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Adopting UN-IGIF in Local Government: a preliminary study in Indonesia

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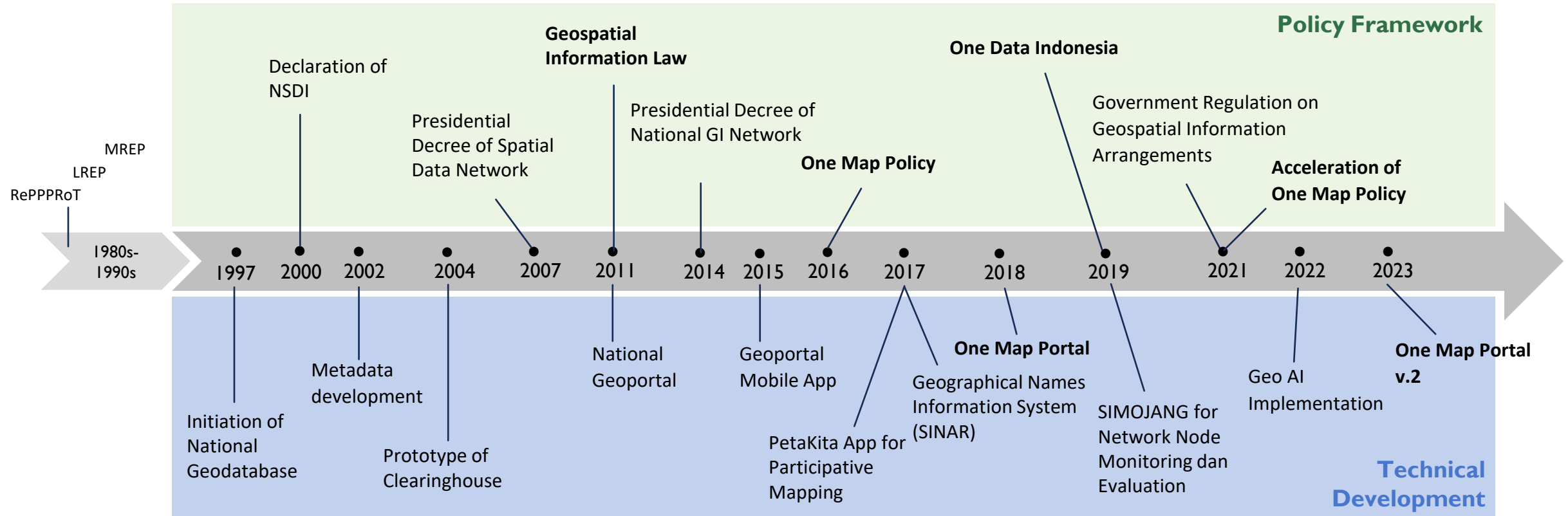
Regional Seminar on Integrated Geospatial Information Framework (IGIF)

New Delhi, 27 November 2024

Milestones of Geospatial Information Infrastructure (GII) in Indonesia



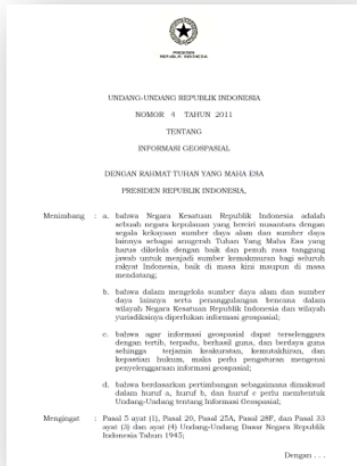
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Geospatial Policy and Legal Settings of Geospatial Information



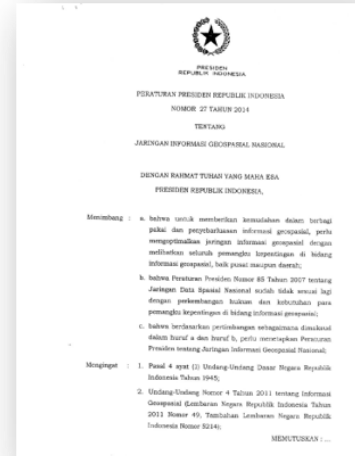
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Geospatial Information (GI) Law (Law No. 4/2011)

Contents:

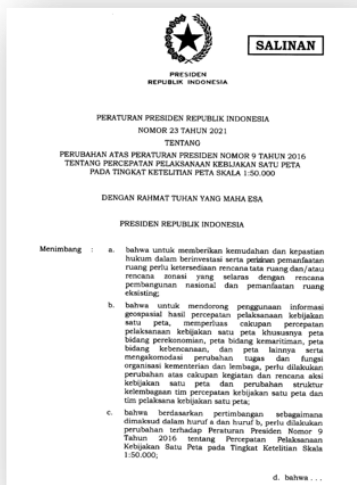
Type of GI (IGD & IGT),
administrations and producer of GI,
GI Infrastructure, utilization of GI, GI
capacity building activities,
prohibition & sanction



National Geospatial Information Network (NGIN) (Presidential Decree No. 27/2014)

Contents:

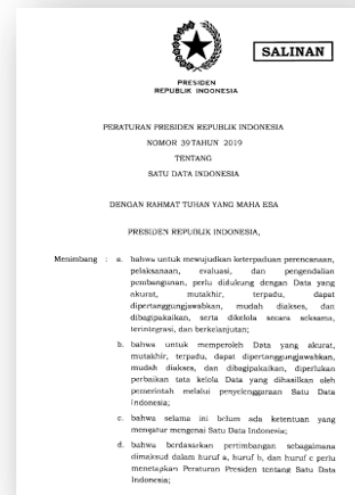
Definition of NGIN, member of NGIN,
role and responsibility of the Network
Node and the Network Node
Connector



One Map Policy (OMP) (Presidential Decree No. 9/2016, amended by Presidential Regulation No. 23/2021)

Contents:

OMP objectives, stages of activity,
board of members, OMP secretariat
and task forces, OMP action plan,
IGT producer (ministry/agency)



One Data Indonesia (ODI) (Presidential Decree No. 39/2019)

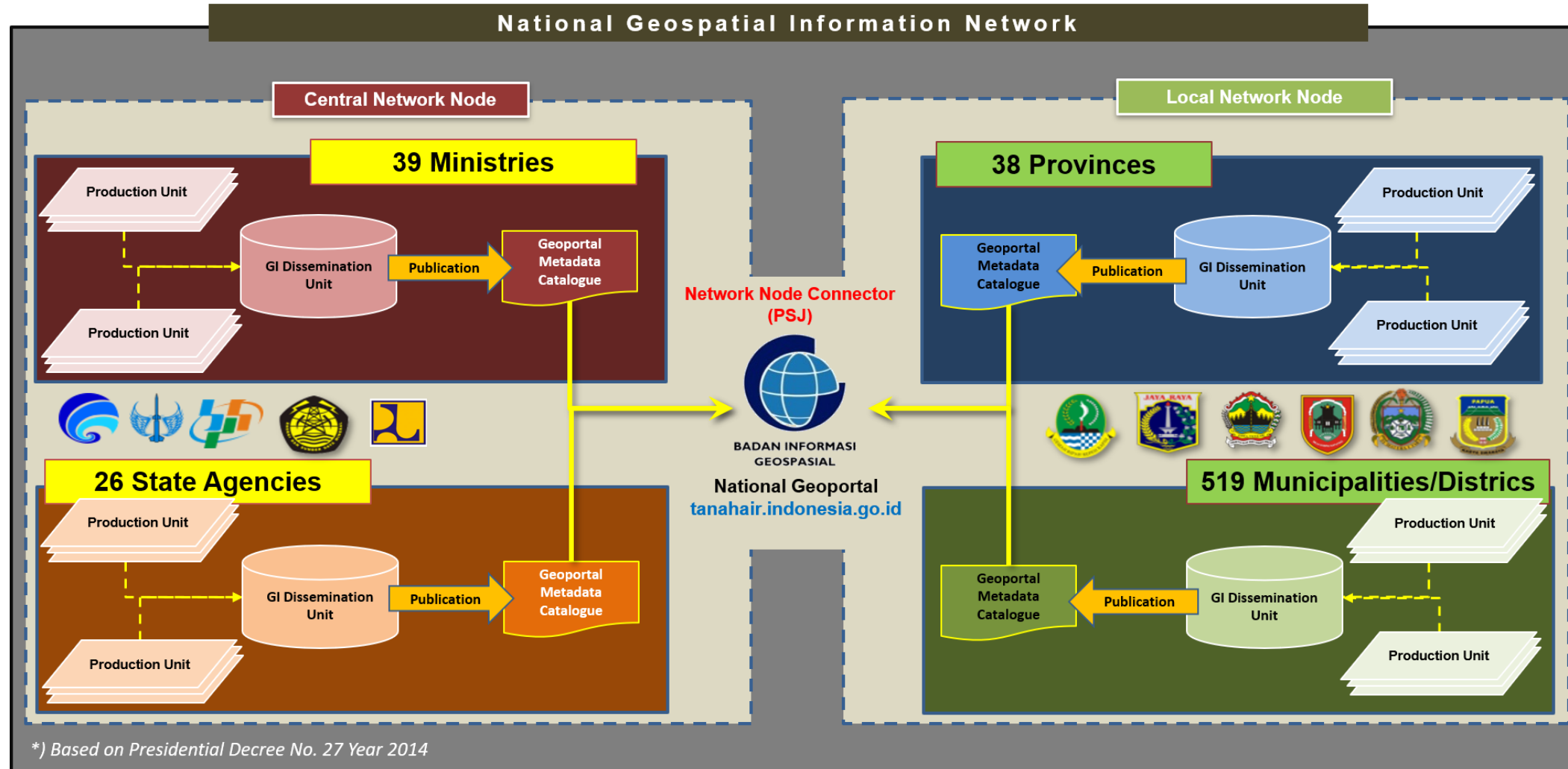
Contents:

ODI objectives and principles,
administrations of ODI, ODI structure
in central and local government, ODI
secretariat, One Data forum

Governance and Institutional Arrangements of Geospatial Information



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Research Background and Objectives



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BACKGROUND

- Adoption of UN-IGIF aims to optimize the implementation of geospatial information and as the references in preparing the National Mid-term and Long-term Development Plan
- Case study of UN-IGIF implementation in supporting the Sustainable Oil Palm Plantations and Forest and Other Land Use (FOLU) Net Sink 2030
- Policy brief development on “Adoption of the United Nations - Integrated Geospatial Information Framework (UN-IGIF) as a Foundation for Transformation in Implementation of National Geospatial Information” (GI National Coordination Meeting, 2024)

OBJECTIVES

- This preliminary study was conducted as part to support for Indonesia's initiation in adopting UN-IGIF to optimize the implementation of geospatial information
- This initial study aims to explore how the implementation of UN-IGIF can support geospatial information development in local governments
- In addition, this research also identified which UN-IGIF strategic pathways are sufficiently applied at the national level and which strategic pathways can be applied at the local government level

This research is funded by the Ministry of Education and Culture through Master Theses Research 2024.



Method

- Literature review to see the relationship between the GII and UN-IGIF based on the GII development guidelines and the GII development performance evaluation guidelines related to the UN-IGIF implementation guidelines and the World Bank IGIF Implementation Methodology: Diagnostic Tool.
- Develop a questionnaire consisting of 55 questions divided into 10 sections to assess the importance of indicators from each UN-IGIF strategic pathway to be evaluated in the development of IIG in local governments.
- 103 respondents from local government employees working in agencies related to geospatial fields.



Questionnaires: how important are the following as assessment indicators

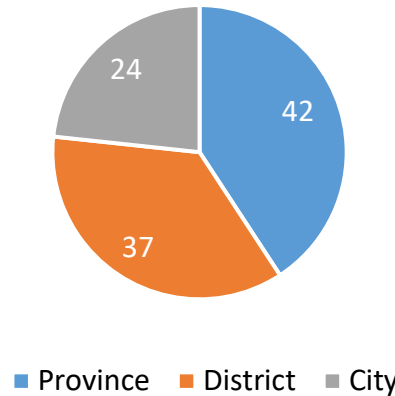
#	Section	Indicators
1	"Governance and institutions aim to gain political support, strengthen institutional mandates and establish a cooperative data-sharing environment.	6
2	"Policy and law aims to solve existing problems by strengthening policies and laws related to geospatial information management.	5
3	"Budget/finance aims to ensure the availability of routine and sustainable budget/finance required for the development of GII and the implementation of GII as well as optimizing the utilization of GI.	4
4	"Data aims to ensure the availability of quality GI and in accordance with the rules of interoperability so that it is ready to be shared and utilized by users.	8
5	"Innovation aims to ensure the implementation of GI using the latest technology that is cost-effective and innovative.	6
6	"Standards aim to raise awareness about the importance of implementing standards at every stage of GI implementation.	2
7	"Cooperation/partnership aims to build cross-sectoral and interdisciplinary cooperation, coordination and collaboration with all levels of government, geospatial industry, private sector, academia, community and international.	7
8	"Human resource capacity and education aims to ensure the availability of human resources for the implementation of Geospatial Information in each implementing unit in accordance with the needs.	6
9	"Communication and engagement aims to help develop effective communication and engagement strategies to increase participation and contributions from all stakeholders at all levels.	5
10	"Geospatial Information Infrastructure is the facilities and infrastructure used to facilitate the implementation of GI through the activities of collecting, processing, storing and securing, disseminating and using GI.	6

Respondents Characteristics

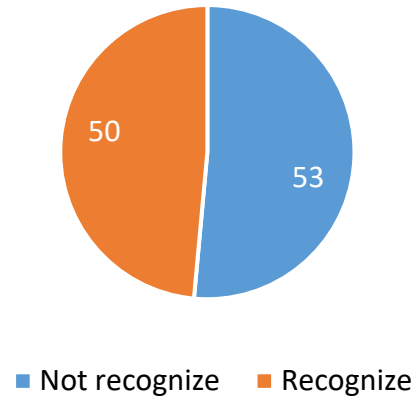


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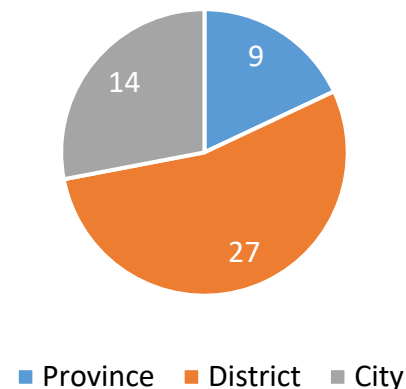
total number of respondents



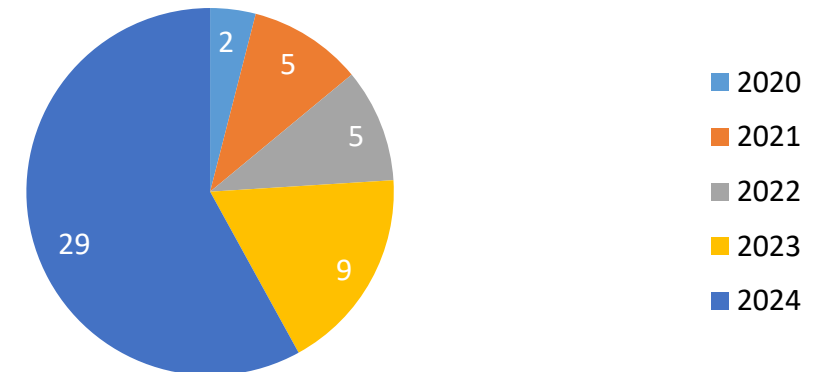
recognition about UN-IGIF



respondents by local government type

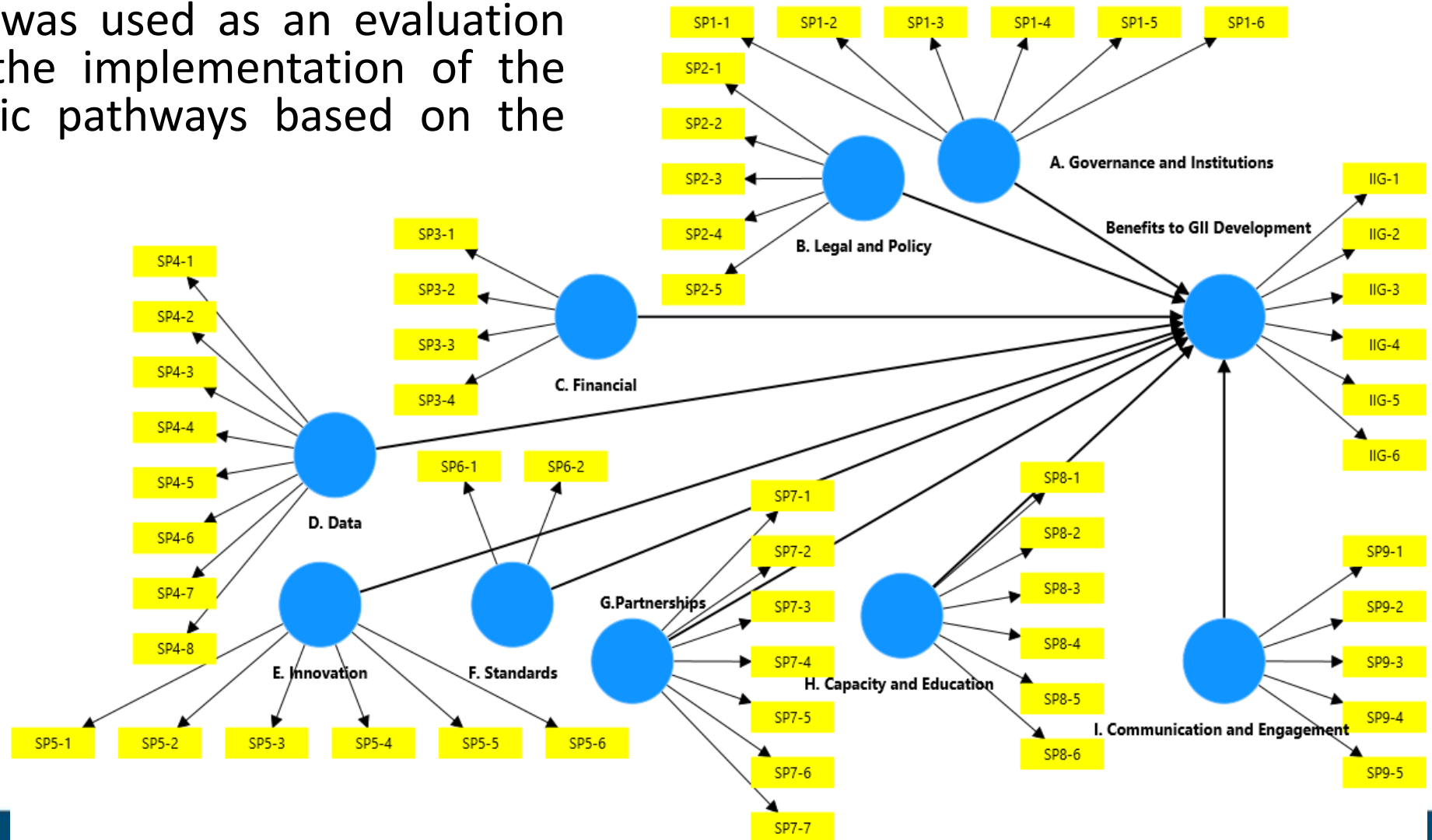


When did you first learn about UN-IGIF



Method

Partial Least Squares Structural Equation Modeling (PLS-SEM) was used as an evaluation model to prioritize the implementation of the nine UN-IGIF strategic pathways based on the questionnaire results.



Results



- The PLS-SEM R^2 of 0.72 indicates that the structural model has moderate predictive ability.
- The results of the T statistic and p-value are used to see the level of significance of each latent variable in the endogenous model (UN-IGIF strategic pathways) to the exogenous model (benefits to GII development).

	T statistics	P values
A. Governance and Institutions -> Benefit to GII Development	2.776	0.006
B. Policy and Legal -> Benefit to GII Development	0.927	0.354
C. Financial -> Benefit to GII Development	1.068	0.286
D. Data -> Benefit to GII Development	2.284	0.022
E. Innovation -> Benefit to GII Development	0.303	0.762
F. Standards -> Benefit to GII Development	0.061	0.951
G. Partnerships -> Benefit to GII Development	0.417	0.676
H. Capacity and Education -> Benefit to GII Development	2.177	0.030
I. Communication and Engagement -> Benefit to GII Development	1.247	0.213

- **Governance and institutions, data, and capacity and education** have a significant influence on use in developing GII.

Identifying the actual condition of GII development in local government



- A five-question structured interview was conducted to twelve local governments to find out the actual condition of GII development in their respective areas.
- Results of these interviews describe the state of development of the five elements of GII, problems and solutions undertaken during the development of GII. It also describes the expectations of local governments towards the application of UN-IGIF in the development of GII in local governments.

No	Question
1	Based on the five elements of GII, what is the progress of GII development in the implementation of NGIN in your local government?
2	What are the problems of GII development in your local government?
3	What are the actions that have been taken and plans to be taken to solve these problems?
4	Have you ever heard about the UN-IGIF?
5	What are your expectations regarding the adoption of UN-IGIF in the development of GII in your local government in the future?

Findings



Human Resources



With most personnel being employed on a contractual basis, the long-term stability and sustainability of the workforce may be at risk.



Recruitment of Civil Servants (CASN) as needed based on job analysis and workload analysis.

Institutional Arrangement



In general, institutional arrangement has been regulated through regulations such as governor regulations, regent regulations and mayor regulations. The problem is the lack of collaboration between OPDs in GII development.



Conduct regular meetings by inviting all regional government agencies to discuss the problems faced by each regional government agency and increase awareness of regional government agencies regarding the importance of GII development in the implementation of GI.

Standards



The obstacles to implementing standards are partly related to the lack of awareness of human resources of the importance of standards in supporting data interoperability.



Conduct regular personnel capacity building training.



Concluding Remarks

- ❑ Three elements that become obstacles in the development of GII in local governments: **institutional arrangement, standard implementation**, and **availability of human resources**.
- ❑ The following aspects significantly influence the optimization of GII development: **institutional governance, data** and **capacity and education**. These three strategic pathways are expected to help solve GII development problems in local governments.
- ❑ Local governments have high expectations that UN-IGIF implementation can help optimize GII development. Some respondents also see some strategic pathways of UN-IGIF that are indirectly beneficial:
 1. **Communication and engagement** can encourage collaboration and engagement of all stakeholders.
 2. **Partnerships** can help expand cooperation between local governments and other parties in developing IIG.
 3. One of the elements in the institutional arrangement strategic path, **the leadership**, is also expected to increase leadership awareness of the role of GI in supporting government activities.

Pusat Pengembangan Infrastruktur Data Spasial (PPIDS)

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