Sarawak Government

Study to Develop Key Indicators for the Economy

POST COVID-19 DEVELOPMENT STRATEGY 2030

Final Report Volume I
Main Report

January 2022

This report has been prepared by PricewaterhouseCoopers Advisory Services Sdn Bhd (PwC) for the Government of Sarawak represented by Economic Planning Unit of Sarawak.

PUBLISHED BY:
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Foreword by
Chief Minister of Sarawak
cum Chairman, Sarawak Economic Action Council

The Right Honourable Datuk Patinggi Tan Sri (Dr) Abang Haji Abdul Rahman Zohari bin Tun Datuk Abang Haji Openg

"By 2030, Sarawak will be a thriving society driven by data and innovation where everyone enjoys economic prosperity, social inclusivity and sustainable environment"

The year 2020 has been an unprecedented and challenging year as the spread of COVID-19 pandemic led to health and economic crises that disrupted businesses and affected people's livelihood across the globe. The pandemic has significantly weakened global growth prospects. Malaysia economy declined by 5.6%, the biggest contraction since the 1998 Asian Financial Crisis. Sarawak was not spared from the significant downturn and experienced a contracted growth of 7.1% whilst exports shrank by 23.3% and unemployment rate increased to 4.3% in 2020.

The pandemic has stimulated digitalisation across sectors, popularised 'work-from-home' as the new normal and highlighted the importance of a resilient global supply chain in order to withstand black swan events like the COVID-19 pandemic. It also shone a spotlight on the impact of economic activity on the environment. Whilst the COVID-19 has caused many upsets and challenges to the socio-economic norms, the change also presents and unlock new opportunities for Sarawak to forge ahead for a brighter future.

To ensure Sarawak is able to embark on a full-fledged transformation capitalising on mega-trends around the world such as globalisation, supply chain resilience, digitalisation, new industrial revolution, circular economy and transition towards a low carbon economy, the Sarawak Economic Action Council (SEAC) was formed on 6th May 2020 to formulate the Post COVID-19 Development Strategy 2030.

Taking this opportunity, I would like to thank SEAC members comprising leaders from the public and private sectors, academicians, captain of industries and opinion leaders for their efforts in formulating the Plan.

We envision that by 2030, Sarawak will be a thriving society driven by data and innovation where everyone enjoys economic prosperity, social inclusivity and sustainable environment.

In terms of economic prosperity, we aim to double the size of our economy from RM136 billion in 2019 to RM282 billion in 2030. To achieve this target, Sarawak economy needs to grow on average 8.0% per annum until 2030. We are now undertaking massive infrastructure development to facilitate economic and investment activities. To do this, we are using creative financial modelling through revenue reengineering and alternative funding methods to ensure healthy fiscal position.

Inclusive society means that all Sarawakians will have equal opportunities to participate in the State's overall development and enjoy equitable distribution of wealth through jobs and business opportunities.

As environmental sustainability is an integral part of Sarawak development initiatives, it is the duty of all of us to ensure clean and healthy environment for current and future generations. The target is to ensure sustainable economic activities through the adoption of new technologies and innovation, continuation of environmentally sound practices such as greening efforts and improved enforcement of regulatory frameworks.

Moving forward, Sarawak will innovate using data to increase productivity, develop high value products, improve safety of our people and assets as well as enhance environmental conservation efforts.

I am confident we can realise Sarawak's 2030 aspirations as we have efficient Civil Service and proactive private sector that are working very hard to develop Sarawak. This Plan is a testimony of our commitment towards prosperous, inclusive and environmentally sustainable Sarawak. Together we will achieve more.

The Right Honourable Datuk Patinggi Tan Sri (Dr) Abang Haji Abdul Rahman Zohari bin Tun Datuk Abang Haji Openg

Introduction by
Sarawak State Secretary
cum Chairman, Sarawak Economic Action Council Working Committee

The Honourable Datuk Amar Jaul Samion

"The Plan will transform the socio-economic well-being of the people by providing access to economic opportunities and social services in a sustainable manner"

Post COVID-19 Development Strategy (PCDS) 2030 is a long term Plan that provides the direction and strategies for Sarawak to achieve its aspiration of a developed State by 2030.

In preparing for this Plan, more than 20,000 man hours were spent involving engaging with over 1,000 stakeholders from more than 250 organisations, from both public and private sectors. The Plan dwells in thirteen sectors and presents a cohesive and robust strategy, necessary to address the worldwide economic disruption as a result of COVID-19 pandemic.

It has been an incredible and exhilarating journey that has seen great involvement and collaboration between all Ministries, Agencies and academicians as well as relevant members of the private sector. I am grateful for being entrusted as the Chairman of the Working Committee of this game-changing plan for Sarawak. This Plan is comprehensive and workable as its formulation involves industry players and implementing agencies. This is what makes it different from other past development plans.

Moreover, the Plan comprises comprehensive Action and Implementation Plan (AIP) outlining specific actions needed to achieve PCDS 2030 outcomes and aspirations, which include policy, legal framework, administrative and procedures as well as clear timelines for each activity.

This is the first time that we have a comprehensive Action and Implementation Plan for Ministries and agencies; it is deemed necessary so that action steps to implement the Plan are clearly thought out and identified. Most importantly the desired outcomes of the various Plan initiatives are given prominence. Programmes and projects fail to achieve their stated objectives, as there are no clear action plans for their implementation.

With this comprehensive AIP, I am confident PCDS 2030 will achieve its desired objectives. Sarawak and its people will experience robust development that will elevate the socio-economic well-being of the people with more access to economic opportunities.

I would also like to take this opportunity to express my gratitude to The Right Honourable Chief Minister, who is Chairman of the Sarawak Economic Action Council (SEAC) and all Council members, Heads of Departments and agencies for their guidance, contributions and far sighted vision to propel Sarawak socio-economic development in the future. My appreciation also goes to Director of EPU Sarawak and Secretariat staff for their coordination of the whole exercise of producing there documents.

The Honourable Datuk Amar Jaul Samion

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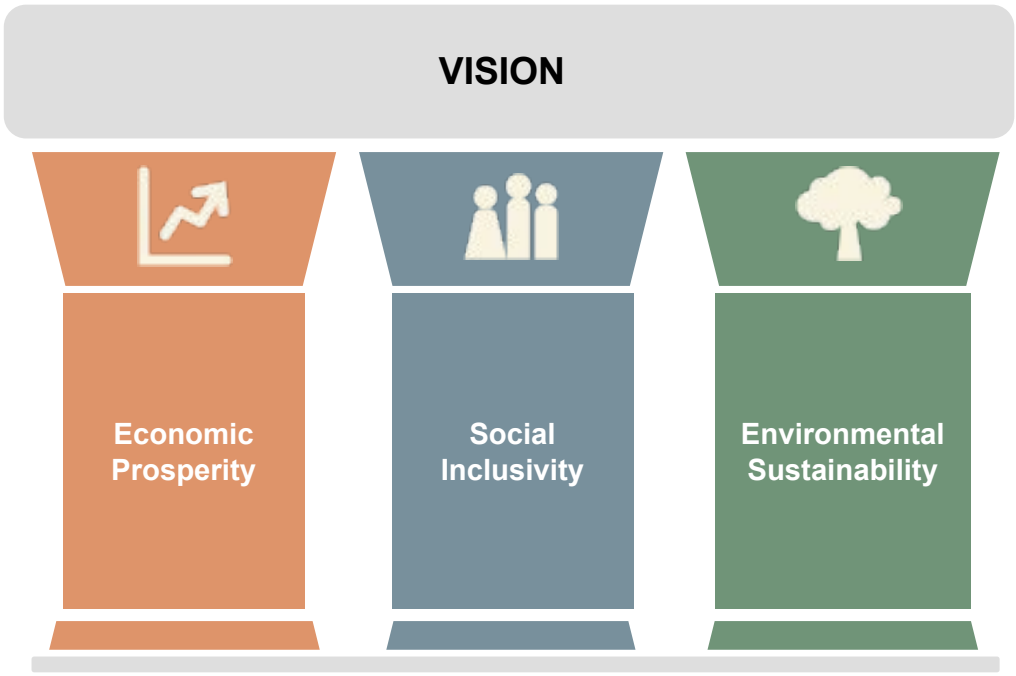
1. Executive Summary

Sarawak will be a thriving society driven by data and innovation where everyone enjoys economic prosperity, social inclusivity and sustainable environment by 2030

The vision is anchored on three (3) key pillars namely economic prosperity, social inclusivity and environmental sustainability. Its corresponding strategies, initiatives, policies and projects will drive Sarawak towards its 2030 goals of being a high income State with inclusive growth for all.

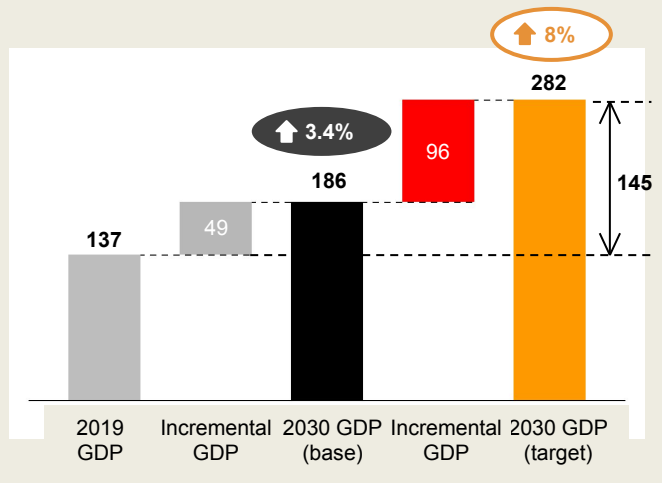


Economic Prosperity	Grow gross domestic product (GDP) at ~8.3% per year and achieve RM282 billion by 2030, from an average 3.4% annual growth between 2006 - 2019
Social Inclusivity	Increase median monthly household income from estimated RM4,500 in 2019 to RM15,000 by 2030, driven by higher job and entrepreneurial opportunities
Environmental Sustainability	Ensure a clean and healthy environment for current and future generations with safely managed water and sanitisation services, sustainable forest management, as well as adoption of new technologies and innovation to support Malaysia's commitment to reduce greenhouse gas (GHG) emissions intensity of GDP by 45.0% by 2030.

COVID-19 pandemic posed challenges to Sarawak, but marks an opportunity for game-changing decisions to propel the State towards Sarawak 2030

It is an opportune time for Sarawak to capitalise on this global reset as governments globally are relooking at the way economies operate. The State should leverage shifts in technology, geopolitics and consumer behaviour (i.e. massive adoption of digitalisation) to achieve the State's 2030 aspiration.

Sarawak's real GDP projection 2030 (RM bil)



Note: Base case 2030 is projected from trend rate of growth for the period 2006 - 2019 (i.e. 3.4%)
Source: Department of Statistics Malaysia (DOSM), PwC analysis

- Sarawak's average growth of 3.4% is lower than national growth of 4.9% for period 2006-2019
- The economy is exposed to commodity price fluctuations from reliance on agriculture (palm oil) and mining (oil & gas) sectors
- Moderating global economic growth led to weak commodity prices over this period
- Sarawak deals with additional issues of long distance to markets, and low economic and population density

The State should seize the opportunity to reimagine a stronger future and transform in order to pivot Sarawak towards its 2030 aspirations. Key features of Sarawak 2030 are:

1 Change economic structure
- Scale-up production from land use and expand on upstream activities
- Develop more downstream activities
- Grow services sector in line with increased economic activities

2 Effective execution of strategic thrusts
- Provide digital and physical infrastructure to support economic activities
- Intensify focus on existing growth areas
- Increase green technology to position Sarawak as an ideal investment destination for green investors

3 Increase household income-to-GDP share
- Promote self-employment and entrepreneurship
- Increase household participation in equity and productive assets

Note: Sarawak 2030 is the State's vision to achieve high income and a developed state by 2030, as first articulated by YAB Chief Minister of Sarawak in his speech published on June 25, 2020 via the First Sarawak Economic Action Council (SEAC) Meeting.

Strategy includes immediate relief steps and transformation of economy to address the post COVID-19 impact

As an immediate measure to mitigate the impact and ease the burden of the people and business community due to COVID-19 pandemic, the Sarawak Government has implemented 7 Bantuan Khas Sarawakku Sayang (BKSS) packages since May 2020 until October 2021 based on four (4) overarching principles.

To accelerate economic development, the Plan outlines seven (7) strategic thrusts, with supporting initiatives and projects.

Immediate Relief Plan

4 Principles	
1	Caring for the people
2	Steering the economy
3	Enabling sustainable living
4	Enhancing service delivery

Long Term Economic Development Plan (2021-2030)

7 Strategic Thrusts	
1	Transform the economic structure
2	Improve ease of doing business
3	Targeted spending to yield the most impact
4	Optimise assets utilisation and develop human capital
5	Accelerate digital and data adoption
6	Social inclusivity for all Sarawakians
7	Focus on environmental sustainability

The proposed strategy, policies and initiatives aim to address these challenges to enable economic transformation, stronger sustainable growth path and overall inclusive growth.

Source: Sarawak Government

Key challenges and opportunities were identified to shape the strategies, initiatives and policy recommendations, following a baseline review of Sarawak's economy

Key Challenges

- Greater uncertainties in the global economy post-pandemic
- Dependency on resource-based economic sectors resulting in strong need for diversification
- Lagging productivity growth compared to regional economies and inadequate skilled labour force
- Low household income relative to national average

Key Opportunities

- Promote Sarawak as regional food supplier
- Leverage wealth of biodiversity assets
- Intensify digitalisation and leveraging digital platform
- Proactive and agile operations in the public sector including greater inter-agency collaboration
- Transparent and empathetic people engagement

Embracing these challenges and proactively addressing them would open up new opportunities. Effective and prompt response to the challenges facing the State would help Sarawak achieve its aspirations of high income status, with strong, equitable and sustainable economic growth.

"In the middle of difficulty, lies opportunity" Albert Einstein

Game changing initiatives and policy recommendations are designed to propel the State forward in terms of economic prosperity, social inclusivity and environmental sustainability

Focus Area	Game Changing Initiatives
Education and jobs	• **Digital** education **platform** readiness • **Training** and **upskilling for employment**
Digital transformation	• **Expand digital solutions** for administration & business interface • Restructure economy to **low-touch model**
Supply chain	• **Risk diversification** of essential items (i.e. food supply)

- Governments are facing a myriad of challenges globally. Creative solutions are constantly sought to capitalise on opportunities and mitigate risks that emerge from major disruptions in the economy and society. The COVID-19 pandemic is a striking example of such disruptions and can be viewed as an excellent opportunity for Sarawak to make **bold game-changing decisions** from creation of initiatives and projects and through powerful policy changes that will have far-reaching impact
- These game changing initiatives are designed to capitalise on global megatrends such as **digitalisation, supply chain management and human capital development**
- Many sectors face major technological disruptions at present, with advancements in technologies, such as artificial intelligence, cloud computing, automation and blockchain
- Successful digital transformation efforts would promote Sarawak as a place where business operations are ran efficiently and economically, while providing excellent customer service. This, and a tech-savvy workforce, would **improve labour productivity and competitiveness** of the economy. These are factors which ultimately attract investors to the State
- Sarawak is uniquely positioned to be a **prominent regional supplier of agricultural and food products**. This is attributable to Sarawak's rich agricultural produce and high market demand, arising from more countries diversifying their supply chain for essential goods post COVID-19

Note: Low-touch economy refers to the way businesses across the globe have been forced to operate in order to succeed as a result of COVID-19. To mitigate health risks, businesses have been forced to adapt to strict policies, including low-touch interactions, limited gatherings, travel restrictions, etc.

Source: Low Touch Economy is Here to Stay Report, Board of Innovation, USA

The PCDS 2030 plan will bring tangible benefits to the Rakyat, increasing their sense of belonging and cementing their identities as stakeholders of Sarawak's inevitable growth

The strategies, initiatives and policy recommendations undertaken in tandem is targeted to bring tangible benefits to the Rakyat through the following:

1

Increased resource production and productivity

More output and increase productivity on an individual level (i.e. higher output produced with the same amount of inputs, including labour and time) will increase income, hence driving inclusive growth

2

New investments in downstream activities

Create more job opportunities, including higher income jobs. Higher complexity activities and expertise are required as companies advance along the value chain. International investments will help in technology transfers, raise the quality of human capital in the State and power economic growth

3

Development and strengthening of industry ecosystems

Strong local supply chain, and job and entrepreneurial opportunities creation for local companies. These opportunities allow local companies to participate and generate innovation and competitiveness in the local landscape

Sarawak is expected to experience sustainable and inclusive growth overall. It will be achieved through concerted efforts to increase household income, supplemented by the State's social policies and delivered by an enhanced public sector delivery model that collaborates with the private sector.

2. Economic Landscape

Chapter Outline

This chapter reviews the developments of the Sarawak economy under the Eleventh Malaysia Plan (11MP) 2016-2020. The analysis provides a context of the global environment. Subsequently, it focuses on the domestic conditions of Sarawak's economy.

These include economic growth, economic structure by sectors, domestic demand, external trade, labour market conditions, issues and challenges, as well as opportunities for Sarawak.

The chapter also provides analysis on Coronavirus disease 2019 (COVID-19) impact to the domestic economy of Sarawak.

Key findings

- Global economic activity contracted by 3.1% due to the COVID-19 pandemic in 2020
- Malaysia's real gross domestic product (GDP) expanded at an average growth of 4.9% for the period of 2016 to 2019. However, a 5.6% contraction in GDP is reported for 2020 due to the COVID-19 pandemic
- Sarawak's real GDP expanded at an average growth of 3.0% for the period of 2016 to 2019. Growth contracted by 7.1% in 2020
- Sarawak is a resource-rich economy with extensive palm oil plantation and oil and gas resources. The dominance of resource sectors expose Sarawak to the global commodity demand and price movements
- Domestic demand remained relatively stable between 2015-2019
- Sarawak recorded an average growth of 4.4% in exports and 6.0% in imports for the period of 2016-2019. Despite a steady growth in total exports, earnings from timber and timber products saw a 8.9% contraction
- Employment in Sarawak rose by an average of 2% annually between 2016-2019. The largest employment is in the services sector at 56% of employed persons in 2020 (2019: 54%).
- Key issues and challenges to be addressed beyond 11MP
    - Global economy post pandemic
    - Resource-based economic sectors
    - Productivity growth
    - Wages and household income disparity

- Key opportunities for Sarawak
    - Promote Sarawak as viable supply chain center
    - Harness richness of biodiversity assets and natural resources
    - Intensify digitalisation and leverage digital platform
    - Proactive and agile operations in the public sector including inter-agency collaboration
    - Transparent and empathetic people engagement
- Sarawak has introduced a COVID-19 Relief Plan, namely through Bantuan Khas Sarawakku Sayang (BKSS) to cushion the impact of COVID-19 on the livelihood of the rakyat

2.1 Sarawak Economy under the 11MP

Sarawak Economy under the 11MP

11MP: Economic Development

This chapter reviews economic developments that occurred in Sarawak under the 11MP (2016-2020). Malaysia underwent major changes in the 11MP period. This includes a mid-term review of 11MP, with a realignment of socioeconomic policies and strategies for 2018-2020, and adjustment to the new normal due to the COVID-19 pandemic.

Global Environment

The global economy upswing that began around mid-2016 moderated in 2019. The economic expansion of 2.8% in 2019 was the lowest level since 2008-2009. This was due to the global manufacturing downturn and rising trade barriers (e.g. China-US trade war).

The COVID-19 pandemic has severely impacted the global economy where economic activity contracted by 3.1% in 2020.

Global economy's recovery trajectory is expected to be moderate and has suffered several setbacks. There were cases where countries have slowed reopening and began reinstating partial lockdowns.

Source: International Monetary Fund (IMF)-World Economic Outlook (WEO) reports

Table 2.1: Selected real GDP growth by region (% change)

	2015	2019	2020f
World	3.4	2.8	-3.1
Advanced economies	2.3	1.7	-4.5
Emerging and developing Europe	1.0	2.5	-2.0
Emerging and developing Asia	6.8	5.4	-0.8
ASEAN-5	5.0	4.9	-3.4
Latin America and the Caribbean	0.4	0.1	-7.0
Middle East and Central Asia	2.7	1.5	-2.8
Sub-Saharan Africa	3.2	3.1	-1.7

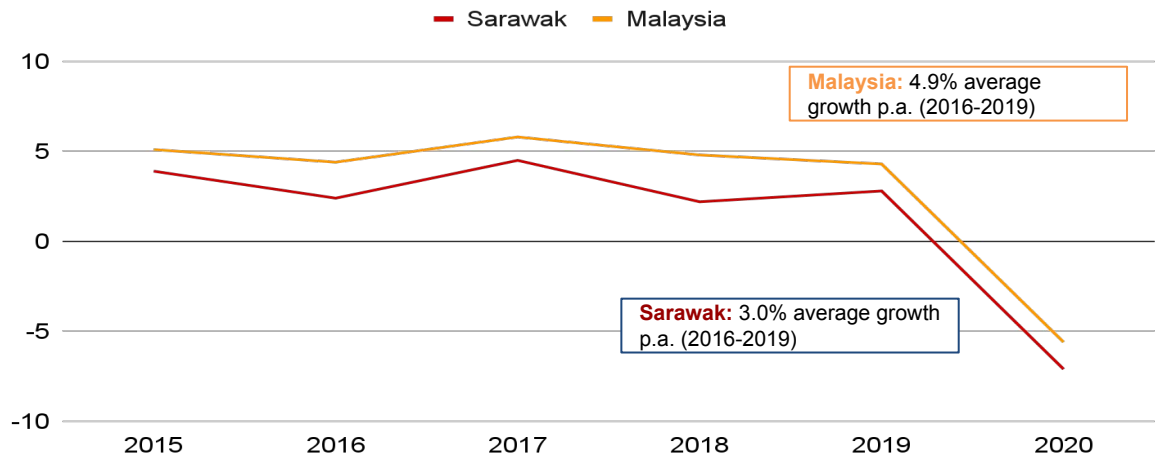
Note: Advanced economies include United States (US), Germany, France, Italy, Spain, Japan, United Kingdom, Canada and other advanced economies. Association of Southeast Asian Nations (ASEAN)-5 countries is a subset of emerging and developing Asia, which includes Indonesia, Malaysia, Philippines, Thailand and Vietnam. Data is based on WEO by IMF in October 2021.
Source: IMF-WEO October 2021

Sarawak's Economy

Sarawak's real GDP growth recorded moderation under the 11MP period. A similar trend was seen at the national level.

A sharp decline in economic growth in 2020 was due to the COVID-19 pandemic impact. Malaysia has reported a 5.6% contraction in GDP for 2020, while Sarawak has contracted by 7.1% for the same year.

Figure 2.1: Sarawak and Malaysia real GDP growth (%)



Source: Department of Statistics Malaysia (DOSM)-GDP by State 2020

Sarawak's GDP growth moderated to 2.2% in 2018 (2017: 4.5%). This was likely attributed to external uncertainties such as the US-China trade war, to a lesser extent. Meanwhile, real GDP picked up, albeit marginally to 2.8% growth in 2019.

The State's nominal GDP per capita has increased by 1.2 times to RM53,548 in 2019 from 2016. This metric was higher than the national average of RM 46,526 in 2019. Sarawak is the third largest GDP contributor to Malaysia with a population of about 2.8 million.

In 2020, Sarawak's GDP per capita declined to RM48,597, and was the fourth largest GDP contributor to Malaysia in terms of real GDP, marginally lower than Johor.

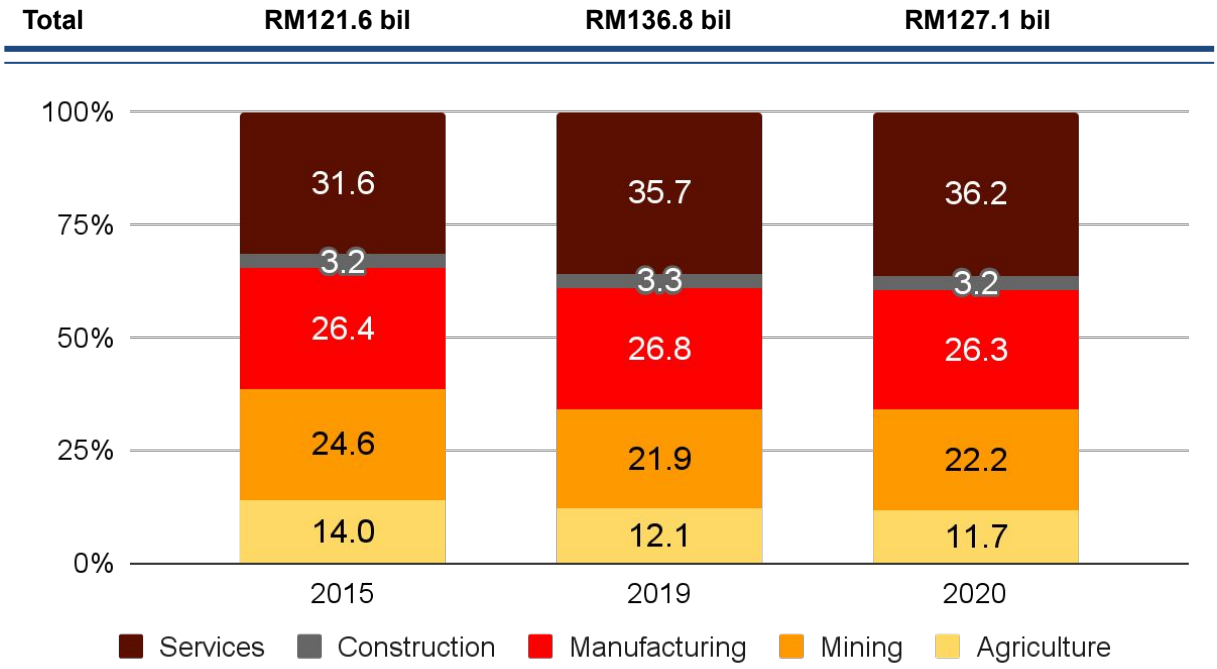
Source: DOSM-GDP by State 2020

Economic Sectors

Sarawak's economic activity saw a slight decrease in its primary sector contribution to GDP and a slight increase in downstream activity in recent years - particularly in the services and manufacturing sectors.

This is attributable to both an increase in services sector development and diversification away from primary sectors, such as mining and agriculture sectors.

Figure 2.2: Share to GDP by kind of economic activity, 2015, 2019 and 2020 (%)



Note: The analysis covers 2015-2019, and excluded share of import duty. Year 2020 experienced a downturn due to the pandemic.
Source: DOSM-Statistics Yearbook Sarawak 2018-2019, DOSM-GDP by State 2020

The services sector was the fastest growing sector with an average growth of 6.2% over 2016-2019. This is attributable to commerce and trade, as well as tourism-related activities (e.g. Visit Sarawak Year 2019, and ecotourism). Tourism sector contributed to 7.5% of Sarawak's GDP in 2018. Services contribution to GDP as a whole grew from 31.6% in 2015 to 35.7% in 2019. It is further supported by the growing digital economy in the State.

Note: Services are the result of a production activity that changes the conditions of the consuming units, or facilitates the exchange or products or financial assets. It consists of economic activities in the utilities, wholesale & retail trade, food & beverage, accommodation, transportation & storage, information & communication, finance, insurance, real estate, business services, private education, private health, domestic services to households and others (Source: DOSM)

Source: DOSM-Statistics Yearbook Sarawak 2018-2019, DOSM-GDP by State 2020, Regional Tourism Satellite Account Sarawak 2018, Media Reports

Digital economy contributed 2.3% of GDP in 2018. It is largely attributable to economic activities in the services sector. The State aims to grow its digital economy with the launch of Sarawak Digital Economy Strategy 2018-2022. This is also supported by the launch of Malaysia Digital Economy Blueprint (MyDigital) in 2021, encouraging digitalisation in the Malaysian economy.

The manufacturing sector is dominated by downstream oil and gas products, with oil and gas-related manufacturing products representing 80% of manufacturing sector GDP in 2019. The construction sector had recorded an average growth of 4.3% for 2016-2019.

In contrast, the mining sector recorded a marginal growth of 0.1% between 2016-2019. This was mainly due to the slowdown in the oil and gas sector, as the oil and gas sector makes up the majority of mining sector activities. The oil and gas sector is also subject to the global commodity markets' price fluctuations.

The agriculture sector also experienced negative growth. This is due to the decline in the logging and forestry sector within the same period.

Furthermore, Sarawak has experienced decline in economic sectors due to the pandemic in 2020. Commodity demand faces sharp decline as global demand falls due to overall negative outlook. This includes activities in the manufacturing and transport sectors. In 2020, the tourism and manufacturing sectors are estimated to be the hardest hit sectors in Sarawak.

Source: DOSM-Statistics Yearbook Sarawak 2018-2019, Sarawak Digital Economy Strategy 2018-2022, DOSM-GDP by State 2020, Media Reports

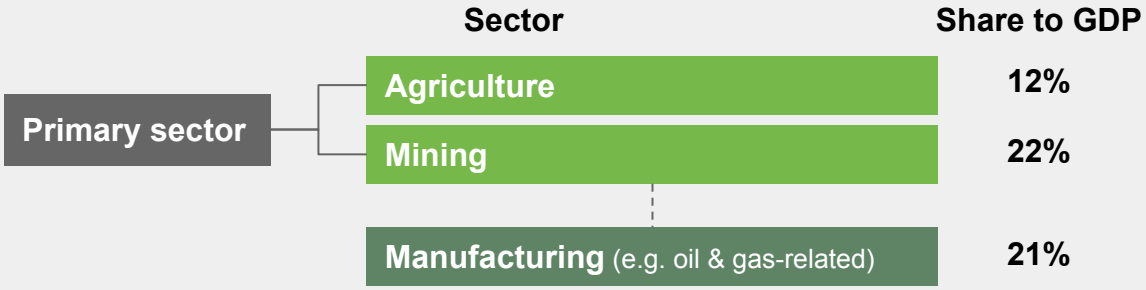
Article 2.1: Sarawak's resource-based sectors

Sarawak's reliance on primary sectors exposes the economy to global commodity price fluctuations

Sarawak is a resource-rich economy with extensive palm oil plantation and oil and gas resources. This is linked with the dominance of the primary sectors which are resource-based sectors (i.e. agriculture and mining).

In 2019, the services sector contributed 36% of Sarawak's GDP, while agriculture and mining sector contributed 34% of Sarawak's GDP. Sarawak's manufacturing sector is largely contributed by downstream oil and gas related industry, including petrochemical industry. Oil and gas-related manufacturing contributed 21% of Sarawak's GDP in 2019.

Figure 2.3: Primary sector share to real GDP, 2019 (%)

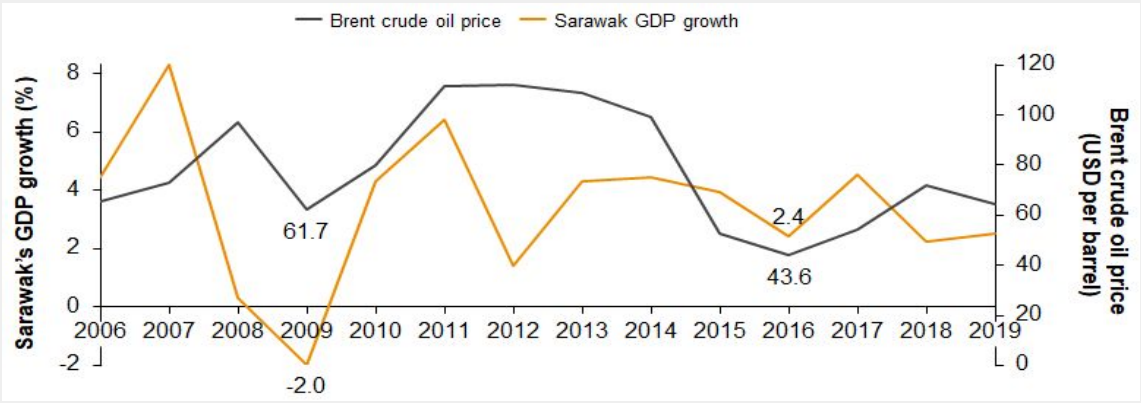


Source: DOSM-GDP by State 2020

Due to its reliance on commodities, particularly oil and gas, Sarawak's economy is exposed to price fluctuations and output volatility. The declining GDP growth over the period of 2013-2019 was primarily due to the decrease in crude oil prices.

In 2016, for example, crude oil price (Brent) fell to an average of USD44 per barrel (from high in 2012: USD112 per barrel), the largest decline since the Global Financial Crisis in 2007-2008. The slower global demand conditions also impacted the domestic economy, where Sarawak's GDP slowed to 2.4% (2015: 3.9%).

Figure 2.4: Brent crude oil prices and Sarawak's GDP growth, 2006-2019



Source: DOSM-National Accounts Statistics (GDP by State) 2005-2013, DOSM-Statistics Yearbook Sarawak 2018-2019, U.S. Energy Information Administration

Aggregate Demand

On the demand side, Sarawak's economy is mainly supported by household consumption and total investment. Both factors in summation contributed to more than half of total real GDP.

Net exports is a sizable component on the external front. It is estimated to be close to 40% share of GDP for most years under the 11MP period.

Table 2.2: Expenditure components as share of GDP, 2015-2019 (%)

Expenditure component, % of GDP	2015	2016	2019
Private consumption	31.9	31.7	30.5
Public consumption	7.6	9.9	10.7
Total gross fixed capital formation (GFCF)	24	21.6	22.2
Net exports	41.2	27.5	37.2

Note: GDP by Expenditure is estimated from Economic Planning Unit (EPU Sarawak) Sarawak internal estimation for 2015-2019. There is no official statistics of GDP by Expenditure from DOSM. Share of expenditure components excludes change in stocks, which may lead to a total of more or less than 100% share of GDP.
Source: Based on EPU Sarawak estimates

A notable decline in Sarawak's net exports in 2016 was due to global economic volatility, such as the Organisation of Petroleum Exporting Countries (OPEC) oil production cuts, US presidential elections and Brexit. A rebound in net exports was seen in 2017. This was supported by an increase in exports of liquefied natural gas (LNG), crude petroleum, aluminium, ferroalloys and palm oil.

Private consumption remained positive throughout the 2016-2019 period. This is evidenced from the value-add of sectors that are driven by household consumption. These sectors include wholesale and retail trade, food and beverage and accommodation, which rose about 7.2% annually over 2016-2019.

However, private expenditure is expected to be impacted by movement controls as a result of the pandemic in 2020. The pandemic has reduced the ability of people to work and businesses to operate/ produce, impacting household consumption and business investments.

Sarawak's public consumption was supported by an average annual growth of 16.5% in the State government's operating expenditure between 2016-2019. The largest annual increase in government operating expenditure during the 11MP period was seen in 2019 at RM3.4 billion, a 29.7% increase from RM2.6 billion in 2018. This is attributable to a 63% increase in grants and fixed payments, increasing from RM0.8 billion in 2018 to RM1.4 billion in 2019.

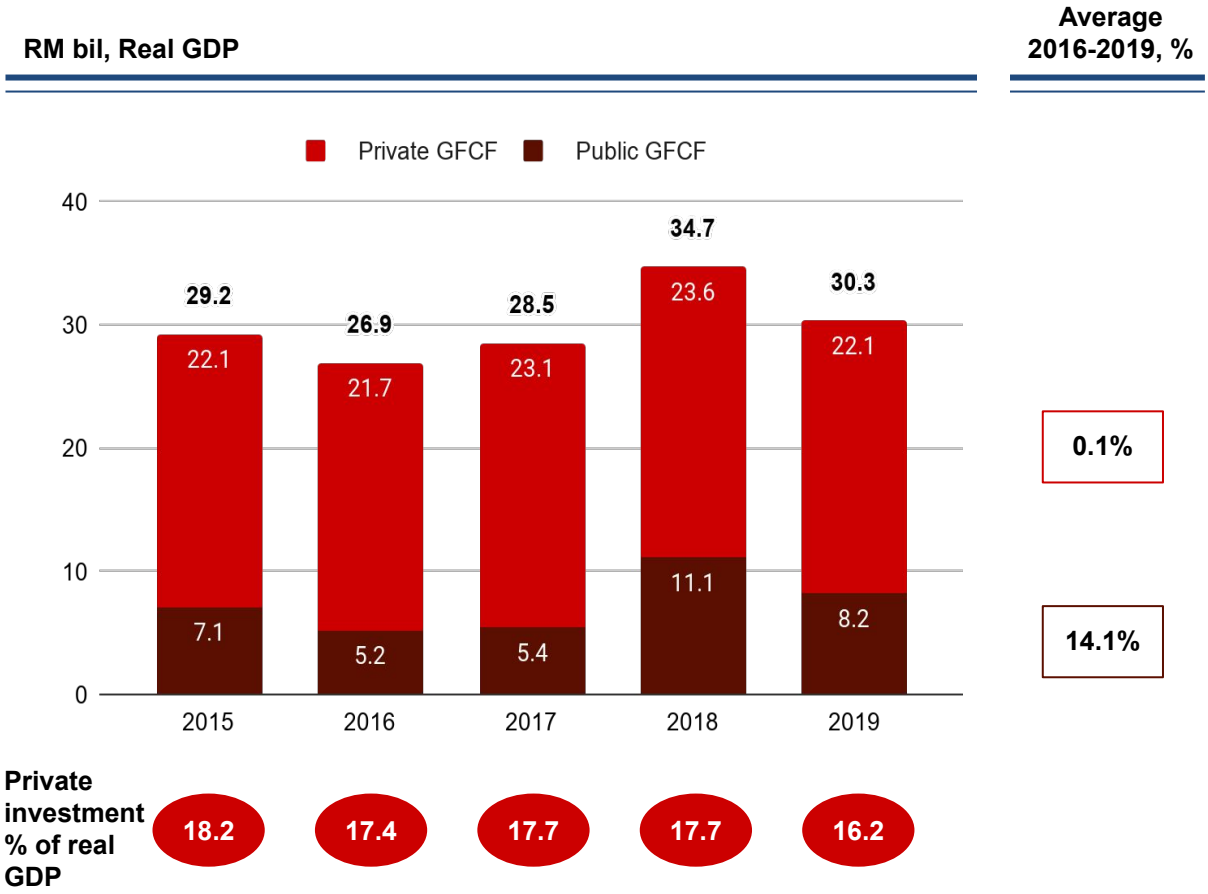
Source: EPU Sarawak, DOSM-Statistics Yearbook Sarawak 2019

Total investment (i.e. GFCF) is also a key determinant of domestic demand. GFCF makes up an estimated 22.2% share of GDP in 2019.

Private investment contributed approximately 73% of total investment in 2019. It is estimated to be relatively unchanged under the 11MP period. Public investment saw a growth of 3.6% in the same period.

Total private investment as a share of GDP has remained steady during this period.

Figure 2.5: Sarawak public and private GFCF, 2015-2019



Source: EPU Sarawak estimates

Sarawak's approved investments in the manufacturing sector saw an average annual decline of 5.4% between 2016-2019. However, approved investments in the manufacturing sector soared in 2020 despite the pandemic. A 509.1% increase in approved investments was recorded in the manufacturing sector in 2020, from 2019 levels. This represents an increase from RM2.6 billion to RM15.7 billion - equivalent to 17.2% of Malaysia's manufacturing sector approved investments in 2020.

Note: GFCF is estimated from EPU Sarawak internal estimation for 2015-2019. There are no official statistics of GDP by Expenditure for Sarawak State from DOSM.
Source: Malaysian Investment Development Authority (MIDA)-Malaysia Investment Performance Report 2020, EPU Sarawak

Article 2.2: Share of total investment to GDP

Sarawak's GFCF as a percentage of GDP is lower than national average

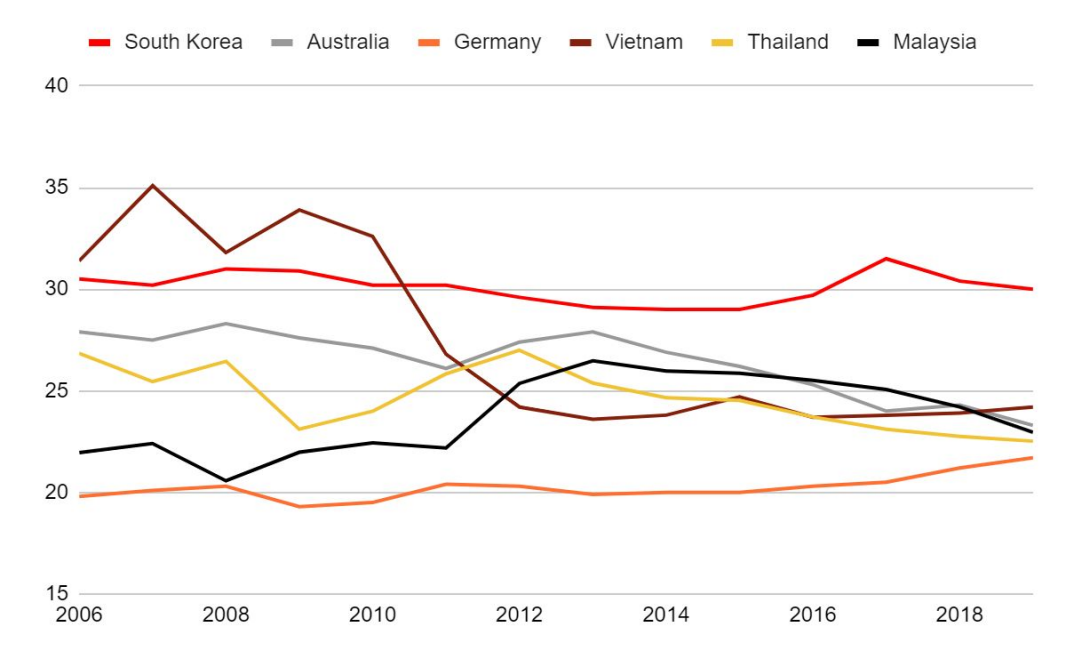
Sarawak's total GFCF is estimated to be 23.2% of total GDP under the 11MP period. This was slightly lower than Malaysia's average GFCF share to GDP over the same period (24.9% of GDP). Overall, total GFCF for both Sarawak and Malaysia saw a decline in 2019.

Based on the observation of several countries, Sarawak should strive for a higher GFCF as a share of GDP. South Korea is an example of advanced economy that has maintained a high level of GFCF share in total GDP (average of 30%).

This is likely attributable to South Korea's investment policy reform for foreign direct investments (FDI). The country is ranked as the biggest reformer of its FDI policies between 1997 and 2010. The ranking is based on a sample of 40 developed and emerging countries in the Organisation for Economic Co-operation and Development (OECD) FDI Regulatory Restrictiveness Index.

Source: EPU Sarawak, OECD-FDI Regulatory Restrictiveness Index, World Bank-World Development Indicators

Figure 2.6: GFCF (% share of GDP)



Source: World Bank-World Development Indicators

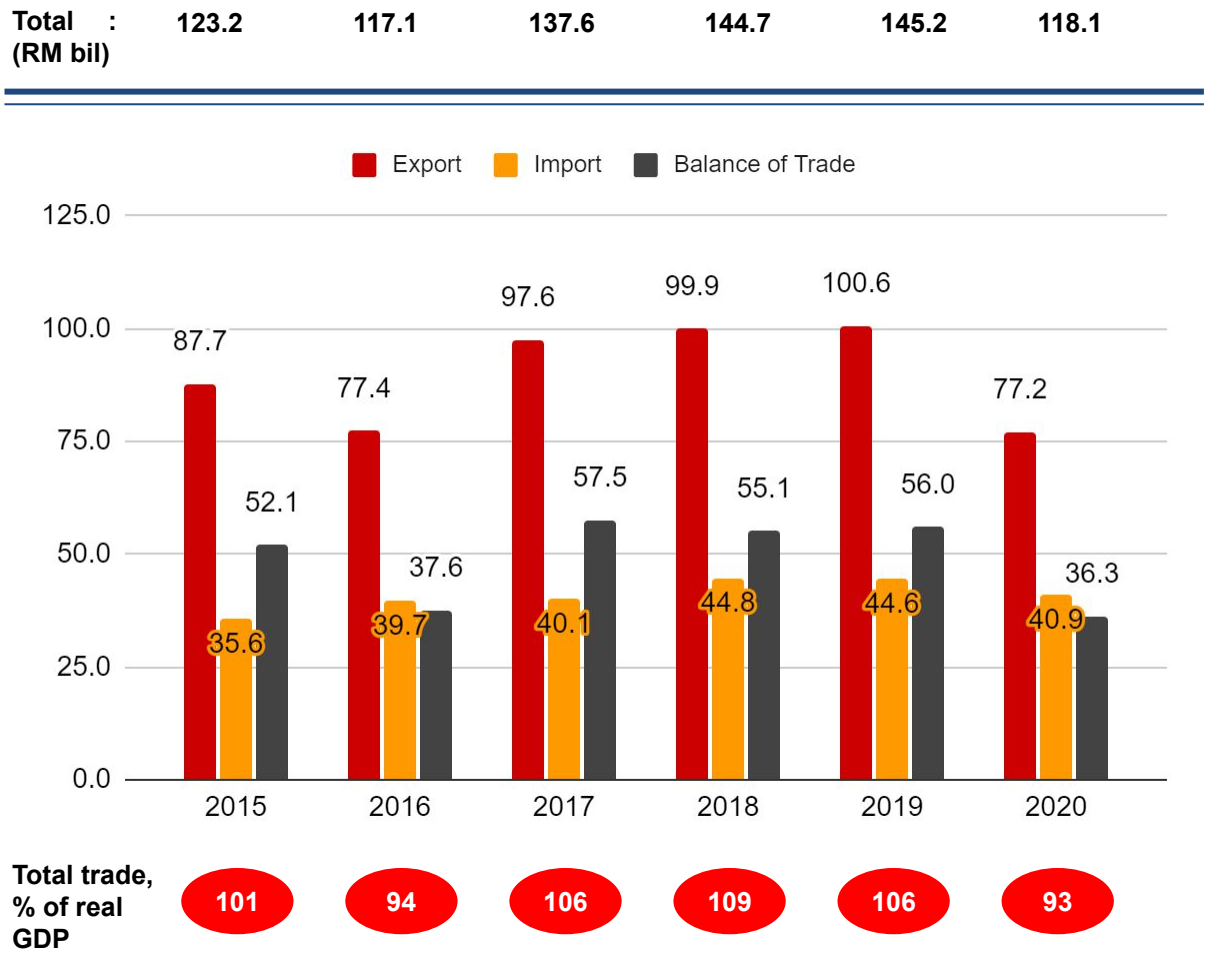
External Sector

The external sector is an important component of Sarawak's economy. This is evidenced by the relatively high trade-to-GDP ratio, reflecting the openness of the State's economy. Total trade as a percentage of real GDP stayed above 100% for most years under the 11MP period.

The external sector expanded steadily in terms of total trade. Exports grew at an average of 4.4% in the period 2016-2019, and imports grew by 6.0% in the same period. Additionally, Sarawak has consistently recorded positive balance of trade through 2016-2019.

In 2020, exports and imports saw a 23.3% and 8.3% contraction respectively due to the pandemic. This resulted in a decline in total trade as a share of GDP to 93%.

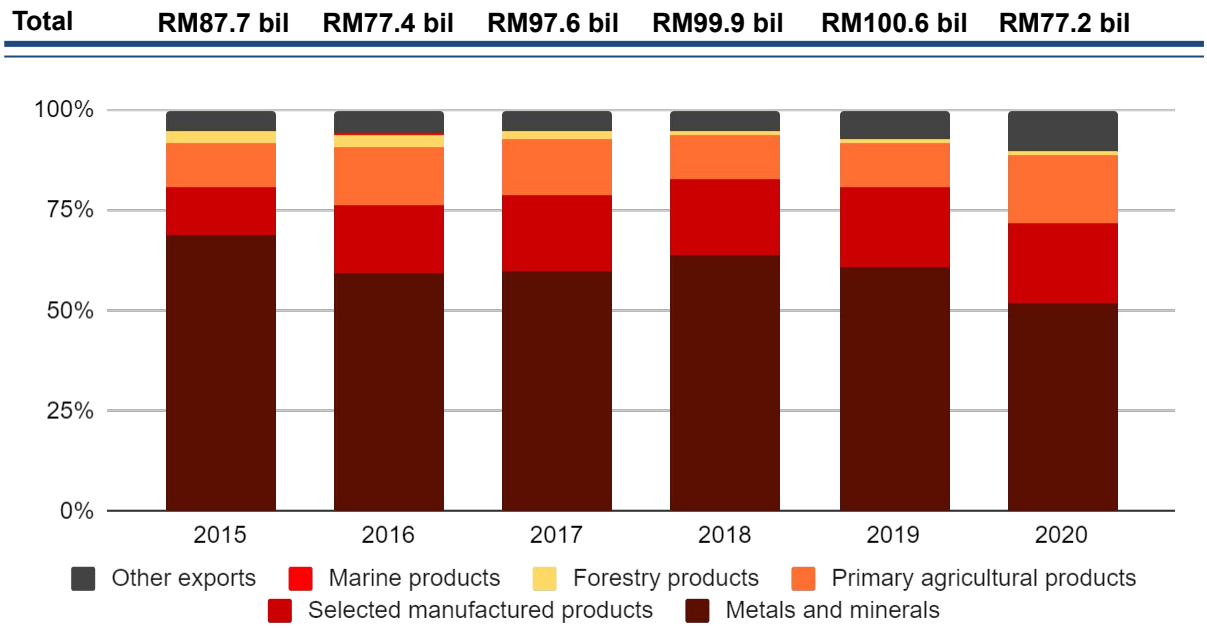
Figure 2.7: Sarawak's Exports, Imports and Balance of Trade, 2015-2020 (RM bil, %)



Source: DOSM-Sarawak External Trade Statistics 2020-2021

Japan and China were Sarawak's top trading partners in 2019. Top products exported in 2019 were LNG, crude petroleum, and palm oil. Top imported commodity sections in the same year include machinery and transport equipment, chemicals and manufactured goods. In commodities exports, metals and minerals made up more than 50% of total exports under the 11MP period.

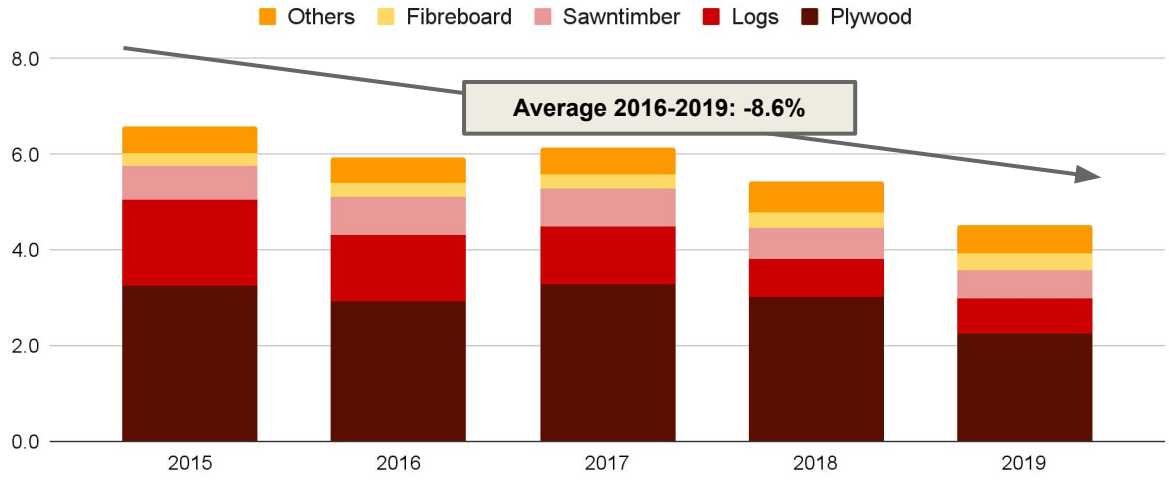
Figure 2.8: Sarawak's export by selected commodities, 2015-2020 (RM bil, %)



Source: DOSM-Sarawak External Trade Statistics 2020-2021

Additionally, selected manufactured products saw an increase in exports. This was largely contributed by the increase in exports of aluminium and ferroalloys. Earnings from timber and timber products have declined despite a steady growth in total exports.

Figure 2.9: Export Earnings from Timber & Timber Products, 2015-2019 (RM bil)



Note: 2020 data is not yet available.
Source: Sarawak Timber Industry Development Corporation

Article 2.3: Sarawak exports

External demand of manufacturing and mining products are driven by high resource-based content

Primary commodities such as LNG and crude petroleum still represent a large share of Sarawak's export baskets.

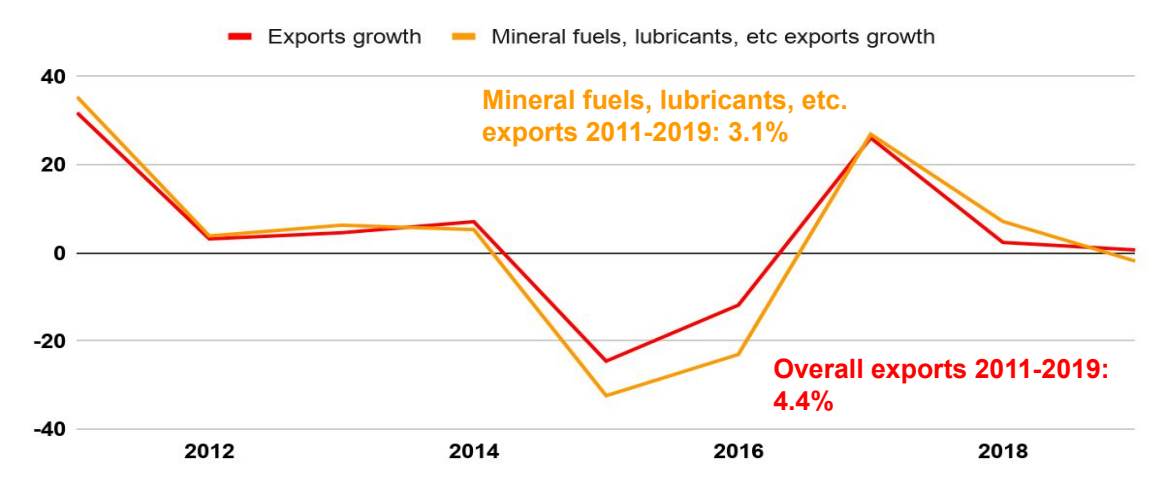
Table 2.3: Top 3 Sarawak's exports, 2019

Exports	Share of total Sarawak exports
Liquefied natural gas	41.9%
Crude petroleum	12.8%
Palm oil	9.1%

Source: DOSM-Sarawak External Trade Statistics 2020

Sarawak's exports growth has averaged 4.4% between the years 2011-2019. Trade moderated to 2.4% in 2018 (RM100 billion), a marked decline from 26.1% growth in 2017. Exports remained sluggish in 2019, with an expansion of 0.7% to RM101 billion.

Figure 2.10: Sarawak's total exports and exports of petroleum related products, Annual growth in 2011-2019 (%)



Note: Mineral fuels, lubricants, etc. consist of petroleum and petroleum products, gas (natural and manufactured), coke, coal and briquettes
Source: DOSM-Sarawak External Trade Statistics 2020, Malaysian Administrative Modernisation and Management Planning Unit (MAMPU)-Sarawak Export by Commodity Sections Year 2010 - 2017

Export performance could be affected by the moderating demand from external market such as Japan. Japan is Sarawak's largest market for commodity-related exports, particularly LNG as the commodity tops Sarawak's exports. Japan is the largest LNG buyer globally importing about 77 million tonnes in 2019.

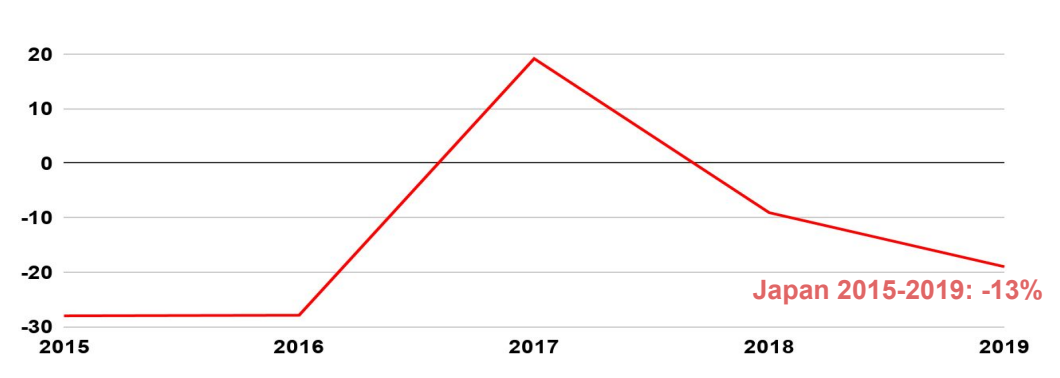
Source: Energy Information Administration, DOSM-Sarawak External Trade Statistics 2020, World Bank

Reduced demand from natural gas and slowdown in economic growth has resulted in reduced LNG consumption in Japan. Japan's GDP growth has averaged 0.9% over the period of 2014-2019.

Japan also restarted its nuclear reactors in recent years. Increased nuclear power production meant a reduced demand for LNG. Japan's LNG imports declined 11% between 2017-2019 as a result. This was when its natural gas-fired power was replaced by electricity fueled by nuclear and renewable sources.

Sarawak's LNG exports to Japan contracted 14.0% in 2018. It further contracted 19.0% in 2019, from RM20.8 bil in 2018 to RM16.8 bil in 2019.

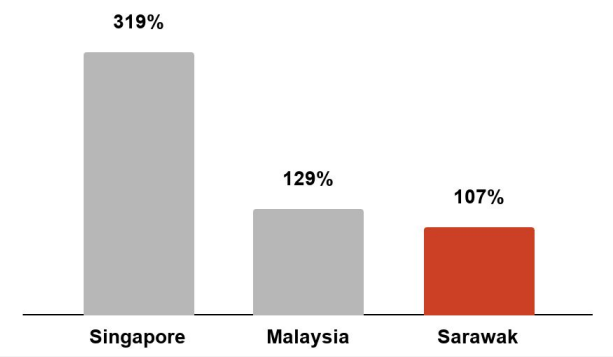
Figure 2.11: Sarawak's LNG exports to Japan, 2015-2019 (%)



Source: DOSM-Sarawak External Trade Statistics 2020

Sarawak is a fairly open economy with total trade-to-GDP share of above 100% (2019: 107%). Developed economies like Singapore has total trade-to-GDP of 319%, while Malaysia has total trade-to-GDP of 129% in comparison.

Figure 2.12: Trade-to-GDP, 2019



Given the limited domestic market size, Sarawak could look to strengthen trade with international markets.

Source: DOSM-Sarawak External Trade Statistics 2020, World Bank-World Development Indicators

In 2020, the global economic slowdown and disruptions in the global supply chain also caused lower economic activity in Sarawak's trade-related industries and exports. Major economic sectors in Sarawak have strong trade linkages to global demand. These include industries in oil and gas, palm oil and manufacturing (at least two-thirds of the total manufacturing sector is linked to oil and gas).

Labour Market Conditions

Employment in Sarawak rose by an average of 2.0% annually between 2016-2019. This can be attributed to the improvement in national and state economic conditions. Due to the pandemic in 2020, Sarawak's labour force saw a 2.0% decline while employment contracted by 3.2%.

Further breakdown of key indicators for Sarawak's labour market conditions are as follows:

Table 2.4: Sarawak employment indicators

	2015	2016	2017	2018	2019	2020
Population ('000)	2,702	2,739	2,766	2,792	2,806	2,813
Total labour force ('000)	1,258	1,260	1,291	1,317	1,347	1,320
Total employed ('000)	1,215	1,218	1,252	1,274	1,305	1,262
Total unemployed ('000)	44	42	39	42	42	57
Unemployment rate (% of labour force)	3.5	3.3	3.0	3.2	3.1	4.3
Retrenchments (persons)	290	596	1,014	582	565	2,598

Note: Retrenchment includes both local and foreign workers
Source: DOSM- Labour Force Survey (LFS) 2015-2020, DOSM-Current Population Estimates 2021, Department of Labour Sarawak-Sarawak Labour Statistics 2015-2020

The services sector contributes the largest employment in Sarawak. About 56% of 1.3 million employed persons was in the services sector in 2020. This was followed by 22% employed in the agriculture sector, 12% in the manufacturing sector, 10% in the construction sector, and 1% in the mining sector.

Average unemployment rate was 3.2% in the period of 2016-2019. Retrenchment in Sarawak remained below 600 persons annually for both foreign and local workers, with the exception of 2017.

Sarawak's labour market has experienced a drastic downturn in 2020 due to the COVID-19 pandemic. It was reported that retrenchments (2,598), voluntary separation schemes (315) and temporary lay-offs (89) rose to 3,002 in 2020 - a 5.3 times increase from 565 in 2019. Additionally, there were 3,765 employees who faced salary reduction in 2020. Unemployment rate increased to 4.3% in 2020.

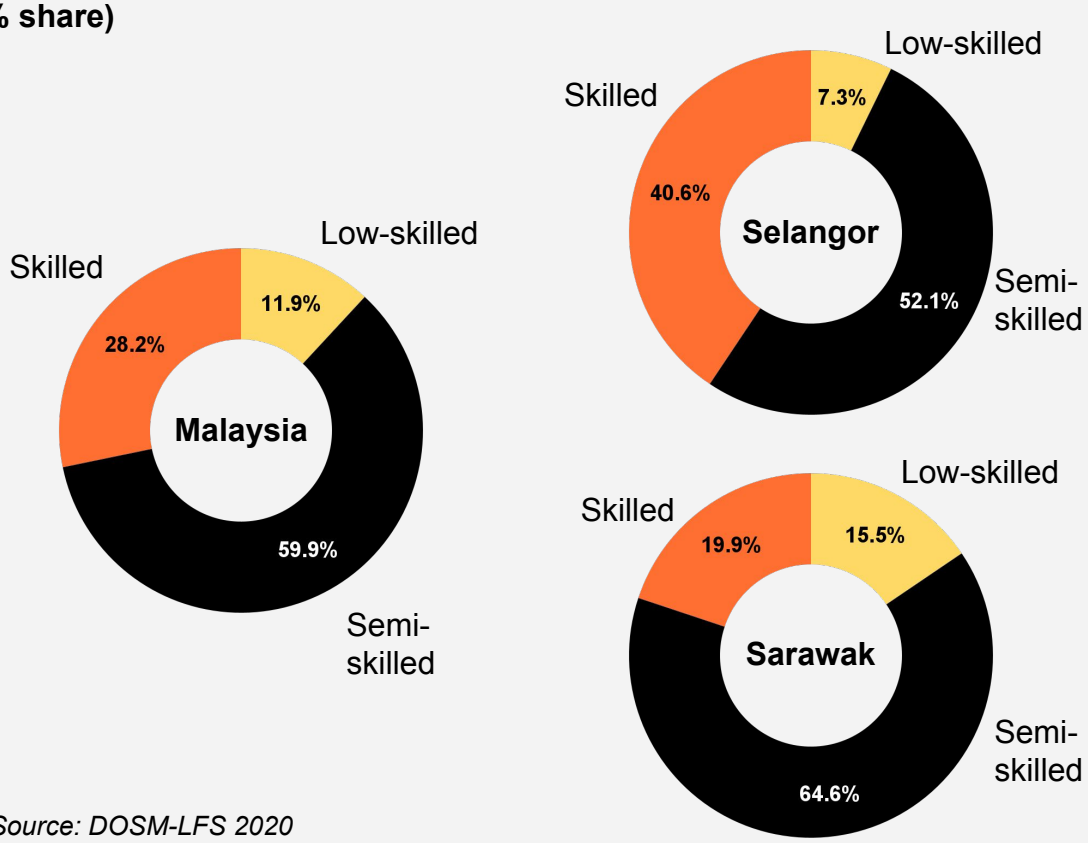
Source: DOSM-LFS 2020, Department of Labour Sarawak-Sarawak Labour Statistics 2020

Article 2.4: Sarawak employment by skill level

Shifting into more skilled workforce from a low base

The largest economic sector in both Sarawak and Selangor is the services sector. Proportion of skilled employed persons in Selangor is higher than the national average, while Sarawak is lower than the national average.

Figure 2.13: Malaysia, Selangor and Sarawak employment by skill level, 2020 (% share)

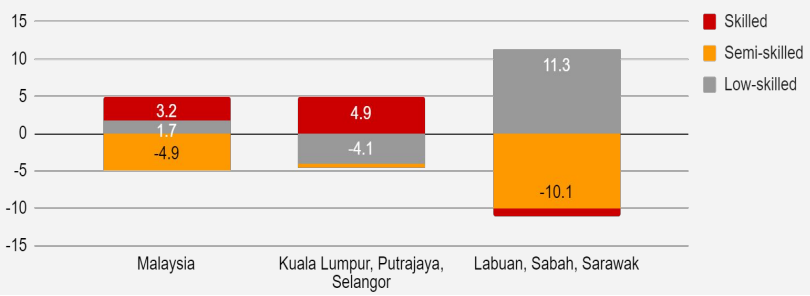


Source: DOSM-LFS 2020

The State of Households 2020 Part II report by Khazanah Research Institute (KRI) highlighted that a combination of higher skilled and educated employed persons, coupled with a concentration of modern services *(i.e. finance and insurance, information and communication technology, real estate, and professional, scientific and technical services)* lifted wage levels and household incomes above other states. Wilayah Persekutuan Kuala Lumpur (WP KL), Putrajaya and Selangor showed an increase in skilled workers and decrease in low-skilled workers in the past 2 decades.

Sarawak should shift towards a more skilled workforce that is associated with modern services to achieve its higher household income aspirations.

Figure 2.14: Change in employment share, by skill level and state group, 2001 – 2019



Source: KRI

2.2 Issues and Challenges

Issues and Challenges

Sarawak's economy experienced growth for most of the 11MP period. However, existing issues and challenges persists with new challenges arising from the COVID-19 pandemic in 2020 that will need to be addressed.

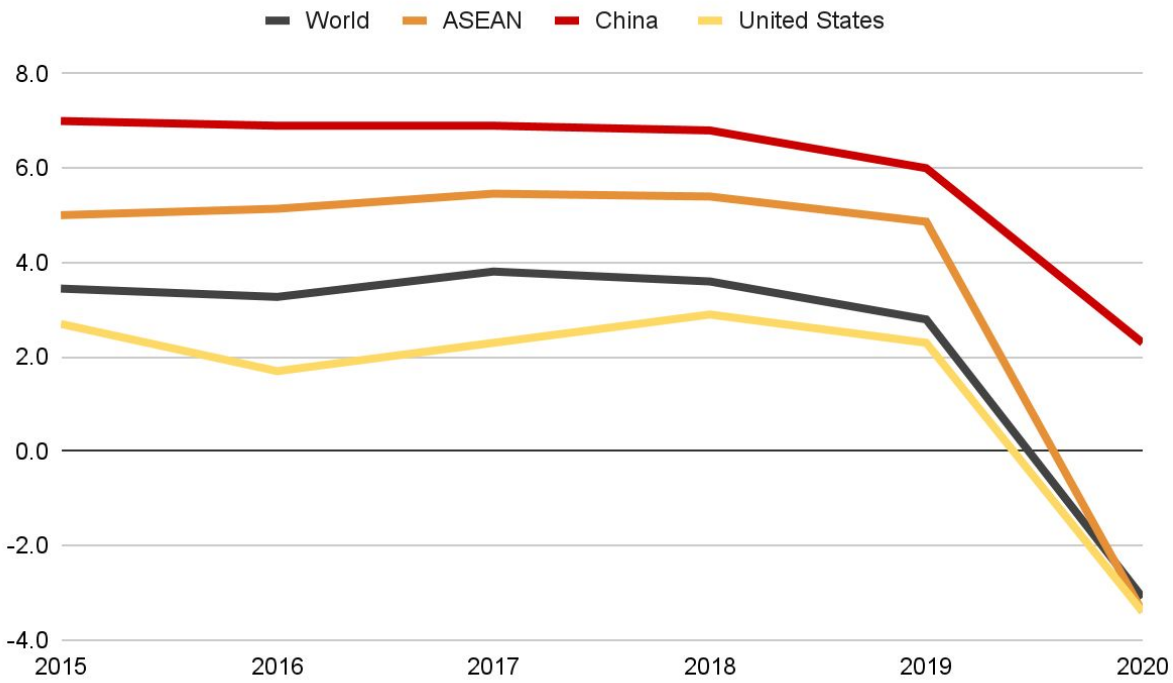
Overall, Sarawak will face challenges due to the following conditions:

- Global economy post pandemic
- Resource-based economic sectors
- Productivity growth
- Income levels

Greater uncertainties in the global economy post pandemic

Global economic activity contracted by 3.1% in 2020. The transport and leisure sectors are expected to be more heavily impacted by the COVID-19 pandemic, despite quicker than anticipated recovery of some economies, with expected moderation in recovery. Both U.S. and ASEAN economies experienced a 3.4% contraction in GDP in 2020. China expanded by 2.3% in the same year.

Figure 2.15: Real GDP growth of selected economies, %



Source:IMF World Economic Outlook July 2021

Malaysia recorded a contraction of 5.6% in GDP for 2020. This is coupled with a worsening unemployment rate of 4.8% in Q4 2020, from 3.3% in 2019.

The hardest hit leisure and travel sectors saw a decline of 68.2% in visitor arrivals due to travel restrictions across borders in the first half of 2020. This contributed to over 200 tourism and hotel operators terminating business operations since March 2020.

Malaysian Aviation Commission (MAVCOM) forecasted revenue-at-risk for Malaysian and foreign carriers at RM14.3 billion and RM6.7 billion respectively in 2020 - highlighting the impact on the aviation sector. Additionally, the wholesale and retail trade sector saw a contraction of 5.9% in 2020.

Sarawak saw a 25% decline in exports, 68.9% drop in visitor arrivals and 5.3 times increase in retrenchments, and voluntary separation schemes and temporary lay-offs, from 565 in 2019 to 3,002 in 2020.

73% of Sarawakians responded being *Severely Affected* and *Affected* financially by COVID-19, as reported in the DOSM Special Survey on COVID-19, Round 1. This was slightly higher than the national average of 69% respondents being *Severely Affected* and *Affected* financially by COVID-19.

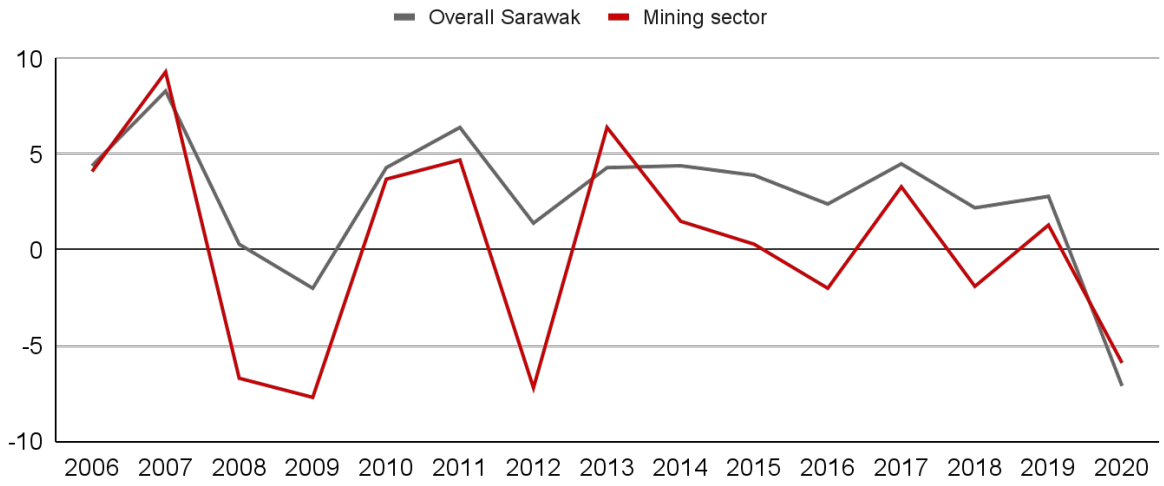
Note: Retrenchment in 2019 includes both local (541) and foreign (24) workers
Source: DOSM-Special Survey on COVID-19, Round 1, Department of Labour Sarawak, MAVCOM, Media reports

It is imperative to diversify and expand into other high value activity to reduce dependency on resource-based economic sectors

Sarawak's reliance on resource-based economic sectors of agriculture and mining subject the economy to global commodity price fluctuations. A fall in oil prices has adverse impact on economic growth, in particular. The persistently weak oil prices caused a slow down in performance of the mining sector.

GDP of the mining sector fell from a 6.4% growth in 2013 to 1.3% growth in 2019. Sarawak's GDP growth moderated from 4.3% to 2.8% in 2013 and 2019 respectively. In 2020, the mining sector saw a 5.9% contraction in GDP.

Figure 2.16: Real GDP growth of overall Sarawak's economy and mining sector (% change)



Source: DOSM-National Accounts Statistics (GDP by State) 2005-2013, DOSM-GDP by State 2020

Findings from the World Bank also supported analysis that countries rich in natural resources tend to have slower economic growth. Countries rich in natural resources have more unequal income distribution and larger share of population in poverty, besides being affected by the volatility of commodities prices.

Source: World Bank Economic Growth in the 1990s Learning from a Decade of Reform, DOSM-National Accounts Statistics (GDP by State) 2005-2013, DOSM-Statistics Yearbook Sarawak 2018-2019

Productivity growth is lagging behind regional economies

Value added per employment is used as an indicator of labour productivity. Sarawak's labour productivity growth by value added per employment under the 11MP period is lower than regional economies in ASEAN. Labour productivity growth saw moderation since 2016.

Table 2.5: Labour productivity by value added per employment, 2015-2020 (% change)

	2016	2017	2018	2019	2020
Sarawak	2.1	1.7	0.4	0.4	-3.9
ASEAN-5					
Malaysia	3.1	3.7	2.2	2.6	-5.1
Indonesia	3.7	2.0	3.1	1.7	-0.7
Philippines	4.5	9.0	4.0	3.0	-5.6
Thailand	4.2	4.7	3.0	3.0	-5.4
Vietnam	5.7	5.7	5.3	7.5	4.5

Note: With the exception of Sarawak, % change for productivity growth was calculated based on World Bank's indicator, GDP per person employed (constant 2017 PPP $). Labour productivity for Sarawak was calculated using real GDP per employed person for the same period.
Source: DOSM-LFS 2016-2020, DOSM-Statistics Yearbook Sarawak 2018-2019, World Bank-World Development Indicators, DOSM-GDP by State 2020

Majority of employed persons in Sarawak are in the services sector, followed by agriculture and manufacturing sectors. Mining is one of the major economic sector after services and manufacturing, but only employed 1% of the State's labour force in 2020. This may increase as Sarawak develops more skilled and qualified workforce to fill more lucrative job opportunities in the sector.

Table 2.6: Employed persons by sector in Sarawak, 2020

Sector	Employed person ('000)	% share
Services	707	56%
Agriculture	272	22%
Manufacturing	146	12%
Construction	125	10%
Mining	13	1%
Total	**1,262**	**100%**

Source: DOSM-LFS 2020

Sarawak's mining sector recorded the highest sector labour productivity by value added per employment of RM2,055,000 in 2019. This was followed by the manufacturing sector with labour productivity by value added per employment of RM203,000. The services, agriculture and construction sectors in Sarawak recorded labour productivity by value added per employment at RM70,000, RM61,000 and RM32,000 respectively.

Malaysia's services, agriculture and construction sectors have higher labour productivity by value added per employment compared to Sarawak. Malaysia's services sector recorded labour productivity by value added per employment at RM87,000, followed by agriculture and construction sectors at RM66,000 and RM52,000 respectively in 2019. Malaysia's mining sector recorded labour productivity by value added per employment at RM1,131,000 and the manufacturing sector at RM118,000.

Table 2.7: Labour productivity by value added per employment, 2019 (RM '000)

Sector	2019		2020	
	Malaysia	Sarawak	Malaysia	Sarawak
Mining	1,131	2,055	1,119	2,248
Manufacturing	118	203	123	230
Services	87	70	80	65
Agriculture	66	61	63	55
Construction	52	32	46	33

Note: Comparison for labour productivity focuses on 2019 as 2020 experienced a downturn.
Source: DOSM-LFS 2019-2020, DOSM-GDP by State 2020, PwC analysis

Sarawak saw negative growth in labour productivity by value added per employment in all sectors except the services sector in 2019. The largest decline was seen in the mining sector with a 21.6% decline in labour productivity growth by value added per employment. Sarawak's mining sector labour productivity growth by value added per employment had a 15.5% average growth between 2016-2019 despite the decline. This was well above Malaysia's mining sector average growth of 0.9% decline for the same period.

The agricultural sector also recorded a higher labour productivity growth by value added per employment in Sarawak, with an average growth of 2.5% as compared to 0.8% for Malaysia under the 11MP period.

Overall, Sarawak's labour productivity growth by value added per employment in the agriculture and mining sector was above the national average. Labour productivity growth by value added per employment in the manufacturing, construction and services sector was relatively lower to the national average.

Source: DOSM, Malaysia Productivity Corporation (MPC)-Productivity Report 2020

Table 2.8: Sarawak labour productivity growth by value added per employment, 2015-2020 (% change)

	2016	2017	2018	2019	2020
Sarawak	2.1	1.7	0.4	0.4	-3.9
Agriculture	-1.0	1.4	14.5	-4.7	-10.2
Mining	71.5	18.6	-6.3	-21.6	9.4
Manufacturing	3.1	-9.6	-9.5	-1.2	13.4
Construction	-3.7	17.1	8.5	-8.0	1.9
Services	4.0	3.9	-1.3	6.2	-6.8

Source: DOSM-LFS 2016-2020, DOSM-Statistics Yearbook Sarawak 2018-2019, DOSM-GDP by State 2020

Article 2.5: Labour productivity

Focusing on developing a skilled workforce to improve labour productivity

A comparative analysis of Sarawak and two selected developed countries, namely Australia and South Korea, was performed. Both countries are high income countries and have considerable share of economic activity in the manufacturing and services sectors. Sarawak has lower productivity levels against both countries. Well-known for its high value add manufacturing activity, South Korea's economy has the highest GDP per employed person in the sector.

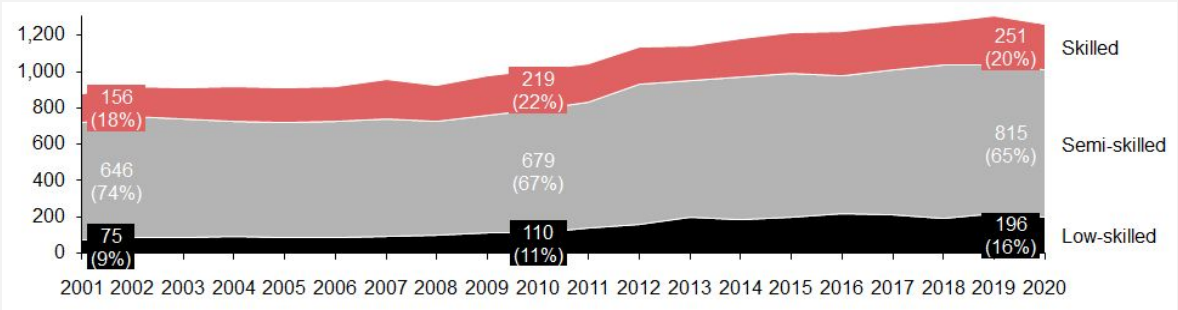
Table 2.9: GDP per employment - Sarawak, Australia and South Korea, 2019 (RM'000)

Sector	Australia	South Korea	Sarawak
Agriculture	394	90	61
Manufacturing	438	401	203
Services	529	182	70

Source: DOSM-LFS 2016-2019, DOSM-Statistics Yearbook Sarawak 2018-2019, World Bank-World Development Indicators

Both the skilled and low-skilled employed persons have grown in Sarawak. The share of skilled workers increased to 20% in 2019 from 18% in 2001. Similarly, the share of low-skilled workers have increased to 17% in 2019 from 9% in 2001. Sarawak's dependency on low-skilled workers is indicated by higher growth of low-skilled workers. This is due to development phase and structure of its economy, which largely relies on primary sectors.

Figure 2.17: Sarawak's employment by skill level from 2001-2020, '000 people (% share)



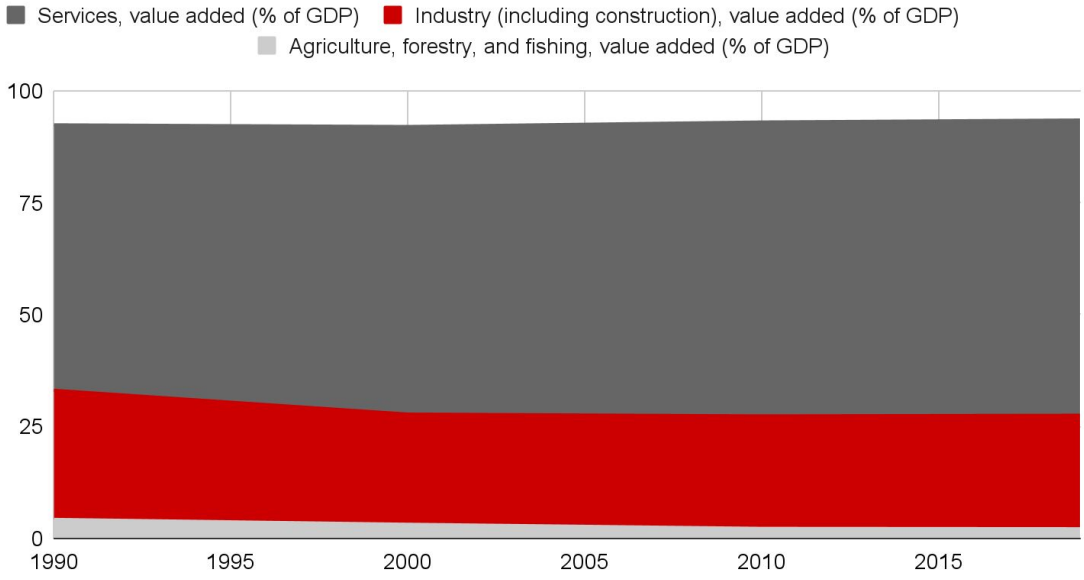
Source: DOSM-LFS 2016-2020, DOSM-Principal statistics of the labour force 1982-2020

Article 2.6: Labour productivity

Benchmark country: Australia

Australia is selected as a benchmark country for a comparative analysis as it is a developed economy with a diversified services-based economy. This is aligned with Sarawak's aspirations to be a high income economy as it seeks to diversify from primary sectors. Sarawak's services sector is already the largest contributor to State GDP. Similarly, the mining sector is a key contributor towards the GDP of Sarawak and Australia.

Figure 2.18: Australia's sectoral contribution to GDP, 1990-2019 (% of GDP)



Note: Industry includes value added in mining, manufacturing, construction, electricity, water, and gas.
Source: World Bank-World Development Indicators (1990-2019)

Article 2.7: Labour productivity

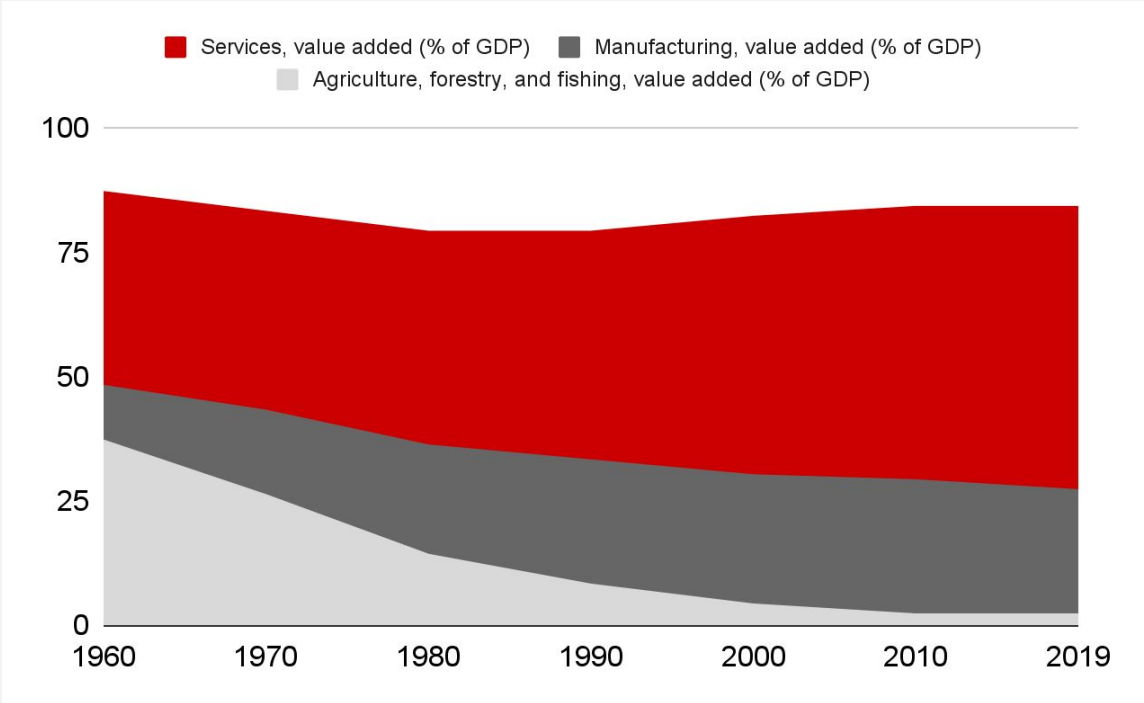
Benchmark country: South Korea

South Korea is also selected as a benchmark country due to its developed economy with a diversified services-based economy. Although South Korea's population is double Australia's population, its productivity in agriculture and services sectors still lack behind Australia.

South Korea is benchmarked for Sarawak as it started as an agriculture-based economy. The country underwent structural transformations attributable to policy reforms opening the country to foreign markets. South Korea is one of the largest economies in terms of GDP at present.

This is aligned with Sarawak's aspirations to be a high income economy. Sarawak's productivity in agriculture, manufacturing and services sectors still has room for growth as compared to developed economies.

Figure 2.19: South Korea sectoral contribution to GDP, 1960-2019 (% of GDP)



Source: World Bank-World Development Indicators (1960-2019)

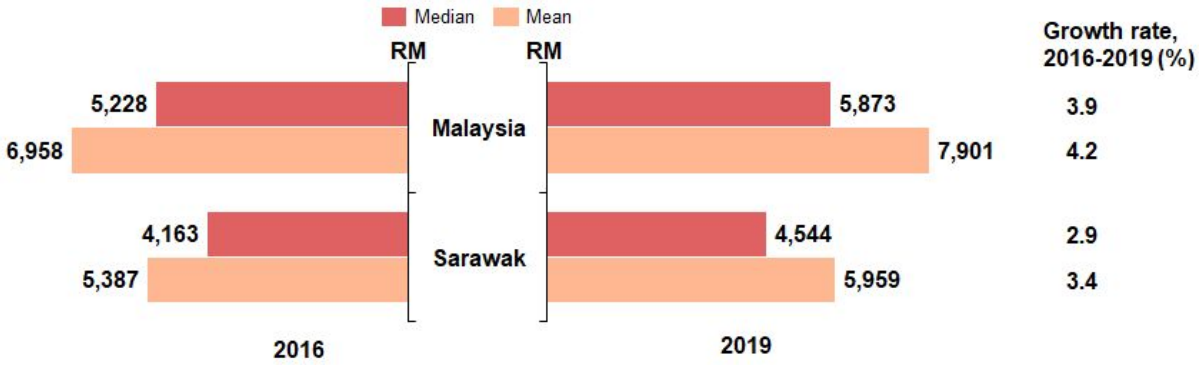
Low household income relative to national average

Sarawak is the fourth largest GDP contributor to the country. However, the total economic output have not been translated into adequate economic and social wellbeing for the population. This is reflected in the State's household income levels and household income disparity.

Median monthly household income in 2019 was RM4,544, while mean monthly household income was RM5,959. The levels of median and mean incomes are lower than national average.

Average household income grew 3.4% and median income expanded by 2.9% between 2016 and 2019. A higher pace of growth in average household income over median income indicates increasing unequal distribution of household income. An increase in income disparity within the State is indicated by an increase in Gini coefficient from 0.386 in 2016 to 0.387 in 2019.

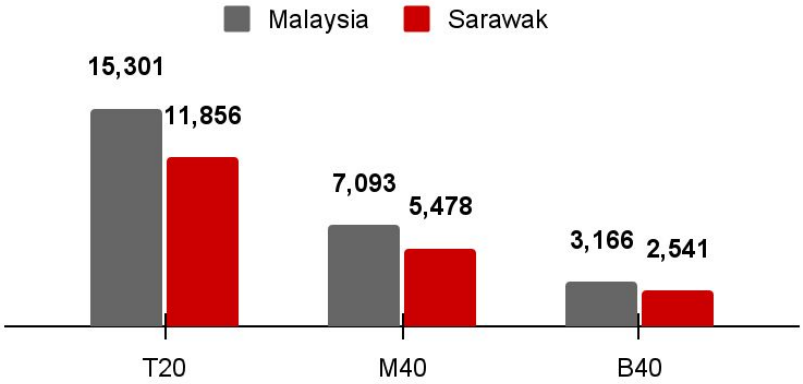
Figure 2.20: Median, mean and growth rate of household income in Sarawak and Malaysia



Source: DOSM-Household Income and Basic Amenities Survey Report 2019

Sarawak's monthly median household income is lower than national level across income groups. This highlights the need for across-the-board economic expansion and stronger pace of income increase across Bottom 40 (B40), Middle 40 (M40) and Top 20 (T20).

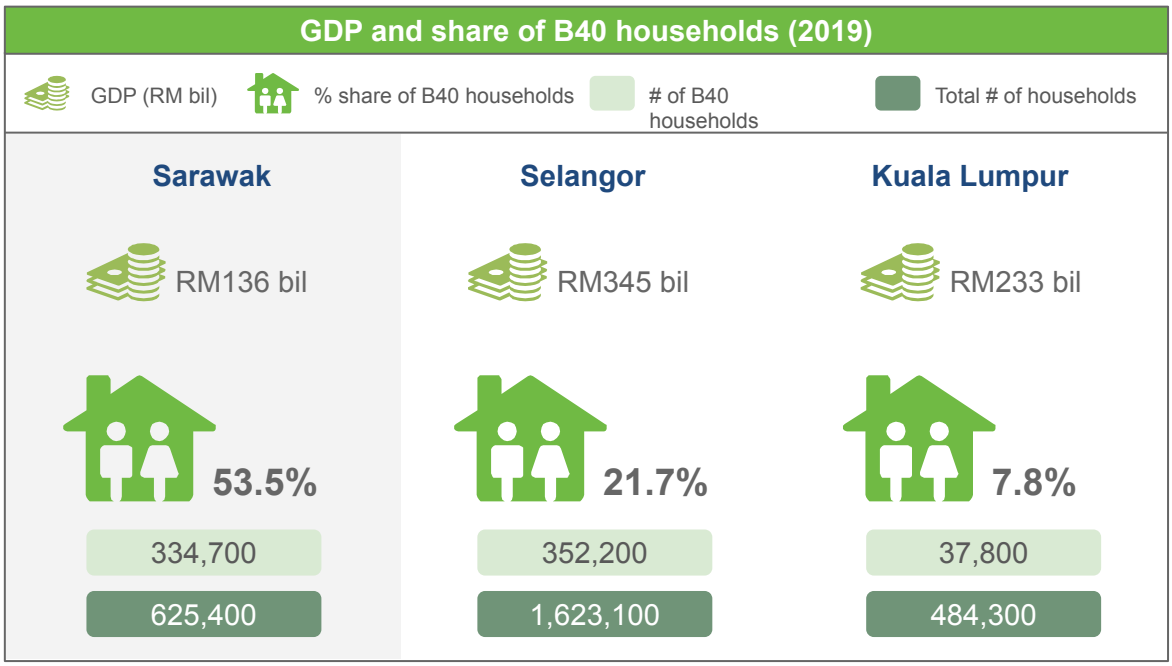
Figure 2.21: Median household income by income group, 2019 (RM)



Source: DOSM-Household Income and Basic Amenities Survey Report 2019

Sarawak has a large share of poor households compared to other states. A total of 334,700 households (53.5% of total Sarawak households) are in the national B40 threshold.

Figure 2.22: GDP and share of B40 households, 2019

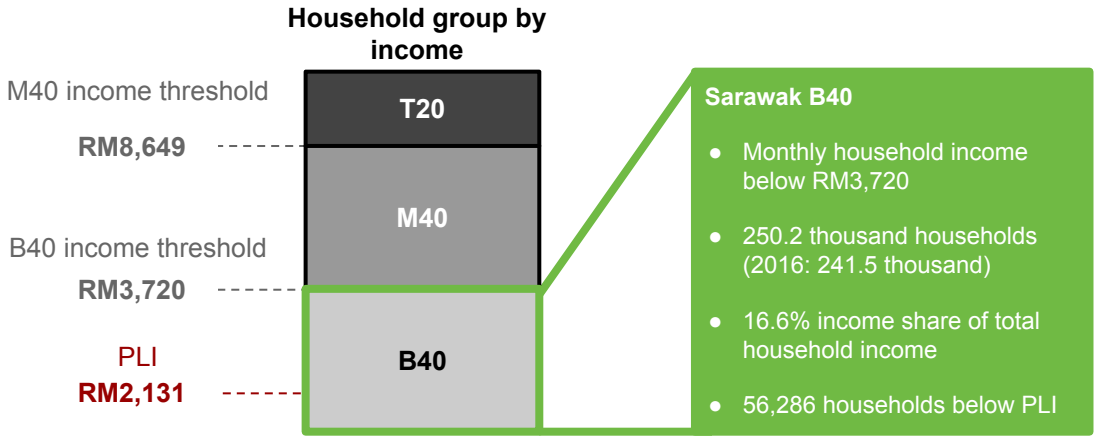


Note: Share of B40 households are calculated based on number of households in each state classified under the national B40 threshold of RM4,849 in 2019
Source: DOSM-Household Income and Basic Amenities Survey Report 2019

A total of 56,286 households were living under Sarawak's Poverty Line Income (PLI) of RM2,131 per month within the State's B40 group. These households are categorised as Absolute Poor by DOSM in its 2019 methodology for PLI.

The B40 households only covered 16.6% of total household income in the State (T20: 45.1%; M40: 38.3%).

Figure 2.23: Sarawak's B40 households, 2019



Source: DOSM-Household Income and Basic Amenities Survey Report 2019

In 2020, Sarawak recorded the largest decline in median and average monthly household income in Malaysia. The State's median monthly household income contracted by 15.7%, from RM4,544 in 2019 to RM3,831 in 2020. The average monthly household income saw a decline of 14.6%, from RM5,959 in 2019 to RM5,087 in 2020. This was largely due to the COVID-19 pandemic.

Table 2.10: Median, mean and growth rate of household income in Sarawak and Malaysia, 2020

Sarawak	2019	2020	Growth rate (% change)
Median household income	RM4,544	RM3,831	-15.7
Mean household income	RM5,959	RM5,087	-14.6
Malaysia	**2019**	**2020**	**Growth rate (% change)**
Median household income	RM5,873	RM5,209	-11.3
Mean household income	RM7,901	RM7,089	-10.3

Source: DOSM-Household Income Estimates and Incidence of Poverty Report 2020

2.3 Key Opportunities towards Post COVID-19 Recovery

Key Opportunities towards Post COVID-19 Recovery

Key opportunities for Sarawak have been identified through a baseline review of the Sarawak economy, as follows:

Promote Sarawak as viable supply chain center

The pandemic exposed weaknesses of supply chains. Highlighting the importance of efficiency and resilience of supply chains. Sarawak can position itself as a key supplier to its regional neighbours and globally as the world looks to rebalance and diversify supply chains.

Sarawak can leverage on natural advantage and act as supplier of food and agricultural produce. For example, Sarawak's rich agricultural produce is an advantage - e.g. pork consumption in Singapore was 20kg per capita in 2019, which Sarawak is well positioned to get a sizeable market share.

The State is planning to establish direct linkages with regional retailers to build direct supplier models. There are plans to explore supply of premium fruits, vegetables and seafood for high-income countries. Development of the agriculture sector from upstream to downstream activities can expand its position as the food supplier of the region. Investments from global food and agro-industrial giants can also be captured.

Increased local and global investments will help comprehensive development of local value chains, including human capital and vendor development, as a result. This will also encourage expansion of industries to generate further economic growth.

Furthermore, the State can leverage on its successful implementation of hydrogen projects to attract more partnerships and global collaborations to advance Sarawak's hydrogen agenda, particularly in the manufacturing sector. This follows the implementation of the first integrated hydrogen production, storage and refuelling plant in the Southeast Asian region, as well as hydrogen fuel cell buses in the State.

It is imperative to develop effective physical and digital infrastructure and connectivity plans - to prepare the State as a key global supplier.

Source:Harvard Business Review 2020, International Food Research Journal, World Wildlife Fund (WWF), Media reports

Harness richness of biodiversity assets and natural resources

Sarawak is known as one of the most species-rich area in the world. Sarawak's large areas of rainforest and peatlands, as well as vast coastal and marine areas provide a diverse wealth of biological resources.

The State's tropical rainforests and climate provide the ideal conditions for a wide variety of species to thrive.

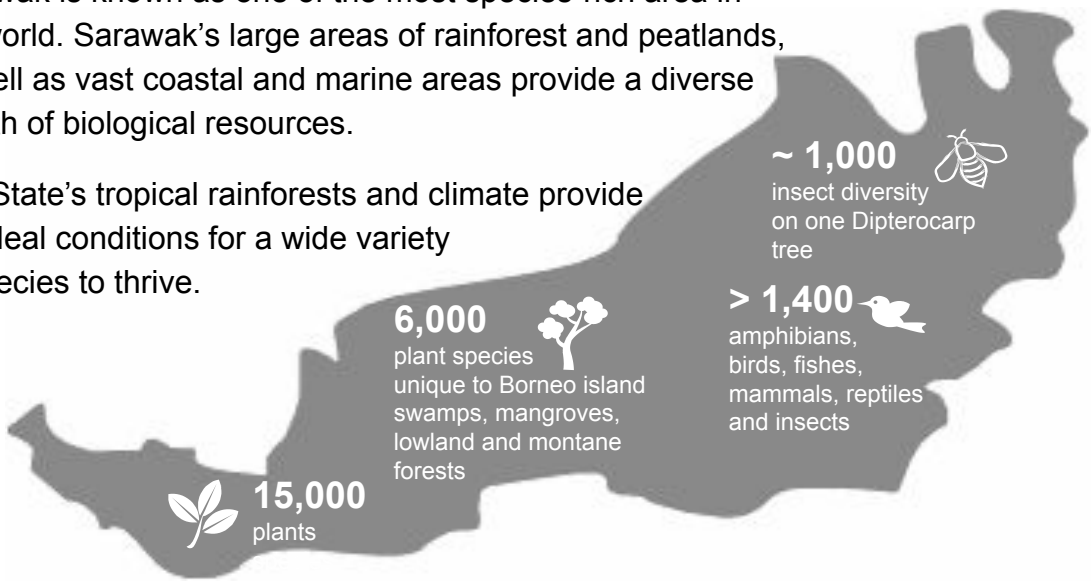


Figure 2.24: Natural resources in Sarawak

50 tscf total known gas reserve	**0.8 bil** barrels total known oil reserve	**1,104mm - 3,317 mm** Rainfall 2019*
7.75 mil ha forest land 2018	**1.6 mil ha** oil palm plantation (27% of Malaysia planted area)	**4 mil tonnes** crude palm oil (CPO) production (21% of Malaysia production)
3,453 MW installed capacity of large hydropower	**65%** of Sarawak powered by clean energy	**4.4** Peak Sun Hours

Sarawak is able to leverage its abundant resources, energy and unutilised land to create opportunities. It is increasingly important for the State to focus on conservation of rainforest biodiversity to mitigate the impact of climate change and reduce loss of biodiversity. Opportunities to conserve the State's biodiversity assets include:

- **Research and development activities through bioprospecting** Sarawak rainforest provides unique species with potential applications in healthcare, agriculture and industries. Research and development (R&D) activities through bioprospecting could discover new applications that has commercialisation properties and societal benefits, such as protection towards future emerging diseases

Note: *Range for rainfall in Sarawak for 2019 is derived from the average rainfall recorded by meteorological stations across Sarawak
Source: DOSM-Compendium of Environment Statistics 2020, Forestry Sarawak 2018, Bintulu Development Authority, Sarawak Statistics Yearbook 2019, Sarawak Energy Berhad, International Food Research Journal, WWF

- **Innovation in biodiversity conservation and biotechnology applications**
  Innovation in biodiversity conservation to assist data collection and enforcement, such as aerial mapping using drone technology and Artificial Intelligence in geospatial analysis. Innovation in biotechnology applications are emerging areas where Sarawak can invest in new capabilities - to serve the needs of the State and potentially other countries

Proactive and agile operations in the public sector including inter-agency collaboration

A Digital Government will deliver services more effectively and efficiently, in an agile manner - proactively responding to users.

This shift towards Government 4.0 increases effectiveness and efficiency. A *whole-of-government* approach where all parts of the government machinery work closely together seamlessly, cutting down processing time and duplicative efforts. Increased effectiveness and efficiency will benefit the people and businesses, in turn, attracting more local and global businesses.

Inter-agency collaboration will be a key focus, with an expected culture change across the public sector. Inter-agency collaboration with centralised and holistic planning is crucial to ensure effectiveness of strategies and initiatives - reducing instances of duplicative efforts and unnecessary competition.

Plans are already in place, with steps taken in the right direction. For example, the State is starting an Infrastructure and Utilities Committee that will adopt a more centralised and holistic approach in planning for land use. Pusat Pembangunan Kemahiran Sarawak (PPKS) and Center of Technical Excellence (CENTEX) are collaborating on complementary technical programmes offered.

Transparent and empathetic people engagement

The COVID-19 pandemic brings important focus toward mental wellness, as more individuals become isolated from social interactions.

The State can promote campaigns to increase awareness towards building a caring society. For example, stronger interventionist policies such as the Community Social Intervention Centers (CSIC) initiative led by the Social Services sector. This includes counselling services that will be provided to any individual in need, increasing the societal welfare of its people.

A Digital Government would allow for a more transparent and effective service delivery. Services can be tracked online with status updates provided for the convenience of users.

Globally, delivery of social services digitally has shown reduction in leakages and ensures direct delivery of benefits to intended recipients.

Intensify digitalisation and leverage digital platforms

Digitalisation across all the sectors in the State will provide the much needed business and training opportunities for companies and human capital alike.

For example, rural communities will be able to learn via digital platforms developed through digital transformation initiatives planned by the State. Digital upskilling on a massive and continuous basis will also equip Sarawakians with the necessary skills needed to support economic growth.

Businesses across the world have been operating in a different manner (referred to as the low-touch economy), where physical interactions are kept to a minimum due to the pandemic. This further highlights the importance of leveraging on digital platforms to operate digitally.

Immediate Term COVID-19 Relief Plan

As an immediate measure to mitigate the impact and ease the burden of the people and business community due to COVID-19 pandemic, the Sarawak Government has implemented 7 BKSS packages since May 2020 until October 2021 based on four (4) overarching principles.

This plan consists of four overarching principles and leverages on Federal funds, schemes and programmes to bring the State back on track.

Figure 2.25: Overview of COVID-19 Relief Plan

1 Caring for the People

Improve employment opportunities, social protection, social mobility, and education to ease the people's burden

- Family Empowerment, Shelter for Poor
- Moratorium on Mutiara Loan
- Jobs Facilitation Scheme
- Federal assistance schemes
- Upskilling programmes, job placement
- Permits waivers
- Community Social Intervention Centers
- Discounts on utility bills for all

2 Steering the Economy

Grow the overall economy, attract foreign investment and build consumer confidence. Digitalisation is a key feature for public and private sectors

- Stimulate domestic tourism
- Promote Visit Sarawak campaign
- Discounts on local government taxes
- Utility Bills discounts for businesses
- Facilitate retailers to shift to online platform to expand market base
- Digitise and expand Sarawak products

3 Enable Sustainable Living

Environmental, social and governance (ESG) initiatives (e.g. rural digital connectivity, extension of tax incentives for ESG businesses, e.g. Green Investment Tax Allowance (GITA) & Green Income Tax Exemption (GITE))

- Sarawak Multimedia Authority (SMA) Rural Telecommunications & MCMC's Jalinan Digital Negara (Jendela) programmes enable digital connectivity to underserved areas enabling online classes for rural children and allowing citizen to work from home
- Various neighbourhood watch programmes have been intensified
- Tax incentives extension for ESG (GITA and GITE)

4 Enhancing Public Service Delivery

Outcome-focused to support the people and businesses while digitising service delivery to be key enabler in enhancing public service delivery

- Innovation grants and programmes to connect SMEs with R&D institutions to promote commercialisation of R&D
- Online digital platforms for micro-entrepreneurs
- Expedite 11MP continuation projects e.g. rural roads, water connectivity and electricity
- Digital Government initiatives to enhance Government Information and Communications Technology (ICT) infrastructure and digitalisation of government processes

3. Post COVID-19 Development Strategy 2030

Chapter Outline

This chapter presents Sarawak's aspiration that forms the basis of the Post COVID-19 Development Strategy 2030 (PCDS 2030). It highlights key pillars, strategic thrusts, economic sectors and enablers identified to support this aspiration.

Key highlights

- Three key pillars to drive the PCDS 2030 (i.e. economic prosperity, social inclusivity, and environmental sustainability)
- Seven strategic thrusts (i.e. economic structure, ease of doing business, targeted spending, optimise assets and human capital, digital and execution, social inclusivity, and sustainable environment activities)
- Six economic sectors (i.e. manufacturing, agriculture, tourism, forestry, mining, and services)
- Seven enablers (i.e. digital transformation, innovation, education and human capital, basic infrastructure, utilities, transport, and renewable energy)

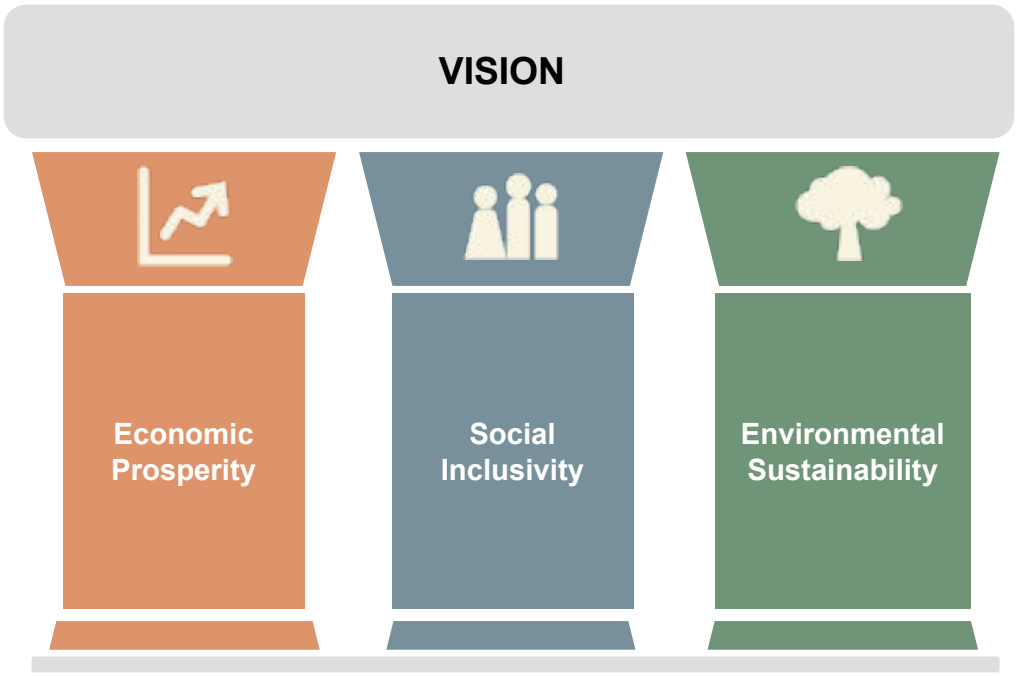
Subsequently, Sarawak's development target and strategies towards its 2030 goals of being a high income State with inclusive growth for all is explained. Targeted impact created through strategies and initiatives in the PCDS 2030 is presented.

- Sarawak requires GDP growth of at least 8.3% p.a. to achieve RM282 billion GDP target in 2030
- Economic structure shifts towards services sector and higher value-added activities
- Increase share of skilled workforce from 20% in 2019 to 30% in 2030
- Increase productivity across sectors
- Build and position Sarawak as an attractive investment destination for private-sector led growth, increase share of investment to 27% of real GDP in 2030
- Increase median monthly household income from RM4,544 in 2019 to RM15,047 in 2030
- Expected impact of sectors' catalytic initiatives include:
    - Economic prosperity: RM42 billion GDP impact
    - Social inclusivity: 40% of population have access to better services, 50% health coverage for population under 18 years old
    - Environmental sustainability: Support 45% reduction of CO_2 emissions as per Malaysia's commitment to the Paris Agreement

3.1 Overview of PCDS 2030

By 2030, Sarawak will be a thriving society driven by data and innovation where everyone enjoys economic prosperity, social inclusivity and sustainable environment by 2030

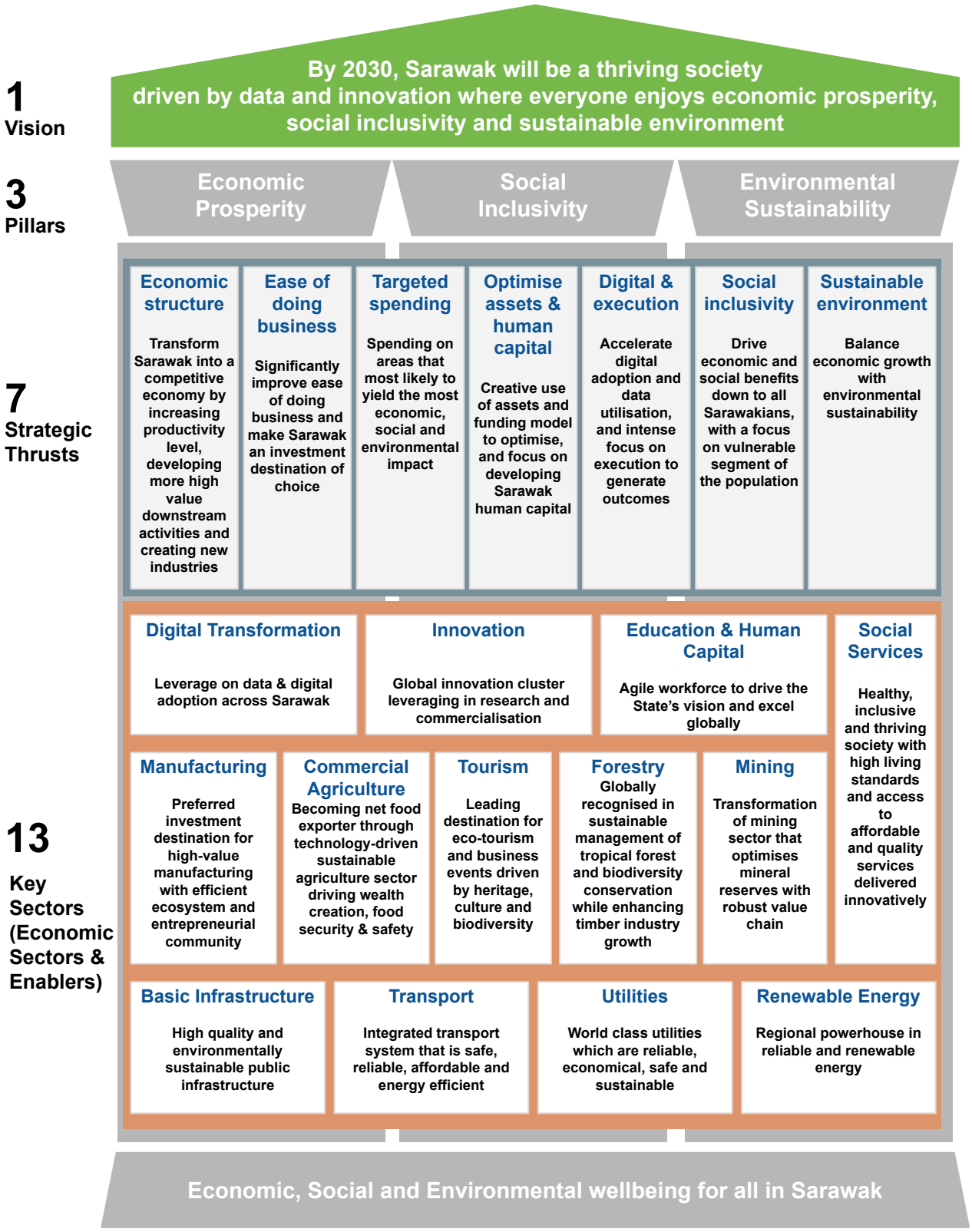
The vision is anchored on three (3) key pillars namely economic prosperity, social inclusivity and environmental sustainability. Its corresponding strategies, initiatives, policies and projects will drive Sarawak towards its 2030 goals of being a high income State with inclusive growth for all.



Economic Prosperity	Grow GDP at ~8% per year and achieve RM282 bil by 2030, from an average 3.4% annual growth between 2006 - 2019
Social Inclusivity	Increase median monthly household income from estimated RM4,500 in 2019 to RM15,000 by 2030, driven by higher job and entrepreneurial opportunities
Environmental Sustainability	Ensure a clean and healthy environment for current and future generations with safely managed water and sanitisation services, sustainable forest management, as well as adoption of new technologies and innovation to support Malaysia's commitment to reduce greenhouse gas (GHG) emissions intensity of GDP by 45% by 2030

Anchored on 3 pillars and 7 strategic thrusts, initiatives across 13 key sectors were developed to recalibrate Sarawak's economy

Figure 3.1: Alignment of vision, strategic thrusts and priority areas



3.2 Strategic Thrusts

The Seven (7) Strategic Thrusts

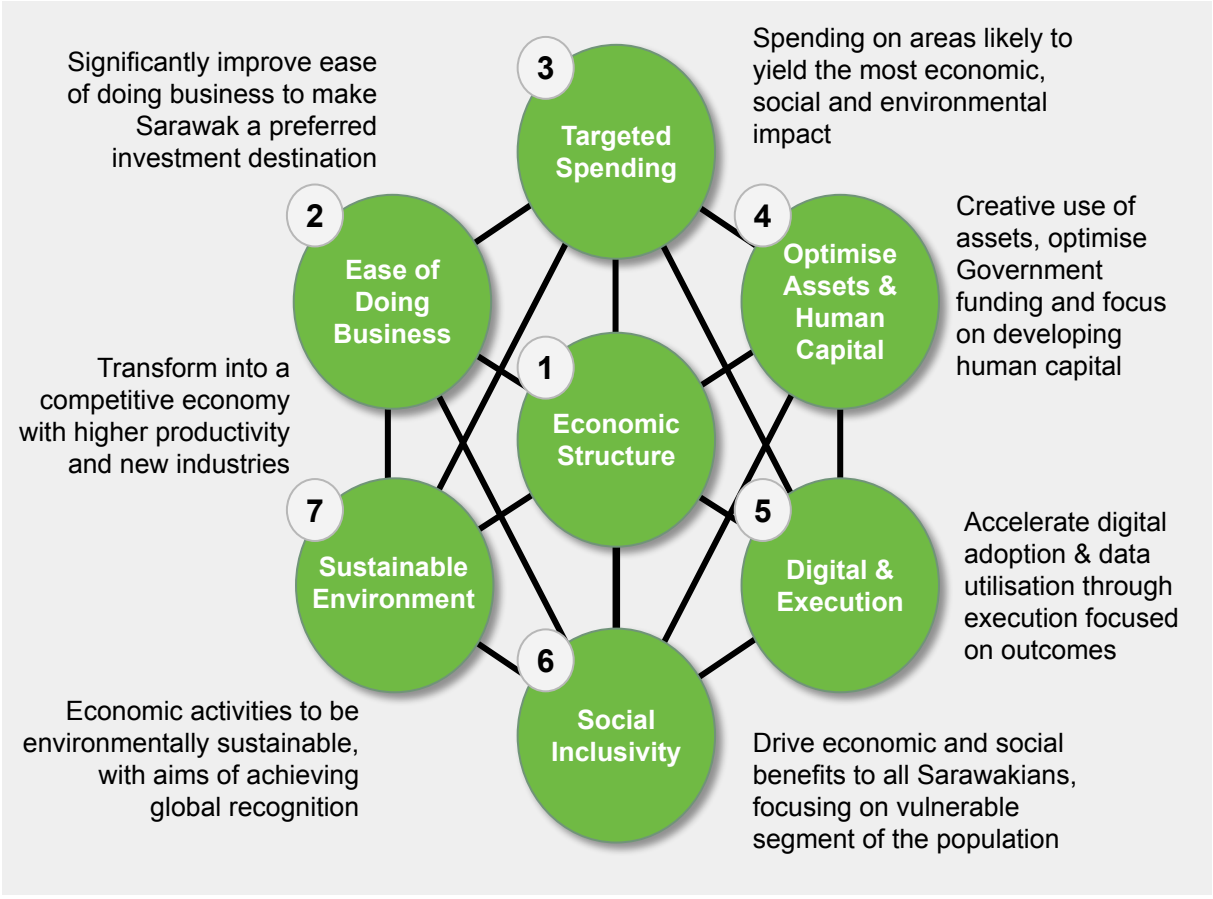
The plan has identified 7 strategic thrusts to ensure initiatives designed contribute to the 3 key pillars of Sarawak's 2030 Aspiration. These thrusts anchor the vision and present strategic direction for initiatives.

Strategic Thrusts 1-5 focus on economic prosperity which in turn provides positive impact to social inclusivity (Strategic Thrust 6).

Strategic Thrust 6 focuses on social aspects of development in which initiatives pass on economic benefits to the people. This thrust includes strategic direction for specific social intervention policies carried out by the State.

Lastly, **Strategic Thrust 7** provides an overarching direction for all activities in the State to be performed in an environmentally sustainable manner aided by technology. As examples, agriculture has smart farming initiatives while mining will adhere to stricter policies and implementation, including enforcement in adhering to global environmental standards and systematic rehabilitation of exhausted mines.

Figure 3.2: The 7 Strategic Thrusts



Explaining the Strategic Thrusts further

1. Economic structure

The transformed economic structure will shift towards a more export-oriented economy. The plan envisages significant improvement in productivity i.e. efficiency and scale. New domestic and foreign investors will play important roles to build up scale, and facilitate technology and skills transfer.

2. Ease of doing business

The State will provide suitable ecosystems (i.e. conducive policy, efficient public administration) to enhance Sarawak's attractiveness as an investment destination. Nurturing a more readily skilled labour force to increase ease of doing business is one of the goals. Greater practice of inter-agency alignment through clear data-sharing and streamlined processes.

3. Targeted spending

The plan will implement prioritised spending with clearly indicated targeted spending measures. Spending will be allocated to initiatives that produce maximum economic and social impact. For example, any new infrastructure spending will be balanced with spending required to enhance existing infrastructure service levels and connectivity to maximise impact and benefits to the people.

4. Optimise assets & human capital

Assets include physical structures and human capital. Human capital will be developed in a more strategic manner. Existing physical assets will be examined and redeployed for specific functions if relevant. Overall, deployment and utilisation of all resources will be optimised.

5. Digital and execution

The plan includes digital delivery of Government services. A comprehensive e-catalogue will be developed to provide users with a thorough view of where to go and what to do for required services. Digitalisation will drive all initiatives that will be executed in the most effective way.

6. Social inclusivity

The State has planned a variety of social initiatives to ensure the wellbeing of Sarawakians. This is especially imminent for vulnerable segments of society. Concerted efforts are underway to raise household income. This will allow the people to have a tangible stake in the economic growth of Sarawak.

7. Sustainable environment

All initiatives will be carried out sustainably to ensure preservation and perpetuation of Sarawak's rich biodiversity and resources for future generations. As economic activity grows, the State will implement stringent management of practices across initiatives.

3.3 Economic Sectors and Enablers

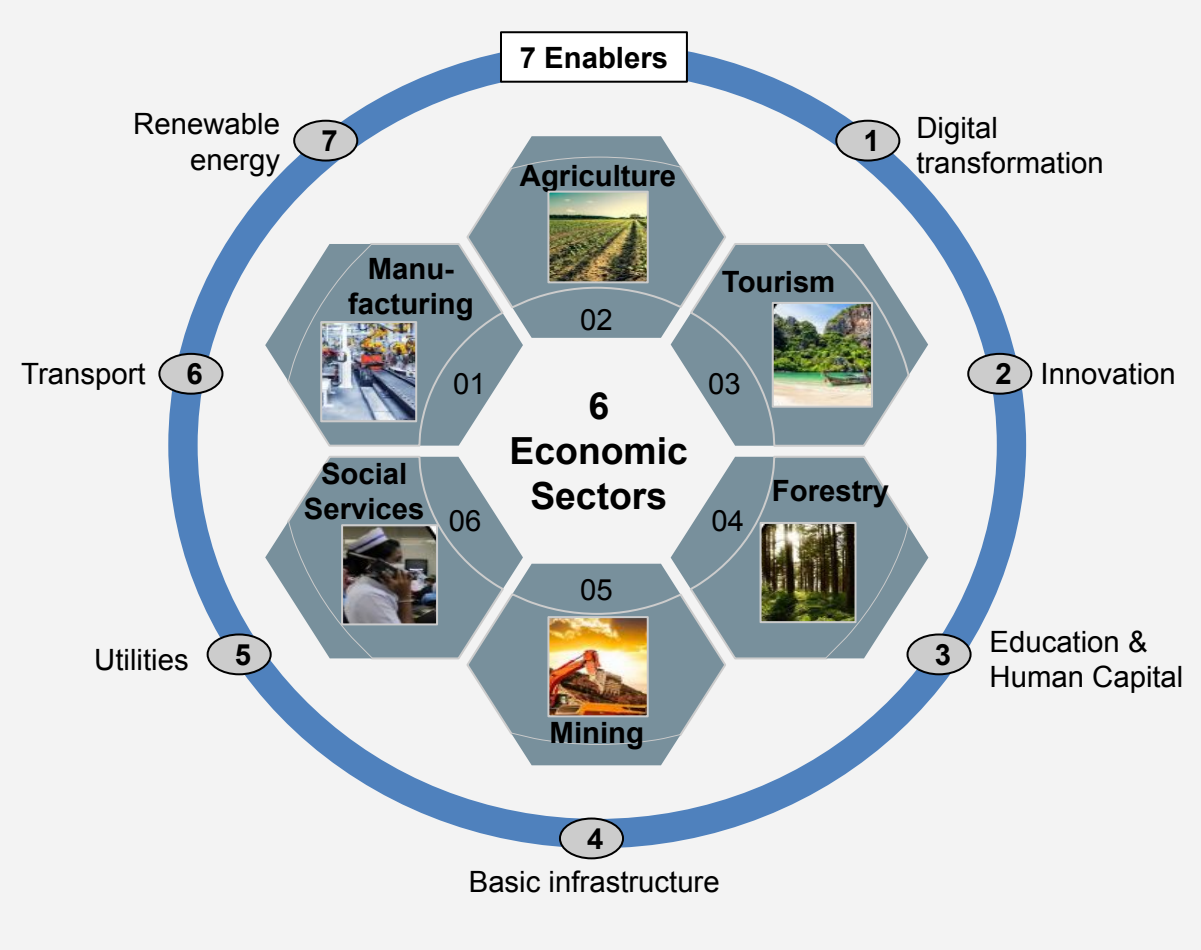
Economic Sectors and Enablers

The plan has identified a total of 13 key sectors divided into 2 main groups i.e. six (6) economic sectors and seven (7) enablers.

The six (6) economic sectors are manufacturing, agriculture, tourism, forestry, mining and social services. Economic sectors produce economic activity and generate direct production and employment, however the social services sector is more focused on providing services to the people.

The seven (7) enablers are digital transformation, innovation, education & human capital, basic infrastructure, utilities, transport and renewable energy. These enablers aim to produce employment opportunities and provide conducive environments for activities in economic sectors to thrive.

Figure 3.3: Economic sectors and enablers



Further detailed explanation on the economic sectors and enablers are provided on the next page.

Explaining the Economic sectors further:

Manufacturing aims to promote Sarawak as a preferred investment destination for high-value downstream manufacturing activities and creates equitable wealth that benefits all Sarawakians.

Commercial Agriculture and Agro-Commodities creates a technology-driven and sustainable future for the agro-based community to attract global partnership and access international markets, ultimately, positioning Sarawak as a net food exporter in 2030.

Tourism plays a vital role in branding Sarawak as a destination for all, rich in culture, heritage and biodiversity. Therefore, the State is highly motivated to increase quality visitor arrivals as well as capacity-building for all tourism industry players. Visitor arrivals will consist of both leisure and business groups.

The **Forestry** sector paves a way for Sarawak to be globally recognised for their sustainable management and conservation. Furthermore, enhancing the rapid growth of the timber industry will generate revenue streams and increase export earnings.

The **Mining** sector is heading towards expanding to other minerals which will see activities expand across the value chain especially downstream activities. The focus will be on creating a conducive environment in the State for more operators and investors to start or intensify mining activities. At the same time, the local ecosystem will be strengthened accordingly through various policy recommendations e.g. technology transfers (building capabilities), usage of local vendors.

Social Services aims to provide high living standards, a healthy and inclusive society with affordable and innovative service delivery. Access to social services and affordability of the same will be addressed to ensure every Sarawakian benefits regardless of social strata. Meanwhile, there will be direct social intervention efforts targeted at the vulnerable, risky and affected individuals in accordance to the issues faced.

Conclusively, these economics sectors of Sarawak are intertwined in the long run growth of the state's economy. Synergies between sectors are crucial in ensuring that Sarawak is headed on the right path to achieve its 2030 aspirations. Therefore, it is mandatory that inter-agency collaboration is practised and efficiently implemented in accordance with the State and Federal government's whole-of-government strategy.

Explaining the Enablers further:

Digital transformation will enable a conducive environment for development of digital infrastructure and connectivity required by sectors in realising the various initiatives / projects mapped out (e.g. training for the rural population).

Innovation nurtures a generation of innovative, creative Sarawakians that will power Sarawak's transformation towards higher value-add economic activities.

The **education and human capital sector** creates higher skilled and digitally savvy Sarawakians to strengthen future workforce. The State is committed to providing access to quality education and training for all segments of the population regardless of socioeconomic background and geographical location.

Basic infrastructure development ensures that the people will have access to essential amenities and services. This access is crucial for movement of both human capital and goods across the State and beyond.

A well-developed **utilities** sector will provide access to power and clean water and allow all to participate in the thriving growth of Sarawak and fuel economic activities in the State.

The availability of more **transport** choices (both integrated and intermodal) provides mobility to Sarawakians and will enhance the attractiveness of Sarawak as an investment destination.

Renewable energy allows economic activities to be performed in a sustainable manner further enhancing investor confidence in Sarawak as an investment destination of choice both locally and globally.

Clearly, there is great interconnectivity between the sectors where the sum will be greater than the parts through the synergies created. Hence, it is critical that inter-agency collaboration is practiced and effectively executed in line with the whole-of-government approach targeted by the State.

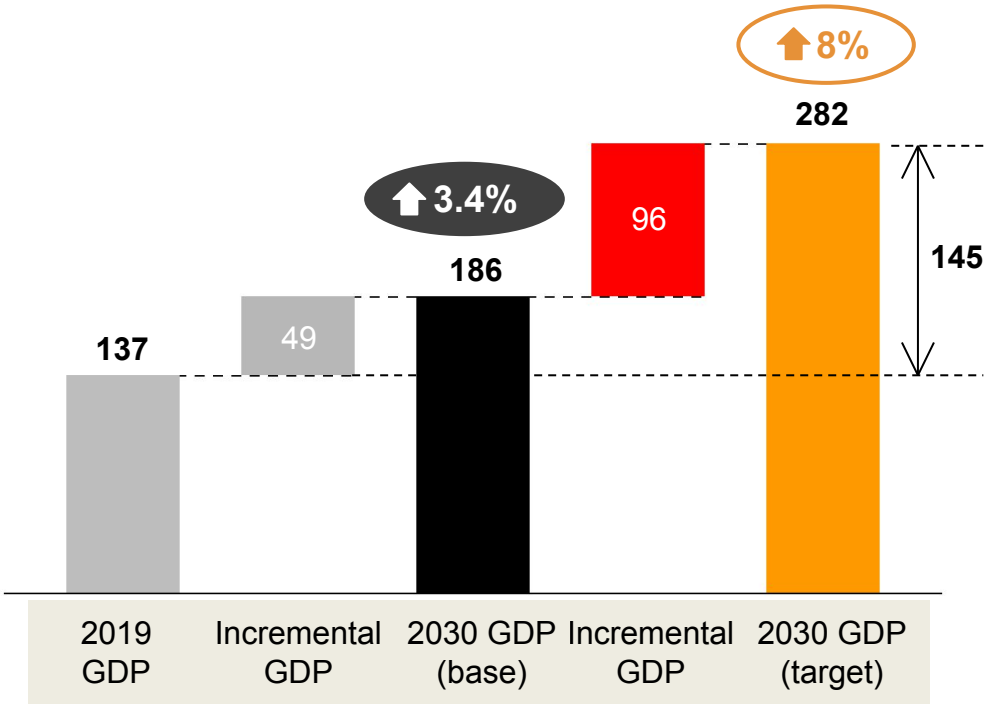
3.4 Sarawak 2030

Sarawak 2030

Sarawak aspires to become a high-income state by 2030. To achieve high-income status, real GDP would need to grow on average 8% per year to achieve RM282 billion GDP target. This is significantly higher than average GDP growth rate of 3.4% over the past years.

The growth will largely be supported by the planned initiatives and complementary policy recommendations that aim to change the State's overall economic landscape.

Figure 3.4: Sarawak's real GDP projection 2030 (RM bil)



Note: Base case 2030 is projected from trend rate of growth for the period 2006 - 2019 (i.e. 3.4%)
Source: DOSM-National Accounts Statistics (GDP by State) 2005-2013, DOSM-Statistics Yearbook Sarawak 2016-2019, PwC analysis

Key Development Strategies

Realising Sarawak's target for 2030 will require several development strategies:

1. **Change economic structure**

   Sarawak needs to scale-up production from improved land usage and expansion of upstream activities. Primary sectors such as agriculture and mining will continue to contribute significantly to the economy. Abundant feedstock will be required to achieve the State's aspirations of moving towards higher-value downstream production. For example, CPO for both basic and specialty oleochemicals, vegetables and crops for high-value food processing will drive positioning as a regional food supplier. This creates scalable growth that the State can leverage to develop and augment downstream activities.

Note: Sarawak 2030 is the State's vision to achieve high income and a developed state by 2030, as first articulated by YAB Chief Minister of Sarawak in his speech published on June 25, 2020 via the First SEAC Meeting

The services sector is expected to grow significantly to cater to the overall growth. This sector will provide high income job opportunities that is requisite to attract and retain highly educated and skilled Sarawakians.

2. Modernise and increase efficiency

Sarawak can intensify focus on existing growth areas through adoption of modern technologies. The State will improve efficiencies and productivity throughout all sectors. For instance, adoption of modern technologies in agriculture can improve the speed of cultivation. This would tremendously improve bringing the produce to market, increasing farmers' income in the process. Furthermore, increasing the adoption green technology should reduce environmental pollution, making Sarawak a more ideal investment destination for green investors.

Adequate provision of digital and physical infrastructure will support economic growth. Enabling policy recommendations is further discussed in later sections of the report.

3. Increase household income-to-GDP share

Sarawak needs to promote self-employment and entrepreneurship in turn increasing household participation in equity and productive assets on top of developing a highly skilled and educated labour pool.

This will drive upward mobility by providing better job opportunities to disadvantaged groups such as youth, women, seniors, People with Disability (PWD), minorities, and migrants to participate in the economy. As a result, the plan expects an increase in household income driving overall inclusive growth.

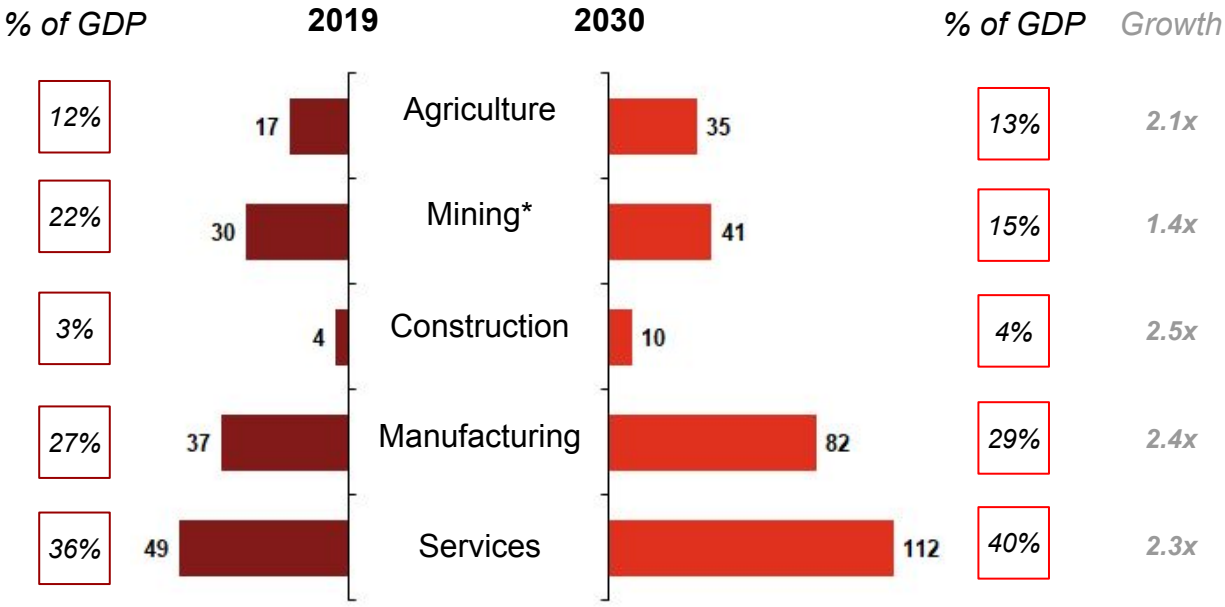
The importance of self-employment and entrepreneurship alongside relevant policy recommendations is further discussed in later sections of the report.

Sarawak's economic structure will evolve in order to achieve high income status by 2030. There will be a shift in economic structure towards services sector and higher value-added activities, such as downstream manufacturing and agri-food processing.

The current economy is relatively more susceptible to external shocks (e.g. commodity price fluctuations) as primary commodities represent the large share of export baskets. The shift mentioned above is imperative.

Higher value add activities typically occur downstream. As examples, canned pineapples have a longer shelf life than fresh pineapples, semiconductor production requires multiple inputs including silicon - value added in manufacturing process benefits more than just silicon trade.

Figure 3.5: Real GDP by sector (RM bil)



*Note: *Mining includes oil and gas. Percentage may not add up to 100% due to rounding.*
Source: DOSM-GDP by State 2020, PwC analysis

Mining sector GDP will increase to RM41 billion. However, as overall economy grows more rapidly, its share of GDP will lessen. Nevertheless, primary sectors will continue to contribute significantly. The expansion of upstream primary production from agriculture and mining sectors are required to provide the feedstock to fuel increasing downstream manufacturing and services activities.

The shift towards services sector and higher value-added activities need to be complemented and supported by a pool of skilled workforce with requisite knowledge and expertise.

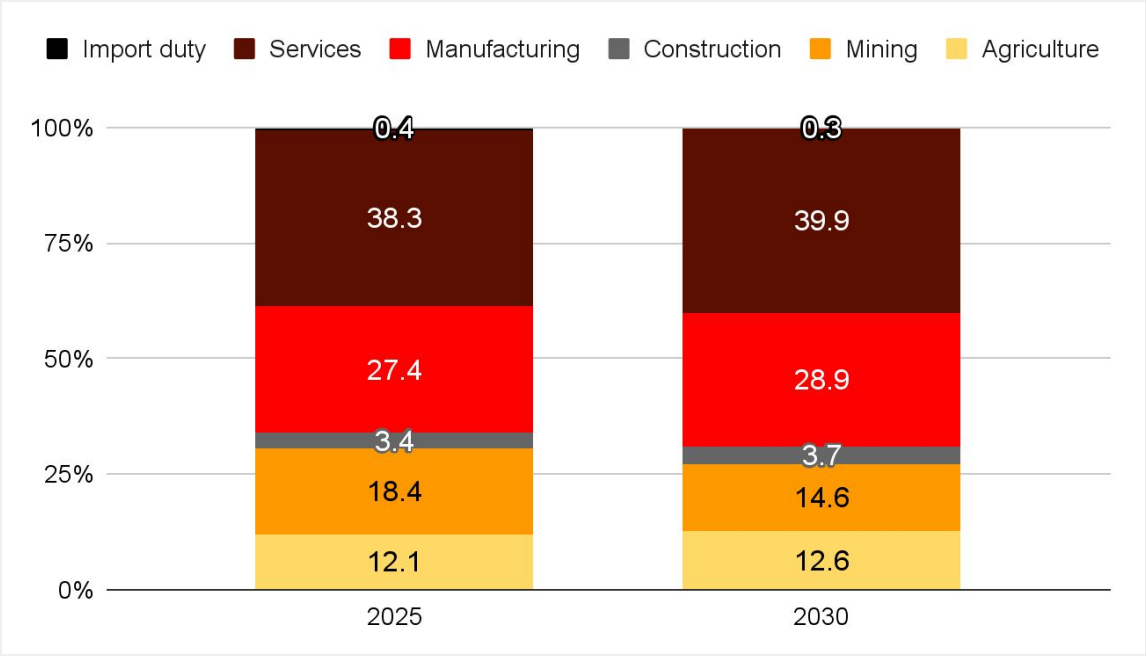
Article 3.1: Snapshot at 2025

Shift in economic structure towards services sector and higher value-added activities

To achieve high income status aspiration, Sarawak is expected to see a shift in economic structure by 2025, and this change continues into 2030. In line with 2030 GDP projection of RM282 billion, Sarawak is expected to achieve RM184 billion GDP in 2025.

Share of services, manufacturing, construction and agriculture GDP are expected to continue growing between 2025 to 2030. Share of mining GDP is expected to decline to 14.6% of Sarawak's GDP by 2030.

Figure 3.6: 2025, 2030 share of GDP by sectors



Source: PwC analysis

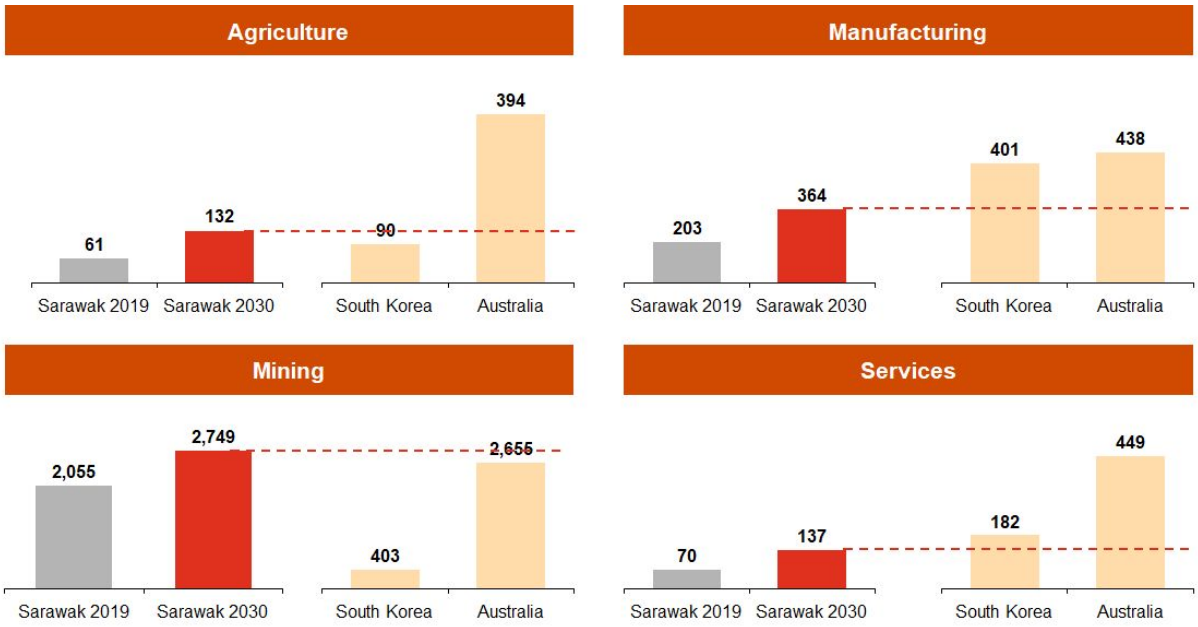
Real GDP per capita is estimated to grow from RM59,193 in 2025 to RM85,762 in 2030. Additionally, Sarawak's labour productivity measured by real GDP per employed person is expected to increase from RM130,000 in 2025 to RM189,000 in 2030.

Note: 2025 GDP figures are based on projections for GDP at 2030 levels, with a target of RM282 bil and 8% annual growth.
Source: PwC analysis

Sarawak's 2030 GDP aspiration also requires significant increase in productivity across sectors. This is to allow the State to narrow the productivity gap with developed economies.

Agriculture, manufacturing and services sectors need to account for almost two-fold increase in productivity. This will put productivity on par with South Korea in 2019.

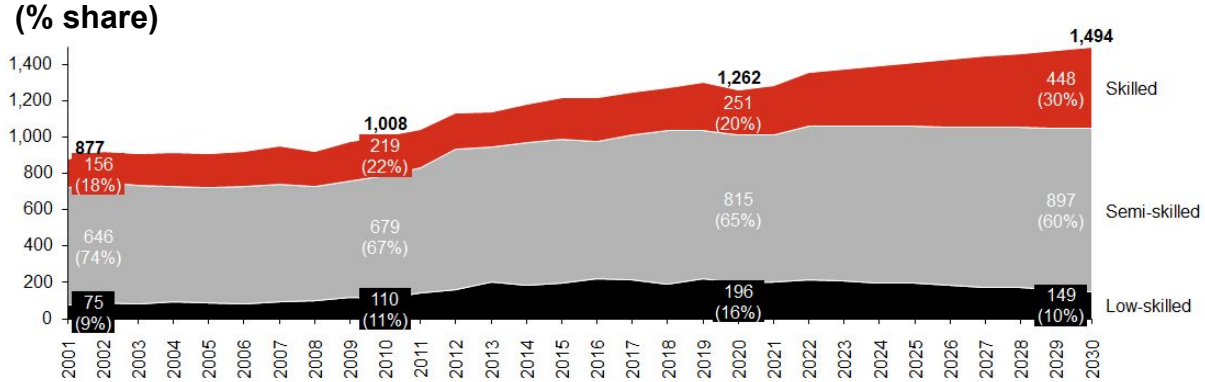
Figure 3.7: Sarawak's productivity in 2030 vs selected developed countries (RM'000)



Note: Productivity levels of developed countries are as of 2017, as published by World Bank
Source: DOSM-LFS 2015-2020, DOSM-GDP by State 2020, World Bank-Global Productivity: Trends, Drivers, and Policies (2017), PwC analysis

Sarawak is projected to have 1.5 million employed persons in 2030. Sarawak needs to increase share of skilled workforce from 20% (251,000 skilled workers) in 2020 to targeted 30% (448,000 skilled workers) in 2030.

Figure 3.8: Sarawak's employment by skill level from 2001-2030, '000 people (% share)



Source: DOSM-LFS 2015-2020, DOSM-Principal statistics of the labour force 1982-2019, PwC analysis

Article 3.2: Employment in 2030

Largest share of employment in services sector

Sarawak is projected to have 1.5 million employed persons in 2030. This projection takes into account key indicators such as population, labour force and unemployment.

The economy is able to support this employment projection, based on a stable share of labour force to total population estimated in 2030 and a low unemployment rate of about 3%. The employment projection in 2030 also assumes minimal changes in working age population and labour force participation rate going forward.

The following table shows indicators of population, labour force and employment:

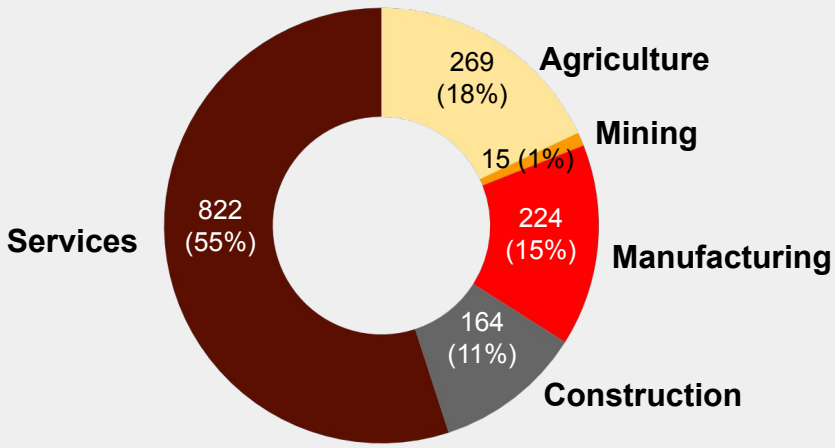
Table 3.1: Sarawak's employment to population and labour force ('000)

	2019	2020	2025	2030
Population	2,806	2,813	3,101	3,285
Labour force	1,347	1,320	1,457	1,544
Employed persons	1,305	1,262	1,411	1,495

Source: DOSM-LFS 2019-2020, DOSM-Current Population Estimates 2020, DOSM-Population Projections (Revised) Malaysia 2010–2040, PwC analysis

Share of employment in the services sector will remain the largest, at 55% in 2030 (2019: 54%). Agriculture sector is projected to employ 18% of Sarawak's workforce (2019: 21%), while manufacturing sector is projected to employ 15% of the workforce (2019: 14%). Share of employment in construction sector and mining sector is projected at 11% and 1% respectively in 2030.

Figure 3.9: Sarawak's employment by sector in 2030, '000 people (% share)



Source: PwC analysis

Private consumption share of GDP is projected to increase to account for 33% of demand-side GDP (RM94 billion) in 2030. This expansion in consumer spending is attributable to higher income expected in 2030.

The share of public consumption to GDP is projected to increase from 11% in 2019 to 13% in 2030. Net exports would gradually reduce towards 28% of real GDP as higher import demand is anticipated in Sarawak. This is in line with a higher income nation or state where consumers have higher disposable income and stronger purchasing power.

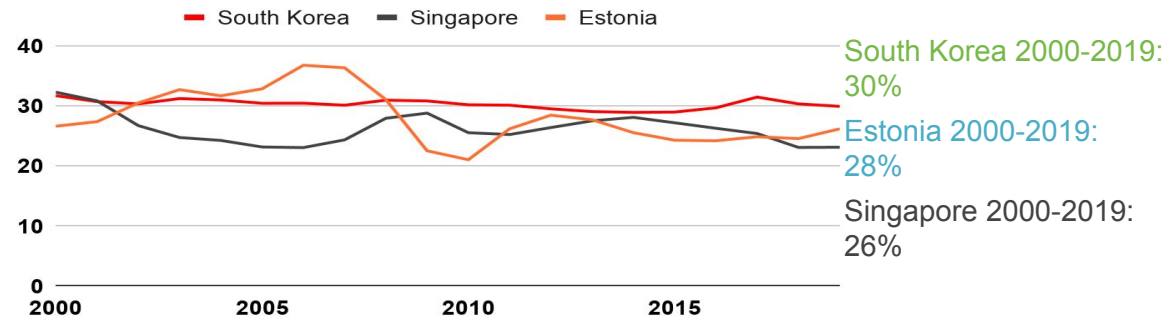
Table 3.2: 2030 GDP target by expenditure share of GDP

Expenditure components	2019e	2030f
Net exports	37%	28%
GFCF	22%	27%
Private consumption	31%	33%
Public consumption	11%	13%
Change in stocks	-1%	-1%
Total	**100%**	**100%**

Note: GDP by Expenditure is estimated for 2019. 2030f is projected from EPU Sarawak internal estimation for 2015-2020. There is no official statistics of GDP by Expenditure from DOSM.
Source: EPU Sarawak, PwC analysis

Sarawak's share of investment to GDP is projected to increase to 27% in 2030. High investments levels are necessary to sustain the economy's growth and move into a higher-income status. According to the World Bank, it was suggested that investment levels of 25% of GDP or more is required to achieve strong economic growth. For instance, South Korea's share of investments averaged 30% over the past decades. The country rapidly transformed its agriculture-based economy (1960s) and became the 11th largest economy (GDP) globally by 2016.

Figure 3.10: GFCF as % share to GDP of other countries, 2000-2019

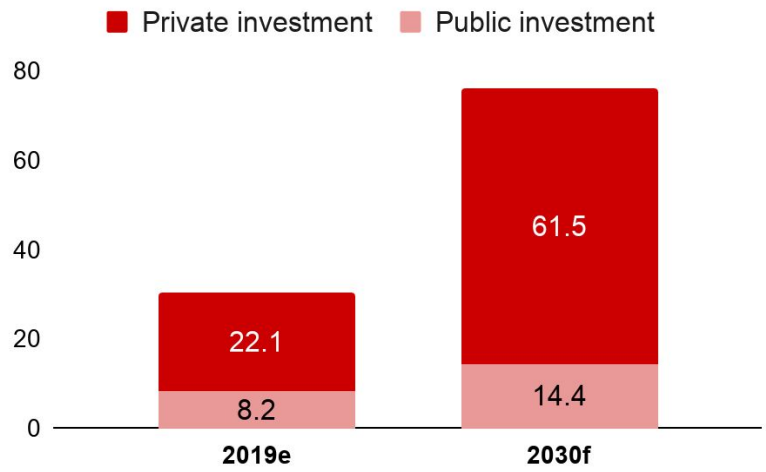


Source: World Bank-World Development Indicators

Sarawak needs to build and position itself as an attractive investment destination to spur private-sector led growth. Correspondingly, there will be visible improvement in the value and quality of investments as efforts are intensified.

Of the projected 27% of investment to real GDP in 2030, private investment would contribute 22% of GDP (RM 62 billion), while public investment would contribute 5% of GDP (RM14 billion) in 2030.

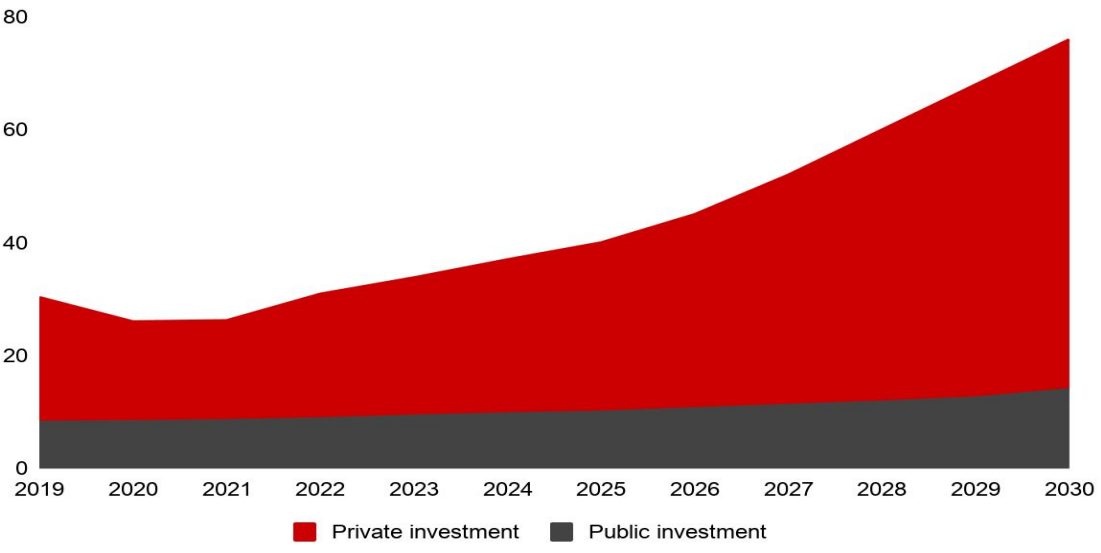
Figure 3.11: Sarawak's public and private investment (RM bil)



Source: EPU Sarawak, PwC analysis

Investments in 2021 is likely to remain weak due to the negative impact of COVID-19, which is in line with global consensus. Total investments is expected to grow from 2022 onwards, largely driven by private investment from implementation of new projects and ongoing business operations.

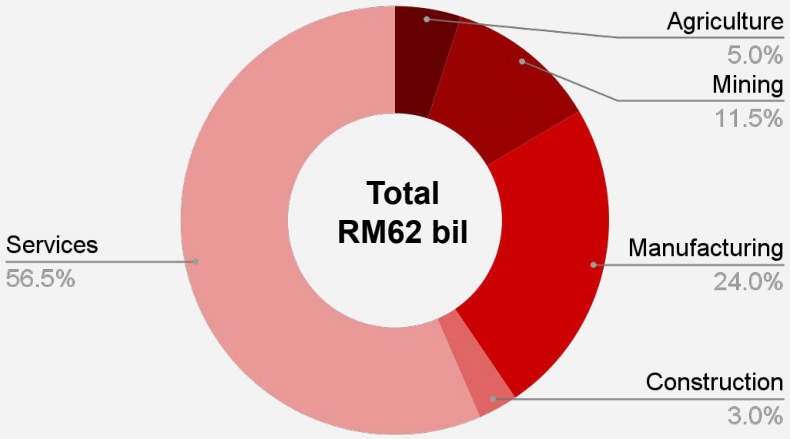
Figure 3.12: Total investments from 2019-2030 (RM bil)



Source: EPU Sarawak, PwC analysis

Services and manufacturing sectors are expected to attract the largest share of private investments, contributing to about 80.5% or RM49.9 bil GDP in 2030.

Figure 3.13: Estimated private investments by sector, 2030 (% share, RM bil)



Note: Share of private investment by sector is estimated based on average 2015-2019 Malaysia share of private investment by sector. Private investment in Services sector is expected to be largely contributed by ICT, finance and business services industries.
Source: PwC analysis

Sarawak has successfully attracted private investments from companies such as Press Metal Berhad, Western Digital, Sumitomo, ENEOS, etc. It could gain additional investments by focusing on improving returns to investors to continue on this trajectory. This will be contributed by PCDS 2030 initiatives and policy recommendations in totality.

Figure 3.14: Major private-sector investments in Sarawak

TAIYO YUDEN, WD, ILJIN, LONGi
Sama Jaya Industrial Free Trade Zone (capacity expansion):
Taiyo Yuden (Sarawak) Sdn Bhd, HGST Malaysia Sdn Bhd (Western Digital), IMM Technology (Iljin), LONGi Kuching Sdn Bhd
RM6.31 bil

SUMITOMO, ENEOS
Sumitomo Corporation, ENEOS
Memorandum of Understanding (MoU) for hydrogen facility in Bintulu

BCP, Sinopec
Beijing BECA Sci-Tech Co. Ltd. & Sinopec Engineering Incorporated
RM20.8 bil (MoU signed 2019 - delayed by COVID-19)

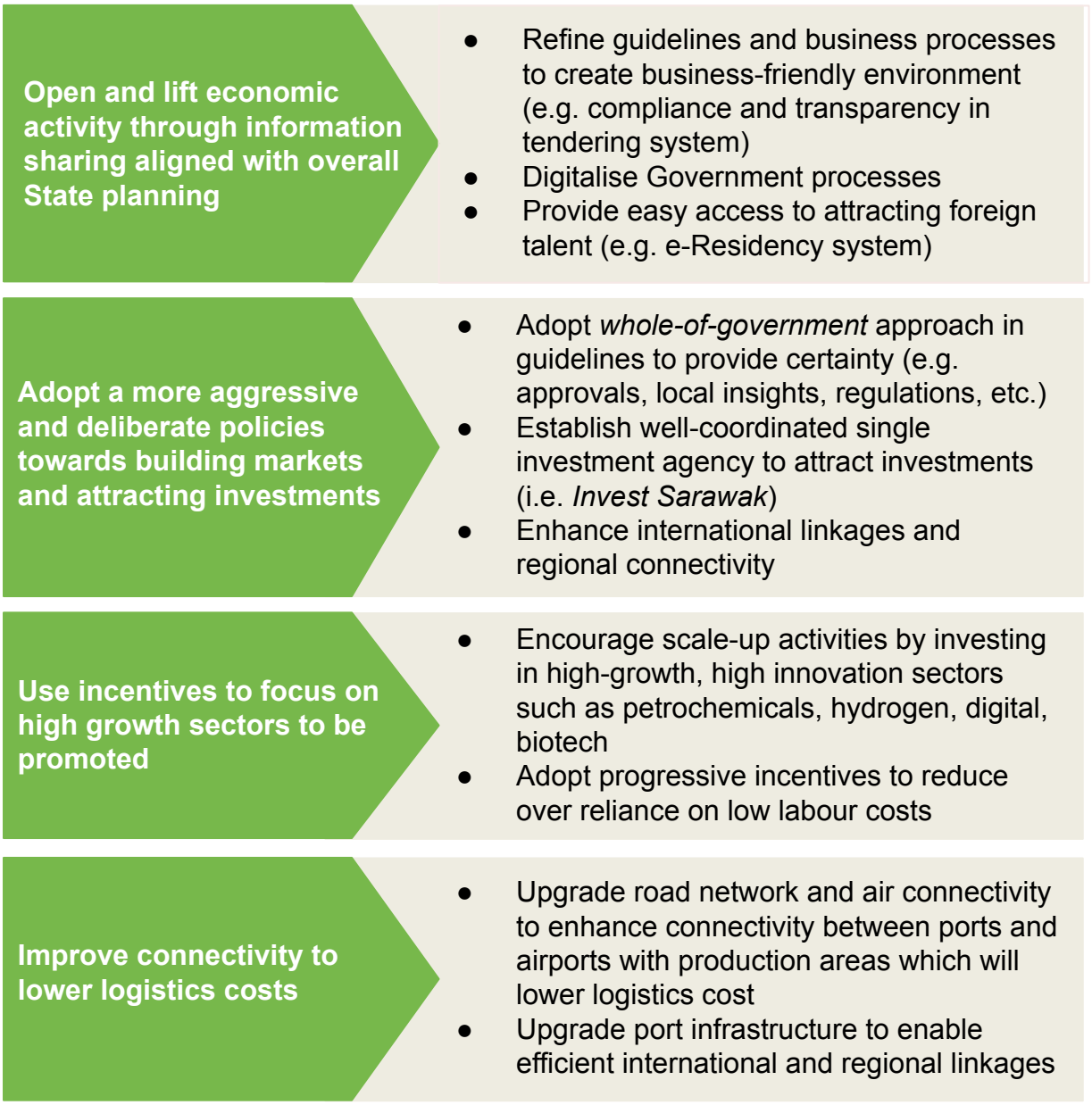
Wenan Iron & Steel Co.
RM13.8 bil

PRESS METAL
Press Metal Berhad
RM2 bil

Source: Media Reports

Facilitating private sector investment requires Sarawak to adopt strategies that can improve investment climate and ease of doing business, as well as increase connectivity that can lower logistics costs.

Figure 3.15: Strategies to facilitate private sector investments



Sources: PwC COVID-19 CFO Pulse Survey 2020, PwC CEO Survey 2020, London School of Economics and Political Science (Global Investments & Local Development),

Initiatives of Key Economic Sectors

Agriculture, manufacturing and services sectors are expected to drive economic growth of Sarawak towards 2030. The study has identified key focus areas and initiatives for these sectors, as summarised in the following table.

The agriculture sector could increase cash crop cultivation and diversify into high value food crops and livestock. Adoption of modern technologies will also increase cultivation, efficiency and productivity. Sarawak could focus on leveraging synergies and linkages to the agriculture sector thus strengthening the manufacturing sector value chain. The services sector should expand along the value chain by providing supporting services to primary and secondary sector activities.

Table 3.3: Focus areas and major initiatives of agriculture, manufacturing and services sectors

Sector	Focus area	Major initiatives/ projects
Agriculture	• Valuable food crops and livestock • Modern farming methods • Agri land availability • Large scale cash crop cultivation • Require direct supply links to retail	• Increase yield for palm oil • Scale up high value commodities and cash crops • Agropreneurs programme for youth • Develop climate and disease resistant crops
Manufacturing	• Abundant natural resource • Sustainable competitive power supply • Human capital, technical and design capabilities • Minimise opex and logistics cost	• Petrochemical plant • Green energy - solar (silica), solar batteries (lithium) • Resource based - leverage mineral resources to develop industry clusters • Agriculture - manufacture high value food crops/ livestock
Services	• Expanding along the value chain to provide supporting services to primary and secondary activities • Attracting and retaining well educated locals for high-income jobs • Promoting domestic tourism and enhance Sarawak's branding as international destination • Enhancing community based tourism	• Attract digital services and data centre business • Manufacturing related services i.e. testing, design and process R&D • Growing a strong education and medical services cluster improving liveability and export earnings • Developing environmental sustainability engineering and design services • Stronger food and beverage (F&B) and hospitality sector to enhance tourism industry • Develop stronger tourism products, packaging and branding • Develop and attract local community participation in tourism and hospitality

Initiatives of Key Enablers

Sarawak's competitiveness can be enhanced through increased connectivity such as physical and digital infrastructure. It is important to build Sarawak's technological and innovation capabilities, as well as quality human capital to keep pace with overall development.

Table 3.4: Focus areas and major initiatives by enablers

Enablers	Focus area	Major initiatives/ projects
Connectivity	• Provide and improve physical and digital infrastructure • Enhance transportation and access to utilities • Improve air connectivity	• Develop digital connectivity infrastructure in key economic and rural areas • Upgrading road network connectivity for efficient distribution • Modernise urban public transport • Increase air connectivity to and within Sarawak
Digitalisation and innovation	• Improve productivity via adoption of technology • Integration of digital services to provide holistic governance • Foster local innovation ecosystem and attract foreign-based Sarawakians to return	• Digitalisation to drive ease of doing business • Bioindustrial park focused on enhancing local R&D and commercialisation • Encourage adoption of smart technology in the public and private sectors • Implement data security and protection framework
Human capital	• Develop digital talents and future workforce • Improve livelihood and welfare	• Conduct digital upskilling programmes for human capital training and development • Cultivate a science literate workforce and society aligned to national goals to increase Science, technology, engineering and mathematics (STEM) graduates by 80% and complete talent mapping • Instill creativity and innovation in the younger generation

Initiatives to Increase Household Income

Sarawak's economic structure will shift towards larger contribution from the services sector and higher value-added activities as a high-income state in 2030. This results in increased investments and demand for skilled workforce. Thus, higher-income jobs will be created, leading to an increase in household income.

The State's economy in 2030 is expected to support an additional 190,000 jobs. It is projected there will be 1.5 million employed persons in 2030 (as compared to 1.3 million in 2019). This increase will be supported by the initiatives and ongoing economic activities. Median household income is also expected to increase by 231% from RM4,544 in 2019 to RM15,047 in 2030.

Strategies to address urban-rural disparity can be pursued (e.g. creating opportunities for lower-income households to participate in the economy, job creation programmes, access to connectivity and social safety nets). The table below highlights initiatives that serve to address the above.

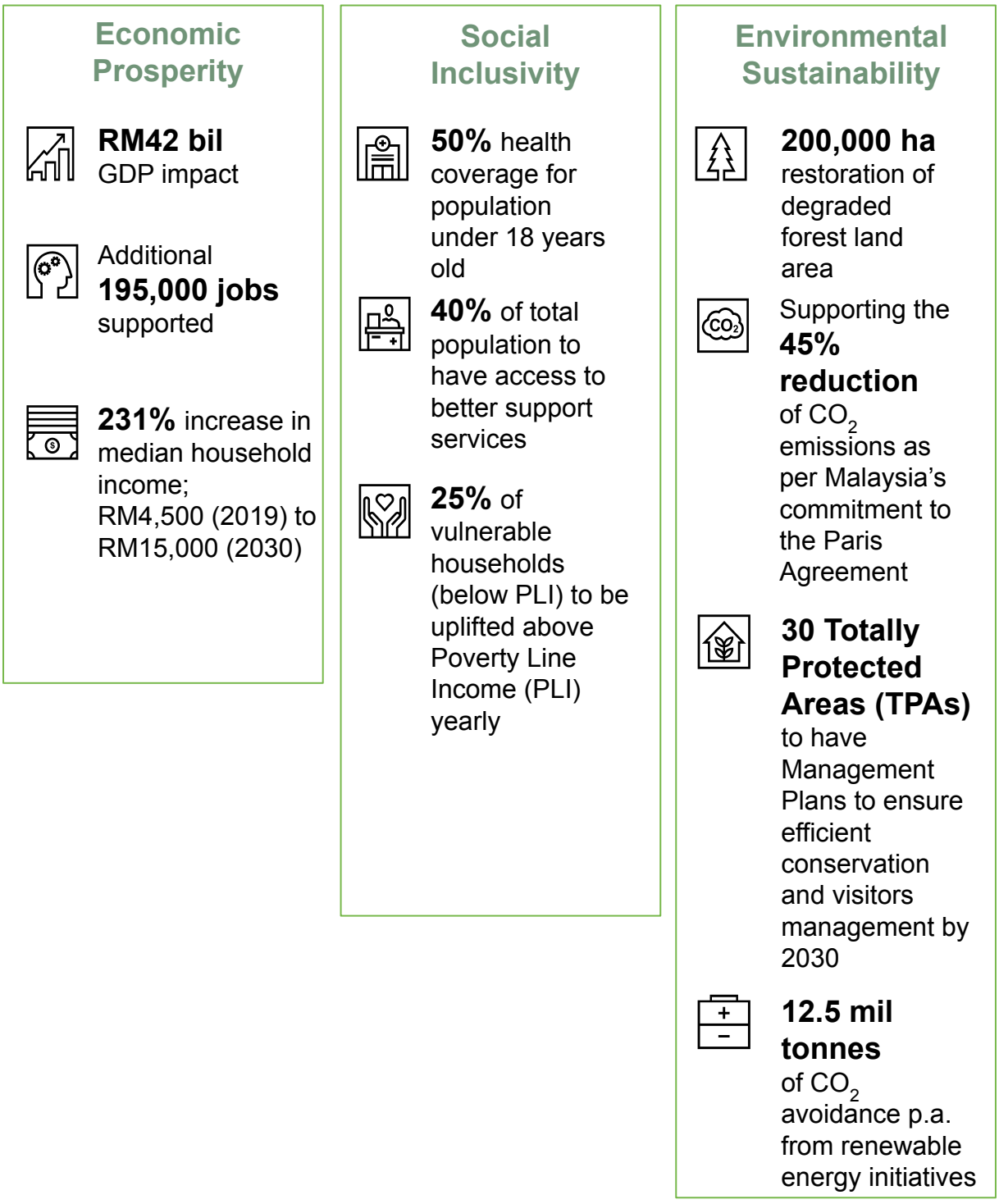
Table 3.5: Initiatives to increase household income

Strategies	Initiatives
Focus on Agriculture, Tourism & Forestry for rural low-income households	● Eco-based rural transformation programmes - Community-based ecotourism and conservation; Small-medium enterprises (SMEs) involvement with local community (e.g. bamboo industry), forest landscape restoration and agro-forestry programmes ● Agropreneur programme - Encourage anchor-outgrower model with improved access to market and transfer of technology to smallholders; financial assistance to agro-based communities in B40 segment
Focus on entrepreneurship for urban and rural income households	● Entrepreneurship & micro-SME programmes - Micro High Impact Programme to support micro enterprises to reach SME status; Informal Sector/ B40 Entrepreneurship assistance (e.g. cottage industry) ● Co-investment with major corporations to develop local talent for high-income and skilled labour supply
Provide social safety net and programmes for social inclusivity	● Housing voucher programme for B40 and M40 ● Rental assistance programme ● SarawakCare State insurance for B40 children below the age of 18 years old and not covered under MySalam scheme ● Medical equipment assistance for primary care in non-urban areas ● Social intervention programme and community needs support infrastructure
Improve access to education & human capital needs	● Addressing disparity in quality education (school upgrade, Technical and Vocational Education and Training (TVET) scholarships) ● Upskilling programmes to develop digital talent
Enhance rural infrastructure	● Upgrade roads and digital connectivity in rural areas ● Implement SAWAS Programme, develop water grid and rural electrification

Impact of Initiatives

Sarawak is anticipated to achieve positive impacts across the 3 main pillars of the 2030 aspiration (i.e. economic prosperity, social inclusivity and environmental sustainability) based on the initiatives identified. The following presents a summary of the potential impacts of these initiatives. In addition, major impacts provided by each sector are tabled in the following pages.

Figure 3.16: Overview of impact by pillars



The following table depicts potential indicators that measure an advanced Sarawak covering multiple areas for comprehensiveness of measurements.

Table 3.6: Key economic indicators for a developed Sarawak

Indicator	Description
Economic Prosperity	
GDP	• Grow GDP at ~8% per year and achieve RM282 billion by 2030
Real GDP per capita	• Raise Sarawak's real GDP per capita from RM48,738 (2019) to RM85,762 (2030)
Monthly household income	• Raise Sarawak's median monthly household income from RM4,500 (2019) to RM15,000 (2030)
Employment	• 1.5 million employed person in 2030. 145,000 jobs supported from PCDS 2030. • Increase skilled workforce from 20% in 2020 to 30% by 2030
Online state services	• Have 100% state open data ready and end-to-end online service
Productivity	• Increase productivity and value added across sectors by 30%
Youth ICT skills	• Increase the proportion of youths using basic arithmetic formulas in spreadsheet from 36.7% in 2019 to 65.0% by 2030 • Increase the proportion of youths creating electronic presentations using computer software from 31.2% in 2019 to 70.0% by 2030 • Increase the proportion of youths searching, downloading, installing, and configuring software from 57.6% in 2019 to 75.0% by 2030 • Increase the proportion of youths writing a computer programme using a specialised programming language from 10.6% in 2019 to 35.0% by 2030

Investment	• Increase total investment from 22% (2019) to 27% of GDP by 2030.
	  ○ Private investment: 22% of GDP (RM62 bil)
	  ○ Public investment: 5% of GDP (RM14 bil)

R&D	• Increasing trends of R&D spending per year • Increasing number of patent filings per year

Source: DOSM-National Accounts Statistics (GDP by State) 2005-2013, DOSM-Household Income and Basic Amenities Survey, DOSM-Statistics Yearbook Sarawak 2016-2019, DOSM-GDP by State 2015-2020, DOSM-Sustainable Development Goals (SDG) Indicators Malaysia (2019), EPU Sarawak, PwC analysis

Social Inclusivity	
B40 households	• Decrease share of B40 households at national threshold from 53.5% in 2019 to 20% or lower by 2030
Incidence of absolute poverty	• Reduce incidence of absolute poverty from 9% in 2019 to 3% by 2030.
Doctor-population ratio	• Increase number of doctors and health clinics ratio to population to 1:294. (In 2019, Sarawak-1:682; Malaysia-1:482)
Public/social safety	• Increase firefighters to population ratio from 1:13,000 in 2019 to 1:2,000 by 2030
Youth education, and employment	• Reduce proportion of youth not in education, employment or training from 13.2% in 2019 to 4.0% by 2030
Education	• Achieve 100% of preschool and primary school participation rate • Achieve >60% STEM enrolment in upper secondary
Internet access	• 99.9% households with access to internet connectivity
Workforce	• Achieve equal gender and wealth distribution in the workforce (women: 50%, men: 50%)
Environmental Sustainability	
Water and sanitisation services	• Safely managed treated water quality complying to National Drinking Water Quality Standards (NDWQS) and sanitisation services • Reduce non-revenue water (NRW) to 25%. Presently based on 2019 data, the NRW rate varies by locations between 46% to 77% • Reduce domestic water consumption to 165 litres per capita per day (lcpd) by 2030 from 229 lcpd in 2019
GHG emissions and Particulate Matter	• Reduce annual mean levels of Particulate Matter 2.5 concentration in cities to below 28 µg/m3 • Contribute to national target to reduce GHG emissions intensity of GDP by 45% by 2030
Forestry	• Maintain 56% forest cover • Restore 200,000 ha of degraded forest land area
Energy generation and usage	• Maintain at least 60% electricity generation mix from hydro • Reduce energy usage from green and sustainable building infrastructure by 20%

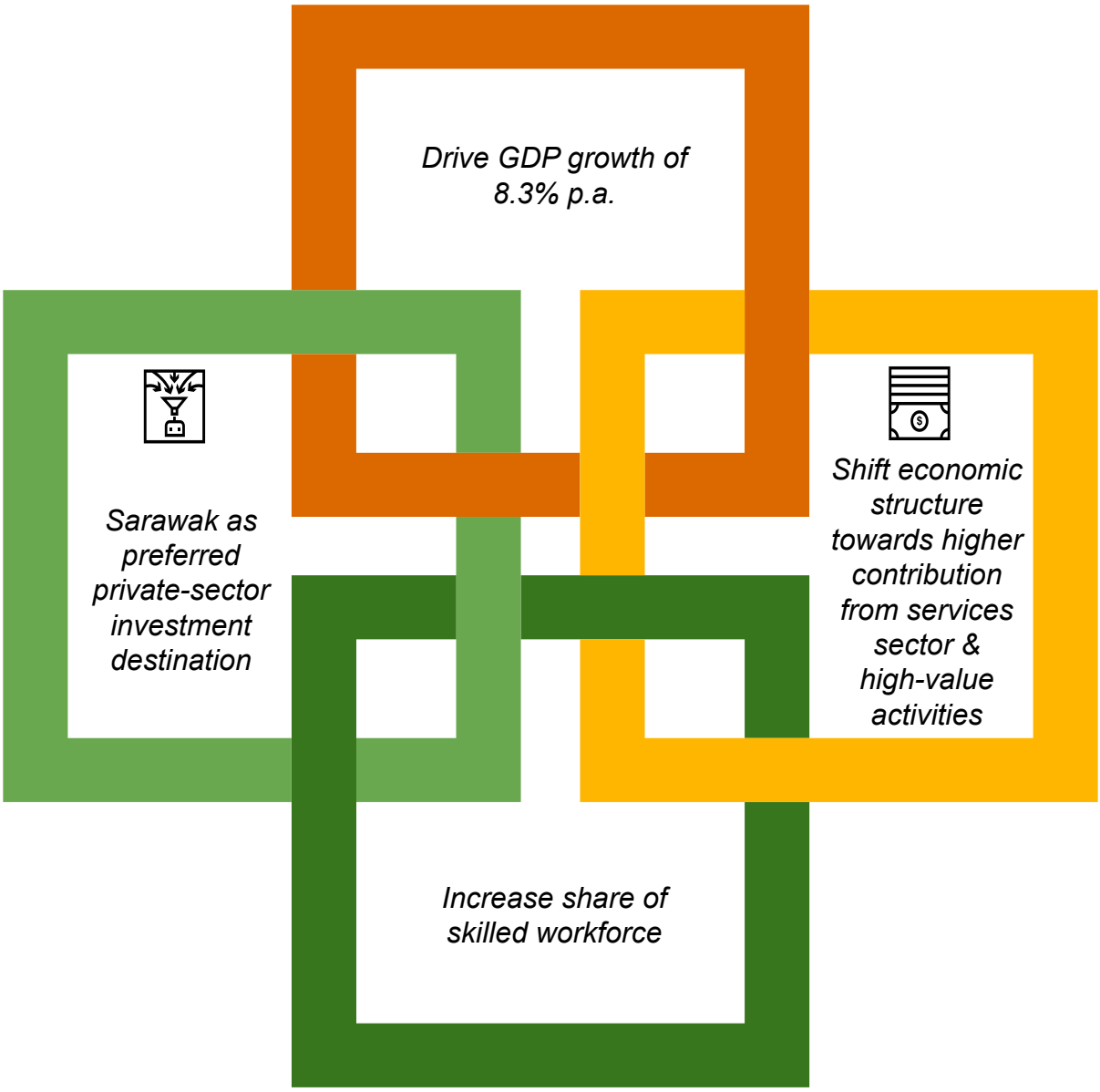
Source: DOSM-Household Income and Basic Amenities Survey, DOSM-SDG Indicators Malaysia (2019), Ministry of Health (MOH)-Health Indicators (2020), World Bank, National Health and Morbidity Survey Report, 2015, 2019 (MOH Malaysia), PwC analysis

4. The Three Pillars

4.1 Economic Prosperity

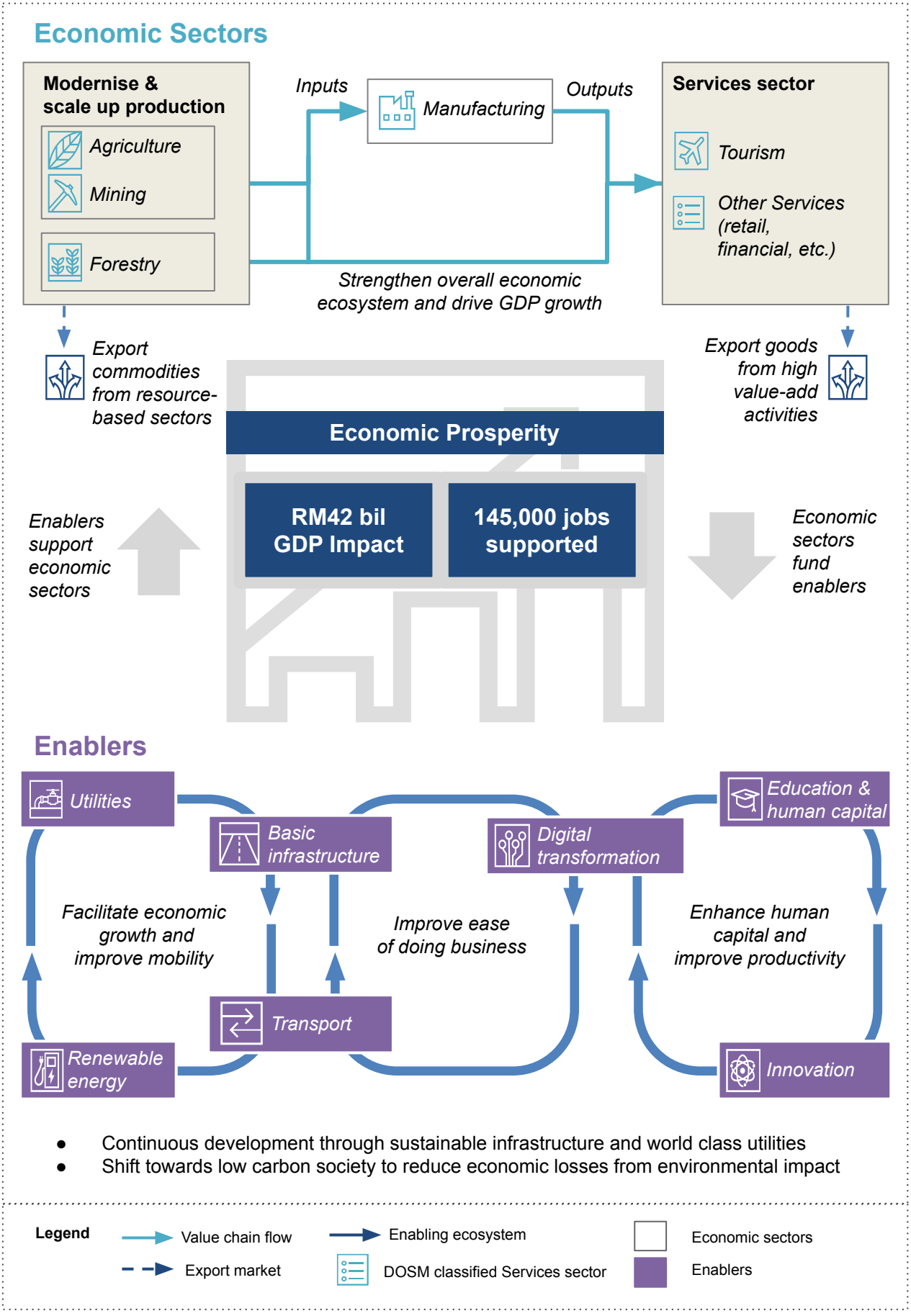
Ecosystem: Interlinkages of Economic Sectors and Enablers

Figure 4.1: Strategic focus of economic prosperity pillar



The ecosystem below illustrates the interaction between economic sectors and how enablers play a role in achieving **economic prosperity**.

Figure 4.2: Ecosystem of economic prosperity pillar



Supporting Initiatives

1. Leverage natural resources for modernisation and larger scale production activities

Sarawak is heavily reliant on resource-based sectors such as agriculture and mining due to its richness in natural resources.

The agriculture and mining sectors contributed 34% of Sarawak's GDP in 2019. Oil and gas related manufacturing is also substantial, contributing 20% of Sarawak's GDP.

Moving forward, Sarawak aims to use technology to modernise and scale up its resource-based sectors. In addition, these sectors will need to improve yield and the corresponding production for both its products.

Modernising resource-based sectors

These sectors will implement various initiatives to adopt digital technologies.

The agriculture sector initiatives include fast-track production high value commodities and other agricultural products, as well as downstream agro-based products. As an example, high value commodities like palm oil will see better yields through efficiency improvements driven by technology.

Enablers will support the development of technology driven initiatives, including high agro-technology industrial parks and precision farming parks. Enablers will complement the above through better physical, digital connectivity and provision of utilities and transportation/ logistics modes.

The mining sector will focus on mining policy reforms and the regulatory framework. This will help ensure higher value-added processing locally, especially for high value minerals.

The mining sector will also utilise digital technologies to develop geological mapping which will provide adequate information for crucial decision-making by potential investors. In addition, the sector initiatives include designing business models to facilitate mining activities and intensify downstream activities.

The forestry sector aims to increase high value processing activities to increase earnings from timber and non-timber products. For example, the industry can utilise local plywood as a key component to manufacture value added products.

Sarawak's forestry sector can also contribute to the growth of the tourism sector by developing ecotourism attractions. In addition, the forestry sector will explore new revenue streams such as revenue from payment for ecosystem services. This initiative rewards the conservation of ecosystem services and supports community development through the use of carbon offsets.

Scale up production of resource-based sectors with innovation and human capital development

The agricultural sector will shift from fragmented smallholders (subsistence-like farming) to high yield commercial-scale agriculture and food manufacturing. To support this shift, the sector will intensify R&D efforts and collaborate with academia and industry players. Methods used in the agricultural sector are largely low-yield due to the large portion of smallholders who lack access to mechanisation and technology in the industry although the sector has advanced from subsistence agriculture.

As the economy moves toward high value production, more skilled workers will be required to fulfil new jobs.

The education and human capital enabler will develop new talents, upskill and reskill the current workforce and build capability of local suppliers. Initiatives under digital transformation, innovation and education and human capital will work towards developing a Science Literate Society. In addition, the sectors aim to form strategic partnerships with industries and stakeholders to strengthen the State's economic growth.

The Digital Academy and Digital ICT Centres will implement large scale upskilling and reskilling of the current workforce. In addition,the Sarawak BioIndustrial Park and entrepreneurship support programmes will complement the above to build innovation clusters in biotechnology, digital R&D and renewable energy. These efforts are anticipated to drive commercialisation of R&D.

As the world moves towards rapid adoption of Fourth Industrial Revolution (4IR) technologies, the digitalisation and digitisation of public and private services will require improvements in digital transformation and innovation.

2. *Increase manufacturing of high value products to further drive economic growth*

The manufacturing sector is one of the largest contributors to Sarawak's GDP (2019: 27%). Majority of manufacturing activities are related to oil and gas.

Manufacturers look to diversify supply chains away from China to ASEAN countries. There is an opportunity to strengthen and promote Sarawak as an attractive investment destination for high-value manufacturing.

Several initiatives have been identified to attract quality investments into Sarawak and develop entrepreneurial community.

Enhance infrastructure support

- Physical infrastructure to enable growth of overall supporting ecosystem such as ports and intermodal transport (e.g. from ports to industrial or economic hub) to provide seamless logistics services
- Navigation infrastructure to allow day-night all weather movement of bulk goods along the Sarawak, Rajang and Baram Rivers, contributing to lower logistics costs
- Specialised infrastructure catered to large scale manufacturing companies (e.g. upgrades to industrial parks) as well as micro and informal entrepreneurs (e.g. Anjung Usahawan, industrial estates)

Adopt digitalisation efforts

- Development of Industry 4.0 skills to increase productivity through automation and smart manufacturing
- Upgrade digital infrastructure in key economic centres and selected rural areas to provide equitable access and accelerate development
- Create future ready talent pipeline through large scale digital upskilling initiatives via Digital Academy and Digital ICT Centres to support growth across economic sectors

Attract foreign and local investments

- Provide attractive investment policies and incentives for Sarawak to develop a supportive and vibrant ecosystem for local SMEs
- Improve ease of doing business (e.g. financial services, legal services, and service delivery) to elevate Sarawak as a competitive and preferred investment destination
- With more participation from foreign investors, Sarawak workforce also benefits from knowledge, technology and skill transfer, which increases the share of skilled workforce and strengthens talent of local vendors over time

Initiatives overview	*Outcome*
Enhance infrastructure support	Provision of sustainable and reliable infrastructure that supports industry growth
Embrace digitalisation efforts	Digitalisation and digitisation of local businesses
Attract foreign and local investments	Improve competitiveness of local value chain with knowledge and technology transfer

3. Key economic sectors drive further expansion in services activity

The services sector contributed the largest share of Sarawak's GDP (2019: 36%). The services sector covers a wide range of activities in wholesale and retail, hotels, restaurants, financial institutions, education, healthcare and public services.

In terms of employment, the sector supported more than half of total employed persons in Sarawak (2019: 53.5% of total employment).

Manufacturing-related services grow in tandem with expansion in manufacturing activities

The manufacturing sector is an important pillar of Sarawak's economy. The sector generates positive spillover to the rest of the economy.

In particular, the manufacturing industry consumes services in the area of storage, transport and logistics, and professional services. Similarly, other resource-based sectors such as agriculture and mining also have close economic links with these services.

The government will continue to improve Sarawak's manufacturing capabilities and attract firms that engage in high value manufacturing services. The manufacturing-related services will enhance the development of Sarawak's manufacturing ecosystem.

Tourism sector as one of the key drivers to shift into higher value-add services

The tourism industry has been severely impacted by the COVID-19 pandemic. Going forward, the industry requires infrastructure and supporting programmes to attract businesses and leisure visitors.

The local tourism industry and government bodies will collaborate effectively to enhance Sarawak's visibility and branding around the world.

By 2030, Sarawak aims to be a leading destination for ecotourism and business events in the ASEAN region. The industry will empower local communities, and implement initiative to conserve the culture, heritage and biodiversity of Sarawak to achieve the aspiration.

Policy Recommendations

Table 4.1: Policy recommendations for economic prosperity pillar

Policy Recommendations: Economic Prosperity	
1. Open and lift economic activity	• Mining - creating a more level playing ground through accommodative policies e.g. evaluation framework for business proposals submitted, qualification criteria design • Manufacturing - platforms for increasing economic activity through business parks and Anjung Usahawan as examples • Tourism - through the increased connectivity envisaged, policies to encourage private sector entry e.g. hoteliers, international F&B chains will serve to lift activity • Commercial agriculture - global food and agri-produce food giants' entry into the State to produce more activity and build on expansion of value chain (see policy area number 3 below)
2. Adopt more aggressive and deliberate policies towards building markets and attracting investments	• Overarching policy to create more investments for all sectors notably manufacturing, commercial agriculture, tourism, forestry through a Sarawak Trade and Tourism Office Singapore (STATOS) equivalent in a systematic and holistic manner (centralised) where targeted investors may enjoy a one-stop service on investments and operations in the State • Example, commercial agriculture sector's strategy of forging global partnerships can be greatly complemented • Exploring different ways of partnerships with private sector i.e. facilitative policies that will ease the way of doing business in Sarawak e.g. through public-private partnerships where risk sharing business models can be used in large projects e.g. mining, forestry

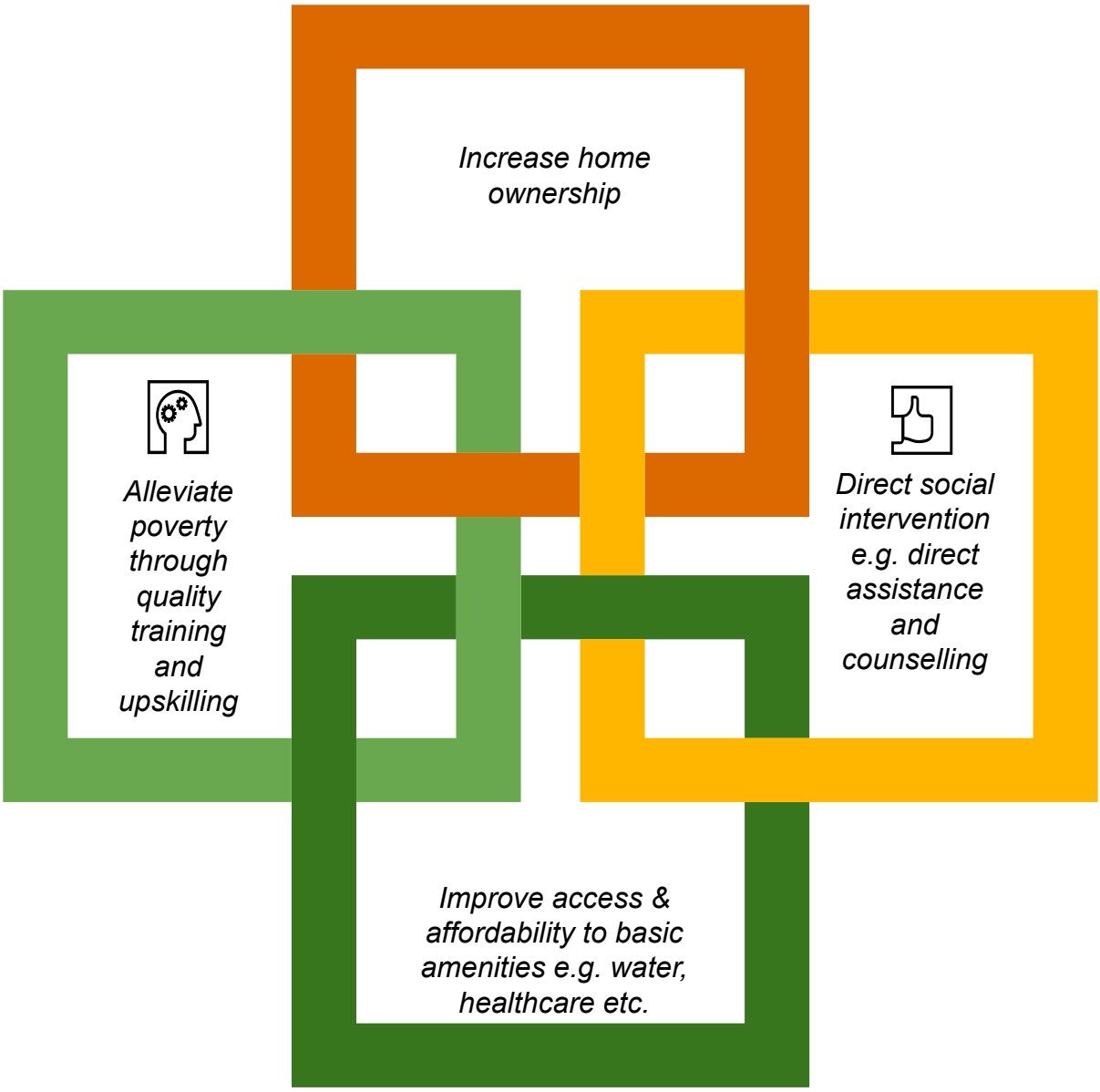
Policy Recommendations: Economic Prosperity	
3. Leverage on industrial ecosystem to develop local value chain	● With the entry of new investors into the State, concerted policies to encourage development of local vendors, human capital should be in place. ● Examples,new investors can be evaluated based on the impact provided to the locals i.e. an amount of employees hired should be sourced locally, usage of local vendors where possible e.g. mining, manufacturing, tourism, forestry ● Hence, investors who have systematic training programmes for locals can be accorded higher priority and have more attractive incentives for their businesses. ● This could take the form of risk sharing with the State government, tax incentives (to be strategised with Federal government)
4. Increase digitalisation and innovation activities as well as adopt 4IR technologies	● Digital transformation throughout the State should be facilitated by accommodative policies. Example, integration of work flows in the State government, policies on sharing data should be clear and serve as guides for members of the civil service. ● Companies that adopt 4IR technologies to be prioritised and given more incentives. This will benefit notably manufacturing, mining, forestry, tourism sectors which creates positive externalities for the environment. ● The State government providing seed funding via start-up funds will greatly provide access to tools and facilities required by new companies and spurring innovation throughout the State. Hence, policies that allow such funding exercises in collaboration with the private sector will provide significant impact.

Policy Recommendations: Economic Prosperity	
5. Build and ensure good international image of a safe and secure location	• This relates to physical and digital security, which will have an impact on Sarawak's image as an investment destination. Physically, Sarawak has maintained a good image with regards to security todate. Smart City policies and implementation will strengthen this, facilitated by Digital Transformation that is underway e.g. advanced tracking systems, immediate notification to authorities. • Cyber security is also an important element for investors in considering Sarawak as an investment destination. Policies that comprehensively govern cyber security with relevant guidelines and penalties to be further developed and implemented to ensure Sarawak can operationalise a cyber security framework that addresses the governance, legislation and policy, compliance and enforcement, technology and innovation, capacity and capability as well as global collaboration related to cyber security. • To apply these policies across all sectors and will especially benefit the manufacturing, mining, commercial agriculture sectors that have specific strategies of attracting private and global investments.

4.2 Social Inclusivity

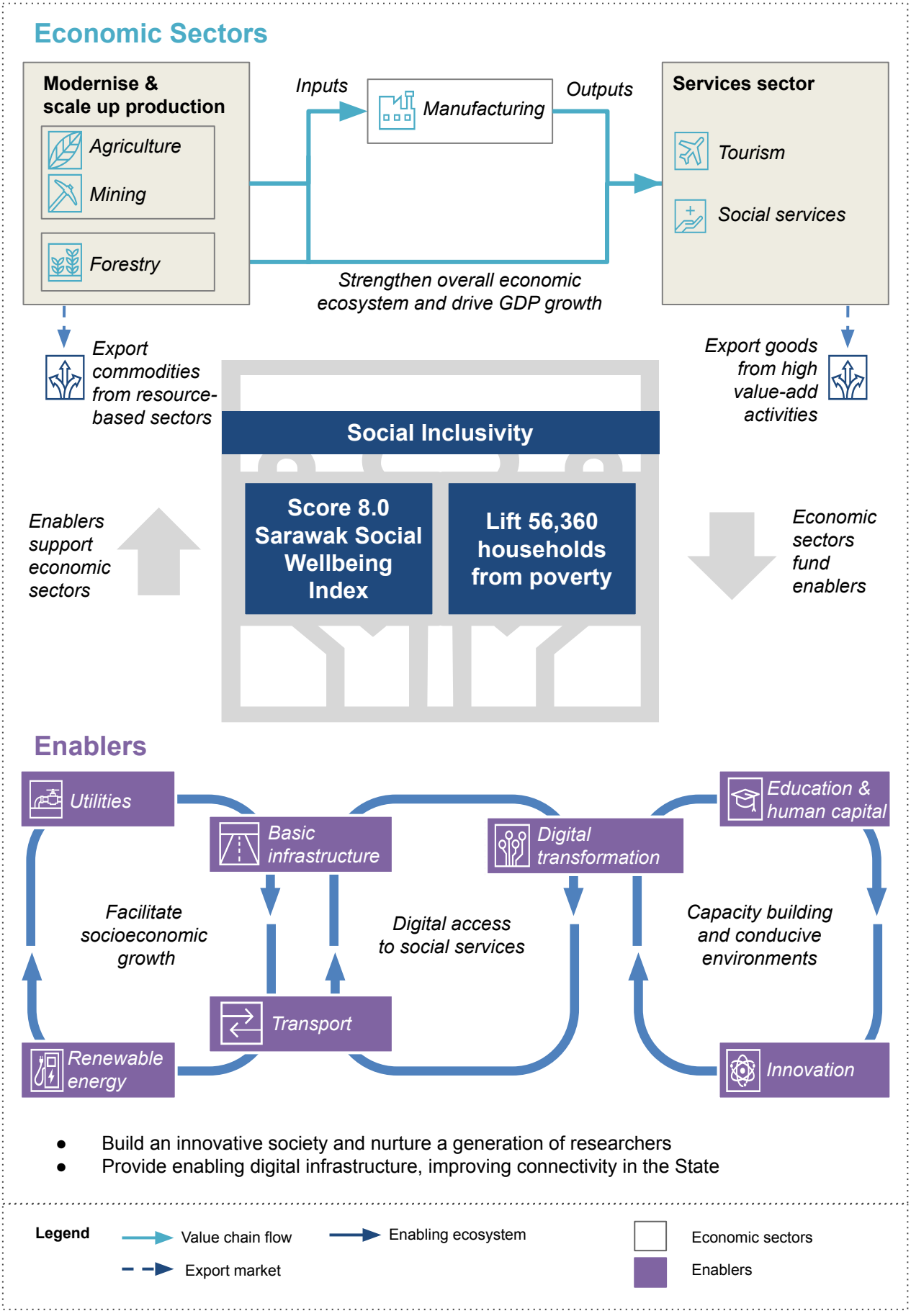
Ecosystem: Interlinkages of Economic Sectors and Enablers

Figure 4.3: Strategic focus of social inclusivity pillar



The ecosystem below illustrates the interaction between economic sectors and how enablers play a role in achieving **social inclusivity**.

Figure 4.4: Ecosystem of social inclusivity pillar



Supporting Initiatives

1. Poverty Alleviation

The Sarawak Government is committed in ensuring opportunities for all segments of the population regardless of socioeconomic background and geographic location. The forefront of this plan will be alleviating poverty and generating higher income among Sarawakians in order to improve their livelihood and wellbeing. This aim will be achieved through various strategies and catalytic initiatives implemented by the respective Ministries, Government Agencies and partnership with Private Sectors.

The State's aspiration is to ensure that by 2030, all poor households in Sarawak will be alleviated from poverty through deliberate intervention by nurturing good values and attitude, provision of the right ecosystem for human capital development and active participation in decent income generating activities. To achieve this, EPU Sarawak will take up the leading role and coordinate the implementation with various ministries and agencies. EPU Sarawak will also monitor the progress of the initiatives closely to ensure successful implementation and achievement of outcomes with periodic reviews that will be detailed Volume II of this Report.

The strategies and catalytic initiatives proposed were recommended to mitigate poverty through multidimensional approaches which will address the need for capacity building and active involvement in economic activities, access to essential needs such as quality education, healthcare services, systematic housing, efficient transportation system and financial services. These elements are significant in ensuring the livelihood and well-being of Sarawakians.

The key outcomes for this Poverty Alleviation and Income Generation sector are as follows:

- 100% households are involved in decent economic activities;
- 100% workforce attained certified formal education;
- 100% households accessibility to quality education & healthcare services;
- 100% households have sustainable monthly income above PLI;
- 100% households access to basic utilities & financial services; and
- 100% households provided with systematic housing

To achieve the above, four strategies have been outlined as following:

- Developing productive and resourceful human capital to participate actively in decent economic activities
    - This strategy will focus on developing human capital starting from mind-set adjustment for early childhood education, primary and secondary school students and post – schooling age
    - Producing competent workforce through initiatives to nurture good attitude for pre and primary school students, providing quality education, professional certification and skills training
    - Providing capacity building, education and skill training programmes which are the tools for participants caught in intergenerational poverty to breakthrough and access better employment opportunities
    - The training will be a continuation of the foundation programme and will be managed by the respective ministries or agencies
- Creating job and business opportunities in all economic sectors to increase household income
    - Providing employment for Sarawakians with consistent income above Poverty Line Index (PLI) across various economic sectors such as Agriculture, Tourism, Manufacturing, Construction, etc
    - Empowerment through entrepreneurship especially Small Medium Enterprise (SME) and start-up business in Sarawak leveraging on Digital Technology through e-commerce and encouraging innovative solutions
    - Providing capital assistance and market access for business ventures which focus on the required resources for business activities and operations
    - Market access, marketing and promotional activities assistance will also be provided to ensure that participants are adequately supported
    - Initiate job placement with potential employers from the private sectors
    - Lower income households will be provided equal opportunities to participate in the State's development
    - Employers will be encouraged and incentivised to hire those from the lower household income group
    - Appropriate training and upskilling programmes will be provided to meet job market demands
    - Scholarships will be allocated to eligible students

- Providing the right ecosystem to support involvement of households in productive activities
    - Providing proper infrastructures and utilities and access to financial services throughout the State to support growth of the economy and increase productivity
    - Providing systematic housing system to ensure safety and enhances well being of the *Rakyat*
    - Enabler such as affordable transport system will ease the mobility of the people especially poor households from the rural areas through low or minimal fares of public transport
- Reaching out to vulnerable group for inclusive society
    - This strategy will cover social intervention by the Government towards the vulnerable groups through education, training and participation in job and business opportunities as well as providing temporary shelters to support their livelihood
    - Under this strategy, the Government will organise various types of programmes to motivate PWDs to excel in their live
    - To provide social safety net for poor households in ensuring the basic necessities such as housing and public transportation are adequately provided

2. Direct social intervention by the State

The State will embark on direct interventionist policies e.g. from the One-Stop CSIC with programmes that include temporary shelters, counselling and guidance. The CSIC will be set up first in 8 locations and expanded throughout the State. Programmes will cover the following:

- Awareness, advocacy, treatment, rehabilitation and referral of vulnerable, risky and affected (VRA) individuals, families and communities
- Tracking, guidance and counselling affected individuals with social problems/ crises
- Diagnosis, intervention and specialised services for children with special needs
- Capacity building for VRA of social issues

The State will work closely with local community leaders to ensure the intended recipients obtain the services they need. Recipients covered include single mothers, recovering substance abuse victims, the elderly, PWD, poor and the homeless.

3. Affordable Housing

Globally, housing affordability is a growing issue as resources become scarcer. Hence, access to housing is a crucial issue to be addressed. Citizens feel a deeper sense of belonging and will become direct stakeholders in the State's growth as homeowners.

Based on 2019 statistics, home ownership in Sarawak is at about 85.6% which is targeted to improve further.

Based on the Median multiple (MM) method, a median house price that is three times or less than the annual income of the median household represents affordable housing. In 2019, Sarawak recorded a multiple of 5.74, ranking second last in the country for affordability of housing ahead of Sabah which recorded a multiple of 5.90. For comparison, Selangor registered a multiple of 3.86 while W.P. Kuala Lumpur's multiple was 3.79.

According to Demographia International Housing Affordability Survey 2020, Singapore's MM score in 2019 was 4.6. Hence, housing is more affordable in Singapore compared to Sarawak.

Bank Negara Malaysia's report entitled 'Demystifying the Affordable Housing Issue in Malaysia' published in 2016 highlights that the housing market has not provided an adequate supply of affordable housing for the lower- and middle-income households. In 2014, the shortage of affordable houses was estimated to be 960,000 units. This gap is evident across most states, with Sabah and Sarawak having the highest deficit, accounting for 50% of the total shortage in Malaysia.

According to Bank Negara's report titled *Demystifying the Affordable Housing Issue in Malaysia* 2016, the housing market in the country inadequately supplied affordable housing for the lower and middle income households i.e. B40 and M40.

To work towards solving this, the plan includes the housing voucher programme for first time house buyers to increase home ownership amongst the B40 and M40 households.

The initiative aims to assist first-time house buyers who may not have adequate credit history to obtain loans from commercial banks. In addition, this programme addresses those who do not have adequate deposits required to obtain a housing loan. There will be conditions for eligible applicants and this initiative is currently under further study before its official launch.

The Sarawak Government announced the Sarawak Rental Assistance Scheme whereby eligible applicants who earn below RM2,131 monthly will receive a rental assistance of RM200 per month for up to a maximum period of 36 months.

4. Access to primary healthcare

To increase access to primary healthcare services, the plan includes Sarawak Care which aims to provide basic services to the B40 youth. This group of the population is not covered by the MySalam programme under the Federal government which covers the B40 population 18 years old and above.

This initiative aims to solve the issue of overcrowding at public healthcare institutions. Sarawak Care will provide medical insurance to the B40 youth enabling them to access private primary healthcare services if preferred.

In essence, B40 families are able to lessen their burden in relation to primary healthcare services required for the youth.

Healthcare is a basic right and making it accessible and affordable is the State's commitment. This initiative will be complemented by the initiatives under the other sectors. As an example, basic infrastructure will strive to provide physical connectivity while utilities will provide clean and treated water in medical institutions.

Digital transformation will greatly aid where the databases of eligible recipients will be more comprehensive. These will be updated on a timely basis reflecting the data-driven initiatives planned by the State.

In addition to the databases maintained by the Federal government, the State aims to update and maintain a database of all welfare recipients. This greatly eases the tracking and monitoring of welfare recipients more accurately.

The access to primary healthcare is crucial towards improving the social wellbeing of the people.

With Sarawak Care lessening the burden of the underprivileged portion of the population, these households may use the freed up resources on other necessities of life hence improving quality of life.

Policy Recommendations

Table 4.2: Policy recommendations for social inclusivity pillar

Policy Recommendations: Social Inclusivity	
1. Increase participation of entrepreneurs, SMEs and rural communities in economic activities and digital opportunities	• Complement strategies and initiatives designed by e.g. manufacturing for providing platforms to small entrepreneurs (Anjung Usahawan), training and employment for rural communities under Forestry, Tourism, Social Services, accommodative policies that will enable maximum impact from these initiatives are required • Policies that facilitate and enhance digital transformation are crucial, as training, etc. can be delivered digitally. Policies that allow for digital versus physical presence are required • Legacy procurement systems requiring physical or in-person submission of documents should be updated to facilitate digital transformation. This mitigates the effects of distance largely due to the vastness of Sarawak
2. Provide support via social intervention programmes and training to vulnerable segments of society	• Although this will be mainly driven by the Social Services sector, social intervention programmes should involve collaboration with the private sector • Private sector companies especially global multinational corporations (MNCs) are mandated with social responsibilities. Policies that encourage any Sarawakian company or foreign investors to participate in social activities to aid the Social Services sector's efforts • Consider a centralised agency to coordinate all poverty alleviation programmes under the various Ministries/ Agencies and develop exit policy for poverty alleviation programmes to mitigate potential dependency issues
3. Better planning and execution in supplying basic amenities	• Centralised, holistic inter-agency collaboration between all the sectors e.g. economic sectors and enablers • Infrastructure, transportation, utilities planned should correspond to the needs of the economic sectors as these enablers are crucial to power both economic and social activities • For example, road planning should be centralised to ensure optimal land use. There is a proposed Infrastructure and Utilities Committee by the State in progress which will seek to ensure land is used optimally (in progress) which is a step in the right direction

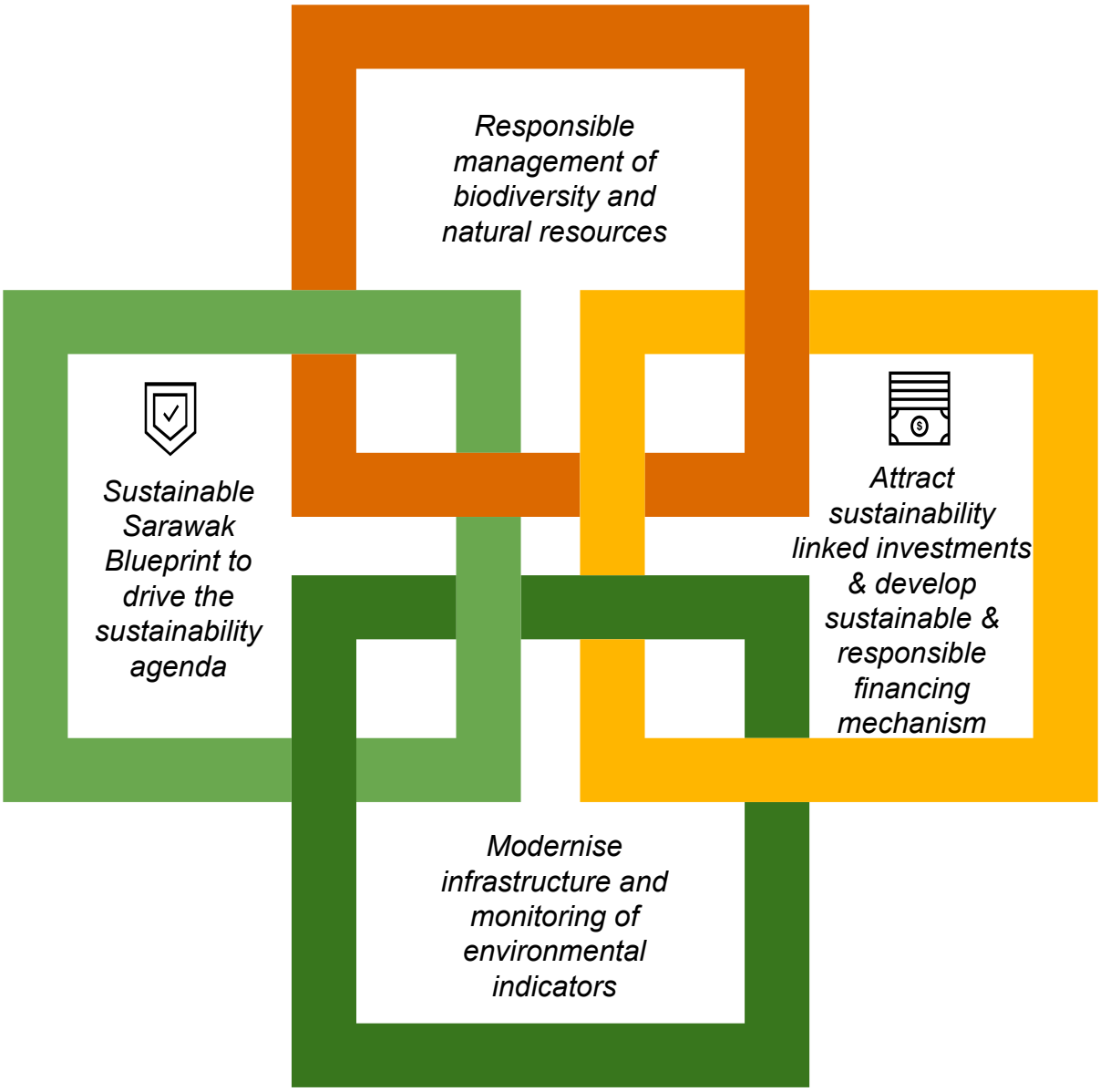
Policy Recommendations: Social Inclusivity	
4. Access to quality education for all	● In addition to social inclusivity i.e. ensuring every Sarawakian across income levels have good access to education to be equipped in the workforce upon graduation, this ensures adequately skilled human capital to power Sarawak's transformation ● Education is recognised globally as a means of assisting individuals in escaping intergenerational poverty and to increase skills for individuals to have better income earning abilities ● Education refers to tertiary and technical skills education ● Allocation of teachers, schools throughout Sarawak including the physical conditions of the schools need to be critically considered ● ECCE is more than preparation for primary school. It aims at the holistic development of a child's social, emotional, cognitive and physical needs in order to build a solid and broad foundation for lifelong learning and wellbeing. ECCE has the possibility to nurture caring, capable and responsible future citizens ● UNESCO's approach is reinforced in the Education 2030 agenda and in particular in target 4.2 of Sustainable Development Goal 4 which aims to 'By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education' ● Digitally accommodative policies will serve to facilitate this as digital learning is growing in importance ● Economic policies encouraging entry of new investors where investors/ large companies collaborate with educational institutions in training human capital with specific skills required who can be placed directly upon graduation ● Centralised planning for education institutions will serve to reduce duplicative programmes offered by competing educational institutions. Note that two major institutions in Sarawak will be setting up workshops to collaborate and to provide educational programmes that are complementary to avoid competing for the same students i.e. Pusat Pembangunan Kemahiran Sarawak (PPKS) and Centre of Technical Excellence (CENTEX)

Policy Recommendations: Social Inclusivity	
5. Employment for poor households	● To encourage private sectors to allocate certain percentage of job vacancies to be filled by workers from poor households ● This is to ensure that poor households will have the opportunity to get consistent and sustainable income from employment and that enable them to escape from poverty ● The salary offered by employer should commensurate with education level and experience for skilled jobs
6. Healthy eating habits among children	● This policy is to promote a healthy diet through nutritious food among children to ensure a healthy and active generation ● Nutritious food will also stimulate the mind-set of the children thus, encouraging the development of a more innovative and creative society
7. Character building among pre and primary school students	● To introduce character building programme and learning in the education syllabus which suites Sarawak context for pre and primary school students ● This initiative is to shape a dedicated, responsible and independent society which also significantly contributing towards the socio – economic growth of the State ● A define and solid character among the society will eventually leads to the reduction of reliance for assistance from the Government such as subsidies, cash handouts, protection scheme and thus stimulating the mind – set to be more independent and competent in growing the economy

4.3 Environmental Sustainability

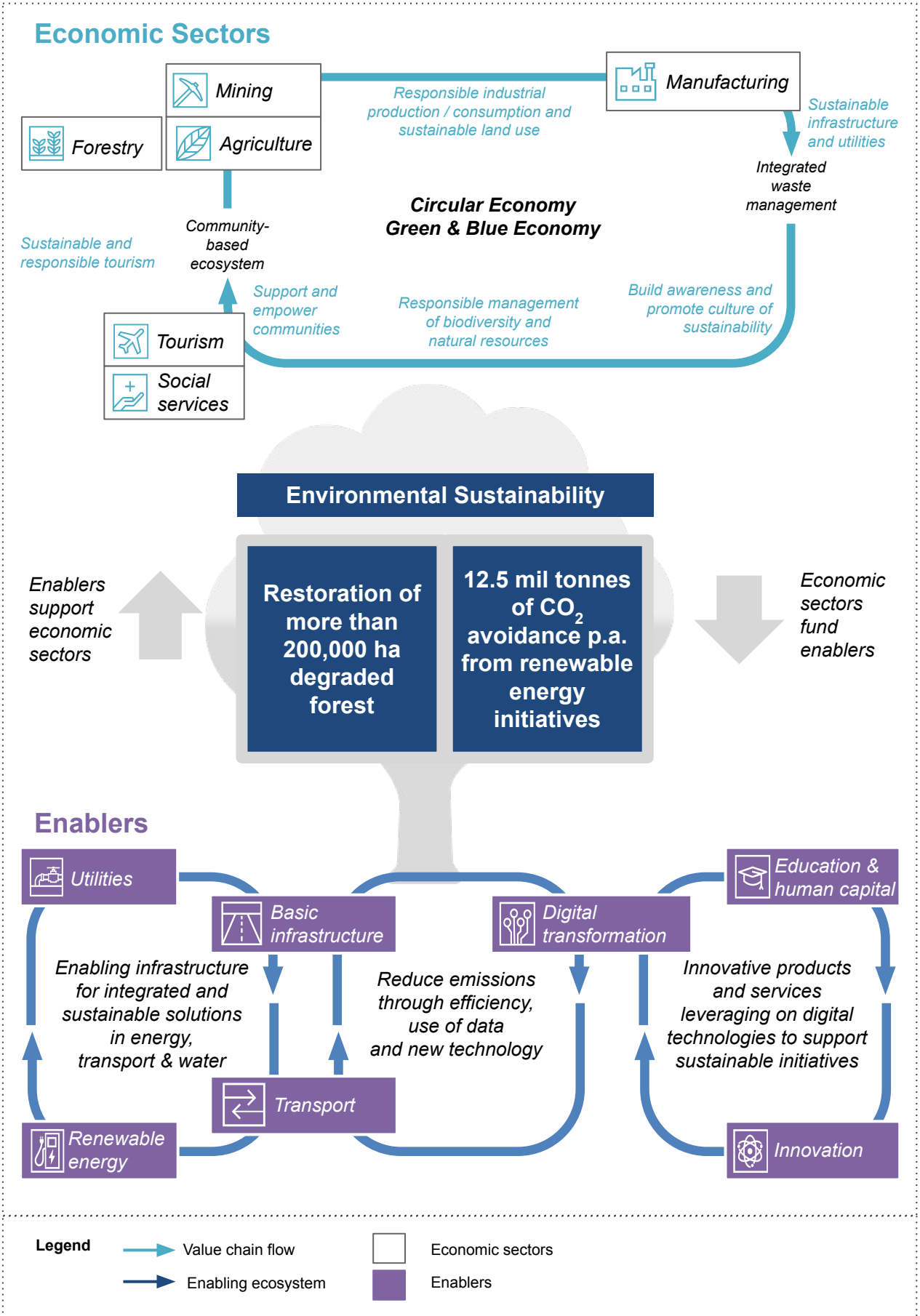
Ecosystem: Interlinkages of Economic Sectors and Enablers

Figure 4.5: Strategic focus of environmental sustainability pillar



The ecosystem below illustrates the interdependence between economic sectors and how enablers play a role in achieving **environmental sustainability**.

Figure 4.6: Ecosystem of environmental sustainability pillar



Supporting Initiatives

1. Sustainable Sarawak Blueprint to drive the sustainability agenda

Sarawak plans to prioritise environmental sustainability and align its development path with the Sustainable Development Goals (SDGs). The State will pursue balanced economic growth by adopting a responsible approach towards development of its natural resources. The plans aim to integrate climate mitigation and adaptation elements.

Following this, Sarawak will develop a Sustainable Sarawak Blueprint to guide all government agencies, businesses and communities to ensure maximum alignment from policy preparation through to daily activities. The blueprint will provide a guide for Sarawak to achieve its vision sustainably.

It will address concerns related to biodiversity and natural resources management as well as climate change mitigation and adaptation. In addition, it will outline strategies to promote green and blue economies' principles, while creating an enabling environment with modern infrastructure.

Sarawak will also develop masterplans and towards Smart Cities that will consider environmental sustainability related to urbanisation. A Kuching Smart City Master Plan has already been developed, with low carbon mobility and smart city infrastructure being considered for the capital city. Other related sustainability issues commonly faced by cities such as waste management, air and water pollution, floods, long commutes and lack of green spaces will be tackled and addressed through implementation of the local city plans.

Indicators and parameters will be established to ensure sustainable planning and development of Sarawak's cities and towns. This will be further supported by projects such as automated urban mobility solutions for Kuching and Miri and integrated waste management. In the energy sector, the State will continue to promote clean energy and enhance energy efficiency measures on public and private development.

The State will also prioritise development of more urban green infrastructure in cities to improve livability and enhance resilience to natural disasters such as floods. These sustainable urban solutions will be developed, tested and commercialised via close collaboration between the government and the private sector.

2. Responsible management of biodiversity and natural resources

Sarawak's natural resources and forest areas are one of Malaysia's main carbon sinks and biodiversity hotspots. Hence, responsible management is critical. This also supports Malaysia's commitment to maintain at least 50% of the country under forest cover. Apart from rainforest conservation to mitigate climate change, Sarawak's rich rainforest presents potential applications in healthcare, agriculture and industries. Research and development activities through bioprospecting may uncover new applications that has commercialisation properties and societal benefits, such as protection towards diseases.

Sarawak is committed towards preservation of six million ha of land as permanent forests and one million ha as totally protected area (TPA). To further promote sustainable forest management, the State will require all long-term timber licensees to obtain the forest management certificate by 2022 and licence for forest plantation management by 2025. Forest Landscape Restoration (FLR) is the State Government's long-term strategy to ensure sustainable forest areas by restoring degraded forest areas as well as increasing the green areas in Sarawak. The Planning and implementation of FLR in Sarawak is a long-term programme until 2030 that involves the participation of various stakeholders. The policy also supports the Federal Government's efforts to achieve the planting of 100 million trees by 2025. The provision for a carbon offset project in Sarawak has been implemented through the amendment of Forests Ordinance 2015 by including the element of "payment for ecosystem services as a ground to planning and implementing of carbon project in Sarawak. In addition, the Forest Department has also inserted a new amendment in 2020 in the Forest Ordinance, 2015 to include 'carbon' as a new source of state revenue. This amendment is still pending for MMKN and DUN.

Water acts as an enabler for sectors such as agriculture, forestry, tourism, and supports the State's energy needs through hydropower. Conserving watershed areas for water catchment is critical, to ensure adequate water supply for drinking and economic activities as well as for mitigating flood and drought risks. The State presently is restructuring its institutional framework for water management with proposed formation of a single water entity and establishing SWA as a body corporate to improve on the delivery and quality of water supply services and to enhance the regulatory functions of SWA respectively. The State will also establish policies on integrated water resource management. This policy will set clear principles and regulations for the government, local planners, landowners, and all other stakeholders on the long term goals of watershed areas and water resources management in the State.

Sarawak will capture value from natural resources for the long term via focused innovation clusters in biotechnology, renewable energy and digital sectors. These clusters will promote R&D and commercialisation of new products and services beyond the extraction of primary resources.

The State is in the process of restructuring its institutional framework for water management in Sarawak with the proposed formation of a single water entity and establishing Sarawak Water Authority (SWA) as a body corporate to improve the delivery and quality of water supply services and to enhance the regulatory functions of SWA respectively.

3. Climate change mitigation and adaptation

The impact of climate change is increasingly apparent through rising sea levels and increasing extreme weather events. Sarawak should integrate climate mitigation strategies into its developmental policies to manage this risk e.g. establishing a GHG emissions inventory with regular reporting and tracking of GHG contributors.

Tracking GHG emissions from sectors such as energy and transport, industrial processes and product use, agriculture, land use, land use change and forestry (LULUCF) will provide an indication of Sarawak's progress in reducing emissions.

Climate mitigation strategies to reduce GHG emissions and decarbonise specific sectors will include both legislative measures and market-based incentives. This will compel and incentivise low carbon and green practices by the government and the private sector.

Overall, this will be aligned with Malaysia's commitments to reduce GHG emissions intensity of GDP by 45% by 2030 relative to the emissions intensity of GDP in 2005.

The State has also approved the formulation of Sarawak Climate Change Policy and Low Carbon Society Blueprints in Sarawak (i.e. Kuching, Miri, Sibu and Bintulu). This aims to inventorise GHG emissions in Sarawak and assess existing carbon footprint in Sarawak's cities and towns by developing appropriate mitigation and adaptation measures and action plans to prepare low carbon society blueprints. This is further supported by the formulation of Climate Change Policy and a reporting and implementation framework to track GHGs emission sources.

Mitigation strategies will be supported by forest protection and conservation. It will also be driven by Sarawak's move to further increase and diversify its renewable energy capacity from solar, biomass, and explore commercial-scale hydrogen technology. In line with Sarawak's move towards a green economy, decarbonisation of the industry sectors will need to look at while ensuring a just transition towards a circular and low-carbon economy.

Concurrently, the State plans to develop innovation clusters to discover new solutions towards enhancing energy efficiency, reducing waste and ultimately reduce GHG emissions.

Developing adaptation plans will also be crucial to strengthen the economy's resilience against extreme climate impacts and assist the most vulnerable communities.

3. Climate change mitigation and adaptation (con't)

Adaptation measures will be considered, targeted towards vulnerable communities in Sarawak. This includes coastal communities which can be impacted by sea level rise and flooding events. In addition, this includes agriculture-based communities which may be impacted by dry spells or floods that can disrupt cultivation and harvest.

4. Promote green and blue economy

The concept of green economy refers to an economy that aims at reducing environmental risks and ecological scarcities. Meanwhile, blue economy refers to the sustainable use of coastal and ocean resources for economic growth, improved livelihoods and jobs. Both concepts promote sustainable economic development while preserving the health of land and ocean ecosystems.

To promote this concept, Sarawak intends to develop carbon offset projects from both forestry-based and coastal-based ecosystems. These projects have the potential to generate new revenue sources for the State in the form of carbon credits. The funding will be utilised towards protecting and regenerating Sarawak's forests and coastal ecosystems.

Sarawak will offer nature-based projects such as reforestation, land restoration, forest protection and sustainable forest management as carbon offsets. In addition, there is potential areas such as renewable energy production, distribution and storage, energy efficiency in buildings, green transport, recycling, pollution prevention and water conservation.

Underpinning these efforts will be development of the State's policy and legislation framework to enable carbon offset project development. This includes updating the legal framework and building capabilities towards certification, verification and disclosures of carbon offsets based on accepted international standards.

This will enable Sarawak to leverage green financing mechanisms that serve to direct investments into sectors that enhance the environment and mitigate climate change.

The State will promote several schemes to improve information access on various green financing options. These schemes aim to provide easy access to relevant information as well as outline key procedures to obtain financing.

Establishing green lane access to facilitate cooperation between relevant State agencies and private sector project developers may greatly help. State agencies can assist the private sector (e.g. by providing information to support fulfilment of scheme requirements) to access these financing schemes which will speed up overall project development.

5. Modernise infrastructure and monitoring of environmental indicators

Data and information is critical in the monitoring and enforcement of environmental policies. Sarawak will invest to intensify data collection and enhance the monitoring process of environmental measures. The State will leverage digitalisation and data towards sustainable land use in land intensive sectors such as forestry, agriculture, urban development and mining aligned with statewide Digital Transformation efforts.

For instance, authorities will be able to continuously monitor environmental conditions in various locations for precision agriculture through the use of wireless sensor networks. These networks connect multiple Internet of Things (IoT) sensors, with the ability to detect various environmental indicators useful to monitor the conditions of the soil, air and water for optimal health of the plants.

Smart environment monitoring utilising artificial intelligence and machine learning enables more precise and automated coordination with optimal control to detect pollution and other undesirable effects to the environment. These solutions will improve production efficiency and be useful towards sustainable use of land, water and other resources.

Advancement in satellite technology, Geographic Information System (GIS) data and drones allow for better land resource planning and monitoring of sustainable logging in the forestry sector. Sarawak will explore leveraging these technologies for remote sensing, forest resource monitoring and early detection of outbreaks such as fire, pests and diseases.

To enable these advancements, the State is planning to form a common IoT infrastructure and Geographic Information System (GIS) platform. Sarawak will also centralise the coordination and management of technology such as drones that allows infrastructure sharing for data collection and analyses.

In addition, the State will enable crowdsourcing of data and enable development of open services that facilitates data analytics and new services utilising government data. This effort will demonstrate collaboration across different Ministries and agencies to synergise the infrastructure and enable data sharing from various sources.

Policy Recommendations

Table 4.3: Policy recommendations for environmental sustainability pillar

Policy Recommendations: Environmental Sustainability	
Mainstreaming of Green Economy and Blue Economy in Sarawak's development plans **Policies will encompass the State's commitments and plans in line with sustainable development principles and clear commitments towards climate mitigation and adaptation**	• Environmental sustainability cuts across all economic sectors through application of the right policy and legislation framework. It will be anchored on principles of sustainable development as part of the State's development agenda and an updated inventory of GHG emissions in Sarawak's key sectors • Forestry sector will be a key driver of environmental sustainability. Protection and conservation of one of the oldest and most biologically diverse rainforest in Sarawak is critical. The State should continue its commitment to allocate more than 56.5% land for forestry sector, which includes enhancement of permanent forest estate (6 mil ha) and totally protected area (1 mil ha). This will complement initiatives to accelerate forest landscape restoration in line with the State's Sustainable Development plan • RE sector will play a key role in carbon avoidance via initiatives to promote and increase private sector participation in RE generation.This is further supported by policies encouraging more diverse RE projects and Net Energy Metering (NEM) incentives for various commercial, industrial and domestic sectors. The State's plan to develop hydrogen-based economy will be supported by policies that incentivise new and existing players to develop a hydrogen ecosystem • Transport and Digital Transformation sector will benefit from policies to develop green mobility and green cities. The State may develop a low carbon society blueprint for cities/towns and establish key sustainability indicators/parameters. This blueprint will complement and support future sustainable urban developments e.g. green mobility options and Smart City infrastructure • Policies for integrated water resources management will help identify clear principles/regulations for management of watershed areas and resources. This policy will improve the planning process for land development, by giving due consideration to sustainable management of water resources which are essential for the development of water supply grid and other initiatives e.g. hydropower and agriculture

Policy Recommendations: Environmental Sustainability	
Mainstreaming of Green Economy and Blue Economy in Sarawak's development plans **Policies will encompass the State's commitments and plans in line with sustainable development principles and clear commitments towards climate mitigation and adaptation** *(cont'd)*	• Establishing green financing mechanism to finance green economy and blue economy projects through schemes such as carbon credits will also provide a foundation and a solution to other sectors towards reducing carbon emissions • Develop a circular economy framework and action plan to incentivise responsible and sustainable production and consumption. For example, a circular economy bioeconomy capturing higher impact opportunities through sustainable management of biomass

5. Additional Information

5.1 Policy Recommendations

Policy Recommendations

Governments across the world are facing low productivity growth, weak trade, investments, and rising high inequality of income and corresponding well-being. Innovative solutions are constantly sought after to seize opportunities and mitigate risks that emerge from major transformations in the economy and society. The current pandemic is a striking example of such transformations.

Transformations such as increased globalisation, digitalisation, the fourth industrial revolution, the changing nature of work, demographic changes, circular economy and transition to a low carbon economy have far-reaching impacts. Impacts which affect productivity and income distribution, illustrate importance of policies' role in enhancing inclusive growth.

Policy changes implemented concurrently or even before the Catalytic Initiatives should be considered. These changes form an integral part of the transformation providing an optimal platform and environment for initiatives to have maximum impact.

The policy recommendations are aimed to achieve the following:

1. Provide guidance, consistency, accountability (to ministry or body driving the policy which requires clear allocation of responsibilities), efficiency and clarity to the State Government (i.e. Civil Service)
2. Create a conducive environment policy-wise

Recommendations have been divided into economic, social and environmental sustainability sections in line with Sarawak's 2030 aspiration.

They were designed to address the challenges identified with the corresponding opportunities in each section.

Figure 5.1: Overview of approach

Note:[1] Policy implementation can fail for (1) absence of complementary measures needed to make the policy effective and (2) the inadequate capability of prevailing institutions and administrative systems

Economic policies

These policies encourage investment, strengthen growth and capability training, complemented by good branding for Sarawak. They benefit manufacturing, tourism and commercial agriculture sectors specifically, with positive spillover effects onto others.

Challenges:

- Perceived barriers in certain industries due to poor information
- Lack of access to digital infrastructure
- Current scale and capabilities could not meet industry demand and compete globally

Opportunities:

- Improve transparency around information and guidelines for ease of business processes
- Uplift local capabilities and increase competitiveness
- Adopt innovation and digitalisation to spur socio-economic growth
- Attract and retain FDI with good international image

- **Open and lift economic activity** through information sharing aligned with overall state planning
    - Refine guidelines and business processes to create a business-friendly environment (e.g. compliance and transparency in tendering system)
    - Digitalise Government processes (e.g. planning and housing data)

- Adopt more aggressive and deliberate policies towards **building markets and attracting investments**
    - Adopt *whole-of-government* approach in guidelines to provide certainty (e.g. approvals, local insights, regulations, etc.)
    - Establish well-coordinated single investment agency to attract investments (e.g. Invest Sarawak)
    - Enhance international linkages and regional connectivity

- Leverage on **industrial ecosystems** to develop local value chain
    - Long-term planning to uplift capacity, knowledge and participation of locals in supply chain and external trade (e.g. SME development programmes)
    - Enhance transportation connectivity and linkages from feedstock producing regions to industrial processing and urban consumption areas

- Increase **digitalisation and innovation** (i.e. Research, Development, Commercialisation and Innovation (R&D&C&I)) activities as well as adopt 4IR technologies
    - Incentivise industry-led technology adoption upskilling programmes (Large scale upskilling programme via Digital Academy)
    - Establish digital platform to increase SMEs' growth and Government services
    - Establish venture capital fund to accelerate development of local start-ups, together with matching grants (e.g. establishing a venture capital fund in partnership with angel investors and existing venture capitalists)

- Build and ensure **good international image** of a safe and secure location
    - Enhance public-private sector collaboration to coordinate digital and physical security (e.g.private experts and Government security unit)
    - Create centralised infrastructure mapping to improve surveillance and maintenance systems
    - Establish data security framework to enhance cybersecurity capabilities and deter cybercrime

Open and lift economic activity through information sharing

Policy should work towards eradicating all barriers to doing business with ease. Information sharing is an important factor driving this.

Refine guidelines and processes to increase ease of doing business, digitally driven

Policies play a big role in facilitating this. For example, on a global basis, implementation of information sharing initiatives in civil services may be hampered by legacy policies (especially in the procurement departments) where tender documents have to be in print. Hence, there is no flexibility of using web-based systems that should increase efficiency and enable easier information sharing.

It is important to note that the quantum of information sharing warrants more detailed assessments. Confidentiality and security of information for sharing to take place among Government agencies is crucial. There are three main categories in terms of security (i.e. data security, information security and process security), categorised under operational and technological factors.

Digitalise Government processes

Digital Government is the transformative approach to provide government services, leveraging on technologies such as IoT, Big Data, Artificial Intelligence and Cloud Computing. The use of digital technologies and data allows for greatly enhanced efficiency. Public services can be provided to citizens, workers and agencies through interoperability of different digitalised services. ICT is used to deliver public services to citizens and businesses.

From a business point of view, digitalising Government processes will greatly enhance ease of operations from a myriad of aspects. These include, but not limited to, approval processes that provides status updates for any applications that may pertain to transfer of land, approval for land development, etc.

The underlying principle of Digital Government is to improve the internal workings of the public sector by reducing financial costs and transaction times to better integrate work flows and processes. An effective digital governance institutional framework should support this principle. Digitalisation of Government processes will also contribute towards transparency and accountability for both citizens and businesses, both local and foreign.

Source: UN E-Government Knowledgebase, A Conceptual Model of Information Sharing in E-Government Services, Universiti Utara Malaysia

Building markets and attracting investments

Building on increasing ease of doing business, more aggressive and deliberate policies are required.

Adopt *whole-of-government* approach in guidelines to provide certainty and transparency

Certainty and transparency are extremely important elements prior to decision making for setting up of or expanding operations in a certain location, from an investor or business perspective. All Government agencies need to be aligned while setting up processes. The consistency and certainty afforded make a significant impact on risk assessment done by businesses in terms of investment choice. A high level of certainty ostensibly contributes to a lower risk factor tagged to the location (or country) i.e. country or location risk.

Establish well-coordinated single investment agency that is executed effectively

A single investment agency has been used by governments across the world to focus on attraction of targeted investors that will boost economic activities. To establish one that is well-coordinated and well-planned is key, highlighting the importance of the execution.

As an illustration, about 20% of Vietnam's output is produced by foreign companies. These are, ostensibly, South Korean firms that have identified Vietnam as an investment and operation destination since the 1990s which happened in three waves. The Vietnamese government is well-coordinated in its approach and works closely with the South Korean government. Frequent business trips are organised, where South Korean business delegates visit designated areas in Vietnam and meet with local businesses, which includes supply chain vendors. Businesses also work directly with Vietnam's agency for the training of locals and hires Vietnamese graduates directly from designated colleges.

These practices can be adopted by Sarawak with targeted countries to enhance its attractiveness as an investment destination.

Enhance international linkages and regional connectivity

Sarawak should work on strengthening its international linkages that will act as an enabler for its investment agency to have more success. International linkages consist of financial, education and business aspects, among others. It will drive stronger and easier cross-border collaboration. This is achieved via open dialogues with target countries or locations, made stronger by liberal policies for foreign investors, and further enhanced by increased ease of doing business (refer previous page).

Source: Global Risk Assessment, Kroll "The Rise of Korean Investment in Vietnam"

Leverage on industrial ecosystems to develop local value chain

Sarawak needs to build and augment its local value chain. A strong local value chain (i.e. supply vendor network) makes a location inherently more attractive from the lens of a foreign investor.

Long-term planning to uplift capacity, knowledge and participation of locals

Building more advanced industrial ecosystems in Sarawak not only drives economic growth but contributes towards inclusive growth. This process typically occurs organically or in a focused manner through knowledge transfers and training by foreign investors.

These recommendations are interlinked, and must be executed in an integrated and well-planned manner, helmed by a central agency in ensuring smooth implementation. This is evidenced in Vietnam where, compared to a decade ago, their local value chain is more advanced following the significant foreign investments. For example, Samsung has set up its largest smartphone plant in Southern Vietnam among others. They are now better positioned to capture investments with a well-developed local value chain.

Sarawak Economic Development Corporation's (SEDC) investment in a A$20 million cattle farming business in Australia is another example of foreign investments benefiting the local industry. They have purchased the Carmor Plains Station in Darwin. SEDC collaborated with the State Department of Veterinary under the *Pawah Cattle* scheme where high quality bulls (male) and hyper (female) cattle breeds were supplied to the State's cattle farms.

Enhance transportation connectivity and linkages

It is important to significantly augment Sarawak's transportation connectivity and linkages to target export markets to position itself as a food supplier to the region (e.g. Singapore, who imports most of its food consumption needs).

The State's plan to better utilise its riverine infrastructure will greatly enhance connectivity between feedstock producing regions with urban consumption areas.

Noting the State's plans on enhancing infrastructure and transportation, it is highly important to note the angle of intermodal transportation efficiency. A country or state which offers a high degree of intermodal transportation possesses an inherent advantage as logistics costs are lesser while providing more transportation choices to the investor.

Source: Global Risk Assessment

The State's infrastructure planning should directly consider the goals of attracting foreign investment, which in turn develops industry ecosystems while strengthening local supply chains.

Related to the Vietnam illustration above, port expansion or development is crucial. Cat Lai Port located in the Ho Chi Minh has become a preferred port by exporters as well as importers due to its proximity to Binh Duong, Ba Ria-Vung Tau, Dong Nai and Ho Chi Minh City where many South Korean conglomerates have their bases. This attracts more foreign investors through existence of well developed local supply chains as it essentially creates a virtuous cycle.

Source: Global Risk Assessment

Increase digitalisation and innovation and adopt 4IR technologies

Important facets of policy recommendations are increased digitalisation, innovation (R&D&C&I) as well as 4IR technologies in the face of the megatrends, where the competitive landscape is increasing in intensity. Accommodative policies towards digitalisation and innovation will focus on on the infrastructure required, technology adoption level, industry development as well as research and innovation capabilities for large companies and SMEs to be a part of the digital economy and embrace innovation

Incentivise industry-led technology adoption upskilling programmes

Accommodative policies to encourage more far reaching digital upskilling programmes will equip a larger portion of the population with skills required to participate in Sarawak's growth (i.e. driving inclusive growth). Technology will reinvent the way we work despite adoption of 4IR technologies displacing certain jobs.

Companies must continuously devise new programmes to upskill its workforce as a result. It will be a challenge to recruit candidates with prior experience due to the complete newness of certain technologies. Hence, companies and industries will need to devise new programmes to upskill employees and do this on a continuous basis.

A publication by the World Economic Forum (2020) showed that by 2022 alone, 75 million jobs will probably be displaced across 20 major economies and 133 million new ones will appear in 'new' industries. It is estimated that nearly two-thirds of children who started school in 2016 will start employments in jobs that currently do not exist during this time. A 'Revolution' in upskilling will be required globally in line with 4IR. It is important for Sarawak to intensely start upskilling its population, as it is the objective of initiatives such as large scale digital upskilling via Digital Academy.

Establish digital platform to increase SMEs' growth and Government services

This is an enabler required for assisting SMEs in Sarawak as well as for public service delivery. Largely, digitalisation will greatly enhance access to product and service knowledge, market demand, and customer preferences among others for SMEs which would enable them to enter the market with relatively lower costs. In addition, to facilitate information sharing discussed earlier in this section, a safe and reliable platform to accelerate SME's growth and digitalisation will be required.

Source: World Economic Forum, The Future of Work 2020, Forbes

The role of governments in venture capital fund to accelerate development of local start-ups

Access to finance is one of the major barriers to doing business especially for smaller operations (e.g. SMEs and start-ups). The role of the governments in venture capital funds globally has evolved to provide ever more targeted funding for high potential firms.

Policy makers should be conscious of the changing external financing ecosystem when designing co-investment policy schemes where flexibility and access to follow-up funding is required. Government-backed or involved venture capital funds may function to fill in specific funding gaps for start-ups that may have linkages to social or public benefits (i.e. those that do not focus purely on profit-making objectives).

Establish venture capital fund to accelerate development of local start-ups

One of the mechanisms to support local technology start-ups is through a local-based venture capital fund. The fund will be focused on assisting Sarawak-based technology entrepreneurs access to capital at an early stage towards scaling-up and commercialisation.

Citing an example, the Startup SG Equity is an investment fund managed by SPRING Seeds Capital and SGInnovate. Under the scheme, the Singapore government will co-invest with 11 private investment partners in startups that require significant capital expenditure and may require a longer gestation period to be commercially viable. For startups that are improving existing technologies, the Singapore government will provide 70% of the funding in an initial round of S$250,000.

Thereafter, the Singapore government will invest S$1 for every S$1 invested by private investors up to a cap of S$2 million. The quantum will be different (i.e. higher) for start-ups classified as *deep-tech*. Deep-tech refer to start-ups that are highly differentiated where products are developed based on scientific or technological breakthroughs. Providing a staggered assistance based on quantum incentivises local start-ups in producing services or products that are highly differentiated and hard to replicate.

Source: Start Up Decisions, Singapore

Build and ensure good international image of a safe and secure location

Safety and security is at the heart of any nation or state's prosperity. There is room for collaboration between the public and private sectors in protecting physical security.

Additionally, digital security is increasingly important due to the higher instances of cyber breaches observed across the world. Cyber-risk is a key factor for investors and businesses to consider in the decision making process for company strategy/ investment locations as major cyber attacks (e.g. NotPetya and WannaCry) paralysed some businesses for weeks.

Enhance public-private sector collaboration to coordinate digital and physical security

Physical security can be significantly impacted by private sector organisations whereby the latter can play an important role in delivering a more secure society. Educational establishments have a responsibility to keep their students secure and educate them how to be safe in society. Health organisations keep people well and safe from harm. Emergency services respond to crises all play a role in delivering a more secure society and ensuring physical security as a whole. This is in addition to police and armed forces being an example of *sharp end* of security.

Cyber risk is included by investors as part of standard due diligence reviews prior to important company or investment strategy decisions. Collaboration between the public and private sector is imperative as they share a similar goal of security and privacy.

It is in the government's interest and duty to ensure cyber risks are low. Private investors are incentivised to ensure utmost digital security since cyber breaches will cost monetary loss and in certain cases, loss of credibility or trust by its customers. For instance, in cases related to the healthcare industry, hospitals have started requiring that medical-device makers improve the cyber defences of their internet-connected infusion pumps, biopsy imaging tables and other healthcare products.

Sarawak should strengthen its focus on maintaining its physical security while enhancing digital security policies and governance framework as an increasing number of activities both economic and social are performed online.

Source: PwC Report, Achieving Safety and Security in an age of disruption and distrust 2019; World Economic Forum, Investors have a Role in Securing our Shared Digital Future, 2019

Create centralised infrastructure mapping to improve surveillance and maintenance systems and establish data security framework

This points to creating an enabling environment to achieve the objective of both physical and digital security. A comprehensive surveillance system with centralised infrastructure mapping will greatly facilitate the ease of delivering a secure society both physically and digitally.

Governments uniquely have the power to facilitate and enable collaboration in security matters whether internationally, nationally or locally across all sectors of society. Their first responsibility is to identify and prioritise the threats that endanger the population. It is important for governments to be involved, especially in digital security efforts. Approximately 90% of cyberspace resides in the private sector on a global basis (i.e. vast majority of cyber infrastructure and operations have been designed, developed and put into operation with limited government involvement).

As such, an attack against private cyber infrastructure may turn into a threat against national security. 72% of CEOs surveyed say their company could be hurt by geopolitical cyber activities in a survey done by PwC. The lack of a unified approach to solving cybercrime complicates government's ability to map the risks and threats, while taking the necessary actions to withstand and deter attacks. The lines of responsibility is blurred between government and the private sector, highlighting further requirement for collaboration.

Sarawak is well-positioned to consider all these risks. The public sector can play a larger role in digital security as digitalisation is still at a relatively intermediate stage across the State. Digital security should be one of the top considerations in the State's agenda as an increase in digitalisation is expected.

Source: PwC Report, Achieving Safety and Security in an age of disruption and distrust 2019.

Social policies

These policies are critical to ensure all Sarawakians are taken care of and have equal opportunities participating in the State's overall growth.

Challenges:

- Low household income specifically in rural areas
- Access to social services especially for rural communities
- Quality of social services offered
- Affordability of social services to ensure all levels of community can benefit from

Opportunities:

- Enhanced social mobility and well being of Sarawakians

- **Increase participation (i.e. promote inclusive growth)** of entrepreneurs, SMEs and rural communities in economic activities and digital opportunities
    - Accelerate capacity building activities to help entrepreneurs, SMEs and rural communities to participate in economic activities
    - Obtain economic benefits through business ventures (e.g. entrepreneurship capacity building project) and digital upskilling (e.g. digital village programmes)

- Provide **support via social intervention programmes and training** to vulnerable segments of society inclusive of PWD, single mothers, elderly, and other social victims
    - Provide training courses and outreach programmes for the vulnerable segments of society to increase their quality of life (e.g. provide business management courses to encourage single mothers venturing into business and enable them to join digital platforms)
    - Establish integrated one-stop intervention centres at key locations to provide awareness, advocacy, treatment, rehabilitation and referral services to the vulnerable segment of society (e.g.Community Social Intervention Center)

- **Better planning and execution in supplying basic amenities** such as healthcare
    - *Whole-of-government* approach towards coordinating basic infrastructure identification, planning and development (e.g. roads, water, electricity, healthcare, education, digital) to maximise project benefits and optimise resources
    - Coordinate the delivery of the social programmes to meet the localised requirements, and continuous assessments to ensure its effectiveness
    - Digital versus physical delivery to save costs

- **Access to quality education** for all
    - Repair selected dilapidated schools to provide a safe and conducive learning and teaching environment - especially for rural communities (e.g. upgrade of dilapidated schools with access to utilities)
    - Continuous training programmes for teachers and school leaders (e.g. Continuous Professional Development (CPD) training for teachers) (n.b. majority of non-option teachers are in rural areas)

SMEs and Entrepreneurship

Policy should address the inefficiencies and barriers that are stifling entrepreneurship and the development of small businesses. Ease of doing business for SMEs in providing access to strategic resources in a global and digitalised economy, such as financing, skills and innovation networks, should be increased at the same time.

SME policies established need to be assessed against an evaluation framework to review its effectiveness. Important roles that SMEs play in increasing productivity and driving inclusive growth are highlighted below:

SMEs are instrumental in strengthening productivity, driving inclusive growth and adapting to major transformations

They are central to the collective goal of increasing productive potential, reducing inequality and ensuring that benefits from increased globalisation and technological progress are equitably distributed, documented by the OECD work on productivity-inclusiveness nexus. SMEs play a pivotal role in helping the people adapt to the global environment seizing new opportunities in a more agile manner while mitigating risks during transformational times like these.

SMEs are the main source of jobs in the business sector globally

SMEs represent the bulk of employment where it accounts for about 60% of total employment and generate between 50% and 60% of value added, on average, in the OECD area. SMEs contribute to more than one third of GDP in emerging and developing economies and account for 34% and 52% of formal employment respectively (2019). Employment in SMEs has steadily increased at the global level in recent decades. Between 2003-2016, across 132 countries, the number of total full-time employees in SMEs has nearly doubled, from 79 million to 156 million (2017 statistics).

SMEs provides employment across geographical locations and drives inclusion by serving smaller locations

SMEs provide employment across geographical locations, including rural areas. Encouraging entrepreneurship will help with upward mobility and social participation, particularly the disadvantaged groups including the youth, women, elderly, PWDs, migrants and minorities, to participate in the economy. Increasing access to resources for entrepreneurship and improving quality of business start-ups can increase labour market participation and boost overall productivity.

Labour employed includes low-skilled workers and usually provides opportunities for skills development. Inclusive growth is further enhanced as small businesses would typically cater to locations, populations and markets that do not have enough scale to attract large companies.

Source: OECD SME Ministerial Conference Key Issues Report, 2018, 2020

Innovation often driven by SMEs

SMEs are usually better positioned to adopt the latest innovations that may have been neglected by larger corporations due to their size. They are able to drive and diffuse innovation in an economy. SMEs held roughly 20% of patents in Europe's biotechnology sector according to Eurostat.

The global shift towards an *open innovation paradigm* facilitated by digitalisation has increased the ease of participation in innovative activities by SMEs where initial capital expenditure (CAPEX) is lessened. However, innovation still remains a challenge for SMEs due to cost constraints. Hence the need for effective policies that foster innovation.

Digitalisation greatly enables SMEs hence digital upskilling and connectivity are integral

Digitalisation is a boon to SMEs as it provides the opportunities for participation, innovation and growth. This is achieved through easier access to market intelligence, global markets and knowledge networks at relatively low costs.

For example, Big Data and data analysis provide new opportunities for SMEs to increase competitiveness through product or service innovation. Innovation is made through better understanding of the demands of clients and potential partners (i.e. the overall business environment).

This highlights the importance of digital upskilling in order for SMEs to participate in the State's growth. The digital adoption divide in most countries is still wide for more participation in e-commerce and sophisticated applications, whereas the divide is narrow for simple connectivity and web presence. Sarawak needs to strive to ensure its population is digitally upskilled and digital connectivity is present as primary steps.

Our policy recommendations in regard to SMEs have been designed based on the following principles:

- A sound business environment or eco-system for business including at local level is hence essential to spur SMEs
- SMEs are typically more vulnerable to market failures, policy inefficiencies and inconsistencies caused by varying regulatory and policy approaches across different areas
- Enabling conditions and readiness assessments to access markets and resources are needed as incentives for SMEs to engage in risk-taking and experimental behaviours ensuring that business growth potential can be realised

Source: OECD SME Ministerial Conference Key Issues Report, 2018, 2020

Social Intervention Programmes

Accommodative and adaptive policies for inclusive growth and social support in Sarawak

Social intervention programmes are generally designed to deliver social benefits and develop human capital of specific target beneficiaries. It includes social welfare, safety net, and social protection. Poverty alleviation, access to public healthcare, maternal and neonatal childcare, access to financial services, insurance, pension, job creation, and technical and vocational skills development is targeted.

A combination of programme elements or strategies are designed to produce behavioural changes or improve health and financial status among targeted beneficiaries. These programmes can be implemented and funded by both public or private sector entities.

As an example, global poverty has been on a steady rise leading to rise in social interventions across governments. According to a *The State of Social Safety Nets Report by the World Bank 2018* report, an estimated 36% of the very poor escaped extreme poverty attributed to social safety nets, clearly pointing to the social safety net programmes making a significant impact in the global fight against poverty. Other elements in the social intervention programmes will act in tandem.

There are still target groups that do not benefit adequately despite the positive impact. Adaptive social programmes are increasingly being considered due to the transformation taking place in global economies from various shocks. Adaptive social protection refer to social protection that addresses impacts of all forms on households including disasters and climate change, economic and financial crises, conflict, displacement, etc.

Adaptive social protection hinges on two interrelated approaches:

1. Building the resilience of households most vulnerable to shocks.
2. Increasing responsiveness of social protection programmes to adapt to and meet changed needs on the ground after shocks have materialised.

Preparedness measures for safety nets can be advanced further through additional investments to encourage flexibility of programmes to be more capable of expanding coverage to reach additional households or members of target groups. It is advantageous to continue and strengthen its collaborations with the private sector in delivering social programmes or services to the people.

It is important to consider a centralised agency that coordinates programmes to lower duplicative efforts and ensure targeted recipients are assisted accordingly. There is also a need to develop an exit policy going forward for poverty alleviation programmes to ensure a sustainable impact and mitigate potential dependency issues.

Source: London School of Economics and Political Science, Social Policy Department, The State of Safety Nets, World Bank 2018

Better Planning to supply Basic Amenities and Public Service Delivery

Whole-of-government approach for public service delivery is aspired to (i.e. Government 4.0)

Governments typically go through a few stages in terms of delivery maturity. We briefly describe the different stages below where Government 5.0 is a longer term target. Sarawak aims to work towards Government 4.0 by 2030.

Government 1.0 - focus on delivery of standalone services and civil servants or agencies don't see beyond individual roles and responsibilities

Government 2.0 - scaling-up being driven by digital help, increasing access however comprehensive understanding of holistic impact contributed by each agency's services is still low

Government 3.0 - operating models are refined and focus is on service delivery where duplicative processes are often streamlined adhering to efficiency

Government 4.0 - shift towards *whole-of-government* alignment illustrated by One-Stop shops, proactive delivery, comprehensive and accountable data sharing. Government as a platform are enabled with digital data driven by citizens needs

Government 5.0 - bringing the government to the people where civil service mindset shifts towards the citizen model and government processes fit into citizens' lives instead of vice versa. This marks the first level where governments of various levels and jurisdictions truly see the value of coming together to align service delivery marking the **whole of life approach rather than government services being event-driven**

Source: PwC Australia, Digital Pulse 2019

Inter-agency alignment, backed by data sharing, integrated planning and enabled by comprehensive digital connectivity, is integral to achieve the *whole-of-government* approach for public service delivery. Digital delivery of public services is important to lower costs and avoid issues of mishandled funds in the instances of social benefits delivery (e.g. direct subsidies, cash assistance).

The shift towards *whole-of-government* alignment will extend throughout. This includes planning and coordination of basic infrastructure, and planning and development of land-use to ensure optimal usage of public resources.

Governments can simultaneously exist on different levels with certain departments leading or lagging due to organisational complexities. Multiple public sector organisations need to work together to achieve the *whole-of-government* alignment.

Source: OECD SME Ministerial Conference Key Issues Report, 2018, 2020

Access to Quality Education

Quality education is a basic amenity that should be provided to the population. Quality of the syllabus and teachers as well as physical structures to facilitate learning are of utmost importance. Conducive policies must be in place to ensure both a good physical environment (e.g. repair of dilapidated schools) and continuous training for teachers who play crucial roles in educating Sarawak's students. Access to continuous education or life-long learning is needed for the Rakyat to adapt to new ways of doing things, especially digitalisation, media literacy and digital upskilling.

Quality education can help end poverty from preschool to tertiary education

Education acts as an equalizer for poverty, as it opens the door to job opportunities, resources, and skills that a family needs to thrive. Access to high-quality primary education and supporting child wellbeing is a globally recognised solution to ending the cycle of poverty.

Education develops skills and abilities

A good quality education system, with hard and soft infrastructure, is integral in supporting a child's developing social, emotional, cognitive and communication skills. Education programmes support the development of knowledge and abilities (i.e. human capital or assets). Children who receive quality primary education are likely to continue developing these assets at a higher level. These abilities and skills can then be used to earn higher income or develop other basic assets (e.g. technical skills).

Building human capital for the nation/ state

Delivering quality education, along with the human capital, generates benefits to individuals and societies. Education raises self-esteem and increases opportunities for employment and earnings from an individual point of view. It helps strengthen institutions within societies, drives long-term inclusive growth, reduces poverty and spurs innovation for a nation or state.

Concerted focus on promoting uptake of TVET and STEM enrolment

Policies should encourage behaviour of students enrolling in the above, in line with promotion of a science-literate society in Sarawak. These skills are highly required to power Sarawak's transformation as the local value chains develop and usage of 4IR technologies increase for all sectors.

These policies can take the form of encouraging behaviours through campaigns in education institutions. Events to be organised at the Sarawak Science Center, as an example, to raise awareness among students on the benefits and importance of such skills. There should be focus on creating more programmes focusing on these subjects while increasing the ease of such learning (digitally), complemented by the digital transformation statewide.

Source: World Bank Research, The Education Crisis 2019

Environmental policies

Policies related to environmental sustainability should be considered to ensure Sarawak's natural capital and rich biodiversity assets are conserved and utilised in a sustainable manner. This should align with Sarawak's eco-friendly credentials and international commitments.

Challenges:

- Consumers are more environmentally conscious and demand environmental sustainable supply chain products and services
- Investor and large companies are required to comply to sustainable practices throughout the supply chain
- Requirement to comply to commitments for international environmental agreements

Opportunities:

- Taking a bold stance on sustainability to attract eco-conscious investors, foster innovation and create green jobs
- Branding of Sarawak as the renewable energy center for the region to capture investments and export RE capacity
- Introduce new mechanisms to capture value from Sarawak's forestry and natural resources

- Mainstreaming of **Green Economy and Blue Economy** in Sarawak's development plans. This encompasses the State's commitments and plans, in line with sustainable development principles and clear commitments towards climate mitigation and adaptation. It includes**:**

    - **GHG emissions inventory:** Establish holistic and integrated climate mitigation and adaptation strategies and plans. It comprises of key GHG contributors, used to manage land use and reduce GHG emission moving towards low carbon and green society, and a **net zero emissions policy**
    - **Forestry:** Maintain adequate forest and tree cover, in line with national level target to maintain at least 50% forest and tree cover. This can be achieved through mechanisms that encourage private sector community participation in reforestation and sustainable forest management initiatives
    - **Financing:** Establish sustainable **green financing mechanism** to attract international investments and finance green economy projects
    - **Water:** Adopt and implement the **Integrated Water Resource Management** Policy for coordinated development and management of water, land and related resources in order to create sustainable water security and improve the conditions in the river basins by conserving the watersheds and protecting the water resources
    - **Green cities and green mobility: Increase urban green spaces and prioritise green mobility** solutions including developing Electric vehicle (EV) based public transport systems, incentivising energy efficient vehicles and promoting resilient infrastructure that **prioritise nature-based solutions**

- **Energy:** Develop regulatory framework for promotion of **electric vehicles and hydrogen-based public transport** and continued support towards **expansion of renewable energy** (e.g. solar)
- **Circular economy:** Develop a circular economy framework and action plan to incentivise responsible and sustainable production and consumption
- **Monitoring and enforcement:** Intensify data collection and digitalisation. Employ high technology such as precision forestry to strengthen enforcement, monitoring and evaluation

Mainstreaming of Green Economy & Blue Economy

Sarawak's development path should be aligned with Sustainable Development Goals, which aims to balance economic growth with a responsible approach towards the utilisation of natural resources and integration of climate mitigation and adaptation plans. This approach will mainstream green economy and blue economy principles, which prioritises the sustainable use of land and ocean resources for economic growth, improved livelihoods, and create jobs while preserving the health of the land and ocean ecosystem.

Integrated climate mitigation and adaptation strategies anchored on a GHG emissions inventory

Sarawak should integrate climate mitigation strategies into its developmental policies (e.g. development of sustainability index for cities and sectors) because the impact of climate change is increasingly apparent through sea level rise and increasing extreme weather events. This policy is anchored on establishing a GHG emissions inventory with regular reporting and tracking of GHG contributors from various sectors including energy and transport, industrial processes and product use, agriculture, LULUCF, and waste.

Climate mitigation strategies to reduce GHG emissions and decarbonise specific sectors should include both legislative measures and market-based incentives to compel and incentivise low carbon and green practices. This will be aligned with the Federal Government's national communications and biennial update to the United Nations Framework Convention on Climate Change (UNFCCC). Malaysia has pledged to reduce GHG emissions intensity of GDP by 45% by 2030 relative to the emissions intensity of GDP in 2005. Based on this information, Sarawak should develop a sustainable index for cities and sectors to target emission reduction and promote sustainable solutions.

Climate adaptation measures should target the most urgent and immediate needs to adapt to climate change. For example, Malaysia's adaptation plans focuses on six sectors/areas, namely water and coastal resources; food security and agriculture; forestry and biodiversity; infrastructure; energy; and public health. Based on projected impacts of temperature increase, projected floods and dry spells and sea level rise, Sarawak should develop risk management strategies to increase resilience towards extreme climate impacts and plans to assist the most vulnerable communities.

For example, this can include developing adaptation strategies for coastal communities which can be impacted by sea level rise and flooding events, as well as agriculture-based communities that can have their harvest and produce disrupted by temperature rise and dry spells.

Source: Malaysia Third National Communications and Second Biennial Update Report to the UNFCCC (2019), Ministry of Urban Development and Natural Resources Sarawak (MUDeNR)

Encourage private sector participation and community in reforestation and sustainable forest management

Sarawak has committed to its land development policy of preserving six million ha of land as permanent forests and one million ha as TPAs in supporting Malaysia's commitment to maintain at least 50% of the country under forest cover. Sarawak government has stipulated that all long-term timber licensees must acquire the forest management certificate by 2022 and licence for forest plantation management by 2025, in order to promote sustainable forest management. As at 30th March 2021, 13 Forest Management Units (FMUs) covering a total of 1.27 million ha and six Forest Plantation Management Unit (FPMU) with an 95,424 ha had been certified.

Policies to increase private sector action could include legislation and incentives towards compensatory tree planting, as well as developing carbon offset initiatives to attract more funding towards forest landscape restoration.

Establish green financing mechanisms

Green financing includes any financial structures that have been created to ensure a better environmental outcome, such as green bonds, green-tagged loans, green investment funds and climate risk insurance. The green bond market could be worth USD2.3 trillion by 2023 according to the World Economic Forum.

These financial products and services typically serve to direct investments towards sectors that protect and enhance the environment, such as renewable energy production, distribution and storage; energy efficiency in domestic and industrial buildings; green transport; recycling; pollution prevention; water conservation; and reforestation.

The State can develop green lane access to facilitate private sector project developers to work with the relevant state agencies to fulfil the requirement of proposals to access these funds, especially for SMEs, in order to attract existing institutional green financing mechanisms.

Sarawak can also utilise its state-owned financial organisation in collaboration with commercial financial institutions to provide financial support such as preferential loans, preferential interest rates and grants for environmental protection, biodiversity, projects and activities.

Access to information to the various green financing options can be enhanced. For example, Vietnam produced a Handbook on How to Access Green Financing in Vietnam, outlining all the relevant schemes available and key procedures on getting access to them targeted to SMEs. Sarawak has the potential to develop its green economy and blue economy further by developing the right policy and legislation framework to enable the development of these sustainable projects in the terrestrial, coastal, riverine and ocean ecosystems.

Promote Green Cities and Green mobility

Sustainable urban development is one of the key pillars of the Sustainable Development Goals. It is closely linked with other goals, such as clean water and sanitation, clean energy, climate action as well as industry, innovation and infrastructure. It is expected that around two-thirds of the world's population will be living in urban areas by 2050. This is because urban areas expand and the trend in conurbation continues due to increasing economic activity and generation of well-paying jobs in the cities.

The imperative around sustainable cities thus becomes important as urban development is where environmental issues such as waste, loss of biodiversity and resource production and consumption becomes a concern. Cities are also places where most of the innovation activities can be conceived and experimented on.

The State could develop strategies and action plans to achieve green cities status, such as Green City Action Plan (GCAP) for cities such as Kuching and Bintulu. This systematically assesses, prioritises and addresses environmental challenges faced by the cities through various policy instruments and sustainable infrastructure investments.

The first step would be to plan and organise GCAP, which involves ensuring political commitment, reviewing relevant existing policies, establishing a dedicated team and institutional structures, and engaging stakeholders. The next step is identifying and prioritising environmental challenge. These green city priorities could be derived from the identified challenges through stakeholder engagement. A city could establish indicators / parameters to determine the achievement of sustainability for cities, including green cities, low carbon cities, smart cities and healthy cities - documenting its current environmental performance / baseline and identify key environmental challenges to tackle. The third step would be to draft a GCAP vision, strategic long-term goals, medium-term targets and list of actions or projects. Finally, the GCAP can be implemented and continuously monitored using new digital technologies to ensure the plan is effective in addressing the environmental challenges.

Sarawak could test various potential solutions and approaches to urban development challenges across different towns and cities through pilot programmes. Pilot programmes collect data on their effectiveness and scale them up progressively according to the city's needs and requirements. For example, development of urban public transport systems can be coupled with promotion of no-vehicle corridors and cycling lanes to reduce congestion and promote more sustainable forms of urban mobility.

Each of Sarawak's cities can also focus on specific solutions. Kuching can be the testbed for sustainable transportation and electrification of mobility, while Bintulu as the hub for hydrogen economy. Incentives for large scale electrification of large fleet vehicles such as buses, truck and, water taxis which can reduce GHG emissions and develop new capabilities should be considered.

Promote Green Cities and Green mobility (cont'd)

Urban planning across the different town and cities should also take into consideration promoting resilient infrastructure and nature-based solutions that can mitigate and withstand natural disasters such as flooding. There is an increasing risk impact of rising sea levels and extreme weather events due to climate change. For example, wetland areas in and around the cities should be conserved to provide natural outlets for water to flow downstream and reduce the risk of floods during extreme events.

Integrated water resource management

Water is one of Sarawak's most important resources, boosting sectors such as agriculture, forestry, tourism and manufacturing as well as powering the majority of the State's energy generation capacity (i.e. hydro-electricity generation). Conserving watershed areas for water catchment and managing water resources in an integrated manner is critical, both in ensuring adequate water supply for upstream and downstream uses as well as managing risks, such as flood and droughts.

The State is embarking on the proposed formation of a single water entity and establishment of SWA as a body corporate to improve on the delivery and quality of water supply services in Sarawak and to enhance the regulatory functions of SWA respectively. The current setup is restructured from having different agencies such as Rural Water Supply Department (JBALB), Kuching Water Board, Sibu Water Board and LAKU Management Sdn Bhd. Clear policies on preserving water catchment areas and integrated water resource management is needed. This will set clear principles and regulations for the government, local planners, landowners, and all other stakeholders on the long term goals and objectives in managing watershed areas and water resources in the State.

Regulatory framework for energy efficient solutions

The world will increasingly look at further decarbonisation of the energy systems because of the reduction of cost of solar-based renewable energy and competitiveness of current fossil fuel-based sources. Sarawak can further increase the renewable energy mix despite having a majority of its energy generation capacity from hydropower. This is achieved through more regulatory support such as incentives for RE generation by households, commercial and industrial building owners through RE purchase schemes and net energy metering.

Currently, with support and funding from the Sarawak government, Sarawak Energy Berhad (SEB) is using alternative renewables like standalone solar and micro hydro technologies to electrify rural Sarawak with a target to achieve full electrification by 2025. The State could review and enhance its regulatory framework to promote RE.

Promote circular economy

Industrial production processes can be one of the more polluting activities in the economy, generating waste that can potentially cause pollution in waterways, or increasing the amount of waste that goes into the landfill. There can still be cases where toxic pollution is not properly dealt with, despite Malaysia having regulations and enforcement mechanism to deal with industrial pollution.

One of the ways in which this can be promoted is through a circular economy framework, where the input and output of production processes is to be redesigned with the aim to eliminate waste from the production streams. A circular economy framework would assess the value chain of waste for key sectors in the economy, identify potential yields to circulate products, components, and materials used, and design recycling and reuse strategies specific to those sectors.

A more comprehensive study could be carried out to develop strategies and action plans as part of a clear implementable framework for circular economy. Some considerations to support the promotion of circular economy include stocktaking of existing SMEs involved in recycling businesses, review of existing regulatory framework and enforcement of waste separation at source.

Modernise monitoring and enforcement of environmental policies

Access to accurate and regular data is one of the areas where Sarawak can improve on. Data and information is critical in the monitoring and enforcement of environmental policies. Sarawak should invest in intensifying data collection and enforce the monitoring process of environmental measures.

Environment monitoring has evolved into smart environment monitoring, with the more recent advances in science and technology, especially artificial intelligence and machine learning. This is attributable to technologies that have enabled monitoring of environmental measures impacting the environment more precisely, with an optimal control of pollution and other undesirable effects.

For instance, authorities can continuously monitor the environmental condition in various locations using wireless sensor networks that connects multiple IoT sensors detecting various environmental indicators such as humidity, temperature, radiation, dust, UV signal and others.

This effort will require cross-Ministerial and inter-agency collaboration with potential for innovative solutions, such as crowdsourcing of data and creating open services that enables data analysis by businesses, NGOs and the general public. Sarawak can employ high technology solutions (i.e. precision forestry and GIS-based aerial mapping) to monitor and enforce forestry activities where putting physical resources in large areas of forestry is not feasible.

Sarawak can also further strengthen its environmental protection with the involvement of public and private sector as well as communities through Conservation, Education, Promotion and Awareness (CEPA) programmes.

5.2 Abbreviations

Abbreviations

Term	Definition
4IR	Fourth Industrial Revolution
11MP / RMK-11	11th Malaysia Plan
ASEAN	Association of Southeast Asian Nations
B40	Bottom 40
bil	billion
BKSS	Bantuan Khas Sarawakku Sayang
CAPEX	Capital Expenditure
CENTEX	Centre of Technical Excellence
CEO	Chief Executive Officer
CEPA	Conservation, Education, Promotion and Awareness
CO_2	Carbon dioxide
COVID-19	Coronavirus disease 2019
CPD	Continuous Professional Development
CPO	Crude Palm Oil
CSIC	Community Social Intervention Centers
Digitalise / Digitalisation	The processes involved in utilising digital technologies and digitised data to impact how work gets done
Digitise / Digitisation	The conversion of information from analog to digital
DOSM	Department of Statistics Malaysia
DUN	Dewan Undangan Negeri
e.g.	*exempli gratia* (example)
E-Government	Electronic government
EPU Sarawak	Economic Planning Unit
ESG	Environmental, social and governance
ECCE	Early Childhood Care and Education
etc.	Et cetera
EV	Electric Vehicle
F&B	Food and Beverage
FDI	Foreign Direct Investment
FPMU	Forest Plantation Management Unit
FMUs	Forest Management Units
GCAP	Green City Action Plan
GDP	Gross Domestic Product
GERD	R&D expenditure as % of GDP
GFCF	Gross Fixed Capital Formation
GHG	Greenhouse gas
GIS	Geographic Information System
GITA	Green Investment Tax Allowance
GITE	Green Investment Tax Exemption

Term	Definition
ha	Hectare
i.e.	id est (that is)
ICT	Information and Communications Technology
IMF	International Monetary Fund
IoT	Internet of Things
JBALB	Jabatan Bekalan Air Luar Bandar
Jendela	Jalinan Digital Negara
kg	kilogram
KRI	Khazanah Research Institute
KWKPK	Kementerian Kebajikan, Kesejahteraan Komuniti, Wanita, Keluarga Dan Pembangunan Kanak-Kanak
lcd	litres per capita per day
LNG	Liquefied Natural Gas
LFS	Labour Force Survey
LULUCF	Land Use, Land Use Change and Forestry
M40	Middle 40
MAMPU	Malaysian Administrative Modernisation and Management Planning Unit
MAVCOM	Malaysian Aviation Commission
MCMC	Malaysian Communications and Multimedia Commission
MIDA	Malaysian Investment Development Authority
mil	million
MM	Median Multiple
mm	millimetre
MMKN	Majlis Mesyuarat Kerajaan Negeri
MNCs	Multinational corporations
MoU	Memorandum of Understanding
MPC	Malaysia Productivity Corporation
MS1525	A rating under Green Building Index
MW	Megawatt
MyDigital	Malaysia Digital Economy Blueprint
NEM	Net Energy Metering
NGO	Non-governmental organisation
NRW	Non-revenue water
OECD	Organisation for Economic Co-operation and Development
OPEC	Organization of Petroleum Exporting Countries
p.a.	Per annum
PCDS 2030	Post COVID-19 Development Strategy 2030
PLI	Poverty Line Income
POC	Proof of Concept

Term	Definition
PPKS	Pusat Pembangunan Kemahiran Sarawak
PPP $	Purchasing Power Parity
PWD	People with Disability
R&D	Research and Development
R&D&C&I	Research, Development, Commercialisation and Innovation
RE	Renewable Energy
RM	Ringgit Malaysia
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
SDGs	Sustainable Development Goals
SEAC	Sarawak Economic Action Council
SEB	Sarawak Energy Berhad
SEDC	Sarawak Economic Development Corporation
SMA	Sarawak Multimedia Authority
SMEs	Small-Medium Enterprises
SSL	Self-sufficiency level
STATOS	Sarawak Trade and Tourism Office Singapore
STEM	Science, Technology, Engineering and Mathematics
SWA	Sarawak Water Authority
T20	Top 20
TPA	Totally Protected Area
tscf	Trillions of standard cubic feet
TVET	Technical and Vocational Education and Training
UNFCCC	United Nations Framework Convention on Climate Change
US	United States
USD	United States Dollar
WEO	World Economic Outlook
Whole-of-Government	Government agencies working together across borders to share the organization's portfolio of actions to resolve specific issues
WWF	World Wildlife Fund
VRA	Vulnerable, risky and affected

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Acknowledgement

The successful completion of this report is the result of strong commitment and contribution of various stakeholders. We express our sincere thanks to them:

Sarawak Economic Action Council (SEAC)

YAB Datuk Patinggi Tan Sri (Dr) Abang Haji Abdul Rahman Zohari Bin Tun Datuk Abang Haji Openg

YB Datuk Amar Douglas Uggah Embas

YB Tan Sri Datuk Amar Dr. James Jemut Anak Masing

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YB Dato Sri Lee Kim Shin

YBhg. Tan Sri Datuk Amar Haji Mohamad Morshidi bin Abdul Ghani

YBhg. Datuk Abang Haji Abdul Karim Bin Tun Datuk Abang Haji Openg

YBhg. Datu Haji Abang Helmi Tan Sri Ikhwan

YBhg. Datuk Joseph Salang Gandum

YBhg. Dato Leonard Martin Uning

YBhg. Dato Richard Wee

YBhg. Dato Tan Jit Kee

YBhg. Tan Sri Abdul Wahid Omar

YBhg. Dato' Sri Idris Jala

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YBrs. Prof. Dr. Fatimah bt Kari

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SEAC Sub-Council Commercial Agriculture, Human Capital and Services

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YB Datuk John Sikie Anak Tayai

YB Hajah Rosey Bt Haji Yunus

YB Datuk Roland Sagah Wee Inn

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YB Datu Dr. Penguang Manggil

SEAC Sub-Council Basic Infrastructure, Utilities and Transport

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Haji Abu Bakar Sepawi
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Azhar bin Nubli

Mohammed Aeizzat bin Mohammed Kassim

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Nurul Khairiah binti Rosli

Genevieve Ann

Thomas Ramli Sutu

Awi Abang

Mohamad Suffian bin Zakaria

Niny Rayer

Mohammad Firdaus bin Haji Fazil

Hazijah binti Yusup

Florida Gala James Mijien

Josephson Louis

Siti Khadijah binti Inhadel

Rahmatullah bin Affandy

Deborah Venesa Henry

Beverly Allison Mcfrost

Alya Farah Shahyra Rosli

Zulhawari bin Morshidi

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