

STRENGTHENING GENDER MEASURES AND DATA IN THE COVID-19 ERA: AN URGENT NEED FOR CHANGE



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A PMA Resident Enumerator administering the women's questionnaire to a resident of the Ngilima neighborhood of Kinshasa, DRC, during data collection.

Photo credit: Gloria Mbuya, Communications Officer for the Kinshasa School of Public Health, University of Kinshasa.

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Acronyms & Key Terms

Acronyms

CSOs: Civil Society Organizations

CRVS: Civil registration and vital statistics

GBV: Gender-based violence

NSO: National Statistical Office

NSS: National Statistical System

UN: United Nations

Key Terms

Data infrastructures: Technologies and frameworks for data collection and processing, as well as related processes such as institutional set-up, capacity development, data planning, and policy.

Digital financial inclusion: Digital efforts to offer a range of sustainable financial services that reach populations traditionally excluded and underserved financially.

Gender data: Data which includes, but is not limited to, a primary focus on sex disaggregation, reflects all peoples' diverse, gendered, and holistic experiences, explicates drivers of different opportunities and outcomes between men and women, and accounts for data biases derived from social and cultural norms.

Gender-intentional: An approach in which an understanding of gender roles, inequalities, gaps, and barriers is intentionally placed at the forefront of all decisions.

Gender measures: Indicators able to measure gender data.

Gender responsive: Results that exhibit an understanding of gender roles and inequalities and support equal and fair participation and distribution of benefits.

Gender statistics: Statistics that measure aspects of the lives of women and men, and of girls and boys.

Intersectionality: The interrelation of social categories (e.g., gender, race) that result in mutual systems of discrimination or disadvantage.

Mobile money: Provision of financial services through a mobile device.

Non-traditional data sources: Data collected outside of typical health and development data generation sources such as administrative, census, and survey data. Data may come from diverse sources including the private sector, biometric collection mechanisms, social media, official sensor networks, citizen-generated data, spatial data infrastructure, and geospatial observation, and can be quite large (e.g., big data).

Sex disaggregation: Data collected, analyzed, and reported separately for females and males.

Traditional data sources: Data collected through government, NSS, and administrative systems, as well as facility or enterprise data, and public or private sector surveys and registers. Traditional data sources generally rely on established data collection methods, and data collection and aggregation often take more time than non-traditional data sources.

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Executive summary

COVID-19 may be gender blind, but it is not gender neutral. Emerging evidence shows tremendous gender disparities in the health and socioeconomic consequences of the pandemic, with a disproportionately negative impact on women's livelihoods, unpaid care work burden, mental health, and subjection to gender-based violence. However, a lack of gender data impedes our ability to measure, preempt, and respond. Understanding the extent of these impacts is the first step toward reversing course. The pandemic has exposed and exacerbated existing gender data gaps—particularly around health, education, and economic opportunity—that undermine our ability to intentionally craft gender-responsive policies and programs. Filling these data gaps poses a significant challenge as many data collection efforts have been disrupted due to COVID-19 control measures, impacting everything from data production to subsequent data management, analysis, use, and communication.

There is no time to waste. Without addressing these gender data gaps and collection obstacles, we cannot fully understand or mitigate the gendered impacts of the pandemic. The collection and use of timely, quality gender data by all data sources, official or non-official, is critical to recognizing and addressing gender inequalities. More and better data is needed to identify the most urgent needs of populations that have been most harmed by the pandemic and to formulate gender-responsive policies to effectively spur an equitable recovery. By committing to increased gender data collection and use now, we can build a foundation that is better prepared for future shocks.

This brief calls on National Statistical Systems and survey managers, funders, multilateral agencies, researchers, and policymakers to act in five key areas:

1. Disaggregate all COVID-19 data at a minimum by sex and, ideally, by other key sociodemographic characteristics.

This must be done consistently to effectively analyze and address the differential health

and socioeconomic impacts of the pandemic. Only one in three countries reports sex-disaggregated COVID-19 case and death data, and this trend is worsening over time; gaps in testing and hospitalization data are even greater.

Key actions:

- Design, develop, and support coordinated statistical infrastructures, capacities, and practices to consistently sex-disaggregate COVID-19 related data, and
- Normalize and enable regular reporting of COVID-19 epidemiologic data by sex and other key sociodemographic characteristics such as age, race, and occupation.

2. Beyond disaggregation:

Collect standardized, comparable gender data in areas where women's and girls' lives are disproportionately affected by COVID-19.

Our understanding of the pandemic's disproportionate gendered impacts on women and girls was hindered by a lack of gender-intentional measures in early waves of data collection, as well as a delay in pivoting to alternative data collection modes when traditional, in-person modes of data collection stopped. These early gaps are gradually being filled. As data collection operations resume, more gender measures are being included in data collection processes and alternative data collection methodologies are being deployed. Yet available data indicates that the COVID-19 pandemic is exacerbating existing inequalities through gender unintentional or more gender >

Executive Summary (continued)

➤ restrictive and discriminatory responses toward women and girls. Collecting policy data that tracks government responses, and the ways in which they address women, will be crucial.

Key actions:

- Support the coordinated inclusion and prioritization of standardized, comparable gender measures in all surveys, including in surveys to assess COVID-19 impacts;
- Prioritize the development, validation, dissemination, and coordinated use of standardized and comparable COVID-19 related gender measures on constructs that are not currently being assessed; and,
- Create survey sampling frames that are representative of women and girls at all privilege, marginalization, and vulnerability levels.

3. Increase the use of non-traditional gender data to fill critical gender data gaps.

Data from non-traditional sources—such as social media activity, news media, mobile device-generated geospatial and other data, internet use, and private sector data—may provide complementary and rapid insights alongside, or in the absence of, traditional data sources. Non-traditional gender data may be harnessed and assembled in shorter time horizons than more traditional modes such as surveys and administrative records and may be produced even when traditional data collection is unfeasible. Gender data has been absent in many non-traditional analyses to date, and there is an opportunity to thoughtfully leverage innovations and non-traditional approaches to data collection and analysis. Ensuring safeguards and ethical governance of the data, of course, will be critical.

Key actions:

- Develop a framework for responsible and ethical governance of gender data, and
- Expand efforts to link traditional and non-traditional gender data and modalities.

4. Rapidly expand COVID-19 related gender data availability, access, and use.

Pandemic policy responses to date have been largely gender unintentional. For example, a mere eight percent of social protection and labor market measures have directly addressed unpaid care—the majority of which falls on women. Open-access COVID-19 related data is largely limited to surveys; there is a gap in open, regular dissemination of administrative and non-traditional gender data. For policy measures to be effective, they must reflect what the data shows, yet global progress is hindered by data silos and suboptimal, inconsistent data sharing. When and where reliable and timely gender data exists, it should be shared and used. Such a bridge between data production and use can improve both data responsiveness and build public trust.

Key actions:

- Create bidirectional engagement across gender data production and use;
- Expand access to and use of existing gender data that is not being used to its full potential; and,
- Mainstream gender data production and use in national data systems.

5. Resource and support coordinated data infrastructures to produce gender data during and beyond the COVID-19 pandemic.

The pandemic has placed a significant strain on overstressed and underfunded data systems, limiting gender data production and diverting resources to directly support COVID-19 responses. Even in a time of fiscal constraint, these budget cuts are shortsighted. Investing in the expertise and resources to gain deeper data on women's realities is a smart long-term investment. Modernizing data collection and strengthening data infrastructures will serve us now and also prepare our systems to better respond to future shocks. ➤

Executive Summary (continued)

› Key actions:

- Increase funding to support statistical systems' capacities to produce and use gender data and provide financial support to modernize administrative data collection and strengthen national survey systems, and
- Support and adequately resource gender data production and use across the entire National Statistical System (NSS) in order to fulfill national, regional, and international commitments to gender data and create responsive and robust data infrastructures.

This moment presents both a choice and an opportunity. Policy responses are not prioritizing women's needs and rights—or taking into account the gendered health and socioeconomic impacts of the pandemic. There is an urgent need to invest in a gender-equitable recovery by prioritizing and funding the collection and use of gender data that gives a true picture of the challenges women face. Now is the time to invest in the foundation of a robust data system that integrates gender—a system that will empower smart, targeted policies that achieve real impact. ●

Introduction

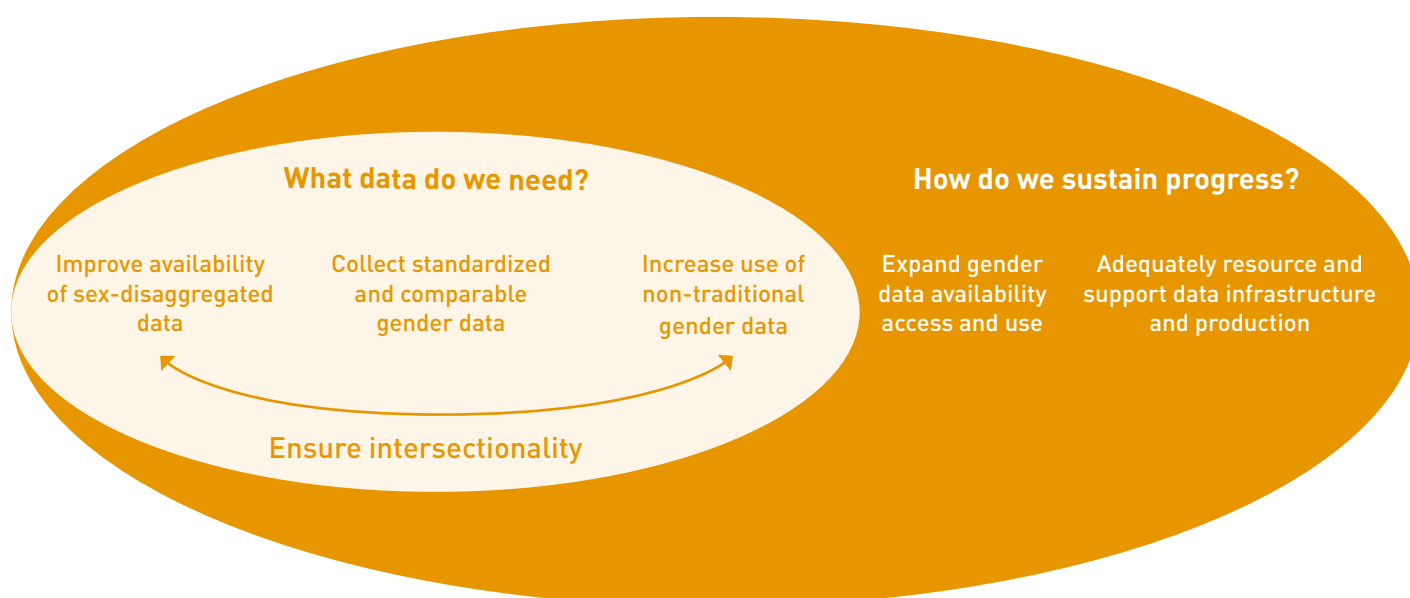
The COVID-19 pandemic has adversely impacted the lives of millions of people globally, with more than 2.3 million deaths across the world by the beginning of February 2021.¹ While few have been left unaffected, there is mounting, albeit incomplete, evidence that the health and socioeconomic impacts of pandemic related lockdowns, social isolation, restrictions, shortages, and behavior change differentially impact women and men.²⁻⁹ Understanding which populations are most harmed by this pandemic, and how those effects are manifesting in different contexts, is integral to creating an evidence based, action oriented, targeted, and gender sensitive policy response.

High quality gender data¹⁰ is the bedrock of effective policymaking to ensure equal rights and opportunities for all, and has become increasingly critical in the context of COVID-19.² There is both need and demand for gender statistics that can help us better understand COVID-19's impacts on health and economic outcomes, as well as ways in which the pandemic is exacerbating underlying social and gender inequalities.¹¹ These pandemic related impacts are layered onto existing gender data gaps, including inadequate internationally comparable data on health, education, and economic opportunities.¹² Without filling these

gaps, it is unlikely that the full health and socioeconomic impacts of the pandemic will be fully understood or properly addressed or that we will be adequately prepared for future shocks.

Unfortunately, COVID-19 related lockdowns and other restrictions have disrupted data collection efforts, impeding data production as well as subsequent data management, analysis, and communication at a time when the need is great.¹³⁻²⁰ Though gender data generation should be a standard component of statistical systems and data generation, analysis, and dissemination processes, there is a perceived tension in its prioritization in some contexts. Rather than being mainstreamed, gender data is often viewed as an "add on" or special interest topic in data production systems which are struggling to regularly produce what are considered more core epidemiologic and economic statistics on COVID-19. This is despite growing recognition from United Nations (UN) bodies, National Statistical Offices (NSOs), and other global and local actors that gender statistics are foundational, rather than additive, and should be mainstreamed at every stage from planning and conceptualization to data collection, analysis, dissemination, and use.^{10,11,21-23} ➤

Figure 1: Framework for strengthening gender measures and data during and beyond the COVID-19 pandemic.



Introduction (continued)

➤ Moreover, gender data is produced as part of broader data ecosystems. Therefore, strengthening gender data production, quality, availability, and use also strengthens data systems overall, supporting rapid and efficient gender-intentional responses to future shocks.

The need for improved gender data is urgent, and responsibility for its generation spans different data systems and collection mechanisms, organizations, and mandates (Figure 1). However, in order to effectively inform policy and action, the global community of data producers, analysts, and users first needs adequate resources to provide timely, robust, and reliable evidence on the gender-differentiated

impacts of the COVID-19 pandemic. Responding with speed, evidence, and appropriate resources offers an opportunity to create a robust COVID-19 response that considers the differential needs and realities of women and men as well as girls and boys. It will also allow for the collection of more nuanced information for intersectional analyses and programming and create stronger, more resilient data infrastructures moving forward. Failing to meet this challenge could result in a gender-blind recovery that sets back rather than accelerates work to improve the status, rights, and opportunities for all. To this end, we advocate for action across the following five key areas. ●

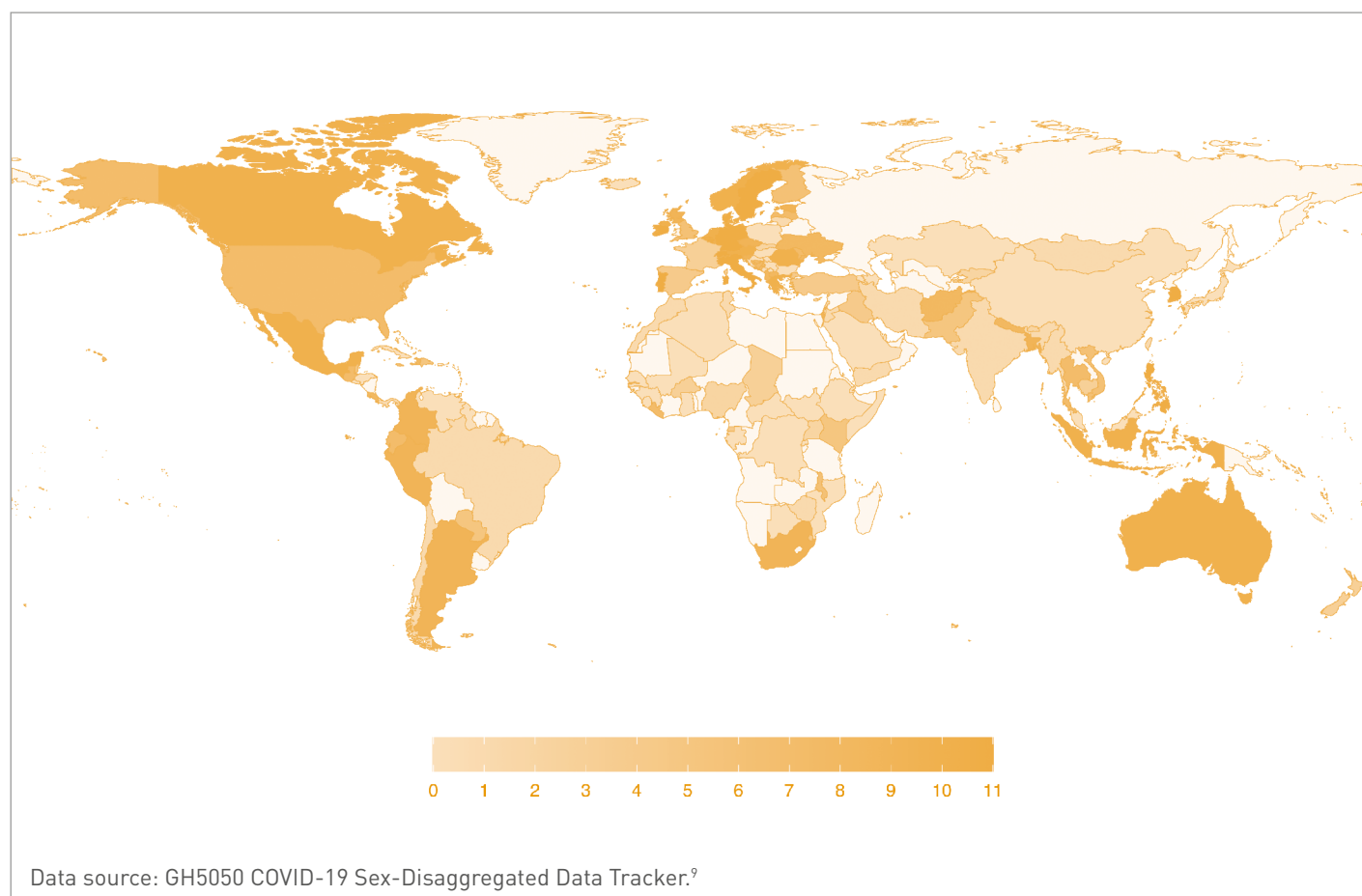
Key areas for action

1. Consistently disaggregate COVID-19 related data by sex and other key characteristics relevant in the national context to analyze the health and socioeconomic impacts of the pandemic.

Sex-disaggregated data is the minimum level of information required to gain insights into gender inequalities and the gender-differentiated impacts of the pandemic. Ongoing data collection by Global Health 50/50 (GH5050) indicates that the most basic epidemiologic information about COVID-19—cases and deaths—are not comprehensively sex-disaggregated, despite World Health Organization (WHO) guidance to collect, report, and analyze data, at a minimum, on confirmed COVID-19 cases and deaths disaggregated by sex and age (Figure 2).^{9,24,25}

The availability of sex-disaggregated data appears to be worsening, rather than improving.^{25,26} Recent estimates indicate that only 73 of 187 countries (39%)—mostly high- and middle-income countries with robust civil registration and vital statistics (CRVS) and surveillance systems—reported sex-disaggregated COVID-19 case and mortality data in the first five weeks of 2021.⁹ Only eight of the 10 countries with the highest burden of COVID-19 cases are sex-disaggregating case and mortality data; sex-disaggregated coverage of other COVID-19 epidemiologic data on testing and hospitalization is lower still.^{25,26} Given that COVID-19 related mortality rates appear to differ between men and women, and that those differences vary across lifespan, consistent ➤

Figure 2: Number of months from March 2020–January 2021 that countries have reported sex-disaggregated data for both COVID-19 cases and deaths. Grey indicates no data.



Key areas for action (continued)

KEY HIGHLIGHTS

- Sex-discriminated COVID-19 data on cases and deaths are regularly reported by only one in three countries.
- Availability of sex-disaggregated epidemiologic COVID-19 data has decreased over time.
- Sex-disaggregated COVID-19 data are rarely disaggregated by additional characteristics that they are necessary for intersectional analyses on health and socioeconomic impacts.

➤ and comprehensive disaggregation by both sex and age is urgently needed.²⁷ Only 61 of 187 countries (33%) have ever reported accessible sex-disaggregated data on COVID-19 deaths broken out across age groups, despite the known association between older age groups and COVID-19 hospitalizations and deaths.^{9,25} Moreover, no country is reporting national COVID-19 disease surveillance data for transgender and non-binary populations.²⁵

In addition to sex and age, the ability to break down sex-disaggregated, COVID-19 data by other basic sociodemographic characteristics (e.g., race/ethnicity, gender identity, region of residence, disability, employment status, and occupation) is essential to inform intersectional analyses and gender-intentional policy responses, including for COVID-19 vaccine roll out. Unfortunately, there are often challenges in administrative data systems (e.g., CRVS and disease surveillance systems) in terms of variable collection, sample size, access, and/or use that impair sex-disaggregated and intersectional reporting within most existing national data infrastructures.^{28,29} Disaggregation of COVID-19 epidemiologic data, including testing, cases, hospitalizations, deaths, and vaccination, is urgent. That disaggregation must extend beyond disease surveillance into health and socio-

economic domains where women and men as well as girls and boys may be differentially affected by this pandemic. Achieving this level of sex disaggregation, and enabling additional intersectional analyses, requires advanced, intentional planning to ensure adequate sample sizes across affected populations.

ACTION REQUIRED

- *Design, develop, and support coordinated statistical infrastructures, capacities, and practices to consistently sex-disaggregate COVID-19 related data.* Governments, UN agencies, multilateral and bilateral organizations, donors, NGOs, research groups, and other data ecosystem actors should recognize the need for sufficiently resourced, coordinated, and ongoing production, reporting, and dissemination of sex-disaggregated data. Core administrative data systems such as CRVS and disease surveillance systems must be strengthened to have consistent, ongoing sex disaggregation built into regular data processes in line with existing guidelines.³⁰ This capacity will not only strengthen the immediate COVID-19 pandemic response, but will build more robust and gender-intentional data systems for future use.
- *Normalize and enable regular reporting of COVID-19 epidemiologic data by sex and other key sociodemographic characteristics.* The UN General Assembly recently passed a resolution calling on member states to ensure availability of disease surveillance data disaggregated by sex, age, disability, and other characteristics relevant in national contexts in the analysis of the health and socioeconomic impacts of the COVID-19 pandemic.²³ Open and regular analysis and sharing of COVID-19 disease surveillance data that is disaggregated by sex as well as other basic characteristics needed for intersectional analyses should be a priority for those governments, organizations, and researchers able to produce this information. ➤

Key areas for action (continued)

➤ 2. Beyond disaggregation:

Collect standardized, comparable gender data in areas where women's and girls' lives may be disproportionately affected by COVID-19.

Available data indicates that the COVID-19 pandemic is exacerbating existing inequalities through gender-unintentional or more gender restrictive and discriminatory responses toward women and girls. There is emerging awareness, based on a mix of anecdotal evidence, smaller case studies, and research from previous crises, of the way that pandemic-linked socioeconomic stressors are affecting paid, unpaid, and domestic work,^{3,8,31,32} intimate partner violence, and mental health concerns differently for women than men.^{3,33-35} The pandemic and resultant shutdowns have also reduced access to services, benefits, and programs that particularly affect women, including essential reproductive, maternal, and child health services.³⁴⁻³⁷ Women's overrepresentation in sectors hit particularly hard by COVID-19, such as tourism and retail, as well as the informal work sector, creates greater impacts on their livelihoods and requires gender-intentional social protection responses.^{38,39} Policy data tracking government responses, and the ways in which they address women, are also crucial.⁴⁰

Reviews of existing information on the gendered effects of the COVID-19 pandemic highlight important gaps in our understanding of how this pandemic is differentially affecting women, girls, men, and boys. Knowledge gaps include pandemic-related effects on broader health care access and utilization, women's political participation and leadership related to COVID-19 management, social support and women's collectives, and access to and use of digital technologies and financial services.^{3,41,42} There is also a need for timely, comparable data collection on the ways that the health and socioeconomic effects of COVID-19 may be exacerbating gender-based bias, discrimination, mistreatment, abuse, violence, norms, and the agency of women and girls to overcome these

KEY HIGHLIGHTS

- Data is lacking on the ways that the health and socioeconomic effects of COVID-19 may be exacerbating gender-based bias, discrimination, mistreatment, abuse, violence, norms, and the agency of women and girls and gender minorities to overcome inequalities exacerbated by the COVID-19 pandemic.
- Our understanding of the ways in which COVID-19 is disproportionately affecting women and girls was hampered by an inability to pivot to alternative modes of data collection when traditional modes were halted, as well as by the lack of gender-intentional measures in early waves of post-pandemic data collection.
- These early gaps in data collection are beginning to be filled, as more gender measures are included in data collection processes, and alternative data collection methodologies are deployed.

inequalities. These types of indicators are less commonly seen or used, but may relate to sexual and reproductive health, gender-based violence (GBV) and harassment in public and private spheres, choice in who and when to marry, unpaid domestic labor and care work, mental health, food insecurity, and information asymmetries. While there is some existing research on these topics, the majority is not nationally representative and is insufficient for intersectional analysis to provide a more comprehensive picture necessary to trigger policy and programmatic shifts.

These gaps were worsened in the early phases of the pandemic by both the delay and cancellation of many data collection mechanisms which supply gender data,ⁱ as well as by the absence of gender-intentional, standardized, and comparable measures in data that was collected. ➤

Key areas for action (continued)

➤ While rapid surveys and modifications to some existing data collection mechanisms are now responding to some of these identified gaps,ⁱⁱ many areas of importance to women's and girls' lives were not included in initial rounds of data collection earlier in the pandemic. This absence is attributable to a number of reasons, including safety and privacy considerations, topical priorities, target population, practical difficulties in obtaining representative samples of males and females (or other groups of interest) in phone and internet-based surveys, and lack of validated measures on key constructs. Further, there is a lack of statistical standards and validated best-practice guidelines for collecting data on gender bias, discrimination, mistreatment experiences, beliefs, norms, and agency, the measurement of which should include perspectives and experiences from men and boys and gender minorities, in addition to women and girls. Even where there is guidance, surveys across agencies and countries may use different sampling methods, frames, and questions. Consequently, even when these types of gender data is collected, they are rarely comparable across surveys, hindering broad understanding of key gender issues in the time of COVID-19.^{45,46}

There are promising advances to address some of these pandemic-related data measurement gaps. Remote modes of survey data collection (e.g., via phone or internet) are being employed by an increasing number of NSOs and other organizations to avoid face-to-face interactions.²⁰ Though remote data collection has some advantages, including lower costs and shorter turnaround times, it can also pose important challenges in general, and for providing gender data specifically.ⁱⁱⁱ These challenges span data quality, coverage, access, bias, representation, and respondent protection, particularly given that phone/digital access and privacy are less likely among women relative to men (in addition to other sociodemographic and economic imbalances), and survey frames built from (generally male) household heads may not

offer access to women, potentially exacerbating data gaps.^{20,52-54} It is also challenging in a remote data collection setting to use participatory methods, such as vignettes, that are important to understand gendered social norms. There are an increasing number of online portals openly sharing COVID-19 focused gender data and/or gender data measures.^{iv} Encouragingly, these novel and adapted measures are increasingly being incorporated into rapid response survey and data production efforts by NSOs, multilateral agencies such as UN Women and the World Bank, and research organizations.^{34,35,62} A brief summary of gender data topics in illustrative COVID-19 related surveys is included in Appendix Table 1. Irrespective of the type of data collection mechanism, it is essential to document the methodologies used so that data can be interpreted in context and data quality can be better assessed.

ACTION REQUIRED

- *Support the coordinated inclusion and prioritization of standardized and comparable gender-intentional measures in COVID-19 related surveys.* Beyond sex disaggregation, it is critical that measures in areas which affect women and girls disproportionately are prioritized in surveys in the near and medium terms. This is particularly important in multi-topic and remote surveys, where questionnaire space is at a premium. It may be practical to have modules that can be rotated in and out of ongoing surveys so that data on a variety of issues can be collected within a given sample over time. Survey sampling frames and implementation protocols must be commensurately designed to mitigate or remove gender bias in data collection.
- *Prioritize development, validation, dissemination, and coordinated use of standardized and comparable COVID-19 related gender measures on constructs that are not currently being assessed.* There are aspects of women's and girls' lives that appear to be ➤

Key areas for action (continued)

➤ profoundly affected by COVID-19 yet lack ➤ validated, standardized, and comparable measures. These include, but are not limited to, gender bias, discrimination and mistreatment experiences, beliefs, norms, and agency. Once validated, these measures should be widely shared and rolled out to enable production of nationally representative and comparable gender data in these areas to track changes over time and across populations.

- *Create survey sampling frames that are representative of multiple groups, including women and girls at all feasible privilege, marginalization, and vulnerability levels.* There is a need to develop more resilient survey sampling frames that can collect gender data via multiple modalities. This design would not only allow for complete shifts from in-person to remote data collection, for example, but would also enable mixed-mode data collection, where some groups are targeted for face-to-face interviewing while others can be reached by phone or online. It is critical to this process to recognize and address sources of bias in survey sample identification, enrollment, and maintenance, and to ensure robust representation of the target population as well as hard-to-survey groups via remote data collection.

3. Increase use of non-traditional gender data to understand the health and socioeconomic impacts of COVID-19.

Non-traditional data (e.g., social media activity, news media, mobile device-generated geospatial and other data, internet use, and private sector data) can be a useful complement to traditional in-person and remote data collection initiatives, and may be helpful to inform pandemic-related forecasting and modeling.⁶³ These non-traditional data can offer nuanced insights that factor in time and place, as well as the potential for longitudinal data collection, to understand gender dynamics over time. To do this thoughtfully, known challenges such as representativeness, bias, and the digital

KEY HIGHLIGHTS

- **Non-traditional gender data may be harnessed and assembled in shorter time horizons than more traditional modalities such as surveys and administrative records and may be produced even when traditional data collection is unfeasible; however, gender data has not been a focal point of most non-traditional data analyses to date.**
- **Privacy, human rights and data security are critical considerations.**
- **Emerging data steward networks and data collaboratives are bringing together multi-sectoral private and public sources of data to cooperatively exchange and analyze data and create public value.**

literacy gender gap must be addressed.⁶⁴

Being able to adapt and leverage innovations in non-traditional methods of data production has the capacity to fill some critical gender data gaps within much shorter time horizons than most traditional data collection modalities, though there are aspects of bias and representation that remain unaddressed in much of this data.⁶⁵⁻⁶⁷ The use of anonymized big data from public and private sector sources (e.g., telecommunication companies, financial institutions, social media companies, e-commerce companies, geospatial platforms) can allow for descriptive, predictive, and prescriptive analyses related to disease spread and other effects and may even be able to presumptively sex-disaggregate findings, albeit with important limitations in using algorithms to predict sex.^{68,69} These techniques were being tested prior to the COVID-19 pandemic—for example, social media data has been used to assess attitudes to GBV⁷⁰⁻⁷²—and are increasingly being developed as a way to provide data during interruptions in traditional data collection modalities.^v ➤

Key areas for action (continued)

➤ While the majority of non-traditional data analyses on the impacts of the COVID-19 pandemic have not integrated or focused on gender to date,⁷⁹⁻⁸⁴ there are a few promising examples. This includes research using administrative payroll data to understand gendered differences in employment shifts in the US,⁸⁵ using a blend of administrative and mobility data to model domestic violence across Mexico,⁸⁶ using Twitter data to identify topics being discussed by Indian feminist activists,⁸⁷ and large-scale surveys of Facebook users to assess gender equality at home and gender-differentiated impacts on businesses.⁸⁸⁻⁹⁰

Key to this work is the careful consideration of proper safeguards for quality, privacy, and human rights as well as full compliance with data protection, portability and security laws and regulations, particularly given that some non-traditional data can potentially be identifiable.^{68,91,92} Safety and privacy concerns associated with non-traditional data may be amplified when looking at gendered topics. One emerging means of addressing these concerns are data steward networks and 'data collaboratives', which bring together private and public actors from different sectors to cooperatively exchange and analyze data to create public value.⁹³⁻⁹⁵ These collaboratives have agreed-upon protocols and safeguards to protect safety and privacy, and are increasingly being called upon to provide access with appropriate oversight and accountability via independent-use agreements, cooperative-use data pooling, and directed-use prizes and challenges.^{vi,95,97} Unfortunately, while some promising data collaboratives are emerging,^{vii,103} these efforts are not always connected to policy responses or efforts related to gender.^{104,105}

ACTION REQUIRED

- *Develop a framework for responsible and ethical governance of gender data.* This is critically important to address privacy, ethical considerations, interoperability, regulatory requirements, and other key issues. Involving governments and policy makers in designing such a framework will make the resulting data, analyses, and communication more relevant to context-specific needs. Data steward networks and data collaboratives offer an opportunity to validate such a framework as they often include traditional and non-traditional data and bring together partners from a wide variety of sectors and spheres. They also offer opportunities to leverage the skills, resources, and data available from each partner to generate a product greater than the sum of its parts, while maintaining safety and privacy standards acceptable to all partners. Transparent decision making and expectations about data access and ownership should be explicit in all collaboratives. NSOs should be resourced and trained, as needed, to enable them to take on stewardship roles in this modernization of data governance.
- *Expand efforts to link traditional and non-traditional gender data and modalities.* Use of non-traditional data in lower-income settings has been enhanced by creating links between these data and traditional data, such as survey data. Additional efforts are needed to find ways to appropriately, safely, and ethically generate richer links that allow for sex-disaggregated and intersectional analysis. This would help expand current big data analyses (e.g., Opportunity Insights Economic Tracker,¹⁰⁶ Flowminder mobility indicators,¹⁰⁷ the Africa COVID Community Vulnerability Index¹⁰⁸) on ➤

Key areas for action (continued)

➤ the labor, economic, health, and social impacts of the pandemic on women and girls and potentially on gender minorities. Bringing together experts from different sectors and spheres, from data scientists to gender experts, can help generate new insights. Providing open-source methodologies for this work with detailed coding, guidelines and instructions will facilitate more rapid uptake by data actors to respond to data system shocks such as COVID-19. Simultaneously developing new approaches to measurement that take advantage of our increasing digital footprints and novel technologies, for example, will further strengthen our capacity to collect key gender data without interruption.

4. Rapidly expand COVID-19 related gender data availability, access, and use.

Despite growing evidence of the negative impacts of the pandemic on women and girls in many countries,^{3,8,31-37} the policy response has often been lacking in specificity to address these gendered impacts. For example, of more than 1,300 COVID-19 social protection and labor market response measures, only eight percent directly address unpaid care, and only 10 percent target women's economic support.¹⁰⁹

Ensuring the availability, access, and use of gender data is vital to addressing the inequalities exacerbated by COVID-19. This includes using data to inform and track tangible changes in policy responses and mitigation measures to address these gendered impacts. Some organizations which have launched COVID-19 gender data initiatives are sharing questionnaires, tools, and data (see Appendix Table 1 for examples).^{15,110-114} This type of open-access approach to data collection and analysis is an important part of pandemic response but is largely limited to surveys at this point. A gap remains in routine, open dissemination of administrative COVID-19 gender data, as well as non-traditional gender data—particularly when coming from private organizations (see social media and big data

KEY HIGHLIGHTS

- Open-access COVID-19 related data is largely limited to surveys; there is a gap in open, regular dissemination of administrative and non-traditional gender data.
- A bridge between data production and use can improve data responsiveness and public trust.
- Data systems that support robust, regular, and reliable gender data production are also able to be more responsive to diverse data needs for accomplishing a broader set of goals and targets.

examples above). There is a need for appropriate, transparent data sharing and documentation to enable subsequent data-driven advocacy, as well as diligent dissemination to overcome extant information asymmetries based on geographic location, internet access, and other factors. While this need is not specific to gender data, it is an integral part of future efforts to strengthen gender data production and use. An intentional, bidirectional bridge between data production and use, wherein governments and organizations involved in data production are involved in the consumption of that data, and where end users and stakeholders are actively engaged in data production, is a key component of effective data use for gender data and beyond. This interlinked approach helps ensure that data are responsive to the needs at hand, and builds commitment to, and greater public trust in, data.^{78,115,116}

Prioritizing both gender data production and data use will require financial support as well as political will and follow through to connect data to policy and programmatic action. Budgetary reallocation of increasingly stretched fiscal resources for data production and use to direct pandemic response has been a common issue.¹¹⁷ In the case of gender data, there is a continued need to advocate for resources for their ➤

Key areas for action (continued)

➤ production and effective use to enable a targeted response that addresses gender gaps, barriers, and gendered impacts. Such advocacy should involve consultation, participation, and involvement of gender experts and women's groups.

We must critically review if, and how, existing gender data is being disseminated and used. Where data exists but is underutilized, it should be more fully leveraged (as is being done with some labor force statistics¹¹⁸).^{viii} Use monitoring is a key aspect of the data lifecycle, as has been demonstrated by UN Women's ongoing reviews of its COVID-19 rapid gender assessments which have directly informed policies to address gendered impacts of the pandemic in seven countries.^{ix,8} Similarly, a recent research review of the gendered impacts of COVID-19 influenced recommendations adopted by the European Union Parliament on gender-based violence and economic empowerment.^{120,121} Governments should work to ensure women are equally represented in COVID-19 policy response and recovery taskforces,^{120,122-124} and gender equality expertise is funded and prioritized in National Statistical Systems (NSSs) and in policy advisory roles.

ACTION REQUIRED

- *Create bidirectional engagement across gender data production and use by involving data producers in the data use process and by involving data users in the data production process.* Maintaining the involvement of data production organizations throughout data use increases their shared ownership in generating data that is better able to respond to challenges such as those generated by COVID-19. Having gender data users and decision-makers involved early on in the gender data production process, through consultations or advisory groups, increases the likelihood that the resulting data will speak more directly to the needs of users such as policymakers and program implementers.

It will also help ensure that those end users will have more ownership of the data, thus making them more invested in data use.

- *Expand use of gender data that has already been collected but is not being used to its full potential.* Without gender data, policymakers, donors, and governments will be unable to create evidence-informed gender-responsive policies to respond to the coronavirus pandemic, as Canada and Hawaii have done by thoughtful intersectional analysis to develop roadmaps to recovery through gender transformative policymaking.¹²⁵ Priority strategies for this gender data-driven advocacy and use for COVID-19 response and recovery should include—with appropriate data privacy and security protections in place—improved open data access from all data producers including academic researchers, the private and public sector, and governments. Resources and ongoing efforts are also needed to improve technical capacities for gender data literacy and communication, gender expertise in NSOs, and equal representation of women in COVID-19 response leadership, management, and planning.¹¹⁹
- *Mainstream gender data production and use in national data systems.* Gender data is often treated as an “add-on” or special interest topic. Recognition that systems that support robust, regular, and reliable gender data production are able to be more responsive to diverse data needs for accomplishing a broader set of goals and targets is key to moving forward. Gender data expertise is necessary for individuals working in NSOs, in government policy positions, and in other areas engaged in data production and use. Similarly, gender data analysis and dissemination products should be treated as components of the main body of reporting, dissemination, and communication in a given setting, rather than as special focus publications. ➤

Key areas for action (continued)

5. Adequately resource and support coordinated data infrastructures to produce gender data during and beyond the COVID-19 pandemic.

The improvements in gender data noted above will not be possible without substantial investment in data infrastructures. While this agenda is expensive, it will broadly strengthen data systems and increase their resilience to future shocks beyond the COVID-19 pandemic. Financial support should be paired with a strong focus on capacity development with a gender equality lens across all relevant parties, including government agencies, civil society, researchers, and donors.

Even prior to the COVID-19 pandemic, there were significant gaps in gender data. This is in part due to broader challenges in data production, and in part due to underlying capacity gaps in resources, technical skills, management, administration, and politics.^{78,126} Unfortunately, recognition of the importance of gender equality does not always translate into strong support for gender statistics. In 2018, while almost 60 percent of statistical projects financed by bilateral donors considered gender equality to be an important objective, only six percent of all projects noted gender equality as a primary objective.¹²⁷ Similarly, less than 12 percent of bilateral donor commitments are directed towards gender statistics activities; less than half of that commitment goes to activities focused primarily on gender data.¹²⁷ There is an estimated gap of \$200 million annually between now and 2025 in financing needed to sustain a core gender data ecosystem and enable low- and lower-middle income countries to monitor and put in place policies that would leave no one behind by 2030.¹²⁸ There is thus an urgent need for heightened awareness among donors, governments, and other key stakeholders that gender equality is integral across sectors. Achieving both gender and sectoral outcomes should be the new paradigm,¹²⁹⁻¹³¹ and attaining this paradigm shift requires adequate and reliable investment in data infrastructures.

KEY HIGHLIGHTS

- The COVID-19 pandemic added strain to overstressed and underfunded data systems, limiting gender data production.
- Strengthening data infrastructures will be expensive but will create more resilient and gender-responsive systems better able to respond to future shocks.
- Modernizing data collection mechanisms will allow gender data production greater flexibility to avoid interruption or cessation.

Prior to the pandemic, only 13 percent of countries had a dedicated budget for collecting and analyzing gender data (primarily for health and reproductive health).²¹ Amidst the economic fallout from COVID-19, collecting and analyzing gender data is likely to be pushed even further down the priority list, thus further exacerbating preexisting data gaps. Despite added demands placed on statistical systems from the pandemic, less than half a percent of international aid for COVID-19 so far has had a primary focus on data and statistics.¹²⁷

COVID-19 has prompted both an increased demand for, and acknowledgement of, the importance of data while hampering the ability of NSSs to produce timely, quality statistics.^{133,134} There are opportunities to close data gaps created and/or highlighted by the current pandemic by supporting data infrastructure and production pipelines to use resources more efficiently (e.g., reviewing modes of data collection and looking for existing or additional data sources) as well as to prepare for the future by creating representative sampling frames inclusive of contact information to enable phone or online surveys. While the challenges should not be underestimated and aren't limited to gender data, the potential benefits of such preparation are substantial. Concurrent with ➤

Key areas for action (continued)

➤ advocacy to fill these gender data gaps should be an emphasis on transparency regarding data quality and privacy protection.

Supporting the foundation for this modernized and multimode data collection extends beyond COVID-19 based challenges, and is reflected in guidance from the UN Statistical Commission.^{135,136} This work would not only address some of the previously noted representation challenges that arise when collecting gender data using remote methods, but would also make data infrastructure more resilient to future shocks by allowing NSOs and others to pivot between modes of data collection based on the particular challenge being faced at the time. This strategy's utility has been demonstrated in some settings,¹³² suggesting that it would drive efficiency and potentially create a base for additional, future rapid data collection.

The first step toward improvement of gender data is strengthening national data infrastructure to ensure the flow of relevant, timely, and accurate data to monitor gender inequalities and prepare for transitions to multimode data collection. Gender data is by nature intersectional; therefore, work to strengthen gender data production and capacity within governments must not only ensure that NSOs are adequately resourced and appropriately staffed, but must encompass the entire NSS (e.g., Ministries of Health, Women and Girls, Education, and Justice; CRVS; health surveillance systems).¹²⁹

ACTION REQUIRED

- *Increase funding to support statistical systems' capacities to produce and use gender data and provide financial support to modernize administrative data collection.* Without additional funding earmarked for the support of gender data production and use, many of the steps previously outlined in this brief will remain unachievable. This will require both focused allocations within government budgets, as well as, in many cases, external sources of support. Creating data production systems that can shift across data collection modalities as needed, and that have robust data collection systems and processes in place, is essential to avoid interruptions in data collection and to be responsive to future shocks.
- *Support and adequately resource gender data production and use across the entire NSS in order to fulfill national, regional, and international commitments to gender data and create responsive and robust data infrastructures.* When gender data training and funding are provided, they are often directed at NSOs. While many NSOs do in fact need this support (particularly in the face of COVID-19 challenges), having a well resourced NSO operating within a poorly resourced NSS presents ongoing barriers to progress for an area as intersectional as gender data. This support, including funding as well as capacity and logistical development, must encompass both NSOs and other parts of NSSs, particularly CRVS systems, health surveillance, and other existing administrative data systems.¹²⁹ ●

Conclusion and Implications

COVID-19 is not an “equal opportunities” pandemic: emerging evidence shows mounting gender disparities in its health and socioeconomic consequences. However, a lack of gender data impedes our ability to understand, preempt, and respond to the adverse effects of the pandemic. To that end, we highlight in this paper the need to: a) ensure that COVID-19 related data is collected, disaggregated by sex and other traits (e.g., age, ethnicity, occupation), and shared; b) move beyond sex-disaggregated COVID-19 data to collect standardized, comparable health and socioeconomic gender data to better understand the full impacts of the pandemic; c) increase the use of non-traditional data sources such as big data and private sector data to complement more traditional household or sector-based survey data, given the restrictions placed on survey data under the pandemic; d) rapidly expand COVID-19 related gender data availability, access, and use, including prioritization of transparent, open access data to the public; and, e) adequately resource and support data infrastructure and production to build robust systems that capture and report gender data and are responsive to current and future shocks.

Addressing gender data gaps during COVID-19 requires a strengthening of existing data systems. NSSs, particularly NSOs, survey managers or sponsors, funders, and custodians at global, regional, and country levels, as well as multilateral agencies and research partners, will need to:

- Strategically integrate gender measures including, but not limited to, sex-disaggregated data in COVID-19 surveys and in future data collection activities;
 - Assess and address budgetary, capacity, methodological, technology, and other gaps that in turn perpetuate gender data gaps;
 - Collaborate and coordinate better on diverse initiatives and plans being undertaken at the national and international levels to fill gender data gaps;
 - Include non-traditional data actors, e.g., the private sector, in the broader gender data conversation and ecosystem; and,
 - Facilitate improved access to, and use of, gender data.
- Calls for improvements in gender data generation and use have been growing for many years, but progress has been slow. While the COVID-19 pandemic has exacerbated existing gender inequalities, it offers an opportunity to galvanize will and sustain political and financial commitments to generate and use gender data and to create robust, resilient data infrastructures that can work to support the health of all populations in both normal and adverse circumstances. These processes must be adequately resourced and funded—by governments and donors alike—and operate as transparently, inclusively, and responsively as possible. Arguably, the process can be as important as the output, particularly if this moment is used to integrate gender data into existing data infrastructures while strengthening and expanding those infrastructures. There is an opportunity to emerge from this pandemic with a more robust and gender-responsive data system than we had at its inception. Direct, decisive, and immediate action is needed by all members of the global data community to achieve this goal and further support gender equality. ●

Appendix

Table Examples of survey modules and large-scale surveys collecting COVID-19 gender data.

Survey	Implementing Organization(s)	Gender Data Summary
<u>UN Women Rapid Gender Assessment Tool</u>	UN Women	Assesses a wide variety of gender data, including sex-disaggregated COVID-19 cases, outcomes, knowledge, attitudes and behaviors, mental health, GBV, access to health services and goods, paid and unpaid work, food insecurity, access to legal services and protections, and child marriage.
<u>World Bank surveys on gender-differentiated impacts of COVID-19</u>	World Bank	Assesses sex-disaggregated information on COVID-19 cases, outcomes, knowledge, attitudes and behavior, access to food, medical, financial, and other essential resources, education, employment, income loss, food insecurity, agriculture, and social protection or safety nets.
<u>insight2impact COVID-19 Livelihoods Tracking Survey in 7 African countries</u>	insight2impact (i2i), FinMark Trus	Assesses sex-disaggregated information on COVID-19 knowledge, behavior, mental health, education, access to health services including contraceptives, business challenges, food insecurity, and social protection or safety nets.
<u>IPA RECOVER Survey in 10 countries</u>	Innovations for Poverty Action (IPA)	Assesses sex-disaggregated information on COVID-19 knowledge, behavior, education, access to health services, employment, income loss, financial health, food insecurity, and social protection or safety nets.
<u>GAGE COVID-19 Phone Survey modules</u>	Gender & Adolescence: Global Evidence (GAGE), Overseas Development Institute (ODI), The George Washington University, IPA	Assesses a wide variety of gender data for adolescents and their primary female caregivers, including COVID-19 health outcomes, education, food insecurity, risky health behavior such as smoking and alcohol consumption, mental health, employment, skills training, freedom of movement, freedom of being connected to friends, GBV, and family violence.

Appendix (continued)

Survey	Implementing Organization(s)	Gender Data Summary
<u>PMA COVID-19 Survey in 4 African countries</u>	Performance Monitoring for Action (PMA)	Assesses gender data on COVID-19 knowledge and behavior, income loss, employment, intra-household economic dynamics, access to health services, and family planning including fertility intentions, access to family planning services, and contraceptive use. The survey gathers data for women only.
<u>CGD COVID-19 in Pakistan Phone Survey</u>	Center for Global Development (CGD)	Assesses sex-disaggregated data on COVID-19 related behavior, education, access to technology for learning, access to health services, income loss, and food insecurity.
<u>COVID-19 Survey Modules</u>	The Abdul Latif Jameel Poverty Action Lab (J-PAL), EPoD India at LEAD at Krea University, Yale Economic Growth Center (EGC)	Assesses sex-disaggregated data on impacts of COVID-19 on migrants, covering indicators such as COVID-19 knowledge and behavior, access to health services, access to essential services such as water and sanitation, food insecurity, stigma and harassment, income, financial inclusion, and social protection or safety nets.
<u>Young Lives Covid-19 Phone Survey of Adolescents in Ethiopia, India, Peru, and Vietnam Future of Business Survey</u>	University of Oxford Facebook, the OECD, the World Bank	Assesses sex-disaggregated data on COVID-19 outcomes, knowledge, attitudes and behaviors, education, mental health, income loss, employment, and social protection or safety nets. Assesses sex-disaggregated data from small and medium sized business owners on income loss, business closure, access to formal financing, and social protection or safety nets.
Note: Table contains examples and is not meant to be comprehensive.		

References

1. World Health Organization. WHO Coronavirus Disease (COVID-19) Dashboard. 2020. <https://covid19.who.int/>
2. Pryor E. Pandemic Response and Recovery Requires an Analysis of Existing—and Missing—Gender Data. Data2X; 2020.
3. Center on Gender Equity and Health. COVID-19 and Gender Research in LMICs: July-September 2020 Quarterly Review Report. La Jolla, CA, USA: University of California San Diego, 2020.
4. Burki T. The indirect impact of COVID-19 on women. *The Lancet Infectious Diseases* 2020; 20(8): 904-5.
5. Madgavkar A, White O, Krishnan M, Mahajan D, Azcue X. COVID-19 and gender equality: Countering the regressive effects: McKinsey Global Institute, 2020.
6. De Paz C, Muller, M., Munoz Boudet, A.M., & Gaddis, I. Gender dimensions of the COVID-19 pandemic. In: Equity P, editor.: World Bank Group; 2020. p. 1-29.
7. Azcona G, Bhatt A, Encarnacion J, et al. From insights to action: Gender equality in the wake of COVID-19. New York, USA: UN Women, 2020.
8. UN Women. Whose Time to Care? Unpaid Care and Domestic Work During COVID-19. United States, 2020.
9. The Sex, Gender and COVID-19 Project,. The COVID-19 Sex-Disaggregated Data Tracker. 2021. <https://globalhealth5050.org/the-sex-gender-and-covid-19-project/>
10. Department of Economic and Social Affairs, United Nations Statistics Division. Integrating a Gender Perspective into Statistics. New York, NY, USA: United Nations, 2016.
11. United Nations World Data Forum. United Nations World Data Forum: Opening Session, 2020.
12. Data2X, Grantham K. Mapping Gender Data Gaps in Economic Opportunities: Data2X, 2020.
13. The DHS Program. COVID-19 Update: Some DHS surveys return to the field; others postponed until 2021. The DHS Program; 2020.
14. World Values Survey. WVS Executive Committee Meeting 2020. 2020. <http://www.worldvaluessurvey.org/WVSNewsShow.jsp?ID=418>
15. The World Bank. LSMS-Supported High-Frequency Phone Surveys on COVID-19. 2020. <https://www.worldbank.org/en/programs/lsmss/brief/lsmss-launches-high-frequency-phone-surveys-on-covid-19>
16. United Nations Children's Fund. COVID-19 Pandemic and Implementation of Multiple Indicator Cluster Surveys (MICS). 2020. [https://mics.unicef.org/news_entries/157/COVID-19-PANDEMIC-AND-IMPLEMENTATION-OF-MULTIPLE-INDICATOR-CLUSTER-SURVEYS-\(MICS\)](https://mics.unicef.org/news_entries/157/COVID-19-PANDEMIC-AND-IMPLEMENTATION-OF-MULTIPLE-INDICATOR-CLUSTER-SURVEYS-(MICS))
17. International Labour Organization (ILO). COVID-19 Impact on the Collection of Labour Market Statistics. 2020. <https://ilostat.ilo.org/topics/covid-19/covid-19-impact-on-labour-market-statistics/>
18. Department of Economic and Social Affairs. Monitoring the State of Statistical Operations Under the COVID-19 Pandemic: Highlights from a Global COVID-19 Survey of National Statistical Offices: United Nations, 2020.
19. Intersecretariat Working Group on Household Surveys. Task Force on COVID-19 and Household Surveys: National Responses to COVID-19. 2020. <https://unstats.un.org/iswghs/task-forces/covid-19-and-household-surveys/national-responses-to-COVID-19/>
20. Encarnacion J. Rapid gender assessment surveys on the impacts of COVID-19: Guidance document. New York, USA: UN Women, 2020.
21. UN Women. Turning promises into action: gender equality in the 2030 Agenda for Sustainable Development. New York, NY, USA: UN Women, 2018.
22. Courey-Pryor E. Why we're optimistic about gender data after the 2020 Virtual UN World Data Forum10/28/2020, 2020. <https://data2x.org/why-were-optimistic-about-gender-data-after-the-2020-virtual-un-world-data-forum/> [accessed 12/07/2020].
23. United Nations General Assembly. Women and girls and the response to the coronavirus disease (COVID-19). Seventy-fifth Session, Third committee, Agenda item 28: Advancement of Women; 2020 10 November 2020; 2020.
24. World Health Organization. Public Health Surveillance for COVID-19: Interim Guidance, 7 August 2020. Geneva, Switzerland: World Health Organization, 2020.
25. The Sex, Gender and COVID-19 Project. The COVID-19 Sex-Disaggregated Data Tracker: January Update Report: GH5050, APHRC and ICRW, 2021.

References (continued)

26. The Sex, Gender and COVID-19 Project. The COVID-19 Sex-Disaggregated Data Tracker: November Update Report: GH5050, APHRC and ICRW, 2020.
27. Bhopal SS, Bhopal R. Sex differential in COVID-19 mortality varies markedly by age. *Lancet* (London, England) 2020.
28. Buvinic M, Carey E. Leaving No One Behind: CRVS, Gender and the SDGs. Ottawa, ON, CANADA: IDRC, 2019.
29. World Bank. Global Civil Registration and Vital Statistics. Washington, DC, USA: World Bank 2018.
30. Department of Economic and Social Affairs. Principles and Recommendations for a Vital Statistics System. United States: United Nations Statistics Division, 2014.
31. International Labour Organization (ILO). A gender-responsive employment recovery: Building back fairer. Geneva, Switzerland: ILO, 2020.
32. Azcona G, Bhatt A, Cattaneo U, Fortuny G, Gomis R, Kapsos S. Fallout of COVID-19: Working moms are being squeezed out of the labour force 25 November 2020, 2020. <https://data.unwomen.org/features/fallout-covid-19-working-moms-are-being-squeezed-out-labour-force> (accessed 12/08/2020).
33. UN Women. Rapid Assessment: The Effects of COVID-19 on Violence Against Women and Gendered Social Norms - A Snapshot from Nine Countries in the Arab States: UN Women, 2020.
34. UN Women. The impact of COVID-19 on women's and men's lives and livelihoods in Europe and Central Asia: UN Women, 2020.
35. UN Women. Unlocking the lockdown: The gendered effects of COVID-19 on achieving the SDGs in Asia and the Pacific.: UN Women, 2020.
36. Gichuna S, Hassan R, Sanders T, Campbell R, Mutonyi M, Mwangi P. Access to Healthcare in a time of COVID-19: Sex Workers in Crisis in Nairobi, Kenya. *Global Public Health* 2020; 15(10): 1430-42.
37. Ahmed SAKS, Ajisola M, Azeem K, et al. Impact of the societal response to COVID-19 on access to healthcare for non-COVID-19 health issues in slum communities of Bangladesh, Kenya, Nigeria and Pakistan: results of pre-COVID and COVID-19 lockdown stakeholder engagements. *BMJ global health* 2020; 5(8): e003042.
38. ILO Monitor. COVID-19 and the world of work, 5th Edition.: International Labor Organization, 2020.
39. Buvinic M, Noe L, Swanson E. Understanding Women's and Girls' Vulnerabilities to the COVID-19 Pandemic: A Gender Analysis and Data Dashboard of Low- and Lower-Middle Income Countries: Data2X, 2020.
40. UNDP. COVID-19 Global Gender Response Tracker. 2020. <https://data.undp.org/gendertracker/>.
41. Mlambo-Ngcuka P, Albrectsen A-B. Op-ed: We cannot allow COVID-19 to reinforce the digital gender divide. *Global Views: Gender Equality*, 4 May 2020, 2020. <https://www.devex.com/news/opinion-we-cannot-allow-covid-19-to-reinforce-the-digital-gender-divide-97118> (accessed 8 December 2020)
42. Center on Gender Equity and Health. COVID-19 and Gender Research in LMICs: October-December 2020 Quarterly Review Report. La Jolla, CA, USA: University of California San Diego, 2021.
43. Harper L, Kalfa N, Beckers GMA, et al. The impact of COVID-19 on research. *J Pediatr Urol* 2020.
44. World Bank. COVID-19 High-Frequency Monitoring Dashboard. 2021. <https://www.worldbank.org/en/data/interactive/2020/11/11/covid-19-high-frequency-monitoring-dashboard>
45. Data2X, Open Data Watch. Bridging the Gap: Mapping Gender Data Availability in Africa: Data2X, 2019.
46. Data2X, Open Data Watch. Bridging the Gap: Mapping Gender Data Availability in Latin America and the Caribbean: Data2X, 2020.
47. UN Women, World Health Organization. Violence Against Women and Girls Data Collection during COVID-19: UN Women, 2020.
48. Peterman A, Bhatia A, Guedes A. Remote data collection on violence against women during COVID-19: A conversation with experts on ethics, measurement & research priorities. UNICEF Innocenti; 2020.
49. Center on Gender Equity and Health. EMERGE COVID-19 and Gender Data: Protocol Recommendations for Conducting Phone-Based Surveys. La Jolla, CA, USA: University of California San Diego, 2020.
50. United Nations ESCAP. Engaging with development partners to stand-up COVID-19 rapid assessment surveys: Five tips for National Statistics Offices: UN ESCAP, 2020.
51. International Labour Organization. COVID-19: Guidance for labour statistics data collection. Essential labour force survey content and treatment of special groups (Rev. 1): ILO, 2020.

References (continued)

52. International Telecommunication Union (ITU). Measuring digital development: Facts and figures 2019. Geneva, Switzerland: ITU, 2019.
53. Alvi M, Gupta S, Meinzen-Dick R, Ringler C. Phone Surveys to Understand Gendered Impacts of COVID-19: A Cautionary Note. EnGendering Data Blog: Research Program on Policies, Institutions and Markets, CGIAR; 2020.
54. Mathur MR. Reflections on reaching women over the phone in rural India. IDinsight; 2020.
55. Center on Gender Equity and Health. EMERGE: Evidence-Based Measures of Empowerment for Research on Gender Equity. 2020. <http://emerge.ucsd.edu/> (accessed 5 August 2020)
56. UN Women. Women Count Data Hub. <https://data.unwomen.org/> (accessed 8 December 2020).
57. UN Women. Rapid Gender Assessment Survey Questionnaire: Consequences of COVID-19 on women's and men's economic empowerment: UN Women, 2020.
58. Staab S, Tabbush C, Turquet L. Global Gender Response Tracker assesses COVID-19 measures for women. 2020. <https://data.unwomen.org/features/global-gender-response-tracker-assesses-covid-19-measures-women> (accessed 8 December 2020)
59. World Bank. High-Frequency Monitoring Systems to Track the Impacts of the COVID-19 Pandemic. Washington, DC, USA: World Bank, 2020.
60. International Labour Organization. Capturing impacts on employment and unpaid work using Rapid Surveys: ILO, 2020.
61. RECOVR I. IPA RECOVR Questionnaire Repository. 2020. <https://www.poverty-action.org/recovr/questionnaire-repository>
62. UN Women. Rapid gender assessment of the situation and needs of women in the context of COVID-19 in Ukraine: UN Women, 2020.
63. Data2X. Big Data, Big Impact?: Data2X, 2019.
64. Law N, Woo D, de la Torre J, Wong G. A Global Framework of Reference on Digital Literacy Skills for Indicator 4.4.2. In: Centre for Information Technology in Education UoHK, editor. Quebec, Canada: UNESCO Institute for Statistics; 2018. p. 1-146.
65. Lu K, Mardziel P, Wu F, Amancharla P, Datta A. Gender Bias in Neural Natural Language Processing. In: Nigam V, Ban Kirigin T, Talcott C, et al., eds. Logic, Language, and Security: Essays Dedicated to Andre Scedrov on the Occasion of His 65th Birthday. Cham: Springer International Publishing; 2020: 189-202.
66. Costa-jussà MR. An analysis of gender bias studies in natural language processing. Nature Machine Intelligence 2019; 1(11): 495-6.
67. Ibrahim SA, Charlson ME, Neill DB. Big Data Analytics and the Struggle for Equity in Health Care: The Promise and Perils. Health Equity 2020; 4(1): 99-101.
68. Lopes CA, Bailur S. Gender Equality and Big Data: Making Gender Data Visible: UN Women Innovation Facility, 2018.
69. Kosinski M, Stillwell D, Graepel T. Private traits and attributes are predictable from digital records of human behavior. Proceedings of the national academy of sciences 2013; 110(15): 5802-5.
70. Scarborough WJ. Feminist Twitter and Gender Attitudes: Opportunities and Limitations to Using Twitter in the Study of Public Opinion. Socius 2018; 4: 2378023118780760.
71. Hardaker C, McGlashan M. "Real men don't hate women": Twitter rape threats and group identity. Journal of Pragmatics 2016; 91: 80-93.
72. Xue J, Macropol K, Jia Y, Zhu T, Gelles RJ. Harnessing big data for social justice: An exploration of violence against women-related conversations on Twitter. Human Behavior and Emerging Technologies 2019; 1(3): 269-79.
73. UNCTAD. Nowcasting: 1st Technical Workshop. Geneva, Switzerland: UNCTAD, 2020.
74. ILO Monitor. COVID-19 and the world of work, 3rd Edition: International Labor Organization, 2020.
75. Cheney C. Will these 3 gender data trends outlast the pandemic? DevEx. 2020.
76. Leung GM, Leung K. Crowdsourcing data to mitigate epidemics. The Lancet Digital Health 2020; 2(4): e156-e7.
77. Desai A, Warner J, Kuderer N, et al. Crowdsourcing a crisis response for COVID-19 in oncology. Nature Cancer 2020; 1(5): 473-6.
78. PARIS21. Citizen-generated gender data in Maldives: Connecting data ecosystems. PARIS21; 2020.
79. Chetty R, Friedman J, Hendren N, Stepner M. The Economic Impacts of COVID-19: Evidence from a new public database built from private sector data: Opportunity Insights, Harvard University, 2020.
80. Pepe E, Bajardi P, Gauvin L, et al. COVID-19 outbreak response, a dataset to assess mobility changes in Italy following national lockdown. Scientific Data 2020; 7(1): 230.

References (continued)

81. Klein B, LaRock T, Torres L, et al. Reshaping a nation: Mobility, commuting, and contact patterns during the COVID-19 outbreak. Boston, Massachusetts, USA: Northeastern University, 2020.
82. Flowminder, IOM UN Migration, Digicel. Privacy-conscious data analytics to support the COVID-19 response in Haiti. Haiti: Flowminder, 2020.
83. Flowminder, Vodafone Ghana, Statistical Service Ghana. Mobility analysis to support the Government of Ghana in responding to the COVID-19 outbreak: Insights into the effect of mobility restrictions in Ghana using anonymised and aggregated mobile phone data. Ghana: Flowminder, 2020.
84. Vodacom Congo, Flowminder, IOM UN Migration. Initial insights into the effect of mobility restrictions in the Democratic Republic of the Congo using anonymised and aggregated mobile phone data. Congo: Flowminder, 2020.
85. Cajner T, Crane LD, Decker RA, et al. The US labor market during the beginning of the pandemic recession: National Bureau of Economic Research, 2020.
86. Yáñez Soria I, Cymorek MH, Kruspel V, del Villar Z. Using Data to Shed Light on the Shadow Pandemic of Domestic Violence in Mexico: Data-Pop-Alliance, 2020.
87. Dehingia N, Raj A. Mining Twitter Data to Identify Topics of Discussion by Indian Feminist Activists. Data2X, UCSD; 2021.
88. Facebook. Data For Good. <https://dataforgood.fb.com/>
89. Facebook, OECD, The World Bank. The Future of Business Survey: Facebook/OECD/World Bank, 2020.
90. Cookson TP, Carlitz R, Fuentes L, Berryhill A. Survey on Gender Equality at Home Report: A gender data snapshot of life during COVID-19: Ladysmith, World Bank, UN Women, Equal Measures 2030, Facebook, 2020.
91. UN Women. Counted and visible: Global conference on the measurement of gender and intersecting inequalities. Online: UN Women, 2020.
92. (EU) EU. Europe's General Data Protection Regulation (GDPR). 2016. <https://gdpr.eu/tag/gdpr/> (accessed November 13 2020).
93. Data Stewards. Data Stewards Network. 2021. <https://medium.com/data-stewards-network>
94. The GovLab. Data Collaboratives: Creating public value by exchanging data. 2021. <https://datacollaboratives.org/>
95. The GovLab. A Call for Action2020. <https://medium.com/data-stewards-network/a-call-for-action-813669f32244> (accessed.
96. Verhulst SG, Young A, Winowatan M, Zahuranec AJ. Leveraging Private Data for Public Good: A Descriptive Analysis and Typology of Existing Practices. New York, NY, USA: GovLab, 2019.
97. DataKind. <https://www.datakind.org/>
98. Equal Measures 2030. <https://www.equalmeasures2030.org/> (accessed November 12 2020).
99. Flowminder. <https://www.flowminder.org/> (accessed November 12 2020).
100. The Governance Lab. <https://www.thegovlab.org/> (accessed November 12 2020).
101. UN Global Pulse. Online Webinar Series: Harnessing mobile phone data in response to COVID-19. 2020. <https://www.unglobalpulse.org/covid-19/harnessing-mobile-phone-data-for-covid-19-pandemic-response/>
102. UNICEF. Effects of Physical Distancing Measures. 2020. <https://www.unicef.org/innovation/magicbox/covid>
103. The GovLab, Luminate. #Data4COVID19. 2021. <https://list.data4covid19.org/index.html>
104. Verhulst SG. Call for action: Toward building the data infrastructure and ecosystem we need to tackle pandemics and other dynamic societal and environmental threats. New York, NY, USA: GovLab, 2020.
105. Oliver N, Lepri B, Sterly H, et al. Mobile phone data for informing public health actions across the COVID-19 pandemic life cycle. American Association for the Advancement of Science; 2020.
106. Opportunity Insights. Opportunity Insights Economic Tracker. 2021. <https://www.tracktherecovery.org/>
107. Flowminder. Flowminder Mobility Indicators: Enabling analysis to produce mobility indicators from CDR aggregates. 2021. <https://covid19.flowminder.org/mobility-indicators/mobility-indicators-descriptions>
108. Surgo Ventures. The Africa COVID Community Vulnerability Index (CCVI). 2021. <https://precisionforcovid.org/africa>

References (continued)

109. UNDP, UN Women. COVID-19 Global Gender Response Tracker: Global Factsheet: UNDP, UN Women, 2020.
110. World Bank. COVID-19 Gender Data Resources. 2020. <https://www.worldbank.org/en/data/datatopics/gender/coronavirus-covid-19-gender-data-resources>
111. UN Women. COVID-19 and Gender Monitor. 2020. <https://data.unwomen.org/COVID19>
112. Center on Gender Equity and Health. Gender, Health and the COVID-19 Pandemic: Measures to Build the Evidence of Need and Response for Women and Girls. 2020. <https://emerge.ucsd.edu/covid-19/>
113. FinMark Trust. COVID-19 Tracking Survey: Resources. 2020. <https://www.covid19tracker.africa/resources>
114. Innovations for Poverty Action (IPA). IPA's RECOVR Survey. 2020. <https://www.poverty-action.org/recovr/recovr-survey>
115. Ross J. Improved data on violence against women catalyses advocacy and legal change in Albania. 16 July 2020 2020. <https://data.unwomen.org/features/improved-data-violence-against-women-catalyses-advocacy-and-legal-change-albania> (accessed 8 December 2020).
116. UN Women Data Hub. Civil society 'listeners' team up with enumerators to track violence against women in Morocco. 16 Jul 2020 2020. <https://data.unwomen.org/features/civil-society-listeners-team-enumerators-track-violence-against-women-morocco> (accessed 8 December 2020).
117. UN Women. Impact of COVID-19 on violence against women and girls and service provision-UN Women rapid assessment and findings: UN Women Headquarters, 2020.
118. ILO Monitor. COVID-19 and the world of work, 1st Edition: International Labor Organization, 2020.
119. Boyd S. We Must Prioritize Investment in Gender Data for COVID-19 Recovery&SDG Progress - Data2X07/14/2020, 2020. <https://data2x.org/we-must-prioritize-investment-in-gender-data-for-covid-19-recovery-and-sdg-progress/> (accessed 12/07/2020).
120. European Parliament. Report on the gender perspective in the COVID-19 crisis and post-crisis period. In: Committee on Women's Rights and Gender Equality, editor.; 2020.
121. Wenham C. The gendered impact of the COVID-19 crisis and post-crisis period. Brussels, Belgium: Policy Department for Citizens' Rights and Constitutional Affairs,, European Parliament, 2020.
122. Gharib M. Where the women aren't: On coronavirus task forces. Goats and Soda; 2020.
123. Pryor E. How partnering with policymakers turns data into action. Global Views: DevEx; 2018.
124. Open Data Watch. The data value chain: Moving from Production to Impact: Data2X, 2019.
125. Solomon A, Hawkins, K., and Morgan, R. . Hawaii and Canada: Providing lessons for feminist pandemic recovery plans to COVID-19: The Gender and COVID-19 Working Group., 2020.
126. UN Women, PARIS21. Assessing data and statistical capacity gaps for better gender statistics: Framework and implementation guidelines: PARIS21, 2019.
127. PARIS21. Partner Report on Support to Statistics 2020. Paris: PARIS21, 2020.
128. Data2X, Open Data Watch. State of Gender Data Financing (forthcoming): Data2X, 2021.
129. Data2X, Open Data Watch. State of Gender Data Financing: Data2X, 2019.
130. Klugman J, Tyson L. Leave No One Behind: A Call to Action for Gender Equality and Women's Economic Empowerment. Report of the UN Secretary-General's High-Level Panel on Women's Economic Empowerment. New York: UN Secretary-General's High-Level Panel on Women's Economic Empowerment, 2016.
131. World Bank. World Development Report 2012: Gender Equality and Development. Washington, DC: World Bank, 2012.
132. UN Statistical Division. Monitoring the State of Statistical Operations under the COVID-19 Pandemic: August 2020: UNSD, 2020.
133. Misra A, Schmidt J, Harrison L. Combating COVID-19 with data: What role for national statistical systems?: Paris21, 2020.
134. Committee for the Coordination of Statistical Activities. How COVID-19 is changing the world: A statistical perspective: CCSA, 2020.
135. U.N. Economic Social Council - Statistical Commission. Management and modernization of statistical systems: United Nations, 2020.
136. United Nations Economic and Social Council - Statistical Commission. Gender statistics: Report of the Secretary-General: UNESC, 2020.

Endnotes

- i Health, social and economic gender data are typically collected using surveys, traditionally conducted in person. As surveys are targeted at specific samples, they are able to answer questions about women, families, households, enterprises, etc. to understand the diverse layers of impact a shock like COVID-19 is having across society. Unfortunately, COVID-19 related lockdowns and movement restrictions delayed, if not halted indefinitely, most in-person surveys.^{17,43} This has not only hampered ongoing and planned future survey data collection efforts; it has reopened or exacerbated gender data gaps that were previously considered closed (e.g., interruptions in regular labor force survey data collection have disrupted long-term trend monitoring in women and men's employment).^{17,19}
- ii For example, UN Women is conducting rapid gender surveys in partnership with NSOs, Ministries of Women, mobile network operators and research firms, and is developing a multi-country survey of GBV (to be administered in less stringent mobility restrictions to ensure safety).^{7,8,20,33-35} The International Labour Organization (ILO) has a forthcoming global survey to capture COVID-19's impacts on employment, education, and skills prospects among young women and men. The World Bank has a dashboard with results from high-frequency remote surveys being conducted in over 100 countries.⁴⁴
- iii Collecting information on sensitive topics such as GBV poses potentially serious challenges in terms of safety, privacy and confidentiality, though expert guidance is increasingly available.⁴⁷⁻⁵⁰ Additionally, phone and online surveys face much more stringent time and space constraints than in-person surveys and may have lower response rates than in-person surveys.⁵¹
- iv See for example University of California San Diego's (UCSD) EMERGE portal,⁵⁵ featuring ready-to-use COVID-19 survey modules, and UN Women's Women Count Data Hub⁵⁶ which features results from rapid gender assessment surveys,³³⁻³⁵ survey questionnaires,⁵⁷ and COVID-19 and gender data from various international agencies.^{40,58} Additional relevant resources include the World Bank's high frequency survey website that includes questionnaires, survey guidance, and a sex-disaggregated data dashboard.⁵⁹ ILO has developed minimum, modular survey questions to capture impacts on paid and unpaid work, including unpaid care work, with alternative sequences for different socioeconomic contexts.^{60 61}
- v The ILO is currently using nowcasting, or contemporaneous forecasting, which leverages country-level economic, policy, mobility and other data, to project real-time estimates of the labor market impacts of the COVID-19 pandemic.^{73,74} UN Women and UNFPA are working with a technology platform to convert big data signals to insights on the situation, attitudes, and social interactions related to GBV during COVID-19.⁷⁵ Crowd-sourced data on COVID-19 has been useful in identifying outbreaks as well as needs for vulnerable populations,^{76,77} though there is inherent bias and lack of general representation in these data, and application in most nations has been limited. Similarly, citizen-generated data production mechanisms are largely under-explored, though pilots are being implemented.⁷⁸
- vi An additional type of collaborative are restricted-access collaboratives, which operate through trusted intermediaries, research and analysis partnerships, and collaborative intelligence generation.⁹⁶
- vii Including Equal Measures 2030, Flowminder, and the Governance Lab.⁹⁸⁻¹⁰⁰ Facebook's Data for Good recently collaborated with the OECD, and the World Bank to survey small business leaders from across over 50 countries, finding stark gender disparities in enterprise-related challenges during the COVID-19 pandemic.^{88,89,101,102}
- viii Examples of ways that governments could use existing data and evidence to inform gender-intentional policies include: bringing a gender lens to the design of fiscal stimulus packages and social protection programs; using burgeoning data on increases in GBV to inform additional funding and programmatic support; using existing data on women's unpaid care work to design policy responses including subsidized or paid childcare or family leave; cash allowances, vouchers and subsidies for childcare or relief packages for childcare industry, wage subsidies for parents with young children, and more expansive social protections.¹¹⁹
- ix Albania, Georgia, Jordan, the Maldives, Pakistan, the Philippines and Ukraine.
- x During the COVID-19 pandemic, three out of four NSOs in low- and lower middle-income countries report reduced data production ability, half have experienced budget cuts, fewer than half are receiving financial support to help respond to COVID-19, and the majority indicate need for technical, financial, infrastructure and training support.^{18,132} As of August 2020, only 11% of donor-funded, data-related COVID-19 projects include a gender dimension.¹²⁷