INDONESIAN STATISTICAL CHALLENGES AND EFFORTS IN THE NEW DATA ECOSYSTEM

PARIS21 CROSS REGIONAL FORUM

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BPS- Statistics Indonesia

Paris, December 3rd, 2018
Indonesian Statistical Systems and Units
Administrative Stratification of Indonesia

- National
  - Indonesia
- Province
  - 34 Provinces
- Regency / Municipality
  - 514 Regencies/Municipalities
- Subdistrict
  - 7,177 Subdistricts
- Village
  - 82,641 Villages
BPS Statistics Indonesia has representative offices in **34 Provinces, 514 Regencies/Municipalities** involving 15,685 employees. About 10% at HQ.

**POSITION:**
A Non-Ministry Government Institution that is under and is responsible to the President.

**FUNCTION:**
To provide official statistics for all
3 Types of Statistics

National Statistical Laws No 16, 1997

- **Basic Statistics**
  By BPS Statistics Indonesia

- **Sectoral Statistics**
  By Ministries / Government Institutions

- **Special Statistics**
  By Community / Private Institutions
Statistical Systems and Units

National Level

- National Statistical Office (NSO)
  - BPS-Statistics Indonesia

Subnational Level

- Field Statistical Office (FSO)
  - Representatives of BPS-Statistics Indonesia

- Sectoral Statistical Units (SSU)
  - Ministries / Agencies

- Regional Sectoral Statistical Units (RSSU)
  - Local Branches of Ministries / Agencies
    - Ex.: Religious, Army/Police, etc

- Local Government Units (LGU)
  - Statistics, Health, Development Planning, Tourism, Industry, Trade, etc
The Agent of Trustworthy statistical data for all

Law No. 16/1997 on Statistics

- Basic statistics → BPS-Statistics Indonesia
- Sectoral statistics → Ministry/gov’t institutions
- Special Statistics → Community/ Private Institutions
Statistical Development Challenges
The Challenges

Data Revolution

• National Medium-Term Development Plan
• SDGs
• National Priority

Improving the quality and variety of data

Rapid technological development

New data growth and availability

Big Data, Digital Economy

Stakeholder demands: quality data, easily accessible, evidence-based policy

effective and efficient in the budget

Innovation in applying methodology

The demands to reduce the burden on respondents
The Future of BPS Organization

<table>
<thead>
<tr>
<th>No</th>
<th>Aspect</th>
<th>Expectation</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Expectation of External Stakeholders</td>
<td>• Preparing for a World Class NSO</td>
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<tr>
<td></td>
<td></td>
<td>• Provider of One Data</td>
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<td></td>
<td></td>
<td>• Producer of High Quality Data</td>
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<tr>
<td></td>
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<td>• Service Excellent Organization</td>
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<td></td>
<td></td>
<td>• Enabling Bureaucratic Reform</td>
</tr>
<tr>
<td>2</td>
<td>Expectation of Internal Stakeholders</td>
<td>• Good Corporate Governance enabling Clean and Accountable BPS</td>
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<tr>
<td></td>
<td></td>
<td>• Effective, Efficient &amp; Agile Organization (Right Sizing)</td>
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<tr>
<td>3</td>
<td>Organization Capability</td>
<td>• Moving toward Learning Organization</td>
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<tr>
<td></td>
<td></td>
<td>• Applying Knowledge Management to move from People Dependant into System Enabler</td>
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<tr>
<td></td>
<td></td>
<td>• Producing continuous capability that support and sustain the BPS Transformation</td>
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<tr>
<td>4</td>
<td>Organization Culture</td>
<td>• High Performance Culture</td>
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<tr>
<td></td>
<td></td>
<td>• Enhancement of Corporate Values to support High Performance Culture</td>
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Bureaucratic Reform

BPS Change & Reform For Quality Statistics

Statistical Capacity Building: Change and Reform for the Development of Statistics (STATCAP-CERDAS)
**IMPLEMENTATION**

**Specify Needs**
- SDGs Working Group
- Statistical Data forum
- Clearing house
- Planning and budgeting system (SIREKA)

**Design**
- Statistical Business Register (SBR)
- Area Sample Framework for estimation of food crop production
- Big data for tourism statistics
- Questionnaire Designer System
- Survey Management System

**Build**
- Multi-mode Data Collection Platform (PAPI, CAPI, CAWI)
- Big data for tourism statistics
- Supply and Used Table (SUT) System
- Data Lake

**Collect**
- Multi-Channel Dissemination
- User Engagement
- Metadata system
- Integrated Data System
- Geography Information System
- Data Lake

**Process**
- Multi-Channel Dissemination
- User Engagement
- Metadata system
- Integrated Data System
- Geography Information System
- Data Lake

**Analyse**
- Multi-Channel Dissemination
- User Engagement
- Metadata system
- Integrated Data System
- Geography Information System
- Data Lake

**Disseminate**
- Dashboard monitoring system
- Command Centre

**Evaluate**
BPS DATA SOURCES

Statistics Industrialization
- Standard -- Metadata
- Administrative data/ Sectoral Statistics

BIG DATA
BACKGROUND

BPS rely on the Immigration Record and Border Survey for Inbound & Outbound Tourism Data

Under Coverage:

→ Not All Border Gates have 24/7 Immigration service
→ Border Survey is too expensive
BPS initiative with BIG DATA for official statistics

2016
Measurement Configuration via Method of Roaming in Cross Border Area Telkom Indonesia, Ministry of Tourism Republic of Indonesia, and Statistics Indonesia

2017
Improving the methodology by involving the cellphone usage habit
BPS initiative with BIG DATA for official statistics

2018

• Calculation of domestic tourist statistics
• Calculation of the number of commuters
• Calculation of the number of non-permanent mobility actors
• Event based analysis (for the Asian Games & IMF-WB annual meeting)

Preliminary Results

Commuter Survey

Twitter
The use of MPD in tourism statistics is in line with BPS Strategic Planning and Transformation Program. It is also in line with the recommendation of UN Secretary General on Data Revolution Report “A World that Counts”.

Right now, Indonesia already have the draft of methodology handbook, following the international standard and quality assurance handbook for MPD use in inbound tourism.

BPS-Statistics Indonesia has already signed an MoU with PT. Telkom, as one of the biggest Mobile Network Operator (MNO) in Indonesia. So, we can have sandbox for data processing and the use of MPD for other official statistics.
• An objective measurement for harvest area
• A Methodology improvement of rice production data calculation
Example: Verification result of Paddy Field Area in West Java

Legends

<table>
<thead>
<tr>
<th>2013</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>✓</td>
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<tr>
<td>✓</td>
<td>X</td>
</tr>
<tr>
<td>✓</td>
<td>✓</td>
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Multi-Mode Data Collection
## CAPI Method Implementations

<table>
<thead>
<tr>
<th>Year</th>
<th>Implementations</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>• Global Adult Tobacco Survey</td>
</tr>
<tr>
<td>2013</td>
<td>• Knowledge, Attitude and Practice Survey for people preparedness faces disasters in Padang City</td>
</tr>
<tr>
<td>2014</td>
<td>• Pilot of Inter-census Population Survey (SUPAS) 2015 in Padang, Bantul and Manado</td>
</tr>
<tr>
<td>2015</td>
<td>• Data Collection of Strategic Horticulture and Plantation Commodities Production</td>
</tr>
<tr>
<td>2016</td>
<td>• CAPI Pilot for National Labour Survey (Sakernas)</td>
</tr>
</tbody>
</table>
| 2017 | • Women’s Life Expectation Survey  
   • Potential Horticulture Survey  
   • Mainstreaming Sex-Disaggregated Data and Gender Indicators in Agricultural Statistics |
| 2018 | • Migration Pilot Survey  
   • Sugar Cane Survey  
   • Pilot of Population Census 2020 |
Think about a Data Lake as a man-made reservoir for data meant to be consumed for a variety of purposes. While the data is safe to consume, it may or may not be processed.

01 Data flows in from many sources in its native form. It may be structured, semi-structured, or unstructured.

02 Since all the data is in the same reservoir, all of it is available for analysis.

03 Data flows out as analyzed or processed data.

04 Through this process, analysts are able to pour through all or parts of the data.

Administrative Data
Survey/Census
Big Data

Structured Data
1. Transactional
2. Rows & Columns
3. Ordered
4. Organized

Semi-Structured Data
1. Data Feeds
2. Text

Unstructured Data
1. Text
2. Email
3. Images
4. Images, video & audio
5. Social
6. XML

DATA QUALITY
DATA EXPLORATION
DATA CONSUMERS
DATA WAREHOUSE PIPELINE

General Access & Security
Security

Simplified Technology
Multi-Channel Dissemination

BPS approached the community

Exhibitions

BPS Goes To Campuss

BPS statistical Services App
silastik.bps.go.id

BPS Android Application

www.bps.go.id

BPS Chat

Facebook

Instagram

Twitter

Youtube

API WEB SERVICES
Webapi.bps.go.id

Other Dissemination Products:
- Leaflets
- Booklets
- Infographics
- Videographics

BPS integrated Dissemination System
National Strategies for Development of Statistics
National Statistical Laws No 16, 1997

Definitions:

- Data Producers
- Statistics
- Data Users
- Data Providers

Management
Coordination
Financing
Training
Innovation

Censuses
Surveys
Administrative System
Other Data Sources

Statistical Business Process and Infrastructures

NSDS Indonesia (Improvement Strategies and Plan for The NSS)

ONE DATA INDONESIA
Partnership in the development of NSDS Indonesia

1. BPS Statistics Indonesia
2. Ministries/Institutions/Agencies
3. Local Government Statistical Unit
4. PARIS21
Coordination meetings of ministries and agencies regarding the preparation of the NSDS, implementation of one data Indonesia and National Statistical System.
Implementation of NSDS Indonesia

- NORMS, STANDARDS, PROCEDURES AND CRITERIA FOR PRODUCING SECTORAL STATISTICS
- COACHING CLINICS FOR LOCAL GOVERNMENT STATISTICAL UNITS
- PREPARING STATISTICAL MODULS
- PREPARING STATISTICAL TRAININGS AS A STATISTICAL CAPACITY BUILDING FOR SECTORAL STATISTICS
Indonesia One Data Policy

Presidential Decree
Use the principles of open data criteria for data release
BPS Website: BPS Open Data as an Implementation of Indonesia One Data

INDONESIA ONE DATA

BPS Open Data

Open Data Criteria

1. Availability and Access
   - The amount and Variety of website contents
   - Contain of basic and sectoral Statistics

2. Re-use and Distribution
   - Machine readable format: Excel, CSV
   - Interoperability machine to machine communication through API

3. Universal Participation
   - Anyone can use and access data

Open Data Watch assessment applied to BPS Website
The increase in ODIN Score for Indonesia ([www.bps.go.id](http://www.bps.go.id)) shows that the BPS website is getting better in terms of coverage, openness, and accessibility of official statistics.

<table>
<thead>
<tr>
<th>RANKINGS</th>
<th>OVERALL</th>
<th>COVERAGE</th>
<th>OPENNESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOUTH-EASTERN ASIA</td>
<td>3</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>WORLD</td>
<td>84</td>
<td>27</td>
<td>50</td>
</tr>
</tbody>
</table>
Role of BPS Web Service to support of One Data Indonesia

Data Flow

App Developer (external)
BPS Internal Application: SIMPUB Dashboard monitoring
545 BPS websites
App Developer (internal) e.g: android BPS
Government Institutions & NGO

Communicate Design machine-to-machine between One Data Portal and BPS Web Services
Provision of **sectoral statistics** should be carried out by Ministries / Institutions / Regional Governments to support the provision of data on development targets and SDGs indicators.
Thank You

Data is the new oil

this is good news, right?