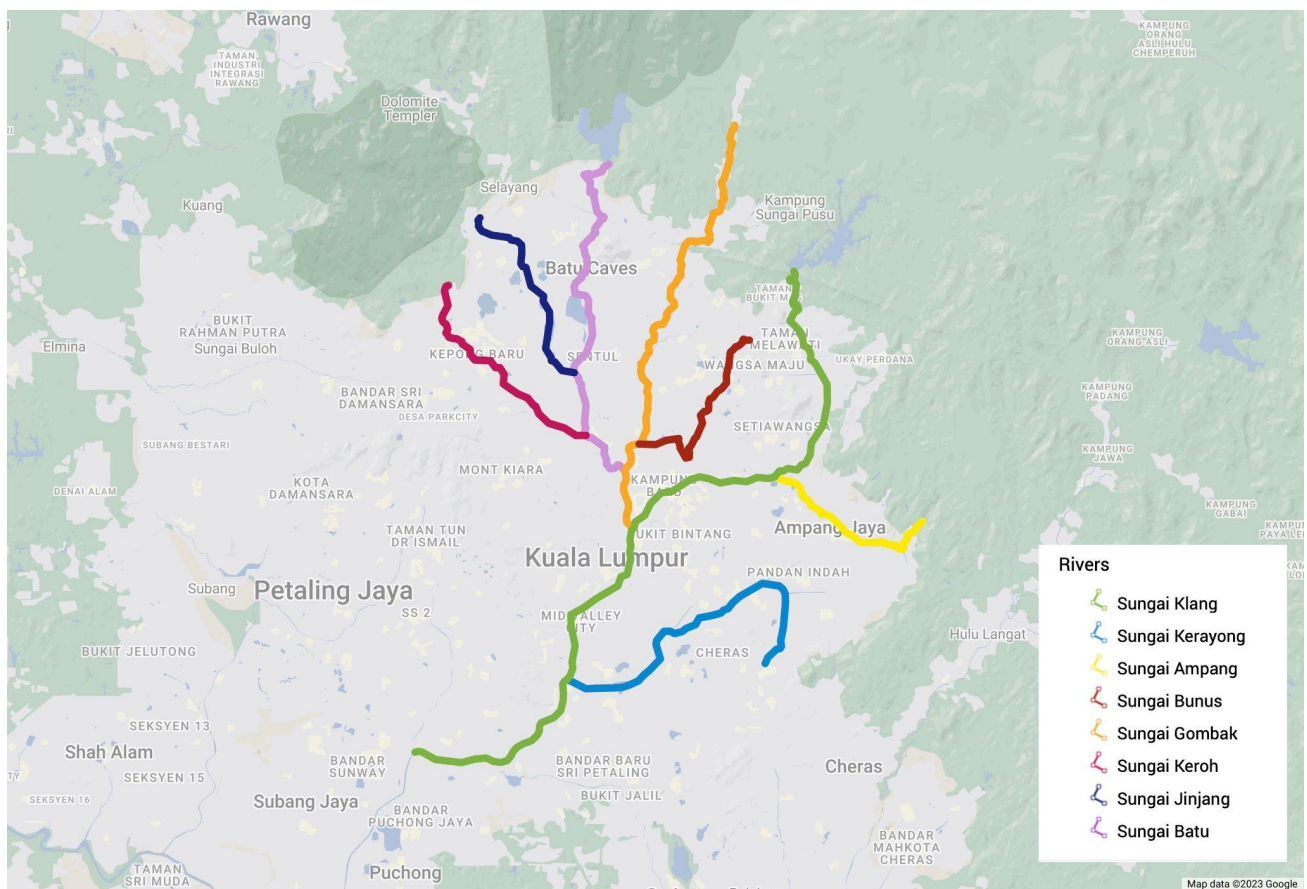
## Objectives:

- I. Improve water quality from class IV to class II for 10.7km along Sungai Klang and Sungai Gombak by 2024;
- II. Improving economic activities and the quality of life of the people by changing the face of the Sungai Klang and Sungai Gombak corridors into cheerful, livable areas with high economic value; and
- III. Develop potential Government lands around the RoL Project location.

## Maps of Project Area:



**Figure 4.** Master plan of the River of Life that covers a 10.7-kilometer spread of riverfront.



**Figure 5.** River of Life project area encompassing 110 km long Klang River Basin, which includes Selangor areas in Selayang and Ampang Jaya.



## ANNEX V: POTENTIAL ECOLOGICAL CONNECTOR PATHWAYS

**Table 1.** Potential ecological connector pathways and pinch points in Damansara Pantai Arc – Federal Hill region of Klang Valley.

No.	Connectivity Cluster	Description	Coordinates			Land use zonings over this traverse	Other relevant information	Comments on re-land status and linkage opportunities
			Start	Waypoint	Destination			
1	Federal Hill/ Central KL	MNS to Muzium Negara (@Lake Gardens Tunnel)	3.1398, 101.6808	3.1382, 101.6841	3.1377, 101.6855	OS1, TR, INT	JUPEM hydrology map indicates riparian/ watercourse connectivity including drainage culverts under road/highway	Viable watercourse link looks improbable. Other avenues to explore: Sri Bukit Persekutuan overhead footbridge, "MRT Intervention shaft 1 (IVS1)" and an existing highway-spanning overhead gantry
2	Federal Hill/ Central KL	Tobacco Board (LKTN) to Carcosa to Lake Gardens	3.1420, 101.6788	3.1418, 101.6797	3.1433, 101.6819	OS1, TR, OS1, C, OS1	JUPEM hydrology map indicates riparian/ watercourse connectivity including drainage culverts under road/highway	Viable watercourse link looks improbable. Other avenues to explore: Existing highway-spanning overhead gantry, or a capital investment intervention (overhead or underground).
3	Federal Hill/ Central KL	Galeria Sri Perdana to Jalan Ledang / Parliament to Carcosa to Lake Gardens	3.1437, 101.6746	3.1471, 101.6768 3.1468, 101.6791	3.1433, 101.6819	INT, OS1, R1, TML/TR, INT, TR, C, OS1	JUPEM hydrology map indicates riparian/ watercourse connectivity including drainage culverts under road/highway	May be facilitated by Sri Perdana's heritage status and MRT Semantan North Portal's 'permanent' green fringes, in addition to an apparently more significant watercourse linkage under Jalan Duta.
4	Federal Hill/ Central KL	Parliament to Lake Gardens	3.1522, 101.6765	3.1521, 101.6798	3.1466, 101.6818	OS1, INT, TR, OS1	JUPEM hydrology map indicates riparian/ watercourse connectivity including drainage culverts under road/highway	There is an undoubted watercourse connectivity i.e. Parliament Stream that feeds Sydney Lake @ Lake Gardens. Other avenues to explore: Investigate ideas for making use of areas along/under the Parliament House access ramp
5	Federal Hill/ Central KL	Parliament to Taman Tugu	3.1522, 101.6765	3.1527, 101.6805	3.1519, 101.6834	OS1, INT, TR, OS1, INT	JUPEM hydrology map indicates riparian/ watercourse connectivity	Viable watercourse link looks improbable. Other avenue to explore: the Lembaga Pertubuhan

							including drainage culverts under road/highway	Peladang grade-separated intersection.
6	Federal Hill/ Central KL	Taman Tugu to JPSM(Bkt Maxwell) to Sg Gombak/Batu	3.1519, 101.6834	3.1584, 101.6870 3.1614, 101.6925	3.1685, 101.6924	INT, TR, INT, TR, INT, TR(railway reserve), IU(river reserve)	Tributaries of Sg Gombak run through Bank Negara/IUMW's land, railway reserve paralleling Jln Kuching and culvert crossing/s under Jln Kuching	Viable watercourse link from University Malaya-Wales straight into Sg Gombak looks unlikely. Other avenue to explore: railway reserve north towards Jln Tun Razak/Jln Kuching grade-separated interchange.
7	Federal Hill/ Central KL	Federal Hill to Ang Seng(Brickfields) to Mid Valley River Three	3.1370, 101.6788	3.1257, 101.6785	3.1205, 101.6763	OS1, TR, TR(railway reserve), INT, IU(river reserve)	Watercourse connectivity under Jln Travers, railway reserve paralleling Jln Bangsar, assumes that "Bicycle Highway Bridge" (@ "Volvo") can be greened	The "Lorong Travers Drainage Corridor" emanating from UCF's Cempedak Trail block is excellent. However, making a connection to the Bangsar/Sg Klang rail corridor/bicycle highway might appear to require a capital investment intervention.
8	Federal Hill/ Central KL	Mid Valley River Three into Bkt Seputeh green belts	3.1205, 101.6763	3.1174, 101.6791	3.1111, 101.6900	IU(river reserve), TR(railway reserve), MX (Bandar Malaysia)	The now-closed down KGAT golf course taken over by Bandar Malaysia project is still part of a monolithically 'block-zoned' MX (mixed development) in KLCP – pending a Master Layout Plan approval where exact green corridors would get identified.	Will require engagement with PLANMalaysia planners.
9	Central KL- DP Arc Link	Mid Valley River Three to Kuala Pantai to UM (Varsity Lake)	3.1205, 101.6763	3.1154, 101.6746	3.1192, 101.6577	IU(river reserve), OS1, INT	Although designated as a river reserve, the area around Kuala Pantai is criss-crossed overhead by	A ground-truthing walk-thru is required all the way into Universiti Malaya.

							highway and railway junctions.		
10A	Damansara-Pantai Arc	UM Rimba Ilmu to Bukit Gasing	3.1307, 101.6571	3.1151, 101.6599			INT, TR, IU, R1, OS1 (PJ side)	Both pathways are obstructed by highways (Federal Highway and NPE respectively), and uncertainty of any drainage paths etc able to link across. In terms of overall setting, the 2nd (roundabout) path via the less dense buildup of Kg Pantai Dalam seems more likely.	Viable watercourse link is absent. Other avenue to explore: Vertical/horizontal greening over Gerbang Darul Ehsan
10B	Damansara-Pantai Arc	-- ditto, but roundabout way via Kuala Pantai --	3.1155, 101.6746	3.0892, 101.6711	3.0926, 101.6615		INT, IU(river reserve), OS1, TR, R1, OS1		Subject to (1) Kg Pantai Dalam retaining its rural-like character (2) sustainability of town plan zoning (National Land Code S.62) reservations on the KL side of Bukit Gasing, especially the 'panhandle' skirting south of Pantai Sentral (IJM's) development.
11	Damansara-Pantai Arc	UM Rimba Ilmu to KGPA - golf course(s)	3.1310, 101.6571	3.1326, 101.6511	3.1330, 101.6500		INT, TR, OS1	JUPEM hydrology map indicates riparian/ watercourse connectivity including drainage culverts under road/highway	Difficult to picture watercourse linkage. A total of 10 traffic lanes separates UM from KGPA, plus the layered interchange is built on RE Wall embankment (not on support piers).
12	Damansara-Pantai Arc	UM Rimba Ilmu to INTAN	3.1310, 101.6571	3.1346, 101.6534	3.1357, 101.6532		INT, TR, INT	JUPEM hydrology map indicates riparian/ watercourse connectivity including drainage culverts under road/highway	The pier-supported layered interchanges at the SPRINT's Kerinchi Link/Damansara Link intersection should be examined in detail for vertical/horizontal greening opportunities and possibilities for constructed wildlife-enabling features.

13	Damansara-Pantai Arc	INTAN to Bukit Kiara	3.1462, 101.6486	3.1476, 101.6443	3.1491, 101.6434	INT, TR, OS1	Riparian/watercourse connectivity across the SPRINT Pusat Sains Negara interchange and highway reserve connects into the 'pointy finger' of Bukit Kiara Federal Park's gazetted Lot 481701	The key requirements for closing the gap to the pointy finger: (1) INTAN block must remain Institutional under the control of Federal Land Commissioner who appreciates its ecosystem linkage function; (2) the lower tier of the Science Centre intersection must remain in its relatively low traffic state, i.e. no commercial redevelopment of Berjaya Equestrian Club; and (3) explore greening and 'bridging' possibilities across the lower tier of intersection.
14	Damansara-Pantai Arc	Bukit Kiara North to Sri Bintang	3.1770, 101.6379	3.1802, 101.6339	3.1806, 101.6382	R1, TR, IU(TNB RoW)	JUPEM hydrology map indicates riparian/ watercourse connectivity including drainage culverts under road/highway	One 1000mm culvert at N3.17987 E101.63549 is confirmed to be present/ usable by terrestrial wildlife
			3.1770, 101.6379	3.1783, 101.6401	3.1806, 101.6423	R1, TR, IU(TNB RoW)		
			3.1734, 101.6457	3.1765, 101.6457	3.1787, 101.6423	R1, IU(TNB RoW), TR, R2		
15	Damansara-Pantai Arc	Bukit Kiara North to Kg Sungai Penchala	3.1770, 101.6379	3.1760, 101.6268	3.1724, 101.6264	R1, OS1/IU (retention pond), R1	There is a 'green belt reserve' apparently incorporated into Country Heights Damansara master plan along with its boundary with the Malay Reserve	The green belt is under control of the CHDRA Home Owners Berhad (even though its public land) via a guarded 'pseudo-gated' scheme (likely with DBKL's consent/ complicity), which is extra-legal to the Local Govt Act. Proper local bylaws to regulate this are absent in KL and elsewhere. Developers and houseowner groups, especially the rich and influential have been able to dictate the agenda.

16	Damansara-Pantai Arc	Kg Sg PENCHALA to Bukit Lanjan	3.1761, 101.6217	3.1805, 101.6218 3.1806, 101.6191	3.1773, 101.6152	R1, IU(TNB RoW), TR, OS2	A weak/doubtful linkage at best. Would depend on the existence of some kind of drainage path under/ across the LDP highway near the toll gate. The open space receptor on the PJ side is equivalent to OS2, i.e. privately owned open space. Traverse thru still-unbuilt low density residential on KL side would be aided if the Country Heights Damansara green belt is available as a publicly conserved connector.	There may be an opportunity with the green space on the PJ side in the form of a new (yet to be created) Taman Awam Damansara Perdana, which appears to be an obligation of the Empire 2 developer (EXSIM) to build and hand over to the local council (MBPJ). With the right planning it could promote connectivity to the residual green lung/utility reserve around Bukit Lanjan peak, i.e Telecoms towers. However connectivity across the rest of Lanjan patch over to NKVE does not appear to be governed by any integrated masterplan. This could potentially be part of a conversation with council planners facilitated by Seksan's firm, who are acting as Landscape Architect for EXSIM's Taman Awam Damansara Perdana project
17	Damansara-Pantai Arc	Bukit Lanjan to KDCF	3.1803, 101.6013		3.1803, 101.5982	UI(TNB RoW), TR, FR	Two possible drainage paths under NKVE	Ground-truthing walk-thru required.. along the NKVE and the NKVE/North-South Expressway intersection. Along much of the Damansara Perdana side (interfacing to KDCF) runs utility (TNB) and open space reserve which provides some measure of continuity across the Damansara Perdana future development parcel
			3.1757, 101.6012		3.1733, 101.5987	OS1, TR, FR		



18	Damansara-Pantai Arc	KDCF to RRI (Kwasa Damansara)	3.1679, 101.5906	3.1565, 101.5777	3.1444, 101.5738	FR, IU(river reserve)	A hard-linked riparian connectivity all the way through. Within RRI the river (Sg Rumput) and water body (Kolam Takungan RRIM) are managed by JPS	A closer look reveals that all significant water bodies, i.e. retention ponds stretching all the way from KDCF to Sg Damansara are managed (or in process of being taken over) by JPS. RUGS should build alliance with JPS to ensure that all best practices and outcomes of river care/river basin management are upheld and protected throughout the upcoming development transformations, especially Kwasa Damansara's 1800 acres development of ex RRI which is tagged to become an entire new section of PJ called PJU4
19	Damansara-Pantai Arc	RRI (Kwasa Damansara) to Sg Damansara to Sg Klang	3.1368, 101.5697	3.1306, 101.5684	3.1196, 101.5696	IU(river reserve)		Ditto as above, alliance with JPS founded upon their key IRBM (integrated river basin management) components for Sg Damansara, which is a major factor for the flood prone confluence with Sg Klang at Taman Sri Muda.

19	Damansara-Pantai Arc	RRI (Kwasa Damansara) to Tropicana/Bandar Utama	3.1331, 101.5682	3.1276, 101.5684	3.1274, 101.5978	IU(river reserve), IU (TNB RoW)	<p>Upon KWASA Damansara being developed, the greenspace networks of the matured planned townships of Ara Damansara, Tropicana and Bandar Utama will become doubly important in sustaining the biodiversity of the midstream Damansara basin. The TNB RoW, which has its roots in the demarcation of the Sg Buloh (gazetted 1898) Forest Reserve, the southeast quadrant of which per field observations still remains as PRF to this day, can serve as 'main artery' linking FOUR townships' greenspace networks</p> <p>In regard to publicly accessible green belts, the risk of development transformations causing loss of uninterrupted wayleave through the Sg Rumpit corridor, needs to be monitored and pushed back against as necessary</p>	<p>1)Develop an urban agroforestry proposition founded upon community participation consistent with the national Social Forestry framework, incorporating the economic activities of current/ existing Use Permit holders wherever compatible. Meanwhile, seeking to positively influence TNB policy on vegetation/farming/other human activity within transmission corridors</p> <p>2)Leverage #1 towards other related purposes eg. urban agroforestry value propositions for in the Penchala Malay Reservation as alternative option for landowners (versus cashing out/ selling ancestral land to developers)</p>
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**ANNEX VI: Monitoring and evaluation plan for Klang Valley landscape.**

Indicators	Targets	Description of indicators and targets	Frequency
<b>Mandatory Indicator, GEF-7 Core Indicator 3: Area of land restored</b>			
<b>Sub-indicator 3.1:</b> Area of degraded agricultural lands restored	<u>Midterm target:</u> 50 hectares  <u>End of project target:</u> 100 hectares	Reforestation / Rehabilitation of degraded soils / Urban community garden / Climate-smart agriculture	Annual, Midterm and end of project
<b>Sub-indicator 3.1:</b> Area of forest and forest lands restored	<u>Midterm target:</u> 100 hectares  <u>End of project target:</u> 300 hectares  (included in Core Ind. 4)	Participatory restoration of degraded forest land as part of improved landscape management  Avoided deforestation / degradation	Annual, Midterm and end of project
<b>Mandatory Indicator, GEF-7 Core Indicator 4: Area of landscape under improved practices (excluding protected areas)</b>			
<b>Sub-indicator 4.1:</b> Area of landscapes under improved management to benefit biodiversity	<u>Midterm target:</u> 2,000 hectares  <u>End of project target:</u> 4,000 hectares	Securing and strengthening legal protection over existing and proposed green spaces  Promoting volunteerism such as planning and building biking and hiking trails in community forest, producing campaign and promotional materials, organise community-based events  Demonstrating the benefits of green spaces to the well-being of urban poor and how	Annual

		urban biodiversity can go hand-in-hand with initiative to alleviate urban poverty	
<b>Sub-indicator 4.3:</b> Area of landscapes under suitable land management in production systems	<u>Midterm target:</u> 500 hectares  <u>End of project target:</u> 1,000 hectares	Promoting improved management and participatory restoration of degraded agricultural ecosystems in Klang Valley	Annual
<b>Mandatory Indicator, GEF-7 Core Indicator 6:</b> Greenhouse gas emission mitigated			
<b>Sub-indicator 6.1:</b> Carbon sequestered or emissions avoided in the sector of Agriculture, Forestry and Other Land Use (AFOLU)	<u>Midterm target:</u>  <u>End of project target:</u> 260,000 tCO <sub>2</sub> e reduction lifetime direct (with Crocker Range and Baram)	Avoided forest loss through strengthened participatory conservation.	Annual
<b>Sub-indicator 6.2:</b> Emissions avoided outside AFOLU	<u>Midterm target:</u>  <u>End of project target:</u> 80 direct beneficiaries 15 tCO <sub>2</sub> e reduction annual 150 tCO <sub>2</sub> e reduction lifetime direct	Energy-efficient roofing and walls in urban areas.  Off-grid solar CCHP for urban communities.  Sustainable transportation initiative.	Annual
<b>Mandatory Indicator, GEF-7 Core Indicator 11:</b> Number of direct project beneficiaries disaggregated by gender as a co-benefit of GEF investment	<u>Midterm target:</u> ~5,000 beneficiaries (of whom 2,500 are female)  <u>End of project target:</u> ~10,000 beneficiaries (of whom 5,000 are female)	Beneficiaries disaggregated by gender	Annual

<p><b>Indicator 5:</b> Sustainable management of common resources, as indicated by the number of new partnerships between CBOs and enabling stakeholders (including with NGOs, protected area management entities, private sector enterprises, government departments, etc.) for participatory conservation and restoration initiatives, disaggregated by gender</p>	<p><u>Midterm target:</u> 1 identified in the set of approved projects in the first call for proposal</p> <p><u>End of project target:</u> 3 new partnerships between CBOs (including at least 1 women-led CBOs)</p>	<p>Strengthening and/or creating new durable partnerships between local communities and protected area administrations.</p>	<p>Annual</p>
<p><b>Indicator 6:</b> Strengthening gender equality and women's empowerment in control of natural resources, as indicated by the number of projects that are contributing to equal access to and control of natural resources by women and men</p>	<p><u>Midterm target:</u> 1 of the awarded projects contribute to equal access to and control of natural resources of women and men</p> <p><u>End of project target:</u> 3 projects</p>	<p>Gender mainstreaming.</p>	<p>Annual</p>
<p><b>Indicator 7:</b> Documentation of traditional knowledge related to biodiversity, as indicated by the number of systems developed or strengthened where traditional biodiversity knowledge is documented, stored and made</p>	<p><u>Midterm target:</u></p> <p><u>End of project target:</u> 1 systems developed or strengthened</p>	<p>Support of traditional communities.</p>	<p>Annual</p>



available to local people (e.g., traditional knowledge recordings, resource classification systems, etc.).			
<b>Indicator 8:</b> Livelihood co-benefits, as indicated by the number of households benefiting from alternative livelihoods supported by clean energy solutions	<p><u>Midterm target:</u> 50 households (50% female) identified in projects approved by midterm</p> <p><u>End of project target:</u> 100 households (50% female) benefitting from alternative livelihoods</p>	Delivering livelihood co-benefits.	Annual
<b>Indicator 9:</b> Strengthened resilience and increased energy security, as indicated by the number of community level renewable energy solutions (e.g., hydroelectric generators, off-grid solar PV systems, biomass gasification generator systems) operationalized.	<p><u>Midterm target:</u></p> <p><u>End of project target:</u> 1 project implemented</p>	Renewable energy and efficient energy in the target landscape.	Annual
<b>Indicator 10:</b> Participatory landscape management, as indicated by the number of landscape strategies developed or strengthened through participatory consultation and based on the socio-ecological	<p><u>Midterm target:</u> 1 landscape strategy developed</p> <p><u>End of project target:</u> 1 landscape strategy developed and endorsed by multi-stakeholder landscape platforms</p>	Landscape strategies are an essential element of the landscape approach.	Annual

resilience landscape baseline assessments endorsed by multi-stakeholder landscape platforms			
<b>Indicator 11:</b> Empowering women in natural resource governance, as indicated by the number of projects that improve the participation and decision-making of women in natural resource governance	<p><u>Midterm target:</u> 1 of the projects include measures aimed at improving participation and decision-making of women in natural resource governance</p> <p><u>End of project target:</u> 1 project implemented that improve participation and decision-making of women in natural resource governance</p>	Equitable representation of women in decision-making.	Annual
<b>Indicator 12:</b> Strengthening socioeconomic benefits for women, as indicated by the number of projects that target socioeconomic benefits and services for women	<p><u>Midterm target:</u> 2 of the approved projects address strengthening socioeconomic benefits and services for women</p> <p><u>End of project target:</u> 3 projects completed that strengthened socioeconomic benefits and services for women</p>	Enhancing socio-ecological resilience includes strengthening socio-economic benefits and services for women.	Annual
<b>Indicator 13:</b> Landscape priority actions mainstreamed into local planning instruments, as indicated by the uptake priority actions outlined in the landscape strategies into local	<p><u>Midterm target:</u> Priority actions described in the endorsed landscape strategy</p> <p><u>End of project target:</u> 1 local development plan, protected area</p>	Local government units and protected area management entities are expected to have leading roles in the multi-stakeholder landscape platforms	Annual

development plans	management plan, or community forestry initiatives contain at least one priority action from landscape strategy		
<b>Indicator 14:</b> Mainstreaming gender equality and women's empowerment, number of women-led projects supported	<p><u>Midterm target:</u> 1 of the approved projects by midterm is led by women</p> <p><u>End of project target:</u> 2 of the implemented projects are led by women</p>	Gender mainstreaming.	Annual
<b>Indicator 15:</b> Upscaling initiated, as indicated by the number of dialogues organised with government entities on upscaling best practices	<p><u>Midterm target:</u> 1 dialogue organised</p> <p><u>End of project target:</u> 2 dialogues organised</p>	Upscaling is enhanced under the socio-ecological resilience landscape approach, with engagement of multiple stakeholders and collective action impact at scale.	Annual
<b>Indicator 16:</b> Knowledge shared, as indicated by the number of project and portfolio experiences and lessons systematised and codified into case studies produced and disseminated, and cumulative number of views of the case studies from the SGP website, social media, or through direct dissemination	<p><u>Midterm target:</u> Case studies from completed projects under preparation, and views tracked on SGP website, social media and through direct dissemination</p> <p><u>End of project target:</u> 5 case studies disseminated, with 250 cumulative views of the case studies on SGP website, social media or through direct dissemination</p>	Each approved project required to develop at least one case study to document best practices and lessons.	Annual

## ANNEX VII: RISK REGISTER

Risk description	Risk Category	Impact	Probability	Mitigating Measures
Community-based organisations (CBOs) have a low level of technical and management capacity to implement grant project	Operational	Decrease demand for community driven projects and influence the pace of implementation of grant projects once approved.	L = 3 I = 3 <b>MODERATE</b>	Building capacity of local CBOs to actively participate in community development initiatives; provide guidance for effective design and implementation of SGP-financed projects.
Lack of coordination among the essential stakeholders/actors in the landscape.	Operational	Negatively affect landscape planning and management process, resulting in low government support and recognition of the integrated landscape strategies.	L = 3 I = 3 <b>MODERATE</b>	Promote collaboration through participatory intervention and multi-stakeholder approaches.
Lack of engagement and involvement from key stakeholders in the landscape	Operational	Inadequate buy-in and poor project outcomes	L = 3 I = 4 <b>MODERATE</b>	Identify pertinent stakeholders early and involve them in the planning and decision-making process.
Community or stakeholder opposition to proposed changes	Reputational Operational	Delay in project implementation; conflicts or legal challenges	L = 2 I = 4 <b>MODERATE</b>	Conduct extensive stakeholder engagement and address concerns through transparent communication, information sharing and collaboration.
Poor communication between	Reputational	Misunderstandings and	L = 2	Communication plan that outlines

stakeholders, the public or project team members	Operational	misinformation can delay project implementation and lead to poor project outcome; public backlash due to misconception about the project's intent and impact	I = 4 <b>MODERATE</b>	key messages, target audience and channels for transparent, accurate and consistent communication; highlight the positive aspects of the project.
Inadequate landscape design or technical flaws in implementation	Operational	Ineffective solutions or infrastructure failure	L = 3 I = 4 <b>MODERATE</b>	Conduct thorough design reviews; engage with experienced landscape architects or engineers.
Technical challenges from the adoption of novel technologies or innovative methods	Operational	Lead to unforeseen technical difficulties or implementation barriers; risk of failure or poor performance of unproven methods	I = 2 I = 3 <b>LOW</b>	Pilot new technologies / innovative methods before full-scale implementation; engage with technology experts
Difficulty finding skilled personnel for specialised tasks or capacity building training.	Operational	Delay in project implementation	L = 2 I = 3 <b>LOW</b>	Establish a skilled personnel pool for backup; partner with reputable contractors and maintain regular communication.
Scarcity of materials, plants (seedlings of suitable native plants) or equipment required for project activities.	Operational	Delay in project implementation	L = 2 I = 3 <b>LOW</b>	Diversify sources for materials, plants and equipments; establish partnership with suppliers and maintain regular communication.
Difficulties obtaining necessary permits and approvals; non-compliance to local regulations, zoning laws or environmental	Operational	Delay in project implantation and legal challenges	L = 2 I = 4 <b>MODERATE</b>	Engage with relevant authorities and initiate permit application process early; work closely with legal experts and proactively



standards;				address compliance requirements.
Insufficient cultural sensitivity to cultural values, traditions and local knowledges of the local communities, especially the Orang Asli	Social and Environmental	Community dissatisfaction or lack of acceptance from local communities; exacerbate the social gap between the Orang Asli / marginalised groups	L = 2 I = 4 <b>MODERATE</b>	Engage with local communities and integrate community input into the design and implementation process.
Drastic landscape changes might inadvertently affect the communities, biodiversity and environment	Social and Environmental	Displacement, social tension or reduced quality of life	L = 2 I = 5 <b>SUBSTANTIAL</b>	Prioritise social impact assessment to identify potential negative effects on communities.
Inadequate post-implementation maintenance	Operational Financial	Degradation of landscape and reduced long-term effectiveness of landscape strategies implemented	L = 2 I = 5 <b>SUBSTANTIAL</b>	Allocate sufficient resources for post-implementation maintenance; encourage the involvement of local communities in ongoing upkeep.
Landscape strategies not aligned with ecological and social sustainability principles of the landscape	Social and Environmental	Reduced long-term effectiveness of landscape strategies implemented	L = 2 I = 5 <b>SUBSTANTIAL</b>	Prioritise ecological and social sustainability principles in landscape strategy; and promote practices that enhance long-term sustainability.
Insufficient funding or delays in securing funding	Financial	Delay in project implementation	L = 3 I = 4 <b>MODERATE</b>	Monitor expenditures regularly and revise budget as needed; diversity funding sources and explore grant opportunities

Uncontrolled changes and expanding project scope	Strategic	Lead to scope creep and delay in project implementation and success; increased cost	L = 2 I = 3 <b>LOW</b>	Conduct a management process to evaluate and approve scope changes; ensure the changes align with project objectives.
Changing weather pattern and extreme weather events (e.g. El-Nino, heavy downpour)	Social and Environmental	Affect vegetation, soil quality and water supply	L = 2 I = 3 <b>MODERATE</b>	Plant drought-resistant species; incorporate climate-resilient water management systems into city planning / strategies
Unforeseen natural disasters such as floods and wildfires; disease outbreak	Safety and Security  Social and Environmental	Damage in landscape elements and delay in project implementation	L = 1 I = 4 <b>LOW</b>	Establish emergency response protocols; incorporate disaster-resilient designs or materials into green innovations

\*Risk assessment is based on UNDP's ERM System.

## ANNEX VIII: FRIENDLY URBAN WILDLIFE

The concept of friendly urban wildlife revolves around the careful selection of species that hold ecological and conservation significance while minimising conflicts and adverse impacts on human and urban infrastructure. Its primary objective is to promote the coexistence of humans and wildlife, allowing humans to benefit from vital ecosystem services by conserving green urban spaces and developing an appreciation for the beauty of urban wildlife. This idea has the potential to garner support and engagement from various stakeholders and the public.

Friendly urban wildlife can be categorised into bioindicator and keystone species that play crucial roles in ecosystem functioning, as well as flagship and Endangered, Rare, and Threatened (ERT) species that are significant for conservation purposes. It's important to note that species can fall into multiple categories as they are not mutually exclusive. These categories assist in strategic planning for wildlife conservation and ecosystem restoration in urban settings.

For instance, planting more fig trees can potentially increase food availability for many animal species. However, it is essential to consider factors such as the suitability of specific fig tree species and locations. The accumulation of dropped figs on the streets can create a mess or attract macaques in high human-macaque conflict areas. The extensive root system of banyan trees, for example, can cause damage to pavements, roads, and building foundations as the roots grow above and below the ground, leading to cracks and structural instability. Hence, careful consideration of such factors is necessary to optimise the outcomes of friendly urban wildlife initiatives.

Categories	Explanation
Bioindicator	Bioindicators include biological processes, species, or communities and are used to assess the quality of the environment and how it changes over time. E.g. The amount and types of lichens indicate air quality since they are sensitive to toxins in the air.
Flagship species	Flagship species are species selected to act as an ambassador, icon or symbol for our RUGS project. Selected species are usually charismatic and relevant to our local context. However they should not be highly involved in human wildlife conflict e.g. tiger and elephant.
Keystone species	A keystone species is a pivotal organism within an ecosystem that has a significant impact on its overall biodiversity and function. Its presence or absence can greatly influence the structure and stability of the ecosystem. Keystone species often have cascading effects, where changes in their population can lead to far-reaching consequences for other species and ecological processes. E.g. fig trees are keystone species in many rainforests, producing fruit year round that are important food sources for thousands of animal species from bats to monkeys to birds.
Endangered, Rare, and Threatened species	ERT species include species that are listed as Critically endangered, endangered, vulnerable, and threatened status in IUCN Red List, CITES, and protected under Malaysia laws (Wildlife Conservation Act).

## Tentative List of Friendly Urban Wildlife

List of Friendly Urban Wildlife					
No.	Taxa	Scientific name	Common name	IUCN/ WCA / CITES	Categories
1	Amphibian	<i>Ingerophrynus gollum</i>	Gollum's Toad	EN	ERT
2	Amphibian	<i>Limnonectes nitidus</i>	Tanah Rata Wart Frog	EN	ERT
3	Amphibian	<i>Chalcorana labialis</i>	White-lipped Frog	LC	Bioindicator
4	Amphibian	<i>Limnonectes hascheanus</i>	Hill Frog	LC	Bioindicator
5	Amphibian	<i>Limnonectes blythii</i>	Blyth's River Frog	LC	Bioindicator
6	Bird	<i>Mycteria leucocephala</i>	Painted Stork	NT	
7	Bird	<i>Anthracoceros albirostris</i>	Oriental Pied Hornbill	LC	Keystone
8	Bird	<i>Buceros rhinoceros</i>	Rhinoceros Hornbill	VU	ERT; Keystone
9	Bird	<i>Rhyticeros undulatus</i>	Wreathed Hornbill	VU	ERT; Keystone
10	Bird	<i>Anthracoceros malayanus</i>	Black hornbill	VU	ERT; Keystone
11	Bird	<i>Bernicornis comatus</i>	White -crowned hornbill	EN	ERT; Keystone
12	Bird	<i>Buceros vigil</i>	Helmeted Hornbill	CR	ERT; Keystone
13	Bird	<i>Acridotheres javanicus</i>	Javan Myna	VU	ERT
14	Bird	<i>Actenoides concretus</i>	Rufous-collared Kingfisher	NT	
15	Bird	<i>Aegithina viridissima</i>	Green lora	NT	
16	Bird	<i>Alcedo peninsulae</i>	Malaysian Blue-banded Kingfisher	CR	ERT; Flagship
17	Bird	<i>Calyptomena viridis</i>	Green Broadbill	NT	
18	Bird	<i>Chloropsis sonnerati</i>	Greater Green Leafbird	EN	ERT
19	Bird	<i>Leptoptilos javanicus</i>	Lesser Adjutant	VU	ERT
20	Bird	<i>Macronus ptilosus</i>	Fluffy-backed Tit-babbler	NT	
21	Bird	<i>Mycteria cinerea</i>	Milky Stork	EN	ERT
22	Bird	<i>Chloropsis cochinchinensis</i>	Blue-winged Leafbird	EN	ERT; Flagship
23	Bird	<i>Halcyon pileata</i>	Black-capped Kingfisher	VU	ERT
24	Bird	<i>Psittacula longicauda/ Belocerus longicaudus</i>	Long-tailed Parakeet	VU	ERT
25	Insect	<i>Idea lynceus</i>	Malaysian tree-nymph	Protect ed	ERT; Flagship
26	Insect	<i>Gnamptogenys sp</i>	-		Bioindicator
27	Insect	<i>Platythyrea parallela</i>	-		Bioindicator
28	Insect	<i>Proatta butteli</i>	-		Bioindicator

29	Insect	<i>Strumigenys sp.</i>	-		Bioindicator
30	Mammal	<i>Trachypithecus obscurus</i>	Dusky leaf monkey	EN	ERT; Flagship
31	Mammal	<i>Presbytis siamensis</i>	White thighed Surili	NT	Flagship
32	Mammal	<i>Trachypithecus selangorensis</i>	Selangor Silvered Langur	NT	Flagship
33	Mammal	<i>Lutrogale perspicillata</i>	Smooth-coated otter	VU	ERT; bioindicator
34	Mammal	<i>Ratufa bicolor</i>	Black Giant Squirrel	NT	
35	Mammal	<i>Nycticebus coucang</i>	Sunda slow loris	EN	ERT
36	Mammal	<i>Hylobates lar</i>	Lar Gibbon	EN	ERT
37	Mammal	<i>Galeopterus variegatus</i>	Sunda colugo	LC	
38	Mammal	<i>Tragulus kanchil</i>	Kancil	LC	
39	Mammal	<i>Axis porcinus ssp. Porcinus</i>	Indian Hog Deer	EN	ERT
40	Mammal	<i>Callosciurus prevostii</i>	Prevost's squirrel	LC	
41	Mammal	<i>Manis javanica</i>	Sunda Pangolin	CR	ERT; Flagship
42	Mammal	<i>Aonyx cinereus</i>	Asian-small Clawed Otter	VU	ERT
43	Mammal	<i>Petinomys setosus</i>	Temminck's flying squirrel	VU	ERT
44	Mammal	<i>Tapirus indicus</i>	Malayan Tapir	EN	ERT; Flagship
45	Reptile	<i>Cuora amboinensis</i>	South Asian Box Turtle	EN	ERT
46	Reptile	<i>Heosemys spinosa</i>	Spiny-hill Turtle	EN	ERT; Flagship
47	Reptile	<i>Siebenrockiella crassicollis</i>	Black marsh turtle	EN	ERT
48	Reptile	<i>Amyda cartilaginea</i>	Asiatic softshell turtle	VU	ERT
49	Reptile	<i>Notochelys platynota</i>	Malayan flat-shelled turtle	VU	ERT
50	Reptile	<i>Heosemys grandis</i>	Giant Asian pond turtle	CR	ERT
51	Reptile	<i>Amyda ornata</i>	Narrow-headed Asian Softshell Turtle	VU / CITES II	ERT
52	Reptile	<i>Indotestudo elongata</i>	Elongated Tortoise	CR	ERT
53	Plant	<i>Ficus spp.</i>	Figs		Keystone
54	Plant	<i>Alseodaphne paludosa</i>	-	VU	ERT
55	Plant	<i>Aquilaria malaccensis</i>	Karas	CR	ERT
56	Plant	<i>Baccaurea lanceolata</i>	Asam pahung	VU	ERT
57	Plant	<i>Diospyros insidiosa</i>	-	VU	ERT
58	Plant	<i>Dryobalanops aromatica</i>	Kapur	VU	ERT
59	Plant	<i>Hopea odorata</i>	Merawan Siput Jantan	VU	ERT
60	Plant	<i>Hydnocarpus filipes</i>	Setumpul	VU	ERT
61	Plant	<i>Litsea fenestrata</i>	-	VU	ERT

62	Plant	<i>Palaquium maingayi</i>	Nyatoh tembaga	VU	ERT
63	Plant	<i>Pterocarpus indicus</i>	Angsana	EN	ERT
64	Plant	<i>Ryparosa fasciculata</i>		VU	ERT
65	Plant	<i>Shorea bracteolata</i>	Meranti paang	EN	ERT
66	Plant	<i>Shorea parvifolia</i>	Meranti sarang punai	EN	ERT
67	Plant	<i>Shorea sumatrana</i>	Balau sengkawang	EN	ERT