

**United Nations Committee of Experts on Global Geospatial Information Management
Working Group on Policy and Legal Frameworks for Geospatial Information Management**

Concept Paper on Geospatial Data for Public Good

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Working Group on Policy and Legal Frameworks for Geospatial Information Management

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Concept paper on geospatial data for public good¹

1. Background

This paper explores key policy and legal considerations related to the issue of geospatial data for the public good, considering that effective policy and legal frameworks will evolve over time. It proposes approaches that respond to challenges from societal progress and technological developments that can be tailored to national circumstances. This paper is a deliverable under the Working Group on Policy and Legal Frameworks for Geospatial Information Management’s (“Working Group”) Work plan 2023-2025.

This paper aligns with previous guidance provided by the UN-GGIM² and the Working Group³ regarding an effective policy and legal framework for public good. At the 13th Session, the UN-GGIM Decision 13/112 acknowledged that, given the increasing global challenges and the related need for reliable data, the Working Group’s planned activity related to addressing the issue of geospatial information for public good is timely⁴.

Acknowledgment

This paper is authored by the Working Group on Policy and Legal Frameworks for Geospatial Information Management, a functional group established by the United Nations Committee of Experts on Global Geospatial Information Management (“the Committee” or “UN-GGIM”). The drafting was conducted under the leadership of the Canada Centre of Mapping and Earth Observation, Natural Resources Canada. The content is based on existing literature on the topic and the contributions and views expressed by the Working Group members at virtual and face-to-face meetings held in 2023 and 2024. This version was developed, considering feedback received at these discussions. The Working Group is co-chaired by Canada and the Kingdom of Saudi Arabia.

All or part of the paper may be reproduced provided the source, “The Concept Paper on Geospatial Data for Public Good, United Nations Committee of Experts on Global Geospatial Information Management, August 2024.”

Scope and Limitations

In the view of the Committee of Experts on Global Geospatial Information Management, ‘ethical use of geospatial data’ and ‘data for the public good’ are considered separate concepts. The term, ‘ethical use,’ is more commonly applied in an informal, guiding context rather than referring to

¹ For the purposes of this paper, the term ‘data’ will be used as an inclusive catchall term for the various understandings of data, which is in line with the way information is defined in the United Nations Integrated Geospatial Information Framework (UN-IGIF) Implementation Guide, *Strategic Pathway 4: Data*.

² United Nations Integrated Geospatial Information Framework (UN-IGIF) Implementation Guide, notably *Strategic Pathway 1: Governance and Institutions* and *Strategic Pathway 2: Policy and Legal*.

³ Policy and Legal Resource kit for form geospatial information management policy and model geospatial information management legislation: <https://ggim.un.org/documents/UN-IGIF-Policy-and-%20Legal-Resource-Kit-Aug2022.pdf>

⁴ UN-GGIM, Item 14. *Policy and legal frameworks, including issues related to authoritative data, annual Report 2023* online, [E C20 2023 16 Add 1-Policy and Legal Frameworks 20Jul2023.pdf \(un.org\)](https://www.un.org/development/desa/locations/ggim/2023/07/2023-07-20-16-Add-1-Policy-and-Legal-Frameworks-20Jul2023.pdf).

legal responsibilities. As such, this paper is focused on ‘data for the public good.’

Importantly, the framework and approaches proposed in this paper are not meant to be applied in the same manner by each country or in each context. These approaches are meant to be considered together with national legal experts, relevant policy communities and other relevant experts, and adapted and tailored to national circumstances that reflect appropriate national (or sub-national) policy and legal frameworks.

Note that this paper is meant as a starting point for discussion. It is provided to the Committee for this purpose. Given the breadth and depth of related content, this paper is not meant as a comprehensive analysis of the public good concept or as it relates to geospatial data. Other frameworks related to public good may also apply to geospatial data and could offer insightful areas for further research. It is anticipated that the dialogue and understanding on this concept will evolve and adapt over time, as exploration continues. To the best of the knowledge of the Working Group, this paper is accurate at the time of publication. A list of key definitions is included as Annex A to this document.

2. Executive Summary

This paper was developed as part of efforts aimed at sharing key legal concepts of relevance and providing guidance to Member States based on a review of the available case law. The paper considers that effective policy and legal frameworks will evolve over time and respond to societal progress and technological developments. As noted by the Working Group, it is important to clarify the concept of public good, and its policy and legal considerations.

The paper discusses different approaches to geospatial data for public good including risk-based, rights-based, and market-based approaches. The rights-based approach considers that governments must recognize, develop and promote the public good by defining and implementing rights, including through regulation and litigation processes. The market-based approach emphasizes the definition and value of the growing geospatial marketplace and how governments can leverage market-based instruments to capitalize on geospatial opportunities arising from technological developments to address current global challenges. The risk-based approach focuses on the apprehension of harm to a human being. It consists of assessing the levels of risks and recommending mitigating measures accordingly. The Working Group elaborates on the risk-based approach in the context of geospatial data for the public good, as this approach offers a holistic, cross-cutting perspective that can inform both rights and market-based approaches⁵.

The paper further explores both substantive and formal elements of a sound policy and legal framework, including: (a) favoring the public good; (b) recognizing the perspectives and interests of stakeholders and partners; (c) considering user needs; and (d) implementation with fairness and due process. The paper assumes that the goal for any effective policy and legal framework for geospatial information management is to maximize the utility and value of geospatial information with due consideration for privacy, confidentiality, security and risks. This underlines the importance of transparency as a foundation for trust in data⁶. It is important to always keep in mind

⁵ As discussed during the in-person Working Group meeting in Leuven, Belgium, in February 2024.

⁶ For more discussion about trust in location data and the public benefit, see the UK Geospatial Commission, *Building*

that a sound policy and legal framework for public good cannot be stand-alone. It needs to align with countries' existing legal and policy frameworks.

The paper also looks at how different approaches to the public good reveal a new angle on the “control-trust continuum” introduced in “Authoritative data in an evolving geospatial landscape: an exploration of policy and legal challenges,” endorsed by the Committee in 2023. Following a preliminary assessment, the risk-based approach is located along the continuum line, with high-risk geospatial data correlating to the use of instruments more on the control side of the continuum, and lower risk data with the trust side.

Finally, the paper considers that a policy and legal framework is sound when it favors the public good while recognizing the perspectives and interests of stakeholders and partners, and when conducted with fairness and due process.

The three approaches identified by the paper to the Committee are not meant to be applied in the same manner in all countries and contexts. They are meant to be considered together with national legal experts, relevant policy communities and other relevant experts, and adapted and tailored to national circumstances including appropriate national (or sub-national) policy and legal frameworks.

3. Introduction

In the context of rapid technological development, Member States are faced with complex realities that are sometimes difficult to manage. For example, by leveraging emerging technologies such as Artificial Intelligence (AI), machine learning and digital twins, data science can strengthen national spatial data infrastructures (NSDIs) by increasing productivity and improving decision-making.⁷ This may explain the growing interest and need from governments to set up national policy and legal frameworks that determine how geospatial information can best be implemented and integrated into their development agendas. This task requires, among other things, taking into consideration the social and economic value of geospatial information and potential risks of transformative technologies.⁸

In the current context, non-state actors also play an increasingly significant role in providing data and driving transformation.⁹ Data is generated by many actors and made available to users,

public confidence in location data, The ABC of ethical use, online, <https://www.gov.uk/government/publications/building-public-confidence-in-location-data-the-abc-of-ethical-use>, last read July 24, 2024.

⁷ Refer to Annex 1 for definitions.

⁸ Greg Scott & Abass Rajabifard (2017), *Sustainable development and geospatial information: a strategic framework for integrating a global policy agenda into national capabilities* https://www.researchgate.net/publication/317572574_Sustainable_development_and_geospatial_information_a_strategic_framework_for_integrating_a_global_policy_agenda_into_national_geospatial_capabilities p.7. Last read June 27, 2024. See also Global Partnership for Sustainable Development Data, *Power of Data, Knowledge and Technology for Sustainable development*, Global partnership for Sustainable Development Data Strategy, 2024-2030, online, [English - Global Partnership 2024-2030 Strategy.pdf \(data4sds.org\)](https://www.data4sds.org/), last read July 5, 2024.

⁹ For detailed information see Claudio Elizio Calazans Campello et Al., *Volunteered Geographic Information and the Future of Geospatial Information*, IGI Global, Hershey, PA, 2017. This collaborative book discusses the challenges and opportunities related to crowd-sourced geospatial data referred to as volunteered geographic information (VGI). For

including from civil society¹⁰ and the community at large; data is used to the extent that it meets users' specific needs. General users, however, are not necessarily able or have time to assess authoritativeness and other qualities of the data. At the same time, they seek to be reassured that the data is reliable, authoritative, repeatable, the best available and fit-for-purpose¹¹

This is where the role of Member States comes in, through laws/regulations and policies that are intended to ensure that data serves the public good, i.e. through its intended use, managing risk, and respecting individual's rights, without creating uncertainty on the market or slowing down technological innovation.

In this context of change and transformation, it is worth rethinking the goal of a sound policy and legal framework for geospatial information management. This paper proposes the following initial conceptual framework when approaching geospatial data for the public good:

- The 'public good' can be viewed from a policy/public administration and legal lens. Both have substantive and procedural elements that share the same broad objective.
- Policy and legal aspects can be approached through, at least, three different pathways: rights based, risk-based, and market-based approaches. Of these three approaches, the risk-based approach is elaborated upon for assessing the public good in the concept of geospatial data. It provides a holistic, cross-cutting perspective that supports the identification of relevant policy/legal and governance instruments that can apply to both rights and market-based approaches.
- The "control/trust continuum," initially presented in "Authoritative data in an evolving geospatial landscape: an exploration of policy and legal challenges," can be applied to the notion of the public good. Applying this framework, this paper identifies a core dynamic between state-driven vs. negotiated/multilateral governance instruments in the context of the public good, which are presented here for consideration.

This paper aims to provide initial guidance to Member States on the basis of a review of available case law, with a view to proposing practical solutions and options that can be tailored to national circumstances. It explores key elements of a sound policy and legal framework and discusses different approaches to geospatial data that favor the public good. Bearing in mind that effective policy and legal frameworks will evolve over time and recognizing that the concept of 'public good' is to be applied on a case-by-case basis, the paper identifies 'legitimate interests' as a potential concept that can help guide countries in their assessment of whether the use of geospatial data can be considered for the 'public good.'

The goal of this paper is to maximize the utility and value of geospatial information with due consideration for privacy, confidentiality, security, and risks. The effectiveness of such a

example, "OpenStreetMap (OSM) is a popular VGI platform that allows user to create or edit maps using GPS-enabled devices or aerial imageries." See Claudio Elizio Calazans et Al. (2017), Chap. 2. p. 19.

¹⁰ Civil society "Refers to the associations of citizens (outside their families, friends and businesses) entered into voluntarily to advance their interests, ideas and ideologies. The term does not include profit-making activity (the private sector) or governing (the public sector). Of particular relevance to the United Nations are mass organizations (such as organizations of peasants, women or retired people), trade unions, professional associations, social movements, indigenous people's organizations, religious and spiritual organizations, academe and public benefit non-governmental organizations." United Nations, Department of General Assembly and Conference Management, online, <https://unterm.un.org/untterm2/en/view/fc6d0c21-7ff5-4abb-aeb6-23d331a5bb22>. Last read on July 1, 2024.

¹¹ Greg Scott & Abass Rajabifard (2017), p.15.

framework will depend on several factors, including the needs of geospatial data users, the perspectives and interests of stakeholders, and ensuring implementation with fairness and due process.

4. Public good

There are at least two definitions of the public good available in current literature and discourse. The common definition of ‘public or collective good(s)’ contrasts public goods with private goods, with ‘goods’ defined as commodities or objects. Public goods are essentially *nonrivalrous* in consumption and *nonexcludable* in use, meaning that their use and benefit is shared by a defined community (i.e., citizens of a given Member State)¹². While this approach may be of interest in broader discussions on this topic, it is not directly relevant to the scope of this paper due to the focus on ‘goods’ as commodities or objects.

The second definition of the public good is more akin to constitutional law and the philosophy of law, and involves the processes, means and principles that facilitate the attainment or realization of the ‘public good’ by a Member State. This definition has the advantage of establishing an implicit premise that governments, as representatives, are responsible for balancing sometimes-opposing interests on behalf of their citizens. In accordance with this doctrine, individual rights can be overridden when government acts in accordance with law, for legitimate public or democratic aim, and in the least intrusive manner necessary, without imposing gratuitous or disproportionate harm on an individual.”¹³ This is the basis for identifying ‘legitimate interests’ as a potential concept that can help guide countries in their assessment of whether the use of geospatial data can be considered for ‘public good.’ While this concept is not examined in detail in this paper, it nonetheless represents a starting point for possible criteria to assist Member States in their own assessments, if applicable.

For the purposes of this paper, the public good is defined as “*the structural, political, economic and social conditions that allow [individuals and] communities to live in in accordance with the precepts of legal justice and promote peace, order, abundance, and good government.*”¹⁴

It is important to note that conversations around defining the public good continue in other areas, as well. In the context of geospatial data infrastructure, an Expert Advisory Group has called for urgent action and made key recommendations to the United Nations Secretary General on sharing technology and innovation for the public good.¹⁵

¹² David L. Weimer and Aidan R. Vining, *Policy analysis, Concept and Practice*, Sixth ed. Routledge, New York 2017, p.74.

¹³ Adrian Vermeule, *Common Good Constitutionalism*, ed. Polity Press, Cambridge, 2022, p. 166.

¹⁴ *Idem.* p.30.

¹⁵ The call was for among other things to “To create mechanisms through which technology and innovation can be shared and used for the common good, we propose to create a global “Network of Data Innovation Networks”, to bring together the organizations and experts in the field. This would: contribute to the adoption of best practices for improving the monitoring of SDGs, identify areas where common data-related infrastructures could address capacity problems and improve efficiency, encourage collaborations, identify critical research gaps and create incentives to innovate” United Nations, Secretary-General, Independent Advisory Group on Data Revolution for Sustainable development, *A World that Counts*, p.3, online, [A-World-That-Counts2.pdf \(undatarevolution.org\)](https://undatarevolution.org) last read April 25, 2024.

The complexity of public challenges and the need for interdisciplinary approaches increasingly require governments to adopt negotiated/multilateral, collaborative approaches to policy design and implementation¹⁶. As networks of state and non-state actors are more and more engaged in policy development process, the concept of ‘public good’ may also continue to evolve over time.¹⁷

5. Geospatial data for public good: A human rights-based approach

Three approaches to geospatial data for public good have been identified and are examined in this paper, based on an initial analysis of relevant literature and case law. Elements of these approaches can be mixed or adapted based on circumstance; it is not necessary for Member States to only consider one approach of the three explored in this paper. Further, the approaches identified here represent a starting point. Additional approaches or adaptations of these approaches may be identified or evolve through further exploration.

The rights-based approach considers that governments must recognize, develop and promote rights that are consistent with the public good, including through fair regulation and litigation processes.

In this approach, ‘rights’ refer to those rights protected by law or established in legislation. They exist even in cases where no individual interests are presumed.¹⁸ These rights are always ordered to the common good and that common good is the highest individual interest.¹⁹ Any legal or regulatory mechanisms, networks or partnerships aiming to mobilize data for sustainable development should have the protection of human rights as a core part of their activities, should specify who is responsible for upholding those rights, and should support the protection, respect, and fulfilment of human rights.²⁰

It should be noted that the scope of this human rights concept has been broadened over time. The rights-based approach extends beyond the classical role of public authorities to promote peace, justice, and abundance. Fundamental elements of human rights to be protected now include health, relationship to the natural environment, privacy, respect for minorities and data sovereignty.²¹

In addition, the need to hold entities accountable for harm against human rights applies to

¹⁶ As stated in the UK Policy Lab Blog, “...future public policy should be more open, inclusive, evidence-based, empathetic and informed by both present and future need.” See Gov.UK, Policy Lab, *Introducing Government as System’ toolkit*, online, <https://openpolicy.blog.gov.uk/2020/03/06/introducing-a-government-as-a-system-toolkit/>, last read July 24, 2024.

¹⁷ Michael M. Atkinson et Al., *Governance and Public Policy in Canada*, University of Toronto Press Incorporated, 2013, p. 130.

¹⁸ Kelsen H., *General Theory of Law and State*, Translated by Anders Wedberg, The Law Book Exchange Ltd. New Jersey, ed. 2009, p. 81.

¹⁹ A. Vermeule *op.cit.* p.167.

²⁰ Data revolution Group, *A World That Counts, Mobilizing the data for Sustainable Development*, p.23, online, [A-World-That-Counts2.pdf \(undatarevolution.org\)](#). Last read July 5, 2024.

²¹ *Idem.* p. 6. See also United Nations Human Rights, Office of the High Commissioner, *A Human Rights-Based Approach to Data, Leaving No One Behind in the 2030 Agenda for Sustainable development*, (2018) online, [GuidanceNoteonApproachtoData.pdf \(ohchr.org\)](#).

businesses.²² In this matter, the human right impact assessment requirement has been grounded in Ten Principles of the United Nations Global Compact, a non-binding framework endorsed by United Nations Human Right Council in 2011.²³ These principles require companies to operate in ways that, at a minimum, meet fundamental responsibilities in areas of human rights, labor, environment and anti-corruption.

Business operators are notably required to develop a human rights strategy for their businesses that addresses challenges such as corruption, security, discrimination, and privacy. Such human rights obligations also apply to companies operating in the geospatial data sector.²⁴

6. Geospatial data for public good: A market-based approach

The market-based approach emphasizes the definition and value of the growing geospatial marketplace and how governments can capitalize on geospatial opportunities arising from technological developments to address current global challenges and grow economies.

Different countries are putting in place laws, policies, and strategies with well-defined economic goals. For example, the Indian National Geospatial Policy states that: “the National Geospatial Policy, 2022 (the Policy) is a citizen-centric policy that seeks to strengthen the Geospatial sector to support national development, economic prosperity and a thriving information economy.”²⁵ In a similar vein, the National Infrastructure Commission of the United Kingdom states that “Data can provide significant economic benefits. Sharing data, with the appropriate security and privacy arrangements, can catalyse innovation and improve user experience.”²⁶

Apart from the economic benefits that governments have identified, global experience has demonstrated convincingly that access to data leads to breakthroughs in scientific understanding as well as to benefits for economic growth, in addition to benefits for society²⁷. While the importance of geospatial data for the economy as well as for scientific and technological innovation is generally acknowledged, there are notable disparities in access to these benefits.

On this topic, the International Monetary Fund has argued for development of international agreement on common minimum principles for a data economy. Rules and standards should be aimed at reducing information inequalities and providing high quality information for all, in the most easily understood format.²⁸

²² Two principles are worth noting: Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights; and Principle 2: make sure that they are not complicit in human rights abuses.

²³ *Recommendations for Assessing AI impacts to Human Rights, Democracy, and the Rule of Law* on line at [HUDERIA paper ECNL and DataSociety.pdf](#), pp. 3-10, last read on May 22, 2024

²⁴ United nation Global Compact, *The Power of Principles*, online: <https://unglobalcompact.org/what-is-gc/mission/principles>, last read on May 13, 2024. On the human rights side it is important to note those 2 principles : Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights; and Principle 2: make sure that they are not complicit in human rights abuses.

²⁵ *Government of India, Ministry of Science and Technology, National Geospatial Policy.pdf (dst.gov.in)*, last read June 26, 2024

²⁶ National Infrastructure commission, *Data for the public good (nic.org.uk)*, online, <https://nic.org.uk/app/uploads/Data-for-the-Public-Good-NIC-Report.pdf> last read July 23, 2023 p.7.

²⁷ *Idem* p.3

²⁸ International Monetary Fund, *Toward a global Approach to data in the digital age*, on line, [Toward a Global Approach to Data in the Digital Age \(imf.org\)](#) last read on June 27, 2024, p. 5.

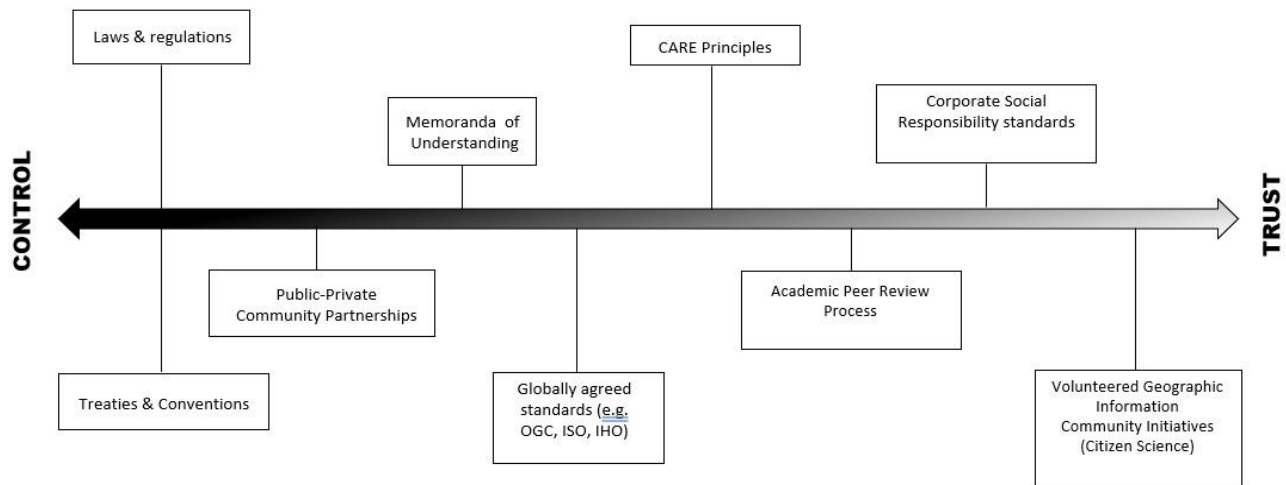
contractual rights are on the trust side. Risk-based approaches also stream along the continuum line and cross-cut the other two approaches: high risk correlates with use of instruments on the control side of the continuum, and lower risks with the trust side.

The risk-based approach is briefly elaborated upon below, to illustrate how it can be applied to the “control-trust continuum”. The level of risk can help Member States identify key policy/legal considerations, and furthermore, relevant policy/ legal and governance instruments that may apply to both rights- and market-based approaches. Future analysis can further explore the policy/legal considerations involved in the various approaches.

As illustrated by this continuum, governments have a range of policy/legal and governance instruments to choose from in order to address varying levels of risk.³³ Such instruments will always need to be considered within the appropriate local policy/legal framework already in place.

Note that the Working Group recognizes that the control-trust continuum may still require further refinement and exploration in the future, but this is out of scope for this paper.

Figure 1: Control-Trust Continuum



The placement of the risk-based approach along the continuum varies according to the risk level associated with different types of geospatial data: high-risk data correlate to the use of instruments on the control side of the continuum, whereas lower-risk data aligns more with actions along the trust side. The continuum also reveals that governments have a broad range of governance arrangements to choose from, from government-driven (e.g., laws and regulations) to negotiated/multilateral arrangements (e.g., Memorandum of Understanding and partnerships). Increasingly, some governments are adopting negotiated/multilateral, collaborative approaches to achieve their objectives.

In most cases, risk and its impact on society in general can serve as a primary reference point. As such, the Working Group proposes that governments consider risk in its approaches to the public good. It provides a holistic and cross-cutting perspective that can help to identify the level of

³³ Refer also to the Working Group’s Policy and Legal Resource kit for form geospatial information management policy and model geospatial information management legislation: <https://ggim.un.org/documents/UN-IGIF-Policy-and-%20Legal-Resource-Kit-Aug2022.pdf>

control required for different types of geospatial data, relative to the potential impact and level of risk involved.

Examples of relevant laws/regulations and policies:

- European Union Artificial Intelligence Act
- White House Executive Order on Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence
- Saudi Arabia Artificial Intelligence Ethics Framework
- Government of India National Geospatial Policy, 2022

Future analysis and comparison of recent developments in new technology, policies, and laws could also inform governments on the range of policy/legal instruments available, and the approaches taken, to address the public good in the geospatial sector.

9. Examples of case law:

While governments are responsible for implementing policy/legal instruments consistent with the public good, the application and interpretation of law relies on the judiciary system and cases (disputes/challenges) brought forward to the courts and tribunals. Reviewing case law helps governments and organizations understand the potential risks and costs associated with adopting, or choosing not to adopt, laws/regulations and policies associated with geospatial data and associated emerging technologies.

A preliminary review of examples of case law from the US, Canada and European Union demonstrates that, across areas of law, the following criteria may be essential: the interests or rights concerned, the nature and degree of the risk, and its impact on the general public. Even if, for some cases, the context is not geospatial data, these criteria could inform efforts to strike a balance between rights, economic interests and the level of risk involved to attain the public good through policy/legal instruments targeted at the geospatial domain and relevant new technologies.

There is a sustained effort to strike a balance between data protection for security and regulatory purposes on the one hand, and respect of individual privacy rights on the other. Through laws, regulations, policies and agreements, privacy protection is generally enhanced, except in situations when the general interest prevails over individual rights. Factors to consider include: the level of threat to the public order, harm to rightsholders; individual consent; and preventing uncertainty for law abiding businesses, among others. Further exploration of case law, from other regions and jurisdictions, may be considered to enrich this analysis.

Examples of case law:

- *Guardians v. U.S. Federal Emergency Management Agency*, CIVIL NO. 03-134 DJS/RLP (D.N.M. Feb. 4, 2004)
- *Ontario (Natural Resources) (Re)*, 2010 CanLII 50525 (ON IPC)
- *Reference re Genetic Non-Discrimination Act - 2020 SCC 17 - [2020] 2 SCR 283*
- Judgment of 5 December 2023 (Grand Chamber), *Deutsche Wohnen (C-807/21)*, EU:C:2023:950)
- Judgment of 24 May 2023, *Meta Platforms Ireland v Commission (T-451/20)*, EU:T:2023:276)

10. Policy and legal considerations

As the production and use of geospatial data evolves hand-in-hand with new technologies, policy and legal considerations should endeavor to address, at the very least, three major imperatives.

- Improvement of governance and accountability in the geospatial community;
- Responsiveness to changes and progress; and
- Facilitating transborder sharing of data and interoperability.

In terms of policy considerations, it is evident that data has emerged as a highly valuable movable asset with significant economic worth domestically, regionally and internationally. This requires countries to have coherent policies that build trust, meanwhile favoring diversity and inclusion.

From a legal standpoint, Member States are advised to develop comprehensive systems of laws and regulations that encompass and take into consideration emerging technologies such as AI to address potential risks³⁴. Considering the wide range of geospatial data providers and users, consultation and engagement involving a multitude of stakeholders and partners with deep knowledge of technology, relevant domains and applications is recommended.

Figure 2 provides a starting framework for understanding some of the key substantive and procedural elements of both the public policy and legal components of the public good. These components may have additional impacts on the application of public good in the context of geospatial data. Additional policy and legal components may be refined as this topic develops further.

³⁴ As noted by Wheeler, “All modern regulations walk a tightrope between protecting the public interest and promoting innovation and investment. In the AI era, traversing the regulatory tightrope means accepting that different AI applications pose different risks and identifying a plan that pairs the regulation with the risk while avoiding innovation-choking regulatory micromanagement” see Douglas Lippoldt, *AI Concentration and Governance Challenge*, Centre for International Governance Innovation, CIGI Papers No.292-April 2024, p.5. Online: [no.292.pdf \(cigionline.org\)](https://www.cigionline.org/papers/no.292.pdf), last read July on 5, 2024.

Figure 2: Policy and legal components of the public good

Public good	<i>Substantive/Material</i>	<i>Formal/Procedural</i>
<i>Policy</i>	<ul style="list-style-type: none"> - Validity and efficacy of the national order (legal social, etc.) - Agenda setting – identifying/constructing and prioritizing problems - Identifying possible solutions to public problems to improve public outcomes - Perspectives and interests of stakeholders and partners - Adoption of a course of action to achieve a public policy objective - Implementation - Measuring performance - Utility and (economic) value 	<ul style="list-style-type: none"> - Collaborative governance - Processes and structures for decision making - Public consultation - Consensus driven dialogue - Epistemic/social justice - Principled engagement
<i>Legal</i>	<ul style="list-style-type: none"> - National security - Human rights and liberties - Minority rights (including Indigenous rights)/discrimination/equity - Environmental rights - Criminal law - Data protection, privacy and security - Intellectual property laws - Liability law - Market regulation - Intellectual property - Licensing, etc. - International law 	<ul style="list-style-type: none"> - Fairness and due process applied to <ul style="list-style-type: none"> ▪ Constitutions, laws (statutes or customary), regulations ▪ Customs and traditions/practices - Interpretation of rules and principles (ex. fit and justification) – case law

11. Conclusion

As expressed at the outset of this paper, the pursuit of the public good related to geospatial data requires a holistic, cross-cutting approach. As such, the Working Group elaborates upon a risk-based approach that can inform both rights and market-based approaches and help to identify appropriate policy/legal and governance instruments.

The task of attaining the public good is increasingly complex in the current environment, where the evolution of technology disrupts the boundaries of knowledge/science and the capacity of governments to exercise legal and institutional authority.

This paper encourages Member States to equip themselves with effective policy and legal responses that can evolve over time to respond to societal progress and technological developments. The aim of a robust policy and legal framework is to prevent risk and abuse,

ensure respect for civil rights and liberties, inclusion and diversity, environmental rights, and promote economic growth and general welfare.

It is important to underscore that the approaches proposed by this Working Group to the Committee will not apply in all countries and contexts. They represent a starting point with key conceptual issues only. Furthermore, different concepts related to the public good may need to be balanced against each other. For example, economic growth from the market approach may be considered against personal data rights in the rights approach. Balancing these trade-offs is another important consideration for Member States when approaching this topic.

The paper aims to provide initial guidance to Member States on the basis of a preliminary review of approaches, policy/legal instruments, and available case law to attain the public good, with a view to informing practical solutions and options that can be tailored to national circumstances. It is recommended that this paper be regarded as a starting point for analysis and further discussion, informed by national circumstances and frameworks.

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Annex A: Definitions

Artificial Intelligence (AI):

An umbrella term for the science of making machines smart. This includes technologies that can perform complex tasks traditionally considered to be out of reach of computer programs, such as visual perception, speech recognition, natural language processing, reasoning, learning from data and solving all manner of optimization problems. AI holds great promise for improving the management of complex infrastructure systems³⁵.

Big data

In information technology... a collection of data sets so large and complex that it becomes difficult to process using on-hand database management tools or traditional data processing applications³⁶.

Digital Twin

A digital twin is a digital representation of a physical object, process or service. It is, in essence, a computer program that uses real world data to create simulations that can predict how a product or process will perform. These programs can integrate the internet of things (Industry 4.0), artificial intelligence and software analytics to enhance the output³⁷.

Geospatial Data:

Data with implicit or explicit reference to a location relative to the Earth's surface. Related terms: Geodata, Geographic Data, Location-Based Data, Spatial Data, Geospatial Information, Geographic Information³⁸.

Machine Learning:

Processes that enable computational systems to understand data and gain knowledge from it without necessarily being explicitly programmed³⁹.

Open Data:

A philosophy and practice that makes data easily and freely available - without restrictions from copyright, patents or other mechanisms of control - by way of portals, metadata and search tools in order to enable reuse of the data in new and unforeseen ways. Open data relies on 1) a permissive licensing model that encourages reuse, 2) data discoverability, and 3) data

³⁵ United Nations department for General Assembly and Conference Management (2024) – *UN Terms*: <https://unterm.un.org/unterm2/en/view/23bd0f7a-7d17-41dd-b1a9-f03c6a82f83b>

³⁶ UN Terms: <https://unterm.un.org/unterm2/en/view/23bd0f7a-7d17-41dd-b1a9-f03c6a82f83b>

³⁷ UN Terms: <https://unterm.un.org/unterm2/en/view/23bd0f7a-7d17-41dd-b1a9-f03c6a82f83b>

³⁸ Arctic Spatial Data Infrastructure (Arctic SDI) Manual - *Glossary of Terms* (2017): <https://publications.gc.ca/site/eng/9.842579/publication.html?wbdisable=true>

³⁹ UN Terms: <https://unterm.un.org/unterm2/en/view/23bd0f7a-7d17-41dd-b1a9-f03c6a82f83b>

accessibility.⁴⁰

Spatial Data Infrastructure:

The relevant base collection of technologies, policies and institutional arrangements that facilitate the availability of and access to spatial data. It is provided for users and suppliers within all levels of government, the commercial sector, the non-profit sector, academia and citizens in general⁴¹.

⁴⁰ Arctic Spatial Data Infrastructure (Arctic SDI) Manual - Glossary of Terms (2017):
<https://publications.gc.ca/site/eng/9.842579/publication.html?wbdisable=true>

⁴¹ Arctic Spatial Data Infrastructure (Arctic SDI) Manual - Glossary of Terms (2017):
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