

I-SRI, an SDI Readiness Index for Local Government in Indonesia

Heri Sutanta, Trias Aditya, Purnama Budi,
Diyono, Dany Laksono, Annisa Farida



Research Centre for Spatial Data Infrastructure Development
(Pusat Pengembangan Infrastruktur Data Spasial)
Universitas Gadjah Mada

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Outline

- Introduction
- SDI Development in Indonesia
- SDI Readiness Index for Local Government
- Results
- Key findings and Future Works

Introduction

- SDI has been developed for around twenty years
- Success stories varies from countries and from different level of governments
- SDI Readiness Index (SRI) can facilitate mapping of progress as well as impediments in SDI development
- SRI has been developed for some times, but mainly deals with national government

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SDI Development in Indonesia

- Digital mapping activities as predecessors
 - Regional Physical Planning Programme for Transmigration (RePPPRoT), 1984-1989 (Rais, 1997; Poniman et al., 2004)
 - Regional Physical Planning for Map Improvement (RePPMiT), 1990 – 1994 (Atmadilaga and Sarbini, 2010)
 - Large Scale Maps of 100 Cities and Towns in Indonesia was executed in 1993 – 2001 (Reed, 1995)
 - Land Resources Evaluation and Planning project (LREPP) – 1983 – 1990 (ADB, 1996)
 - Marine Resources Evaluation and Planning project (MREPP) 1993 – 1998, which was then followed by MAREMAP (Dahuri, 1997).
 - Land Administration Project (ILAP) 1994 – 1999 (Walijatun, 1997)
 - Land Management and Policy Development Planning, 2004 – 2009 (World Bank, 2014)

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SDI Development in Indonesia

- National GIS, since 1991, as a national coordination meeting attended by representative from local governments and ministerials/agencies
- Renamed to National Spatial Data Infrastructure (NSDI) in 1999/2000
- Renamed again to Geospatial Information Infrastructure (GII) in 2011
- Law on Geospatial Information (4/2011) and presidential decree on SDI play important roles

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SDI Development in Indonesia

- Current status
 - Ministerial/Agencies : 11 out of 57
 - Provincial : 12 out of 34
 - Districts/Cities : 3 out of 507+

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SDI Readiness Index for Local Government

Category	Methods
Readiness	Clearinghouse readiness (Crompvoets & Bregt, 2007).
	Clearinghouse suitability index (Crompvoets & Bregt, 2008).
	SDI readiness index (Fernandez, dkk., 2008).
	INSPIRE State of Play (Vandenbroucke, dkk., 2008)
Performance Assessment	The geoconnection framework (GeoConnections, 2013)
	Geomaturity model (SADL, 2010)
	Balance scorecard (Toomanian, dkk., 2011)
	Multi-View Framework (Castelein & Callejo, 2010 ; Grus, dkk., 2011)

- Existing SDI Assessment methods → mostly for country level, not local government

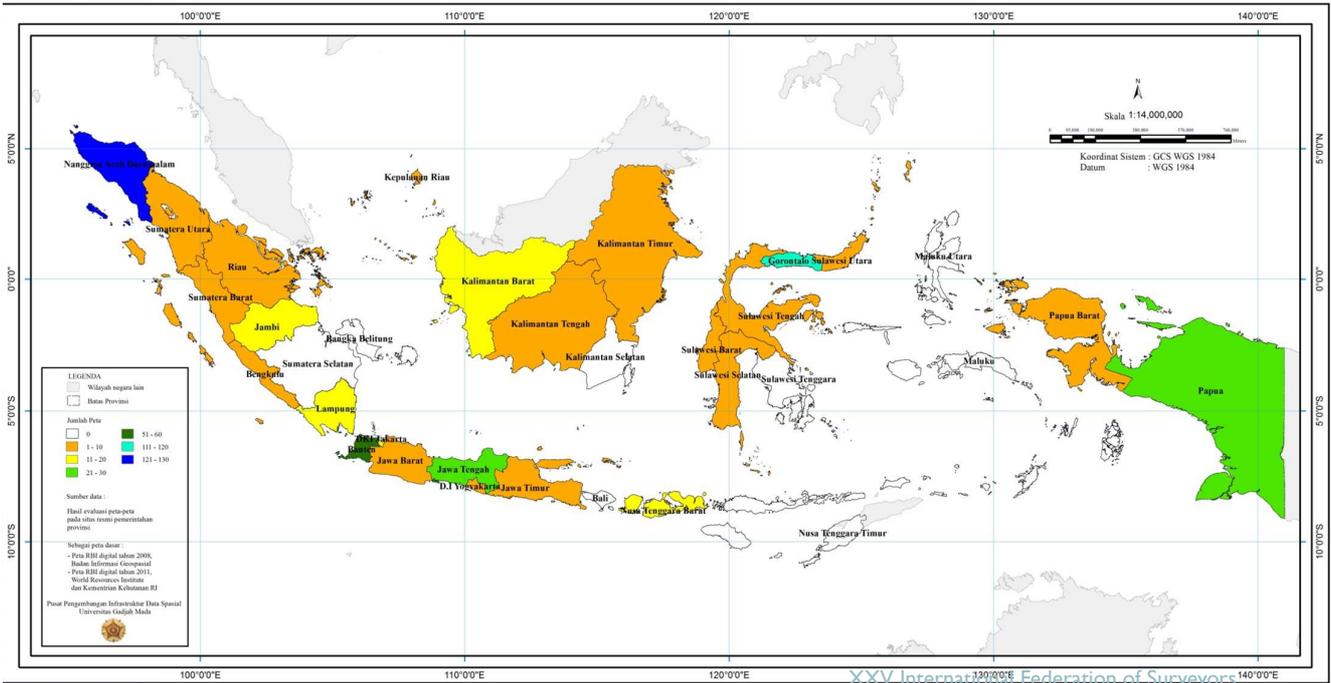
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SDI Readiness Index for Local Government

- Ministerial and Central Government Agencies have adequate human resources, technical expertise and funding; the situation is different for local government
- Challenges mostly found in districts/cities with spread over 5000 kms east-west and 1500 north-south in more than 13000 islands
- Difficulties in preparing good internet connection, sustainable funding, and capable staff

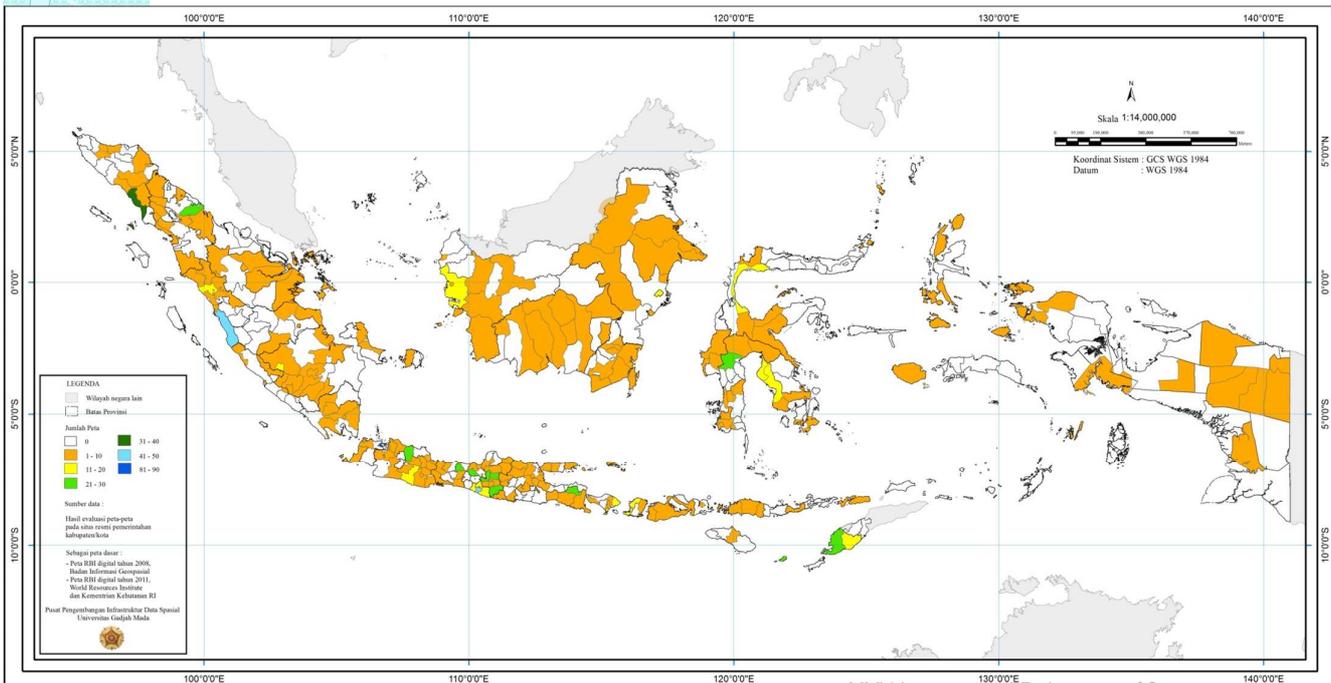
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Maps Availability - Provincial



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As of July 2013

Maps Availability - District/City



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As of July 2013



I-SRI Measures

- Issue:
 - how to develop a comprehensive yet simple measures for assessing SDI readiness and development at local government level
- Characteristics
 - All SDI elements included
 - Useful to evaluate SDI development for all local governments
 - Useful for self evaluation to determine local policy
 - Useful for national award selection process to recognise those who perform well
 - Useful for developing policy for assisting those who need help

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I-SRI Measures – Policy and institutional aspects

1. coordination among local government agencies or established committee
2. a dedicated unit for spatial data management
3. a road map for SDI development
4. mechanism for access to spatial data
5. mechanism for spatial data utilization and copy right protection
6. local government regulation on management and utilization of spatial data
7. funding from local/central government for
 - a. spatial data provision
 - b. system and technology provision
 - c. skills and competence upgrading for staff in geospatial information management

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I-SRI Measures – Human resources aspect

1. number of personnels able to operate GIS software and manage geospatial information
2. number of personnels able to operate geospatial server
3. number of personnels who manage geospatial information and GIS with respect to qualification:
 - a. self learning on GIS and/or web
 - b. attending courses on GIS and/or web
 - c. holding diploma degree in geodesy/geomatics/geography/IT
 - d. holding bachelor degree in geodesy/geomatics/geography/IT
4. capacity building for staff in internet-based GIS and geospatial data management

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I-SRI Measures – Technological aspect

1. number of GIS software installed
2. number of hardware used for management and dissemination of geospatial information
3. implementation of Indonesian National Standard or other nationally recognized standard
4. dedicated internet subscription for geospatial server
5. geoportal operation
6. catalogues for maps and geospatial
7. metadata and their use

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I-SRI Measures – Geospatial data aspect

1. geospatial data availability
 - a. topographic map
 - b. land parcel map
 - c. land and building tax map
 - d. spatial plan map
 - e. transportation/road network
 - f. utilities maps
2. maps were stored as digital geospatial databases
3. geospatial data publicly available through the website

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I-SRI Measures

Simple formulae

$$\text{I-SRI} = 1.5 \times \text{institutional} + 2 \times \text{human resources} \\ + 1 \times \text{technology} + 1 \times \text{data}$$

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I-SRI Results - Provincials

Province	Skor
Provinsi #1	59.85
Provinsi #2	50.00
Provinsi #3	77.27
Provinsi #4	29.55
Provinsi #5	68.18
Provinsi #6	59.85
Provinsi #7	27.65
Provinsi #8	64.02
Provinsi #9	45.83
Provinsi #10	20.45
Provinsi #11	42.80
Provinsi #12	68.18
Provinsi #13	73.86
Provinsi #14	48.86

Min : 20.45
Max : 77.27
Average : 52.60

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I-SRI Measures – District/City

District/City	Score	District/City	Score
District #1	42,80	District #17	18,18
District #2	59,85	District #17	16,67
District #3	30,68	District #17	15,15
District #4	55,68	District #17	18,94
District #5	45,08	District #17	18,56
District #6	8,33	District #17	76,52
District #7	38,64	District #17	12,88
District #8	46,21	District #17	27,27
District #9	28,30	District #17	52,27
District #10	29,92	City # 1	42,05
District #11	43,18	City # 2	83,71
District #12	51,14	City # 3	56,06
District #13	49,24	City # 4	35,23
District #14	39,39	City # 5	34,47
District #15	34,09	City # 6	33,33
District #16	6,06	City # 7	54,17
District #17	34,09	City # 8	42,80

Min : 6.06
 Max : 83.71
 Average : 37.39

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Key Findings and Future Works

- I-SRI has been developed for the first time
- The findings, combined with other observations, have been used for consideration in the Indonesian Geospatial Award
- I-SRI has been and will be used for policy drafting
- A comprehensive survey will be conducted annually, starting this year, to cover the whole districts/cities, provinces, and government agencies



Thank you

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