

To Measure, or Not to Measure, or to Measure Differently

Yoichi Mine

Executive Director, JICA Ogata Sadako Research Institute for Peace and Development

While the English verb “measure” corresponds to the Japanese verb *hakaru*, the latter has a considerably broader semantic range than its English counterpart. The primary meaning of *hakaru* is to infer the current state of affairs by reference to an intended or desired state. The phonetic form of *hakaru* can be written with a variety of Chinese characters that signify its primary and derivative meanings, such as 測 (measure), 計 (calculate), 量 (weigh), 図 (intend), 諮 (consult), and 謀 (conspire). Depending on context, the word *hakaru* carries each of these connotations.

Human beings act with intention, picking up objects and moving from one place to another. We measure lengths and shapes, and we measure time and space; we do so not merely out of necessity but with delight and wonder (Lockhart 2012). The objects of measurement are not confined to objective things alone. The state of human well-being is also appraised subjectively: pleasure and pain, joy and sorrow, and a sense of achievement and failure.

In fact, the act of measurement is foundational to human cognition (Vincent 2022). Since measuring things is intrinsic to what it means to be human, one might argue that *Homo sapiens* (the thinking human) is equally *Homo metiens* (the measuring human). While all living organisms engage in some form of measurement as part of their vital activities, it is uniquely human to devise elaborate instruments for the purpose of measurement.

The Pros and Cons of Measurement

Development agencies such as JICA are expected to design and launch development projects, assess their challenges, monitor progress, evaluate outcomes, disclose results to the public, and thereby hold themselves accountable for their actions. As a public institution, we are obligated to demonstrate with evidence that taxpayer funds are being allocated appropriately and efficiently.

Against this backdrop, the concept of evidence-based policy making (EBPM), originally derived from clinical medicine, has gained considerable influence. Our research institute has published policy papers employing methodologies such as randomized controlled trials (RCTs) and difference-in-differences (DiD). The mainstreaming of evidence-based policy research constitutes part of the broader context in which this human security report featuring measurement was developed.

It would be a mistake, however, to characterize JICA as an organization populated by cold-blooded bureaucrats obsessed with measurement. In conversations with colleagues across JICA, the author has found that while staff members strongly value accountability toward both taxpayers and beneficiaries, many of them also consistently express concern about the adverse effects of the “tyranny of metrics” (Muller 2018).

Indeed, poorly designed measurement practices can be deeply counterproductive. Excessive performance evaluation may erode staff morale, and the fear of negative evaluations among practitioners may entrench a risk-averse culture.

The views expressed in this report are those of the author(s) and do not necessarily represent the official positions of either JICA or the JICA Ogata Research Institute.

When organizational effort becomes disproportionately concentrated on indicators that are readily quantifiable, activities risk drifting away from their original objectives. In such cases, measurement, which ought to remain a means to an end, stealthily becomes an end in itself. Ultimately, the outcomes pertaining to areas such as capacity development, trust-building, and long-term impact may not lend themselves to short-term quantitative assessment.

What to Measure

What, then, does this report attempt to measure? The answer is reflected in the main title: “Measuring Human Security.” We seek to measure the conditions under which human security is—or is not—being achieved. In other words, given the concept of human security, we ask where the problems that demand our attention lie, and how serious they are.

The definition of human security is not addressed here, as it has been discussed in detail in previous reports and their overview editions. Nevertheless, when measuring human security, we must revisit and clarify what sort of state we ultimately aim to achieve in the quest for human security. According to Joseph Stiglitz’s special contribution, “Human Potential, Security and Freedom, and the Good Society” (pp. 6–10), human security is realized when people—and children in particular—are ensured the freedom to live up to their potential as well as freedom from fear.

It has been commonly assumed that freedom from fear corresponds to “peace,” while freedom from want corresponds to “development.” Stiglitz, however, explicitly identifies as a human security concern the fear and anxiety that people may lose their income, employment, health, and other dimensions of well-being in the future, in addition to threats to their physical safety and freedom of expression. What is essential is making human development *secure*. This is a powerful reaffirmation of the original conception of human security as articulated by the United Nations Development Programme (UNDP).

Stiglitz draws attention to the relationship between the objectively measured adverse conditions and the subjective

state of fear and anxiety that things *may* be going wrong. He also underscores the importance of measuring social mobility across different time periods. In societies where inequality and poverty are perpetuated from generation to generation, people are unable to live up to their human potential and, consequently, the economic vitality of society is undermined (see also Stiglitz 2024).

The practice of measuring human security is nothing other than an attempt to better understand and render visible the problems that cause people to feel insecure and anxious and to clarify who is being left behind, where, and in what ways. Real human beings are not abstract entities; they are unique individuals defined by a diverse array of characteristics, including gender, generation, available resources, place of residence, culture, language, and belief. A careful, disaggregated understanding of the scope of life opportunities open to real human individuals, as well as the constraints upon them, is required. Our analysis should go beyond averages.

How to Measure

Following the release of the report of the International Commission on the Measurement of Economic Performance and Social Progress, edited by Joseph Stiglitz, Amartya Sen, and Jean-Paul Fitoussi (Stiglitz, Sen, and Fitoussi 2010), discussions on the principles of measurement beyond GDP have evolved and been refined in global forums at the Organisation for Economic Co-operation and Development (OECD) and the United Nations.¹

Akihiko Tanaka, President of JICA, and Sakiko Fukuda-Parr, who spent a decade working for the Human Development Report Office at UNDP, engage in a dynamic conversation that sets the tone for the discussions in our report, titled “Measuring Human Security” (pp. 12–26). This dialogue is a useful compass for organizing our thinking on a variety of topics, such as the merits and drawbacks of single-number indices versus dashboard indicators, the significance of understanding causality through measurement, and recent methodological

¹ The UN Expert Group on Beyond GDP published its final report in May 2026. <https://www.un.org/en/beyondGDP>

innovations in measurement. It is highly valuable as an introduction to the subsequent parts of the report.

The conversation is followed by a series of theoretical articles that explore the frontiers of the measurement of human security. Measuring human capabilities is an attempt to capture the bundle of possibilities available to each individual person. Reiko Gotoh's "Measuring the Opportunity Set as Freedom: Meaning and Method" (pp. 27–40) mathematically demonstrates how the agenda of individual freedom connects with human solidarity. The capability evaluation rules based on the axiomatic approach that Gotoh has developed are refined through case studies of municipal support for disabled citizens. Her theory also holds rich potential for application in developing countries.

Tadashi Hirai's article, "Human Development: Toward Measuring the True Wealth of Well-Being" (pp. 41–55), surveys past efforts in measuring development and proposes an alternative approach to evaluating human development, focusing on trust and self-assessment and explicitly incorporating the subjective dimension of people's well-being. By integrating the capability approaches of Amartya Sen and Martha Nussbaum, Hirai's proposal seeks to enrich the assessment of human development through two perspectives, aggregation and gaps, which resonate with the approach advanced in Gotoh's article.

Artificial Intelligence (AI) as Instrument

Henri Bergson characterized the human being as *Homo faber* (the making human) (Bergson 1907). In this conception, what distinguishes human beings from other species lies not merely in their capacity to produce useful things, but in their ability to create sophisticated tools with which to make things. Various indicators are themselves a kind of tool designed for the purpose of measurement.

We are now confronted with the challenge of using artificial intelligence (AI) effectively, rather than being used by it. AI emerged as an attempt to replicate and extend the human brain in cyberspace. In essence, it is a form of external device connected to the human mind. Therefore, the grandeur and the ugliness of humanity, its possibilities and its dangers

posed to other systems, are faithfully reflected and exaggerated in the digital world.

In "Digital Observation Technologies for Human Security: Using Open Data and Artificial Intelligence" (pp. 56–66), Takuto Sakamoto deftly surveys the existing literature on the quantitative measurement of human security, complementing Hirai's article on the measurement of human development. Sakamoto then demonstrates that advances in data science and AI have given rise to an unprecedented capacity to quantify the lived realities of human life with greater precision and granularity than was previously possible. With respect to human security, which takes people's existential lives as its point of departure, data disaggregated only at the level of the nation-state or the calendar year cannot provide adequate information. However, we are now approaching a point at which the power of computation may enable us to transcend this constraint, although Sakamoto cautions against an uncritical celebration of digital methods.

Jerven (2013) observed that much of the statistical information on developing countries that was available to researchers was, if not the product of deliberate falsification, fabricated to some extent. Yet circumstances have changed dramatically in a decade. Nowadays, AI-based techniques are increasingly used to fill gaps in missing data. Although AI-generated estimates may themselves constitute a form of "fabrication," they are often regarded as reasonable approximations.

While serving as President of JICA, Sadako Ogata suggested that we should develop a human security index as an early warning instrument for preventing humanitarian crises, designed to be of practical utility to field practitioners. Such an index, which may include an indicator of a sudden increase in numbers of political prisoners, for example, was intended to signal the possibility of future mass atrocities or large-scale refugee flows. Although at the time, twenty years ago, we lacked the technological capacity to systematically develop a tool for that purpose, it may not be long before such an index capable of sounding the alarm over deteriorating human rights situations comes into being.

Attempts at Visualization

Before children demonstrate the capacity for logical storytelling by constructing temporally ordered causal narratives, they attempt two-dimensional drawing, the act of visually representing one's direct relationship with salient features in the surrounding world. Drawing maps can be a primordial practice that lies at the very core of how humans make sense of reality. Time comes after space.

In the recesses of the JICA Library, there was once a room housing a vast collection of paper maps gathered by JICA experts and staff from partner countries around the world. While the time of collecting such analog information is over, the practice of sitting around a map—paper or digital—to deliberate on future strategies attracts attention not only from military analysts but also from practitioners and citizens engaged in participatory development.

From an aerial perspective, modern cities and farms often show geometric order. In such configurations, Scott (1998) identifies the logic of social engineering in which authorities capture citizens and peasants as objects of top-down policy operation. In practice, modern spatial design in developing countries is seldom implemented as intended. By leveraging geographic information systems (GIS), however, we can often visualize the emergence of fractal patterns across scales from macro to micro in urban and rural spaces in developing as well as developed countries.

Hidekazu Watanabe's article, "Human Security Forged by Digital Archives: From Inheriting Memories to Real-time Crisis Response" (pp. 67–75), employs digital technology not merely to place human memory in stock but to transform it into a dynamic flow that connects the past to the future. From the atomic bombing of Hiroshima and the Battle of Okinawa, to the Great East Japan Earthquake, the war in Ukraine, the Noto Peninsula Earthquake, and the destruction in Gaza, individual recollections of tragedies and the regeneration of communities are visualized in 3D perspectives in maps with their resolution freely adjustable.

Akiyuki Kawasaki's article, "Measuring the Impact of Water-Related Disasters on Poverty and Inequality, and

Evaluating Climate Adaptation Policies to Strengthen Societal Resilience" (pp. 76–83), focuses on resilience, a keyword for dynamizing human security, and constructs an evidence-based account of how natural disasters can accelerate inequality among local people. Based on household surveys at the village level, the essay sheds light on the social reproduction of inequality, a theme also emphasized by Stiglitz in his special contribution, in the context of disaster risk management.

Jin Sato's article, "Information Ownership" (pp. 84–87), vividly portrays the possibilities of collaborative practices of using digital maps to measure community challenges together with local people. In his case study, long before aid agencies arrived, villagers had already been practicing measurement according to their own methods as the need arose. When communities are empowered to analyze their own data independently, the act of measurement becomes both more effective and more democratic. According to Sato, given that local people are confronted with urgent threats such as climate change, behavioral adaptation must also proceed with comparable urgency.

In addition to the contributions described above, this report contains a dozen research essays and columns. Though relatively brief, these contributions from researchers and practitioners around JICA are very earnest and insightful—all are worth reading closely.

The Joy of Measurement

Through centuries of trial and error, human civilization has developed standardized units of measurement such as the meter (length), the second (time), the kilogram (weight), the kelvin (temperature), the ampere (electric current), the mole (amount of substance), and the candela (luminous intensity) (Martin 2023). Dependent as we were on the path of the Industrial Revolution, these convenient scales will, in all likelihood, continue to serve as instruments for advancing human well-being.

Had the revolution of reason emerged somewhere other than in the West, however, these units might have taken on a somewhat different form, while perhaps broadly similar.

According to Chie Nakane, there are two methods of making a traditional Japanese kimono. The first is to convert metrics based on the *shakkanhō* method (the traditional Sino-Japanese measuring system) into Western metric units and then cut and finish the fabric accordingly (1 *shaku* $\approx$ 0.3030303 m); the second is to cut and finish the fabric directly in *shakkanhō*, then explain it in Western metrics if subsequently required. The former method, she notes, produces something no more than “roughly similar” to the intended garment (Nakane 1967). It is precisely in this context of incommensurability that development studies have long emphasized the significance of tacit knowledge and translative adaptation (Ohno et al. 2024).

Humanity has historically measured the surrounding world using the human body as the primary referent. If, as Protagoras noted, the human being is the measure of all things, then when one person judges and measures others, that person is in turn judged and measured by the same standard. Should the human being who constructed particular metrics disappear, the very practice of measurement would also disappear. In this sense, purely objective measurement may be an impossibility.

Human beings continue measuring, not merely because it is necessary, but because it is genuinely delightful. *Homo metiens* is also *Homo ludens* (the playing human) (Huizinga 1938). The editorial process behind this report involved an extensive exchange of ideas among contributors and editors. What one wishes to measure, which tools one prefers to employ, and the degree of resistance one feels toward being measured and measuring others—all these vary from person to person. Discovering each author’s commitments in their distinctive approach to measurement proved to be an experience replete with intellectual reward.

During this period, under the leadership of President Akihiko Tanaka, JICA has advanced two major research initiatives pertaining to the post-SDG agenda: a statistical research proposing “core indicators” of the SDGs (Sato, “The Process and Challenges of Developing SDG Indicators and Implications for Future Global Indicator Frameworks,” pp. 88–90), and the development of an indicator “dashboard” for measuring human security challenges across countries worldwide (Ishizuka, “Constructing Human Security Indicators:

Objectives, Methods, and Future Prospects,” pp. 122–125).

In consolidating these indicator proposals, we have drawn extensively on the diverse scholarly contributions assembled in this report. The ongoing work of measuring human security will be made publicly available and regularly updated on the JICA website. We warmly invite readers to examine these companion research outputs alongside the present report.

Humanity cannot survive apart from the small vessel that is the Earth. It is the sincere hope of the JICA Ogata Sadako Research Institute for Peace and Development to contribute, however modestly, to the collective endeavor of creating shared tools for realizing the well-being of all humanity, leaving no one behind. Beyond the work of “measuring,” we aspire in due course to take up the work of “connecting.”

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