SPATIAL PLANNING AND DEVELOPMENT CONTROL IN JAVA ISLAND – INDONESIA

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INDONESIA
OUTLINE

1. JAVA ISLAND: OVERVIEW
2. JAVA-BALI SPATIAL PLAN
3. DKI JAKARTA SPATIAL PLAN
4. DEVELOPMENT CONTROL FOR WATER
5. LAW ENFORCEMENT
• 65.4% of national economic contribution is from Java-Bali
• Economy activity is concentrated in DKI Jakarta (31.52%)
• Economy activity is dominated by Industry (28.2% of National Industry)
Population in Java Island is around **150 M** people by **2019** and projected to be around **167 M** by **2035** (Source: BPS)
JAVA ISLAND INFRASTRUCTURE PROFILE

ROAD LENGTH (EXCLUDING TOLL ROAD) 2017

<table>
<thead>
<tr>
<th>Region</th>
<th>Length (Km)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sumatera</td>
<td>50 Ribu</td>
</tr>
<tr>
<td>Jawa</td>
<td>100 Ribu</td>
</tr>
<tr>
<td>Sulawesi</td>
<td>50 Ribu</td>
</tr>
<tr>
<td>Kalimantan</td>
<td>50 Ribu</td>
</tr>
<tr>
<td>Maluku dan Papua</td>
<td>50 Ribu</td>
</tr>
<tr>
<td>Bali dan Nusa Tenggara</td>
<td>50 Ribu</td>
</tr>
</tbody>
</table>

TRANS JAVA TOLL ROAD

- Mojokerto - Surabaya
- Pemalang - Batang
- Mojokerto - Jombang - Kertosono
- Pejagan - Pemalang
- Semarang - Solo
- Batang - Semarang
- Ngawi - Kertosono
- Solo - Ngawi

SEA TOLL ROUTES
### Ecological Footprints in Indonesia

*a measure of the amount of bioproductive land and sea required to support a person lifestyle*. It include the land needed to grow their food, dispose of their waste, and absorb their carbon emission.

<table>
<thead>
<tr>
<th>ISLAND / ARCHIPELAGO</th>
<th>EF (gha/people)</th>
<th>BC (gha/people)</th>
<th>EFD (gha/people)</th>
<th>CATEGORY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sumatera</td>
<td>1.56</td>
<td>1.96</td>
<td>0.40</td>
<td>Surplus</td>
</tr>
<tr>
<td>Jawa</td>
<td><strong>1.01</strong></td>
<td><strong>0.20</strong></td>
<td><strong>-0.81</strong></td>
<td>Deficit</td>
</tr>
<tr>
<td>Bali</td>
<td>1.76</td>
<td>0.24</td>
<td>-1.52</td>
<td>Deficit</td>
</tr>
<tr>
<td>Kalimantan</td>
<td>1.26</td>
<td>4.05</td>
<td>2.79</td>
<td>Surplus</td>
</tr>
<tr>
<td>Sulawesi</td>
<td>1.46</td>
<td>1.63</td>
<td>0.17</td>
<td>Surplus</td>
</tr>
<tr>
<td>Nusa Tenggara</td>
<td>0.45</td>
<td>0.47</td>
<td>0.02</td>
<td>Surplus</td>
</tr>
<tr>
<td>Maluku</td>
<td>1.20</td>
<td>1.25</td>
<td>0.05</td>
<td>Surplus</td>
</tr>
<tr>
<td>Papua</td>
<td>0.79</td>
<td>7.43</td>
<td>6.64</td>
<td>Surplus</td>
</tr>
<tr>
<td>Indonesia</td>
<td>1.07</td>
<td>1.12</td>
<td>0.05</td>
<td>Surplus</td>
</tr>
</tbody>
</table>

**EF**: Ecological Footprint  
**BC**: Biocapacity Calculation  
**ED**: Ecological Footprint Deficit  
**gha**: Global Hectare  

### Water Supply Challenges

- Java population = 141 M (41% of Indonesia)  
- Utilized for: domestics, irrigation/agriculture, industry  
- Water deficit is predicted in 2070 (Heru Santoso, LIPI)
There are more than 60% out of 1,000 natural disasters in Indonesia take place in Java: earthquakes, tidal waves, floods, volcanic eruptions, and landslides (BNPB).
National Spatial Plan

Java-Bali Spatial Plan 2012-2032

6 Provincial Spatial Plan

199 Kabupaten/Kota Spatial Plan (199)

4 Metropolitan Spatial Plan
GOALS:

1. NATIONAL’S FOOD BARN
2. COMPACT AND VERTICAL CITIES
3. COMPETITIVE INDUSTRIAL CENTER
4. INTERNATIONAL TRADE AND SERVICES
5. COMPETITIVE TOURISM
6. ENVIRONMENTAL SUSTAINABILITY
7. COMPETITIVE INTEGRATED TRANSPORTATION NETWORK
GOAL 1
National’s Food Barn

**PROTECT SUSTAINABLE AGRICULTURAL AREA**

1. Protect sustainable agricultural area  
2. Control land-use conversion  
3. Control urbanized development

**DEVELOP WATER RESOURCE INFRASTRUCTURE**

1. Develop dams and reservoirs  
2. Improve irrigation networks

**DEVELOP CENTER OF AGRICULTURE-BASED INDUSTRY**

1. Develop agricultural center for food security  
2. Develop agriculture-based industry  
3. Develop agriculture-based research center
GOAL 2
Compact and Vertical Cities Based on Disaster Mitigation & Adaptation

CONTROL URBAN SPRAWL

1. **Control** development based on environmental carrying capacity
2. **Control** the development of urbanized area next to environmentally protected areas

CONTROL URBAN GROWTH IN DISASTER-PRONE AREAS

1. Determine disaster-prone areas
2. **Control** urbanized development in disaster-prone areas
3. Develop infrastructure for evacuation routes and evacuation center
4. Develop disaster monitoring center
GOAL 3
Competitive Industrial Center

**COMPETITIVE ECO-FRIENDLY INDUSTRIAL CENTER**
1. Enhance infrastructure quality to support industry
2. Control land-use in industrial area
3. Develop high-tech and eco-friendly industry

**COMPETITIVE CREATIVE INDUSTRY**
1. Develop centers of creative industries
2. Develop infrastructure to support creative industries

**CONNECTION BETWEEN INDUSTRIAL CENTERS**
Develop infrastructures to support regional connection: roads, railways, port, airport
GOAL 4

International Trade and Services

1. Develop cities for center of international trade and services
2. Enhance the infrastructure quality to support the connection between centers based on its environmental carrying capacity
GOAL 5
Competitive Tourism

DEVELOP TOURIST ATTRACTION AND DESTINATION
1. Develop tourism attractions: culture, education, MICE
2. Enhance infrastructure quality to support tourism

DEVELOP TOURISM CENTERS
1. Develop tourism promotion centers
2. Enhance infrastructure accessibility to support tourism

CONNECTION BETWEEN TOURISM CENTERS
Develop integration and connection among cities as tourism centers as one integrated tourism destination
GOAL 6
Environmental Sustainability

30% OF JAVA-BALI AS PROTECTED AREA

1. Maintain and rehabilitate degraded protected areas
2. **Control** activities that may interfere protected areas
3. **Protect** and rehabilitate **critical watershed**
4. **Protect** and rehabilitate **upstream area**, protected forest, **catchment area** and conservation forest
5. **Control** land-use conversion

DEVELOP CITIES BASED ON ITS ENVIRONMENTAL CARRYING CAPACITY

1. Develop eco-friendly technology
2. Enhance coordination and cooperation among cities
3. Develop green cities
GOAL 7

Competitive Integrated Transportation Network

**INTEGRATION AMONG CITIES FOR ECONOMIC EFFICIENCY**
1. Improve infrastructure connection among cities
2. Enhance Java-Bali economic corridor
3. Improve the connection between cities and centers of production, port, and airports
4. Eco-friendly transportation network

**IMPROVE ACCESSIBILITY OF REMOTE AREAS**
Develop transportation network to connect cities and remote areas, including small islands
DKI JAKARTA SPATIAL PLAN
(Local Regulation 1/2012)

GOALS:

1. Optimize the development of built-up areas
2. Integration of spatial utilization and development control
3. Integrated development as megapolitan
4. Sustainable development for small islands and coastal areas
GOAL 1

Optimize the development of built-up areas to support the needs of 12,500 inhabitants.

1. Develop built-up areas that have economic competitiveness in regional, national, and international level
2. Develop compact and vertical built-up areas
3. Maintain environmental carrying capacity
4. Direct the development of residential area based on its characteristic
Integration between Spatial Utilization and Development Control in Jakarta as Delta City based on its Carrying Capacity

1. Preserve and **protect conservation areas**, including green space
2. Preserve **30% areas as green space**: public (20%) and private (10%)
3. **Reduce** greenhouse gas emission
4. **Protect** environmentally strategic area
GOAL 3
Integrated Development as Megapolitan with Surrounded Cities

1. Strengthen the role of Jakarta as center of megapolitan
2. Integrated water management from upstream area
3. Cooperation and coordination of infrastructure between Jakarta and its surrounding cities
GOAL 4

Sustainable Development for Small Islands and Coastal Areas

1. Spatial development control in small islands and coastal areas for environmental sustainability
2. Develop Seribu Islands as regional, national and international tourist destination and center of fishery commodities
3. Enhance environment quality
4. Integrated infrastructure
Aims:
1. Preserve water-security
2. Preserve water bodies
3. Optimize the function of water bodies

Holistic and Integrated Approach:
1. Macro: Watershed (WS)
2. Messo: River Basin (DAS)
3. Micro: Surrounding Area of Priority Water Bodies (SDEW)

5 of 22 watershed in Java have been handled:
1. Citarum
2. Ciliwung-Cisadane
3. Bengawan Solo
4. Jratunseluna
5. Brantas
WATERSHED-BASED PLANNING AND DEVELOPMENT CONTROL : CITARUM

To analyze the most critical water body in the watershed, based on:
1. Vulnerability
2. Impact
3. Location
4. Function
5. Morphology

MACRO LEVEL : WS CITARUM

MESSO LEVEL : DAS CITARUM HULU

General Provision of Zoning Regulation for Citarum Hulu River Basin

MICRO LEVEL

- Zoning regulation for Situ Cisanti as priority water body
- Law-enforcement
Citarum River has 225 km long, with upstream in Situ Cisanti (Cisanti Lake), on Mount Wayang Slope (Mount Malabar), South of Bandung.

Issues:
- Critical land approximately 77,000 Ha
- Erosion 592.11 ton / Ha / year
- 500,000 m³ of solid waste
- Sedimentation 7.9 Ton / year
- Polluted river body from industry
- New housing development regarding Spatial Plan
- Land subsidance 4-5 cm / year
- Low monitoring and low law enforcement to the riverbank and citarum basin landuse.

<table>
<thead>
<tr>
<th>No</th>
<th>Nama SDEW</th>
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<tbody>
<tr>
<td>1</td>
<td>Situ Cisanti</td>
</tr>
<tr>
<td>2</td>
<td>Situ Cianjing</td>
</tr>
<tr>
<td>3</td>
<td>Situ Sukapura</td>
</tr>
<tr>
<td>4</td>
<td>Situ Ciaul</td>
</tr>
<tr>
<td>5</td>
<td>Situ Cihars</td>
</tr>
<tr>
<td>6</td>
<td>Situ Cimeuhmal</td>
</tr>
<tr>
<td>7</td>
<td>Situ Sipatalunan</td>
</tr>
<tr>
<td>8</td>
<td>Situ Ciburuy</td>
</tr>
<tr>
<td>9</td>
<td>Situ Umar</td>
</tr>
<tr>
<td>10</td>
<td>Situ Lembang</td>
</tr>
</tbody>
</table>
**ZONING REGULATION AT PRIORITY AREA**

**INTENSITY**
- BCR : 0%
- FAR : 0
- Greenery Coefficient: 100%

**USAGE PROVISIONS**

**Limited Utilization:**
- Buildings are allowed only for public function
- KDB maximum of 20%
- The maximum KLB is 0.2
- KDH of at least 80%;
- Building height maximum of 1 floor
- Maximum building height of 7 meters (equivalent to 1 floor).
- The vertical distance from the ground floor to the floor above cannot be more than 7 meters.

**Conditional use:**
- Provide infrastructure for disposal
- Provide at least 1 infiltration well and biopori hole
- Architectural paying attention to the beauty and harmony of the surrounding environment
- Natural building materials
- Space between buildings is 4 m
- Road’s border to the building is at least 6 meters.
Indicated Location of Spatial Plan Violation based on AUDIT

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<tbody>
<tr>
<td>1</td>
<td>Ds. Jelekong, Kec. Baleendah</td>
<td>River Buffer Zone</td>
<td>Rice field</td>
<td>Brick processing</td>
<td>± 0,24</td>
</tr>
<tr>
<td>2</td>
<td>Ds. Jelekong, Kec. Baleendah</td>
<td>River Buffer Zone</td>
<td>Rice field</td>
<td>Brick processing</td>
<td>± 0,26</td>
</tr>
<tr>
<td>3</td>
<td>Ds. Wargamekar, Kec. Baleendah</td>
<td>River Buffer Zone</td>
<td>Rice field</td>
<td>Brick processing</td>
<td>± 0,23</td>
</tr>
<tr>
<td>4</td>
<td>Ds. Tegalluar, Kec. Bojongsoang</td>
<td>River Buffer Zone</td>
<td>Settlement, Place of Activity</td>
<td>Settlement and Place of Activity</td>
<td>± 0,28</td>
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<tr>
<td>5</td>
<td>Ds. Tegalluar, Kec. Bojongsoang</td>
<td>River Buffer Zone</td>
<td>Settlement and Place of Activity</td>
<td>Land Maturation</td>
<td>± 0,57</td>
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<tr>
<td>6</td>
<td>Ds. Sumbersari, Ds. Bojongmas</td>
<td>River Buffer Zone</td>
<td>Settlement and Place of Activity</td>
<td>Settlement and Place of Activity</td>
<td>± 0,10</td>
</tr>
<tr>
<td>7</td>
<td>Ds. Majalaya, Kec. Majalaya</td>
<td>River Buffer Zone</td>
<td>Rice field</td>
<td>Warehouse (stalled)</td>
<td>± 0,16</td>
</tr>
<tr>
<td>8</td>
<td>Ds. Majalaya dan Ds. Sukamaju</td>
<td>River Buffer Zone</td>
<td>Settlement and Place of Activity</td>
<td>Industry (new building)</td>
<td>± 0,06</td>
</tr>
</tbody>
</table>
Development Control in Urban Area: THE LAW ENFORCEMENT
OVERVIEW : THE MAJ CASE

The MAJ is an Apartment built in the Hilly and Prone Disaster Area, consist of 21 floors for 516 residential units.

It is not recommended for high rise building, due to:
1. Located in Mount Eruption Area
2. Located in unstable Land, on the Lembang fault
3. Land slope >40%
The Permit issued **DOES NOT COMPLY** with the Bandung Spatial Plan

<table>
<thead>
<tr>
<th></th>
<th>Bandung Spatial Plan</th>
<th>Spatial Utilization Permit (SPPR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building Coverage Ration (BCR)</td>
<td>20%</td>
<td>40% (exceeded)</td>
</tr>
<tr>
<td>Floor Area Ratio (FAR)</td>
<td>1.6</td>
<td>3.2 (exceeded)</td>
</tr>
</tbody>
</table>
SANCTION RECOMMENDATION

1. RESPONSIBLE FOR LAND ACQUISITION SURROUNDING THE BUILDING SITE

2. PROVIDE EVACUATION PATH, STRENGTHENING SLOPE STABILITY, AND PROVIDE GREEN AREA

3. BUILDING OPERATIONAL PERMIT (SLF) IS DELAYED

The Maj Building
Pullman Bandung City Center for MICE (Meetings, Incentives, Conferences and Exhibitions), consist of 300 rooms 5 star hotel, confession building and area retail. The Building intensity and function doesn’t comply with the spatial plan.
The **use as Hotel does not comply** with the designated use as **office** based on the Bandung Spatial Plan (RTRW Bandung City Number 18/2011)

The **building height exceed** the height allows in the Building Permit. It has 17 floors while it only allows for 14 floors.

It **blocks** the view of Tangkuban Perahu which is trusted as Local Wisdom.
1. Demolition of 3 floors and 1 basement floor
2. The fine is applied for permit violation
3. Change the land use for offices domination