

# Global Vision, Local Impact: Translating Geospatial Thought Leadership into Community-Driven Outcomes

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**Key words:** Geospatial ecosystem, Geospatial governance, Localisation of global frameworks, Capacity building, Sustainable development

## 1. SUMMARY

As geospatial technologies, data practices, and policy frameworks continue to evolve globally, a persistent challenge remains - translating high-level international thought leadership into practical, locally relevant outcomes that deliver measurable societal and economic value. While global geospatial frameworks provide strategic direction, their impact depends on how effectively they are contextualised to national and sub-national priorities, institutional capacities, and socio-cultural settings. This paper examines how global geospatial frameworks and developing country-level strategies can be adapted to strengthen local priorities, build long-term capacity, and support sustainable development.

Drawing on the authors' extensive global advisory experience, the paper outlines practical pathways for aligning international standards, policies, and best practices with local needs. Particular emphasis is placed on addressing emerging priorities such as indigenous data sovereignty, climate resilience, smart infrastructure, and ethical use of geospatial data. The paper highlights the importance of coordinated governance, inclusive stakeholder engagement, interoperable data infrastructures, and standards-based approaches in enabling geospatial information to effectively inform decision-making.

The discussion is supported by case studies and strategic insights from the conceptualisation and establishment of the National Geospatial Ecosystem in the Kingdom of Saudi Arabia. This experience demonstrates how a structured geospatial ecosystem approach can enable national alignment with international frameworks while remaining responsive to local institutional, environmental, and development contexts. Although Saudi Arabia's geospatial ecosystem is still in its establishment phase, early outcomes illustrate its potential to empower communities, inform policy, and stimulate innovation across sectors.

The paper further explores the applicability of this approach to other national contexts, such as Indonesia, where rich yet vulnerable biodiversity, climate risks, and development pressures demand integrated geospatial solutions. By adopting a geospatial ecosystem approach, countries can enhance climate resilience, improve policy coherence, and accelerate progress toward the Sustainable Development Goals. Ultimately, the paper argues that locally grounded implementation of global geospatial frameworks is essential for delivering inclusive, resilient, and sustainable outcomes from the ground up.

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## 2. INTRODUCTION

Rapid digitalisation, advances in sensor-based technologies, and the growing application of artificial intelligence (AI) and machine learning (ML) are fundamentally reshaping how societies understand, manage, and respond to complex real-world challenges. In this increasingly data-driven environment, location and geospatial information have emerged as critical integrators—linking physical, social, environmental, and economic dimensions of decision-making. From climate resilience and infrastructure planning to land administration, public services, and smart cities, geospatial information underpins evidence-based policy and sustainable development outcomes.

While technologists, researchers, and industry continue to advance increasingly sophisticated geospatial solutions, national governments are simultaneously strengthening policy, governance, and institutional arrangements to harness their value. This includes investment in digital and geospatial infrastructure, adoption of international standards, protection of data and infrastructure sovereignty, and the establishment of trusted frameworks to guide ethical and secure use of geospatial information. These efforts reflect a growing recognition that geospatial information is not merely a technical resource, but a strategic national capability requiring coordinated governance, sustained investment, and cross-sector collaboration.

At the global level, significant efforts are underway to support improved geospatial information management and integration with broader digital ecosystems to advance national and international development agendas. Foremost among these is the United Nations Expert Group on Global Geospatial Information Management (UN-GGIM), which has articulated a shared global vision through the United Nations Integrated Geospatial Information Framework (UN-IGIF). Structured around nine strategic pathways, UN-IGIF provides comprehensive guidance to strengthen geospatial governance, policy, data, standards, partnerships, capacity building, and value realization (UN-GGIM, 2023). Many countries have adopted UN-IGIF as a reference framework to guide national geospatial strategies and action plans.

Complementing UN-IGIF, international geospatial standards developed by the International Organization for Standardization (ISO) and the Open Geospatial Consortium (OGC) enable interoperability, scalability, and trust across geospatial systems. In parallel, the concept of a geospatial ecosystem has gained prominence, emphasizing a whole-of-system approach that connects government, industry, academia, and communities to translate geospatial investments into societal and economic value (Coetzee et al., 2021). Together, these frameworks form key components of the global geospatial landscape.

However, the robustness of global frameworks is ultimately tested during national and sub-national implementation. Despite strong conceptual foundations, implementation outcomes vary widely due to differences in institutional maturity, governance arrangements, legal contexts, capacity, and development priorities. Without deliberate localisation, global frameworks risk remaining aspirational rather than operational.

This paper draws on the professional advisory experience of the authors in supporting countries to localise global geospatial frameworks through a geospatial ecosystem-based approach. It presents insights from the Kingdom of Saudi Arabia, where a National Geospatial Ecosystem has been established through a whole-of-government approach, and from the Republic of Indonesia, focusing on the Indonesia Integrated Land Administration and Spatial Planning (ILASP) Project. Together, these cases illustrate how contextualised implementation can translate global frameworks into tangible, locally relevant outcomes that support sustainable development and resilience.

### **3. APPROACH**

This paper adopts a qualitative, practice-informed approach grounded in the authors' extensive global advisory experience in geospatial policy, governance, and ecosystem development. Rather than employing a purely empirical or quantitative methodology, the study draws on applied professional practice, policy engagement, and strategic advisory roles undertaken with national governments, international organisations, and multilateral institutions. This approach is well suited to examining complex, system-level challenges associated with localising global geospatial frameworks, where contextual, institutional, and governance factors play a critical role.

The analysis is informed by direct involvement in the design, implementation, and review of national geospatial strategies, frameworks, and programmes, complemented by examination of policy documents, national action plans, and relevant global frameworks such as UN-IGIF, international geospatial standards, and ecosystem models. Case studies from the Kingdom of Saudi Arabia and the Republic of Indonesia are used to illustrate contrasting national contexts and stages of geospatial maturity. These cases enable comparative insights into how global frameworks can be adapted to local priorities, capacities, and development objectives. Through synthesis of lessons learned and strategic reflections, the paper identifies transferable principles and practical pathways to support effective localisation of global geospatial frameworks.

### **4. GLOBAL FRAMEWORKS AND PRACTICES**

Geospatial information has become a foundational element of modern digital societies, underpinning decision-making across sectors such as land administration, infrastructure development, climate resilience, public health, disaster risk reduction, and economic planning. Despite its growing ubiquity and demonstrated value, the evolution of geospatial capabilities—particularly in developing and emerging economies—has been constrained by persistent challenges. These include fragmented governance arrangements, limited financial and human

capacity, inadequate institutional coordination, lack of awareness among decision-makers, and insufficient appreciation of geospatial information as a strategic national asset rather than a purely technical function. As a result, many countries have struggled to move beyond isolated geospatial initiatives toward sustained, integrated, and value-driven national geospatial systems.

In response to these challenges, the global geospatial community, led by multilateral institutions, standards bodies, and professional organisations, has developed a suite of complementary frameworks and practices designed to strengthen national geospatial maturity. These frameworks provide strategic guidance, common language, and shared principles to support countries in building trusted, interoperable, and sustainable geospatial capabilities.

Among these, the United Nations Integrated Geospatial Information Framework (UN-IGIF), the emerging concept of a geospatial ecosystem, and internationally agreed geospatial standards play central and interrelated roles.

#### **4.1 United Nations – Integrated Geospatial Information Framework (UN-IGIF)**

UN-IGIF, developed under the auspices of the United Nations Expert Group on Global Geospatial Information Management (UN-GGIM), provides a comprehensive and globally endorsed framework to support national geospatial enablement (UN-GGIM, 2023). Structured around nine strategic pathways, UN-IGIF addresses governance and leadership, policy and legal frameworks, financial sustainability, data management, innovation, standards, partnerships, capacity building, and societal value. Its primary contribution lies in positioning geospatial information as a national capability that supports development agendas, rather than as a collection of disconnected datasets or technologies. By encouraging countries to develop national action plans aligned to these pathways, UN-IGIF facilitates improved institutional coordination, clearer accountability, and stronger alignment between geospatial investments and national priorities. Importantly, it also emphasises capacity development and knowledge transfer as essential enablers of long-term sustainability.

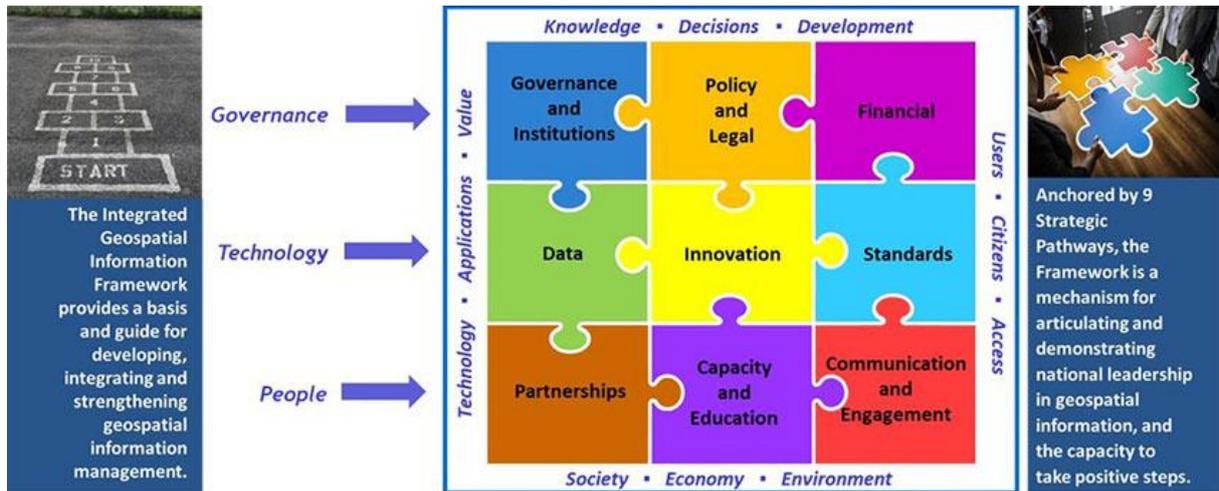


Figure 1: UN-IGIF Nine Strategic Pathways (UN-GGIM, 2023)

## 4.2 Geospatial Ecosystem

While UN-IGIF provides strategic direction, the concept of a geospatial ecosystem offers an operational and relational lens through which these strategies can be realised. The geospatial ecosystem approach moves beyond traditional spatial data infrastructure (SDI) models by recognising geospatial information as part of a dynamic, multi-stakeholder system involving government, industry, academia, civil society, and communities (Coetzee et al., 2021). This approach emphasises collaboration, shared value creation, innovation, and adaptability, acknowledging that no single organisation can deliver geospatial outcomes in isolation. A geospatial ecosystem perspective supports whole-of-government and whole-of-society engagement, enabling countries to better respond to complex challenges such as climate change, urbanisation, indigenous data sovereignty, and digital transformation. It also provides a practical mechanism for embedding global frameworks into local institutional and cultural contexts.

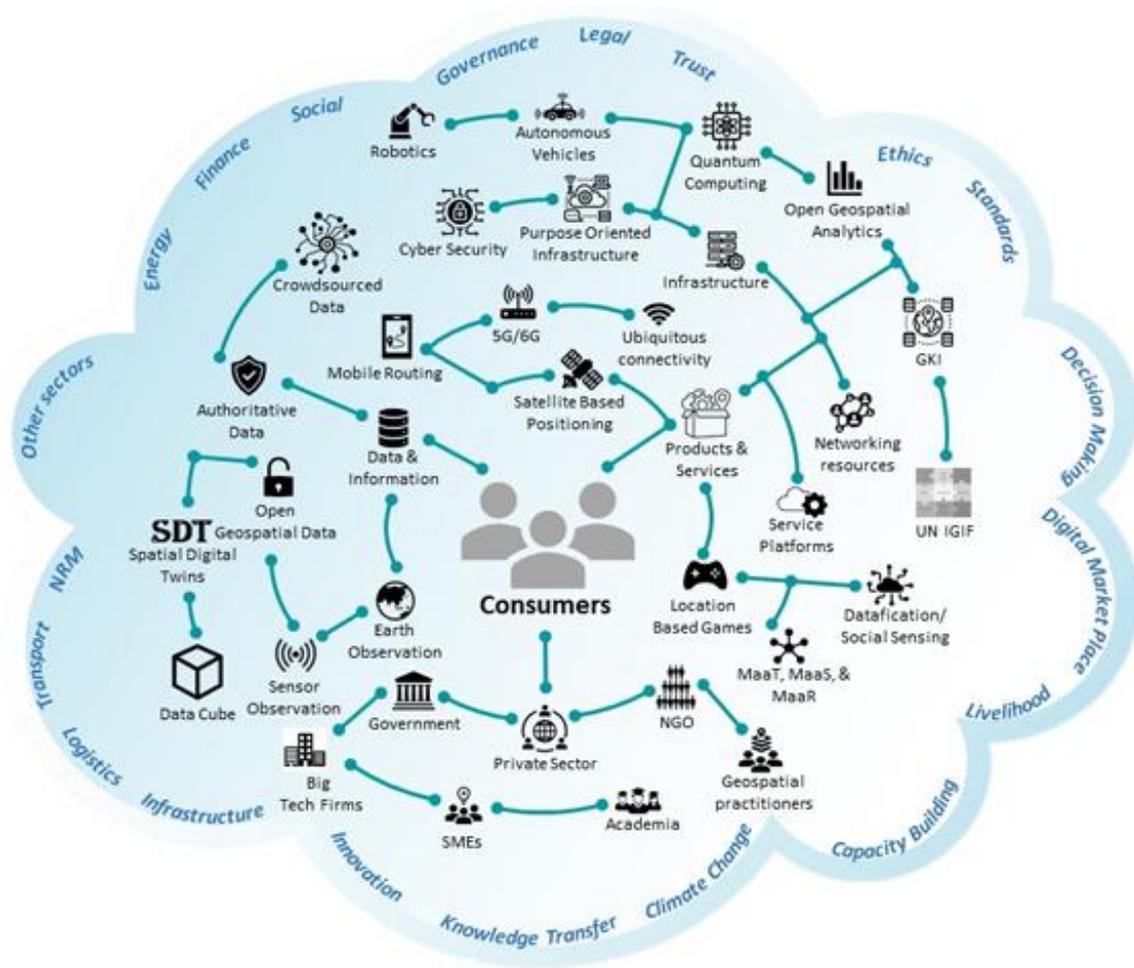


Figure 2: The Geospatial Ecosystem (Coetzee et al., 2021)

### 4.3 Geospatial Standards

Underpinning both UN-IGIF and geospatial ecosystems are international geospatial standards, which provide the technical foundation for interoperability, trust, and scalability. Standards developed by the International Organization for Standardization (ISO/TC 211) and the Open Geospatial Consortium (OGC) enable consistent representation, exchange, and integration of geospatial data and services across systems and jurisdictions (ISO, 2024; OGC, 2024). These standards are critical for reducing duplication, enabling cross-sector data sharing, supporting digital government initiatives, and fostering innovation in emerging areas such as digital twins, smart infrastructure, and AI-enabled geospatial analytics. Without standards-based approaches, national geospatial initiatives risk becoming fragmented, vendor-dependent, and difficult to scale.

Together, UN-IGIF, the geospatial ecosystem approach, and international standards form a coherent set of global practices that support national geospatial maturity. UN-IGIF provides strategic governance and policy direction; geospatial ecosystems enable inclusive, system-wide implementation; and standards ensure technical coherence and long-term sustainability. The challenge—and opportunity—lies in effectively localising and integrating these frameworks to deliver tangible national outcomes.

Table 1 synthesises the relationship between these global frameworks and their primary implementation objectives, illustrating how they collectively support effective national geospatial development.

*Table 1: Relationship between Global Geospatial Frameworks and National Implementation Objectives*

<b>Global Framework / Practice</b>	<b>Primary Focus</b>	<b>Key Contributions</b>	<b>National Implementation Objectives Supported</b>
<b>United Nations Integrated Geospatial Information Framework (UN-IGIF)</b>	Strategic governance and national enablement	Provides a holistic framework structured around nine strategic pathways covering governance, policy, data, standards, capacity building, partnerships, innovation, and value realisation	Strengthened national geospatial governance; alignment of geospatial investments with development priorities; improved institutional coordination; sustainable funding and capacity development
<b>Geospatial Ecosystem Approach</b>	Whole-of-system, multi-stakeholder engagement	Emphasises collaboration across government, industry, academia, and communities; moves beyond traditional SDI models toward shared value creation and innovation	Inclusive and resilient geospatial systems; enhanced cross-sector collaboration; localisation of global frameworks; empowerment of communities and stakeholders
<b>International Geospatial</b>	Interoperability, trust, and	Establishes common models, interfaces, and protocols for geospatial data and services;	Interoperable and scalable national geospatial infrastructures; reduced duplication; trusted data

<b>Standards (ISO / OGC)</b>	technical coherence	supports consistent data exchange and system integration	sharing; support for digital government, smart infrastructure, and emerging technologies
<b>Combined Application of Frameworks</b>	Integrated national geospatial capability	Aligns strategic direction (UN-IGIF), operational collaboration (ecosystem), and technical foundations (standards)	Mature, sustainable national geospatial ecosystems that inform policy, support innovation, enhance resilience, and deliver socio-economic value

## 5. ISSUES WITH LOCALISATION OF FRAMEWORKS AND PRACTICES

While these global geospatial frameworks are robust and widely recognised, their effective localisation remains a systemic challenge. These frameworks are designed for broad applicability, yet their translation into national and sub-national contexts often reveal structural barriers that impede realisation of their full potential (UN-GGIM, 2023). These challenges are not confined to specific countries, but are observed across diverse governance systems, especially in developing and emerging economies.

A key systemic constraint is the persistence of institutional silos, where geospatial functions are scattered across disconnected agencies with limited coordination, resulting in fragmented data infrastructures and inefficient use of resources. Closely linked are pervasive skills and capacity gaps; even where frameworks emphasise capacity building, countries often lack sustained investment in human capital, formal training pathways, and institutional knowledge retention. This limits countries' ability to steward and evolve national geospatial capabilities over time.

Another significant issue arises from misalignment with local legal, cultural, and indigenous contexts. International frameworks and standards may not fully reflect national legislative arrangements, customary land tenure systems, or principles of indigenous data sovereignty, leading to resistance or superficial compliance rather than meaningful adoption. Funding and sustainability challenges further complicate implementation: reliance on short-term project financing and donor support often undermines long-term planning, maintenance, and institutional ownership.

Finally, many localisation efforts prioritise a technology-first mindset, deploying tools and platforms ahead of robust policy and governance structures. This can yield technically capable systems that fail to deliver sustainable socio-economic outcomes.

Adopting a geospatial ecosystem approach — which emphasises whole-of-system alignment of policy, institutions, standards, capacity, and technology — provides a promising pathway for addressing these systemic barriers and enabling effective localisation of global frameworks (Coetzee et al., 2021).

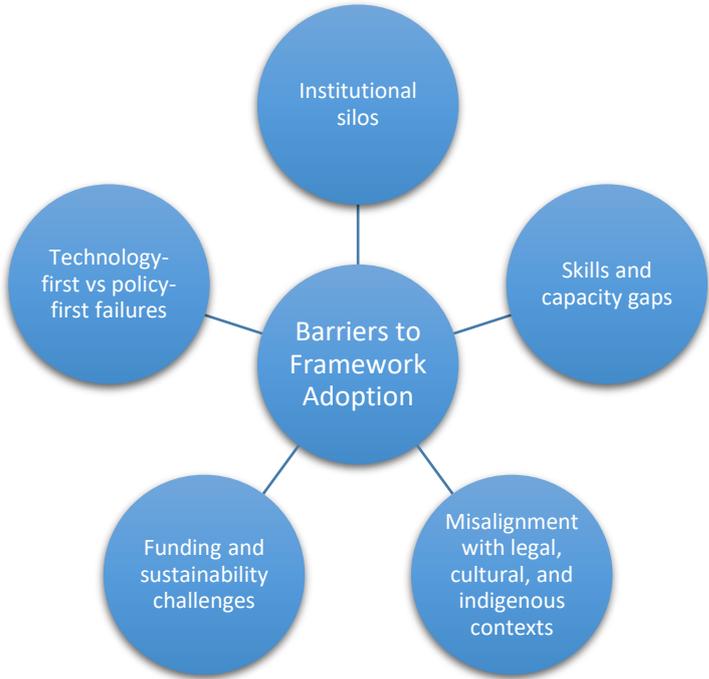


Figure 3: Barriers to Framework Adoption

## 6. CONTEXTUALISING GLOBAL FRAMEWORKS AND PRACTICES

Successful localisation of global frameworks requires recognising local governance structures, cultural norms, legacy data systems, and institutional practices—while fostering long-term growth and sustainability. Countries that excel in this process typically adopt a systematic, principles-driven approach that integrates strategic planning, technical standards, and stakeholder engagement.

Key principles for effective localisation include:

- Maintaining a systemic outlook that connects policy, infrastructure, and societal needs;
- Embedding ecosystem governance to coordinate government, private sector, academia, and civil society;
- Respecting indigenous data sovereignty;
- Adopting incremental maturity pathways for gradual capability development;
- Fostering public–private–academic collaboration; and

- Ensuring ethics and trust underpin all geospatial practices (UN-GGIM, 2023; Coetzee et al., 2021).

The Kingdom of Saudi Arabia offers a compelling example, having embraced the geospatial ecosystem approach in 2023. By aligning global frameworks with national priorities, the initiative established governance structures, interoperable systems, and stakeholder engagement processes that deliver tangible outcomes, such as improved data integration, enhanced service delivery, and strengthened capacity building (GEOSA, 2023). This case demonstrates that localisation is not merely a technical adaptation but a holistic strategy that balances global standards with national realities.

### 6.1 Lessons from the Kingdom of Saudi Arabia

The Kingdom of Saudi Arabia's adoption of the National Geospatial Ecosystem approach provides a compelling case study in translating global geospatial frameworks into a national context. Driven by the objectives of Saudi Vision 2030, which aims to diversify the economy, enhance public service delivery, and position the Kingdom as a global logistics hub, the initiative demonstrates that effective localisation requires a holistic, ecosystem-oriented approach. Unlike traditional, government-centric spatial data infrastructures (SDIs), the Geospatial Ecosystem prioritizes collaborative, market-driven, and user-focused strategies, leveraging technology while embedding governance, ethics, and stakeholder engagement at its core (GEOSA, 2023; UN-GGIM, 2023; Coetzee et al., 2021).

Several key lessons emerge from the Kingdom's experience. First, **systemic thinking and ecosystem governance** are critical. The integration of multiple stakeholders, including government agencies, private sector participants, academic institutions, and civil society has fostered shared ownership and improved coordination, demonstrating that geospatial initiatives succeed when stakeholders operate as interconnected nodes rather than isolated silos. Early outcomes include the creation of collaborative governance structures, partnerships, and platforms for stakeholder engagement, which have strengthened trust, enhanced decision-making, and aligned incentives across sectors.

Second, **investing in integrated infrastructure and data environments** is essential. The operationalization of shared technical platforms, cloud-based systems, high-performance computing, APIs, and interoperable data environments has ensured consistent, reliable access to geospatial services. Establishing standards, licensing models, quality frameworks, and semantic interoperability has further promoted a contextualized and mature data ecosystem. Early evidence shows that these components enable scalable and timely access to critical geospatial information for policy formulation, urban planning, and disaster response.

Third, **analytics and automation capabilities** significantly enhance the ecosystem's value. By embedding Big Data analytics, spatial analysis workflows, visualization platforms, and AI/ML-driven process automation, the Kingdom has reduced human intervention while delivering actionable insights. Lessons learned include the importance of aligning technical tools with end-

user workflows and providing training and analytical resources to maximize uptake. Early outcomes highlight enhanced efficiency, faster decision-making, and the ability to model complex scenarios for infrastructure, environmental, and economic planning.

Fourth, **incremental and maturity-based implementation pathways** ensure sustainability. The Geospatial Ecosystem’s phased approach—from foundational partnerships and governance to advanced analytics and immersive visualization—illustrates that localisation requires iterative scaling. Developing maturity frameworks and feedback loops allows governments to measure progress, adapt strategies, and maintain alignment with policy objectives.

Finally, **ethics, trust, and indigenous data sovereignty** are foundational. Ensuring secure data sharing, compliance with regulatory frameworks, and respect for local cultural and societal norms has fostered confidence among stakeholders and end users. This demonstrates that a successful geospatial ecosystem balances technical excellence with responsible data stewardship and societal relevance.

Collectively, the Saudi experience offers transferable insights for other nations seeking to localize global frameworks: adopt a systemic and ecosystem approach, integrate governance with technology, build scalable infrastructure and analytics, follow incremental maturity pathways, and embed ethics and trust in all aspects of geospatial management. The Kingdom’s early outcomes—stakeholder integration, operationalized platforms, enterprise architecture deployment, advanced analytics, and automated workflows—illustrate that these principles can deliver tangible socio-economic benefits while establishing a future-ready, dynamic, and collaborative geospatial ecosystem (GEOSA, 2023; UN-GGIM, 2023).



Figure 4: Saudi Arabia National Geospatial Ecosystem: Lessons Learnt

## 6.2 Impact for the Republic of Indonesia

In contrast to the Kingdom of Saudi Arabia, the Republic of Indonesia is characterized by one of the world's richest and most diverse ecological profiles. As the world's largest archipelagic nation, Indonesia encompasses vast tropical rainforests, extensive mangrove systems, peatlands, volcanic landscapes, and globally significant coral reef ecosystems. This ecological diversity underpins food security, livelihoods, cultural heritage, and regional environmental stability, while positioning Indonesia as a global steward of biodiversity and natural capital.

With evolving weather patterns, Indonesia's geography and ecosystems are increasingly shaped by climate-related dynamics such as sea-level rise, changing precipitation regimes, coastal processes, and ocean temperature variability. These dynamics influence forests, wetlands, coastal zones, and marine systems, with implications for habitat continuity, disaster risk management, and human–environment interactions. National initiatives such as the Integrated Land Administration and Spatial Planning reforms highlight the importance of spatially enabled planning for climate resilience, land governance, and sustainable development (World Bank, 2024).

Indonesia's institutional landscape is defined by decentralization, multi-tier governance, and diverse local implementation contexts. While this diversity supports localized innovation, it also highlights the importance of coordination, shared standards, and interoperable geospatial information across national and subnational levels. A geospatial ecosystem–based approach offers a practical pathway to localize global frameworks such as UN-IGIF while aligning them with Indonesia's governance structure, environmental priorities, and development agenda.

By fostering public–private–academic collaboration, the geospatial ecosystem approach shifts emphasis from centralized control toward coordination, facilitation, and shared value creation (Coetzee et al., 2021). This model enables agile policy frameworks, interoperable data practices, and inclusive stakeholder participation, supporting climate-informed decision-making across sectors. Importantly, it strengthens Indonesia's capacity to address climate-related challenges while contributing directly to multiple Sustainable Development Goals, including SDG 11 (Sustainable Cities and Communities), SDG 13 (Climate Action), SDG 14 (Life Below Water), and SDG 15 (Life on Land).

Through integrated spatial intelligence, geospatial ecosystems support risk-informed planning, ecosystem conservation, resilient infrastructure development, and evidence-based policy formulation. For Indonesia, this approach provides a scalable and adaptive foundation for advancing climate resilience and sustainable development across its uniquely diverse national landscape.

## 7. LESSONS FOR DEVELOPING COUNTRIES

Experiences from the Kingdom of Saudi Arabia offers valuable insights for developing countries seeking to translate global geospatial frameworks into meaningful national outcomes.

These lessons emphasize systemic design, institutional alignment, and long-term sustainability rather than short-term technical implementation.

### **1. Governance and Institutional Coordination**

- Effective geospatial development requires shifting from centralized control to coordinated governance models that enable participation across government, private sector, academia, and civil society.
- Clear institutional roles, supported by cross-sector coordination mechanisms, help reduce duplication and encourage shared ownership of geospatial assets.

### **2. Capacity-Building Pathways**

- Sustainable geospatial ecosystems depend on continuous skills development, institutional learning, and knowledge transfer.
- Capacity building should extend beyond technical skills to include governance, data stewardship, policy design, and ecosystem facilitation capabilities.

### **3. Role of Standards and Ecosystems**

- International standards (e.g., ISO and OGC) provide a foundation for interoperability, trust, and scalability.
- Embedding standards within a broader ecosystem approach ensures that technical interoperability is complemented by organizational, legal, and social alignment.

### **4. Managing Data Sovereignty and Ethics**

- Respecting national and indigenous data sovereignty strengthens trust and legitimacy.
- Ethical frameworks, transparency, and secure data-sharing mechanisms are essential to balance openness with accountability and societal values.

### **5. Incremental vs. “Big Bang” Implementation**

- Incremental maturity-based approaches enable countries to build capability progressively, manage risk, and adapt to evolving needs.
- Focusing on priority use cases and essential datasets ensures early value realization while allowing the ecosystem to evolve organically.

Collectively, these lessons suggest that developing countries can achieve meaningful geospatial transformation by adopting adaptive, inclusive, and ecosystem-oriented strategies aligned with national contexts.

## 8. CONCLUSION

This paper demonstrates that global geospatial frameworks are most effective when translated through locally grounded, ecosystem-based approaches. The case of the Kingdom of Saudi Arabia and the Republic of Indonesia illustrate complementary pathways: one driven by a national transformation agenda and systemic ecosystem design, and the other highlighting the potential of geospatial ecosystems to support environmental stewardship, institutional coordination, and climate resilience within a diverse and decentralized context.

Key insights emerging from both cases include:

- The importance of moving beyond traditional SDIs toward dynamic, multi-stakeholder geospatial ecosystems.
- The critical role of governance, standards, and capacity-building in enabling sustainable and trusted geospatial information management.
- The value of incremental, maturity-driven implementation that balances ambition with institutional readiness.

The implications of these findings are significant for:

- **Policymakers**, who can leverage geospatial ecosystems to improve decision-making, service delivery, and national resilience.
- **Developing economies**, which can use ecosystem approaches to maximize limited resources, foster innovation, and accelerate development outcomes.
- **Global geospatial governance**, where stronger global–local alignment can enhance coherence, comparability, and collective impact.

While the ecosystems discussed are at varying stages of maturity, early outcomes indicate positive momentum and practical value. Acknowledging these early-stage limitations, future work should focus on:

1. Developing mechanisms to measure geospatial ecosystem maturity.
2. Conducting longitudinal assessments of socio-economic and environmental impact.
3. Undertaking comparative studies across regions.
4. Integrating governance frameworks for emerging technologies such as AI and machine learning within geospatial ecosystems.

The paper concludes with a call to action for strengthened global–local collaboration, encouraging countries, institutions, and the international community to jointly advance inclusive, ethical, and sustainable geospatial ecosystems that serve both national priorities and global development goals.

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## BIOGRAPHICAL NOTES

**Prof. Dr Zaffar Sadiq Mohamed-Ghouse** is a globally recognised leader in geomatics with over 27 years of experience shaping geospatial strategies, policies and programmes for government and private organisations across Australia, Asia, the Middle East and beyond. He is currently Vice President and Director – Advisory & Innovation at Woolpert Australia and holds prominent international leadership roles, including Chair of the Board of the United Nations Global Geospatial Information Management (UN-GGIM) Private Sector Network and Board Director of the Open Geospatial Consortium.

Zaffar has served extensively on international and national boards, contributing to global initiatives on spatial data infrastructure, digital twins, AI/ML, data privacy and geospatial standards. He is an Australian representative to ISO TC 211 (Geographic Information/Geomatics) and FIG Commission 3 (Spatial Information) and has played a key role in UN-GGIM and Integrated Geospatial Information Framework (IGIF) initiatives. In Australia, he has led the peak professional body Surveying & Spatial Sciences Institute as President and Chair.

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An Adjunct academic at the University of Melbourne and institutions in India, Zaffar has authored books and numerous publications on GIS, remote sensing and spatial policy. A sought-after keynote speaker, mentor and advocate for diversity and inclusion, he has received multiple national and international awards recognising his professional leadership and impact.

**Megha Datta** has over two decades of experience in the Geospatial industry contributing to global geospatial industry growth through strategic communications, report writing, research, leading conferences, and events, authoring papers and articles, advocating for the societal and economic benefits of geospatial, and improving partnerships and collaboration.

Formerly with the Association of Geospatial Industries (AGI) in India, Megha played a pivotal role in fostering collaboration between the private sector, policymakers, and academia, driving the growth of India's geospatial industry. Her tenure at Geospatial World saw her forging partnerships with national mapping and multilateral agencies, professional societies, the UN, and the World Bank.

At Woolpert, Megha is a part of the Advisory and Innovation division that offers advisory services to national mapping agencies, ministries, and private industries globally in delivering practical geospatial strategies, architectures, and realistic, fully costed action plans.

She was an Executive Committee Member (Industry) for the Indian Society of Remote Sensing and a Member of the Organizing Committee – UN World Geospatial Information Congress 2022. Megha completed a Master of Arts (MA) in Psychology from Delhi University in 2002 and a Bachelor of Arts (BA) in Psychology from Jesus and Mary College in 2000.

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