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International data governance: a need for a set of universal data principles

Zarządzanie danymi w skali międzynarodowej – o potrzebie ustanowienia uniwersalnych zasad

1. Introduction

In response to the collapse of the Soviet Union, the Economic Commission for Europe Ministerial Conference adopted the fundamental principles of official statistics (Decision c42) in 1992, to help statistical offices in former Eastern Bloc countries transition from the closed and secretive soviet regime to the more open, western liberal democratic model where official statistics aspired to be impartial and independent (MacFeely, 2020). The value and relevance of these principles beyond the former Soviet bloc was quickly understood by national statistical offices (NSOs) around the world. Consequently, they were adopted by the UN Statistical Commission in 1994 and by the UN General Assembly in 2014 to become the Fundamental Principles of Official Statistics (Resolution adopted by the General Assembly on 29 January 2014. Fundamental Principles of Official Statistics). Those principles are as relevant today as they were thirty years ago, and they remain the 'basic law' or 'constitution' of official statistics (UN, 2019).

In the thirty years since the Fundamental Principles of Official Statistics (FPOS) were adopted, the wider data world, the many data ecosystems – the Dataverse – has seen dramatic changes. Slipstreaming on the back of the digital and information communications revolutions, on the dataveillance economy, massive volumes of data are now being generated every day. Every transaction or activity leaves a 'digital footprint', or more pertinently, a data footprint. This torrent of by-product data has resulted in a data deluge. This is also the consequence of important behavioural and cultural changes, where people now record and post content online for free. Reflecting these seismic changes in the data world, in 2022 the UN Economic and Social Council awarded the UN Statistics Commission a broader mandate covering both statistics and data. This change has triggered some reflection on the differences between statistics and data, and whether the FPOS need to be updated to reflect these changes, or whether a broader, complementary set of principles is required – principles that would support global data governance and not just statistical governance?

The aim of this paper is to argue that a set of universal principles is required to guide today's broader data environment and make a proposal as to what those

principles might be. These new principles, inspired by the success of the FPOS which guide official statistics, build upon them to help bring coherence between statistics and the wider data world.

2. Background

The UN High-Level Committee on Programmes (HLCP), recognising the importance and need for international data governance, began discussing the issue in 2021. These deliberations culminated in 2023 with the approval of a discussion paper *International Data Governance – Pathways to Progress*. This paper was subsequently endorsed by the UN System Chief Executives Board for Coordination (UN CEB) in May 2023. It outlined a vision and steps towards the promotion and protection of data through a multistakeholder approach to international data governance that would responsibly unlock the full value of data for the global public good.

Deliberations at the HLCP had been prompted in no small measure by two seminal reports the *World Development Report 2021* (World Bank, 2021) and the *Digital Economy Report 202*1 (UN Conference on Trade and Development, 2021). Both reports were dedicated solely to data, both highlighted the need for some sort of international data governance mechanism, and both called for some sort of new social contract for data. Such an international governance mechanism would require a normative basis, i.e. values and principles, and clearly the FPOS were conceptually too narrow to serve this purpose.

To advance this work, the HLCP agreed to further explore the normative foundations of an international data governance framework, and how such a framework would be grounded in human rights and sustainable development. As part of that normative foundation, a draft set of common goals and principles was developed. These goals and principles build on the *International data governance: pathways to progress* paper (UN CEB, 2023), which had emphasised the need for a values and principles-based approach to data governance.

Recognising the rapid changes in the Dataverse and digital worlds, and under the broad chapeau of data stewardship, this paper sets out draft goals and principles, and also presents some of the considerations that guided their formulation. These include the expectation that the goals and principles will:

- be forward-thinking, adaptable, and foster consistency in data governance across international actors and countries;
- support, promote and align to globally recognised frameworks and objectives such as human rights and the Sustainable Development Goals (SDGs);
- align with and support shared goals, such as value, trust and equity.

The paper also seeks to complement work underway across the UN system on artificial intelligence (AI), including the development of a Global Digital Compact[1] and work under the HLCP Inter-Agency Working Group on AI[2]. As data are the base for AI development, data governance is an important component in the development and responsible use of AI and other data-dependent technologies. Notwithstanding the linkages between data and AI, this paper does not focus on AI or address the issue of AI governance.

Advancing the normative grounding of international data governance is timely, as techniques to realise the economic and social value from data are evolving at a rapid pace. Advances in AI, for example, pair opportunities for extraordinary growth and inclusive development with the potential for risk and disruption. The ability to harness these techniques for inclusive development critically depends on the availability of diverse and representative data to develop solutions fit to function and serve populations across the globe. Conversely, lack of data gives rise to a lack of solutions or solutions that work less-well for some, usually those already at risk of being left behind – emerging techniques for data processing have the potential to drastically widen existing inequalities. International data governance sets one of the necessary foundations to leverage emerging techniques designed to accelerate inclusive development and the realisation of human rights.

3. Data governance

Data governance approaches may vary depending on the laws and social constructs within a country. They may also vary depending on the role of stakeholders in an ever-evolving Dataverse. But in a world where data are shaping our lives, the decisions of individual actors in the Dataverse can no longer be made in isolation, as they have wider spillover and societal consequences. Advanced technological innovations are also playing a role in how data are being used to create insights that can benefit all of the society in a safe, ethical, and equitable manner. A principles-based approach can help create a common understanding, values and goals to support data governance approaches and frameworks. Any principles, while addressing current challenges, will also need to be forward-looking, so that they are relevant to changes across the Dataverse. Universal data principles collectively designed and agreed can help create a foundation for the safe use of all types of data and data transactions, for both humans and machines.

While rules, policies, regulatory and institutional mechanisms will need to adapt and be codified for the successful implementation of data governance approaches in

[1] See: https://www.un.org/techenvoy/global-digital-compact.

[2] See: https://unsceb.org/inter-agency-working-group-artificial-intelligence.

the 21st century (World Bank, 2021), common principles can help change behaviours, mindsets and practices towards data governance – a concept still not well understood by the different actors operating in the Dataverse. A recent survey and study conducted by Govlab (Marcucci et al., 2023) highlighted the lack of clarity, consistency, and adaptability of the existing principles and data governance approaches. Governments and other stakeholders are still in the early stages of implementation, which presents an opportunity to integrate a unified set of data governance principles that can further inform data strategies, implementation, and action plans in concrete terms, and avoid siloed and fragmented approaches.

The design of the principles also needed to consider calls for a new social contract for data, where the role of digital systems and data play a transformative role in achieving the intended development outcomes. A preliminary proposal for a universal set of data governance principles is presented here. These principles build on a review of existing principles (Marcucci et al., 2023), including, but not only, the FPOS, and are grounded on recent work of several stakeholders, most notably the World Bank, UNCTAD, *Lancet* Commission and Transform Health.

4. Normative foundations for an international data governance framework

4.1. Goals

The proposed normative structure and principles articulated below set out the foundations for data governance, under the chapeau of three overarching goals:

1. Value: increase data use and reuse to realise greater economic and social value;
2. Trust: foster trust through safeguards that protect people from the harm of data misuse;
3. Equity: create more equitable access to the benefits of data.

These goals, identified in the UN CEB (2023), apply across the full data lifecycle (from the collection, extraction, processing and analysis, storage to dissemination) and at international, national, and organisational levels.

Re 1. Maximise the value of data across all domains (sustainable and inclusive development, peace and security, human rights, and humanitarian assistance) through increased responsible data use and reuse by fostering a culture of data quality and appreciation, as well as promoting interoperability, mutuality, and solidarity. Harmonising definitions, classifications, and standards (for example, through thematic taxonomies) across stakeholders and data assets is essential to achieve interoperability and enable the effective (re)use of data.

Re 2. Enable trust by ensuring secure environments for data across the data lifecycle and by protecting individuals and groups from harms arising from data misuse. Establishing trust requires adopting a human rights-based approach to data governance, prioritising safeguarding and personal data protection and privacy, ensuring responsible data practices that involve enhancing transparency, accountability, data quality, integrity, and the security of data infrastructure.

Re 3. Ensure equitable distribution of benefits from increased access, use and reuse of data. In the case of personal data, engage in efforts to return the benefits of data use to the people the data is from and about. Promoting equity includes representation of all people and communities; preventing bias and discrimination in data collection, analysis, and use; and respecting individuals and communities' agency, rights, interests, and preferences throughout the data lifecycle. Strike a balance between individual and collective needs by empowering subjects to access and control their personal data and its uses where appropriate. The aspiration of equity involves responsible data stewardship, including the ethical reuse of data for the public good.

The echoes of the FPOS are evident in these goals. Trust captures the general aspirations of principles 2 (Professional standards and ethics), 3 (Accountability and transparency) and 4 (Prevention of misuse). Equally, the shadow of principle 1 (Relevance, impartiality and equal access) is evident in equity. Thus, although written for the wider Dataverse, the etymology is traceable. The consistency between these two sets of principles is important, as it highlights that, although one is a sub-set of the other, there is a universal quality to many of the FPOS.

4.2. Principles

The principles below seek to advance the overarching goals of value, trust, and equity. They provide the foundation for an international data governance framework grounded in globally accepted frameworks, such as human rights. These principles provide practical and ethical guidelines and serve as guidance for the design and development of a future global data governance framework, and for evaluating its effectiveness.

Maximising the value of data (goal 1) requires:

- enabling environment for data use and reuse: foster a culture and systems (i.e. processes, methods and tools) that value and promote appropriate access and responsible use and reuse of data (with the adoption of open data standards). This principle includes providing equal access to the benefits of data and its technologies, devices and tools. It also envisages educating and empowering individuals, communities, and organisations to produce or co-create, work with, derive benefits from, and understand data effectively;

- interoperability: promote data interoperability and portability by adopting standardised and open formats, protocols, taxonomies, and interfaces. This principle can contribute to improved consistency and integration across different systems, both to enable effective data collaboration and sharing and to simplify the compilation and harvesting of data from multiple sources;
- mutuality and solidarity: encourage data governance approaches that prioritise mutual benefit and solidarity so that data can be used for the greater good of society, considering both individual and collective needs, interests, and responsibilities.

Enabling trust (goal 2) requires:

- human rights-based approach to data: respect and uphold human rights, including children's rights, and fundamental freedoms as defined in human rights frameworks and treaties, across all elements of data governance, including ensuring the promotion and protection of data-specific rights. This principle emphasises the need for consent, data minimisation, proportionality, and fair and lawful processing of personal data;
- accountability: articulate clear roles and responsibilities over data assets and processes, including assigning responsibility to explain outcomes, and to ensure that individuals can access and control their data;
- transparency: promote transparency across the data lifecycle. This principle emphasises the need for organisations that collect, store, process and use data to offer open information on all aspects of data governance decision-making, including timely and accurate information on data management, use and approaches to sharing data;
- data quality: take the necessary measures to ensure data quality throughout the data lifecycle. This principle involves ensuring that accurate, reliable, timely data and metadata are available, and promoting data governance practices that maintain data integrity and prevent data corruption, manipulation, or distortion;
- data security and infrastructure protection: safeguard the infrastructures and systems for data over the entire lifecycle, from design and collection to use, transfer and sharing, dissemination, archiving and destruction, to ensure the security and integrity of data and data flows. This principle involves implementing appropriate organisational and technical safeguards, procedures and systems to prevent, mitigate, report and respond to security breaches of data (including unauthorised or inappropriate internal access or manipulation, accidental disclosure, damage, alteration, loss, and other security risks related to data management);

Promoting equity in data governance (goal 3) requires:

- digital self-determination: recognise the principle of digital self-determination, empowering individuals and communities to have control over their data and its uses. This principle involves enabling individuals and communities to make

informed decisions about their data, giving them the right to access, correct, delete, and agree to the purposes of data processing;
- fairness and non-discrimination: reduce and correct for bias and discrimination throughout the data lifecycle and ensure that there is a fair distribution of the data benefits. It also includes improved and responsible disaggregation to describe and understand specific characteristics, leaving no one behind;
- people-centred: ensure that people are at the centre of data governance decision-making;
- encourage data stewardship: encourage and resource responsible data stewardship (with appropriately skilled capacities) to properly manage, curate and protect data and to maximise data (re)use for the public good.

The astute reader will again identify clear linkages between the universal data principles outlined above with the Fundamental Principles, just as they will also notice important differences, particularly in scope. A few examples. Perhaps the most obvious is fundamental principle 4 – accountability and transparency appear as two distinct data principles, and are developed further, but the linkages are clear. But other concepts such as confidentiality (#6) are retained in spirit but developed to make explicit risks and outcomes associated with breaches in data privacy. Data stewardship develops and modernises the ideas of national coordination, also removing the boundaries or limitations of the national context. Once again, the etymology is traceable, yet conceptual expansion is also clear. Thus, like a child, the similarity with the parent is obvious, as are the differences.

5. Steps moving forward: towards the operationalisation of the principles

The proposed goals and principles of an international data governance framework, set out above, address the need to minimise fragmentation, update existing frameworks to incorporate shared values, and ensure relevance in rapidly changing data and digital ecosystems. By adopting goals focused on value, trust, and equity, the framework aims to foster effective data governance, promote fairness, as well as promote and protect individuals' and communities' rights. Once finalised, the goals and principles are intended to inform ongoing intergovernmental deliberations and processes, including the Summit of the Future and the development of the Global Digital Compact. But the recognition of these principles as universal, their consideration and uptake in intergovernmental discussions and, finally, their practical implementation, would require multiple actions and actors, including:

- participatory consultative processes: to create buy-in for these goals and principles, additional and wider consultation and stakeholder engagement is required to obtain valuable insights and grant social licence to a data governance framework;
- visible leadership: to drive positive change, visible support and leadership from the UN system will be required, including the vital importance of including data governance in discussions on digital transformation, AI, and AI governance;
- harmonisation of meanings: to operationalise the goals and principles effectively, it will be necessary to harmonise the standards and definitions that give meaning to the principles across countries, sectors, and organisations while recognising national and cultural autonomy. Universalising the principles above within an international data governance framework will promote coherence;
- provision of practical guidance: to implement the principles, specific and actionable guidance is needed for policymakers, data producers and users to align their practices with the principles, including guidance on data standards, taxonomies and governance.

6. Conclusions

The enduring power and relevance of the Fundamental Principles of Official Statistics has highlighted the importance of having a guiding constitution. They have served as a 'North Star' for official statisticians around the world. Learning from this example, it is clear that a new, guiding star, is required to direct the Dataverse beyond official statistics.

This paper has presented a preliminary proposal for a universal set of data governance principles that would build upon and complement the FPOS, in addition to offering similar guidance for the wider Dataverse and providing the normative foundations for an international data-governance framework – one that is grounded in human rights and sustainable development. Such a principles-based approach can help create common values and a common understanding, and facilitate modifying behaviours, mindsets and practices towards data governance. Universal data principles, collectively designed and agreed upon, could help create a foundation for the safe use of all types of data and data transactions, for both humans and machines.

The justification or inspiration for the FPOS was the dramatic changes in Eastern Europe. The justification for a set of Universal Data Principles is the changes, no less seismic, underway in the Dataverse.

Initiating a discussion on a new set of universal data principles, firmly rooted in the FPOS, presents an opportunity for the UN Statistical Commission to extend its current focus from official statistical systems to a more comprehensive agenda,

encompassing coordination and governance of official data systems. This new vision could envisage the setting of norms and standards for the wider Dataverse – not just the statistical world.

The year 2022 marked a significant milestone, as the UN passed a resolution acknowledging the pivotal role of the UN Statistical Commission in the data agenda (UN, 2022). That new mandate has prompted many questions about the future trajectory and organisational structure of the Commission. Working towards a common set of universal data principles can empower the Commission to assume a meaningful role within the constellation of global data-governance actors. As happened with the FPOS, the new data principles can serve as a catalyst, bolstering the capacity of national statistical offices to act as primary stewards for their respective national data systems.

Some thirty years ago, the FPOS triggered a debate on the purpose and objectives of official statistics. They crystalised the key elements to be protected, and in doing so became the unofficial constitution for official statisticians around the world. Those principles are as relevant today as they were when they were first adopted. But the world has changed. Now statistics and data are produced by multiple actors, far beyond the walls of NSOs. A new, broader set of principles is needed to address this new complex, fragmented reality. These principles build upon the FPOS, but have developed and broadened them to suit this new reality. The etymology is clear, but so too is the evolution.

The objective of presenting these preliminary goals and principles is to begin a debate. A debate of critical importance on the rules, policies, regulatory or institutional mechanisms we need to better manage our continuously evolving Dataverse in the 21st century.

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