BIG DATA FOR MEASURING AND ACHIEVING THE 2030 AGENDA FOR SUSTAINABLE DEVELOPMENT GOALS IN MALAYSIA

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Why Malaysia embark SDG and Big Data?

Big Data can be defined as large volumes of high velocity, complex, and variable data that require advanced techniques and technologies to enable the capture, storage, distribution, management and analysis of the information.

SDG is the broader sustainability agenda, go much further than the MDGs, addressing the root causes of poverty and the universal need for development that works for all people.
Big data can be characterized by 3Vs: the extreme **volume** of data, the wide **variety** of types of data and the **velocity** at which the data must be processed.

Big data needed for doing complex tasks with existing data.
Big Data in Official Statistics

Reduce response burden on some respondents

Allow high actuality

Used as supplements for existing data in production of certain statistics.
Big Data vs RMK-11 vs SDG’s

1: INTERNAL PORTAL FOR TRADE BY ENTERPRISE CHARACTERISTICS (TEC)
2: INTERNAL PORTAL FOR PRICE INTELLIGENCE (PI)
3: SENTIMENT ANALYSIS OF OFFICIAL STATISTICS
4: PATCHING SYSTEM FOR REAL TIME BUSINESS STATUS
5: REAL TIME NEWS ON OFFICIAL STATISTICS
6: BIZCODE@STATS MOBILE

Strategic Thrust 6
Re-engineering economic growth for greater prosperity

Key initiatives
We will ensure quality growth and international competitiveness. All economic sectors will migrate towards more knowledge-intensive and high value-added activities with greater productivity.
Using BDA for SDGs???

Identify characteristics of BDA project that can be used to monitor and achieve the SDGs

Learn about SDGs areas, data sources, partners and objectives of the BDA

Study the type of data source e.g. social media data, mobile apps, satellite image etc.
17 Goals & 5 Dimensions of SDGs

1. No Poverty
2. Zero Hunger
3. Good Health and Well-Being
4. Quality Education
5. Gender Equality
6. Clean Water and Sanitation
7. Affordable and Clean Energy
8. Decent Work and Economic Growth
9. Industry Innovation and Infrastructure
10. Reduced Inequalities
11. Sustainable Cities and Communities
12. Responsible Consumption and Production
13. Climate Action
14. Life Below Water
15. Life on Land
16. Peace, Justice and Strong Institutions
17. Partnerships for the Goals

PEOPLE
End poverty and hunger in all forms and ensure dignity and equality

PLANET
Protect our planet's natural resources and climate for future generations

PROSPECT
Ensure prosperous and fulfilling lives in harmony with nature

PARTNERSHIP
Implement the agenda through a solid global partnership

PEACE
Foster peaceful, just and inclusive societies
The Sustainable Development Goals (SDGs): a set of universally applicable goals that balances the three dimensions of sustainable development: environmental, social, and economy.

THE INVOLVEMENT OF DEPARTMENT OF STATISTICS MALAYSIA (DOSM)

**MDGs**
- **Period**: 2000 – 2015
- **Involvement**: Since 2007 - 2015
- **Focal Point**: The coordination of the compiling MDGs indicators
- **Member in Technical Working Groups (TWG)** for providing MDGs reports at national, ASEAN and International level

**SDGs**
- **Period**: 2016 – 2030
- **Involvement**: April 2015
- **Focal Point**: The coordination of the development of SDGs indicators
- **Appointed as representative of South-Eastern Asia in High Level Groups (HLG) for SDGs**
- **Provide inputs on assessment of SDGs indicators to Philippines (IAEG-SDGs representative of South-Eastern Asia)** in the development of SDGs indicators
Role Of National Statistical Office (NSO)

Role of Department of Statistics, Malaysia (DOSM)

General

Compilation of Statistics
Analysis/Interpretation
Dissemination/Statistics Communication

In SDGs (DOSM & Stakeholders)

Coordinate
Measure Development Progress
Effectively Participation in National Monitoring Programme

Support government in development planning & monitoring by providing evidence-based statistics

17 GOALS
169 TARGETS
230 INDICATORS
193 Countries

Malaysia involve in various agencies
Issues & Challenges Ahead
… of SDGs indicators compilation to suit the needs of global sustainable development

Financing

Capacity building/Support needed

Capacity gaps

Data limitation

Coordination

Requires major investment

More socio-economic indicators

More environmental-related indicators

Data collection & management activity

Technology in statistical instrument

Open Data

Data tapping

MDGs Lesson Learnt

Big Data Analytics

Better Decision Making

Better Targeting
DOSM Transformation Agenda (PTJ 2015-2020)

5 Dimensions

- National Development and Transformation Policy
- Empowerment of Human Capital
- Expansion of Global Statistical
- Increase of Users’ Expectation
- ICT Development

4 Strategic Trusts

- To produce statistical product and services with integrity and reliability
- To strengthen the role as producer of official statistics
- To provide efficient management on resource and infrastructure
- To revitalize human capital
- To produce statistical product and services with integrity and reliability

WSC 2019

Input for 11th MP
BDA: Way Forward

Strategic Thrust 1: Enhancing inclusiveness towards an equitable society

Strategic Thrust 2: Improving wellbeing for all

Strategic Thrust 3: Accelerating human capital development for an advanced nation
• To create awareness and better understanding on development of SDGs

• Collaboration from all related agencies is needed in order to ensure the monitoring & measurement of SDGs indicators 2016 -2030 on tracks:
  - Work plan agencies include SDGs priority;
  - Commitment;
  - Budget Allocation; and
  - Focal Point.

• National Comprehensive Data Gaps Study at National level
Big data, the future of statistics....

Big data brings together a number of different, already existing technologies and disciplines, while statisticians are looking for exactness and definition.
Malaysia - Population

Population (Million)

Year

---|---|---|---|---|---|---|---|---
4.9 | 4.0 | 3.6 | 2.9 | 2.1 | 2.0 | 2.1 | 2.1 | 2.0

Population density (per square km)

Year

---|---|---|---|---|---|---|---
32 | 42 | 56 | 71 | 86 | 93 | 94 | 102

1. Population and Housing Census Malaysia
2. Current population estimate
3. Population estimate
Income Received

Malaysia’s Mean monthly household gross income by strata, 1974-2014

- Urban Growth
- Rural Growth

1974: Urban = 570, Rural = 269
1979: Urban = 1,045, Rural = 523
1995: Urban = 2,589, Rural = 1,326
1999: Urban = 3,103, Rural = 1,718
2004: Urban = 3,956, Rural = 1,875
2009: Urban = 4,705, Rural = 2,545
2014: Urban = 6,833, Rural = 3,831
Malaysia’s Mean monthly household gross income by B40, M40 & T20, 1974-2014
### How data science and analytics can contribute to sustainable development?

<table>
<thead>
<tr>
<th>Goal</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>1. NO POVERTY</strong></td>
<td>Spending patterns on mobile phone services can provide proxy indicators of income levels</td>
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<td><strong>2. ZERO HUNGER</strong></td>
<td>Crowdsourcing or tracking of food prices listed online can help monitor food security in near real-time</td>
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<tr>
<td><strong>3. GOOD HEALTH AND WELL-BEING</strong></td>
<td>Mapping the movement of mobile phone users can help predict the spread of infectious diseases</td>
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<td><strong>4. QUALITY EDUCATION</strong></td>
<td>Citizen reporting can reveal reasons for student drop-out rates</td>
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<td><strong>5. GENDER EQUALITY</strong></td>
<td>Analysis of financial transactions can reveal the spending patterns and different impacts of economic shocks on men and women</td>
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<td><strong>6. CLEAN WATER AND SANITATION</strong></td>
<td>Sensors connected to water pumps can track access to clean water</td>
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<tr>
<td><strong>7. AFFORDABLE AND CLEAN ENERGY</strong></td>
<td>Smart metering allows utility companies to increase or restrict the flow of electricity, gas or water to reduce waste and ensure adequate supply at peak periods</td>
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<td><strong>8. DECENT WORK AND ECONOMIC GROWTH</strong></td>
<td>Patterns in global postal traffic can provide indicators such as economic growth, remittances, trade and GDP</td>
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<tr>
<td><strong>9. INDUSTRY, INNOVATION AND INFRASTRUCTURE</strong></td>
<td>Data from GPS devices can be used for traffic control and to improve public transport</td>
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<td><strong>10. REDUCED INEQUALITY</strong></td>
<td>Speech-to-text analytics on local radio content can reveal discrimination concerns and support policy response</td>
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<td><strong>11. SUSTAINABLE CITIES AND COMMUNITIES</strong></td>
<td>Satellite remote sensing can track encroachment on public land or spaces such as parks and forests</td>
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<td><strong>12. RESPONSIBLE CONSUMPTION AND PRODUCTION</strong></td>
<td>Online search patterns or e-commerce transactions can reveal the pace of transition to energy efficient products</td>
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<td><strong>13. CLIMATE ACTION</strong></td>
<td>Combining satellite imagery, crowd-sourced witness accounts and open data can help track deforestation</td>
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<td><strong>14. LIFE BELOW WATER</strong></td>
<td>Maritime vessel tracking data can reveal illegal, unregulated and unreported fishing activities</td>
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<td><strong>15. LIFE ON LAND</strong></td>
<td>Social media monitoring can support disaster management with real-time information on victim location, effects and strength of forest fires or haze</td>
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<td><strong>16. PEACE, JUSTICE AND STRONG INSTITUTIONS</strong></td>
<td>Sentiment analysis of social media can reveal public opinion on effective governance, public service delivery or human rights</td>
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<td><strong>17. PARTNERSHIPS FOR THE GOALS</strong></td>
<td>Partnerships to enable the combining of statistics, mobile and internet data can provide a better and real-time understanding of today’s hyper-connected world</td>
</tr>
</tbody>
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*Source: United Nations Global Pulse*
“Without data you’re just another person with an opinion.”

- W. Edwards Deming, Data Scientist
“Statistics are the barometer that reflects the pulse of the country”

Dr. Mohd Uzir Bin Mahidin, The Star, 14th July 2016