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UN Methodological Guidelines on the Production of Statistics on Asset Ownership from a Gender Perspective

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Table of Contents

Introduction

Purpose of the guidelines and key recommendations

1. The present publication provides national statistical agencies and policy makers with guidance on collecting, processing, analysing and disseminating individual-level data on asset ownership and control for the production of gender statistics. Although agricultural surveys and administrative data sources are briefly addressed, the focus of the guidelines is on household surveys for two key reasons. First, household surveys are the most flexible instrument for data collection.[1] They can accommodate almost any population-based social or economic subject in great detail and provide statistics that serve the needs of a wide range of users. Second, within existing national programmes of data collection, household surveys are the most developed and frequent source of data. Thus, collecting individual-level data on asset ownership and control through household surveys may be a more immediate and less resource-intensive prospect than through other sources. As such, the methodology presented in these guidelines for measuring asset ownership and control from a gender perspective has been tested in the context of household surveys in select pilot countries.

2. The guidelines introduce the concepts, definitions and data requirements for measuring asset ownership and control from a gender perspective and provide guidance on planning, organizing and implementing a household survey, or appending a module on asset ownership to a nationally-representative household survey. Countries may choose a particular modality for implementation of the recommendations depending upon their own needs and capabilities, including the needs of data users and the availability of data from other statistical and administrative sources. Guidance on data analysis and dissemination is also provided.

3. These guidelines make the following **recommendations** for producing statistics on asset ownership from a gender perspective through household surveys:

3.1. Asset ownership should be conceptualised as a bundle of ownership rights, including documented ownership, reported ownership and the rights to sell and bequeath an asset. To capture gender differences in the ownership and control of assets, many countries will have to measure ownership as a combination of some or all of these rights.

3.2. At a minimum, countries should collect information on the following "core" set of assets: principal dwellings, agricultural land and other real estate, including non-agricultural land. Countries may also wish to collect data on financial assets, non-agricultural enterprises, livestock, agricultural equipment

[1] See Part II of these guidelines for a discussion about the advantages and limitations of household surveys in collecting data on asset ownership from a gender perspective in comparison with other data sources.

and valuables as well as liabilities and consumer durables based on their policy needs and the prevalence of each asset within the country.

3.3. National statistical agencies should collect self-reported rather than proxy data on asset ownership due to large discrepancies in proxy versus self-response using one of the following three data collection strategies:

- To derive nationally-representative estimates of the prevalence of women's and men's asset ownership, including SDG indicators 5.a.1 (a) + (b), a minimum set of questions can be integrated into an existing household survey or a small module can be appended to a household survey and one-randomly selected adult household member can be interviewed.
- To generate statistics that take into account differentials in the characteristics (such as value and size) of assets owned by women and men, in addition to the above measures, a roster of assets belonging to one randomly selected respondent and the value of each asset should be obtained from a module appended to an existing household survey.
- Finally, to collect data for the purposes of analysing intrahousehold gender inequality in asset ownership, in addition to calculating the above measures, a roster of assets belonging to all household members should be obtained and multiple or all adult household members should be interviewed. Countries adopting this approach may append a module to an existing household survey or develop a stand-alone survey.

4. Each of these recommendations is explained in detail throughout the publication.

Relevance of the guidelines

5. The international guidelines presented in this publication contribute to the development of gender statistics. Gender statistics are instrumental in building an evidence base of the drivers and consequences of gender inequality and in informing the necessary policy approaches for fostering gender equality and other development outcomes. Conversely, the lack of adequate gender data is a major impediment to informed and effective policies.

6. In 1995, the UN Beijing Platform for Action identified 12 critical areas of concern to women and girls, and urged Governments to regularly collect statistics related to each of these areas, to serve as a basis for monitoring progress and evaluating the impact of policies. While considerable progress has been made in producing gender statistics, basic gender data in some areas of critical interest for policy makers are still non-existent, insufficient or lack comparability across countries. Recognizing this data gap, the Busan Partnership for Effective Development Co-operation, in 2011, called for renewed and accelerated efforts to collect harmonized data, disaggregated by sex, for informing policy decisions and guiding

investments. Further, asset ownership was identified as one critical area with a large gender data gap.

7. Assets serve multiple functions. In their productive capacity, they generate income and facilitate access to capital and credit. They also strengthen a household's capacity to cope with and respond to shocks by enhancing its ability to diversify income and ease liquidity constraints. Moreover, assets comprise a store of wealth that can be sold to generate income or passed on to future generations. Finally, assets may provide status and security to individuals or households.

8. Despite substantial empirical evidence that household members do not fully pool their resources, most data on assets are collected at the household level, typically by asking a proxy respondent whether anyone in the household owns land, housing, or other key assets. Yet this approach provides only a partial-and potentially misleading- picture of how asset ownership influences individual and household welfare. Indeed, prior research has found that most assets are owned by individuals (either solely or jointly), thus making individual-level data more revealing than household-level data for informing evidence-based policies and programs. Further, individual-level data enables gender analysis as well as analysis along numerous other dimensions, such as age or marital status, that are important for understanding a range of policy issues. For example, while widows are recognized as a particularly vulnerable group, relatively little evidence is available to facilitate understanding the circumstances under which they acquire or lose assets upon their husbands' deaths.

9. Collecting asset data at the individual level, by asking a respondent about his or her ownership status, provides insights into three broad sets of policy issues: 1) fostering women's empowerment, 2) reducing poverty and vulnerability, and 3) understanding livelihoods.

Women's empowerment

10. The importance of women's ownership and control of assets has long been recognized as a key element of women's empowerment. A call to strengthen women's access to assets, particularly to land and financial assets, was made in both the Convention on the Elimination of All Forms of Violence against Women, in 1979, and the Beijing Platform for Action in 1995. Ensuring women's ownership and control of land and other resources is also a key target of the 2030 Sustainable Development Agenda. (For an overview of the SDG target, see Box 1). Still, relatively little data exists on women's ownership of assets, particularly data derived from nationally-representative surveys.

11. The available evidence does find that women's ownership of assets is positively associated with a number of important development outcomes for the household, including food security, child nutrition, and education. For example, mothers' ownership of assets is

related to increased educational attainment of daughters in Ethiopia and of sons in Indonesia.[2] In Bangladesh, a higher share of women's assets is associated with better health outcomes for girls.[3] And in Nepal, mothers who own land are less likely to have malnourished children.[4]

Box 1

Measuring women's ownership of assets in the 2030 Sustainable Development Agenda

In 2015, the General Assembly of the United Nations adopted a set of goals to end poverty, protect the planet and ensure prosperity for all. Building upon the achievements of the Millennium Development Goals, the 2030 Agenda for Sustainable Development comprises 17 goals and 169 targets. The Goals and targets are the result of over two years of intensive public consultation and engagement with civil society and other stakeholders around the world, which paid particular attention to the voices of the poorest and most vulnerable.

Recognizing that gender equality is critical to achieving the vision set out in the 2030 Agenda, and indeed an objective in its own right, Goal 5 is dedicated to achieving gender equality and empowering all women and girls. Under Goal 5, target 5.a directs countries to undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws.

To monitor progress toward reaching target 5.a, three indicators were agreed, as a starting point, by the United Nations Statistical Commission at its 47th session in 2016 as part of the Sustainable Development Goals Global Indicator Framework. The indicators are:

5.a.1(a) Proportion of total agricultural population with ownership or secure rights over agricultural land, by sex;

5.a.1(b) Share of women among owners or rights-bearers of agricultural land, by type of tenure;

5.a.2 Proportion of countries where the legal framework (including customary law) guarantees women's equal rights to land ownership and/or control

The present publication provides the conceptual basis for the measurement of indicators 5.a.1 (a) + (b) as well as guidance on how to collect the data for computing them. (See Part IV on recommended indicators and list of tabulations).

12. Women's ownership of assets is also associated with improvements in their own wellbeing. Analysis of data collected in Ecuador and Ghana under the Gender Asset Gap Project finds that indicators of women's asset ownership are correlated with more egalitarian

[2] Quisumbing, A. R. & Maluccio, J. A., 2003. Resources at Marriage and Intrahousehold Allocation: Evidence from Bangladesh, Ethiopia, Indonesia, and South Africa. *Oxford Bulletin of Economics and Statistics*, *65*(3), 283–328.

[3] Hallman, K., 2000. Mother-father resource control, marriage payments, and girl-boy health in rural Bangladesh. Food Consumption and Nutrition Division Discussion Paper 93. Washington DC: IFPRI.

[4] Allendorf, K., 2007. Do Women's Land Rights Promote Empowerment and Child Health in Nepal? *World Development*, *35*(11), 1975–1988.

decision-making.[5] Securing women's property and inheritance rights to land can promote women's economic security and thus reduce their vulnerability to unsafe sex and other AIDS-related risk factors.[6] And while the evidence on the relationship between asset ownership and spousal violence is mixed, several studies indicate that asset ownership can protect against spousal violence.[7]

13. Thus, by measuring asset ownership at the individual level, national statistical agencies better equip policymakers to understand women's empowerment and well-being; women's economic vulnerability, especially in the event of household dissolution through death, divorce, separation or abandonment; and bargaining power within the household.

Reducing poverty and vulnerability

14. Traditional poverty studies measure poverty as flows of income, consumption or expenditure deprivation, but this approach often fails to capture the wide range of vulnerabilities experienced by individuals. Because stocks of assets are accumulated by individuals over time, an asset-based approach to the study of poverty can provide better insights into how people manage their vulnerability to poverty than do traditional poverty studies. Research in this vein identifies households with few to no assets that are trapped in poverty, households vulnerable to losing their assets and becoming trapped in poverty, and households that are temporarily poor but that will be able to acquire additional assets and move out of poverty.[8] The results vary across countries as to whether asset poverty traps are present, but all of this work examines assets at the household level. Collecting data on asset ownership and control at the individual level would provide a more rigorous basis for analysis of how poverty affects different household members.

Understanding livelihoods

15. Women's lack of access to important productive resources for agriculture—especially land, agricultural equipment, and livestock—hinders their agricultural productivity. Women's lack of productive assets also inhibits their ability to become entrepreneurs, generate income and earn livelihoods. Individual-level data on asset ownership and control can facilitate a

[5] Deere, C. D., Alvarado, G. E., and Twyman, J., 2012. Gender Inequality in Asset Ownership in Latin America: Female Owners vs Household Heads. *Development and Change*, *43*(2), 505–530.

[6] Bhatla et al., 2006. Property ownership and inheritance right of women as social protection. ICRW; Gillespie and Kadiyala, 2005. HIV/AIDS and Food and Nutrition Security: Interactions and response. In American Journal of Agricultural Economics. 87 (5): 1282-1288.

[7] Bhattacharyya, M., Bedi, A. S., & Chhachhi, A., 2011. Marital Violence and Women's Employment and Property Status: Evidence from North Indian Villages. *World Development*, *39*(9), 1676–1689; Panda, P. & Agarwal, B., 2005. Marital violence, human development and women's property status in India. *World Development*, *33*(5), 823–850; Grabe, S., 2010. Promoting Gender Equality: The Role of Ideology, Power, and Control in the Link Between Land Ownership and Violence in Nicaragua. *Analyses of Social Issues and Public Policy*, *10*(1), 146–170.

[8] See Carter, M. and C.B.Barrett, 2006. "The economics of poverty traps and persistent poverty: An asset-based approach. *The Journal of Development Studies* 42(2):178-99.

better understanding of the conditions under which women's and men's ownership of assets, and the interlinkages of those assets, contribute to diverse livelihood activities. This data can provide the basis for integrated policy packages to increase agricultural productivity and entrepreneurship.

Key policy questions and measures

16. A sound, gender-informed, evidence base is essential for the development of policies and programs aimed at promoting gender equality and indeed, gender analysis is critical to the success of most, if not all, development programs. This evidence can also be used to assess the effectiveness of such policies and programs. Depending on the mode of data collection, as well as the inclusion of additional topics (such as education, health, employment, income or living arrangements) in the same survey instrument, , a range of statistics can be generated from collecting individual-level data on asset ownership and control to answer policy questions on: 1) the extent of the gender incidence and wealth gaps in asset ownership; 2) the consequences of the gender incidence and wealth gaps; and 3) channels for strengthening women's and men's secure rights to assets, such as:

- What is the gender distribution of asset ownership?
- Are assets owned exclusively or jointly by men and women? Which assets?
- Does joint ownership confer equal rights over the asset to the owners?
- Do men and women acquire assets differently? In which ways?
- How secure is women's and men's ownership and control of assets over time?
- Do the values of women's and men's assets differ? In which assets are the bulk of women's and men's wealth stored?
- What are the impacts of the gender incidence and wealth gaps in asset ownership on poverty and other development policy outcomes, including women's empowerment?
- What are the drivers that help poor individuals and households move out of poverty?
- What effects does increasing women's control of key assets have on poverty reduction?
- What are effective ways for programs to build women's asset holdings?

17. To answer the above questions, four main types of measures can be generated that use either the individual or the asset as the unit of analysis. *Incidence gaps* compare the proportion of the total population, by sex, who are owners of a particular type of asset, such as dwellings or land. The *share of owners* indicates how many of the people who own a particular type of asset are women or men. Both of these measures are useful for comparisons between men's and women's asset ownership over time, within and across countries, but are limited in that they do not indicate whether the quality and quantity of assets owned varies among male and female owners. Gender *wealth gaps*, which require data on the value of each asset, account for quantity and quality of assets owned by men and women. Finally, indicators of the *form of ownership* provide information on how each asset is owned, whether

exclusively by a man or a woman or jointly by couples or other configurations of individuals. As will be discussed in Part IV of these guidelines, additional indicators can be constructed to add to a country's evidence base on men's and women's ownership and control of assets.

Development of the guidelines

18. The present publication is the culmination of a multi-year, multi-stakeholder initiative led by the Evidence and Data for Gender Equality (EDGE) project to develop methodological guidance on measuring asset ownership from a gender perspective. (For an overview of the EDGE project, see Box 2). The importance of measuring asset ownership at the individual level to facilitate analysis of women's and men's wellbeing is increasingly recognized by the international community as essential for devising evidence-based policies and programs that promote gender equality and other key development outcomes. The World Bank Living Standards Measurement Study- Integrated Surveys on Agriculture (LSMS-ISA), the Demographic Health Surveys (DHS), the Agricultural Censuses supported by the Food and Agriculture Organisation, the Gender Asset Gap Project (GAGP), and the Women's Empowerment in Agriculture Index (WEAI) all collect some individual-level data on the ownership and control of assets. Building upon the conceptual and operational foundations of this work, and in collaboration with a wide range of national, regional and global partners, the EDGE project developed international guidelines for national statistical agencies to regularly produce individual-level data on asset ownership and control.

Box 2

The EDGE project

The Evidence and Data for Gender Equality (EDGE) initiative seeks to improve the integration of gender issues into the regular production of official statistics for informing better evidence-based polices. Building on the work of the Inter-agency and Expert Group on Gender Statistics (IAEG-GS), the multi-year initiative is jointly executed by the United Nations Statistics Division and the United Nations Entity for Gender Equality and the Empowerment of Women (UN Women) in collaboration with National Statistical Offices, the Asian Development Bank, the Food and Agriculture Organisation of the United Nations, the Organisation for Economic Co-operation and Development (OECD) and the World Bank. The project is guided by a Steering Committee composed of members of the donor community, members of the IAEG-GS, regional commissions, regional development banks and key agencies that coordinate statistical work. EDGE receives funding from the governments of Australia, Canada, Germany, the Republic of Ireland, the Republic of Korea, and the United States.

EDGE aims, specifically, to accelerate existing efforts to generate internationally comparable gender indicators on health, education, employment, entrepreneurship and asset ownership through two main activities: 1) the development of an online data portal to disseminate gender-relevant data and metadata on education, employment and health; and 2) the development of methodological guidelines on measuring asset ownership and entrepreneurship from a gender perspective.

To develop methodological guidelines on measuring asset ownership and entrepreneurship from a gender perspective, the EDGE project has consolidated technical inputs over a multi-year process from a wide range of stakeholders, including national statistical offices, regional and international agencies, and researchers with expertise in gender analysis, asset ownership and entrepreneurship.

The EDGE project then tested the proposed methodology in seven pilot countries -Georgia, Maldives, Mexico, Mongolia, Philippines, Uganda, and South Africa – and refined the methodology based on the lessons learned from the pilots. The guidelines were presented to the UN Statistical Commission in 2017.

By developing and testing methodologies to collect data on entrepreneurship and assets, the EDGE project provides national statistical offices with the necessary tools to institutionalize the systematic collection of these data. Consistent with a clear imperative for evidence-based policy-making, the ultimate aim of the EDGE initiative is to build both a cost-effective and sustainable model for integrating gender issues into regular statistical production and countries' capacities to produce gender data in all policy areas.

19. To ensure that the guidelines presented in this publication are robust, feasible, and sustainable, the EDGE project partnered with the national statistical agencies of seven countries – Georgia, Maldives, Mexico, Mongolia, Philippines, Uganda, and South Africa – to pilot the methodology. (For an overview of the EDGE pilots, see Table 1). The selection of pilot countries was based on three criteria. First, given the limited scope of the project, countries had to possess adequate statistical capacity to contribute to the development of a new methodology. Second, countries had to have plans in place to either conduct a survey that could accommodate a module on asset ownership and control or be willing to implement a stand-alone survey during the project time frame. Third, countries had to express demand for better gender statistics on asset ownership and control, as the success of the EDGE project, including the likelihood that national statistical agencies would incorporate the methodology into their survey programs, depended on countries' interest and engagement in the programme and its aims.

20. Key partners provided financial and additional technical support; the Asian Development Bank (ADB) for the pilots in Georgia, Mongolia and the Philippines and the World Bank for the pilot in Uganda. Funding and additional technical support for the pilot in Mexico were provided by the National Institute of Statistics and Geography (INEGI). Funding and technical assistance for the pilots in Maldives, Uganda and South Africa were provided by the EDGE project.

21. The seven pilot studies provided an opportunity to test and refine key aspects of the methodology on measuring asset ownership from a gender perspective, including conceptual and measurement issues related to questionnaire design, respondent selection interview protocols and indicator constructs. In Uganda, in 2014, the EDGE project partnered with the World Bank LSMS team to conduct a methodological survey experiment assessing the relative effects of interviewing different household members about individual-level asset ownership and control, the findings of which informed the EDGE pilots implemented over the next two years. In 2015, Mexico appended a module on a "core" set of assets to a national household survey, and Georgia, Mongolia and the Philippines implemented stand-alone surveys on the full range of financial and physical assets. In 2016, Maldives also appended a module on a core set of assets to a national household survey and South Africa piloted a stand-alone survey.

22. Throughout this process, the EDGE initiative held a series of technical meetings, a midterm review meeting and side events during the 45th, 46th, 47th and 48th UN Statistical Commissions to solicit input on the methodology from its stakeholders, including national statistical agencies, the Asian Development Bank, the African Development Bank, the Food and Agriculture Organisation of the United Nations, the United States Agency for International Development, and the World Bank.

23. The final methodology presented in this publication, including the recommendation of key indicators for global and national monitoring, is informed by the technical input of the EDGE project stakeholders as well as both quantitative and qualitative analysis of the pilot data and lessons learned from implementing the pilot studies in seven countries with divergent economies, gender norms, legal frameworks and rights to property.

Table 1
Overview of EDGE pilots

Country	Data collection strategy	Asset coverage	Sample size	Household member(s) interviewed	Dates of data collection
Georgia	Stand-alone survey	Principal dwelling, agricultural land, livestock, large agricultural equipment, non-farm enterprises, real estate, consumer durables, financial assets and liabilities, valuables	3,160 households, nationally-representative	Principal couple plus a third randomly selected household member; self-reported and proxy data collection. In households without couples, the household member most knowledgeable about the assets belonging to the household and two randomly selected respondents were interviewed.	September-October 2015
Maldives	Module appended to Household, Income and Expenditure Survey (HIES)	Principal dwelling, agricultural land, enterprises, real estate, financial assets and liabilities	An HIES subsample of 285 households on 3 islands	1 randomly selected adult household member; self-reported data collection	May 2016
Mexico	Modules appended to National Household Survey (ENH)	Agricultural land, large agricultural equipment, real estate, financial assets and liabilities	An ENH subsample of 8,204 households	Principal couple; self-reported and proxy data collection. In households without couples, the household member most knowledgeable about the assets belonging to the household and a household member of the opposite sex were interviewed.	June-October 2015
Mongolia	Stand-alone survey	Principal dwelling, agricultural land, livestock, agricultural equipment, non-farm enterprises, real estate, consumer durables, financial assets and liabilities, valuables	3,008 households, nationally representative	Principal couple plus a third randomly selected household member; self-reported and proxy data collection. In households without couples, the household member most knowledgeable about the assets belonging to the household and two randomly selected respondents were interviewed.	September-November 2015

Country	Data collection strategy	Asset coverage	Sample size	Household member(s) interviewed	Dates of data collection
Philippines	Stand-alone survey	Principal dwelling, agricultural land, livestock, agricultural equipment, non-farm enterprises, real estate, consumer durables, financial assets and liabilities, valuables	1,536 households, representative for Cavite province	Principal couple plus a third randomly selected household member; self-reported and proxy data collection. In households without couples, the household member most knowledgeable about the assets belonging to the household and two randomly selected respondents were interviewed.	September-October 2015
South Africa	Stand-alone survey	Principal dwelling, agricultural land, livestock, agricultural equipment, non-farm enterprises, real estate, consumer durables, financial assets and liabilities, household decision-making module	1,946 households in KwaZulu-Natal province	In half the sample, 1 randomly-selected adult household member plus all additional household members identified as entrepreneurs in the household questionnaire; self-reported data collection. In half the sample, 1 randomly-selected adult household member and his/her spouse/partner plus all additional household members identified as entrepreneurs in the household questionnaire; self-reported data collection.	August-September 2016
Uganda	Stand-alone survey	Principal dwelling, agricultural land, livestock, agricultural equipment, non-farm enterprises, real estate, consumer durables, financial assets and liabilities, valuables	2,720 households, nationally representative	5 interview settings were tested: 1. Self-identified most knowledgeable household member, interviewed alone, asked about assets owned, exclusively or jointly, by any household member; 2. Randomly selected member of the principal couple - interviewed alone, asked about assets owned, exclusively or jointly, by any household member; 3. Principal couple - interviewed together, asked about assets owned, exclusively or jointly, by any household member; 4. Adult (18+) household members - interviewed alone and simultaneously, asked about assets owned, exclusively or jointly, by any household member, and; 5. Adult (18+) household members - interviewed alone and simultaneously, asked about assets owned, exclusively or jointly, by individual respondent.	June-August 2014

Relationship with existing international standards and other global guidelines

24. This publication presents the first global guidelines on measuring asset ownership and control from a gender perspective. As such, careful attention was given to ensure consistency with existing internationally agreed standards, including concepts and definitions, classifications, and recommendations for data collection. The global methodological

publications most relevant from this perspective include: (i) the 2008 System of National Accounts (SNA); (ii) the third revision of the Principles and Recommendations for Population and Housing Censuses; and (iii) the OECD Guidelines for Micro Statistics on Household Wealth.

25. Differences between the present guidelines and the publications referenced above do exist, however. For example, differences vis-a-vis the coverage of assets and definitions of ownership reflect the present publication's focus on the individual-level measurement of asset ownership and a strong gender perspective supported by prior empirical research on gender and property rights. Differences from the OECD Guidelines for Micro Statistics on Household Wealth additionally reflect the aim of this publication to provide guidance to a wider set of countries, both developing and developed, as well as an emphasis on the operational aspects of collecting the required data through household surveys. Each difference is explained in the relevant section of the publication.

Users of guidelines

26. This publication is targeted primarily to national statistical offices aiming to produce statistics on asset ownership from a gender perspective using household surveys. It addresses conceptual and definitional aspects of measuring asset-ownership at the individual level, practical issues in planning and implementing data collection in the field, and hands-on approaches for data analysis and dissemination. The guidelines are prescriptive in terms of the conceptual framework that should guide the measurement of asset ownership, but offer a menu of options for data collection and analysis that could fit a range of objectives and resources. They provide a common platform for the range of specialists typically involved in a data collection project, including specialists in gender statistics, household surveys, sampling, national accounts, agricultural land, data managers, and other specialists in field operations. Finally, these guidelines are designed to be applicable in countries at different stages of statistical development and with different experience in conducting household surveys. Aspects specific to asset ownership are emphasized across all chapters, while indicating where these specific aspects fit within the typical stages of the statistical production.

27. This publication is also relevant to users of data. Data on individual-level asset ownership and control are important for a variety of users, including the government, civil society, researchers and the general public. These guidelines can improve users' understanding of how to interpret the available data, including by taking into account conceptual and measurement issues. They can also improve the dialogue between users and producers of data, including by creating a more precise and efficient communication, and showcasing targeted statistical products that are designed to respond to specific users' needs.

Organization of the publication

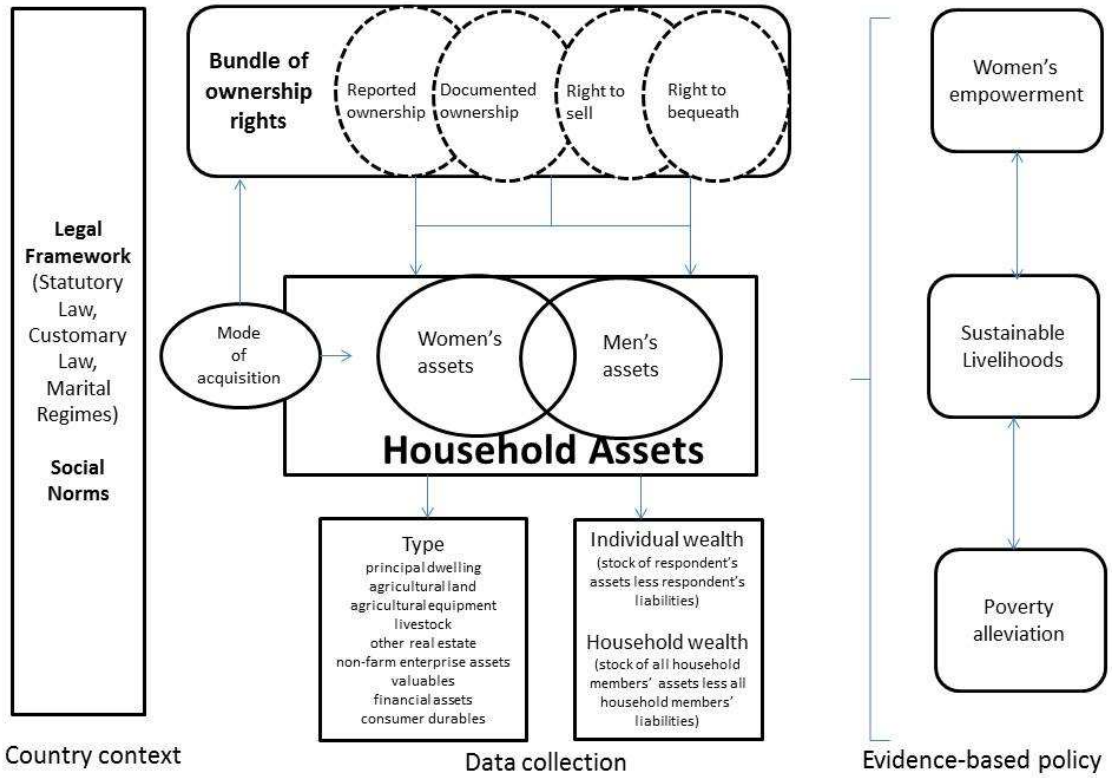
28. The guidelines on measuring individual-level asset ownership and control in household surveys comprise four parts. Part I presents a conceptual framework for measuring

asset ownership and control from a gender perspective. Part II discusses the role of household surveys and other sources of data in collecting individual-level data on the ownership and control of assets. Part III provides guidance on planning, organizing and implementing a household survey to collect individual-level data on the ownership and control of assets. Part IV provides guidance on data processing, tabulation, analysis and the dissemination of results.

Part I. A conceptual framework for measuring asset ownership from a gender perspective

29. This chapter presents a conceptual framework for measuring asset ownership from a gender perspective. To ensure consistency with existing international standards, the concepts and definitions presented below are anchored in the System of National Accounts (SNA), the internationally agreed conceptual and accounting framework for recording economic activities for the purpose of analysing and evaluating the performance of an economy. To ensure that the framework orients data collection on asset ownership from a gender perspective, the concepts also build upon prior empirical research on gender and property rights.

Figure 1
Conceptual framework for measuring asset ownership and control from a gender perspective



30. As illustrated in Figure 1, the conceptual framework for measuring asset ownership from a gender perspective is concerned with assets held by households, including adult female and male household members. An asset is defined as "a store of value representing a benefit or a series of benefits accruing to the economic owner by holding or using the entity over a period of time", consistent with the 2008 SNA. In the conceptual framework on

measuring asset ownership from a gender perspective, household assets may be owned exclusively by one household member or jointly by two or more household members or household members and non-household members. The *form* of ownership, whether exclusive or joint, is represented by the overlapping circles labelled "women's assets" and "men's assets" in Figure 1. The *type* of ownership may consist of one or more of the bundle of ownership rights – reported ownership, documented ownership, the right to sell and the right to bequeath – depicted by the overlapping ovals in the top of Figure 1. Both the type and the form of women's and men's ownership of assets are influenced by the initial context, including the legal framework and social norms, as well as the modes in which the assets were acquired.

31. Consistent with the SNA, the collection of individual-level data on a range of financial and non-financial assets is recommended, including those listed in figure 1 in the square labelled "type": principal dwellings, agricultural land, agricultural equipment, livestock, other real estate, non-farm enterprise assets and valuables, as well as consumer durables. This is because individual-level data on women's and men's ownership of these assets can provide important insights for the design of evidence-based policies and programmes, including those on women's empowerment, sustainable livelihoods and poverty alleviation. In addition, countries are encouraged to collect information on the value of assets to reflect additional attributes of assets, such as size, quality or location, that are not revealed by a simple count of women's and men's asset holdings, including for the purpose of understanding differentials in the individual wealth held by women and men.

32. In the following sections, each of these key concepts is discussed in detail.

1. Definitions of Ownership

33. This section discusses the types of ownership comprising the bundle of ownership rights, the forms of acquisition and the modes of acquiring assets.

1.1. Types of ownership

34. The 2008 SNA distinguishes between two types of ownership: legal and economic. The legal owner of assets is the institutional unit entitled in law and sustainable under the law to claim the benefits associated with the entities. The economic owner of assets is the institutional unit entitled to claim the benefits associated with the use of the asset in question in the course of an economic activity by virtue of accepting the associated risks. In the SNA framework, every entity has both a legal owner and an economic owner, though in many cases these two are the same.[9]

[9] Where the legal owner and the economic owner are not the same, the legal owner has handed responsibility for the risk involved in using the entity in an economic activity to the economic owner along with associated benefits. In return the legal owner accepts another package of risks and benefits from the economic owner. For example, an individual can rent out her dwelling for a fee to another person, who derives economic benefit from using the dwelling but also assumes the risk of keeping the dwelling in working order during the duration of the exchange.

35. While the present publication recognizes the appropriateness of legal and economic ownership for the accounting focus of the SNA's macro statistics framework, it posits that these concepts are not sufficient for understanding the complexity of ownership rights from a gender perspective, for three key reasons. First, in many countries, the incidence of ownership documents, which confer upon the owner the ability to claim the asset under the law, remains low. Absent of any documentation, the legal owner of a given asset is not easily identified and may only be determined if an external claim to the asset is made.

36. Second, even when ownership documents exist, claims of legal ownership are complicated by legal pluralism; i.e. the coexistence of multiple types of (often contradictory) law governing individuals' rights to property, including both statutory and customary laws.[10] For example, constitutional or national laws, such as in South Africa and Uganda, may guarantee women equal rights to land ownership while customary laws or practices, such as religious law or long standing traditions, may prohibit women's ownership of land and only grant them access through husbands, fathers, brothers, or other male relatives.[11] When conflict arises between different types of laws, local law often prevails over statutory law, according fewer property rights to women.[12] In this way, a woman may be a legal owner, nominally, of a given asset but possess few or none of the rights or benefits associated with legal ownership.

37. Third, a male individual may be able to claim the benefits associated with the use of an asset, such as the proceeds from farming an agricultural parcel or selling a goat, without assuming any of the risk associated with the use of the asset if prevailing gender norms allow husbands or male relatives to assume command of women's assets at their discretion. Accordingly, economic ownership, as defined in the 2008 SNA, does not reflect the potentially unequal distribution within households of the risks and benefits associated with asset ownership.

38. In departure from the 2008 SNA, and as illustrated in Figure 1, the present publication conceptualizes ownership as a "bundle" of rights comprising some of all of the following components:

- **Reported ownership**. Reported ownership refers to the person(s) who considers him or herself to be an owner of the asset in question, irrespective of whether his or her name is listed as an owner on an ownership document for the asset. Reported ownership measures people's self-perceptions about their ownership status and thus, need not –and cannot – be objectively verified. It is a key concept for understanding the empowerment effects of asset ownership from a gender perspective since we expect the benefits and behaviors related to asset ownership to be influenced by people's perceptions of what they believe themselves to

[10] Meinzen-Dick, RS. and R. Pradhan, 2002. Legal pluralism and property rights. IFPRI.

[11] Jacobs K. and A. Kes, 2015. The ambiguity of joint asset ownership: cautionary tales from Uganda and South Africa. In *Feminist Economics*, Vol. 21, Issue 3.

[12] Bomuhagni, Doss and Meinzen-Dick, 2011. Who owns the land? Perspectives from rural Ugandans and implications for land acquisition. IFPRI Discussion Paper 01136.

own.[13] Further, in contexts in which the incidence of documented ownership for applicable assets remains low, such as in most of Sub-Saharan Africa, reported ownership may be the only available proxy of one's ownership status.

- **Documented ownership**. Documented ownership refers to the existence of any document an individual can use to claim ownership rights in law over an asset by virtue of the individual's name being listed as an owner on the document. The type of documentation conferring ownership, and the rights accorded under that ownership, will be specific to the country context, but may include one or more of the following: a formal title or deed, a purchase agreement, or a certificate of customary ownership. In some contexts, documented ownership may provide owners of land and housing with more tenure security than reported ownership. For example, households with documented ownership of land may be better able to withstand large-scale land acquisitions by the private sector than households with no documented land ownership while women are more likely to retain ownership of documented land in the event of household dissolution due to divorce or the death of a spouse.[14] In other contexts, documented ownership may not confer greater tenure security, particularly when the institutional frameworks meant to enforce property rights are weak and land owners have little knowledge about their rights.[15]

- The **right to sell**. The right to sell an asset refers to the ability of an individual to permanently transfer the asset in question in return for cash or in-kind benefits. This right to alienate is the right most commonly associated with ownership, but the concept is not applicable in areas where assets, such as land, cannot be sold due to either laws or social norms. In such contexts, information on the **right to rent out** an asset may be collected. This right refers to the ability of an individual to bestow the use rights of the asset in question to another person(s) for a specific period of time, in return for cash or in-kind benefits.

- The **right to bequeath**. The right to bequeath an asset refers to the ability of an individual to give the asset in question, by oral or written will, to another person(s) after his or her death. The right to bequeath is also an alienation right, one that may be more universal than the right to sell since in many contexts, owners can bequeath assets to their children or other persons even if they are prohibited from selling them.

[13] Bomuhagni, Doss and Meinzen-Dick, 2011. Who owns the land? Perspectives from rural Ugandans and implications for land acquisition. IFPRI Discussion Paper 01136.

[14] Doss et al., 2013. Gender Inequalities in Ownership and Control of Land in Africa. IFPRI.

[15] Meinzen-Dick, R. et al., 2014. The Gender Asset Gap and Its Implications for Agricultural and Rural Development. In R. A. Quisumbing, R. Meinzen-Dick, L. T. Raney, A. Croppenstedt, A. J. Behrman, & A. Peterman (Eds.), *Gender in Agriculture: Closing the Knowledge Gap* (pp. 91–115). Dordrecht: Springer Netherlands.

39. Central to the conceptualization of ownership as a bundle or rights are two key notions. First, in some contexts, and particularly for agricultural land, there may be certain ownership rights that no individuals hold due to the tenure systems recognized within a country. For example, in Ethiopia, which vests the ownership of agricultural land in the state, individuals cannot own land but they can be accorded long-term use rights, which may be certified, and can alienate that land through bequeathment. In other contexts, individuals may possess documented ownership of customary land but not be allowed to sell it due to legal restrictions on the sale of customary land. The context-specificity of the bundle of ownership rights is illustrated by the dotted oval lines representing the different rights in Figure 1 above.

40. Second, even when the full set of ownership rights exists, they may not all be vested in one individual. For example, a woman may consider herself to be an owner of the dwelling she resides in, and her husband may agree, but her name may not be listed as an owner on the deed for the dwelling. Alternatively, her name may appear as an owner on the deed, but she may lack de facto authority to sell the dwelling.

41. While variations in the overlap of ownership rights will be observed across countries, analysis of the data from six of the EDGE pilot studies finds that, female owners, on average, are less likely than male owners to possess the full bundle of ownership rights. This holds true across all types of applicable assets and irrespective of the type of ownership (documented or reported) or form of ownership (exclusive or joint, as discussed in Section 1). For example, in Uganda 76 per cent of men who consider themselves owners of the principal dwelling also report the right to sell the dwelling whereas only 46 per cent of women who report owning the dwelling also report the right to sell it. Similarly, 90 per cent of men reporting ownership of agricultural land report the right to bequeath it while only 62 per cent of women reporting ownership of agricultural land also report this right. In South Africa, 75 per cent of male reported agricultural land owners report the right to bequeath the land versus 67 per cent of female reported owners.

42. In Georgia, Mexico, Mongolia and the Philippines, the overlap between reported ownership and the rights to sell and bequeath assets is higher for both men and women, but the differences between men and women in the degree of overlap are still statistically significant. For example, in Georgia, 90 per cent of male reported dwelling owners possess the right to sell the dwelling versus 80 per cent of female self-reported dwelling owners, while in Mongolia, 97 per cent of male reported owners of dwellings have the right to sell it compared to 90 per cent of female reported owners. In the Philippines, the corresponding statistics are 93 per cent and 88 per cent for male and female reported dwelling owners, respectively. Finally, in Mexico, 97 per cent of male spouses/partners who report owning agricultural land also report the right to sell the land versus 89 per cent of female spouses or partners.

43. Documented ownership confers a higher share of alienation rights than reported ownership to both men and women in the pilot studies. While in almost all cases, the share of documented female owners with the rights to sell or bequeath a given asset is still lower than the share of documented male owners with these rights, the overlap is 90 per cent or greater for both men and women in all countries except Uganda and South Africa and the magnitude

of the differences between men and women is smaller for documented ownership than reported ownership in all countries except Uganda. For example, in Georgia, 97 per cent of male documented dwelling owners possess the right to sell the dwelling versus 93 per cent of female self-reported dwelling owners whereas in Mexico 98 per cent of male documented agricultural owners report the right to bequeath the land versus 92 per cent of female documented owners. In South Africa, 96 per cent and 88 per cent of male and female documented land owners, respectively, report the right to sell the land. In Uganda however, only about 60 per cent of female documented dwelling owners have the right to sell or bequeath the dwelling compared to 95 per cent of male owners.

44. Two key implications for countries measuring asset ownership from a gender perspective emerge from the analyses of the EDGE pilot data. First, the extent to which the bundle of ownership rights are vested in one individual (pictorially, the extent to which the dotted ovals representing the bundle of ownership rights will overlap in Figure 1 above) can vary considerably across countries (and within). Second, to capture gender differences in asset ownership, many countries will have to measure a combination of ownership rights. This is particularly true in countries with a low incidence of documented ownership, such as those in Sub-Saharan Africa, where multiple land tenure systems complicate the ownership of land and housing. Accordingly, and as detailed in Part III of these guidelines, national statistical agencies will need to develop a thorough understanding of the country context prior to collecting individual-level data on asset ownership, including an understanding of the statutory and customary laws governing property rights and the social norms mediating those rights, as represented by the rectangle labelled "country context" in Figure 1. Equipped with such knowledge, national statistical agencies can thus define ownership as the strongest bundle of rights available in that country.

1.2. Forms of ownership

45. An asset may be owned exclusively by one person or jointly by two or more persons. While joint ownership between spouses or couples is often the most common form of joint ownership, other patterns of joint ownership are also possible, such as joint ownership between siblings or between parents and their adult children.

46. Measuring the form of ownership, whether exclusive or joint, is important because the rights and benefits associated with ownership may differ if one owns an asset exclusively or jointly. Further, while joint ownership typically confers some rights on the owners, the joint owners may not have equal rights to, or benefit equally from, the asset in question. To fully understand the implications of joint ownership, data are needed on both the forms of ownership and the rights held by each of the joint owners.

47. Exclusive and joint ownership within couples is influenced by issue of the laws regarding property ownership within marriage. Broadly speaking, there are three types of marital regimes. In a *common property regime*, all property owned by either member of a couple is joint property. In a *partial community property regime*, assets brought to marriage or inherited during marriage remain individual exclusive property, while all property acquired

during marriage is joint property. Finally, in a *separation of property regime*, marriage does not confer any rights to the property of the spouse.

48. In many countries, there is a default regime, but a couple may choose a different martial regime at the time of marriage. In addition, there may be different marital systems with different marital property regimes within the same country; a couple may choose to marry under civil law, customary law or religious law, and each may have different property arrangements.

49. Like prior empirical studies, including the Gender Asset Gap Project (GAGP) and the Gender, Land and Asset Survey (GLAS), analysis of the data from the EDGE pilots finds that a substantial proportion of physical assets are owned jointly, but that the level and patterns of joint ownership vary by country. In South Africa, women and men are more likely to be exclusive owners of principal dwellings than joint owners, regardless of whether the ownership is documented or reported. In Mongolia and Uganda, men are also more likely to be both exclusive reported and documented owners than joint owners of principal dwellings, but for women, there is no difference in the proportion of sole or joint reported or documented ownership.

50. In contrast, in the Philippines, women and men are more likely to be joint reported and documented principal dwelling owners than exclusive reported and documented owners. In Georgia, women and men are also more likely to be joint reported principal dwelling owners than exclusive owners. However, the proportion of exclusive documented owners is higher than the proportion of exclusive reported owners for both women and men, perhaps suggesting while only one person's name may be listed on the ownership documentation for the dwelling, these individuals consider the dwelling the dwelling to be jointly owned by others. The highest level of joint ownership of principal dwellings is found in Georgia, where 87 per cent of male owners and 88 per cent of female owners are joint owners. The highest level of exclusive ownership of principal dwellings is in Uganda where 84 per cent of male owners and 49 per cent of female owners are exclusive owners.

51. For agricultural land, the incidence of exclusive ownership is higher than joint ownership for women and men in Uganda, but the reverse is true for women and men in Georgia. In South Africa, there is no difference in the likelihood of men being exclusive or joint reported owners of agricultural land whereas women are more likely to be exclusive than joint reported owners although the difference is only marginally significant. In Mexico, male spouses or partners are more likely to be exclusive reported owners than joint owners.[16]

52. In the Philippines, South Africa and Uganda, women and men are both more likely to be exclusive owners than joint owners of financial assets. However, when respondents do jointly own financial assets, they are most likely to own them with their spouses or partners.[17]

[16] The prevalence of female spouses'/partners' ownership of agricultural land in Mexico is less than 2 per cent. The prevalence of both women's and men's ownership of agricultural land in Mongolia and the Philippines is less than 6 per cent and 3 per cent, respectively.

[17] The prevalence of financial asset ownership is low (less than 6 per cent) in Mongolia and Georgia.

1.3. Acquisition of assets

53. In order to develop policies and programs that promote women's and men's accumulation of assets, data is needed to understand how men and women acquire assets and whether their modes of acquisition differ. While countries will need to customize the modes of acquisition according to their specific contexts, as discussed in more detail in Part III, these guidelines recommend including inheritance, purchase, and allocation through government programs to assess whether these channels can be utilized to strengthen women's ownership of assets. For example, research in Latin America indicates that while overall men are more likely than women to inherit land, the most prevalent means of acquisition of land for women is inheritance. This suggests that in Latin America, the market has more of a gender bias than inheritance.[18]

54. Analysis of the EDGE data reveals that while inheritance is an important means of women's acquisition of principal dwellings in four of the pilot studies, it is never the most prevalent way by which women acquire the dwelling. In the EDGE samples in Mongolia, the Philippines and South Africa, women are most likely to purchase the principal dwelling, with just over half of female owners purchasing the dwelling in the Philippines. Inheritance is the second most common means of dwelling acquisition for women in the Philippines and South Africa and the third most prevalent means for women in Uganda. Allocation by family or government is also a prevalent mode of acquiring the principal dwelling in some of the pilot samples. In both Mongolia and the Philippines, allocation by government is the third most common means of acquiring the principal dwelling, with similar levels for both men and women within each country. In Mexico, allocation by family is the third most common mode of acquisition for both men and women, while in Georgia, it is the most prevalent means by which men acquire dwellings (45 per cent of male owners). In contrast, women in Georgia are most likely to obtain the dwelling though marriage or custom (40 per cent of owners).

55. The acquisition of agricultural land shows similar patterns. Purchase is the most prevalent way for women to acquire agricultural land in Georgia, Mexico and Uganda and the most common way for men in Georgia and Uganda. Men in Mexico are more likely to inherit agricultural land than to purchase it, and allocation by family is an important channel by which both men and women acquire land in Georgia, Mexico and Uganda, with on third of male owners and one quarter of female owners being allocated land by family in Uganda.

2. Who to interview about the ownership and control of assets at the individual level

56. This section presents recommendations for who in the household should be interviewed about the ownership and control of assets at the individual level. These recommendations are as follows:

[18] Deere, C. D., & Leon, M., 2003. The Gender Asset Gap: Land in Latin America. *World Development*, *31*(6), 925–947.

- National statistical agencies should collect self-reported rather than proxy data on the ownership and control of assets at the individual level;
- For the purposes of deriving nationally-representative estimates of the prevalence of women's and men's asset ownership, it is sufficient to interview one randomly selected adult household member.
- For a full intrahousehold analysis of gender inequality in asset ownership, all adult household members can be interviewed.
- Countries may wish to adopt a modified approach and interview one randomly selected adult respondent and his/her spouse/partner, if applicable. This approach would allow for both the derivation of nationally-representative estimates of women's and men's asset ownership as well as intrahousehold analysis of asset ownership between spouses.

57. The rationale for these recommendations, including a discussion of the empirical evidence on which they are based, is presented below.[19]

2.1. Proxy versus self-reported prevalence estimates of women's and men's asset ownership

58. Central to collecting data at the individual level on the ownership and control of assets is the question of who in the household should be interviewed. While some large-scale household survey programs, such as the Living Standards Measurement Study (LSMS), Demographic and Health Surveys (DHS) and Labour Force Surveys[20] collect self-reported data from multiple household members, most household surveys implemented by national statistical agencies that collect individual-level data do so by obtaining proxy data from the head of the household or the person most knowledgeable about the survey topic. To the extent however, that there is an incomplete pooling of information within households or a response bias related to prevailing gender norms, this approach is likely to be problematic for measuring the ownership and control of assets from a gender perspective due to the introduction of non-random measurement error. For example, the head of household may be unaware of the full stock of assets owned by other household members or aware of the full stock of assets belonging to the household but unable to accurately identify the owners. Moreover, when asked to report on the ownership status of all household members, the head (who is often male) may inflate his ownership of assets relative to his wife's or other females in the household in order to appear to have the most personal wealth, thus biasing estimates of both women's and men's asset ownership.[21]

[19] Part III on sampling discusses the implications of these recommendations for sampling design.

[20] Proxy responses are accepted for household members unavailable for interview in Labour Force Surveys, but ILO guidelines caution that proxy respondents may provide inaccurate information, which can bias labour force statistics (Hussmanns, Mehran, and Verma, 1990 in Bardasi et al. 2011).

[21] In an analysis of proxy versus self-reported data in surveys on household income, Fisher, Reimer and Carr (2009) find for Malawi that the husband underestimated his wife's income by an average of 47 per cent.

59. While theoretically, self-reported data is presumed to be more accurate than proxy data, few studies have systematically assessed the effects of using proxy data in lieu of self-reported data and most of the empirical evidence is concentrated on labour force statistics. For example, in an analysis of a randomized survey experiment in Tanzania in which both self-reported and proxy data were collected for a labour module, response by proxy rather than self-report has no effect on female labour force participation (LFP) rates but results in a decrease of male labour force participation by about 12 percentage points. The effects on male LPF are attenuated (although still large) when proxy respondents are spouses, suggesting that spouses may have more accurate information on the employment status of their partners than other household members.[22] Still, proxy response by spouse is still likely to suffer from imperfect information sharing or response bias as demonstrated in an analysis of the effects of proxy versus self-reported data on household income in which husbands underestimated the earnings of their wives income in 66 per cent of sampled households in Malawi by an average of 47 per cent.[23]

60. As no similar studies had been done on the effects of proxy versus self-reported data on estimates of men's and women's asset ownership, the UN EDGE project partnered with the World Bank LSMS team and the Uganda Bureau of Statistics to implement a randomized survey experiment in Uganda that tested the relative effects of interviewing different household members and collecting proxy versus self-reported data on the ownership and control of assets (see Box 3 for an overview of the experiment, formally known as the Methodological Survey Experiment on Measuring Asset Ownership from a Gender Perspective (MEXA)). Analysis of the data from MEXA finds that collecting information on individual-level asset ownership by proxy from the household head yields different estimates of men's and women's asset ownership than asking respondents to self-report their ownership status although, unsurprisingly, variations by asset, by type of ownership and by the sex of the owner are observed.

61. For example, response by self-report rather than proxy increases women's reported ownership of the principal dwelling by 19 percentage points and men's reported ownership by 10 percentage points whereas response by self-report increases women's documented ownership of dwellings by only 3 percentage points and has no effect on men's documented ownership. This sizeable distinction between reported and documented ownership is to be expected if we consider that reported ownership measures people's perceptions of who the owners of a given asset are and thus is more sensitive to variations in respondents.

62. Response by self-report rather than proxy also increases both women's and men's reported ownership of agricultural land in Uganda, although the increase is greater for men (15 percentage points) than for women (10 percentage points). Increases in documented ownership based on self-reported data rather than proxy are observed for both men and

[22] Bardasi et al., 2011. Do Labor Statistics Depend on How and to Whom the Questions Are Asked? Results from a Survey Experiment in Tanzania.

[23] Fisher, Reimer, and Carr, 2009. Who Should be Interviewed in Surveys of Household Income?. In *World Development*, Vol.38, Issue 7.

women although the increase is also greater for men (7 percentage points) than for women (2 percentage points). Finally, self-reported data yields similar increases in both women's and men's reported ownership of financial assets (approximately 9 percentage points) compared to proxy data. Taken together, these results are likely due to information imperfections within the household since both men's and women's asset ownership is underestimated by proxy response across all assets.

63. The EDGE pilots in Georgia, Mongolia, the Philippines and Uganda, which collected both proxy and self-reported data from multiple household members, allow for analysis of discrepancies in proxy and self-reporting within households, including the extent to which proxy respondents agree with the self-reported ownership status of other household members. In Uganda, discrepancies exist between proxy and self-reported ownership of dwellings and agricultural land for both male and female owners, with much larger discrepancies observed for women. For example, 91 per cent of male respondents who consider themselves to be owners of the principal dwelling are also considered owners by at least one proxy respondent in the same household. However, only 53 per cent of female respondents who self-report ownership of the principal dwelling are also considered to be owners by at least one other household member. For agricultural land, the discrepancies between proxy and self-reporting are even larger. 79 per cent of male respondents who consider themselves to own agricultural land are also considered owners by at least one proxy respondent in the same household whereas the comparable statistics for women is 49 per cent.

64. While these findings provide further evidence that proxy respondents underestimate the ownership of other household members, particularly women, a non-ignorable share of respondents who do not consider themselves owners of assets are actually identified as owners by other household members. For example, 9 per cent of men and 7 per cent of women who do not consider themselves owners of the principal dwelling are identified as owners by at least one other household member. For agricultural land, the discrepancy is again larger, with 25 per cent of men and 14 per cent of women who do not report themselves as owners of agricultural land being identified as owners by at least one other household member.

Box 3

Overview of the methodological experiment on measuring asset ownership from a gender perspective in Uganda

In 2013, at the request of its stakeholders, the EDGE project formally established a partnership with the World Bank Living Standards Measurement Study (LSMS) program for the design, implementation and analysis of a methodological household survey experiment to test different respondent selection protocols for collecting data on asset ownership and control at the individual level. The Uganda Bureau of Statistics (UBoS), an early partner of the EDGE project, was selected to implement the experiment in Uganda given its strong implementation capacity and longstanding partnership with the LSMS. Formally known as the "Methodological Experiment on Measuring Asset

Ownership from a Gender Perspective" (MEXA), the survey was implemented on the World Bank Survey Solutions Computer-Assisted Personal Interviewing (CAPI) platform from May-August 2014 with in-country training, survey management, field supervision, data processing and quality control support from the LSMS. The findings from MEXA and the operational challenges of implementing the experiment, both of which are discussed in the main text of these guidelines, informed the six EDGE pilot studies implemented over the following two years as well as on-going work by the LSMS team. The totality of this work forms the basis for the best practices recommended in these guidelines.

Questionnaire Design

The MEXA questionnaire consisted of two parts: 1) a household questionnaire comprising a household roster (of people, not assets) and a short module on dwelling characteristics administered to the self-identified most knowledgeable household member; and 2) an individual questionnaire comprising modules on the ownership and control of the principal dwelling, agricultural land, large and small livestock, large and small agricultural equipment, non-farm enterprises and enterprise assets, other real estate, consumer durables, financial assets, liabilities, and valuables, administered to one or more respondents per the survey treatment arm protocols (described in section 2.2. below).

For agricultural land, other real estate, non-farm enterprises, and financial assets and liabilities, an inventory of assets belonging to the household was collected from each respondent in the individual questionnaire by asking the respondent to itemize the given assets at the start of each respective module (e.g. each agricultural parcel). The individual questionnaire asked questions on four main topics: ownership and control of assets; acquisition of assets; valuation of assets; and hidden assets. Data were collected on a bundle of ownership rights, including reported and documented ownership and the rights to sell the asset, bequeath the asset, use the asset as collateral, make improvements to the asset and claim the economic benefits from the sale of the asset.

Experiment Design

In order to assess the relative effects of respondent selection protocols on key outcome estimates of women's and men's asset ownership and control, MEXA tested the following five survey treatment arms (TAs) in which different household members were interviewed:

1. Self-identified most knowledgeable household member, interviewed alone, asked about assets owned, exclusively or jointly, by any household member;
2. Randomly selected member of the principal couple - interviewed alone, asked about assets owned, exclusively or jointly, by any household member;
3. Principal couple - interviewed together, asked about assets owned, exclusively or jointly, by any household member;
4. Adult (18+) household members - interviewed alone and simultaneously, asked about assets owned, exclusively or jointly, by any household member, and;
5. Adult (18+) household members - interviewed alone and simultaneously, asked about assets owned, exclusively or jointly, by individual respondent.

Sample Design

A key consideration in determining the sample size for MEXA was the requirement that households allocated to TAs 2 and 3 had to have a couple (either married or cohabitating) among the adult

household members due to the requirement that a randomly selected member of the principal couple be interviewed in arm 2 and that both members of the principal couple be interviewed together in arm 3. Although a full household listing was conducted prior to sample selection, information on whether a couple resided in the household was not collected due to cost and timing constraints. Instead, the sample design oversampled across all treatment arms to account for the rate of households with a couple in Uganda being approximately 66 per cent. Factoring in a non-response rate of roughly 10 per cent at the Enumeration Area (EA) level in UBoS' survey program, 544 households were initially allocated to each treatment arm.

In total, the experiment attempted to cover 140 enumeration areas (EAs) (with 84/56 urban/rural split) across Uganda, selected with probability proportional to size of the EA. The actual EA coverage was 137. In each completed EA, 20 households were selected using systematic sampling with a random start, and 4 households were randomly allocated to each of the 5 treatment arms for a total sample size of 2,720 households.

In TAs 4 and 5, in which multiple adult household members were interviewed, the number of respondents was capped at 4 for each household due to logistical considerations, which resulted in a negligible number of adults being missed. If a household had more than 4 adult members that were eligible for an interview in Arms 4-5, the teams made sure to target the household head, and the spouse if applicable, with the rest of the respondents selected at random.

2.2. Who to interview

65. The present guidelines recommend that national statistical agencies collect self-reported rather than proxy data on the ownership and control of assets at the individual level due to the large discrepancies in proxy versus self-response, including the assignment of ownership by proxy to persons who do not consider themselves owners. From the perspective of measuring asset ownership from a gender perspective, counting people who do not consider themselves owners as owners is problematic since the policy issues data users are interested in understanding - including women's empowerment, livelihood strategies and poverty reduction- are likely to be driven by people's self perceptions of what they own rather than what other people think they own. As such, proxy responses should not be relied upon even if household members are unavailable.

66. Whether one or more adult household members should be interviewed will depend on the objectives of the survey and the resources available for conducting the survey. For the purposes of deriving nationally-representative indicators of women's and men's asset ownership, including Sustainable Development Goal indicators 5.a.1 (a) and (b),[24] one randomly selected adult household member can be interviewed.

67. However, to understand how assets are allocated and owned within households, two or more adult household members must be interviewed. Interviewing all household members provides the scope for a full intra-household gender analysis of asset ownership and key outcomes of interest -such as patterns of household decision-making and expenditures, so

[24] SDG Indicators 5.a.1 (a): the proportion of total agricultural population with ownership or secure rights over agricultural land, by sex; 5.a.1 (b): the share of women among owners or rights-bearers of agricultural land, by type of tenure.

long as additional questions are included in the survey to measure the outcome variables of interest. For example, microdata on the distribution of assets across individuals within a household can provide policymakers with important insights into individuals' intra-household bargaining power when their preferences over household outcomes differ.[25] As such, countries that are already implementing nationally-representative surveys in which multiple adult household members are interviewed should be encouraged to collect individual-level data on the ownership and control of assets from all adult members.[26]

68. However, interviewing all adult household members within the constraints of a typical survey program is resource intensive and increases costs.[27] Thus, countries may wish to adopt a modified approach and interview one randomly selected adult respondent and his/her spouse/partner, if applicable. This approach would allow for both the derivation of nationally-representative prevalence estimates of women's and men's asset ownership (based on the data obtained from the randomly selected adult) as well as meaningful intrahousehold gender analysis of asset ownership (based on the data obtained from both respondents) since prior empirical work, including the EDGE pilots, finds that couples are likely to own the most assets within a household.[28] Ultimately, the decision will need to be informed by the needs of data users and the resources available to implement the survey.

3. Definition and coverage of assets

69. The terms and definitions related to assets presented in this section are based on, and consistent with, the 2008 System of National Accounts (2008 SNA), the internationally agreed conceptual and macro-economic accounting framework for recording economic activities for the purpose of analysing and evaluating the performance of an economy. Other global methodological publications are also used where relevant, including the UN System of Environmental-Economic Accounting Central Framework, the OECD Guidelines for Micro Statistics on Household Wealth, and the FAO World Programme for the Census of Agriculture. Differences from the publications mentioned above, which reflect the focus of the present guidelines on the individual-level measurement of asset ownership from a gender perspective, are explained in the relevant subsections.

3.1. What is an asset

70. Consistent with the 2008 SNA, these guidelines define an asset as "a store of value representing a benefit or a series of benefits accruing to the economic owner by holding or using the entity over a period of time" (para 3.30). Economic benefits include primary

[25] IFPRI, 2012. A Toolkit on Collecting Gender & Assets Data in Qualitative & Quantitative Program Evaluations.

[26] Appropriate host surveys for appending the EDGE module are discussed in Section 2 of Part III of these guidelines.

[27] The cost implications of interviewing multiple household members are discussed in Part III of these guidelines.

[28] The implications of the different respondent selection protocols for sample design and data weighting are discussed in section 4 in Part III and section 1.4 in Part IV.

income and possible holding gains or losses due to changes in the prices of assets. Also consistent with the 2008 SNA, all assets covered refer to economic assets, including, for example, buildings, land, equipment, currency, securities, shares and other equity, loans and accounts receivable.

71. However, due to their focus on measuring asset ownership at the individual level, these guidelines focus only on assets held by households, including female and male household members and the unincorporated household enterprises they run. Assets held by other institutional units that are important from the SNA perspective, including non-financial corporations, financial corporations, government units and non-profit institutions serving households, are not covered.

72. There are also some slight variations in the types of assets covered by these guidelines in comparison to the SNA. The coverage of assets in the 2008 SNA is limited to those assets that can be used in an economic activity repeatedly (for generally one year or more) and that are subject to ownership rights. As such, resources such as human or social capital, which are sometimes described in common parlance as "assets," as well as natural resources that are not owned, are excluded from the SNA asset boundary. Also excluded are consumer durables because the services they provide are produced for own use by the household's members and thus fall outside of the production boundary.

73. Consistent with the 2008 SNA, these guidelines do not cover human and social capital, given that their ownership rights cannot be enforced. Similarly, natural resources that are not individually owned are not covered. However, consumer durable are included in the scope of assets for the purpose of the present guidelines, due to their importance to individual and household well-being. This inconsistency with the 2008 SNA is only partial. Indeed, the 2008 SNA recognizes the analytical interest of information on consumer durables and suggests that it appear as a memorandum item in a country's balance sheet (para 3.47, 2008 SNA). The coverage of consumer durables is also consistent with the OECD Guidelines for Micro Statistics on Household Wealth.[29]

74. Finally, consistent with the 2008 SNA, the present publication distinguishes between financial and non-financial assets. The 2008 SNA classification of assets distinguishes, at the first level, financial and non-financial assets (para 2.35, 2008 SNA). *Non-financial assets* may be *produced* during a process that falls within the production boundary of the SNA (and further classified into fixed assets, inventories, and valuables), while other non-financial assets are *non-produced* (and further classified into natural resources; contracts, leases and licenses; and purchased goodwill and marketing assets). Examples of non-financial assets held by households include dwellings as a produced asset and land as a non-produced asset. Most non-financial assets generally serve two purposes (para 2.35, 2008 SNA). They are primarily objects usable in an economic activity and, at the same time, serve as stores of value.

[29] OECD, 2013. *OECD Guidelines for Micro Statistics on Household Wealth*.

75. *Financial assets* are necessarily and primarily stores of value, although they may also fulfil other functions. Some examples of financial assets held by households include bank deposits, shares, equity in unincorporated enterprises, and pension fund entitlements. For almost all financial assets, there is a corresponding liability. A *liability* is always financial and is established when one unit (the debtor) is obliged, under specific circumstances, to provide a payment or series of payments to another unit (the creditor) (para 3.5, 2008 SNA). Loans borrowed are one of the most common examples of liabilities at the household or individual level.

76. The further classification of financial and non-financial assets in these guidelines does not match the classification used by the 2008 SNA. However, it corresponds with the types of assets covered by the OECD Guidelines for Micro Statistics on Household Wealth. The types of assets covered by the present guidelines include, in addition to financial assets and liabilities, the following types of non-financial assets: primary dwellings, agricultural land, other real estate, non-agricultural enterprise assets, large and small agricultural equipment, livestock, valuables and consumer durables. [30] These types were selected based on their relevance for the household sector and for measuring asset ownership from a gender perspective, as explained later in the section.

77. Because the patterns of asset ownership vary across countries with differing levels of wealth,[31] each country will need to determine which assets to collect information on based upon the needs of data users, the consistency with the national SNA framework, the availability of individual-level, sex-disaggregated data from other statistical and administrative sources and finally, the resources available for collecting the data. However, these guidelines suggest that countries collect information, at a minimum, on the following "core" set of assets, which have been found to comprise the majority of individual wealth in prior representative studies in Ecuador, Ghana, and Karnataka, India[32] and the majority of household wealth in European countries.[33] The core set of assets is as follows:

- Principal dwelling
- Agricultural land
- Other real estate

[30] Countries may consider additional types of assets, based on the prevalence of their ownership among women and men and relevance for policymaking. Two such types are recommended for inclusion in the OECD Guidelines on Micro Statistics on Household Wealth (2013): (1) intellectual property products such as computer software, databases that allow resource-effective access to and use of the data, and entertainment, literary and artistic originals; and (2) some items in the SNA category of "contracts, leases and licences", including marketable operating leases allowing a tenant to sub-let a building, tradable licences and permits to undertake specific activities.

[31] Davies, J.B., Sandstrom, S., Shorrocks, A. & Wolff, E.N., 2008. "The World Distribution of Household Wealth." In J. Davies (ed.), *Personal Wealth from a Global Perspective*. Oxford: Oxford University Press and UNU-WIDER, pp. 395-418.

[32] Doss, C. et al., 2011. Lessons from the field: Implementing individual asset surveys in Ecuador, Ghana, India and Uganda.

[33] European Central Bank, Household Finance and Consumption Network, 2016. The household finance and consumption survey: results from the second wave. In *Statistic Paper Series No.18*.

78. Countries may also wish to collect data on the following additional assets based on countries' policy needs and the prevalence of each asset within the country, which can be determined by existing household-level or holding-level data from household or agricultural surveys:

- Non-agricultural enterprise assets
- Livestock
- Large and small agricultural equipment
- Financial assets and liabilities
- Valuables
- Consumer durables

79. The following section specifies terms and definitions related to each type of asset.

3.2. Terms and definitions related to specific types of assets

80. This section presents terms and definitions related to the specific types of assets covered by these guidelines. For each type of asset, two aspects are emphasized: (a) the importance of covering the asset, and (b) consistency and differences with existing international standards. Related measurement issues are discussed in Part III, in the section on Questionnaire design.

Dwellings

81. Dwellings are one of the most important assets owned by individuals and households. They serve as a store of wealth and can provide a place to live for owners. Especially for women, having secure tenure to a dwelling reduces vulnerability when the household dissolves through divorce or death and provides economic security. From a policy perspective, information on the ownership of dwellings is key to understanding drivers of homeownership and developing national and local housing programs that can reach both women and men.

82. Dwellings can also be occupied by household members on a regular or occasional basis or be used by the household for other purposes, including for running and operating an unincorporated enterprise. They can also be rented out, in whole or in part, to earn money. These guidelines distinguish between the primary dwelling, defined as the main dwelling or housing unit occupied by the household and owned by one or more of its members, regardless of whether the residence has a mortgage or loan secured against it, and other dwellings. Other dwellings that are not used as primary residences are captured, in these guidelines, within the category of "other real estate," together with non-agricultural land. Agricultural land is captured as a separate category of assets.

83. The definition of dwellings (regardless of their use) used by these guidelines is consistent with the 2008 SNA. "Dwellings are buildings, or designated parts of buildings, that are used entirely or primarily as residences, including any associated structures, such as garages, and all permanent fixtures customarily installed in residences" (para 10.68, 2008 SNA). Some typical examples of dwellings are houses, semi-detached houses, flats or

apartments in a block of flats. Houseboats, barges, mobile homes and caravans used as principal residences of households are also included (para 10.68, 2008 SNA). Furthermore, the definition of the primary dwelling and the distinction between the primary dwelling and other dwellings, adopted by these guidelines, is consistent with the OECD Guidelines for Micro Statistics on Household Wealth,[34] and current practices of data collection on housing units in household surveys and censuses.

84. One challenge in collecting data on dwellings is whether the land on which a dwelling sits should be treated as a distinct category of asset. Evidence from the EDGE pilot studies show that in some contexts, the plot of land on which the dwelling is located may be owned together with the dwelling, while in other contexts it may be owned separately. When the land and dwelling are owned separately, provisions need to be made for a separate measurement. In addition, some areas of the plot of land on which the dwelling is located may be used for agricultural production, such as a kitchen garden. Information on the use of the land of the dwelling for agricultural purposes should also be recorded separately. The section on Questionnaire design in Part III of these guidelines shows in detail how to deal with these measurement challenges.

Agricultural land

85. The ownership and control of agricultural land are important for a range of policy issues, including, for example, agricultural production, food security and the development of rural communities. In recognition of the importance of this type of economic resource, particularly for women, one of the SDG indicators for monitoring Goal 5 on gender equality and empowerment for all women and girls, indicator 5.a.1, directly refers to the ownership and control over agricultural land (see Box 1 in the Introduction of these guidelines).

86. Therefore, these guidelines recommend that agricultural land is treated as a distinct category, separate from land that may be used for non-agricultural purposes, which is classified as "other real estate" in these guidelines. This approach is relatively distinct from the SNA and the OECD guidelines on measuring household wealth, which do not identify agricultural land as a separate category. In the SNA, the focus is on the overall category of land, defined as a natural resource and a non-produced asset consisting of "the ground, including the soil covering and any associated surface waters" (para 10.175, 2008 SNA). However, agricultural land is a subset of the "land" category classified by use, according to the System of Environmental-Economic Accounting (SEEA) Central Framework.[35] In this framework land use reflects the activities undertaken and the institutional arrangements for a given area of land for the purpose of economic production or the maintenance and restoration of environmental functions. [36]

87. The present guidelines are consistent with SEEA Land Use Classification and FAO in covering the following classes of land use under the category of "agricultural land": (a) arable

[34] OECD, 2013. *OECD Guidelines for Micro Statistics on Household Wealth*.

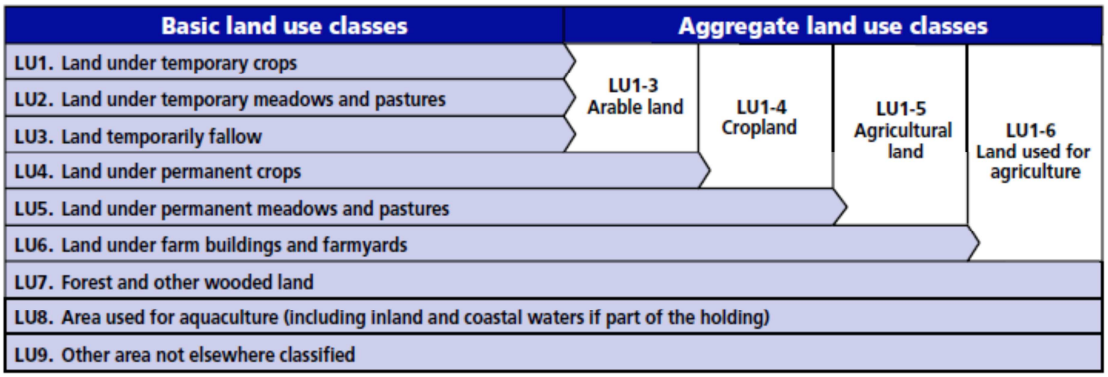
[35] United Nations, 2014. *System of Environmental-Economic Accounting Central Framework*.

[36] United Nations, 2014. *System of Environmental-Economic Accounting Central Framework*.

land under temporary crops (with a less than one-year growing cycle); (b) arable land under temporary meadows and pastures (cultivated with herbaceous forage crops for mowing or pasture); (c) arable land that is temporarily fallow (due to crop rotation systems or temporary unavailability for planting); (d) land under permanent crops; and (e) land under permanent meadows and pastures.[37]

88. In addition to SEEA, FAO distinguishes the category "land under farm buildings and farmyards," which refers to areas under farm buildings such as hangars, barns, cellars and silos and buildings for animal production such as stables, cow sheds, sheep pens, and poultry yards. Farmyards and areas under the holder's house and the yard around it are also included in this category. "Agricultural land" together with "land under farm buildings and farmyards" form the FAO category "land used for agriculture", which is equivalent to the "agricultural land" category within the SEEA Framework. This is presented schematically in Figure 2.

Figure 2
FAO classification of land use



Source: FAO, 2015. *World Programme for the Census of Agriculture 2020*, page 67.

89. These guidelines suggest collecting data on the ownership of all categories of land described above, as piloted in the EDGE surveys conducted in Uganda, Georgia, Mongolia, the Philippines and South Africa. Other classes of land use that may be relevant for asset ownership, including when collecting data within agricultural censuses and surveys, include: forests and other wooded land; areas used for aquaculture; and other areas not elsewhere classified.[38]

90. Evidence from the GAGP and the EDGE pilot surveys shows that one person or one household may own one or more parcels of agricultural land. These parcels may vary in terms of use (as shown in Figure 2 above), as well as other characteristics such as size, value, or

[37] FAO, 2015. *World Programme for the Census of Agriculture 2020*. Volume 1: Programme concepts and definitions.

[38] FAO, 2015. *World Programme for the Census of Agriculture 2020*. Volume 1: Programme concepts and definitions.

existing improvements such as irrigation systems. Tenure status, ownership types and forms, and mode of acquisition, which have been described in the previous section on Definitions of ownership, may also vary across parcels. Thus, countries who wish to collect data on such aspects will have to record the information parcel by parcel, as shown in the section on questionnaire design in Part III of these guidelines.

Other real estate

91. Real estate other than the primary dwelling and agricultural land (already covered above) include other residential buildings and spaces, buildings for commercial use, and non-agricultural land. They may serve several purposes, including providing services to one or more household members (such as a secondary vacation house), serving as a source of income by being rented out, or being used as assets in an unincorporated enterprise for the purpose of producing and selling goods and services.

92. These guidelines recommend that information on all categories of other real estate listed above is collected by countries. Two additional definitional aspects should be noted. First, consistent with the 2008 SNA, incomplete dwellings that may be used in the future as primary residence for the owner should be listed as other real estate and not in the category of primary dwellings. They are not yet used as a primary residence, however, they are an asset to the extent that the ultimate user is deemed to have taken ownership, either because the construction is on own-account or as evidenced by the existence of a contract of sale or purchase (para 10.71, 2008 SNA).

93. Second, in departure from the SNA, these guidelines recommend that information on the ownership and value of non-agricultural land improvements is collected together with the ownership and value of the land on which these improvements have been made. Within the 2008 SNA, improvements to land are treated as a fixed asset separately from the natural asset (agricultural and non-agricultural land included) in its unchanged state. Such improvements may be the result of land clearance, land contouring, creation of wells and watering holes, etc. (para 10.79, 2008 SNA) and their value is to be compiled separately in the accumulation accounts and the balance of sheets of the SNA. However, this detailed approach can unnecessarily complicate data collection in household surveys. Instead, countries may consider collecting information on existing improvements to land in additional questions describing the quality of the land owned.

Livestock

94. Livestock refers to all animals, birds and insects kept or reared in captivity mainly for agricultural purposes.[39] This includes the following categories: cattle and buffaloes, sheep and goats, horses and other equines, camels and camelids, poultry, bees and silk worms etc.

[39] FAO, 2015. *World Programme for the Census of Agriculture 2020*. Volume 1: Programme concepts and definitions.

Domestic animals that may be used as pets, such as cats and dogs, are excluded unless they are being raised for sale, food or other agricultural purposes.[40]

95. These guidelines recommend that countries collect information on asset ownership for categories of livestock that are most relevant in their context. Those categories may be further refined to include, for example, categories defined by the purpose of raising the livestock. For instance, the 2008 SNA distinguishes livestock that should be considered fixed assets from livestock considered as inventories (para 10.92). Among fixed assets are included breeding stocks, dairy cattle draft animals, sheep or other animals used for wool production and animals used for transportation, racing or entertainment. Animals raised for slaughter, including poultry, are considered "inventory", a separate category of assets.

96. However, countries should not exclude categories of livestock that have a higher monetary value and would contribute substantially to the wealth of individuals and households, such as cattle, or categories of livestock that may be more often in the ownership of women, such as poultry or sheep and goats.

Large and small agricultural equipment

97. Agricultural equipment constitutes crucial assets for many households and individuals, and is often central to the livelihoods of people living in rural areas. These guidelines recommend that countries collect data on the ownership of large agricultural equipment and consider covering small agricultural equipment as well, if relevant in their context. It should be noted that although small agricultural equipment is of small value, its coverage can be useful for understanding agricultural productivity, particularly in poorer developing countries. In addition, the gender gap in asset ownership may be different with regard to small agricultural equipment by comparison to large agricultural equipment.

98. The recommendation on coverage of large and small agricultural equipment, noted above, is consistent with the 2008 SNA and the FAO guidelines for the 2020 agricultural census round (WCA 2020).[41] Within the 2008 SNA, agricultural equipment is a sub-category of fixed assets referring to machinery and equipment. They are produced assets that are used repeatedly in agricultural production processes for more than one year. The 2008 SNA recommends that tools that are small, inexpensive and used to perform relatively simple operations may be excluded from the asset boundary and be treated as materials or supplies for intermediate consumption. Examples of such tools include saws, spades, knives, axes, hammers, screwdrivers and spanners or wrenches. Nevertheless, the 2008 SNA acknowledges that some flexibility is needed, depending on the relative importance of such tools in a given country. In countries in which they account for a significant part of the value of the total stock of an industry's durable producers' goods, they may be treated as fixed assets (para 10.35, 2008 SNA).

[40] FAO, 2015. *World Programme for the Census of Agriculture 2020*. Volume 1: Programme concepts and definitions.

[41] FAO, 2015. *World Programme for the Census of Agriculture 2020*. Volume 1: Programme concepts and definitions.

99. A broad concept of machinery and equipment is also used for agricultural censuses, covering all machinery, equipment and implements used as inputs to agricultural production.[42] This includes everything from simple hand tools, such as a hoe, to complex machinery, such as a combine harvester. According to the WCA 2020, countries should decide on the type of agricultural machinery and equipment that is most relevant in their context. Developed countries may focus on machinery such as tractors, and crop maintenance and harvesting machines. However, less developed countries may be interested in some animal-powered or even hand-powered items of equipment, as well as machinery.[43]

100. The following categories of agricultural machinery and equipment, distinguished within the FAO guidelines for agricultural censuses, are within the scope of the present guidelines and may be adapted to the country context, as done in the EDGE pilot surveys: manually operated equipment such as seed/fertilized drill, transplanter, thresher, winnower, sprayer, duster; animal-powered equipment such as wooden plough, steel plough, cultivator, disk harrow, animal cart; machine-powered equipment, including machines for general farm use, tractors, bulldozers and other vehicles, crop machinery and equipment for land preparation, planting, crop maintenance, crop harvesting, post-harvest equipment; livestock machinery and equipment; and aquacultural machinery and equipment.[44]

Non-agricultural enterprise assets

101. Enterprises, defined as entities engaged in the production or distribution of goods and services mainly for the purpose of sale, are one of the major components of individual and household wealth.[45] While enterprises may be considered "assets" in the sense that holding them would bring a series of economic benefits to the owner, these guidelines, consistent with the 2008 SNA, consider enterprises as economic institutional units that may hold financial and non-financial assets. Ownership of such productive assets that can be used to start or grow a business play an important role, particularly for women, in creating self-employment, earning income, and reducing poverty and inequality.

102. These guidelines recommend collecting information on the ownership and control of assets used only in *non-agricultural* and *unincorporated* enterprises, for the following reasons. First, capturing agricultural enterprises is operationally more challenging, including with regard to separating agricultural activities for own consumption from activities mainly for the purpose of sale, and thus warrants a separate set of recommendations. Moreover, these guidelines recommend collecting data on the ownership of key assets that are involved in

[42] FAO, 2015. *World Programme for the Census of Agriculture 2020*. Volume 1: Programme concepts and definitions.

[43] FAO, 2015. *World Programme for the Census of Agriculture 2020*. Volume 1: Programme concepts and definitions.

[44] FAO, 2015. *World Programme for the Census of Agriculture 2020*. Volume 1: Programme concepts and definitions. A complete list of classes, subclasses and type of machinery and equipment is included in Annex A.

[45] Doss, C. et al., 2011. Lessons from the field: Implementing individual asset surveys in Ecuador, Ghana, India and Uganda; European Central Bank, Household Finance and Consumption Network, 2016. The household finance and consumption survey: results from the second wave. In *Statistic Paper Series No.18*.

agricultural production, including agricultural land, agricultural machinery and equipment, and livestock, in addition and separately from assets of non-agricultural enterprises.

103. The following definitions are used to distinguish between agricultural and non-agricultural enterprises. Agricultural enterprises are enterprises engaged in the production and sale of non-processed agricultural goods (such as milk, wool, fruits, vegetables) produced on own farm. Non-agricultural enterprises are enterprises engaged in the production and/or sale of goods and services other than own-produced, non-processed agricultural products. It should be noted that the sale of by-products of agricultural goods (such as cheese, beer, jam, sweaters) is a non-agriculture enterprise in the manufacturing sector. The sale or trade of agricultural products purchased from non-household members is also a non-agricultural enterprise, in the trade sector. Other examples of non-agricultural enterprises are: making mats, crafts and bead jewellery, bricks, or charcoal; working as a builder or carpenter; selling firewood; metalworking; running a street corner stall; providing services such as haircuts or massages; making local drinks, carpets or baskets; trading in any form (in food, clothes or various articles),offering services for payment in cash or in-kind, including for professional activity (like that of a private lawyer, a doctor, etc.).

104. Second, these guidelines recommend focusing only on assets in unincorporated enterprises, consistent with the 2008 SNA and the OECD guidelines on measuring household wealth. As mentioned earlier, the 2008 SNA distinguishes between the household sector and other institutional sectors, including corporations, government and non-profit institutions serving households. Assets owned by one or more members in a household are uniquely accounted for in the household sector. Assets owned by other entities are accounted for separately, in the entity's corresponding institutional sector. For instance, assets of incorporated enterprises are recorded in the sectors of non-financial and financial corporations. Sources such as establishment surveys and business registers may be used to obtain information on incorporated enterprises, including the assets they hold.

105. An incorporated enterprise is defined as a legal entity, "created for the purpose of producing goods and services for the market, that may be a source of profit or other financial gains to its owner(s); it is collectively owned by shareholders who have the authority to appoint directors responsible for its general management" (para 4.39, 2008 SNA). An incorporated entity is recognized independently of the other institutional units that may own shares of its equity. The shareholders are entitled to dividends (shares of the enterprise's income) and, in the event the enterprise is wound up or liquidated, they are entitled to a share in the net worth of the corporation remaining after all assets have been sold and all liabilities paid. However, if a corporation is declared bankrupt, the shareholders are not liable to repay the excess liabilities with their own money (para 4.40, 2008 SNA).

106. Unincorporated enterprises, on the other hand, often belong to the household sector. Households are primarily consumer units, but they can also engage in production, including for the purpose of producing goods or services for sale or barter on the market. They can range from single persons working as street vendors or shoe cleaners with virtually no capital or premises of their own to larger manufacturing, construction or service enterprises with employees. When the production units of households are not legal entities, they are described

as household unincorporated enterprises and they remain part of the same institutional unit as the household to which they belong (para 4.21, 2008 SNA). The liability of the household members for the debts of the enterprises is unlimited, and all the assets of the household may be at risk if the enterprise goes bankrupt. Household unincorporated market enterprises may also include unincorporated partnerships, where the partners may belong to different households (para 4.156, 2008 SNA).

107. Some unincorporated enterprises may hold accounts similar to incorporated enterprises. An unincorporated enterprise can be treated as a corporation only if it is possible to separate all financial and non-financial assets into those belonging to the household in its capacity as a consumer from those belonging to the household in its capacity as a producer (para 4.157, 2008 SNA). The 2008 SNA advises that such unincorporated enterprises that maintain separate accounts be treated as quasi-corporations, and the data be presented in the sectors of non-financial and financial corporations. In practice, however, it is rare that unincorporated enterprises maintain separate accounts.[46]

108. These guidelines recommend that all unincorporated enterprises, regardless of whether they maintain separate accounts or not, are treated similarly. This is consistent with the OECD Guidelines for Micro Statistics on Household Wealth, which argue that unincorporated enterprises and quasi-corporations share key similarities, including the fact that the risks and benefits associated with the ownership of assets and the running of the business stay with the person and not with a legal entity. Therefore, assets and liabilities of *any* unincorporated enterprise owned and operated by one or more household members should be captured by individual-level measures of asset ownership and wealth. As mentioned earlier, assets of incorporated enterprises are excluded since these are not owned by individuals within the household; however, equity shares in incorporated enterprises should be included among financial assets that a person may hold.

109. Nevertheless, it is important to note that collecting information on assets of unincorporated enterprises can be operationally challenging. It is difficult to distinguish between the assets belonging to an unincorporated enterprise and those that are used to provide goods and services for own use by the household members. A dwelling, for example, may be used as a primary residence for the household members but also as the place where products meant for market are prepared or crafted. A vehicle owned by a household may be used for transportation of household members but also to distribute to clients goods produced by the household enterprise. The section on Questionnaire design in Part III of these guidelines shows how to deal with these measurement issues and ensure that only assets not listed under previous categories of assets should be included under the category of assets of unincorporated (and non-agricultural) enterprises.

[46] OECD, 2013. *OECD Guidelines for Micro Statistics on Household Wealth*.

Financial assets and liabilities

110. Financial assets are a key component of the wealth of households and individuals, particularly in industrialized countries.[47] Examples of financial assets include cash and deposits, shares and debentures, bonds, and also loans made by the households/individuals to others in cash and in kind. Several types of financial assets may be held by individuals or households, as distinguished and defined by the 2008 SNA and the OECD Guidelines for Micro Statistics on Household Wealth:

- *Currency and deposits* consist of notes and coins of fixed nominal values issued or authorized by the central bank or government and claims represented by evidence of deposit. Typical forms of deposits relevant for the household sector include saving deposits, fixed-term deposits, and non-negotiable certificates of deposits (paras 11.52, 11.54, and 11.58).
- *Debt securities* are negotiable instruments serving as evidence of a debt. They include bills, bonds, negotiable certificates of deposit, commercial paper, debentures, asset-backed securities, and similar instruments normally traded in the financial markets (para 11.64).
- *Equity and investment fund shares*. Equity comprises instruments and records acknowledging claims on the residual value of a corporation after the claims of all creditors have been met (para 11.83). Investment funds are collective investment undertakings through which investors pool funds for investment in financial and non-financial assets (para 11.94)
- *Insurance, pension and standardized guarantee schemes* refer to financial claims of policy holders, account holders or members who contributed with funds to a financial institution in exchange for financial benefits in the same or later periods. Among these types of financial assets, life insurance and annuity entitlements and pension entitlements are the most common at the household and individual level. *Life insurance and annuity entitlements* are defined as "claims of policy holders on enterprises offering life insurance or providing annuities, except those annuities purchased from lump sums rolled over from pension schemes. These claims include life insurance entitlements where the insurer guarantees to pay the policy holder an agreed minimum sum or an annuity at a given date or earlier if the policy holder dies beforehand" (para 17,6, 2008 SNA and OECD, 2013a). *Term insurance*, which is a policy that provides a benefit in the case of death within a given period but in no other circumstances is regarded as a non-life insurance and not covered by the measurement of wealth and asset ownership (para 17.6, 2008 SNA). *Pension entitlements* refer to claims of members and account holders on pension schemes such as retirement plans or superannuation schemes and include "entitlements in both employment-related social insurance pension schemes and private pension schemes. These claims also include annuities purchased

[47] European Central Bank, Household Finance and Consumption Network, 2016. The household finance and consumption survey: results from the second wave. In *Statistic Paper Series No.18*.

with lump sums rolled over from pension funds regardless of the institution with which the annuity is held."(OECD, 2013). Excluded are entitlements in government social security pension schemes.

- *Financial derivatives and employee stock options.* These financial assets are less frequently held by individuals and households. Financial derivatives refer to financial instruments through which specific financial risks (such as interest rate risk, currency, equity and commodity price risk, and credit risk) can be traded in their own right in financial markets (paras 11.111 and 11.112). Employee stock options are agreements made on a given date under which an employee may purchase a given number of shares of the employer's stock at a stated price either at a stated time or within a period of time immediately following (para 11.125).
- Other financial assets held by individuals or households may refer to loans made to persons in other households.

111. However, these guidelines recommend that national statistical offices collect information on the ownership of financial assets using the list of types of assets noted above as well as sub-categories of those assets, based on their prevalence in the population and relevance from a policy perspective. In particular, sub-categories of "currency and deposits" may be defined relative to the institutional set up and refer to bank savings, savings and credit associations, post-office accounts, informal saving accounts, saving accounts through NGOs. Use of such sub-categories captures gender differences that can be relevant to programmes aimed at increasing women's access to financial services.

112. Countries are also recommended to collect data on liabilities. This information is needed to estimate the net worth of a person or household, by subtracting the value of outstanding liabilities from the value of the asset held. By definition, a liability (debt) is established when one unit (the debtor) is obliged, under specific circumstances, to provide a payment or series of payments to another unit (the creditor) (para 3.5, 2008 SNA). Most financial liabilities at the level of the household sector are loans. *Loans* are defined as obligations that are created when a creditor lends funds directly to a debtor and the creditor's claims are evidenced by documents that are not negotiable (para 11.72, 2008 SNA; and OECD 2013a). Loans may be categorised into short-term loans (with an original maturity of one year or less) and long-term loans.

113. In addition, countries should consider collecting information on the main purpose for which the loan was taken out. For example, the OECD Guidelines for Micro Statistics on Household Wealth suggest the following types of loans: principal residence loans and other owner-occupied loans; other real estate loans; financial asset loans; valuable loans; intellectual property loans (loans to develop intellectual property products such as a computer software); vehicle loans; other consumer durable loans; education loans; other loans and liabilities. Collecting this information would also enable analysis of whether women and men borrow money for different reasons. Countries may also consider further splitting the category "other loans and liabilities" into subcategories - for example, loans for the purpose of paying medical bills, food and clothing, etc. – which may also be relevant from a gender

perspective. Information on who are the lenders, including formal or informal institutions or person(s) from which the money were borrowed, is also important in providing evidence for gender-relevant policies and programmes on access to financial services.

Consumer durables

114. Consumer durables are goods that may be used for the purposes of consumption repeatedly or continuously over a period of a year or more (para 9.42, 2008 SNA). Examples of consumer durables are cars and other vehicles, furniture, kitchen equipment, laundry appliances, computers and entertainment equipment. It should be noted that the same type of durable good may be considered an asset in one circumstance and a consumer durable in another. For example, a car used as means of transportation solely for the household members is a consumer durable, while a car used for transportation of passengers for pay or profit is an asset in an enterprise providing transportation services. Similarly, a computer may be a consumer durable when used in a household for educating children or paying personal bills or as an item of personal entertainment but an asset in the equipment category when used to keep business records for a household-operated enterprise.

115. As noted before, consumer durables are not regarded as assets in the 2008 SNA (but as a form of expenditure) because the services they provide are not within the production boundary; however, these guidelines recognize the analytical interest of information on the stock of consumer durables, including for the purpose of measuring household and individual-level wealth. This approach is also consistent with the OECD Guidelines for Micro Statistics on Household Wealth, which treat consumer durables as non-financial assets. The OECD guidelines highlight two main reasons for this treatment. On one hand, the inclusion of consumer durables in the measurement of household wealth can significantly impact the magnitude and the distribution of wealth across households. On the other hand, treating consumer durables as assets ensures greater symmetry with liabilities data, since households often take out loans to purchase more expensive durables, such as motor vehicles. In addition, an asset owned by a household may have multiple uses, including for productive activities and other activities. Conceptually, these multiple uses can make difficult the categorization of a durable good as an asset or a consumer durable. In practice, however, ownership of such goods that can be used in productive activities can have a positive impact on livelihoods, particularly for women.

116. These guidelines recommend that countries determine the categories of consumer durables to include based on their prevalence in the population as well as countries' policy needs. In general, however, countries should include durables of high value such as motor vehicles (cars, motorcycles and boats) as well as those durables that are of lower value but that may be of particular importance to women such as cell phones, kitchen equipment, or laundry appliances. While the high-value durables are important from the perspective of the value stored in the assets and the estimation of individual and household wealth, other durables may be used in productive and non-productive activities that may be more often performed by women.

Valuables

117. Valuables include precious metals and stones, fine jewellery, paintings, antiques or other art objects, and other valuables. Values are acquired and held as stores of value. They are expected to appreciate or at least not to decline in real value or deteriorate over time. Thus, although valuables are a type of non-financial assets they have more in common with financial assets (paras 10.13 and A4.57, 2008 SNA).

118. These guidelines recommend that the range of valuables covered should be wider than that prescribed by the SNA, including for the purpose of capturing types of valuables that are more relevant for women. The intent of the 2008 SNA is to capture only those items that can be regarded as alternative forms of investment. However, valuables function as a store of value but they can also be used as collateral in pawn markets or sold quickly for cash. This can play an important role in consumption-smoothing and individual and household wealth. [48] Valuables such as collections of stamps, coins, china, books, etc. that have a recognized market value, and fine jewellery, fashioned out of precious stones and metals of significant and realizable value (such as gold, for example) may be more often held by individual household members, with jewellery in particular being an important asset for women in some countries.

4. Establishing the value of assets

4.1. Why valuing assets is important

119. The valuation of assets reflects a range of asset attributes, such as size, quality or location, and allows for the calculation of a series of measures of wealth level, distribution and composition at individual, household and macro-economic levels. All assets can be valued in monetary terms. The value of an asset represents the total of the benefits (current or future) embodied by the asset, typically assessed as if the asset was acquired in a market transaction. Establishing the value of assets allows the calculation of wealth, or net worth, which is defined in the SNA as the value of all nonfinancial and financial assets owned by an institutional unit or sector less the value of all its outstanding liabilities (para 3.109).[49] Similarly, at the micro-level of individuals and households, wealth represents the net value of economic resources held at a point in time by an individual or a household, measured as the value of all assets owned less the value of all liabilities.[50] The share in monetary terms contributed by each type of asset to the total wealth of an individual or a household is

[48] Antonopoulos, R. and M. Floro, 2005. Asset ownership along gender lines: Evidence from Thailand.

[49] *The 2008 System of National Accounts.*

[50] OECD, 2013. *The OECD Framework for Statistics on the Distribution of Household Income, Consumption and Wealth*.

referred to as the composition of wealth.[51] The level and the composition of wealth may vary over time due to changes in the assets owned and changes in the market prices of assets.[52]

120. Wealth may be calculated at the level of a person, household, institutional sector or an economy. At the *individual level,* the calculation of wealth enables the production of a set of gender-relevant statistics on asset ownership, in addition to those based on the prevalence of ownership of each type of asset. The valuation of assets reflects additional attributes of the asset, such as size, quality or location that are not revealed by a simple count of asset holdings. When all asset values are expressed in monetary terms, this provides a method for summarizing differences between women's and men's ownership of assets in an aggregated measure for all assets. The resulting summary measure, referred to as the gender wealth gap, indicates differences between women and men not only in terms of whether they own assets but also in terms of the number and quality of those assets owned.

121. At the *household level*, the valuation of assets can serve two purposes. First, valuation can provide the basis for estimating household wealth. This can be done, as recommended by the OECD, in an integrated framework that ensures consistency in measuring household economic well-being along the dimensions of wealth, income and consumption.[53] Second, information on the value of some assets, such as the value of owner-occupied buildings, may be incorporated into living standards measures at the household level. For example, any consumption analysis would incorporate the rent paid. However, while rentals can be observed directly for renters, for owner-occupied dwellings a rental value may be imputed when the value of the dwelling is obtained.[54] Finally, information on the values of assets held in a household may eventually feed into the compilation of National Accounts, and contribute to constructed measures of wealth at the level of the *household sector* and the *national economy*.

122. Regardless of the level at which wealth is estimated, it is important that assets are not double counted. In the SNA, for example, rules of accounting are followed systematically to avoid counting the same asset as being owned in more than one institutional unit or sector. Data collection on asset ownership at the individual level, for the purpose of wealth measures, should also ensure that the assets are not double counted. If an asset is owned exclusively by an owner, that asset should be listed only once as belonging to that and only that owner, and its total value should become a share in the net worth of that owner. If an asset is owned jointly by more than one owner, the asset should be listed as belonging to all joint owners, and its value should be divided into shares that can be apportioned to the net worth of each owner.

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[51] OECD, 2013. *OECD Guidelines for Micro Statistics on Household Wealth*.

[52] The 2008 *System of National Accounts*; OECD, 2013. *OECD Guidelines for Micro Statistics on Household Wealth*.

[53] OECD, 2013. *The OECD Framework for Statistics on the Distribution of Household Income, Consumption and Wealth*.

[54] Grosh, M. and Glewwe, P. eds., 2000. *Designing Household Survey Questionnaires for Developing Countries: Lessons from Fifteen Years of the Living Standards Measurement Study*. Washington, DC: World Bank.

4.2. Principles in establishing value

123. These guidelines are consistent with the 2008 SNA and the OECD Guidelines for Micro Statistics on Household Wealth in recommending three principles in establishing value for the purpose of measuring wealth. This consistency is the basis for obtaining comparable statistics and indicators of wealth at individual, household and macro-economic levels. The first principle is that assets and liabilities should be valued at market prices. Market prices are values at which assets are exchanged (or could be exchanged) in actual transactions, in other words, the amounts of money that willing buyers pay to acquire something from willing sellers (paras 3.118 and 3.119, 2008 SNA). The second principle is that assets and liabilities should be recorded at current values, corresponding to the reference time for the wealth calculation or its closest equivalent, and not at their original valuation at the time of asset acquisition.

124. The third principle refers to consistency of valuation. Household surveys collecting information on the value of assets should aim to obtain the information in a consistent manner across all assets, using the same principles of valuation and time reference. A common approach, used in the LSMS-ISA surveys and the Gender Asset Gap Project, and further tested in the EDGE pilot surveys, is to inquire about the amount that would be received if the asset were to be sold today. [55] This method is shown in the section on Questionnaire design in Part III of these guidelines.

125. However, when current market prices are not available, alternative methods of valuation may be considered. For instance, the SNA recommends that observable market prices are used to value non-financial assets. However, in their absence, averages estimated from observed market values could be used if the market is one on which the items in question are regularly, actively and freely traded. Information from markets may also be used to price similar assets that are not traded (para 13.22, 2008 SNA). When assets cannot be valued at the current acquisition price, as in the case of used assets, their value may be given by the current acquisition price of an equivalent new asset less the accumulated depreciation. This valuation is sometimes referred to as the "written-down replacement cost" (para 13.23, 2008 SNA). Similarly, in the case of financial assets and liabilities, the 2008 SNA recommends that financial assets and liabilities should be valued at current prices if they are regularly traded on organized financial markets. However, financial claims that are not traded on organized financial markets should be valued by the amount that a debtor must pay to the creditor to extinguish the claim (para 13.54).

126. Countries may consider similar alternative methods in establishing the value of assets in household surveys, including based on additional information obtained in the questionnaire or from additional sources of data. Such information may refer, for example, to original acquisition prices, assessed value of an asset for tax purposes, or cost of construction (for

[55] Alternative methods in obtaining values of assets, although departing to some extent from the concept of current market prices, may refer to: a "quick sale" price (the price that would be obtained if the owner needs to sell right away), "reservation price" (the price that would cause an owner not intending to move to be willing to sell). Some of these methods may undervalue the assets (for example the "quick sale" approach) or overvalue them (the "reservation price" approach).

dwellings and other structures). However, it should be noted that they cannot be applied consistently across all types of assets.

4.3. Challenges in obtaining the value of assets in household surveys

127. The values of assets are important, however, collecting information on them in household surveys is challenging. Markets may not exist or be very thin or the respondents may not be informed about recent transactions of assets. Analysis of data from the EDGE pilots shows that this is often the case. Overall, women are less informed than men about the existence of markets and recent market transactions. For example, in Uganda, women owners report information on markets and recent transactions in the location of only 28 per cent of the dwellings and 40 per cent of the agricultural parcels they own. For men owners, the corresponding proportions stand at 63 per cent and 68 per cent, respectively. A similar pattern is observed in Mongolia, while in Georgia and the Philippines, the proportion of dwellings and agricultural parcels for which the owners have information on markets and recent transactions is even lower.

128. In addition, respondents may not be willing to disclose information that is perceived as sensitive. As a result, a high proportion of non-responses on questions of valuation may arise. Among the six EDGE pilots that included questions on the valuation of assets, Uganda had the lowest proportion of non-responses. The proportion of non-responses for valuation questions on dwellings, agricultural parcels and financial assets stood between 2 and 13 per cent of assets for women and between 6 and 9 per cent of assets or lower for men.[56] The EDGE pilot surveys in Georgia and the Philippines, on the other hand, had a high proportion of non-responses on valuation questions for the same types of assets.

129. It should be noted that there may be no association between non-responses on valuation questions and the lack of markets and information on market transactions. Women and men who report that they are not familiar with market transactions for a particular asset may still report values. In Uganda, for example, the proportion of non-responses for valuation of assets is not necessarily higher when the respondent owners are not informed about market transactions compared to when they are. These challenges in obtaining consistent responses for valuation questions point to the importance of training the enumerators to obtain sensitive information. Once data are collected, high proportions of non-responses on valuation will require some well-thought strategies for adjusting the data for the purpose of obtaining wealth estimates for women and men, including imputations based on information already obtained in the household survey and potentially additional information from other sources.

5. Units of observation and the rostering of assets

130. This section discusses the different units of observation that can be used to collect data in a survey on individual-level asset ownership and control, namely the individual and

[56] Proportions refer to TA5 in MEXA experiment. For TA4 and 5 combined, the range if 3 to 11 per cent of assets for women and 4 to 9 per cent of assets for men.

the asset, and the different measures that can be generated from each unit. Two options are presented for countries that want to use the asset as the unit of observation: 1) a respondent roster of assets collect by the randomly-selected adult household member that lists all of the assets he/she owns; and 2) a household roster of assets collected by one adult household member in the household questionnaire that lists all the assets owned by all the household's members.

131. Countries that want to obtain information on incidence gaps in asset ownership can ask a minimum set of questions that use the individual as the unit of analysis. Countries that want to develop asset-level indicators that account for differentials in the size and quality of assets owned by women and men can collect respondent asset rosters. Countries that want to estimate household wealth can collect household asset rosters that included information on the value of each asset. Finally, countries that want to analyse intrahousehold gender inequality in asset ownership can collect household asset rosters and interview all household members, or a subset of members. Each option is explained in detail below.

5.1. Unit of observation

132. Household surveys in general have households and individual household members as basic units of enumeration, observation and analysis. **Households** may consist of one or more persons and they are defined on the basis of the "housekeeping" concept. According to the third revision of Principles and Recommendations for Population and Housing Censuses,[57] a *one-person household* is defined as "a person who makes provision for his or her own food or other essentials for living without combining with any other person to form part of a multiperson household". A *multiperson household* is defined as "a group of two or more persons living together who make common provision for food or other essentials for living. The persons in the group may pool their resources and have a common budget; they may be related or unrelated persons or a combination of persons both related and unrelated." Definitions of households may vary and countries are encouraged to use their own definitions, already established and in use by the statistical offices, for the purpose of collecting data on asset ownership.[58]

133. Although in practice most households are composed of a single family, the concept of *household* is different than the concept of *family*. A family is defined as those persons "who are related, to a specified degree, through blood, adoption or marriage". A household may contain a combination of one or more families together with one or more non-related persons, or may consist entirely of non-related persons. A family however, typically will not comprise more than one household. However, there are exceptions, including, for example, the case of polygamous families in some countries, or the shared child custody and support arrangements in others.[59]

[57] United Nations, 2015. *Principles and Recommendations for Population and Housing Censuses*. Revision 3.

[58] A discussion on pro- and cons- in using different definitions of households and population when designing a sample is presented in section 4 of Part III of these guidelines.

[59] United Nations, 2015. *Principles and Recommendations for Population and Housing Censuses*. Revision 3.

134. These guidelines recommend that households –not families –are used as one of the key units of enumeration. This is consistent with common practices in conducting surveys and censuses in most countries and existing international standards, including the Principles and Recommendations for Population and Housing Censuses, the System of National Accounts, and the OECD Guidelines for Micro Statistics on Household Wealth.

135. **Persons** as units of enumeration and observation in data collection may be identified, in principle, within households (where the majority of the population live) or within institutions. Typically, household surveys are designed to represent only the population living in households (in other words, the non-institutional population). For the purpose of these guidelines, a person is defined as an individual residing within a household. Similar to other surveys, a roster of household members is constructed, i.e. a listing of all persons identified as belonging to a household, and for each of them a series of basic characteristics such as age and sex are collected. Other characteristics, such as those referring to education and employment, are collected only for a sub-set of household members, typically defined by an age threshold. Information on asset ownership is collected only for adult persons, defined as individuals aged 18 or above. The threshold of 18 years follows international standards defining a child.[60] While this publication offers guidance on collecting asset ownership data only for the population aged 18 or above, countries may consider extending the data collection to younger ages.

136. When planning a survey on measuring asset ownership at the individual-level, countries must decide whether the **individual** or the **asset** will be used as the unit of observation based on their main policy needs and the related statistics they wish to generate. Table 1 below presents the key measures that can be calculated and who should be interviewed when the unit of observation is the individual or the asset.

137. Using the individual as the unit of observation is a simpler approach that allows for the measurement of asset ownership through a short set of questions that ask whether respondents, women and men, own a given type of asset. Countries may consider this approach when they want to obtain information on incidence gaps in asset ownership, or the proportion of women and men in the population owning the type of asset as well as the modes by which women and men acquire assets. For example, it can be used to monitor SDG Indicator 5.a.1 (a) on the proportion of the total agricultural population with ownership or secure rights over agricultural land, by sex. This approach has been used in the Demographic and Health Surveys (DHS) for the purpose of measuring land ownership, and for some assets in the EDGE pilot studies, including livestock, small agricultural equipment, consumer durables and valuables. As presented in Part III of these guidelines, the recommended Minimum Set of Questions for measuring the prevalence of women's and men's ownership of key assets also uses the individual as the unit of observation.

[60] United Nations, 1989. Convention on the Rights of The Child. General Assembly Resolution 44/25 November 1989. Available at http://www.ohchr.org/Documents/ProfessionalInterest/crc.pdf

Table 2
Units of observation and key measures that can be calculated

Unit of observation	Key measures that can be calculated	Who to interview
Individual: Minimum set of questions	*Incidence gaps*, which compare the proportion of individuals who are owners of a particular type of asset, by sex *Share of owners*, which indicate how many of the people who own a particular type of asset are women and men Proportion of men and women who *acquire assets* through a specific mode, which provide information on potential channels for strengthening women's ownership of assets	One randomly selected adult household member
Asset: Respondent roster of assets	Above plus: *Forms of ownership*, which provide information on how each asset is owned, whether exclusively by a man or a woman or jointly by couples or other configurations of individuals *Share of agricultural land area owned by women*, which requires data on the size of each agricultural parcel owned by women and men plus the number of owners for assets owned jointly *Gender wealth gap*, which require data on the value of each asset owned by women and men plus the number of owners for assets owned jointly	One randomly selected adult household member
Asset: Household roster of assets	Above plus: *Level, composition and distribution of household wealth*, which can also feed into the balance sheet for the household sector in a country's System of National Accounts; *Distribution of household assets by sex of owner* (and other characteristics), which enables analysis of intrahousehold gender inequality in asset ownership	For purposes of estimating household wealth, the person most knowledgeable about assets belonging to the household should complete the household roster of assets, and one randomly selected adult household member should complete the individual questionnaire For purposes of analysing intrahousehold inequality, the person most knowledgeable about assets belonging to the household should complete the household roster, and all household members should complete the individual questionnaire or a modified approach can be used (e.g. one randomly-selected adult household member plus his/her spouse/partner)

5.2. The rostering of assets

138. Using the asset as the unit of observation is a more complex approach that requires inventories, or rosters, of assets to be created for each type of asset (such as agricultural land and other real estate), but it allows for additional measures of asset ownership to be calculated that can provide important policy insights. Further, many household surveys, such as the Living Standards Measurement Study surveys, already collect asset rosters, to which a module on individual-level asset ownership and control could be appended. In these cases, only slight modifications of the host survey instrument would be required to align it with the recommendations in the present publication.

139. Two types of asset rosters can be obtained, each providing different information, as presented in Table 1. A **respondent roster of assets** lists each asset owned (whether exclusively or jointly) only by the respondent randomly selected for interview. He or she provides this information to the enumerator in the individual questionnaire.[61] A **household roster of assets** lists each asset owned (whether exclusively or jointly) by all household members. One person, ideally the person most knowledgeable about household assets, provides this information to the enumerator in the household questionnaire (see Table 1 on an alternative approach implemented in the EDGE pilot studies).

140. Countries will need to determine which assets to include in the roster based on their policy needs, but it is suggested that they include those assets in which the bulk of wealth tends to be held, such as agricultural land, other real estate, financial assets and liabilities and non-farm enterprises.[62] For each asset listed, two sets of information are collected: (a) key characteristics of the asset, such as its value, size, location or use, and (b) the identity of the owner(s) of the asset. In the respondent roster, all of this information is obtained in the individual questionnaire. In the household roster, information on the value and other characteristics of the asset is obtained when the assets are listed in the household questionnaire, but information on the identity of the owners is reserved for the respondents to the individual questionnaire

141. A respondent roster of assets enables countries to develop asset-level indicators on the form of ownership of assets that provides different insights into asset ownership patterns than individual-level prevalence indicators. For example, policymakers might be interested in knowing how principal residences are owned. In Ghana, 51 per cent are owned exclusively by men and 25 per cent are owned exclusively by individual women whereas in Ecuador, 16 per cent are owned exclusively by men and 30 per cent exclusively by women.[63] A respondent roster of assets also enables countries to generate statistics that take into account

[61] See Part III on questionnaire design for illustrations, including discussion of the household and individual questionnaires.

[62] Because there is only one principal dwelling, it does not need to be itemized in a roster of assets.

[63] Doss, C. et al., 2013. Measuring personal wealth in developing countries: Interviewing men and women about asset values. In the Gender Asset Gap Project Working Paper Series No.15. Indian Institute of Management. Bangalore.

differentials in the size and quality of assets owned by women and men. For example, gender wealth gaps can be derived by collecting information on the value of each parcel of agricultural land owned by male and female respondents and on the number of owners for parcels that the respondent jointly owns.

142. A household roster of assets yields information for two additional areas of analysis important for policymaking: household wealth and intrahousehold gender inequality in asset ownership and control. As discussed in section 4 above, microdata on the level, composition and distribution of household wealth is of increasing interest to policymakers as it can inform the design and evaluation of a wide range of economic and social policies.[64] Such data can also feed into the balance sheet for the household sector in a country's system of national accounts. Countries wishing to estimate household wealth through a survey on individual-level asset ownership can obtain information on the value of each asset from the respondent who completes the household roster of assets in the household questionnaire and then proceed to interview one randomly-selected adult household member about his/her ownership status for the assets listed in the household roster as well as any other assets that were not captured in the roster.

143. A household roster of assets also provides the scope for a full intra-household gender analysis of asset ownership so long as all household members are interviewed so that they can self-report their ownership status for the assets listed in the household roster of assets. As discussed in section 2 above, understanding how assets are distributed and owned within a household can provide policymakers with important insights, including how household members may respond differently to policy and program interventions based on their asset endowments. Countries wishing to collect data for intrahousehold analysis can obtain the household roster of assets, as described above, in the household questionnaire from one respondent and then proceed to interview all household members about their ownership status for the assets listed in the household roster and any other assets that were not captured in the roster. As a modified approach, countries may want to interview fewer household members, such as couples.

Box 4

The challenges of constructing household rosters of assets from multiple respondents

An alternative approach to creating a household roster of assets was tested in five of the EDGE pilot studies. In Georgia, Mexico, Mongolia, the Philippines, and Uganda, rosters of agricultural parcels, large agricultural equipment, non-agricultural enterprises, other real estate, and financial assets and liabilities were collected in the individual questionnaire from each household member who was interviewed by asking him/her to list each asset (e.g. each agricultural parcel) owned by each member of the household (whether exclusively or jointly). This decision was taken because it was thought that a roster of assets created by one respondent in the household questionnaire might not yield a complete roster of assets belonging to the household due to information asymmetries within the household, including the presence of "hidden" assets; i.e. assets that household members owned but reportedly kept confidential (hidden) from other household members.

[64] OECD, 2013. *OECD Guidelines for Micro Statistics on Household Wealth*.

To assess the prevalence of hidden assets, enumerators in Georgia, Mongolia, the Philippines and Uganda asked respondents whether anyone 18 years of age or older did not know about the respondent's ownership of the assets they reported owning, including agricultural parcels, agricultural equipment, non-farm enterprises, real estate, financial assets and liabilities. Across the pilot studies, the proportion of hidden assets was negligible with the exception of hidden financial assets and liabilities. For example, in Uganda, about 25 per cent of men who had borrowed money reported that at least one other member of the household did not know about their liability while the comparable statistic for women was 18 per cent. In Georgia, while the percentage of hidden liabilities was negligible, the percentage of male and female owners of financial assets reporting hidden assets was about 12 and 13 per cent, respectively, with slightly higher proportions for both sexes in urban areas. While the low prevalence of hidden assets in the pilot studies could be driven by respondents' reluctance to reveal them to the enumerators, qualitative findings from the Gender Asset Gap Project support the results of the EDGE pilot studies, as they revealed that while individuals were likely to know about the physical assets owned by other household members, they were less likely to know about the financial assets of other household members.[65]

Moreover, when multiple respondents provide independent asset rosters, the information must be merged ex post- and for cases with discrepancies, reconciled- to create one household asset roster that does not double count assets. Counting each asset only once is essential for the estimation of household wealth and the construction of indicators at the asset level. In all the EDGE pilot studies, this exercise proved to be resource-intensive with little additional information gained, suggesting that having multiple household members create independent household rosters is not a better design approach than having one person provide a list of all assets belonging to the household's members. The one exception would be for financial assets. If countries wish to obtain a complete household roster of financial assets, it should be generated by asking all adult household members about the financial assets they own.

[65] Doss, C. et al., 2013. Measuring personal wealth in developing countries: Interviewing men and women about asset values. In the Gender Asset Gap Project Working Paper Series No.15. Indian Institute of Management. Bangalore.

Part II. The role of household surveys and other sources of data in collecting individual-level data on asset ownership and control

145. Individual-level data on asset ownership and control can be collected mainly through household surveys, agricultural censuses and surveys, and administrative sources. In some countries, population and housing censuses may also play a role; however, they are conducted only once every ten years and, due to their size of operations, the opportunity to add a new topic and cover it in detail is limited.

146. National statistical offices should consider all relevant sources in a complementary manner, and decide, within the context of the overall statistical plan, each source's role in collecting individual-level data on asset ownership and generating statistics relevant from a gender perspective. For this purpose, the sections below briefly describe the type and detail of information each data source can provide vis-à-vis (i) the range of assets and types and forms of ownership that can be measured, (ii) the conceptual framework used to assess ownership and control, (iii) the units of observation and analysis and, ultimately, the types of statistics and indicators that can be generated.

1. The role of household surveys

147. Household surveys are a major source of social, demographic and economic statistics in both developed and developing countries. Household surveys are defined as "an investigation about the characteristics of a given population by means of collecting data from a sample of that population and estimating their characteristics through the systematic use of statistical methodology".[66] Compared to other sources of data on asset ownership, household surveys are advantageous because they can cover a wide-scope of topics and conceptual frameworks and generate a complete set of measures of asset ownership from a gender perspective.

Scope

148. Household surveys are the only source of data that can explore the full range of physical and financial assets, including the ones recommended for data collection in these guidelines: dwellings, agricultural land, other real estate, livestock, agricultural equipment, bank accounts or other financial assets, valuables and consumer durables. The information obtained on women's and men's ownership of these assets can be linked to information obtained on other topics covered by the same survey, such as education, health, employment, income or living arrangements. Integrating these relevant dimensions into data collection in the same household survey will provide the most complete understanding of asset ownership patterns across different groups of the population and the link between asset ownership and key development outcomes for the household.

[66] Eurostat, 2016. Eurostat Statistics Explained Glossary.

Conceptual framework

149. Household surveys can easily adopt the conceptual framework presented in Part 1 of these guidelines for measuring asset ownership and control from a gender perspective. In particular, household surveys can accommodate the set of questions for measuring the bundle of ownership rights, including reported ownership, documented ownership and the rights to sell and bequeath an asset and to claim the economic benefits from the sale of said asset.

150. Additionally, household surveys can relatively easily implement the respondent selection protocols presented in the guidelines. As discussed in Part 1, national statistical agencies are recommended to collect self-reported information on the ownership and control of assets from household surveys by interviewing one or more randomly selected adult household members or all household members. Among the various types of surveys within a country's household survey program, some may already randomly select individuals for interview or interview all household members while others may be able to initiate the respondent selection protocols after data for the main survey has been collected.[67] Other potential sources of data on the ownership and control of assets do not have the same flexibility in adjusting respondent selection protocols. For instance, agricultural censuses and surveys focus on agricultural holdings and therefore have an interest in collecting information from the person most knowledgeable about the agricultural holding, not from a randomly selected household member who may or may not know about the agricultural holding. Censuses can cover topics of interest only briefly and have to rely heavily on proxy response in order to avoid expanding the length and cost of the census.

Units of observation and measures of ownership

151. Household surveys have as basic units of enumeration, observation and analysis households or individuals and the data requirements for producing incidence indicators can be as simple as asking the sampled persons whether they own any of the different types of assets of interest. Population-based incidence indicators on asset ownership and control provide the basic picture of how many women and men own dwellings, land, livestock or other physical and financial assets. Gender differences in the incidence of ownership by type of asset, for the entire population of a country and/or disaggregated by multiple relevant population groups can be assessed, in most countries, based on household surveys only. This is essential information for policymaking that most countries currently do not collect but which national statistical offices can produce in order to assess the extent of gender discrepancies in asset ownership. This information may also signal the need for additional data to understand the drivers of the discrepancies, including data that may be provided by other sources, such as agricultural surveys or administrative data.

152. Depending on the overall objectives of the data collection and the overall tabulation and analysis plan envisioned by the NSO, data requirements may be more complex. Each respondent may be required to list assets owned individually or jointly with somebody else. Household surveys are flexible enough to allow the collection of information on an inventory

[67] The implications for the organization of field work are discussed in Part III.

of assets and their characteristics item by item, as discussed in Part 1 of these guidelines. In this case, the different types of assets listed become additional units of observation and analysis. Using asset as units of analysis in addition to the individual allows for a much broader range of indicators and analyses to be developed from the data, including measures of wealth distribution by sex, and patterns of asset ownership (as described in Part 1) in addition to the measures of ownership incidence.

Limitations

153. It should be mentioned, however, that data collection through household surveys has implications in terms of cost, data quality, sampling errors, and the ability to provide data for small areas or population groups. These challenges and limitations are typical of all household surveys.

154. Some non-observation errors may have a specific impact on the estimates of asset ownership. For example, the richest and poorest households may be more likely to be excluded from some household surveys, either by design or because they are more likely to refuse to respond to the surveys.[68] This omission can have an impact on the estimated wealth distribution across the population, and, to a lesser degree, the estimated incidence of ownership. This aspect should be taken into account in survey operation activities, including the sample design, the training of enumerators, data processing and weighting.[69]

2. Population and housing censuses

155. "A population census is the total process of planning, collecting, compiling, evaluating, disseminating and analysing demographic, economic and social data at the smallest geographic level pertaining, at a specified time, to all persons in a country or in a well-delimited part of a country."[70] They are conducted every 10 years, on the principle of complete enumeration, and based on large-scale operations.

156. Population censuses and household surveys cover, in principle, the same population and employ the same units of enumeration, households and individuals. However, censuses are less equipped to collect complex or detailed information on specific topics that would require intensive training, more specialized interviewers and a higher burden for the field staff. Furthermore, the census interview relies heavily on proxy respondents. The requirement to collect self-reported data from one or more randomly selected adult household members or from all household members (as is needed for measuring asset ownership at the individual level) would increase considerably the burden, length and cost of the census.

157. Nevertheless, many countries have designed population censuses to combine (a) a full field enumeration, based on a short-form questionnaire, and (b) a large sample attached to the census, where a long-form questionnaire can be used to cover a range of issues more in-

[68] United Nations, 1984. *Handbook of household surveys*; the 2008 System of National Accounts.

[69] Sample design and field operations are discussed in Part III of these guidelines. Data processing is discussed in Part IV.

[70] United Nations, 2015. *Principles and Recommendations for Population and Housing Censuses*. Revision 3.

depth. Collecting information during the census on additional topics from a sample of households is a cost-effective way of broadening the scope of the census to meet the expanding demands for statistics. Countries may explore this sample-based modality of data collection to obtain individual-level data on the ownership and control of a core set of assets. For example, adding questions on whether women, men, or both own selected assets listed in the housing questionnaire would enable the calculation of some basic asset-based measures of wealth distribution by sex; while adding questions on the ownership of selected assets for adults listed in the household roster would enable the calculation of population-based incidence measures of ownership. However, such attempts would first need to assess carefully the possibility of using only self-reported information on ownership.

3. Agricultural censuses and surveys

158. "A census of agriculture is a statistical operation for collecting, processing and disseminating data on the structure of agriculture, covering the whole or a significant part of the country. Typical structural data collected in a census of agriculture are size of holding, land tenure, land use, crop area, irrigation, livestock numbers, labour and other agricultural inputs." Data are collected based on complete enumeration of all agricultural holdings (the agricultural production unit), every 10 years, in combination with more detailed structural data using sampling methods or administrative sources.[71]

159. Agricultural surveys collect similar information from a sample of agricultural holdings. They are based on the same conceptual framework and the same units of analysis. However, with much smaller workloads and the opportunity to train fewer personnel more intensively, agricultural surveys can examine topics in much greater detail. They are conducted more frequently than agricultural censuses and can provide more timely data.

Scope

160. Because of their focus on agricultural holdings, agricultural censuses and surveys can be extremely efficient in obtaining in-depth information on a series of aspects related to agricultural production. They may be appropriate ways to obtain individual level data on ownership of assets used in agricultural production, including agricultural land, livestock, and agricultural equipment - and their characteristics. Further, including questions on who owns these assets is relatively straight forward.

Conceptual framework

161. The key concepts in agricultural censuses and surveys are the agricultural holding and the agricultural holder. "Agricultural holding is an economic unit of agricultural production under single management comprising all livestock kept and all land used wholly or partly for agricultural production purposes, without regard to title, legal form or size." The agricultural holder is defined as "the civil person, group of civil persons or juridical persons who makes

[71] FAO, 2015. *World Programme for the Census of Agriculture 2020*. Volume 1: Programme concepts and definitions.

the major decisions regarding resource use and exercises management control over the agricultural holding operation."[72]

162. Thus, the emphasis in agricultural censuses and surveys is on the management of the agricultural holdings, and not the ownership of agricultural assets. The identification of the agricultural holder provides the basis for comparing the characteristics of holdings operated by women and men, which is important for understanding issues of decision-making and agricultural productivity. However, it does not currently identify the owners of agricultural assets. Nevertheless, ownership is addressed in a new topic for data collection recently introduced by the guidelines for the 2020 agricultural census round (WCA 2020): intrahousehold distribution of decision-making and ownership.

163. Finally, agricultural censuses and surveys may be less flexible than household surveys when it comes to the respondent selection protocols presented in these guidelines, which may have an impact on the statistics obtained on ownership. The WCA 2020 recommends that the respondent should be someone sufficiently knowledgeable to answer accurately questions on the agricultural holding and its components. This person is usually the holder or the hired manager. The information she/he would provide about the ownership status of other persons in the households qualifies as a proxy response and may be biased. Further, statistics based on self-reported information provided by the respondent would also be biased if he/she was not randomly selected for interview.

Units of observation and measures of ownership

164. Agricultural censuses and surveys use different units of enumeration and observation than household surveys. The statistical unit for the agricultural census and surveys is the agricultural holding, which is the basic agricultural production unit. Overall, data are collected at the agricultural holding level, but secondary units of observation and analysis are used. For example, some of the information on agricultural land may be collected at the parcel level, including, for example, area of land, land use, land tenure and terms of renting.

165. The WCA 2020 recommends that countries collect data on the ownership of agricultural land and livestock for each individual household member, to allow analysis by characteristics such as age, sex and education. In the absence of other data requirements, the ownership measures that can be constructed may be limited to incidence indicators for the population residing in households managing agricultural holdings. An alternative data requirement suggested by the WCA 2020 is that countries collect data by disaggregating the owned area collected at the parcel level and its tenure status, into areas owned by a male or female household member, or jointly by female or male household members. This would enable the analysis of women's and men's ownership, asset by asset, thus enabling asset-based measures. However, further analysis by other socio-demographic characteristics are limited if the owners are not identified within the household roster.

[72] FAO, 2015. *World Programme for the Census of Agriculture 2020*. Volume 1: Programme concepts and definitions.

Limitations

166. Ownership indicators constructed based on data collected in agricultural censuses and surveys may have limitations related to the design and coverage of the data collection method. Agricultural surveys may be implemented only in rural areas; therefore the asset ownership of women and men residing in urban areas may not be captured. The ownership of women holding small-size areas of land may not be captured either in some countries because agricultural censuses and surveys have a minimum size limit for the holdings covered by the data collection or because they are restricted to holdings conducting commercial agricultural activities. [73]

167. For the agricultural census, the size limitation for holdings covered is justified on the grounds that there are usually a large number of very small holdings making little contribution to total agricultural production and it is not cost effective to include them in the agricultural census. Nevertheless, an alternative to setting minimum size limits is to cover all units regardless of size, but ask only some very limited questions for small units. [74] In that case it is important that the small holdings are administered the questions on asset ownership and control from a gender perspective.

4. Administrative sources of data

168. Administrative sources are defined as "data holdings containing information which is not primarily collected for statistical purposes". [75] Typically, they are developed and maintained by government administrative authorities for the purpose of implementing government services and regulations.[76] Administrative sources have several key advantages by comparison to other sources of data; (a) their running cost is low once they have been set-up; (b) when complete, they can provide accurate and detailed information at the level of small geographic areas; (c) they can generate statistics at frequent and regular intervals; and (c) they can eliminate survey errors and non-response.

Scope

169. Statistical information on asset ownership may be derived from some administrative sources such as land registration and cadastre systems (or some sort of land information system), dwelling property records, property taxation records, and vehicle registration records. These sources may provide information on registered assets (such as a description of the land parcels or dwellings and their value) and some characteristics of their owners (such as their name and national ID). These sources of information are typically developed by

[73] FAO, 2015. *World Programme for the Census of Agriculture 2020*. Volume 1: Programme concepts and definitions

[74] FAO, 2015. *World Programme for the Census of Agriculture 2020*. Volume 1: Programme concepts and definitions

[75] United Nations, 2011. *Using Administrative and Secondary Sources for Official Statistics. A handbook of Principles and Practices*. Geneva: United Nations Economic Commission for Europe.

[76] United Nations, 2011. *Using Administrative and Secondary Sources for Official Statistics. A handbook of Principles and Practices*. Geneva: United Nations Economic Commission for Europe.

formal institutions and can provide statistics mainly on documented ownership. For example, in a country where access to land is governed by a mix of formal and customary institutions, information on formal legal rights to land is probably recorded in some form of land registration and cadastre system.[77] That information may be accessed for the purpose of generating statistics. However, there are no corresponding systematic and consolidated records reflecting customary tenure.

170. Several countries have developed farm registers (listings of farms or agricultural holdings) and some have attempted to create statistical farm registers, including for the purpose of selecting samples for agricultural surveys and for generating statistics, among other purposes. Farm registers may be developed and updated based on agricultural censuses and surveys and/or administrative records (such as tax records, cadastral records, directories from farmers' associations). Statistical farm registers are in use in many European countries.[78] However, the development of statistical farm registers with regularly updated/maintained records of holdings and holders that would generate statistics in agriculture remain a difficult enterprise. Statistical farm registers usually contain information about the name of the holder and the address of the holding, sex of holder, total area of holding, main land uses and types of animals kept. Owners of specific agricultural assets are usually not recorded.

Conceptual framework

171. Information available in administrative sources is not primarily collected for statistical purposes. Therefore, the recording of information about assets covered and their owners does not follow a predefined conceptual framework. However, it should be noted that administrative sources such as property and taxation records typically cover assets that are registered/documented, thus corresponding to one of the types of ownership presented in these guidelines.

Units of observation and measures of ownership

172. The unit of record in administrative sources is typically the asset. In theory, having the asset as a unit of record enables the calculation of both population-based indicators and asset-based indicators of gender differences in documented asset ownership. In practice, the calculation of these two types of indicators depends on the accurate and complete recording of all owners of an asset and their sex as well as the ability to be able to determine whether one person owns multiple plots as the plots may be registered under different names and thus viewed as two separate people.

Limitations

173. Administrative sources can only be useful if they are kept current and if the sex of the owner/holder is recorded. This is not the case for many administrative sources. Besides

[77] FAO, 2002. Land tenure and rural development.

[78] Stephen Clarke, 2007. Improving the quality of EU farm registers. Presented at: Seminar on Registers in Statistics – methodology and quality. Helsinki: 21-23 May 2007.

differences in conceptual frameworks, one of the key limitations in using administrative sources for statistical indicators and analysis of asset ownership refers to incomplete coverage of assets and incomplete information on all owners of an asset, including their sex or other demographic characteristics. For instance, land registry records may not incorporate in a systematic manner information that can be used to establish whether land owners are women or men. A review[79] of land registry databases in six Western Balkans countries[80] showed that the sex of the owner is not typically recorded as a standalone variable and often cannot be deducted based on other information that may be specified in the records, such as the IDs or the first name of the owners.

[79] World Bank and FAO, 2014. Gender disaggregated data in Western Balkans.

[80] Albania, Bosnia and Herzegovina, FYR Macedonia, Montenegro and Serbia.

Part III. Guidance for implementation

174. Careful planning and execution is critical to the success of any survey or survey module on measuring asset ownership and control at the individual level. General principles and rules for all statistical sample surveys are applicable to surveys on asset ownership but, in addition, specific considerations should be taken into account in order to ensure the quality and reliability of results on individual-level asset ownership. Topics addressed in this chapter include the planning process, data collection strategies, sample design, questionnaire design and field operations.

1. Planning a survey on measuring asset ownership at the individual level

175. While some countries collect data on assets or durable goods owned by, or used in, the household, very few collect individual-level data on asset ownership and control. Countries adopting this new gender-relevant approach will need to decide which mechanisms of data collection are at their disposal to gather such data. As discussed in Part II, household surveys are the preferred data source for regularly estimating the prevalence of asset ownership and other key measures within the female and male populations, but other potential sources include agricultural surveys and censuses and administrative records. All of these sources should be assessed to determine their capacity for delivering the data needed, the costs involved, and the technical expertise required.

176. The desired frequency of producing statistics on asset ownership as well as ensuring comparability with future statistics through the use of the same methodology of data collection over time should also be assessed at this early stage and inform the decision on sources of data used. Asset-ownership prevalence is expected to be fairly stable over short periods of time, unless economic crises deeply impact the wealth of a large portion of the population or new government programmes targeting assets are implemented. In the absence of such events, monitoring the prevalence of ownership once every 3 to 5 years should be sufficient to construct reliable trends. If the survey or survey module will be used to monitor SDG land indicators 5.a.1 (a) + (b), countries may want to consider more frequent data collection in line with the recommendations vis-à-vis the SDG indicator.

177. Nevertheless, similar to other surveys, the quality of data collected will depend in part on the quality of the planning process, starting with specifying clear objectives for data collection, bringing together the right people, and developing realistic budgets and timelines. These aspects are covered in the following sub-sections.

1.1. Specifying the survey objectives

178. A clear statement of survey objectives should be developed in consultation with stakeholders, including funders and data users. Survey objectives indicate topics and policy issues that need to be addressed; the statistical information they are based upon; the geographical and population coverage of the results; and how the results will be used. Survey objectives give a rough idea of the expected scale of the survey and are a crucial input in

deciding the sample size and structure, the amount and complexity of information to be collected, and the needed resources of time, human skill and funding.

179. Survey objectives may be initially formulated as key questions that the survey seeks answers to. They may vary from very simple ones that provide a basic picture of asset ownership to more complex ones, as in the following examples:

- What is the prevalence of asset ownership among women and men? A simple description of asset ownership can be developed by using data collected through a minimum set of questions on whether the respondent owns specific assets or not.
- Are women more likely to own assets exclusively or jointly? Are men? Are female owners as likely as male owners to possess the full bundle of ownership rights, including the right to sell and bequeath? Do women and men acquire assets in different ways? To address these policy issues, a few more questions can be added to a short module appended to a household survey.
- Is agricultural land or housing more likely to be owned exclusively or jointly be men and women? What are the value of assets owned by women and men? Addressing these types of questions requires that a respondent roster of assets is created and information obtained on the form of ownership and the value of each asset.
- Are assets equally distributed among adult women and men living in the same household? Is the value of assets owned by married/partnered women similar to the value of assets owned by their husbands/partners? Is women's wealth concentrated in the same types of assets as men's wealth? Data requirements to answer these questions are more complex and require that a household roster of assets is created and information is obtained about each asset listed. In addition, all adult members of the household will have to be interviewed about their own asset ownership.
- Do women who own assets, whether exclusively or jointly, have more decision-making power than women who do not own assets? Are they more likely to be entrepreneurs or to have their own income? Do they invest more often in the education of their children? Are they less likely to be victims of domestic violence? Answering these policy questions requires the inclusion in the survey of additional questions that need to be analysed in relation to the questions on asset ownership.
- Has a government programme of land distribution and titling had different impacts on the women's and men's ownership? Addressing this question may require including in the questionnaire items specifically referring to the programme of interest or fielding separate survey waves (to control and treatment populations) before and after the programme is implemented.

180. Several objectives may be accommodated in the same survey if they are consistent with each other and their number and complexity do not compromise the quality of the survey. For example, Statistics South Africa included a module on decision-making in the EDGE pilot survey in order to analyse the relationship between women's and men's asset ownership and household decision-making.

181. Nevertheless, covering too many objectives may prove challenging for sample and questionnaire designs and may exceed the allocated budget. As such, care must be taken not to overload the survey with too many competing goals, and a clear statement of the survey's

objectives will help to keep the project focused throughout all stages of development, implementation, data analysis and dissemination.

182. Similar to other surveys, once the objectives for a survey have been drafted, they should be ranked by their importance and feasibility, including through the use of a tabulation and data analysis plan. A tabulation and data analysis plan explains in detail what data are needed to attain the objectives (answer the questions) set out for the survey, and what indicators can be derived from the data collected. It also ensures that no unnecessary questions are included and no essential analyses are omitted, therefore maintaining compatibility between the data requirements and the final survey design. Survey designers must refer to this plan constantly when working out the details of the survey questionnaire.

183. The final set of objectives to be covered in the survey should be chosen based on capacity for data collection, amount and quality of data expected from other sources, and the funding available. If countries choose to append a module, rather than implementing a stand-alone survey, as discussed in section 2, it is important that the module itself will be designed based on a clear set of objectives that can be accommodated by the host survey.

1.2. Building the project team

184. The planning of a survey is usually carried out by a relatively small group of subject-matter specialists and technical and administrative staff members of the central statistical office, in close collaboration with key stakeholders. A small team of key stakeholders should be involved from the early planning stages of the survey, including when formulating the scope and objectives of the survey. Consultations should also be undertaken at other specific stages. By including this group, the communication between the data users and data producers will be greatly increased. Engaging stakeholders throughout all phases of the project also ensures that there will be knowledgeable experts who are prepared to use the basic statistics obtained and the results of more in-depth analysis for policymaking.

185. Key stakeholders may include researchers, women's and gender advocates, policy analysts and policymakers, and donors. Data and analysis on asset ownership is generally relevant for the development and monitoring of policies and government programmes related to poverty, livelihoods and entrepreneurship, agriculture, women's empowerment and gender equality, as well as housing and distribution or titling of land. Analysts involved in these aspects of policymaking can provide technical expertise and contribute to specifying the objectives of the survey. When individual-level data on asset ownership is collected through a module attached to a survey, it is important that the group of stakeholders for the overall survey includes people representing those institutions.

186. Staff requirements for the various aspects of the survey are a crucial planning consideration in any survey and their assignment to the project must be decided at an early point. A team of experts, subject-matter specialists and data analysts must be formed at the very beginning of survey planning to ensure that no aspect of the survey is neglected and that it is given priority in the NSO's survey program. This team should include senior staff of the national offices, including specialists in gender statistics, household surveys, sampling,

national accounts, agricultural land, data managers, and other specialists in field operations. Other specialists may be from outside the statistical agency and include the small group of stakeholders.

187. This team of experts has an important role to play, especially when it is the first time the NSO is collecting data on asset ownership from a gender perspective. New concepts and definitions will need to be applied, reflected in the questionnaire design in a way that makes sense to the country context, and communicated in an effective way to the enumerators and supervisors during the training. The sample design needs to account for potential variations of the tenure system across the country, and may involve new respondent selection protocols. The individual-level perspective used in data collection enables new ways to analyse asset ownership that could lead to better articulated policies; however, the data structure and data analysis have a certain degree of complexity and analytical reports that inform policymaking will need to be carefully drafted.

188. Finally, the group of data collectors has an indispensable role in ensuring the quality of data. This group includes interviewers, supervisors, data entry staff and computer technicians. They may be part of the staff of the central agency or of regional offices. Additional interviewers and supervisors may be hired from the field. Some representatives of this group may be involved in some aspects of the questionnaire design, including how some questions or instructions may be best formulated to be clearly understood by both enumerators and respondents.

1.3. Budget and timeline

189. One of the first tasks in planning a survey is to draw up a draft budget that approximates the cost of the survey based on some assumptions of the sample size and the average time needed to interview one or more household members. This exercise is typically done by looking at budgets of similar surveys already implemented in the country or in similar countries.

190. Typically, there are two types of survey costs: fixed and variable. Examples of fixed costs are costs associated with the developing and testing of the questionnaire and other survey instruments. Variable costs refer to expenses that are highly dependent on the sample size and structure, including those related to the employment of the field staff and their transportation and accommodation in the field, or, for example, the number of electronic devices needed when computer-assisted interviewing is used. Typically, the variable costs, mainly driven by the sample size and structure, will dominate the survey budget. As extensively discussed in section 4, the sample size and structure will depend on the level of precision required for the key estimates of asset ownership and wealth, the number and level of population subgroups for which estimates need to be produced, and the prevalence of asset ownership in the population or population subgroups targeted. Another important factor is the use of sampling techniques such as stratification and clustering, which are cost-effective ways to reduce costs associated with field staff travel without compromising the possibility of obtaining estimates representative at the level of the population groups desired and with the required precision.

191. More reliable and detailed cost estimates can be developed once the overall scale of the survey and a detailed timetable of activities are in place. The timetable of activities should be comprehensive and include details on the time frame of each activity, keeping in mind existing constraints such as other surveys being developed at the same time or preferred time of the year when the fieldwork should take place. There should also be a clear specification of which activities are done "in-house" - performed by the regular staff of the statistical office, and which are outsourced to other individuals or institutions.

192. Financial resources can be a major constraint, limiting how many households can be surveyed, how many interviewers can be employed and how much time they can spend within any given enumeration area. Some elements of the survey may need to be adjusted depending on the available budget, including sample size and structure and questionnaire length and complexity. However, the quality of data needs to be preserved. Survey errors need to remain at an acceptable minimum for the specified survey objective; the data collection instruments need to be properly developed or customized; and the staff involved in data collection need to be adequately skilled and properly trained.

2. Data collection strategies

193. Countries choosing to measure asset ownership and control at the individual level through household surveys have three options for collecting the data that vary in complexity. First, they can implement a stand-alone, or dedicated, survey. Second, they can append a survey module to an existing household survey. Third, they can integrate a minimal set of questions into an existing household survey. This section discusses each option in more detail and provides guidance on the criteria countries should use in selecting an approach.

2.1. Conducting a stand-alone survey

194. A dedicated survey on the ownership and control of assets enables countries to collect a comprehensive set of data for informing policies and programs aimed at promoting gender equality and other development outcomes. In comparison to a survey module or a minimum set of questions, a stand-alone survey can collect information on a larger range of assets and their characteristics, including, for example, the tenure type and size of agricultural parcels. It can also measure all components of the conceptual framework presented in Part 1 of these guidelines, including types and forms of asset ownership, modes of asset acquisition and asset valuation. A stand-alone survey also has the flexibility of including modules on additional topics, such as education, health, or decision-making, so that data users can analyse the relationship between asset ownership and key development outcomes of interest to policymakers. Finally, because the survey's focus is on asset ownership and control, the data collected in a dedicated survey is less likely to suffer from respondent fatigue than data collected from a module appended to the end of a household survey on another topic.

195. A disadvantage of stand-alone surveys is that they typically require more resources to implement than appending a survey module to, or integrating a minimum set of questions into, an existing household survey. In countries that conduct many official surveys in one

year, it may also be difficult to find the time and resources to include a dedicated survey on asset ownership in the survey pipeline, particularly within the constraints of a limited survey budget.

196. A stand-alone survey on individual-level asset ownership and control includes, at a minimum, two parts: 1) a household questionnaire, or roster, that lists, and collects basic sociodemographic information about, all household members, which is administered to one adult household member; and 2) an individual questionnaire in which one or more randomly selected respondents or all household members self-report their ownership and control of assets.[81]

197. Countries which wish to collect a household roster of assets (i.e. an inventory of assets belonging to all household members) for the purpose of estimating household wealth or analysing intrahousehold gender inequality in asset ownership, as discussed in Part I of these guidelines, should include an asset roster in the household questionnaire and obtain the value of each asset. If this approach is taken, the household questionnaire will be completed, ideally, by a person knowledgeable about the household's asset holdings. The roster of assets is then fed forward to individual-level interviews in which one (or more respondents for the purposes of intrahousehold analysis) report their ownership status for the assets listed in the roster as well as for any additional assets they own that were not captured in the household roster of assets.

2.2. Appending a survey module to an existing household survey

198. Rather than implement a stand-alone survey, countries may opt to append a survey module on asset ownership and control to an existing household survey. Depending on the level of precision needed at lower administrative units, the module may be appended to the entirety of the sample for the main survey or to a subsample of the main survey so long as national representation is retained. Appending a module to an existing survey is often less resource-intensive and costly than conducting a stand-alone, dedicated survey on asset ownership because the bulk of the costs are borne by the main survey; the marginal costs of the survey module relate mainly to the additional personnel that may be needed to collect individual-level data on asset ownership as well as their training.[82] Appending a module on asset ownership to a household survey, particularly a multi-topic survey, also provides a rich source of data to analyse relationships between asset ownership and key variables of interest to policymakers.

199. However, one disadvantage of this approach is that it affords less flexibility than a stand-alone survey because the data collection is subject to the parameters of the main survey. For example, the sample size is determined by the objectives of the main survey, not by the module on asset ownership, which may have implications for the respondent selection protocols recommended in these guidelines.[83] Further, the content of the module on asset

[81] Methods for selecting the random respondent are discussed in Part III Section 4 on sample design.

[82] Field staff and training are discussed in Sections 6.1 and 6.2, respectively, of Part III.

[83] See Section 4 on sample design.

ownership, including the number of both the assets that can be covered and the questions asked, will be determined in part by the length of the main survey questionnaire and the need to minimize response burden. As such, this approach is more suitable to collecting data on the core set of assets.

200. Countries planning to append a module on asset ownership and control to an existing household survey should consider which surveys in their existing survey program would be a good fit for hosting the module. There are several factors to consider. First, the topic(s) of the main survey should complement the module's focus on asset ownership and control so as to ensure the continuity of the interview. Integrated, or multi-purpose, household surveys, which collect data on multiple topics relevant to policy analysis in one survey, such as the Living Standards Measurement Study survey, are a natural fit. Also appropriate are household income and expenditure surveys, which collect data on the flow of monetary and non-monetary resources of households and individuals and may include a module on asset ownership at the household level. Because these surveys tend to require repeat visits by the enumerators to the households to collect the data, respondents may be more comfortable answering sensitive questions, such as on asset valuation, than in surveys requiring enumerators to visit the household only once.

201. Second, the host survey must be able to accommodate the respondent selection protocols necessary for collecting individual-level data on asset ownership and control. As discussed in Part 1, information on the ownership and control of assets should be self-reported, not reported by proxy, due to sizeable discrepancies in proxy versus self-response, including the assignment of ownership by proxy to persons who do not consider themselves owners. Further, to avoid biased estimates, either one or multiple adult household members must be randomly selected for interview or all adult household members must be interviewed. For countries that prefer to collect information on asset ownership from multiple respondents to understand the intrahousehold allocation of resources, the module on asset ownership can be appended to a multipurpose survey that already interviews multiple adult household members, and administered to each respondent. For countries that prefer to interview one randomly selected adult household member, the survey should allow for the random selection of the respondent following the listing of all household members.

202. Third, countries should assess how often they will need to collect data on individual-level asset ownership and select a host survey that can accommodate this frequency. As discussed in Section 1 above, data on asset ownership can be collected every three to five years unless a country has a policy need, such as assessing public interventions, for more frequent monitoring. Thus, the main survey to which the module on asset ownership will be appended should be administered with similar frequency or if it is administered more frequently, the module should be appended to it every three to five years.

2.3. Integrating a minimum set of questions into an existing survey questionnaire

203. Countries may choose to integrate questions on asset ownership into an existing household survey in order to measure the prevalence of asset ownership at the individual level. However, countries planning to adopt this approach will need to integrate the minimum

set of questions into a household survey that adheres to the respondent selection protocols presented in these guidelines. Given the requirement to collect self-reported data, as discussed above, the only surveys appropriate for integrating the minimum set of questions on the prevalence of asset ownership are surveys which collect self-reported data from one or more randomly selected respondents or all household members.

204. Four questions in total, as illustrated in section 5 on Questionnaire Design, can be integrated into an existing questionnaire to measure the full bundle of ownership rights for each of the core assets (dwellings, agricultural land, and other real estate). Countries may also choose to collect individual-level data for additional assets, depending on their policy needs, by including one question each to measure reported ownership of financial assets, agricultural equipment, livestock, consumer durables and valuables.

205. There are several advantages to integrating a minimum set of questions into an existing survey questionnaire. First, it enables countries to measure the prevalence of asset ownership in the population, by sex, with minimal increases in data collection or response burden. Second, collecting the data as part of an existing household survey may be more sustainable than conducting a stand-alone survey or appending a module to a host survey, as the latter approaches are often more susceptible to budgetary cuts and competing priorities within a survey program. However, one disadvantage of this approach is that it allows only for the calculation of prevalence estimates of women's and men's asset ownership. If countries wish to derive other indicators, such as on the gender wealth gap or modes of asset acquisition, they should consider appending a survey module to an existing household survey or conducting a stand-alone dedicated survey on asset ownership.

2.4. Choosing between the three data collection strategies

206. First, countries should assess whether they have existing data, either through statistical or administrative sources, on the prevalence of each asset type (e.g. principal dwellings or agricultural land) within the country to determine which assets individual-level data should be collected for. For example, an industrialized country in which less than 5 percent of the population owns agricultural equipment may choose not to collect data on agricultural equipment while a country with a largely agrarian economy and a higher percentage of agricultural equipment may opt to do so.

207. If no such data exists for each of the types of assets, a country may choose to implement a nationally-representative, stand-alone survey to estimate asset prevalence within the country and determine which assets data should be routinely collected for in the future. The data obtained can also serve as baseline estimates for monitoring purposes. However, because this is a resource-intensive option, countries may opt to add a few questions on asset ownership at the household level to an existing nationally-representative survey that will be implemented well in advance of the data collection on individual-level asset ownership. The information on asset prevalence obtained at the household level through this exercise can be used to determine sample size for the data collection on individual-level asset ownership, as discussed in Section 4 on sampling in Part III. As a third but less robust option, countries could conduct a series of focus group discussions with individuals to identify which assets

women and men own. While this approach will not yield prevalence estimates of asset ownership due to the non-probabilistic approach in which focus groups are selected, it can identify the assets which women and men consider important to their livelihoods and well-being. If national statistical agencies choose this approach, skilled facilitators should be employed to lead the focus groups and a sufficient number of focus groups should be conducted in various regions of the country to ensure variation in land tenure systems and gender norms as well as other characteristics that may influence asset ownership.

208. Likewise, each national statistical agency will need to determine the relevance of the bundle of ownership rights to its country context. As discussed in Part I of these guidelines, this assessment should entail an analysis of the legal framework, including statutory and customary laws, on property rights as well as the social norms mediating those rights. If countries opt to conduct a stand-alone baseline survey, as discussed above, to obtain prevalence estimates, the data collection could also serve to determine whether the full bundle of ownership rights -including documented ownership, reported ownership and the rights to sell and bequeath an asset- comprise ownership in the given country. In future rounds of data collection, only those aspects of ownership relevant to the country context would be fielded. Alternatively, countries could opt to conduct focus groups, as discussed above, in which ownership patterns and other themes important to the data collection are explored. The qualitative information obtained would serve both to inform the design of the survey questionnaire and interpret the quantitative findings of the survey.

209. Countries that have a clear understanding of which assets and which bundle of ownership rights to measure also have the options of appending a module or integrating a minimum set of questions into an existing household survey. To decide between these two options, countries should first determine the types of measures needed by the data users. As discussed elsewhere in these guidelines, *incidence gaps* indicate the proportion of the total population, by sex, who are owners of a particular type of asset, such as dwellings or land, while the *share of owners* indicates how many of the people who own a particular type of asset are women or men. If a country is interested in deriving these two measures only, it can integrate the minimum set of questions into an existing household survey that collects self-reported data from one or more randomly selected adult household members or all household members. If the country does not have a survey that adheres to these respondent selection protocols, it should append a module on asset ownership to an existing household survey and design the respondent selection protocol (one or more randomly selected or all household members) needed for the collection of data in the attached module. The *gender wealth gap* indicator, which requires data on the value of each asset, accounts for the quantity and quality of the asset owned whereas the indicator on *form of ownership* provides information on how each asset is owned, whether exclusively by a man or a woman or jointly by couples or other configurations of individuals. If a country is interested in compiling these indicators, it should append a module on asset ownership to an existing household survey since the questions needed to measure them exceed the minimum set.

210. Ultimately, the determination of which data collection strategy to adopt should be considered vis-à-vis the resources available for the data collection, the overall work program of the national statistical agency, and the objectives of data collection.

3. Modes of data collection

211. This section briefly introduces modes of data collection typically used in household surveys including face-to face interviews, telephone interviews, self-enumeration methods, and computer-assisted interviewing. It then focuses on face-to face interviews, including the advantages and limitations of using paper versus CAPI questionnaires. The focus on face-to-face interviewing is due to three reasons: (a) it is the most common method; (b) it meets key sampling and field operations requirements when implementing a survey on asset ownership from a gender perspective, and (c) it achieves a high degree of cooperation, resulting in higher response rates and data that are more complete and accurate. The discussion of the advantages and limitations of a paper versus a CAPI questionnaire summarizes a few general issues related to data quality and timeliness, and emphasizes aspects that are most relevant for data collection on asset ownership, including how these methods deal with the complexity of using multiple rosters (of individuals and assets) in the household.

3.1. Basic modes of data collection

212. The modes of data collection used by national statistical offices vary across countries and across surveys within the same country. A household survey may employ one mode of data collection or a combination of two or more methods. The mode of data collection has implications in terms of logistical requirements for the survey operations, procedures related to sampling, number and qualifications of the enumerators, training needs, and, consequently, the cost of the survey. Therefore, a decision on the mode of data collection should be made by countries early in the planning stage of the household survey, based on the objectives and scope of the survey, previous experience in data collection, available resources, characteristics of the population such as literacy rates and coverage of phone and internet services, and availability of sampling frames.

213. There are three basic modes of data collection used in household surveys that countries may consider: face-to-face interviews, telephone interviews, and self-administered questionnaires. ***Face-to-face interviews*** are the most common method, particularly in developing countries and in population groups with significant illiteracy rates. In this method, information is obtained from one or more household members and entered in the questionnaire by an enumerator (field interviewer) designated to visit that household and conduct an interview for the purpose of data collection. A high degree of cooperation from respondents is usually achieved, which translates into response rates that are typically higher compared to other methods. [84] Data obtained in face-to-face interviews may also be more complete and accurate because of the potential for interaction between the enumerator and

[84] Groves and others, 2009. *Survey Methodology*.

the respondent, and the opportunity to clarify some of the questions and probe for more adequate answers. However, face-to-face interviews require highly trained enumerators and are likely to be more costly than other data collection modes, mostly due to traveling to respondents' residences.

214. ***Telephone interviews*** are increasingly used, but require that telephone services have broad coverage. Surveys based on telephone interviewing are cheaper than face-to-face surveys and may be completed faster than surveys involving a self-administered questionnaire. Their main limitations refer to incomplete coverage and a high proportion of non-responses. In addition, telephone interviewing may result in higher coverage error when the survey requires a listing of all household members with a subsequent random selection of a person in the household.[85]

215. ***Self-administered questionnaires*** are more often used in developed countries. In the self-enumeration method, questionnaires are distributed to households selected in the survey sample and collected by mail, email or internet. The major responsibility for entering the information in the questionnaire is given to a person in the household. The sample population must be literate, and, in the case of web-based surveys, able to access the internet through computers or handheld devices. Self-enumeration questionnaires need to be limited in length in order to avoid confusion and reduce non-response. In addition, when using self-enumeration, there are no established methods to meet key sampling and operational requirements for collecting data on asset ownership, including randomly selecting one person in the household or simultaneously interviewing multiple respondents.[86]

216. More recently, computer-assisted versions of these three methods have been developed and countries are increasingly using what is called an electronic questionnaire. **Computer-assisted interviewing** may take the form of a computer-assisted personal interview (CAPI), a computer-assisted telephone interview (CATI), a computer-assisted self-interview (CASI) or an audio-computer-assisted self-interview (ACASI).[87]

217. There are several advantages to using technology in data collection. Data will be available much faster for analysis because data are transferred to a central database immediately or soon after data collection in a household. Electronic forms reduce the amount of material (such as questionnaires) to be printed, distributed and returned, and reduce data entry costs and errors. Further, the need to securely store completed paper questionnaires is eliminated, thus contributing to the privacy of respondents and the confidentiality of data. Instead, national offices need to ensure that online transmission is encrypted and secured for confidentiality purposes. Most importantly, electronic forms can improve data quality by implementing validation rules on individual questions, cross-validation between questions and automatic sequencing of questions (leading the operator to the next appropriate question). More options in pull-down lists may be implemented, thus capturing more detailed data.

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[85] Groves and others, 2009. *Survey Methodology*.

[86] These requirements are explained in detail in the sections on sampling design and field operations.

[87] Groves and others, 2009. *Survey Methodology*.

Finally, electronic questionnaires can also give enumerators access to "help" material that can be used during interviews.

3.2. Implementing face-to-face surveys using paper versus CAPI questionnaire

218. As mentioned above, face-to-face interviews, the most common method of data collection in surveys, have the advantages of higher response rates and obtaining data that are more complete and accurate. This is particularly the case when the questionnaires used and the interviewer protocols are complex, as in the EDGE pilot studies. All seven EDGE pilot studies were based on face-to-face interviews, reflecting the typical mode of data collection used by the national statistical offices in those countries. Five countries used paper questionnaire, while two countries, Uganda and South Africa, collected data using the World Bank's Survey Solutions' CAPI software. Each of the two methods proved to have its own advantages and challenges in collecting data on asset ownership.

219. Paper-based data collection has been used for decades and many countries have accumulated extensive experience with this mode of data collection vis-à-vis designing and testing questionnaires, building networks of skilled enumerators and trainers and implementing quality assurance procedures for field operations. Nevertheless, use of a paper questionnaire in collecting data on asset ownership has some specific challenges when complex survey instruments are used. One challenge refers to the creation and use of multiple rosters, one for household members and additional ones for the different inventories of assets that are collected. For example, one of the requirements in constructing asset rosters is listing all asset items in a roster before starting to record specific information for each asset item. This technique prevents the underreporting of asset items due to respondent fatigue. While this aspect can be emphasized during the training, the enumerators may not necessarily follow the rule in the field, and proceed to complete all the questions related to an asset before listing a second asset.

Advantages of using a CAPI questionnaire

220. Using CAPI can address some of the challenges that are common in household surveys or specific to the measurement of asset ownership. Similar to other computer-assisted modes of data collection, CAPI considerably reduces the time lag between data collection and data analysis because date entry and some data validation procedures can be embedded in the process of recording information obtained from respondents. In addition, the CAPI questionnaire can be designed to facilitate better data quality through the way the rosters are constructed and displayed. By CAPI questionnaire design, the enumerator has to complete a roster of assets before recording further information for each asset. When collecting information on who the joint owners of a particular asset are, the name/identification of the asset in question remains displayed, so the enumerators are reminded of the subject of observation. The roster of household members, including their names, is also displayed, reducing the potential for errors in recording the joint owners of that particular asset.

221. Better data quality is also enabled by embedding in the CAPI questionnaire design a routine to automatically select for interviewing a person in the household, based on

randomization procedures. When using a paper questionnaire, some enumerators may have difficulties in using correctly the method prescribed for randomly selecting a respondent (such as the Kish selection method or a selection method based on birth date), as observed in some of the EDGE pilot studies, negatively impacting the quality of the estimates obtained in the survey.

222. Additionally, CAPI can capture a range of operational information that can be used to monitor operations and analyse responses. For example, although the duration of an interview may be recorded manually in a paper questionnaire, use of CAPI allows for a detailed analysis of the time duration for the entire questionnaire as well as by module and question. Finally, use of CAPI also enables more efficient management of interviewers, including updating enumerators' assignments and checking of the completed questionnaires by the supervisors.

Costs and risks associated with using CAPI

223. However, there are also costs and risks associated with using CAPI instead of a paper questionnaire. When considering the CAPI method, the cost of providing all interviewers with the electronic device[88] used to administer the questionnaire must be incorporated into the project budget. Each interviewer must have her or his own tablet computer for data collection, which can represent a substantial initial investment. Less expensive tablets and notebooks are becoming widely available, however, meaning that computer costs may be offset by savings derived from eliminating the printing, editing and transport of the questionnaires and the transfer of data from paper forms to an electronic database. These devices can also be reused on future surveys. Therefore use of CAPI is more expensive for the first one or two surveys, but subsequent surveys will be far less expensive. Additional costs when using CAPI may refer to the human resources and time related to programming, additional training on CAPI for interviewers, field supervisors and headquarters staff; cost of access to server hardware, software and server maintenance; and technical support.

224. Furthermore, more preparation time is needed before starting data collection in the field. The additional time to be allocated to field preparation activities should not be underestimated. It also should be emphasized that when not enough time is allocated to the development and testing of the CAPI questionnaire data quality may be severely compromised. Based on EDGE pilot studies in Uganda and South Africa, at least one additional month may need to be allocated to field preparations when using CAPI, including for the purpose of CAPI design, CAPI testing, and training on CAPI-specific issues.

[88] The term handheld electronic device typically refers to a small device which provides computing and information storage along with retrieval capabilities. The typical handheld electronic device has a touch-screen interface for input and output along with a miniature or a virtual keyboard. Most handheld electronic devices have an operating system and can run various types of application software. Most are equipped with capabilities for connection to cellular networks and for establishing connectivity to the Internet and other devices such as a personal computer (PC) and other mobile devices through mechanisms including WiFi, Bluetooth, IRDA and near field communication (NFC). The synchronization function of these devices allows the exchange of data with a PC or other devices. Handheld devices are available in a variety of form factors, including the personal digital assistant (PDA), tablet computer, smart phone and Ultra-mobile PC.

225. Nevertheless, when using CAPI, statistical offices are strongly encouraged to develop a paper questionnaire first. The paper questionnaire will serve several purposes. First, a draft questionnaire will need to be developed in parallel with the tabulation and data analysis plan, and the objectives of the survey, to ensure consistency among all three elements. The paper questionnaire can be shared with the entire team and stakeholders, to ensure exchange of ideas and communication.

226. Second, the paper questionnaire will provide a full picture of the organization of the questions in modules and sections, the flow from one section to another and the sequence of questions within each section. It is important that the paper questionnaire contains all the questions and skip patterns needed. Having the entire logical design on paper will facilitate tremendously the implementation of the right sequence of questions and logical validations in CAPI. It is important that the paper questionnaire is implemented in CAPI only after it has been tested, finalized and approved. This will prevent going back and forth in numbering the questions and redoing validation checks in the CAPI questionnaire.

227. Third, the paper questionnaire is an invaluable tool to be used during the training of the enumerators. Trainers and trainees can easily refer to the paper questionnaire for a variety of purposes, including understanding the scope of data collection and how key concepts are operationalized, illustrating the sequencing of questions and emphasizing difficult questions that need to be probed further, without getting distracted by the use of technology. Fourth, the paper questionnaire can be made available by itself or accompanying the statistical publications and products developed after data collection.

228. The CAPI questionnaire will be used specifically to: test the flow of the questionnaire and validation rules in the field and the communication between the different components of the system involved in data transfer; conduct the training of enumerators and supervisors on CAPI-specific issues; conduct the field practice for enumerators and supervisors; and collect the data once the fieldwork commences.

4. Sample Design

229. Sample design is a process that specifies how to select a sample of elements from a sampling frame and how to compute estimates using sample data. The goal is to provide estimates of things in the population from which the sample was drawn and make statements about the uncertainty of those estimates because a sample rather than a complete enumeration of all elements was selected.

230. Official statistics systems generally prefer that the elements in the sample should be randomly selected with a non-zero probability, properly representing the target population as well as key subgroups of the target population. A survey collecting information on asset ownership, as with a survey on any topic, needs to satisfy survey objectives, take into account the mode of data collection and the fieldwork constraints, be efficient in terms of cost and the precision of the survey estimates, and be practically feasible in a country.

231. In most countries, no comprehensive population or household register is available. A stratified multi-stage area sample design is used. The sample is selected in stages so that

locations where interviews are conducted require limited travel and the households are chosen efficiently. To ensure representation of population subgroups in the sample, first stage sampling units, such as enumeration areas defined in a population census, are divided into mutually exclusive strata, based on information that is available for every element in the first stage frame. Clusters are then selected independently across the strata. Within selected clusters, households are selected from a list of households in the selected cluster created at the time of household selection or obtained from official sources, to keep costs at a manageable level. For surveys requiring the sampling of individuals, a last step of the sampling process involves selection of one or more individuals from selected households, who are then interviewed.

232. In other countries which maintain a comprehensive and up-to-date population register, the selection of individuals may be done either through systematic sampling from a purposively-ordered list of people registered in the system or systematic sampling from a purposively-ordered list of addresses followed by selection of individuals from within the household. Even with a population or address register available, individuals or addresses may be clustered into first stage sampling units, as in stratified multistage area sampling, and multiple individuals or addresses selected from chosen sampling units. If, though, a selection of individuals directly from a register is done, the ordering of people in the register should be carefully sorted by key characteristics available in the register that are correlated with the measurement of asset ownership. Systematic selection applied to such a sorted list is often called implicit stratification and is helpful in achieving smaller standard errors for virtually the same cost as systematic sampling from a randomly ordered or unsorted register. Information on relevant correlates is available below in the section on stratification.

233. As outlined earlier, countries may choose to implement a stand-alone or dedicated survey, append a survey module to an existing household survey, or integrate a minimum set of questions into the questionnaire of an existing household survey. If a stand-alone survey on asset ownership at the individual level is implemented, sample selection involves selecting sample households and selecting individuals from households. If a survey module is appended to an existing household survey, sample households would have already been selected and the sampling process for the purpose of collecting data on individual-level asset ownership and control only involves the selection of individuals from the sampled households.

234. Designing the sample for a sample survey requires comprehensive knowledge of the principles and techniques of sampling. Survey managers without comprehensive knowledge about these techniques must seek assistance from a specialized statistician early in the planning stage. A complete discussion of the principles and techniques is beyond the scope of this publication. However, the discussion will cover basic principles in sampling households and individuals as well as issues that need to be taken into consideration for household surveys collecting individual-level asset ownership data. The section will also cover, in detail, the selection of individuals within households.

4.1. Principles in sampling

4.1.1. Target population

235. The target population refers to the population or universe that is the focus of the study. Depending on the objective of the survey, the target population could be person-based or entities other than persons such as establishments for establishment surveys and agricultural land for agricultural surveys. Household surveys are typically used for surveys of persons, and often limit their focus to a specific target population such as people residing in the country, including those living in households or institutions, excluding population subgroups such as the homeless or those in the military.

236. More specific objectives of the survey could further limit the scope of the target population. For example, as this set of guidelines focuses on collecting information on asset ownership at the individual level, the target population will be limited to usual residents living in households who are above a certain age.[89] If the objective were to understand decision-making and power dynamics between husbands and wives or between unmarried partners, the target population would be persons who are either married or residing with a partner.

237. Other restrictions may arise depending on the survey focus. For example, the measurement of women's asset ownership, as presented in the 2030 Sustainable Development Agenda (more specifically indicator 5.a.1 on the proportion of the total agricultural population with ownership or secure rights over agricultural land, by sex) could restrict the population to the agricultural population. This can be done by limiting data collection to individuals only in that population or the subpopulation may be treated as a subgroup that is of interest in a survey with a broader target population.[90]

4.1.2. Sampling frame

238. Sampling frames are lists or source materials used to select the sample. Frames that identify only elements of the target population are available in some countries, and ideally the sampling frame is a perfect match to the target population. In a multi-stage sample design, the sampling frame is different for each stage. Surveys on asset ownership could, as noted above, require an area sampling frame comprised of lists and maps of geographical units for the first stage of sampling, a list and a map of households for the second stage, and a list of individuals in selected households.

239. An area sampling frame consists of geographical units arranged hierarchically. An area frame may include province, district, tract, ward, and village (rural areas) or block (urban areas). For census purposes, these administrative subdivisions are further divided into enumeration areas (EA). The EA is typically the smallest geographical unit that is defined

[89] The guidelines recommend collecting data on asset ownership for individuals 18 years of age and over. However countries may use a different age cut-off.

[90] See Box 1 in the Introduction for an overview of the 2030 Sustainable Development Agenda and Indicator 5.a.1.

and delineated in a country, making it a natural and convenient choice for the primary sampling unit (PSU) in household sample surveys. The use of census frame lists of households is not an uncommon practice in the field. If household census information is outdated, the frame can still be used, but a new or updated listing of households within the selected EAs is advised.

240. For surveys designed to collect data on asset ownership at the individual level, the last stage sample frame includes a list of individuals in selected households. It is recommended that the individuals listed should be those who are age 18 years or older. The list is constructed by asking one informant, such as the head of household or a knowledgeable household member, to identify individuals who are residents of the household and provide their birthdates so those who are 18 years of age or older can be identified. Residency rules must be specified so the enumerators can determine, based on the information provided by the informant, who can be listed as a resident.

241. Two different residence rules are usually used. One is a *de-facto* residence based on the place where the person resides at the time of the data collection, usually the night before data are collected. The other is a *de-jure* residence based on the place where the person usually resides. De-facto residence is more straightforward for the informant to report – anybody who spent the night prior to data collection in the household would be listed as household members. Frames based on de-facto residents generally fit better with surveys that take a relatively short period of time. If the enumeration is extended over a period of weeks or months, the risk of either overcounting or undercounting household members increases. For example, one person who sleeps at multiple locations might be included multiple times under a *de facto* rule, or this person may not be included at any location.

242. Usual residents of a household are defined as persons who have lived in the household for at least a specified period of time, or who intend to stay there for some time. The minimum duration of stay, either actual or intended, that is required to qualify as a usual resident of a household varies by country. The United Nations recommends applying a threshold of 12 months when considering place of usual residence.[91] However, even with a very clear cutoff duration, identifying usual residents of a household is not always easy. The informant might understand the question differently from the survey's intention, especially for certain groups of people whose residence is difficult to define. For example, people who maintain multiple residents, children who are less than one year old at the time of data collection, and students who attend a boarding school and stay away from the family while maintaining a close tie with the family are types of individuals who are either missed or over-represented under a *de jure* rule.[92] Whichever residency rule is used, clear and specific instruction should be provided to enumerators and respondents about how different types of residents group should be treated.

[91] United Nations, 2016. *Principles and Recommendations for Population and Housing Censuses*: the 2020 Round, Revision 3.

[92] A more complete list of these population groups is available in *Principles and Recommendations for Population and Housing Censuses: the 2020 Round*, Revision 3. Para 4.43.

243. Another important consideration in deciding who to include as resident of a household is to maintain comparability with population censuses and other household surveys conducted in the country. It is usually plausible to keep the same residence definition throughout all data collections, unless there is a specific reason for using a criterion that is different for a given survey from the rest of the surveys conducted within the same country.

244. Those designing surveys on individual-level asset ownership and control should also consider errors in frames and remedies to repair them during data collection or estimation. For example, non-coverage error arises when a sampling frame fails to cover all of the target population. Non-coverage can occur at the PSU, the household, and the individual level. For developing and transition countries, non-coverage is a more serious problem at the household and individual levels.[93] Listing of households within selected PSUs right before data collection is helpful in reducing household-level frame non-coverage. For individual-level non-coverage, clear guidance to both the enumerator and respondents on whom to include in the household roster is crucial.

245. An additional frame issue concerns blank elements in the frame, when some listings in the frame contain no elements of the target population. In the case of surveys on asset ownership from a gender perspective, households headed by children or those younger than the target age range would probably fall into this category.[94] This would not be discovered until after the household was visited and a roster of eligible individuals created. These households should be removed from the sample once individuals are listed, unless a country has a policy interest in collecting data on asset ownership and control for younger age cohorts.

246. Clustering of target population elements within the frame is another frame problem to consider. Clustering arises when a single listing in the sampling frame actually consists of multiple elements in the target population. For example, in the EDGE pilot survey in South Africa, multiple households or families appeared in one dwelling unit. In that case, all households and families in the selected dwelling unit were included in the sample.

247. One final frame problem that arises is duplicate listings. This problem is less likely to occur in household surveys requiring personal visits than in telephone sampling frames in which one person has multiple phone numbers. Yet, it is still possible in household surveys that a person might be included in more than one household during the data collection. This further highlights the importance of following strict guidelines on listing household members under *de jure* rules as mentioned earlier.

248. Countries could also use a population register as a sampling frame. There might be over or under-coverage of the target population, even in countries with very well maintained population registers. For example, undocumented migrants are often not covered by population registers.

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[93] Yansaneh, Ibrahim, 2005. Overview of sample design issues for household surveys in developing and transition countries. In *Household Sample Surveys in Developing and Transition Countries*.

[94] Around 1% of the households in KawZulu-Natal were headed by children under 18 years of age, according to the 2011 South African census. Statistics South Africa, 2012. *Census 2011 Municipal report*.

249. There is another issue associated with the use of population registers as frames with respect to information needed for surveys on asset ownership from a gender perspective. Individual or person level registries may not include data about the usual private household status for the individual, also referred to as "housekeeping households" data.[95] Population registers do not group individuals by private household, more typically instead providing information only about "dwelling households". Dwelling households include all persons living in the same housing unit as members of the same household. Dwelling households therefore could include one or more housekeeping households. For asset ownership dynamics within the household, the concept of "dwelling households" is problematic as respondents selected from the same dwelling household but different housekeeping households do not provide meaningful information on intra-household ownership dynamics. Finally, another key piece of information that is usually missing from population registers is the status of partners living together, as when only legal marital status is recorded in the system.

4.1.3. Sample size determination

250. Factors that must be considered when determining the appropriate sample size for a survey on asset ownership from a gender perspective are similar to those that must be considered for any statistical sample survey. They include the following:

- Level of precision required for the key estimates to be obtained from the survey (of which there are usually several);
- Number of planned subgroups of the population for which estimates will be produced (e.g., are estimates needed separately for urban and rural areas, geographical regions and population subgroups, such as age groups and minority groups?);
- Population variance, which requires prior knowledge about the approximate prevalence in the population of the key characteristics to be measured, usually obtained from past data or data from another country;
- The extent of anticipated levels of nonresponse among households or individuals.

251. The level of precision is a major consideration when determining the size of the survey sample. As a general rule, the more precise or reliable the survey estimates must be, the larger the sample must be. It must be noted that, in estimating precision, sampling error needs to be estimated in a manner that takes into account the sample design that is used. Clusters in selection increase sampling variance, while stratification may reduce sampling variance. In a typical multi-stage cluster survey, using clusters would require a larger sample size than surveys that use simple random sampling in order to achieve the same precision in the cluster sample as obtained in a simple random selection. The size of the cluster sample depends on how closely associated or alike cluster elements are, relative to elements in other clusters. Data on intra-cluster association or correlation, and its impact on sample size, is discussed later when the use of clusters is in selection is examined.

[95] UNECE, 2015. Conference of European Statisticians Recommendations for the 2020 Censuses of Population and Housing.

252. The need for estimates for subgroups of the population increases the sample size required as well. The subgroups are generally analytical subgroups for which equally or increasingly reliable data are wanted. For surveys on measuring ownership from a gender perspective, the two essential subgroups are women and men. Another subgroup that is relevant for the ownership of agricultural land, agricultural equipment and livestock is the agricultural population (see, again, for example, the SDG indicator 5.a.1, Box 1 in the Introduction).[96] Separate estimates by regions would also be relevant for countries that have different marital regimes and land tenure systems in different regions in the country. While it is desirable to have data for many subgroups, the number of subgroups has to be carefully considered. A very large sample size may be required to produce reliable estimates for a large number of domains.[97]

253. The prevalence of the key variables of interest plays an important role in calculating sample size for the survey as well. For characteristics that are estimated for a survey, such as using proportions, advanced knowledge of the approximate level of the proportion can be used to calculate the sample size. When a proportion is to be estimated, such as the proportion of women owning assets, the size of the proportion determines the population variance. With prior knowledge on ownership prevalence among women and men, one could calculate the sample size required for the survey to reach required precision. Measuring a rare or very low prevalence event requires a much larger sample than for an event of medium prevalence. For example, the ownership of dwellings is usually quite common and measuring it would not require as large a sample as the prevalence of owning agricultural land, which can vary greatly from one country to another. In Uganda around 70 per cent[98] of people are employed in the agricultural sector, and the reported ownership of agricultural land is around 60 per cent for men and 30 per cent for women. However in Mongolia, while around 19 per cent of men living in rural areas report exclusive or joint ownership of agricultural land, only 5 per cent of rural women report themselves as owners.[99] A larger sample would thus be needed to produce a reliable estimate of the prevalence of owning agricultural land in Mongolia compared to Uganda.

254. If women's ownership of assets is significantly lower than men's, oversampling women within households is one strategy to increase sample size. Ultimately determining sample sizes is a process that must balance the overall budget and the objectives of the survey. If the prevalence of owning a particular asset is extremely small, it might be in the interests of the survey planners to reconsider the inclusion of this asset in consultation with policy makers and other stakeholders.

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[96] There is no international agreement on the definition of agricultural population. Proxy groups could be population living in rural areas, population whose main economic activity is in the agricultural sector, population living in households with at least 1 member employed in the agricultural sector, or other population groups deemed relevant in national context.

[97] United Nations, 2008. *Designing Household Survey Samples: Practical Guidelines*. Studies in Methods, Series F, No. 98. Sales No. E.06.XVII.13

[98] International Labour Office, 2017. Key Indicators of the Labour Market, 8th edition. Geneva: ILO. Online version (accessed January 2017). Table 4: Employment by sector.

[99] Findings from EDGE pilot study on measuring asset ownership from a gender perspective in Mongolia.

255. However, the expected prevalence of individual-level asset ownership may not be known in advance, especially if it is the first time that a survey on this topic is being conducted in a country. In such cases, the national statistical office should first assess whether any prior surveys have collected data on asset ownership at the household level. From such data, an initial estimate of the prevalence can be obtained for sample size calculation. If this is not possible, a rough estimate may be calculated on the basis of household surveys conducted in other countries with similar cultural and ownership contexts.

256. A final factor to consider when calculating sample size is anticipated non-response. For surveys on individual-level asset ownership, the non-response needs to be taken into account at both the household and the individual level. Refusals, non-contacts and break-offs by a household are considered non-response at the household level. If a household questionnaire is completed but not all selected respondents are interviewed, then there is non-response at individual level. Part IV of these guidelines discusses how to handle non-response at both the household and the individual level. Non-response is likely to vary by country and should be calculated on the basis of national survey experience.

257. One important consideration for surveys on individual-level asset ownership is to ensure that households in the entire spectrum of wealth are represented in the sample. It is well-known that wealthy households tend to have lower response rates than other households and without proper representation of wealthy households, the overall estimates of asset ownership might be biased downward. Higher non-response rate might also occur in households that have very little wealth and hence low ownership of assets. Sample selection should take this into consideration by oversampling those that tend to have high non-response in household surveys.

4.1.4. Structure of the sample

258. The structure of the sample for a survey on asset ownership at the individual level will be broadly similar to that of other national household surveys within a country for sample selection up to the household level. In most countries, a stratified multi-stage area sample design could be used. In a stratified multistage area sample design, sampling efficiencies are achieved by techniques such as stratification and sampling in stages. Each of these techniques figures prominently in national household surveys that employ the traditional census frame or other frames based on household or individual listings. The following discussion will cover the basic principal of each technique briefly. For more detail, readers should refer to standard textbooks on sampling or a sampling specialist in the country.

Stratification

259. Stratification improves efficiency by reducing sampling variances. Stratification also occurs when separate estimates for each stratum are required. Stratification can be applied to any stage of sampling. It divides the units to be sampled into mutually exclusive and collectively exhaustive subgroups or strata based on auxiliary information that is known about the full population. Sample elements are selected from each stratum independently.

260. One of the purposes of stratification is to reduce sampling variances and gain efficiency. The gains in efficiency are guaranteed when strata sample sizes are proportional to the strata population size, the strata formed are as different as possible from each other and the units within the same stratum are as homogeneous as possible with respect to the characteristics of interest in the survey. For surveys on asset ownership from a gender perspective, regions that have different marital regimes and land tenures should be placed in different strata. Dividing populations into urban and rural residence is also preferred since the ownership of agricultural land, agricultural equipment, and livestock would be very different for people living in urban and rural areas.

261. Another benefit of stratification is to guarantee representation of important domains and special subpopulations. The level of asset ownership at the individual level is closely linked to the level of household wealth. It is therefore important to reach respondents representing an entire spectrum of wealth levels. As mentioned earlier, in practice it is often difficult to reach the two extremes of the wealth distribution, the extremely poor and the extremely wealthy.

Cluster sampling

262. Cluster sampling is a random sampling technique whereby the study population is divided into clusters and a sample of those clusters is chosen. These clusters are often naturally occurring units or groups, such as neighbourhoods, villages, enumeration areas, or city blocks. The final sample of elements is then drawn from the selected clusters.

263. Sometimes a household can also be considered a cluster when more than one person from each household is selected. But households are typically selected within other clusters, such as enumeration areas. Then the cluster sample becomes multistage, with a stage for the selection of enumeration areas, a stage for the selection of households within selected enumeration areas, and a stage for selection of persons from selected households.

264. In household surveys, the sampling design will invariably and of necessity utilize some form of cluster sampling if survey costs are to be contained.[100] Cluster sampling is particularly cost-effective in face-to-face interview situations with widely dispersed populations where clustering interviews in specific geographic areas can significantly reduce travel costs and, hence, the overall costs of the survey. The disadvantage of cluster sampling is that it decreases the reliability of the estimates because people living in the same cluster tend to be relatively alike in the characteristics under study. Correlation among units within the same cluster inflates the variance (lowers the precision) of the survey estimates.

265. The effects of clustering are measured by the design effect, which expresses how much larger the sampling variance for the cluster sample is compared to that for a simple random sample of the same size. The design effect is generated by two factors, the intra-cluster homogeneity measurement (*roh*) and the size of the cluster. The higher the intra-cluster homogeneity and the higher the size of each cluster, the higher the design effect and

[100] United Nations, 2008. *Designing Household Survey Samples: Practical Guidelines*. Studies in Methods, Series F, No. 98. Sales No. E.06.XVII.13

the lower the precision of estimates. The intra-cluster homogeneity varies by the variables of interest. For example, studies across samples in different countries show that intra-cluster homogeneity is higher for socioeconomic characteristics than for variables on attitude and behavior.[101]

266. Before designing a survey, it is advised to use the intra-cluster homogeneity value (*roh*) to calculate the optimal cluster size. *roh* can be based on information obtained from prior national household surveys that investigate similar topics. If countries are conducting surveys on the topic of asset ownership for the first time, it is possible that a value for *roh* from another country could be used for the initial calculation. Particular caution must be exercised in borrowing a value for *roh* as it seems to be more portable for some variables of interest than others. For example, *roh* is more portable for demographic variables than variables on socioeconomic conditions. Estimates of *roh* for a given variable in the Demographic and Health Survey are fairly portable across countries if sample designs are comparable. But when the variable measures socioeconomic conditions such as household consumption and ownership of household durables, *roh*s tend to vary across countries.[102]

267. The design effect can be projected in advance of the survey. Standard survey sample design uses criteria that lead to the design effect being kept as low as possible given cost constraints. Good survey sample design uses clusters that have larger numbers of units (enumeration areas are more numerous than, say, provinces or states), keeping the size of the sample from clusters small in terms of number of elements selected, and keeping cluster elements as diverse as possible. For example, if at the last stage of selection of households there is a choice between selecting a geographically dispersed sample or groups of households that are closer together, the geographically dispersed sample is preferred, even though it may cost more to collect data from widespread households.

268. All of these aims should be balanced with the way in which the number and size of clusters affect overall costing and survey logistics. Cluster sampling is generally used in order to reduce costs and increasing the number of clusters will increase costs.

4.2. Selecting individuals from households

269. As discussed in the conceptual framework on measuring asset ownership from a gender perspective in Part I, self-reported asset ownership should be collected instead of proxy-reported asset ownership. The selection of respondents within households therefore needs to be dealt with carefully so that the individual respondents are selected with a known probability and representative estimates can be derived.

[101] Groves et. al., 2009. *Survey methodology.* Second edition.

[102] Vaessen, Martin, Thiam, Mamadou and Le, Thanh, 2005. The Demographic and Health Surveys. In *Household Sample Surveys in Developing and Transition Countries*. New York: United Nations; Pettersson, Hans and Pedro Luis do Nascimento Silva, 2005. Analysis of design effects for surveys in developing countries. In *Household Sample Surveys in Developing and Transition Countries*. New York: United Nations

270. Within household selection for asset ownership studies can be achieved in two ways: 1) selecting all adult household members or 2) selecting one person randomly from all adult household members.

271. In selecting all eligible persons in a household, a household roster or list must be completed before individual person interviewing begins. To avoid possible contamination, all eligible members of the household should be interviewed simultaneously, which will pose logistical challenges of scheduling a time, and obtaining a commitment from the household informants at the time of listing, when all eligible persons will be in the household at the same time. In addition, multiple interviewers will need to be assigned to the household to collect data at one time point. The logistical challenges of simultaneous interviewing of all eligible persons are considerable in a large survey. Careful planning and management are required to accomplish the simultaneous interviewing of all eligible persons in many households.

272. In many countries, response rates may be low for simultaneous interviewing all members of the household. Households may find simultaneous interviewing intrusive, and become reluctant to participate at all. Simultaneous interviews may need to be conducted with fewer than all adult household members because they can never be assembled at one time during the allocated time period of enumeration. Adjustment of weights to compensate for potential differential nonresponse, and subsequent bias, needs to be considered by the survey organization.

273. As a practical alternative to selecting all eligible persons in a household, one could choose to select not all but multiple adults, for example a husband and a wife and one other person chosen at random as was the approach employed in the EDGE pilots in Georgia, Mongolia and the Philippines. To achieve simultaneity, such a selection scheme faces similar challenges as interviewing all eligible members within households, the only exception being that it is relatively easier for the supervisor to manage enumerators as the maximum number of enumerators required is pre-defined.

274. One can also choose to select only one adult randomly per household, which can be done using a variety of methods. One, attributed to Kish[103], is specifically aimed at random selection in cases where face-to-face or telephone data collection is carried out using paper-and-pencil methods (see Box 5 for a description of the Kish method).[104]

[103] Kish, Leslie, 1965. *Survey sampling*. New York: J.W. Wiley and Sons, Inc.

[104] There is an objection to the Kish method from another nonresponse consideration. The Kish method requires the household informant to identify all eligible persons in the household and specify the sex and age of each prior to selecting one at random. This process raises concerns of intrusiveness, which may increase non-response rates at the household level. With EDGE suggesting a household questionnaire collecting key sociodemographic characteristics before interviewing individual respondent, the intrusiveness would then not be an issue introduced by the Kish method.

Box 5

Kish method for random selection of household members

Random selection under field conditions is not, for interviewers who are not trained statisticians, easy to implement. In the Kish 'objective respondent selection,' the selection of a single person from each household is made before the interviewer arrives at the household. Two problems must be overcome though to make the process ultimately objective and random.

First, households can be different sizes, that is, have different numbers of eligible persons within them. For instance, a household may have only one adult person in it, or it may have two or three or four or more. At the 'doorstep' or during a telephone interview, where an interviewer has a paper form to guide them, the interviewer is told which person to select on the paper form. If there is only one eligible person, the interviewer is told to attempt an interview with that person. But if there are two, the interviewer is told to list the persons, and then interview either the first listed person, or the second. Whether the selected person is the first or second is determined by a central office and printed on the form. Similarly, if there are three eligible persons, the central office determines in advance whether the first, second, or third listed person is to be interviewed.

To implement Kish, the form must have a table which tells the interviewer to first list the number of eligible persons and then count the total number. For each possible number (one, two, three, four, and so on), the form tells the interviewer which person on the person list to interview.

The Kish procedure introduces an additional requirement in the process. To avoid introducing subjective procedures into the selection, it does not allow interviewers to determine the order of the list of eligible persons. Instead, it requires them to list persons in a particular order. For example, females may be listed first from youngest to oldest. Since the order in which persons are listed is objective (that is, not determined by the interviewer), the selected person to be interviewed would also have been determined objectively.

There is one other feature of the Kish procedure that was designed to help organizations handle the problem of selecting respondents in a central office and then printing the selection on a form that is assigned to each household. There could be a very large number of possible selection tables that could be used. For example, suppose that in a country there are expected to be no more than six eligible persons per household. There would then need to be a large number of selection tables any one of which would be assigned a given household. One selection table could tell the interviewer to select the only person listed if only one is in the household, to select the first if two were in the household, the first if three, the first if four, the first if five, and the first if six. A second possible table would specify selecting the only person listed if one is listed, the first if two were in the household, the first if three, the first if four, the first if five, but the second if six were listed. A third possible table would specify selecting the only person listed if one is listed, the first if two were in the household, the first if three, the first if four, the first if five, but the third if six were listed. Altogether there would be 6 x 5 x 4 x 3 x 2 = 720 possible tables. The central office would then assign one of the 720 tables to the first household in the sample, and another at random to the second, and so on.

But operationally, keeping track of 720 tables and making selections for each household in advance would be difficult in a paper-and-pencil operation. It means that there would have to be 720 forms telling the interviewer for each household which person to select, and these would have to be printed household by household. That is, each of the 720 forms would be assigned to 1/720ths of the

households. This process, though, would dramatically drive up the cost of the process of printing forms.

Kish proposed one further modification of the process to reduce printing costs in paper-and-pencil operations. He devised a procedure whereby for up to six possible persons in a household, only eight forms would be needed. He found a subset of the 720 possible forms that when assigned to households in the right proportions gave the right selection process outcome. That is, with just eight forms, he managed to find a subset that gave equal chance to each of the two persons in a two eligible person household, and equal chance to each of the three persons in a three eligible person household, and so on.

In order to do this, he determined that the eight forms would need to be distributed not to one-eighth of the households each, as in the 720-form case, but a varying fraction. Two of the eight forms were assigned to one-third or the households, two to one-quarter, two to one-sixth, and two to $1/12^{th}$. When properly balanced, the end result was that each person in a household with one, two, three, four, and six eligible persons had the same chance of being selected. There was a slight difference in selection chances for persons in five person households, but the difference in chances across the five persons was not considered to be large enough to be of concern.

275. If the data collection involves computer assisted interviewing of some type, the Kish procedure is not needed. In computer assisted data collection, the eligible persons in the household can be listed in any order, and the computer can be programmed to select the person to be interviewed using a random process. The procedure is then objective – list order does not matter, and the interviewer will not know who is to be interviewed until after the list is entered and the computer program makes the selection.

276. Either the Kish procedure or the computer assisted random selection procedure would yield approximately the same number of women and men in the sample, before nonresponse occurs. This sex balance is extremely important for the methodology proposed in the guidelines. However, if the probability of non-response is not the same for women and men (and typically men respond at lower rates than women), neither procedure will yield the sex balance needed. Most survey organizations then use nonresponse adjustment weights to try to compensate for the nonresponse generated disproportionate sex distribution.

277. Therefore, in surveys on asset ownership at the individual level, the response status of each household and selected person within the household must be carefully recorded. Data should be collected about both responding and nonresponding households in order to aid household nonresponse adjustment later. Data on key sociodemographic characteristics of household members should also be collected in the household roster before selecting individual respondents in order to aid person level nonresponse adjustment.

278. In some countries, asset ownership among women may occur much less frequently than that among men. Selecting one eligible person per household will yield approximately the same number of women and men in the sample. The same number of women and men in the sample can be a problem for the estimation of key measures of asset ownership for two reasons in countries with large differences between women's and men's asset ownership. When estimating the rate of asset ownership, the asset ownership estimated rate for women

will tend to have lower precision than that for men. And when examining the distribution of asset values, there will be substantially fewer asset amounts for women to examine such distribution than for men. As a result, asset distribution estimates for women will be less precise than those for men.

279. If there is prior information on the prevalence of ownership and that women tend to have much lower rates of owning assets, then one may choose to oversample women to improve the precision of ownership estimates and asset amount estimates for women. Oversampling can be accomplished more readily when selecting one person per household. It cannot be accomplished when selecting all persons per household, because the sex balance will then be determined by the population sex distribution.

280. Selecting persons within households with oversampling by sex is more easily accomplished in computer-assisted systems. Sampling rates can be set by sex in the selection program to give women higher chances of selection than men. It is also possible in the Kish selection method to select women at higher rates than men, but it is more challenging than for computer-assisted selection.

281. There are advantages and limitations associated with both selecting all eligible persons and randomly selecting one adult household member within household selection. These advantages and limitations concern issues of the precision of estimates obtained under either approach, the cost of data collection and operational challenges.

4.2.1. Precision of estimates

282. For multi-stage sampling designs, where there is a loss of precision associated with the use of clusters, when all adult members in the household are selected for interview, households become another layer of clusters. If household members tend to be more homogeneous with respect to asset ownership, then the intra-household (intra-cluster) variation is small, and there will be an increase of sampling variance due to within household homogeneity of asset ownership. On the other hand, if only one respondent is selected from each household, there would be no clustering effect at the household level.

283. With the same number of individual respondents, the selection of all eligible persons in a household will have larger sampling variances for estimates than selecting a single person per household. The magnitude of the precision loss when selecting all eligible persons depends on how closely household members are associated with each other in terms of asset ownership. Some have argued that the precision loss associated with the intra-household variation is rather small, due to the fact that a large proportion of the homogeneity within the household has been taken into consideration in higher level intra-cluster homogeneity.[105]

284. For countries in which the household size is small on average, perhaps mostly two-person husband-wife households, the intra-household clustering effect virtually ceases to

[105] Krenzke, Tom, Li, Lin and Rust, Keith, 2010. Evaluating within household selection rules under a multi-stage design. Survey Methodology, June 2010, Vol. 36, No. 1, pp. 111-119. The findings are based on surveys on adult literacy. The same argument was made, on health related variables, by Alves MC, Escuder MM, Claro RM and Silva NN, Selection within households in health surveys. Rev *Saude Publica*, 2014 Feb; 48(1): 86-93

exist. Perhaps more importantly, though, is the tendency for men and women in the same household to have very different asset ownership levels and asset amounts. When all adult members are selected for interview, it is not possible to oversample women and therefore estimates on asset ownership for women will have lower precision than for men.

285. The selection of one random respondent from each household may also involve, as noted above, an increase in the variance of estimates. This is due to the introduction of unequal probabilities selection corrected with the use of weights. The added variability of the weights, when properly accounted for in variance estimation, means either wider confidence intervals for the same size sample or larger samples to overcome the increase in variance due to weighting.

4.2.2. Cost considerations

286. A comparison of the costs of interviewing one person from each household versus interviewing all members of the household can be carried out through a cost function propose[106] proposed as the:

$$Cost\ after\ reaching\ the\ household\ level = nc + aC_a$$

287. where n is the number of individuals being interviewed, c is the cost of per individual interview, a is the number of households and C_a is the cost associated with household-level activities such as contacting household for interviews and completing the household questionnaire.

288. Under this cost model, selecting all members of the households would be less costly than the design where only one person from each household is selected. For the same number of respondents, the number of households required is much smaller when everyone in the household is interviewed.

289. Two additional issues need to be taken into consideration though. First, the number of individuals required for the design that interviews all adults in the household may already be higher if the within household homogeneity is high, and sample sizes have been increased to compensate for the higher design effects. That is, the necessary increase in the number of individual respondents (n) will result in an increased cost.

290. Second, the requirement that multiple respondents of a household need to be simultaneously and independently interviewed drives up cost. The desire to interview only one person in a household is due to the sensitive nature of the individual-level asset ownership and control questions. Interviewing a single person per household eliminates contamination of responses introduced by having another adult in the household present at the interview, or by leaving time for a respondent to exchange information with another member of the household before that person's interview is conducted.

291. It is difficult to quantify the possible contamination on reported ownership and control of assets when simultaneous and independent interview is not achieved. But an analysis of

[106] Kish, Leslie, 1965. *Survey Sampling*. New York: J.W. Wiley and Sons, Inc.

the Uganda EDGE pilot data under MEXA did show that there were differences in men's reporting of exclusive and joint ownership of dwellings and agricultural land when they were interviewed alone compared to when they were interviewed together with their spouses. When men were interviewed alone, they were more likely to claim themselves as exclusive owners. But when they were interviewed with their spouses, they were more likely to report themselves as joint owners.

292. The requirement of simultaneously interviewing multiple persons in the household often translates into additional costs, as noted above. More callbacks are needed to schedule a time when all adult members will be present in the home. In all EDGE pilots that interviewed multiple household members (Georgia, Mongolia, the Philippines and Uganda), field protocols required enumerators to schedule a minimum of 3 callbacks with households in order to maximize the chance of interviewing multiple members simultaneity. Enumerators were also asked to approach the household at different times of the day to increase the chance of reaching all respondents at the same time. Lower response rates can be expected relative to interviewing one person selected at random within a household, increasing the potential for additional nonresponse bias.

4.2.3. Operational challenges

293. There are operational challenges associated with each approach. For the approach where one adult is randomly selected from households, the challenge mainly lies in the random selection process. Training the enumerators in using the Kish intra-household selection method is not a trivial job. Sufficient training and exercises should be provided to enumerators to ensure that the procedure is fully adopted by the enumerators in the field. The challenge of using the Kish method, however, could be alleviated by using CAPI with the randomly selection procedure embedded in the program (more discussion on CAPI is available in Part III).

294. The EDGE pilot countries adopted different within-household respondent selection methods, following the usual practice in the respective countries. The Kish method was used in Maldives, South Africa and Uganda for the selection of one respondent from each household (Maldives and South Africa) and of the non-principal couple respondents (Uganda). Both South Africa and Uganda implemented the method through programs embedded in the CAPI platform. In Maldives, enumerators were asked to list all household members ordered by sex and age and a respondent was selected randomly following a randomly assigned Kish table for intra-household selection. In Georgia, Mongolia and the Philippines, the nearest birthday method was used for the selection of the non-principal couple respondent.[107]

295. The operational challenges for interviewing all adult members in the household relates to field work organization when simultaneous and separate interviews are considered.

[107] For comparison between different methods of within household respondent selection, refer to Gaziano, Cecilie, 2005. Comparative analysis of within-household respondent selection techniques. *Public Opinion Quarterly*, Vol. 69, No. 1, Spring 2005, pp. 124-157.

It is unknown how many enumerators are needed until the household roster is completed. In the Uganda pilot, a number of strategies were employed for ease of managing the field work. First, a maximum of 4 adult members[108] were interviewed in Treatment Arms 4 and 5 where the design required all adult household members to be interviewed.[109] Then a team approach was adopted, with each team consisting of 1 supervisor and 2 to 4 enumerators. Supervisors played an important role in assigning enumerators for simultaneous interviews in a way that attained efficient field operation. The team approach was also used in the pilots in Georgia, Mongolia and the Philippines. The overall reaction to the team approach across pilot tests was positive in terms of ensuring simultaneity of multiple interviews in the same household.

296. The challenge of attaining simultaneous interviews within the household is locating a time where all respondents can be interviewed at the same time. For instance, in Georgia multiple visits were made to a household to determine when all eligible household members would be available across different times of the day. In a typical household survey, enumerators are usually in a geographic area, such as an EA, for a specific number of days (2-3 days). It is then not practical to extend the time spent in a particular EA to achieve simultaneity for some households.

297. In fact, in all EDGE pilots, a duration of 2-3 days per EA was used to replicate the constraints faced within typical household survey operations. In the Uganda pilot, a common scenario encountered was reaching a household, assessing the number of eligible respondents, and realizing that it might not be possible to interview all eligible respondents simultaneously during the 3 days the team would be in the EA. In this situation, the supervisor and enumerators had to decide whether they should proceed with interviewing the available respondents, relaxing the requirement of simultaneity, or taking the risk of losing the entire household from the sample if all members did not become available during the enumerator's time in the EA.

298. Because of the challenges mentioned earlier, in most cases it was not possible to achieve simultaneity for all households in the sample. In addition, as shown in Table 3, the more household members there were to interview simultaneously, the less likely it was that simultaneity was achieved. For example in the Georgia pilot, among all 2-adult households that were interviewed, simultaneity was achieved in 71 per cent of the households. The percentage was lower for households where 3 adult members were interviewed (57 per cent). Similarly for three EDGE pilot countries (Mongolia, the Philippines and Uganda), the percentage of 2-adult households that conducted simultaneous interviews ranged between 38 per cent and 57 per cent. For 3-adult households, the percentage of households with simultaneous interviews was lower, in the range of 20 to 30 per cent. In Uganda where there were households sampled to interview 4 adult members, enumerators were only able to conduce simultaneous interviews in only 8 per cent of interviewed households.

[108] The principal couple was selected with probability of 1 and two additional persons were selected randomly from the remaining adult household members.

[109] See Box 3 in Part I for more information about Treatment Arms 4 and 5 in the Uganda pilot survey.

Table 3

Percent of households in which all eligible respondents were interviewed, interviewed simultaneously, among all households that were interviewed, by size of household

	Georgia	Mongolia	Philippines	Uganda	
				Arm 4	Arm 5
Number of 2-adult households interviewed	926	1282	622	237	248
Proportion of all eligible adults interviewed	84%	74%	89%	58%	54%
Proportion of all eligible adults interviewed simultaneously	71%	43%	57%	47%	38%
Number of 3-adult households interviewed	1399	2620	789	54	58
Proportion of all eligible adults interviewed	75%	39%	76%	37%	40%
Proportion of all eligible adults interviewed simultaneously	57%	27%	32%	22%	26%
Number of 4+-adult households interviewed	N/A (a maximum of 3 adult members were interviewed in those countries)			60	60
Proportion of all eligible adults interviewed				23%	25%
Proportion of all eligible adults interviewed simultaneously				8%	8%

299. An additional challenge encountered by the EDGE pilot studies when testing simultaneous interviewing was a lack of space in the household when multiple interviews needed to be conducted. This was a problem especially in the urban areas where it was often difficult to find separate locations where interviews would not interfere with each other.

300. Interviewing multiple persons within households also poses some challenges at the analysis stage. For asset-based indicators, deriving weights associated with each asset requires that all respondents within the same household provide consistent ownership report, which is difficult to achieve (more details on generating weights for asset-level analysis are available in Part IV section 1.4).

4.2.4. Making decisions on individual respondent selection

301. While considering advantages and limitations of the two within household selection methods – either selecting one person randomly from all adult household members or selecting all adult household members - one first needs to keep in mind the ultimate objectives of the survey. The choice should also depend on how the information on asset ownership from a gender perspective would be collected, whether through a stand-alone survey or through an attached module to an existing household survey. In the attached module approach, it may be much more difficult to manage simultaneous interviewing when field procedures for the main survey are already well established.

302. If the objective is to collect information on ownership prevalence by sex, and the number of households is large enough, then one person from each household should be selected. If however there is a limit in the number of households that are available for interview, one can interview multiple persons in the households so the number of respondents is sufficient to derive estimates.

303. If the objective of the survey also includes analyzing intra-household dynamics of ownership and decision-making, multiple persons from each household should be selected. However, the survey team must be certain that it has the analytic expertise to handle such data. Whenever multiple persons from within one household are selected for interview, simultaneous interview protocols should always be followed to avoid possible response error. If it is not possible to achieve complete simultaneous and separate interview, assessment of how much the survey implementation deviates from the protocol should always be carried out.

5. Questionnaire design

304. In order to produce reliable and valid measurements of women's and men's ownership and control of assets, the conceptual framework presented in Part I of these guidelines must be explicitly operationalized in the questionnaire used to collect the data.

5.1. Background research

305. Although these guidelines provide a model for collecting data on asset ownership and control at the individual level, including a detailed questionnaire as presented in the next section and in the annex of these guidelines, countries are encouraged to conduct their own background research for the purpose of adapting the generic model to the country context. In general, the background research to a household survey has the role of informing the survey design and providing the context in which to interpret the results of the survey. It can include a desk review of relevant quantitative and qualitative research studies in the country context as well as new qualitative research commissioned by the statistical office or key stakeholders.

306. The desk review should cover topics such as:

- The legal framework and customary norms that govern property rights, including those related to marital and inheritance regimes, across different areas of the country.

- The link between asset ownership and other development issues, including poverty, livelihoods, entrepreneurship, agriculture, women's empowerment and gender equality.
- Government programmes and policies related to key core assets, including on housing and distribution or titling of land.
- Existing quantitative studies providing information on the prevalence of asset ownership, including at individual and household levels, as well as wealth distribution across different groups of the population.
- Studies related to land tenure systems across the country.

307. In addition, new qualitative research may be conducted. This research may be limited in scope and focused on adapting or improving the questionnaire design or more comprehensive, providing a stand-alone qualitative study complementing the statistical results obtained in the survey. Statistical offices are more likely to focus their efforts on the first approach, due to constraints of cost and time. Conducting comprehensive qualitative research also requires a set of skills more often found among staff in research and academia institutions than in the statistical office. As such, these experts should be sought out for technical guidance for any qualitative research undertaken by NSOs.

308. At the minimum, the statistical offices should conduct interviews with key informants and hold focus-group discussions for the purpose of improving questionnaire design. These methods can explore how participants think about asset ownership and what terms they use in talking about them. Individual interviews may vary in format from informal discussions, used for the purpose of gaining a broad understanding of the issues related to asset ownership, to structured interviews with a pre-determined set of questions covering key topics related to asset ownership, such as types and forms of ownership and acquisition of assets. It is important that the key respondents chosen represent a range of viewpoints and concerns. Similar information may be obtained in focus group discussions. For example, in the GAGP project, four themes were covered during the focus group discussions: the accumulation of assets over the individual life cycle; the importance of assets; the market for assets; and household decision-making over asset acquisition and use. In terms of respondents covered, it is important that several groups are formed, each of them involving a moderator and six to ten participants relatively homogeneous in terms of background and experience.

5.2. Questionnaire content

309. The content of the questionnaire should be developed in accordance with the goals, objectives and required final outputs of the survey. The design of the questionnaire comprises listing the topics to be addressed, agreeing on the principle concepts to be measured and examining how this can be translated into specific series of questions. Important considerations when developing a questionnaire on measuring asset ownership and control at the individual level include the length of the completed interview, the mode of interviewing, the need for skip and filter questions, the importance of establishing a rapport with respondents, and the wording and ordering of questions.

5.2.1. Questionnaire template for a stand-alone survey administered to one randomly selected adult household member

310. This section presents a template for a stand-alone dedicated survey on asset ownership and control administered to one randomly-selected adult household member. As discussed in Part I of these guidelines, this approach enables the derivation of nationally-representative estimates of asset ownership prevalence, by sex and other key characteristics, as well as asset-level measures that take into account the size and quality of assets owned by women and men, including the gender wealth gap. However, it does not permit estimates of household wealth or intrahousehold gender analysis of asset ownership.

311. The stand-alone survey includes the full range of questions that the present guidelines recommend asking to operationalize the conceptual framework presented in Part I of the publication. Collecting information on who owns the asset and whether there is an ownership document for the asset allows countries to begin to monitor both the gendered patterns of asset ownership and policies to improve women's property rights. The additional questions about value, rights and acquisition make further gender analysis possible. Questions on rights over the assets will make it possible to understand the extent to which rights are shared under joint ownership. In addition, information on rights may indicate the extent to which the full range of rights are correlated with ownership and the extent to which women may have some ownership rights, but not others. The valuation data allows for the computation and analysis of gender wealth gaps. Finally, because men and women often acquire assets through different means, understanding the modes of acquisition may provide insights for developing policies to ensure women's ability to acquire them.

312. The questionnaire template presented below includes a statement of purpose, a household questionnaire and an individual questionnaire further divided into modules. Countries will need to customize it according to their local context. At a minimum, for many of the questions, each country will have to determine the appropriate response categories or coding. For example, under the question about whether there is an ownership document for a given asset, each country should list the various types of ownership documents that are used locally. The possible modes of acquisition will also differ by country and by asset. More thoroughly, countries should draw upon qualitative research and prior quantitative research to customize the questionnaire, as discussed in the prior section.

313. For each question in the following modules, a detailed explanation is provided for why the question should be considered for inclusion in the module and the factors that countries should consider in adapting the question to their local context. Where appropriate, alternative questions are presented with the aim of addressing countries' broader policy needs.

Statement of purpose

314. As is standard in household surveys, the questionnaire should include a statement of purpose that explains the survey to the households selected for interview. The statement of purpose should be read before the household questionnaire is administered and again to the adult household member randomly selected for the individual interview if this is a different

person. Before proceeding to the questionnaires, respondents should be given time to ask follow-up questions about the survey.

315. Below is a template for a statement of purpose for a survey on asset ownership and control. Each country should customize it, accordingly, and translate it into local languages, as warranted, ensuring that the term "asset ownership" is understood. It is recommended that countries do not describe the survey as a survey on gender or gender equality as this may be off-putting to some respondents.

> *"The [Name of NSO] is conducting a survey of households across [country] to better understand asset ownership in the country. The findings from the survey will provide important information to the Government for developing policies and programs to improve the lives of men and women in [country]. Your household was selected as one of those to which the survey questions will be asked. You were not selected for any specific reason. Rather, your household was selected randomly from a list of all of the households in this village.*
>
> *All information your household provides is strictly confidential. It will not be shared with any other government agency, and it will only be used for statistical purposes by the [NSO] or under its supervision. To ensure that the most accurate information is collected, it is very important that we interview the specific household member selected for the interview and that we interview him or her alone, without family or neighbours present. If, during the interview, any family members or neighbours come within hearing distance of the interview, please ask them kindly to come back later after the interview has been completed. Please spare some time to answer the questions. We thank you in advance for your time."*

Household questionnaire

316. The household questionnaire comprises the household roster, which captures key sociodemographic information about all members of the household, and a short module on the characteristics of the dwelling. As is standard in most national survey programs, the household questionnaire can be completed by any household member, but ideally should be administered to a person knowledgeable about the characteristics of all household members.

Household roster

317. The household roster should list the name of every household member and assign him/her a unique Person ID code. This information is critical as the respondent chosen to complete the individual questionnaire will be randomly selected from the roster, as discussed in Section 4. Each country should define household members according to the standards employed by the national statistical agency so as to ensure comparability with other

household surveys administered in-country.[110] As is standard in most household surveys, the household roster should also collect basic sociodemographic information on each household member, including sex, age and other characteristics such as education level, employment status, marital status, relationship to household head, and ethnicity. The information obtained from these variables will allow data users to calculate a set of gender indicators on asset ownership and further investigate asset ownership by key covariates for a more nuanced understanding of who owns and controls assets.

318. Countries using this survey instrument to monitor SDG indicator 5.a.1 (a) on the proportion of the total agricultural population with ownership or secure rights over agricultural land, by sex; and 5.a.1 (b) on the share of women among owners or rights-bearers of agricultural land, by type of tenure will also need to ensure that the household questionnaire permits the identification of the agricultural population, as defined by the metadata for the indicators.[111]

Dwelling characteristics

319. The following questions on the characteristics of the principal dwelling, which are commonly collected in nationally-representative household surveys, can be used to impute a value for the dwelling when no valuation is provided.

1. *What type of dwelling is this?*
    - Codes: detached house; semi-detached house; flat in a block of flats; room or rooms of a main house; traditional dwelling/hut/structure made of traditional materials; other (specify)

320. This question seeks to establish the type of dwelling unit occupied by the household. The response should refer to the characteristics of the biggest part of the dwelling unit.

2. *What type of material is mainly used for construction of the roof?*
    - Codes: iron sheets; tiles; asbestos; concrete; tin; thatch; other (specify)
3. *What type of material is mainly used for construction of the walls?*
    - Codes: concrete/stones; cement blocks; bricks; wood; mud and poles; tin/iron sheets; other (specify)
4. *What type of material is mainly used for construction of the floor?*
    - Codes: earth; cement screed; concrete; tile; brick; stone; wood; other (specify)

321. Questions 2-4 measure the physical characteristics of the dwelling. The main materials used to construct the dwelling should be recorded (i.e. the material that covers the

[110] See the section on sampling in Part III of these guidelines for further discussion of household members.

[111] As discussed in Section 4, international agreement on how to define and operationalize the agricultural population for the SDG indicator has not yet been reached.

largest part of the floor/roof/wall of the dwelling unit). The quality of the material does not matter.

5. *What type of toilet is mainly used in your household?*
    - Codes: flush toilet; VIP latrine; covered pit latrine with a slab; covered pit latrine without a slab; uncovered pit latrine with a slab; uncovered pit latrine without a slab; compost toilet; no facility- bush, polythene bags, bucket, etc.; other (specify)

322. This question seeks information about the type of toilet used by the household. Note that it refers to use rather than ownership.

Individual questionnaire

323. The individual questionnaire comprises 9 modules on the ownership and control of the following physical and financial assets: the principal dwelling, agricultural land, livestock, agricultural equipment, other real estate, consumer durables, non-agricultural enterprise assets, valuables and financial assets. In addition, information on liabilities is collected for the calculation of net wealth. Following the respondent selection protocols recommended in the present publication, the individual questionnaire should be administered to one adult household member randomly selected from the household roster.

Principal dwelling

324. Dwellings are one of the most important assets owned by individuals and households. They are a store of wealth and provide a place to live. They can be rented out, in whole or in part, to earn money. Especially for women, having secure tenure to a dwelling reduces vulnerability and provides security. The following questions should be asked about the dwelling in which the respondent lives. If the respondent owns more than one dwelling, list the primary one in which they live in this section and the other(s) in the module on other Real Estate.

325. A few measurement challenges arise that are specific to dwelling ownership. The dwelling structure may be owned separately from the land on which it sits, and the plot and the structure may have been acquired at different moments in time in different ways. For example, a person may have inherited the plot of land on which the dwelling is located and own it individually and then built a house on it jointly with his or her spouse. Or the plot may not be legally owned, but a household member may own the dwelling. Countries should collect this type of information through qualitative research prior to designing the questionnaire. If the dwelling and the plot on which it stands are considered separate property, then the questions in the module should be asked for each of them, as illustrated below.

Types and forms of ownership

1. *What is the present ownership status of this dwelling?*
    - Codes: owned by someone in the household; rented; received rent-free; squatting; other (specify); don't know

326. This question is a screening question to assess whether the principal dwelling is owned by a household member. It measures the respondent's perception of whether the dwelling is owned by someone in the household; there may or may not be an ownership document for the dwelling.

327. Because this module is concerned with ownership of the dwelling, if no one in the household owns the dwelling, the remainder of the questions in this module will be skipped. In places where housing is not technically "owned" by individuals, but is allocated to them on a very long-term lease by the state, countries can include a category for long-term government lease and ask many of the follow-up questions that are asked of owners, such as whose name(s) are on the lease documents. For example, in its EDGE pilot study, the Maldives included a category for long-term government lease to reflect dwellings that are leased to individuals on a long-term basis and a category for public-housing scheme to reflect dwellings that are allocated to individuals by the state. In some contexts, squatting may constitute a form of informal ownership; in this case, the respondents should answer the additional questions about ownership.

2. *Do you own this dwelling*?
    - Codes: yes, alone (skip to Q5); yes, jointly with one or more persons; no (skip to Q5); refuses to respond (skip to Q5)

328. This question refers to whether the respondent, not the respondent's household, owns the dwelling. It measures reported ownership of the principal dwelling. Reported ownership captures the respondent's self-perception of his/her ownership status, irrespective of whether his/her name is listed as an owner on an ownership document for the dwelling. The question also measures the form of reported ownership of the dwelling; i.e. whether the respondent owns the dwelling exclusively or jointly with one or more persons. Because the benefits of ownership may differ if one owns the dwelling alone or jointly, countries are encouraged to distinguish between individual and joint ownership.

329. With the information collected in this question, countries may wish to calculate the prevalence of dwelling ownership, by sex, conditional on the dwelling being owned by someone in the household, as discussed in Part IV of these guidelines.

3. *How many other people jointly own this dwelling with you, including household members and non-household members?*

330. If the respondent shares reported ownership of the dwelling, information on the number of joint reported owners is needed for calculation of the gender wealth gap, as discussed in Part IV of these guidelines.

4. *Is one of these joint owners your spouse or partner?*
    - Codes: yes; no

331. Identifying whether the respondent jointly owns the dwelling with his/her spouse or partner allows for the construction of an indicator on joint (reported) ownership between spouses, the most common form of joint ownership. Other patterns of joint ownership are also possible, such as between siblings or a parent and an adult child, and countries that are interested in identifying these patterns are encouraged to ask, in place of Qs 2-3, "*Who are the joint owners, including household members and non-household members?*" The Person IDs assigned to household members in the household roster should be recorded for each household member who is a joint reported owner and each non-household member who jointly owns the dwelling should be assigned a non-household member ID code (e.g. 100).

5. *Is there an ownership document for the dwelling?*
    - Codes: yes, a title deed; yes a certificate of customary ownership; yes, a certificate of occupancy; yes, a will; yes, a sales receipt; yes, other (specify); no (if no AND Q2 also = No or refuse to respond, skip to next module).

332. This question identifies whether there is an ownership document for the dwelling and what type of document it is. There may be a range of types of documents that provide formal evidence of ownership, and national statistical agencies will need to customize the response categories according to their country context. Titles and deeds are one form of ownership document. Registration certificates document rights over property. In addition, where titling or registration is not complete, documents including wills or sales receipts provide some form of documented claim. If the dwelling is a co-op, then the person may have shares in the co-op rather than a deed.

333. If an ownership document exists for the dwelling, it should be recorded independent of whether it has the name of someone in the household on it. If there is more than one type of document, the one that is held by someone in the household should be recorded. For example, if there is a deed, but the household member does not have it, but has an invoice or sales receipt, list the invoice, not the deed. If an ownership document does not exist for the dwelling and the respondent did not self-report ownership of the dwelling in Q2, skip to the next module (or to the set of questions about the parcel of land on which the dwelling is located, as discussed above) as the remainder of this module is only administered to the respondent if she/he owns the dwelling.

6. *Are you listed as an owner on the ownership document for the dwelling?*
    - Codes: yes, alone; yes, jointly with one or more persons; no (if no AND Q2 also = No or refuse to respond, skip to next module).

334. This question measures documented ownership of the principal dwelling. Documented ownership refers to the existence of any document an individual can use to claim ownership rights in law over the dwelling by virtue of the individual's name being listed as an owner on the document. Because individual names can be listed as witnesses on an ownership document, it is important to ask if the respondent is listed "as an owner" on the document. While countries may want to ask the respondent to produce the document for the enumerator so that the enumerator can confirm that the respondent's name is listed on the document, these guidelines recommend that the measure of documented ownership *not* be conditional on the document being checked or kept within the home.[112] If the respondent is not a documented owner and did not self-report ownership of the dwelling in Q2, skip to the next module as the remainder of this module is only administered to the respondent if she/he self-reports ownership of the dwelling.

335. The question also measures the form of reported ownership of the dwelling; i.e. whether the respondent owns the dwelling exclusively or jointly with one or more persons. Because the benefits of ownership may differ if one owns the dwelling alone or jointly, countries are encouraged to collect information on the form of documented ownership.

7. *How many other people are listed as owners on the ownership document, including household members and non-household members?*

336. If the respondent shares documented ownership of the dwelling, information on the number of joint documented owners is needed for calculation of the gender wealth gap, as discussed in Part IV of these guidelines.

8. *Is one of these joint owners your spouse or partner?*
   - Codes: yes; no

337. Identifying whether both the respondent's name and the name of his or her spouse/partner are listed as owners on the ownership document allows for the construction of an indicator on joint (documented) ownership between spouses, the most common form of joint ownership. Other patterns of joint documented ownership are also possible, such as between siblings or a parent and an adult child, and countries that are interested in identifying these patterns are encouraged to ask, in place of Qs 7-8, "*Who else is listed as an owner on the ownership document, including household members and non-household members?*" The Person IDs assigned to household members in the household roster should be recorded for each household member who is a joint documented owner, and each non-household member who jointly owns the dwelling should be assigned a non-household member ID code (e.g. 100).

[112] In the EDGE pilot study in Uganda, where respondents were asked to produce the ownership documentation, they were able to do so in only 25 percent of interviews that reported documentation for at least one asset. The low incidence may be due to the respondent's refusal or their inability to locate the document (Kilic and Moylan, 2016).

Ownership rights

9. *Do you have the right to sell this dwelling?*
    - Codes: yes, alone (skip to Q11), yes, jointly with one or more persons; no, someone else has this right (skip to Q11); no, it cannot be sold (skip to Q11)

338. This question obtains information on whether the respondent believes that he or she has the right to sell the dwelling. When a respondent has the right to sell the dwelling, it means that he or she has the right to permanently transfer the dwelling to another person or entity for cash or in kind benefits. To assess gender differences in the right to sell the dwelling, it is useful to distinguish between the two "no" answers, identifying if the respondent is not the one who can sell the dwelling (but someone else can sell it) or that the dwelling cannot be sold (for example, due to cultural or legal norms).

10. *Is one of the persons who jointly has the right to sell the dwelling your spouse or partner?*
    - Codes: yes; no

339. If the respondent's spouse/partner was identified as a joint reported or documented owner of the dwelling, collecting information on whether the spouse/partner jointly has the right to sell the dwelling enables analysis of whether joint owners have the same rights to the dwelling. If countries choose to collect information on all joint reported and documented owners in Qs 4 and 8, respectively, then countries can ask, in place of this question, "*Which other household members also have the right to sell this dwelling?*" The Person IDs assigned to household members in the household roster should be recorded for each household member who has the right to sell the dwelling. Note that information on the number of non-household members who have this right is not needed to calculate the gender wealth gap for dwellings.

11. *Do you have the right to bequeath this dwelling?*
    - Codes: yes, alone (skip to Q13); yes, jointly with one or more persons; no, someone else has this right (skip to Q13); no, it cannot be bequeathed (skip to Q13)

340. This question obtains information on whether the respondent believes that he or she has the right to bequeath the dwelling. When a respondent has the right to bequeath the dwelling, it means that he/she has the right to give the dwelling by oral or written will to another person(s) upon his/her death. To assess gender differences in the right to bequeath the dwelling, it is useful to distinguish between the two "no" answers, identifying if the respondent is not the one who can bequeath the dwelling (but someone else can bequeath it) or that the dwelling cannot be bequeathed (for example, due to cultural or legal norms).

12. Is one of the persons who jointly has the right to bequeath the dwelling your spouse or partner?

- Codes: yes; no

341. If the respondent's spouse/partner was identified as a joint reported or documented owner of the dwelling, collecting information on whether the spouse/partner jointly has the right to bequeath the dwelling enables analysis of whether joint owners have the same rights to the dwelling. If countries choose to collect information on all joint reported and documented owners in Qs 4 and 8, respectively, then countries can ask, in place of this question, "*Which other household members also have the right to bequeath this dwelling?*" The Person IDs assigned to household members in the household roster should be recorded for each household member who has the right to bequeath the dwelling. Note that information on the number of non-household members who have this right is not needed to calculate the gender wealth gap for dwellings.

Dwelling acquisition and use

13. How did you acquire this dwelling?

- Codes: purchased; inherited; received as a gift; built it; allocated by government program; through marriage; other (specify)

342. This question measures the mode of acquiring the dwelling. It refers to when the respondent first came into possession of the asset and presumably began deriving economic benefit from it. Because men and women often acquire assets through different means, understanding the modes of acquisition may provide insights for developing policies to ensure women's ability to acquire them. As such, national statistical agencies should include all relevant modes of acquisition and may want to add additional codes for when dwellings are received as an inheritance or as a gift to indicate who gave the inheritance/gift (e.g. the respondent's natal family or the souse's family). This is particularly useful for gender analyses, since the information collected can indicate whether the dwelling was received from the husband's family or the wife's family.

14. Do you grow any food, either from crops or animals, or raise any livestock on the plot of land on which the dwelling is located, whether for sale or for household food?

- Codes: yes; no

343. This question captures whether the plot of land on which the dwelling is located is a backyard/kitchen garden. Because women commonly rely on these parcels for subsistence production but such parcels are often not measured by agricultural surveys due to their small size, collecting information on backyard/kitchen gardens can provide a better understanding of their prevalence and contribution to agricultural productivity and women's food security. Note that if the dwelling and the plot of land on which the dwelling is located are considered separate property, then this question need only be asked in the set of questions on the plot.

Dwelling value

15. If this dwelling were to be sold today, how much could be received for it?

344. This question measures the value of the dwelling. Respondents should estimate the current value based on the location and condition of their particular dwelling. The full amount that would be received in the sale should be listed, regardless of whether all of it would be kept by the respondent. If the respondent is not sure how to answer, enumerators should probe on this question by encouraging the respondent to consider the price received for similar houses sold in the community. Note that asking about the price that would be received today refers to the current value, not a lower price that would be obtained from a distress sale or fire sale that had to happen immediately. If there are large areas of the country with no market for dwellings, other measures may be considered. Such measures could include the cost of constructing a similar dwelling (investigators should specify whether the cost of the lot should be included), or the amount that they could receive if they rented it out. If there is no market, investigators may want to use the information collected in the household questionnaire on the characteristics of the dwelling to impute a value.

Questions about the plot of land on which the dwelling was located

Types and forms of ownership

16. What is the present ownership status of the plot of land on which this dwelling is located?

- Codes: owned by someone in the household; rented; received rent-free; squatting; other (specify); don't know

345. This question is a screening question to assess whether the plot of land on which the principal dwelling is located is owned by a household member. It measures the respondent's perception of whether the plot of land is owned by someone in the household; there may or may not be an ownership document for the plot of land on which the dwelling is located.

346. Because this module is concerned with ownership of the plot of land on which the dwelling is located, if no one in the household owns the dwelling plot, the remainder of the questions in this module will be skipped.

17. *Do you own the plot of land on which the dwelling is located*?

- Codes: yes, alone (skip to Q20); yes, jointly with one or more persons; no (skip to Q20); refuses to respond (skip to Q20)

347. This question measures reported ownership of the plot of land on which the principal dwelling is located. Reported ownership captures the respondent's self-perception of his/her ownership status, irrespective of whether his/her name is listed as an owner on an ownership document for the dwelling plot. The question also measures the form of reported ownership of the dwelling plot; i.e. whether the respondent owns the plot exclusively or jointly with one

or more persons. Because the benefits of ownership may differ if one owns the plot alone or jointly, countries are encouraged to collect information on the form of reported ownership.

18. How many other people jointly own the plot of land on which the dwelling is located, including household members and non-household members?

348. If the respondent shares reported ownership of the dwelling plot, information on the number of joint reported owners is needed for calculation of the gender wealth gap, as discussed in Part IV of these guidelines.

19. Is one of these joint owners your spouse or partner?

- Codes: yes; no

349. Identifying whether the respondent jointly owns the dwelling plot with his/her spouse or partner allows for the construction of an indicator on joint (reported) ownership between spouses, the most common form of joint ownership. Other patterns of joint ownership are also possible, such as between siblings or a parent and an adult child, and countries that are interested in identifying these patterns are encouraged to ask, in place of Qs 18-19, "*Who are the joint owners, including household members and non-household members?*" The Person IDs assigned to household members in the household roster should be recorded for each household member who is a joint reported owner and <u>each</u> non-household member who jointly owns the dwelling plot should be assigned a non-household member ID code (e.g. 100).

20. Is there an ownership document for the plot of land on which the dwelling is located?

- Codes: yes, a title deed; yes a certificate of customary ownership; yes, a certificate of occupancy; yes, a will; yes, a sales receipt; yes, other (specify); no (if no AND Q17 also = No or refuse to respond, skip to next module).

350. This question identifies whether there is an ownership document for the plot of land on which the dwelling is located and what type of document it is. There may be a range of types of documents that provide formal evidence of ownership, and national statistical agencies will need to customize the response categories according to their country context. Titles and deeds are one form of ownership document. Registration certificates document rights over property. In addition, where titling or registration is not complete, documents including wills or sales receipts provide some form of documented claim.

351. If an ownership document exists for the dwelling plot, it should be recorded independent of whether it has the name of someone in the household on it. If there is more than one type of document, the one that is held by someone in the household should be recorded. For example, if there is a deed, but the household member is not listed on it, but is listed as an owner on an invoice or sales receipt, list the invoice, not the deed. If an ownership document does not exist for the dwelling plot and the respondent did not self-

report ownership of the dwelling plot in Q17, skip to the next module as the remainder of this module is only administered to the respondent if she/he owns the plot of land on which the dwelling is located.

21. Are you listed as an owner on the ownership document for the dwelling plot?

- Codes: yes, alone (skip to Q24); yes, jointly with one or more persons; no (if no AND Q17 also = No or refuse to respond, skip to next module).

352. This question measures documented ownership of the plot of land on which the principal dwelling is located. Documented ownership refers to the existence of any document an individual can use to claim ownership rights in law over the dwelling plot by virtue of the individual's name being listed as an owner on the document. Because individual names can be listed as witnesses on an ownership document, it is important to ask if the respondent is listed "as an owner" on the document. While countries may want to ask the respondent to produce the document for the enumerator so that the enumerator can confirm that the respondent's name is listed on the document, these guidelines recommend that the measure of documented ownership *not* be conditional on the document being checked.[113] If the respondent is not a documented owner and did not self-report ownership of the dwelling plot in Q17, skip to the next module as the remainder of this module is only administered to the respondent if she/he self-reports ownership of the plot of land on which the dwelling is located.

353. The question also measures the form of reported ownership of the dwelling plot; i.e. whether the respondent owns the plot exclusively or jointly with one or more persons. Because the benefits of ownership may differ if one owns the dwelling plot alone or jointly, countries are encouraged to collect information on the form of documented ownership.

22. How many other people are listed as owners on the ownership document, including household members and non-household members?

354. If the respondent shares documented ownership of the dwelling plot, information on the number of joint documented owners is needed for calculation of the gender wealth gap, as discussed in Part IV of these guidelines.

23. Is one of these joint owners your spouse or partner?

- Codes: yes; no

355. Identifying whether both the respondent's name and the name of his or her spouse/partner are listed as owners on the ownership document for the plot allows for the construction of an indicator on joint (documented) ownership between spouses, the most

[113] In the EDGE pilot study in Uganda, where respondents were asked to produce the ownership documentation, they were able to do so in only 25 percent of interviews that reported documentation for at least one asset. The low incidence may be due to the respondent's refusal or their inability to locate the document (Kilic and Moylan 2016).

common form of joint ownership. Other patterns of joint documented ownership are also possible, such as between siblings or a parent and an adult child, and countries that are interested in identifying these patterns are encouraged to ask, in place of Qs 22-23, "*Who else is listed as an owner on the ownership document, including household members and non-household members?*" The Person IDs assigned to household members in the household roster should be recorded for each household member who is a joint documented owner, and each non-household member who jointly owns the dwelling plot should be assigned a non-household member ID code (e.g. 100).

Ownership rights

24. Do you have the right to sell the plot of land on which the dwelling is located?

- Codes: yes, alone (skip to Q26), yes, jointly with one or more persons; no, someone else has this right (skip to Q26); no, it cannot be sold (skip to Q26)

356. This question obtains information on whether the respondent believes that he or she has the right to sell the dwelling plot. When a respondent has the right to sell the dwelling plot, it means that he or she has the right to permanently transfer it to another person or entity for cash or in kind benefits. To assess gender differences in the right to sell the plot of land on which the dwelling is located, it is useful to distinguish between the two "no" answers, identifying if the respondent is not the one who can sell the dwelling plot (but someone else can sell it) or that the dwelling plot cannot be sold (for example, due to cultural or legal norms).

25. Is one of the persons who jointly has the right to sell the plot of land on which the dwelling is located your spouse or partner?

- Codes: yes; no

357. If the respondent's spouse/partner was identified as a joint reported or documented owner of the dwelling plot, collecting information on whether the spouse/partner jointly has the right to sell the plot enables analysis of whether joint owners have the same rights to the plot of land on which the dwelling is located. If countries choose to collect information on all joint reported and documented owners in Qs 17 and 21, respectively, then countries can ask, in place of this question, "*Which other household members also have the right to sell the plot of land on which the dwelling is located?*" The Person IDs assigned to household members in the household roster should be recorded for each household member who has the right to sell the dwelling plot. Note that information on the number of non-household members who have this right is not needed to calculate the gender wealth gap for dwellings plots.

26. Do you have the right to bequeath the plot of land on which the dwelling is located?

- Codes: yes, alone (skip to Q28); yes, jointly with one or more persons; no, someone else has this right (skip to Q28); no, it cannot be bequeathed (skip to Q28)

358. This question obtains information on whether the respondent believes that he or she has the right to bequeath the dwelling plot. When a respondent has the right to bequeath the dwelling plot, it means that he/she has the right to give the dwelling plot by oral or written will to another person(s) upon the death of the respondent. To assess gender differences in the right to bequeath the dwelling plot, it is useful to distinguish between the two "no" answers, identifying if the respondent is not the one who can bequeath the dwelling plot (but someone else can bequeath it) or that the dwelling plot cannot be bequeathed (for example, due to cultural or legal norms).

27. Is one of the persons who jointly has the right to bequeath the plot of land on which the dwelling is located your spouse or partner?

- Codes: yes; no

359. If the respondent's spouse/partner was identified as a joint reported or documented owner of the dwelling plot, collecting information on whether the spouse/partner jointly has the right to bequeath it enables analysis of whether joint owners have the same rights to the dwelling plot. If countries choose to collect information on all joint reported and documented owners in Qs 23 and 26 respectively, then countries can ask, in place of this question, "*Which other household members also have the right to bequeath the plot of land on which the dwelling is located?*" The Person IDs assigned to household members in the household roster should be recorded for each household member who has the right to bequeath the dwelling plot. Note that information on the number of non-household members who have this right is not needed to calculate the gender wealth gap for dwelling plots.

<u>Acquisition of dwelling plot and use</u>

28. How did you acquire the plot of land on which the dwelling is located?

- Codes: purchased; inherited; received as a gift; built it; allocated by government program; through marriage; other (specify)

360. This question measures the mode of acquiring the dwelling plot. It refers to when the respondent first came into possession of the asset and presumably began deriving economic benefits from it. Because men and women often acquire assets through different means, understanding the modes of acquisition may provide insights for developing policies to ensure women's ability to acquire them. As such, national statistical agencies should include all relevant modes of acquisition and may want to add additional codes for when dwellings plots are received as an inheritance or as a gift to indicate who gave the inheritance/gift. This is particularly useful for gender analyses, since the information collected can indicate whether the plot of land on which the dwelling is located was received from the husband's family or the wife's family.

29. Do you grow any food, either from crops or animals, or raise any livestock on the plot of land on which the dwelling is located, whether for sale or for household food?

- Codes: yes; no

361. This question captures whether the plot of land on which the dwelling is located is a backyard/kitchen garden. Because women commonly rely on these parcels for subsistence production but such parcels are often not measured by agricultural surveys due to their small size, collecting information on backyard/kitchen gardens can provide a better understanding of their prevalence and contribution to agricultural productivity and women's food security.

Value of dwelling plot

30. If the plot of land on which the dwelling is located were to be sold today, how much could be received for it?

362. This question measures the value of the plot of land on which the dwelling is located. Respondents should estimate the current value based on the location and condition of their particular plot. Note that because the dwelling and plot of land are considered separate properties, the estimate should not include the value of the dwelling. The full amount that would be received in the sale should be listed, regardless of whether all of it would be kept by the respondent. If the respondent is not sure how to answer, enumerators should probe on this question by encouraging the respondent to consider the price received for similar dwelling plots sold in the community.

Agricultural land

363. Although agricultural land is a subset of the category "land" in the System of National Accounts, the present guidelines recommend collecting data on agricultural land separately because of its distinctive uses. Land used for non-agricultural purposes should be captured in the module on Other Real Estate.

364. In line with the recommendations of the FAO for the World Programme for the Census of Agriculture 2020, these guidelines recommended that the data items in this module be collected at the parcel level.[114] An agricultural parcel is any piece of land, regardless of type of tenure, entirely surrounded by other land, water, road, forest or other features not forming part of the holding or forming part of the holding under a different land tenure type. A parcel may consist of one or more plots.[115] Some countries may choose to collect the information at the plot level. A plot is a part or whole of a parcel on which a unique crop or crop mixture is cultivated.[116] The decision to collect data at the plot, rather than the parcel level, should be based on an understanding of the country's tenure system and the level (parcel or plot) at which ownership is accorded, keeping in mind that plot boundaries are more likely to change over time.

[114] FAO, 2015. *World Programme for the Census of Agriculture 2020*.
[115] FAO, 2015. *World Programme for the Census of Agriculture 2020*.
[116] FAO, 2015. *World Programme for the Census of Agriculture 2020*.

1. *Do you own any agricultural parcels?*
    - Codes: yes; no

365. This questions refers to whether the respondent, not the respondent's household, owns an agricultural land. It is the screening question to determine whether the respondent should complete the module. It also measures reported ownership of agricultural land. The definitions of ownership can be quite blurred—ranging from formal ownership with title deeds to customary tenure to long-term rights over land. Reported ownership captures the respondent's self-perception of his/her ownership status, irrespective of whether there is an ownership document for the parcel that the respondent is listed on as an owner.

366. Agricultural parcels of interest include those that are owned by the respondent and cultivated by the household and those that are currently fallow, rented out or given away for nothing in return on a temporary basis. Because the module is concerned with the ownership of agricultural land, parcels that are rented in and farmed should not be included. If the respondent does not own any agricultural land, skip to the next module as the remainder of this module is only administered to the respondent if she/he self-reports owning agricultural land.

367. Alternatively, countries may also want to collect information on land rented in, but not owned. For example, countries may want to assess whether the proportion of women who rent land is greater than the proportion of women who own land, which may suggest less gender discrimination in rental markets than sales markets. To do so, the current screening question can be replaced with, "*Do you own or farm any agricultural land?*" and a few modifications can be made to the remainder of the module, as follows: In the parcel roster, all parcels owned or farmed by the respondent would be listed. The questions on parcel characteristics could be asked for all parcels. Q 7 would be modified to include all tenure categories, not only those related to legal and non-legal ownership/possession. Q8 on perceptions of tenure security would be modified to refer to land owned or rented. A new question to measure reported ownership would precede Q9 by asking, "*Do you own this [agricultural parcel]?*" If the respondent reports owning the parcel, the remainder of the questions would be asked; if the respondent farms but does not own the parcel, the enumerator would move on to the next parcel (if more than one listed) or to the next module.

<u>Parcel roster</u>

2. *Parcel name and description*

368. By recording each agricultural parcel owned by the respondent, a respondent roster of agricultural land is created. Each of the agricultural parcels owned by the respondent should be listed from largest to smallest. The respondent should provide a name for each parcel (e.g. "road parcel" or "swamp parcel") and a brief description of each parcel that can be referenced during the interview. This information should be provided for each agricultural parcel the respondent reports owning before proceeding to the next question.

3. *Is this [agricultural parcel] located inside or outside of the country?*"
    - Codes: inside; outside

369. Note that this question is only necessary if countries wish to use the data collected on agricultural land for informing their System of National Accounts as land located outside of the country is not included in the SNA.

Parcel characteristics

370. The following questions on the characteristics of the agricultural parcel can serve as proxies for the quality of land owned by women and men and can be used to impute a value for the parcel when no valuation is provided.

4. *What is the size of this [parcel]?*

371. In the absence of GPS-based area parcel measurements, this question measures the size of the parcel as self-reported by the respondent and can serve as a proxy to assess differences in the quality of land owned by women and men. The respondent should estimate the size of the parcel in the unit(s) of measure commonly used in the national survey program (e.g. hectares, acres).

5. *Is this [parcel] irrigated?*
    - Codes: yes; no

372. This question measures whether the parcel uses any form or irrigation or relies entirely on rainfall and can serve as a proxy to assess differences in the quality of land owned by women and men.

6. *What was the primary use of this [parcel] during the last cropping season?*
    - Codes: livestock production; poultry production; grains and legumes; industrial crops; fruit and vegetable production; fodder, grazing pasture or grass for animals; fish farming/aquaculture; forestry plantation; fallow; woodland/ forest; swamp; rented out

373. This question captures the primary use of the agricultural parcel during the last cropping season and can provide for further disaggregation of gender statistics on land ownership. If the parcel had more than one use, the activity comprising the largest use of the land should be considered primary.

Tenure security

7. *What is the tenure status of this [parcel]?*

- Each county will have to determine the appropriate coding for this question

374. The World Programme for the Census of Agriculture 2010 guidelines define land tenure as the arrangements or rights under which the holder operates the land making up the holding.[117] The guidelines recognize that there are many different systems of formal and informal land tenure around the world and the distinction between legal and non-legal ownership (one of the keys to tenure security) is often blurred. Consequently, only four broad categories of land tenure are offered by the WCA recommendations, as follows:

375. Legal ownership or legal owner-like possession refers to legal ownership obtained through either a formal land title system or customary land tenure arrangements that are registered or certified in some way. Such arrangements might include: possession of an ownership title by the holder; operation of the land by the holder under hereditary tenure arrangements; perpetual or long-term lease (with nominal or no rent) and; the land is held under tribal or traditional form of tenure recognized by the state[118];

376. Non-legal ownership or non-legal owner-like possession covers situations where the holder: a) operates the land without interruption for a long period of time without any legal form of legal ownership, title, long–term lease or payment rent; b) is operating land owned by the state without any legal rights or; c) is operating land held under tribal or traditional form of tenure which is not recognized by the state;

377. Rented from someone else: land may be rented for: a) an agreed amount of money and/or produce; b) a share of the produce, or; c) in exchange for services. Land may be also granted for free. At the parcel level, rental arrangements are noted in Item 0103 (Land Tenure) and explored in more detail in Item 0104 (Terms of Rental) for rented parcels. The categories here are rented: a) for an agreed amount of money and/or produce) b) for a share of produce; c) in exchange for services, and; d) under other rental arrangements;

378. Other types of land tenure include land: a) operated on squatter basis; b) operated under transitory tenure forms such as trusteeship; c) received by members of collective holdings for individual use, and; d) under inheritance proceeding.

379. Because this module collects information only on agricultural land owned by the respondent, the tenure status of the parcels reported by the respondent should fall under either legal ownership or legal owner-like possession or non-legal ownership or non-legal owner-like possession. In some contexts, squatting may constitute a form of informal ownership and thus the "other types" category would also be applicable.

380. Because the WCA categories of land tenure are purposely broad, each country should use its own categories of land tenure, which allows for more in-depth analysis. For example, the categories used in the EDGE pilot study in Uganda were: "Mailo," "Customary,"

[117] FAO, 2005. *The World Programme for the Census of Agriculture 2010.*

[118] This was reported in Neciu, A., 2013. Approaches to measuring asset ownership and control in Agricultural Censuses and Surveys. Paper prepared by the FAO Junior Consultant for the EDGE Project. Draft. 17 September 2013. Statistics Division (ESS). Rome: The Food and Agriculture Organization of the United Nations.

"Leasehold" and "Freehold," while in South Africa, the categories were "Owns and farms the land," "Owns and rents out the land," "Owns and sharecrops out the land," "Tribal authority," "State land," and "Other." Note that land rented in or sharecropped in should not be included in the module and thus, a tenure category for said tenure arrangement is not needed unless for the purposes of data validation. The tenure status categories used by the countries can then be collapsed into the WCA categories as additional analysis warrants.

8. *What could make you lose ownership of this plot over the next five years?*
    - Codes: eviction by family or clan; someone with political influence wants this piece of land; death of household head; death of a spouse; land redistribution by government; eviction by sheriff/court; other (specify); nothing, I believe I will own this land in five years

381. This question measures the respondent's perception of his or her tenure security or the likelihood that a claim will be made against his/her ownership rights. Sources of perceived tenure insecurity may include contestation from within households, families, or communities, or as a result of the actions of governments, companies or other private land claimants. Individuals holding land under customary systems may perceive their rights as secure despite the absence of legal recognition or formal documentation while those with formal documentation may still perceive some insecurity depending on the robustness of the institutions enforcing documented land rights. National statistical agencies should customize the response categories according to their country context.

<u>Types and forms of ownership</u>

9. *Does anyone jointly own this [parcel] with you, including household members and non-household members?*
    - Codes: yes; no (skip to Q12)

382. The question measures the form of reported ownership of the agricultural parcel; i.e. whether the respondent owns the parcel exclusively or jointly with one or more persons. Because the benefits of ownership may differ if one owns the parcel alone or jointly, countries are encouraged to collect information on the form of reported ownership.

10. *How many other persons jointly own this [parcel] with you?*

383. If the respondent shares reported ownership of the agricultural parcel, information on the number of joint reported owners is needed for calculation of the gender wealth gap, as discussed in Part IV of these guidelines.

11. *Is one of these joint owners your spouse or partner?*
    - Codes: yes; no

384. Identifying whether the respondent jointly owns the agricultural parcel with his/her spouse or partner allows for the construction of an indicator on joint (reported) ownership of agricultural land between spouses, the most common form of joint ownership. Other patterns of joint ownership are also possible, such as between siblings or a parent and an adult child, and countries that are interested in identifying these patterns are encouraged to ask, in place of Qs 9-10, "who are the joint owners, including household members and non-household members?" The Person IDs assigned to household members in the household roster should be recorded for each household member who is a joint reported owner and each non-household member who jointly owns the agricultural parcel should be assigned a non-household member ID code (e.g. 100).

12. Is there an ownership document for this [parcel]?

- Codes: yes, a title deed; yes, a certificate of customary ownership; yes, a certificate of occupancy; yes, a will; yes, a purchase agreement; yes, other (specify); no (skip to Q16)

385. This question identifies whether there is an ownership document for the agricultural parcel and what type of document it is. There may be a range of types of documents that provide formal evidence of ownership, and national statistical agencies will need to customize the response categories according to their country context. Titles and deeds are one form of ownership document. Registration certificates document rights over property. In addition, where titling or registration is not complete, documents including wills or sales receipts provide some form of documented claim. If much of the land is currently in the process of being titled, it may be useful to have a category that indicates that the titling process has started but has not been completed.

386. If an ownership document exists for the parcel, it should be recorded independent of whether it has the name of someone in the household on it. If there is more than one type of document, the one that is held by someone in the household should be recorded. For example, if there is a deed, but the household member does not have it, but has an invoice or sales receipt, list the invoice, not the deed.

13. Are you listed as an owner on the ownership document for this [parcel]?

- Codes: yes, alone (skip to Q16); yes, jointly with one or more persons; no (skip to Q16)

387. This question measures documented ownership of agricultural land. Documented ownership refers to the existence of any document an individual can use to claim ownership rights in law over an agricultural parcel by virtue of the individual's name being listed as an owner on the document. Because individual names can be listed as witnesses on an ownership document, it is important to ask if the respondent is listed "as an owner" on the document. As discussed above, while countries may want to ask the respondent to produce the document for the enumerator so that the enumerator can confirm that the respondent's

name is listed on the document, these guidelines recommend that the measure of documented ownership *not* be conditional on the document being checked.

388. The question also measures the form of documented ownership of the agricultural parcel; i.e. whether the respondent owns the parcel exclusively or jointly with one or more persons. Because the benefits of ownership may differ if one owns the parcel alone or jointly, countries are encouraged to collect information on the form of documented ownership.

*14. How many other people are listed as owner**s** on the ownership document, including household members and non-household members?*

389. If the respondent shares documented ownership of the parcel, information on the number of joint documented owners is needed for calculation of the gender wealth gap, as discussed in Part IV of these guidelines.

15. Is one of these joint owners your spouse or partner?

- Codes: yes; no

390. Identifying whether both the respondent's name and the name of his or her spouse/partner are listed as owners on the ownership document allows for the construction of an indicator on joint (documented) ownership between spouses, the most common form of joint ownership. Other patterns of joint documented ownership are also possible, such as between siblings or a parent and an adult child, and countries that are interested in identifying these patterns are encouraged to ask, in place of Qs 14-15, "*Who else is listed as an owner on the ownership document, including household members and non-household members*?" The Person IDs assigned to household members in the household roster should be recorded for each household member who is a joint documented owner, and each non-household member who jointly owns the parcel should be assigned a non-household member ID code (e.g. 100).

Ownership rights

16. Do you have the right to sell this [parcel]?

- Codes: yes, alone (skip to Q18), yes, jointly with one or more persons; no, someone else has this right (skip to Q18); no, it cannot be sold (skip to Q18)

391. This question obtains information on whether the respondent believes that he or she has the right to sell the parcel. When a respondent has the right to sell the parcel, it means that he or she has the right to permanently transfer the parcel to another person or entity for cash or in kind benefits. To assess gender differences in the right to sell the parcel, it is useful to distinguish between the two "no" answers, identifying if the respondent is not the one who can sell the parcel (but someone else can sell it) or that the parcel cannot be sold (for example, due to cultural or legal norms).

17. Is one of the persons who jointly has the right to sell this [parcel] your spouse or partner?

- Codes: yes; no

392. If the respondent's spouse/partner was identified as a joint reported or documented owner of the parcel, collecting information on whether the spouse/partner jointly has the right to sell the parcel enables analysis of whether joint owners have the same rights to the parcel. If countries choose to collect information on all joint reported and documented owners in Qs 10 and 14, respectively, then countries can ask, in place of this question, "*Which other household members also have the right to sell this [parcel]*?" The Person IDs assigned to household members in the household roster should be recorded for each household member who has the right to sell the parcel. Note that information on the number of non-household members who have this right is not needed to calculate the gender wealth gap for agricultural land.

18. Do you have the right to bequeath this [parcel]?

- Codes: yes, alone (skip to Q20); yes, jointly with one or more persons; no, someone else has this right (skip to Q20); no, it cannot be bequeathed (skip to Q20)

393. This question obtains information on whether the respondent believes that he or she has the right to bequeath the parcel. When a respondent has the right to bequeath the parcel, it means that he/she has the right to give the parcel by oral or written will to another person(s) upon the death of the respondent. To assess gender differences in the right to bequeath the parcel, it is useful to distinguish between the two "no" answers, identifying if the respondent is not the one who can bequeath the parcel (but someone else can bequeath it) or that the parcel cannot be bequeathed (for example, due to cultural or legal norms).

19. Is one of the persons who jointly has the right to bequeath this [parcel] your spouse or partner?

- Codes: yes; no

394. If the respondent's spouse/partner was identified as a joint reported or documented owner of the parcel, collecting information on whether the spouse/partner jointly has the right to bequeath the parcel enables analysis of whether joint owners have the same rights to the parcel. If countries choose to collect information on all joint reported and documented owners in Qs 10 and 14, respectively, then countries can ask, in place of this question, "*Which other household members also have the right to bequeath this [parcel]?*" The Person IDs assigned to household members in the household roster should be recorded for each household member who has the right to bequeath the parcel. Note that information on the number of non-household members who have this right is not needed to calculate the gender wealth gap for agricultural land.

20. Are you the decision-maker for this [parcel] regarding the timing of crop activities, crop choice, and input use?

- Codes: yes, alone (skip to Q22); yes, jointly with one or more persons; no, someone else is the decision-maker (skip to Q22); no, the parcel is rented out (skip to Q22)

395. This question measures whether the owner of the agricultural parcel is also the decision-maker, or among the decision-makers, for the operations of the agricultural parcels. Knowing whether the owner of the parcel (and his or her sex) makes agricultural production decisions is useful for policy targeting increased household agricultural productivity.

21. Is one of the joint decision-makers for this [parcel] your spouse or partner?

- Codes: yes; no

396. If the respondent's spouse/partner was identified as a joint reported or documented owner of the parcel, collecting information on whether the spouse/partner is a joint decision-maker regarding the timing of crop activities, crop choice, and input use enables analysis of whether joint owners jointly make decisions concerning agricultural production. If countries choose to collect information on all joint reported and documented owners in Qs 10 and 14, respectively, then countries can ask, in place of this question, "*Which other household members are the joint decision-makers for this [parcel] regarding the timing of crop activities, crop choice, and input use*?" The Person IDs assigned to household members in the household roster should be recorded for each household member who is a joint decision-maker. Note that information on the number of non-household members who are joint decision-makers is not needed to calculate the gender wealth gap for agricultural land.

<u>Acquisition of agricultural land</u>

22. How did you acquire this [parcel]?

- Codes: purchased; inherited; received as a gift; allocated by government program; through marriage; other (specify)

397. This question measures the mode of acquiring the agricultural parcel. It refers to when the respondent first came into possession of the asset and presumably began deriving economic benefits from it. Because men and women often acquire assets through different means, understanding the modes of acquisition may provide insights for developing policies to ensure women's ability to acquire them. As such, national statistical agencies should include all relevant modes of acquisition and may want to add additional codes for when parcels are received as an inheritance or as a gift to indicate who gave the inheritance/gift (e.g. the respondent's natal family or the spouse's family). This is particularly useful for gender analyses, since the information collected can indicate whether the parcel was received from the husband's family or the wife's family.

Value of agricultural land

23. If this [parcel] were to be sold today, how much could be received for it?

398. This question measures the value of the agricultural parcel. Respondents should estimate the current value based on the location and quality of their particular parcel. The full amount that would be received in the sale should be listed, regardless of whether all of it would be kept by the respondent. If the respondent is not sure how to answer, enumerators should probe on this question by encouraging the respondent to consider the price received for other parcels that have been sold in the area. If markets are thin for land, investigators may want to use information on the characteristics of the plot (such as the size of the parcel and irrigation status) so that a value can be imputed.

Livestock

399. Livestock are an important source of income and means of wealth accumulation. Livestock are valued for breeding, for the various foods and goods they produce, and for their role in transportation and work-related activities. However, due to the variety of livestock often owned by households and individuals, this category poses a number of challenges regarding identifying ownership. Among agro-pastoralist and pastoralist households, there may be many animals with various configurations of rights and ownership. For this reason, the simplest approach, presented below, is to ask whether the respondent owns any of the categories of livestock which the country wants to collect data on. This approach only provides information on the prevalence and form (exclusive or joint) of reported livestock ownership, by type of livestock and sex of the owner.

1. *Do you own any [livestock category], exclusively or jointly?*
   - Codes: yes, exclusively only; yes, jointly only; yes, both exclusively and jointly; no (skip to next category)

400. This question measures reported ownership of livestock as well the form of ownership; i.e. whether the livestock is owned exclusively or jointly by the respondent. Categories may include but not be limited to cattle, goats, sheep, pigs, horses, donkeys and poultry, as well as distinctions between exotic and indigenous breeds. Countries will need to determine the categories of livestock to include based on prevalence rates from prior agricultural or household surveys as well as policy needs.

401. For some policy purposes, the approach presented above may not be sufficient because it may be important to know more detail about ownership patterns and to establish the value of livestock. Establishing the value of livestock tends to be easier than obtaining values for land. In most places where people raise livestock, there is an active livestock market. The challenge with valuing livestock is that if a person owns five cattle, they may each have a quite different sales price, depending on their sex, age, and condition. Thus, asking about how much would be received if one of the animals is sold may not reflect the average price of the animals. In the EDGE pilot in Uganda, the livestock module was

separated into large livestock and small livestock and poultry. For large livestock, the respondent was asked to report the total number of each type of livestock he or she owned, how many animals were owned exclusively or jointly, the person IDs of each joint owner and the total amount that could be received if all of the livestock for a given ownership arrangement were sold in the market. Because the module proved operationally difficult to implement, it is not presented here, but countries can refer to the EDGE survey instruments for Uganda for more detail.[119]

Agricultural equipment

402. Agricultural equipment constitutes crucial assets for many households and individuals, and is often central to the livelihoods of people living in rural regions. Agricultural equipment includes both mechanized and non-mechanized farm equipment and tools.

403. Prior empirical work has found that most small agricultural tools, such as spades and hoes, are of little economic value and it is thus not necessary to collect detailed information on the ownership and control of these assets.[120] As such, the present guidelines recommend implementing a detailed module on large agricultural equipment, which asks the questions on ownership and control for each piece of agricultural equipment owned by the respondent, and a brief module on small agricultural equipment, which treats each category of small equipment as one unit rather than itemizing them. This simpler approach can be implemented if countries wish to collect information on the prevalence and form (exclusive or joint) of reported ownership of small agricultural equipment.

Large agricultural equipment

1. *Do you own any large agricultural equipment, such as tractors, ploughs, irrigation systems or trailers?*
   - Codes: yes; no

404. This is the screening question to determine whether the respondent should complete the module. It measures the reported ownership of any agricultural equipment (not by type of agricultural equipment). Categories of large agricultural equipment may include, but are not limited to, ploughs, ox-ploughs, tractors, trailers, threshers, irrigation systems, and spraying machines. Countries will need to determine the categories of large agricultural equipment to include based on prevalence rates from prior agricultural or household surveys as well as policy needs. If the respondent does not own any large agricultural equipment, skip to the next module as the remainder of this module is only administered to the respondent if she/he self-reports owning any large agricultural equipment.

[119] All EDGE survey instruments are available at: http://unstats.un.org/edge

[120] Doss, C. et al., 2011. Lessons from the field: Implementing individual asset surveys in Ecuador, Ghana, India and Uganda.

Respondent roster of large agricultural equipment

2. *Please list each piece of large agricultural equipment that you own, exclusively or jointly with someone else.*

405. By recording each piece of agricultural equipment owned by the respondent, a respondent roster of large agricultural equipment is created. This information also measures reported ownership of agricultural equipment, by type of equipment. If more than one piece of the same type of agricultural equipment (e.g. two tractors) are owned by the respondent, ask the respondent to provide a brief description of each piece and name them accordingly so they can be easily distinguished during the interview. The list of each piece of agricultural equipment owned by the respondent should be provided before proceeding to the next question.

Form of ownership

3. *Does anyone jointly own this [agricultural equipment] with you, including household members and non-household members?*
    - Codes: yes; no (skip to Q6)

406. The question measures the form of reported ownership of the agricultural equipment; i.e. whether the respondent owns the piece of equipment exclusively or jointly with one or more persons. Because the benefits of ownership may differ if one owns the equipment alone or jointly, countries are encouraged to collect information on the form of reported ownership.

4. *How many other persons jointly own this [agricultural equipment] with you?*

407. If the respondent shares reported ownership of the agricultural equipment, information on the number of joint reported owners is needed for calculation of the gender wealth gap, as discussed in Part IV of these guidelines.

5. *Is one of these joint owners your spouse or partner?*
    - Codes: yes; no

408. Identifying whether the respondent jointly owns the agricultural equipment with his/her spouse or partner allows for the construction of an indicator on joint (reported) ownership of agricultural equipment between spouses, the most common form of joint ownership. Other patterns of joint ownership are also possible, such as between siblings or a parent and an adult child, and countries that are interested in identifying these patterns are encouraged to ask, in place of Qs 4-5, "*Who are the joint owners, including household members and non- household members?*" The Person IDs assigned to household members in the household roster should be recorded for each household member who is a joint reported owner and each non-household member who jointly owns the agricultural equipment should be assigned a non-household member ID code (e.g. 100).

Ownership rights

6. *Do you have the right to sell this [agricultural equipment]?*
    - Codes: yes, alone (skip to Q8), yes, jointly with one or more persons; no, someone else has this right (skip to Q8); no, it cannot be sold (skip to Q8)

409. This question obtains information on whether the respondent believes that he or she has the right to sell the piece of agricultural equipment. When a respondent has the right to sell the equipment, it means that he or she has the right to permanently transfer it to another person or entity for cash or in kind benefits. To assess gender differences in the right to sell agricultural equipment, it is useful to distinguish between the two "no" answers, identifying if the respondent is not the one who can sell the equipment (but someone else can sell it) or that the equipment cannot be sold (for example, no markets exist for used agricultural equipment or due to cultural or legal norms).

7. *Is one of the persons who jointly has the right to sell this [agricultural equipment] your spouse or partner?*
    - Codes: yes; no

410. If the respondent's spouse/partner was identified as a joint reported or documented owner of the piece of agricultural equipment, collecting information on whether the spouse/partner jointly has the right to sell it enables analysis of whether joint owners have the same rights to the equipment. If countries choose to collect information on all joint reported owners in Q 4, then countries can ask, in place of this question, "*Which other household members also have the right to sell this [agricultural equipment]*?" The Person IDs assigned to household members in the household roster should be recorded for each household member who has the right to sell the equipment. Note that information on the number of non-household members who have this right is not needed to calculate the gender wealth gap for agricultural equipment.

8. *Do you have the right to bequeath this [agricultural equipment]?*
    - Codes: yes, alone (skip to Q10); yes, jointly with one or more persons; no, someone else has this right (skip to Q10); no, it cannot be bequeathed (skip to Q10)

411. This question obtains information on whether the respondent believes that he or she has the right to bequeath the agricultural equipment. When a respondent has the right to bequeath the equipment, it means that he/she has the right to give the equipment by oral or written will to another person(s) upon the death of the respondent. To assess gender differences in the right to bequeath agricultural equipment, it is useful to distinguish between the two "no" answers, identifying if the respondent is not the one who can bequeath the equipment (but someone else can bequeath it) or that the equipment cannot be bequeathed (for example, due to cultural or legal norms).

9. *Is one of the persons who jointly has the right to bequeath this [agricultural equipment] your spouse or partner?*
    - Codes: yes; no

412. If the respondent's spouse/partner was identified as a joint reported or documented owner of the agricultural equipment, collecting information on whether the spouse/partner jointly has the right to bequeath it enables analysis of whether joint owners have the same rights to the equipment. If countries choose to collect information on all joint reported owners in Q 4, then countries can ask, in place of this question, "*Which other household members also have the right to bequeath this [agricultural equipment]?*" The Person IDs assigned to household members in the household roster should be recorded for each household member who has the right to bequeath the agricultural equipment. Note that information on the number of non-household members who have this right is not needed to calculate the gender wealth gap for agricultural equipment.

Acquisition of agricultural equipment

10. *How did you acquire this [agricultural equipment]?*
    - Codes: purchased; inherited; received as a gift; allocated by government program; through marriage; other (specify)

413. This question measures the mode of acquiring the agricultural equipment. It refers to when the respondent first came into possession of the asset and presumably began deriving economic benefits from it. Because men and women often acquire assets through different means, understanding the modes of acquisition may provide insights for developing policies to ensure women's ability to acquire them. As such, national statistical agencies should include all relevant modes of acquisition.

Value of agricultural equipment

11. *If this [agricultural equipment] were to be sold today, how much could be received for it?*

414. This question measures the value of the agricultural equipment. Respondents should estimate the current value based on the location and quality of their particular equipment. The full amount that would be received in the sale should be listed, regardless of whether all of it would be kept by the respondent. If the respondent is not sure how to answer, enumerators should probe on this question by encouraging the respondent to consider the price received for other pieces of agricultural equipment that have been sold in the area.

Small agricultural equipment

1. *Do you own any [small agricultural equipment], exclusively or jointly?*

- Codes: yes, exclusively; yes, jointly; yes, both exclusively and jointly; no (skip to next category)

415. This question measures reported ownership of small agricultural equipment as well the form of ownership; i.e. whether the equipment is owned exclusively or jointly by the respondent. Categories may include but not be limited to axes, hoes, spades, watering cans, rakes, wheelbarrows, pruners, weeders, etc. Countries will need to determine the categories of small agricultural equipment to include based on prevalence rates from existing agricultural or household surveys as well as policy needs.

Consumer durables

416. Consumer durables—such as stoves, cell phones, refrigerators, furniture, televisions, radios, bicycles and vehicles—are important for the wealth they represent; for poorer households and individuals it is often these items that represent a large share of wealth.

417. There may be many consumer durables in a household with various configurations of rights and ownership. For this reason the approach proposed below is to ask whether the respondent owns any of the categories listed. This approach only provides information on the prevalence and form (exclusive or joint) of reported ownership of consumer durables, by type of durable and sex of the owner.

1. *Do you own any [consumer durable category], exclusively or jointly?*
    - Codes: yes, exclusively; yes, jointly; yes, both exclusively and jointly; no (skip to next category)

418. This question measures reported ownership of consumer durables as well the form of ownership; i.e. whether the durable is owned exclusively or jointly by the respondent. Categories may include but not be limited to cars, motorcycles, bicycles, computers/laptops, cell phones, and radios. Countries will need to determine the categories of consumer durables to include based on prevalence rates from existing data sources as well as policy needs. In general, however, countries should include durables of high value, such as motor-vehicles, as well as those durables that are of lower value but that may be of particular importance to women, such as cell phones. Also include a category of "other (specify) to create an exhaustive module on consumer durables. Because some durables may be owned collectively by all household members while others are owned individually, countries can exclude those durables that are reported as being collectively owned during focus group discussions or pilot testing of the questionnaire.

2. *If this [category of consumer durable] were to be sold today, how much could be received for it?*

419. These guidelines recommend collecting valuation data for all motor-vehicles and other high-value consumer durables. Respondents should estimate the current value based on

the quality of their particular durable. The full amount that would be received in the sale should be listed, regardless of whether all of it would be kept by the respondent. If the respondent is not sure how to answer, enumerators should probe on this question by encouraging the respondent to consider the price received for other durables of the same type that have been sold in the area.

Valuables

420. Valuables, including jewellery, paintings, and semi-precious and precious metals and stones, function as a store of value and play an important role in consumption-smoothing and individual and household wealth since they can generally be sold quickly for cash.

421. A challenge of collecting data on valuables is that it can be difficult for the respondent to itemize, or report the number of, each type of valuable he or she owns. For example, asking the respondent to count the number of pieces of jewellery she owns is relatively meaningless.

422. The following module collects data on the prevalence of reported owner.

1. *Do you own any [valuables category], exclusively or jointly?*
    - Codes: yes; no

423. This question measures reported ownership of valuables. Categories of valuables may include, but not be limited to, jewellery, semi-precious and precious metals, semi-precious and precious stones, and paintings. Countries will need to determine the categories to include based on prevalence rates from existing data sources or, if such data does not exist, from qualitative work, such as focus group discussions. For certain valuables of particular importance to women, such as jewellery in some countries, national statistical agencies may also wish to collect information on the form of ownership (i.e. exclusive or joint) by recoding the responses, accordingly (see the module on consumer durables for an example).

Other real estate

424. The category of other real estate includes residential buildings and spaces other than the principal residence, other buildings for commercial use and non-agricultural land.

1. *Do you own any other real estate, including other residential dwellings/ buildings, commercial buildings or non-agricultural plots of land?*
    - Codes: yes; no (skip to next module)

425. This is the screening question to determine whether the respondent should complete the module. It measures the reported ownership of any other real estate (not by type of real estate). Categories of real estate may include residential dwellings/buildings, commercial buildings or non-agricultural plots of land. Countries will need to determine the categories of other real estate to include based on prevalence rates from prior household surveys as well as

policy needs and may want to further disaggregate the suggested categories based on analytical needs. If the respondent does not own any other real estate, skip to the next module as the remainder of this module is only administered to the respondent if she/he self-reports owning any other real estate.

Respondent roster of other real estate

2. *Please list each piece of other real estate that you own, exclusively or jointly with someone else.*

426. By recording each piece of other real estate owned by the respondent, a respondent roster of other real estate is created. This information also measures reported ownership of other real estate, by type of real estate. If more than one piece of the same type of other real estate is owned by the respondent (e.g. two non-agricultural plots of land), ask the respondent to provide a brief description of each piece and name them accordingly so they can be easily distinguished during the interview. The list of each piece of other real estate owned by the respondent should be provided before proceeding to the next question.

3. *Is this [real estate] located inside or outside of the country?*"
    - Codes: inside; outside

427. Note that this question is only necessary if countries wish to use the data collected on other real estate for informing their System of National Accounts as real estate located outside of the country is not included in the SNA.

Types and forms of ownership

4. *Does anyone jointly own this [other real estate] with you, including household members and non-household members?*
    - Codes: yes; no (skip to Q7)

428. The question measures the form of reported ownership of the other real estate; i.e. whether the respondent owns the real estate exclusively or jointly with one or more persons. Because the benefits of ownership may differ if one owns the real estate alone or jointly, countries are encouraged to collect information on the form of reported ownership.

5. *How many other persons jointly own this [real estate] with you?*

429. If the respondent shares reported ownership of the real estate, information on the number of joint reported owners is needed for calculation of the gender wealth gap, as discussed in Part IV of these guidelines.

6. *Is one of these joint owners your spouse or partner?*
    - Codes: yes; no

430. Identifying whether the respondent jointly owns the real estate with his/her spouse or partner allows for the construction of an indicator on joint (reported) ownership other real estate between spouses, the most common form of joint ownership. Other patterns of joint ownership are also possible, such as between siblings or a parent and an adult child, and countries that are interested in identifying these patterns are encouraged to ask, in place of Qs 5-6, "*Who are the joint owners, including household members and non-household members*?" The Person IDs assigned to household members in the household roster should be recorded for each household member who is a joint reported owner and each non-household member who jointly owns the other real estate should be assigned a non-household member ID code (e.g. 100).

7. *Is there an ownership document for this [other real estate]?*

- Codes: yes, a title deed; yes, a certificate of customary ownership; yes, a certificate of occupancy; yes, a will; yes, a purchase agreement; yes, other (specify); no (skip to Q11)

431. This question identifies whether there is an ownership document for the other real estate and what type of document it is. There may be a range of types of documents that provide formal evidence of ownership, and national statistical agencies will need to customize the response categories according to their country context. Titles and deeds are one form of ownership document. Registration certificates document rights over property. In addition, where titling or registration is not complete, documents including wills or sales receipts provide some form of documented claim.

432. If an ownership document exists for the other real estate, it should be recorded independent of whether it has the name of someone in the household on it. If there is more than one type of document, the one that is held by someone in the household should be recorded. For example, if there is a deed, but the household member does not have it, but has an invoice or sales receipt, list the invoice, not the deed.

8. *Are you listed as an owner on the ownership document for this [other real estate]?*
    - Codes: yes, alone (skip to Q11); yes, jointly with one or more persons; no (skip to Q11)

433. This question measures documented ownership of other real estate. Documented ownership refers to the existence of any document an individual can use to claim ownership rights in law over the real estate by virtue of the individual's name being listed as an owner on the document. Because individual names can be listed as witnesses on an ownership document, it is important to ask if the respondent is listed "as an owner" on the document. As discussed above, while countries may want to ask the respondent to produce the document for the enumerator so that the enumerator can confirm that the respondent's name is listed on the document, these guidelines recommend that the measure of documented ownership *not* be conditional on the document being checked.

434. The question also measures the form of documented ownership of the other real estate; i.e. whether the respondent owns the real estate exclusively or jointly with one or more persons. Because the benefits of ownership may differ if one owns the real estate alone or jointly, countries are encouraged to collect information on the form of documented ownership.

9. *How many other people are listed as owner**s** on the ownership document, including household members and non-household members?*

435. If the respondent shares documented ownership of the real estate, information on the number of joint documented owners is needed for calculation of the gender wealth gap, as discussed in Part IV of these guidelines.

10. *Is one of these joint owners your spouse or partner?*
    - Codes: yes; no

436. Identifying whether both the respondent's name and the name of his or her spouse/partner are listed as owners on the ownership document allows for the construction of an indicator on joint (documented) ownership between spouses, the most common form of joint ownership. Other patterns of joint documented ownership are also possible, such as between siblings or a parent and an adult child, and countries that are interested in identifying these patterns are encouraged to ask, in place of Qs 9-10, "*Who else is listed as an owner on the ownership document, including household members and non-household members*?" The Person IDs assigned to household members in the household roster should be recorded for each household member who is a joint documented owner, and <u>each</u> non-household member who jointly owns the other real estate should be assigned a non-household member ID code (e.g. 100).

<u>Ownership rights</u>

11. *Do you have the right to sell this [other real estate]?*
    - Codes: yes, alone (skip to Q13), yes, jointly with one or more persons; no, someone else has this right (skip to Q13); no, it cannot be sold (skip to Q13)

437. This question obtains information on whether the respondent believes that he or she has the right to sell the real estate. When a respondent has the right to sell the real estate, it means that he or she has the right to permanently transfer it to another person or entity for cash or in kind benefits. To assess gender differences in the right to sell the real estate, it is useful to distinguish between the two "no" answers, identifying if the respondent is not the one who can sell the real estate (but someone else can sell it) or that the real estate cannot be sold (for example, due to cultural or legal norms).

12. Is one of the persons who jointly has the right to sell this [other real estate] your spouse or partner?

- Codes: yes; no

438. If the respondent's spouse/partner was identified as a joint reported or documented owner of the real estate, collecting information on whether the spouse/partner jointly has the right to sell the real estate enables analysis of whether joint owners have the same rights to the real estate. If countries choose to collect information on all joint reported and documented owners in Qs 5 and 9, respectively, then countries can ask, in place of this question, "*Which other household members also have the right to sell this [other real estate]*?" The Person IDs assigned to household members in the household roster should be recorded for each household member who has the right to sell the real estate. Note that information on the number of persons who have this right is not needed to calculate the gender wealth gap for other real estate.

13. Do you have the right to bequeath this [other real estate]?

- Codes: yes, alone (skip to Q15); yes, jointly with one or more persons; no, someone else has this right (skip to Q15); no, it cannot be bequeathed (skip to Q15)

439. This question obtains information on whether the respondent believes that he or she has the right to bequeath the real estate. When a respondent has the right to bequeath the real estate, it means that he/she has the right to give the real estate by oral or written will to another person(s) upon the death of the respondent. To assess gender differences in the right to bequeath the real estate, it is useful to distinguish between the two "no" answers, identifying if the respondent is not the one who can bequeath the real estate (but someone else can bequeath it) or that the real estate cannot be bequeathed (for example, due to cultural or legal norms).

14. Is one of the persons who jointly has the right to bequeath this [other real estate] your spouse or partner?

- Codes: yes; no

440. If the respondent's spouse/partner was identified as a joint reported or documented owner of the other real estate, collecting information on whether the spouse/partner jointly has the right to bequeath the real estate enables analysis of whether joint owners have the same rights to the real estate. If countries choose to collect information on all joint reported and documented owners in Qs 5 and 9, respectively, then countries can ask, in place of this question, "*Which other household members also have the right to bequeath this [other real estate]?*" The Person IDs assigned to household members in the household roster should be recorded for each household member who has the right to bequeath the real estate. Note that information on the number of non-household members who have this right is not needed to calculate the gender wealth gap for other real estate.

Acquisition of other real estate

15. How did you acquire this [other real estate]?

- Codes: purchased; inherited after the death of a family member; received as a gift; allocated by government program; through marriage; other (specify)

441. This question measures the mode of acquiring the other real estate. It refers to when the respondent first came into possession of the asset and presumably began deriving economic benefits from it. Because men and women often acquire assets through different means, understanding the modes of acquisition may provide insights for developing policies to ensure women's ability to acquire them. As such, national statistical agencies should include all relevant modes of acquisition and may want to add additional codes for when the real estate is received as an inheritance or as a gift to indicate who gave the inheritance/gift. This is particularly useful for gender analyses, since the information collected can indicate whether the real estate was received from the husband's family or the wife's family.

Value of other real estate

16. If this [other real estate] were to be sold today, how much could be received for it?

442. This question measures the value of the other real estate. Respondents should estimate the current value based on the location and quality of their particular real estate. The full amount that would be received in the sale should be listed, regardless of whether all of it would be kept by the respondent. If the respondent is not sure how to answer, enumerators should probe on this question by encouraging the respondent to consider the price received for other pieces of real estate of the same type that have been sold in the area.

Non-agricultural enterprise assets

443. This module collects information on the ownership and control of non-agricultural enterprise assets owned by the respondent that were not listed in earlier modules. In line with the Living Standards Measurement Study surveys, information on agricultural enterprises is not collected in this module because the entirety of assets owned by agricultural enterprises should be captured in the modules on agricultural land, livestock and agricultural equipment; if those agricultural-enterprises use assets that are rented instead of owned, the assets are beyond the parameters of this questionnaire.

444. An enterprise is an entity engaged in the production and/or distribution of some goods and/or services mainly for the purpose of sale whether fully or partly, no matter how small. A non-agricultural enterprise is an entity engaged in the production and/or sale of goods and services *other than* own-produced, non-processed agricultural products. As discussed in Part I of these guidelines, the sale of by-products of agricultural goods (such as cheese, beer, jam, or sweaters) is a non-agriculture enterprise in the manufacturing sector. The sale or trade of agricultural products purchased from non-household members is also a non-agricultural

enterprise, in the trade sector. Some other examples of non-agricultural enterprises include making mats, crafts, bricks, or charcoal; working as a builder or carpenter; selling firewood; running a street corner stall; providing services such as haircuts or massages; making local drinks, straw mats, carpets or baskets; any trade (in food, clothes or various articles) or any professional activity (like that of a private lawyer, a doctor, a carpenter, etc.) offering services for payment in cash or in-kind.

445. Note that while enterprises may be considered "assets" in the sense that holding the enterprises would bring a series of economic benefits to the owner, the SNA considers enterprises as economic institutional units, not assets. Thus, this module is design to collect data on the assets used by the enterprise, not on the characteristics of the enterprise.

1. *In the last week (Monday to Sunday) did you run or do any kind of business, big or small, for yourself or with one or more partners, even if it was for only one hour?*
    - Codes: yes(skip to Q3); no

446. This is the first of three screening questions in this module to determine whether the respondent owns a business. Countries should assess in advance through focus group discussions or testing of the questionnaire whether this question needs to be rephrased to capture smaller economic units that respondents may not identify as businesses, but that nonetheless should be measured in this module. For example, in Karnataka, India under the Gender Asset Gap Project, businesses were referred to as "economic activities" rather than "businesses" when it became clear during field testing that respondents did not consider small informal business activities to be businesses.[121] Alternatively, rather than asking if the respondent owned a business, the EDGE pilots in Uganda, Georgia, Philippines and Mongolia asked a detailed list of seven screening questions to capture the businesses owned by the respondent.[122]

2. *Do you have a business that you will definitely return to?*
    - Codes: yes; no (skip to next module)

447. This question aims to capture business owners who may have been absent from the business due to leave, illness or any other commitments during the 7-day reference period in Q1, but who will definitely return to it. If the respondent answered "no" to Qs 1-2, skip to the next module as the remaining questions in this module are only asked if the respondent reports owning an enterprise/business.

3. *Is your business in?*
    - Codes: farming, forestry, raising animals or fishing; a sector other than agriculture

[121] Doss, C. et al., 2011. Lessons from the field: Implementing individual asset surveys in Ecuador, Ghana, India and Uganda.

[122] The questionnaires fielded in Georgia, Mongolia, Philippines and Uganda under the EDGE project are available at http://unstats.un.org/edge

448. The question establishes the sector in which the business operates, distinguishing between agricultural activities and non-agricultural activities. The production and sale of non-processed agricultural goods (such as milk, wool, fruits, and vegetables) produced on own farm is an agricultural enterprise while the sale or trade of agricultural products purchased from non-household members and the sale of by-products of agricultural goods (such as cheese, beer, jam, or sweaters) is considered a non-agriculture (manufacturing) enterprise. If the enterprise owned by the respondent is engaged in the agricultural sector, skip to the next module as the remaining questions in this module are only asked if the respondent owns a non-agricultural enterprise. If the respondent owns more than one enterprise, at least one enterprise must be in the non-agricultural sector to proceed with the module. This question also measures reported ownership of non-agricultural enterprises.

Respondent roster of non-agricultural enterprises

4. *Please describe the kind of activity each non-agricultural enterprise is engaged in:*

449. The enumerator should list each non-agricultural enterprise described by the respondent to create a respondent roster of non-agricultural enterprises. The list of each non-agricultural enterprise owned by the respondent should be provided before proceeding to the next question.

5. *Is this business a…?*
   - Codes: Limited-liability enterprise; non-limited liability enterprise?

6. *What type of records or accounts does this [ENTERPRISE] maintain?*
   - Codes: No written account kept; informal records for personal use; simplified accounting format required for tax payment; detailed formal account (balance sheet and income statements)

450. Questions 5 and 6 measure whether the enterprise is incorporated (i.e. the production unit is a separate legal entity from its owners) or unincorporated. Consistent with the System of National Accounts (SNA) and the OECD Guidelines for Micro Statistics on Household Wealth, the assets owned by incorporated enterprises cannot be owned by the respondent and thus are excluded from the measurement of wealth at the individual or household level in these guidelines. If the enterprise is incorporated, skip to the next enterprise or the next module.

7. *Do you currently own any of the following [category of enterprise assets] that are used by the [enterprise]?*
   - Codes: yes, alone (skip to Q10; yes, jointly; no (skip to next enterprise (if more than 1 owned by respondent) or to next module)

451. The categories of enterprise assets are: 1) the current stock of physical capital, including all machinery, equipment, and furniture used for the business that were not listed earlier in any of the other modules; 2) the current stock of inputs or supplies, including raw materials; and 3: the current stock of finished merchandise (goods for sale). If the enterprise does not own assets in any of these three categories, skip to the next enterprise if the respondent reported owning more than one enterprise or to the next module.

452. Note that only those assets that were not listed in the previous modules should be included here to avoid the double-counting of assets. Any motor-vehicles used for the enterprise should be listed and valued in the module on consumer durables. Any land and buildings used for enterprises should be listed and valued in the module on other real estate.

8. How many persons jointly own [category of enterprise asset]?

453. If the respondent jointly owns [category of enterprise assets], information on the number of joint owners is needed for calculation of the gender wealth gap, as discussed in Part IV of these guidelines.

454. Note that this question should be asked for each category of enterprise assets the respondent reports owning in Q7. Qs-8-10 should be asked for each category before proceeding to the next category.

9. Is one of these joint owners your spouse/partner?

- *Codes: yes; no*

455. Identifying whether the respondent's spouse/partner is a joint owner of the category of enterprise assets allows for the construction of an indicator on joint ownership of enterprise assets between spouses, the most common form of joint ownership. Other patterns of joint documented ownership are also possible, such as between siblings or a parent and an adult child, and countries that are interested in identifying these patterns are encouraged to ask, in place of Qs 8-9, "*Who else is listed as an owner on the ownership document, including household members and non-household members*?" The Person IDs assigned to household members in the household roster should be recorded for each household member who is a joint documented owner, and each non-household member who jointly owns the category of enterprise assets should be assigned a non-household member ID code (e.g. 100).

10. What is the total value that would be received for this [category of enterprise asset] if it were sold today?

456. For each category of enterprise assets that the respondent reported owing in Q7, he or she should estimate in local currency how much would be received in total if the all of the assets in that category (e.g. all finished merchandise) were sold today. Include codes for "does not know" and "refuses to answer."

457. As discussed above, because the SNA does not consider enterprises to be assets, the module does not include a question on valuing unincorporated enterprises in addition to valuing the assets held by the enterprise.

Liabilities

458. To calculate measures of net wealth, information on credit and debt is needed. Loans may be taken out either to purchase assets or for consumption, and these liabilities should be deducted from a person's gross wealth, as discussed in Part IV on measuring the gender wealth gap. If countries wish to estimate net wealth by asset (e.g. by dwelling, agricultural land or other real estate), then questions will need to be asked about whether there any outstanding financial obligations specific to these assets. One option is to ask the question, "Is there an outstanding loan on this [asset]?" in each of the asset modules and then to record only additional debts in the module on liabilities. This was the approach followed in Karnataka, India under the *Gender Asset Gap* project (GAGP); however, analysis of the data suggested that the instruction on where to record the different liabilities was not always followed and there was likely some double-counting of debts (i.e. debts were recorded in both the assets modules and the liabilities module). Moreover, checking and cleaning the data on liabilities was very time-consuming. As such, the present guidelines follow the recommendation of the GAGP to ask about all of the respondent's debts in one consolidated liabilities module rather than in multiple modules.[123]

1. *Do you owe money to any person or institution?*
    - Codes: yes; no (end of questionnaire); refuses to respond (end of questionnaire)

459. This is the screening question to determine whether the respondent should complete the module. If the respondent does not owe any money, including lines of credit, the module should be skipped as it is only administered to the respondent if she/he self-reports having any debts.

2. *Who is the person or institution that you owe?*
    - Codes: family; friend; employer; landlord; bank; private money lender; shop keeper; other (specify)

460. This question measures the source of the respondent's loan. National statistical agencies will need to customize the response categories according to their country context.

3. *What was the main purpose for seeking the loan?*
    - Codes: to buy principal dwelling; to buy agricultural land; to buy non-agricultural land; to pay education expenses; to pay health expenses; to pay for food; to purchase a vehicle; to purchase other consumer durables; to pay for ceremonial expenses (weddings, funerals, etc.) other (specify)

[123] Doss, C. et al., 2011. Lessons from the field: Implementing individual asset surveys in Ecuador, Ghana, India and Uganda.

461. This question measures the main purpose the respondent sought the loan. National statistical agencies will need to customize the response categories according to their country context and based on whether they wish to develop net wealth estimates by asset, as discussed above.

4. *Is anyone jointly responsible for paying back the loan with you, including household members and non-household members?*
    - Codes: yes; no (skip to Q7)

462. Because the person who borrowed the money may not be the same person who is responsible for paying back the loan, the question should be phrased as suggested, rather than as, "*Who jointly borrowed the money with you*?"

5. *How many other persons are jointly responsible for paying back the loan?*

463. If the respondent reports that he or she is responsible for paying back the loan with one or more persons, information on the number of joint borrowers is needed for calculation of the net gender wealth gap, as discussed in Part IV of these guidelines.

6. *Is one of these joint borrowers your spouse or partner?*
    - Codes: yes; no

464. Identifying whether the respondent is jointly responsible for the loan with his/her spouse or partner allows for analysis of debt patterns between spouses. Other patterns of joint debt-taking are also possible, such as between siblings or a parent and an adult child, and countries that are interested in identifying these patterns are encouraged to ask, in place of Qs 5-6, "*Who are the joint borrowers of this loan, including household members and non-household members?*" The Person IDs assigned to household members in the household roster should be recorded for each household member who is a joint borrower and <u>each</u> non-household member who is also responsible for paying back the loan should be assigned a non-household member ID code (e.g. 100).

7. *What is the remaining amount to be repaid on the loan?*

465. This question measures the outstanding amount to be repaid on the loan and should include principal plus interest. A response category for "refuses to respond" should also be included.

Financial assets

466. Financial assets constitute another important category of wealth, both for households and individuals, particularly in industrialized countries. A major challenge of measuring financial assets related to collecting valuation data. Enumerators may think it is inappropriate

to ask for account balances of financial assets and respondents may be reluctant to provide values. For example, the qualitative assessment of the EDGE pilot in Mexico revealed that saving tends to be a private matter, related to personal goals, and thus is not frequently subject to questioning or public discussion.[124] In Maldives, where a fraudulent scheme involving bank accounts transpired during the period of data collection for the EDGE pilot, the National Bureau of Statistics opted not to ask respondents to provide account balances. Given the sensitivity of asking about financial assets, it is recommended that the questions in this module be asked last in the questionnaire.

1. *Do you currently own any of the following: a bank account, a microfinance account, an informal savings program, stocks/shares, a pension fund, life insurance or another type of account?*
    - Codes: yes; no

467. This is the screening question to determine whether the respondent should complete the module. If the respondent does not own any financial assets, skip to the next module as the remainder of this module is only administered to the respondent if she/he self-reports owning any financial assets.

468. The question also measures the reported ownership of any financial assets (not by type of financial asset). Categories of financial assets may include, but not be limited to, bank savings, savings and credit associations, post office accounts, informal savings accounts, savings accounts through NGOs, stocks, bonds, pension funds, and insurance funds. Sums of money that respondents lend to family or friends are also financial assets and should be included in estimates of the gender wealth gap.

469. Countries will need to determine the categories of financial assets to include based on prevalence rates from prior financial or household surveys as well as policy needs. For example, countries with limited access to financial services may want to include a category for cash savings.

470. Countries should also assess how best to present the categories of financial assets to the respondent. A key recommendation to emerge from the EDGE pilot in Mexico was to divide the module on financial assets into formal and informal financial assets, beginning with informal assets. This approach was suggested because respondents with restricted access to formal financial services were often daunted when confronted with the array of service providers to whom they do not have access and as a result, were reluctant to discuss their "insignificant" (i.e. informal) savings with the enumerators.[125]

471. Definitions of common financial assets are as follows:

[124] Report Assessing Mexico's Pilot Survey on Measuring Individual Level Asset Ownership and Entrepreneurship from a Gender Perspective. 2016. Unpublished.

[125] Report Assessing Mexico's Pilot Survey on Measuring Individual Level Asset Ownership and Entrepreneurship from a Gender Perspective. 2016. Unpublished.

- A m**icrocredit** account is a source of financial services for entrepreneurs and small businesses lacking access to banking and related services. The two main mechanisms for the delivery of financial services to such clients are 1) relationship-based banking for individual entrepreneurs and small business and 2) group based models where several entrepreneurs come together to apply for loans and other services as a group.
- An **informal savings group** is a group of individuals who agree to save and borrow together.
- **Equity** is ownership interest or claim of a holder of stock in a company.
- Governments, corporations and many other institutions sell **bonds**. Generally, when a person buys a bond, he is loaning his money to the institution selling the bond and the institution promises to repay the principal along with interest by a specified date. Some bonds do not pay interest but all bonds require a repayment of a principal.
- A **pension fund** is a fund established by an employer to pay retirement benefits to employees, but the definition and structure of pensions vary widely across countries. When pensions are held in savings accounts, the value may be asked. However, it is challenging to estimate the value of pensions that provide a stream of income over time, such as annuities,[126] so the present guidelines recommend not asking for their monetary value.

Respondent roster of financial assets

2. *Please list each financial asset that you own, exclusively or jointly.*

472. By recording each financial asset owned by the respondent, a respondent roster of financial assets is created. This information also measures reported ownership of financial assets, by type of financial asset. If more than one of the same type of financial asset is owned (e.g. two bank accounts), each one should be listed, starting with the most valuable one. The list of each financial owned by the respondent should be provided before proceeding to the next question.

Type and form of ownership

3. *Is your name on the account as an owner?*
   - Codes; yes, alone (skip to Q6); yes, jointly with one or more persons; no (skip to Q6)

[126] Doss, C. et al., 2011. Lessons from the field: Implementing individual asset surveys in Ecuador, Ghana, India and Uganda.

473. This question measures whether the respondent is a documented owner of the financial asset by virtue of his or her name being listed on ownership documents for the account. It also measures the form of documented ownership of financial assets; i.e. whether the respondent owns the financial asset exclusively or jointly with one or more persons. Because the benefits of ownership may differ if one owns financial assets alone or jointly, countries are encouraged to collect information on the form of documented ownership.

4. *How many other persons' names are on the account for this [financial asset], including household members and non-household members?*
   - Codes: yes; no (skip to Q7)

474. If the respondent jointly owns the financial asset, information on the number of joint reported owners is needed for calculation of the gender wealth gap, as discussed in Part IV of these guidelines.

5. *Is the name of your spouse or partner listed on the account as an owner for this [financial asset]?*
   - Codes: yes; no

475. Identifying whether the respondent jointly owns the financial asset with his/her spouse or partner allows for the construction of an indicator on joint (reported) ownership of financial assets between spouses, the most common form of joint ownership. Other patterns of joint ownership are also possible, such as between siblings or a parent and an adult child, and countries that are interested in identifying these patterns are encouraged to ask, in place of Qs 5-6, "*Who are the joint owners, including household members and non-household members?*" The Person IDs assigned to household members in the household roster should be recorded for each household member who is a joint reported owner and each non-household member who jointly owns the financial asset should be assigned a non-household member ID code (e.g. 100).

Value of financial assets

6. *What is the current value of the financial asset?*

476. This question measures the value of financial assets. Respondents should be encouraged to estimate the current value of the account in the currency in which it is held. As discussed above, respondents may be reluctant to provide account balances, and enumerators should be trained accordingly on how to solicit sensitive information. The training should include the need to emphasize to respondents the security and confidentiality of providing such information. An alternative approach is to provide a range of values as response categories and use the average for calculation of the gender wealth gap. A response category for "refuses to respond" should be included with either approach.

Loans made/given

477. The following set of questions asks information about the sums of money respondents lend to family or friends, which are also considered financial assets.

7. *Does any person or any business owe you any money?*
    - Codes: yes; no (skip to next module)

478. This is the screening question to assess whether the remaining questions in this module should be asked. If no other persons currently owe the respondent any money, skip to the next module.

8. *Who was the money lent to?*
    - Codes: family; friend; client/customer; employee; other (specify)

479. The information collected in this question allows for analysis of patterns of lending, by sex of the lender. National statistical agencies should customize the response categories according to the country context.

9. *Did anyone jointly lend the money with you, including household members and non-household members?*
    - Codes: yes; no (skip to Q12)
10. *How many other people jointly lent the money with you?*

480. If the respondent jointly lent money, information on the number of joint lenders is needed for calculation of the gender wealth gap, as discussed in Part IV of these guidelines.

11. *Is one of the joint lenders your spouse/partner?*
    - Codes: yes; no

481. Identifying whether the respondent jointly lent the money with his/her spouse or partner allows for analysis patterns of lending between spouses. Other patterns of lending are also possible, such as between siblings or a parent and an adult child, and countries that are interested in identifying these patterns are encouraged to ask, in place of Qs 10-11 "*Who are the joint lenders, including household members and non-household members?*" The Person IDs assigned to household members in the household roster should be recorded for each household member who jointly lend the money and each non-household member who jointly lent the money should be assigned a non-household member ID code (e.g. 100).

5.2.2. Questionnaire template for a module on asset ownership and control at the individual level

482. While many countries will opt to append a module on asset ownership and control to an existing nationally-representative household survey instead of implement a stand-alone

survey, a template for the module is not presented in these guidelines because the module will vary considerably according to the objectives of the data collection. For example, some countries may wish to append the full stand-alone survey to a host survey, and thus the content presented above would not change. Given that the stand-alone survey took 30-35 minutes, on average, to field in each of the EDGE stand-alone pilots, it is feasible for countries to consider this option depending on the main survey they are appending to.

483. Other countries may want to collect data on the full range of physical and financial assets included in the stand-alone survey, but limit the number of questions asked about each asset. For instance, some countries may wish to only ask questions about the types and forms of ownership rights for each asset, which would enable countries to begin to monitor gendered patterns of asset ownership and to assess the extent to which the full range of rights is correlated with ownership in the country. Other countries might wish to also ask questions about the value of assets, allowing for analysis of gender wealth gaps, since the value of men's and women's assets may differ. Finally, some countries may wish to collect data only on a few key assets, such as dwellings, agricultural land and other real estate, but ask the full set of questions for each asset.

484. Once a national statistical agency has a clear understanding of the survey's objectives, as discussed earlier in Part III of these guidelines, it can refer to the stand-alone survey for designing a module on asset ownership and control. If the module will be appended to a household survey which does not collect a household roster of assets, countries can draw from the questionnaire template for a stand-alone survey administered to one randomly selected adult household member presented above. If the module will be appended to a household survey that does collect a household roster of assets, countries can refer to the questionnaire template for a stand-alone survey administered to multiple adult household members and/or for the purposes of estimating household wealth shown in Annex A.

5.2.3. Template for a minimum set of questions to integrate into an existing household survey

485. As discussed in Section 2, countries may choose to integrate additional questions into the survey instrument in order to measure the prevalence of asset ownership at the individual level. This approach is possible if the household survey collects self-reported data from one or more randomly selected respondents or all household members.

486. These guidelines recommend restricting the minimum set of questions to dwellings and agricultural land because all other assets will have to be disaggregated by type to collect useful data. For example, asking, "*Do you own any consumer durables?*" will not yield information on the type of durables the respondent owns so the question will need to be asked for each *type* of consumer durable. Countries may opt to select the most important types of consumer durables to ask about (e.g. vehicles or cell phone), keeping in mind the need to keep the number of questions minimal so as not to burden the main survey. Below are the recommended minimum set of questions on dwellings and agricultural land to integrate into an existing household survey:

Principal dwelling

1. *Do you own this dwelling*?
    - Codes: yes, alone; yes, jointly with someone else; no

487. This question measures reported ownership of the principal dwelling. Reported ownership captures the respondent's self-perception of his/her ownership status, irrespective of whether his/her name is listed as an owner on an ownership document for the dwelling. The question also measures the form of reported ownership of the dwelling; i.e. whether the respondent owns the dwelling exclusively or jointly with one or more persons. Because the benefits of ownership may differ if one owns the dwelling alone or jointly, countries are encouraged to collect information on the form of reported ownership.

2. *Is there an ownership document for this dwelling*?
    - Codes: yes, a title deed; yes, a will; yes, a sales receipt; no (if Q1 also = no skip remaining questions on dwelling); don't know (if Q1 = no skip remaining questions on dwelling)

488. This question identifies whether there is an ownership document for the dwelling and what type of document it is. There may be a range of types of documents that provide formal evidence of ownership, and national statistical agencies will need to customize the response categories according to their country context. Titles and deeds are one form of ownership document. Registration certificates document rights over property. In addition, where titling or registration is not complete, documents including wills or sales receipts provide some form of documented claim. If the dwelling is a co-op, then the person may have shares in the co-op rather than a deed.

489. If an ownership document exists for the dwelling, it should be recorded independent of whether it has the name of someone in the household on it. If there is more than one type of document, the one that is held by someone in the household should be recorded. For example, if there is a deed, but the household member does not have it, but has an invoice or sales receipt, list the invoice, not the deed. If an ownership document does not exist for the dwelling and the respondent did not self-report ownership of the dwelling in Q1, skip to the next module as the remainder of this module is only administered to the respondent if she/he owns the dwelling.

3. *Are you listed as an owner on the ownership document for the dwelling?*
    - Codes: yes, alone; yes, jointly with one or more persons; no (if no AND Q1 = no skip remaining questions on dwelling).

490. This question measures documented ownership of the principal dwelling. Documented ownership refers to the existence of any document an individual can use to claim ownership rights in law over the dwelling by virtue of the individual's name being

listed as an owner on the document. Because individual names can be listed as witnesses on an ownership document, it is important to ask if the respondent is listed "as an owner" on the document. While countries may want to ask the respondent to produce the document for the enumerator so that the enumerator can confirm that the respondent's name is listed on the document, these guidelines recommend that the measure of documented ownership *not* be conditional on the document being checked.[127] If the respondent is not a documented owner and did not self-report ownership of the dwelling in Q1, skip to the next module as the remainder of this module is only administered to the respondent if she/he self-reports ownership of the dwelling.

491. The question also measures the form of reported ownership of the dwelling; i.e. whether the respondent owns the dwelling exclusively or jointly with one or more persons. Because the benefits of ownership may differ if one owns the dwelling alone or jointly, countries are encouraged to collect information on the form of documented ownership.

4. *Do you have the right to sell this dwelling?*
- Codes: yes, alone; yes, jointly with someone else; no, someone else has this right; no, it cannot be sold

5. *Do you have the right to bequeath this dwelling?*
- Codes: yes, alone; yes, jointly with someone else; no, someone else has this right; no, it cannot be bequeathed

Agricultural land

1. *Do you own any agricultural land?*
   - Codes: yes, alone only; yes, jointly only; yes, both alone and jointly; no, does not own

492. This question measures reported ownership of agricultural land. Reported ownership captures the respondent's self-perception of his/her ownership status, irrespective of whether there is an ownership document for the land that the respondent is listed on as an owner.

2. *Is there an ownership document for any of the land that you own?*
   - Codes: yes; no; don't know

493. This question identifies whether there is an ownership document for any of the agricultural land the respondent owns and what type of document it is. There may be a range of types of documents that provide formal evidence of ownership. Registration certificates

[127] In the EDGE pilot study in Uganda, where respondents were asked to produce the ownership documentation, they were able to do so in only 25 percent of interviews that reported documentation for at least one asset. The low incidence may be due to the respondent's refusal or their inability to locate the document (Kilic and Moylan 2016)

document rights over property. In addition, where titling or registration is not complete, documents including wills or sales receipts provide some form of documented claim.

494. If an ownership document exists for the parcel, it should be recorded independent of whether it has the name of someone in the household on it. If there is more than one type of document, the one that is held by someone in the household should be recorded. For example, if there is a deed, but the household member does not have it, but has an invoice or sales receipt, list the invoice, not the deed.

3. *Is your name listed as an owner on any of the ownership documents?*
- Codes: yes; no; refuses to respond

4. *Do you have the right to sell any of the land you own?*
- Codes: yes, alone only; yes, jointly only; yes, both alone and jointly; no, someone else has this right; no, none of the land can be sold

5. *Do you have the right to bequeath any of the land you own?*
- Codes: yes, alone only; yes, jointly only; yes, both alone and jointly; no, someone else has this right; no, none of the land can be bequeathed

5.3. Testing the questionnaire

495. As previously mentioned, countries are encouraged to conduct their own background research for the purpose of customizing the model questionnaire presented above to the country context. After the questionnaire has been customized, several methods for testing the questionnaire should be considered, including expert reviews, cognitive interviewing, field pretests and randomized experiments. The decision of which testing methods to employ will be based on the available survey budget and whether the survey questions are implemented for the first time. At the minimum, statistical offices should use expert reviews and field pretesting of the questionnaire. However, when a survey on asset ownership is implemented for the first time, with a new questionnaire, focus groups and cognitive interviews should also be conducted.

496. Testing of the questionnaire should assess three aspects: (a) whether it covers the assets and aspects of asset ownership that are relevant in the country context and uses terms that are clearly understood by the respondents (referred to as content standards); (b) the ability of respondents to formulate answers to individual questions (cognitive standards); and (c) the ability of interviewers and respondents to easily complete the entire questionnaire (usability standards).[128] National statistical offices can use several methods to evaluate draft survey questionnaires, as described below.[129]

497. ***Expert reviews.*** Expert reviews ensure that the questionnaire collects the information needed to achieve the objectives of the survey and in the form needed, including the proper

[128] Groves and others, 2009. *Survey Methodology*.

[129] Groves and others, 2009. Survey Methodology.

structure of the questionnaire and flow of the questions, wording of the questions, response categories, instructions to interviewers and skip patterns. This method is easiest to carry out at minimal expense and all EDGE pilots implemented it. Reviewers should be questionnaire design experts and subject matter experts, some of whom may be in the group of stakeholders involved in the planning and implementation of the survey. Subject matter experts and research analysts can have a key role in identifying aspects of asset ownership that are relevant in the country context but that have not yet been included in the questionnaire. They can also ensure that the data are collected in the format and detail needed to achieve the objectives of the survey.

498. Potential problems in formulating questions and categories of answers can also be re revealed, including: unclear purpose; reference to information that respondents are unlikely to know or recall; complex syntax; vague, ambiguous or imprecise terms or unfamiliar technical terms; misleading or incorrect presuppositions; and mismatch between the questions and the answer categories.[130]

499. ***Focus groups.*** Focus groups may be involved even before developing a survey questionnaire and/or when considering customizing a given model questionnaire. Focus group discussions can explore what members of a target population think about asset ownership and what terms they use in talking about them. Focus groups consist of a small number of participants (six to ten) and a moderator. Usually, the participants are selected to form a homogeneous group, and more than one focus group should be mounted to cover different subpopulations in the country. During discussions the moderator follows a set of pre-identified topics (but no scripted questions or probing questions) and the participants are encouraged by the moderator to express freely their point of view on those topics.

500. ***Cognitive interviews.*** Cognitive interviews are conducted with individual persons for the purpose of understanding how respondents understand the questions in the draft questionnaire and how they formulate their answers. The person conducting the cognitive interview may be a research scientist, cognitive psychologist, expert in survey question methodology, or an interviewer with special training or experience in question evaluation. Cognitive interviewing may involve different techniques, including requiring respondents to (a) think aloud / verbalize their thoughts as they answer a question or after they answered a set of questions / section of a questionnaire; (b) paraphrase some questions in their own words or even provide definitions for key terms in the question; (c) answer additional probing questions to reveal why specific answers were given; and (d) rate how confident they were in giving answers to specific questions. Cognitive interviews may be video- or audio-recorded; alternatively, interviewers may take notes. The information obtained can be used to revise questions and categories of answers.

501. ***Field pretests***. Field pretests consist of a small number of interviews, typically up to 100, using field procedures similar to the full-scale survey. The purpose is to evaluate the entire questionnaire in different settings (for example in large cities, small towns, rural areas; areas of the country that have different tenure systems or different marital regimes).

[130] Groves and others, 2009. *Survey Methodology*.

Interviewing protocols may also be tested at the same time. The pretest interviews may be conducted by statistical office staff or field supervisors. At the end of the field prestests, the interviewers should be debriefed on which questions worked in the field and which did not. Interviewers can often offer suggestions on how to improve questions and categories of answers. Data obtained during the pretest may be entered and tabulated to reveal items with high rates of missing data that may need to be revised or removed.

502. In some field pretests the observations on how questions are asked and answered may be more systematic, using a technique called behavior coding. Interviews may be recorded, with the permission of the respondent. After the field pre-test the behavior of the interviewer and the respondent is coded consistently across interviews using the same categories of assessment. Alternatively, the coding is done during the interview by a third person present at the administration of the questionnaire. The technique enables tabulating rates of specific respondent behavior such as asking for clarifications, giving answers that are inadequate for questions, or interrupting the question reading, which may be indicative of poorly phrased questions. At the same time, the technique provides information on interviewer's behavior (such as whether the question was read in such a way that its meaning was altered), which may be controlled for when analyzing information on respondents' behavior.

503. ***Randomized or split-ballot experiments.*** Generally, randomized or split-ballot experiments can be conducted for the purpose of comparing different versions of the questionnaire or different methods of data collection and field procedures. These different questionnaires or procedures are covered separately in random portions of the sample. An example is the Methodological Experiment on Measuring Asset Ownership from a Gender Perspective (MEXA) implemented in Uganda as part of the EDGE project. As described in Box 3 in Part I, MEXA tested the relative effects of five different approaches to survey respondent selection on individual-level measurement of asset ownership. One of the key findings that informed these guidelines was that information on individual-level ownership by proxy from the household head yields different estimates of women's and men's asset ownership than asking respondents to self-report their ownership status.

504. Nevertheless, randomized experiments can be costly and they need tight supervision in the field to control for other factors that may influence the results obtained in the different samples. More importantly, although these experiments can demonstrate that the different versions of the instruments or procedures produce different results they cannot resolve the question on which version produces better data, unless external validation data can be used to check survey responses or strong theoretical reasons are at the basis for deciding that one version of the questions is better than another.

5.4. Designing and testing the CAPI questionnaire

505. This section presents general issues related to designing and testing of the CAPI questionnaire. As discussed in the section on modes of data collection, an increasing number of countries are considering using computer-assisted interviewing for the purpose of increasing the quality and timeliness of data. In countries choosing this mode of data collection for asset ownership, the designers of the CAPI questionnaire should pay particular

attention to two aspects. First, they should ensure that the complexity of the questionnaire, given by the multiple units of observation and rosters, is reflected in the CAPI questionnaire, through proper nesting of various sections and subsections. This aspect should also be verified at the testing stage. A second aspect is related to the use of automatic procedures to randomly select the person to be interviewed about own assets.

Designing the CAPI questionnaire

506. Designing a CAPI questionnaire is not necessarily difficult.[131] The CAPI questionnaire should be developed after the paper questionnaire is finalized and it should include all the information planned to be collected and covered in the paper questionnaire. However, it should be noted that what might appear as a single question in a paper questionnaire may correspond to one or more questions in the CAPI questionnaire. Finally, recording of the information obtained from the respondents basically functions as data entry in CAPI, therefore CAPI designers should have a good understanding of the types of variables in the database that will correspond to each question in the questionnaire.

507. Most of questions included in the CAPI questionnaire are for the purpose of information gathering during the interview, and, once the interview starts, those questions are the only ones displayed. However, some questions may have different purposes. Some are pre-filled with information that are useful for enumerators in completing their field assignments, such as the identification of enumeration area, household address, household identification number, and identification number for the enumerator. Other questions are to be completed by the supervisors, once the enumerator completes the interview and sends it for checking and approval; while others have the sole purpose of being used in validation and enabling conditions.

508. How information is displayed on the device screen is important. More than one question should be displayed at a time, to help orient the interviewers in the overall flow of the questionnaire. The interviewers should be able to navigate easily through the questionnaire and immediately understand, for example, which text they should read out loud and which contains instructions for them. This can be done by using different graphic characters and colour variation in displaying information that has different purposes. Interviewers should also be able to spot immediately messages generated by the software application when some questions have been left unanswered or the answers given are not within the range expected.

509. One of the most important tasks in designing a CAPI questionnaire is implementing properly skip patterns and validation checks. In a survey on asset ownership, not every respondent will be asked every question in the questionnaire. Depending on the answers to some questions, other questions will be skipped. For example, if a person does not own a particular asset, questions related to the mode of acquisition or value of that asset are skipped. In CAPI questionnaire design, skip patterns are implemented through the use of enabling

[131] For more information on CAPI design refer to: World Bank, Survey Solutions. *Questionnaire Designer-User's Guide*. Available at http://siteresources.worldbank.org/INTCOMPTOOLS/Resources/8213623-1380598436379/designer.pdf

conditions for a question, which determine whether that question is displayed or not conditional to answers in one or more previous questions. It should be stressed that once errors are made in the structure of the CAPI questionnaire, enumerators have no power in correcting them in the field. Therefore additional care must be taken to ensure that skips are correctly placed so that relevant questions are not excluded in the interview. This requires a thorough review of the logical conditions implemented in the CAPI questionnaire design and testing of the questionnaire.

510. Implementation of validation conditions, which determine whether an answer recorded is acceptable, i.e. whether it is within the expected range of values, is particularly important in the CAPI questionnaire design. Control rules that would be performed during the data entry stage in a survey using paper questionnaire can be implemented in the design of the electronic questionnaire. There are two types of errors that can be managed: range errors (for example the age of a person recorded as being 157 years) and inconsistency errors (for example the age of a person is not equal to the difference between the current date and the date of birth). When errors occur, error messages can be displayed to alert the interviewer to probe the respondent or to correct the answer wrongly entered.

511. Another important aspect is the flow of the questionnaire, in other words, the order in which the questions appear on the screen and are administered to the respondent. This aspect is particularly relevant in the context of complex questionnaires dealing with multiple inter-related sections and rosters (including a household members' roster and potentially several separate rosters of assets owned). This is the case of the questionnaire on asset ownership. When designing the CAPI questionnaire, the nesting of sections, sub-sections and questions needs to be carefully created, to ensure that the questions appear on the screen as planned. Similarly, when more than one person is interviewed in each household, adequate nesting is also required to enable proceeding with a new individual interview only once the previous individual interview has been completed.Finally, some elements of design may involve using more complicated macros or developing new functions. This may be the case, for example, when using automatic procedures to randomly select the person to be interviewed about own assets.

Testing the CAPI questionnaire

512. An initial test of the CAPI questionnaire should be conducted by survey team members who are familiar with the questionnaire. This will help to resolve the most obvious errors prior to the field pre-test. A key aspect to verify at this stage is whether the flow of the questionnaire is as intended, in other words, whether a proper nesting was used to integrate the multiple rosters and sections of the questionnaire on asset ownership.

513. The field pre-test will be the first opportunity to test the entire CAPI –based data collection system in the environment in which it is to be used. All components of the system should be checked, including synchronization with the headquarters, accessing work assignments, completing several interviews with real households, transferring completed questionnaires and allowing for supervisors' checks and approval, receiving the data at the

headquarters and enabling additional checks, implementation of additional validation rules and testing of the database structure.

514. The questionnaire incorporating the revisions suggested by the field pre-test should be used to train the interviewers and supervisors, including in the field practice. The field practice will also test the communication and data transfer procedures and the entire network infrastructure. Complete interviews implementing the interviewing protocol established for data collection in the field should be followed. A final questionnaire should be prepared based on observations from the field practice.

5.5. Survey manuals

Manual of instructions for field workers

515. As with any survey conducted by the national statistical agency, a detailed manual of instruction should be prepared for supervisors and enumerators prior to the start of field training. The manual should be prepared in a language a typical interviewer can understand easily and serve as guidance during training as well as a reference document during field operations.

516. All aspects of the survey should be covered in the manual. Some components will be similar to other surveys, including, for example, administrative responsibilities of interviewers, rules of proper behavior and dress, and strategies for minimizing nonresponse in the survey. Other aspects, however, should be specific to data collection on asset ownership, including (a) the general background and purpose of the survey; (b) instructions for selecting the ultimate sample units (the households) and determination of appropriate respondent(s) in each household; (c) strategies for developing rapport with respondents and asking sensitive questions, such as about land ownership or the value of assets; and (d) detailed instructions and specifications for each item in the questionnaire on asset ownership.

517. The manual for enumerators should cover the following aspects: [132]

(a) General background and purposes of the survey, the scope of the information, and the general type and coverage of the sample;
(b) Administrative responsibilities of interviewers in terms of managing materials, proper planning and organization of their workload, procedures for reporting progress and problems, preparation of necessary administrative forms;
(c) Basic interviewing rules in terms of proper behavior and dress, the need for proper identification, courtesy in interviewing persons in all walks of life, appropriate ways of introducing the survey,
(d) Instructions for selection of ultimate sample units (the households) and determination of appropriate respondent(s) in each household;
(e) Importance of and strategies for minimizing nonresponse in the survey, including arranging for return visits and procedures for dealing with refusals;

[132] United Nations, 1984. *Handbook of household surveys.*

(f) Detailed instructions and specifications for each item in the questionnaire, permissible types of probing, tactful ways of dealing with inconsistencies, methods of recording information, types of notes and explanations needed.

518. Additional information is required for field supervisors, to aid them in their supervisory responsibilities.[133] These include:

(a) Procedures for organizing and controlling the flow of materials to and from the field;
(b) Means of monitoring field work, importance of adherence to timetable, procedures for field review of completed questionnaires, and application of quality control procedures;
(c) Steps to take when serious errors are discovered;
(d) If supervisors are involved in the recruitment and training of interviewers, additional provisions on these matters should be covered.

519. In addition to the manuals, other training materials may be developed, including: home study materials that interviewers can study at home before attending training sessions, including instructional material and test exercises; materials for group training sessions, including test exercises, recordings of illustrative interviews, slides and other visual aids that can show mapping materials, questionnaire forms and the like.

CAPI manual(s)

520. In addition to the manuals of instructions for field workers, manuals providing practical reference on how enumerators and supervisors can perform CAPI-related tasks should be developed.[134] These manuals may cover practical issues on how enumerators should sign in and out of the software application used (thus preventing others from accessing the sensitive data recorded on the device), and use the tablet for the purpose of accessing and managing their work assignment. Information on managing work assignments may include details on how to check the status of each assignment (including whether the assignment has been completed or not by the enumerator and approved or rejected by the supervisor); how to open, close or resume an assignment; and how to transfer completed questionnaires and receive new assignments through a synchronization procedure. A section of the manual may be dedicated to examples of key issues that the enumerators should pay particular attention to in the field, including, for example, types of questions that are more complicated and how to use rosters. A separate section may also be dedicated to quality checks, including checking that all questions have been completed and answers are valid, and how to leave comments that supervisors can check.

[133] United Nations, 1984. *Handbook of household surveys.*

[134] Refer to Surveys Solutions Interviewer Manual (available at http://siteresources.worldbank.org/INTCOMPTOOLS/Resources/8213623-1380598436379/Interviewer_manual.pdf) and Survey Solutions Supervisor Manual (available at http://siteresources.worldbank.org/INTCOMPTOOLS/Resources/8213623-1380598436379/Supervisor_manual.pdf) for an illustration of issues that may be covered in a CAPI manual.

521. Practical guidance tailored to supervisors should also be included. Supervisors have a key role in the survey workflow. They receive the survey assignments from headquarters and allocate them to the interviewers in their team. Once the questionnaires have been completed by the interviewers, the supervisors review those questionnaires to confirm that all questions are answered and the answers are accurate, coherent and plausible. This review may result in the questionnaire being approved (and therefore transferred to headquarters) or rejected (and therefore returned to the interviewer for corrections, completion, or explanatory notes). The manual may illustrate how the software application can be used by supervisors at each step of this process. The manual should also illustrate how the application should be used, to regularly check the overall status of the field work and manage actively the workload distribution of the team members through assignments and re-assignments. Finally, the manual should provide support on how to troubleshoot problems that interviewers may have, including, for example, with synchronization of their tablets, checking for the updates and manually backing up the data collected.

5.6. Translating the survey instruments

522. Countries are likely to have in place translation protocols for their national survey program and these protocols can be followed for collecting individual-level data on the ownership of assets. In general, if the data will be collected in more than one language, best practice indicates that the survey questionnaire should be translated into the main languages spoken where the survey will be implemented and then back-translated to ensure proper translation. This should occur prior to the training of enumerators so that enumerators are accustomed to the translated materials. If countries choose instead to rely on oral translation by enumerators in the field during interviews, they may wish to prepare a small packet of translated materials prior to the training of enumerators to aid them in the field. This may include translations of the glossary definitions found in the manual of instruction, the statement of purpose to be read at the start of each interview and key questions that appear throughout each module. It is particularly important that terms related to ownership and control of assets are thought out in each language to ensure consistency in data collection across all enumerators.

6. Field operations

6.1. Field organization

523. The organization of field work can greatly affect the quality and cost of the survey and the staff involved in planning the survey should give considerable attention to these activities. This section addresses issues related to four key activities: the recruitment of the field staff, publicity, cartography and printing of the field materials. In addition to aspects that are typical to the field organization in any household survey, the section includes details on three aspects specific to implementing a survey on asset ownership: the organizing of the field staff in small teams with a high ratio of supervisors to enumerators; gender match-up between the supervisors and enumerators; and the content of the publicity material.

6.1.1. Recruitment and organization of field staff

524. Field staff typically comprises supervisors and enumerators (interviewers). Field supervisors may be full-time statistical officers or other employees assigned to posts related to survey operations in central or regional offices, or they may be employed on a temporary or part-time basis. In the latter case, they may be selected from the ranks of those interviewers who have experience and exhibit the ability and willingness to take on more responsibilities.

525. Enumerators are less likely to be permanent staff of statistical offices and most of the time they are selected and employed for fieldwork in specific surveys. Statistical offices usually develop a network of experienced interviewers who can be called as needed.

526. Desirable traits for interviewers in household surveys would typically include:[135]

- Sufficient education (the exact requirements may vary from country to country);
- Absence of highly opinionated views, especially with regard to the subjects covered by the survey;
- Willingness to accept instructions and to adhere to rules;
- Knowledge of local languages and dialects used in areas where they are going to conduct interviews;
- When using CAPI, familiarity with computers and keyboard skills;
- Availability for travel and work in the evening and week-end, when the respondents may be available for the interview.

527. Costs related to field staff are one of the biggest components of the survey budget; therefore, decisions related to the number of enumerators and supervisors and their selection should be made early in the planning stage of the survey. The number of enumerators who need to complete the field work within the specified survey period should be estimated based on the size of the sample and its geographic distribution and the number of enumerators needed per household. The number of interviews per enumerator may vary across areas where the survey is implemented depending on differences in travel distances and time, access, and the likelihood of finding respondents at home.

528. How the enumerators are selected also has implications on the survey budget. The interviewers may be selected locally, which may minimize the travel costs. In that case, it is important that all interviewers have access to the same type of training to ensure consistency in data collection. However, it should be noted that the use of locally-based staff, especially in small areas towns and rural areas, increases the probability that the interviewers and respondents are acquainted, which may affect the survey results.

529. The ratio of supervisors to interviewers depends to some extent on the geographical spread of the fieldwork and the complexity of the survey operations. It is generally considered that in situations of a wide dispersion of the sample, difficult communications and

[135] United Nations, 1984. *Handbook of household surveys.*

complex field protocols, the ratio should not exceed 6 or 8 to 1.[136] Where close supervision is required, higher supervisor-interviewer ratios should be considered. In EDGE pilot surveys, the ratio was 1 supervisor for every 4 enumerators or less.

530. Similarly, the organization of interviewers and supervisors in teams may vary depending on the complexity of survey operations, particularly the interviewing protocols used. There are two extremes that can be described, with various arrangements in between:

(a) Small mobile teams consisting of one supervisor and a few interviewers which move from one area to the next as fieldwork proceeds. In this case, the supervisors have a key role in assigning work for each of the team members within each approached area, and planning and scheduling interviews. The use of mobile teams generally permits better supervision and control of fieldwork. It can also permit a more efficient sample design since, with mobility, a given number of interviewers can cover a more dispersed sample. Organization of field staff in small teams is particularly suitable for data collection based on interviewing more than one person in each sampled household, and when gender matching between interviewers and respondents is required. Use of small teams, however, may be associated with higher travel costs, which may have to cover transport facilities for the use of each team and temporary accommodation in areas covered by the sample.

(b) Use of fixed enumerators, often recruited locally, each working singly in a fixed sample area for an extended period. With fixed enumerators, the supervisor may be located elsewhere and visit each interviewer periodically. In this case, it is important that the interviewers are experienced and can function independently, as close supervision is not available on a daily basis. This arrangement is more suitable for simple interviewing protocols, in which only one respondent is selected per each sampled household and gender matching between interviewers and respondents is not required.

531. Another aspect for consideration when selecting and assigning enumerators is whether customs and traditions make it necessary to match interviewers and respondents in terms of ethnicity, tribal affiliation, gender or other characteristics. There may be situations where cooperation cannot be obtained unless the two parties are matched based on those criteria. In general, statistical offices should follow the protocols they have developed for this matter. In particular, it is important to assess whether gender matching between interviewers and respondents is required, given that this survey focuses on measuring asset ownership from a gender perspective and both women and men are going to be interviewed. In some contexts, for example, some male respondents may not be willing to talk to female interviewers, or female respondents may not be allowed to talk to male interviewers. However, there are other considerations to take into account, including, safety and security of both interviewers and respondents. For example, in some contexts, respondents may feel safer and may be more willing to share information when the interviewer is a woman. In other contexts, it may be less safe for a woman than a man to be a field staff and travel alone.

[136] United Nations, 1984. *Handbook of household surveys.*

532. Gender matching between interviewers and respondents requires a balanced distribution by sex of the overall number of interviewers and within each team dispatched in the field. Nevertheless, some EDGE pilots show that the matching is feasible. In Uganda,[137] for example, the field staff consisted of 16 men and 14 women organized in 7 mobile teams consisting of 1 supervisor and 2 to 4 interviewers. Gender match-up was encouraged on the basis of qualitative fieldwork conducted prior to the survey by experts on gender and land rights, which showed that respondents are more comfortable disclosing information on asset ownership when the interviewers were of the same sex. The gender match-up had a high success rate. Overall, about 75 per cent of male respondents were interviewed by male interviewers and 82 per cent of female respondents were interviewed by female interviewers.

533. In other countries, women were the majority of interviewers and high rates of gender matching were obtained for female respondents only. In Georgia, 91 per cent of female respondents were interviewed by female interviewers, while 18 per cent of male respondents were interviewed by male interviewers. In Mongolia the corresponding proportion were 74 and 40 per cent, while in the Philippines, 76 and 24 per cent respectively.

534. Similarly, in Mexico, 68 per cent of female respondents were interviewed by female enumerators and 31 per cent of male respondents were interviewed by male enumerators. However, an analysis of several dimensions of quality of interviewing, including enumerator's perceptions of fluidity of the interview and resistance to the interview and the proportion of incomplete interviews, showed that the gender match-up did not have an impact in the Mexico context.[138]

6.1.2. Publicity

535. A survey requires the cooperation of the households selected to be interviewed, and an effort should be made to inform those households in advance about the survey. Typically, a national statistical office may involve one or more approaches:[139]

(1) Prepare materials that enumerators can share with respondents, including pamphlets or articles, in local languages.
(2) Newspaper publicity about the survey; in that case, the enumerators should be provided with copies of the newspaper article.
(3) Radio or television announcements that may be referenced by the enumerators in the field.
(4) Information disseminated through local government bodies, professional associations or similar groups.
(5) It is particularly important to secure the approval of local officials such as village heads, chiefs of nomadic tribes, including through personal contacts. If the statistical

[137] Kilic, T., and Moylan, H., 2016. Methodological experiment on measuring asset ownership from a gender perspective (MEXA): technical report. Washington, DC: World Bank.
[138] Report Assessing Mexico's Pilot Survey on Measuring Individual Level Asset Ownership and Entrepreneurship from a Gender Perspective. 2016. Unpublished.
[139] United Nations, 1984. *Handbook of household surveys.*

agency has a regional office structure, these local contacts might more readily be made by the regional officials.

(6) Where literacy is reasonably high, advance letters may be sent to selected households, describing the survey briefly and announcing the approximate time period for the data collection. However, this procedure is not always advisable. In some contexts/local conditions and customs, such notices may create suspicion and hostility.

536. Content wise, national offices should assess the sensitivity of the topics that would be covered in the publicity materials. In some communities, mentioning issues such as asset ownership or women's empowerment may creative negative reactions and lead to non-participation in the survey. If these issues are perceived as sensitive, the publicity materials should avoid them. Instead, they may refer to non-controversial issues such as how the findings of the survey would provide important information for developing policies and programs to improve the lives of women and men; and emphasize the confidentiality of the information provided. Furthermore, it is important that the materials are translated in the local languages of the households covered by the survey, to make sure their messages will reach the intended audience.

6.1.3. Cartography

537. In surveys based on face-to-face interviews, mapping materials may need to be developed for the purpose of sample selection and field administration. Comprehensive mapping materials are usually prepared in the course of population and housing censuses, typically by geographers, cartographers and supporting personnel. Census materials can serve as the starting point for meeting cartographic needs for survey purposes. However, when census maps are incomplete, inadequate or substantially out of date, they may need to be updated and adapted for the current use, or new ones may need to be produced. For this purpose, additional materials from other sources (governmental agencies, civilian or military, or geography departments of university) should be obtained. Once mapping materials are assembled from the census and other sources, the next step is to appraise them from the standpoint of completeness, accuracy and currency. This may be done by comparisons of different maps for the same area. Knowledge and experience of geographers of regional and local officials is important for appraisal. Often, however, field checks on the spot are necessary. Special training may also be needed on how to use the maps or on updating old listings from previous surveys.

6.1.4. Printing of materials

538. Questionnaires, manuals, survey administrative forms, interviewing aids such as calendars, checklists and prompt cards and mapping materials should be ready for distribution to the enumerators before the field work starts. It is important that materials, particularly questionnaires and manuals, are printed only once they have been tested and finalized. It is also essential to allow sufficient time for the printing and distribution. Another issue that is sometimes overlooked is the need to provide for adequate supplies of

questionnaires. Quality control on the printing is another important element, to make sure that the printed forms are not too light, smudged or missing certain sections.

6.2. Training of field staff

539. Training plays a key role in obtaining good quality data in household surveys. Typically, during training, enumerators will learn about the purpose and the structure of a survey, the key constructs and concepts used, and the role of each question in measuring them. They will also learn (or will be reminded) about how to approach communities and households, correctly select the persons to be interviewed, and successfully schedule and complete the interviews with those persons.

540. Training of enumerators for collection of data on asset ownership from a gender perspective should follow similar principles, while emphasizing issues specific to the topic. While many enumerators may have experience collecting household-level data on asset ownership, they may have no prior experience collecting data about asset ownership at the individual level and they may not be familiar with some of the concepts employed such as "rights to" an asset. It is recommended that training should be designed on the premises that enumerators have little pre-existing knowledge of the topic, and that it is always useful to cover general data collection techniques such as approaching communities and households and successfully conducting an interview.

541. The following set of issues specific to surveys on asset ownership should be emphasized during the training: (a) what assets are measured and how they are defined; (b) how the ownership rights to assets are defined and measured; (c) systematic guidance on refraining from assuming answers to questions on ownership when moving from one type of ownership to another and refraining from attempting to "reconcile" responses in the field when more than one person is interviewed in the same household; (d) delivering the statement of the purpose of the survey; and (d) how to select the eligible respondents.

542. This section includes two parts. The first one addresses training on the paper questionnaire, including the content of the training and training approaches. The second one addresses training on CAPI-specific issues. In countries using a CAPI questionnaire, the training should be organized in two parts, starting with the training on the paper questionnaire and continuing with the training on the CAPI questionnaire. Training on the paper questionnaire should cover topics such as: overview of objectives of surveys; content of the questionnaire, including organization of the questionnaire, key concepts, and a detailed review of the questionnaire; and operational procedures regarding approaching communities and households, identifying eligible household respondents for interview, and conducting successful interviews. For this part of the training as much as one week should be reserved in a stand-alone survey. Training on CAPI questionnaire should follow and cover CAPI-specific issues while recapitulating the key points made during training on paper questionnaire. This part of the training may be as long as one week also. Finally, separate training sessions for supervisors should be scheduled.

6.2.1. Training on the paper questionnaire

Content of the training

543. The following content should be covered in the training on the paper questionnaire.

544. **Overview of objectives of the survey**. Understanding the objectives of the survey will enable the interviewers to introduce the survey to the respondents and answer their questions with confidence. If applicable, a session on objectives of the survey should discuss how asset ownership data have been routinely collected in the past at the household level (highlighting that some enumerators participating in the training may have that experience) and explain why it is important to collect this data at the individual level (i.e. the policy relevance of measuring asset ownership from a gender perspective, as presented in the introduction of these guidelines).

545. **Introduction of key concepts.** At the core of training on key concepts are two sets of issues: (a) what assets are measured and how they are defined and (b) how the ownership of assets are defined and measured. Understanding these issues are key in ensuring the accuracy of data collected. The main objective of a session covering key concepts is to familiarise the enumerators to these concepts so that they recognize them and understand why they are being asked during the detailed review of the questionnaire later in the training. A session on this topic should first define "assets" and introduce the enumerators to the range of assets covered by the survey. The session should continue by covering concepts related to asset ownership. These refer to, as explained in Part I of these guidelines, types of ownership - including reported ownership, documented ownership, and the rights to sell and bequeath the asset; forms of ownership – exclusive and joint ownership; modes of acquiring assets; and valuation of assets.

546. **Detailed review of the questionnaire**. The detailed review of the questionnaire may be covered in one or more sessions depending on the length of the questionnaire. During these sessions the interviewers should learn about the structure and organizations of the questionnaire, how its different sections relate to the survey objectives, and what the purpose of each question is. With regard to ownership questions, interviewers should receive systematic guidance on not assuming answers in the ownership context when moving from one type of ownership to another and to not attempt a "reconciliation" of responses in the field when more than one person is interviewed in the same household. The interviewers should also understand the logic of the filter questions and skip patterns, which questions may require more probing and how to do that without prompting or suggesting the response to the respondent; and what strategies to involve when some questions are perceived as sensitive, including by emphasizing the confidentiality of information. During these sessions the facilitators should emphasize possible stereotypes on the side of interviewers that may affect the way questions are asked and the answers are noted, including, for example, the view that men are the owner of all the assets held in the household, or, that the wife is by default a joint owner.

547. **Approaching communities and households and conducting successful interviews**. Training on this issue is crucial to obtaining high response rates from the households and

respondents in each household. Topics to address should include: (1) avoiding conflicts at the community and household levels in the context of soliciting sensitive information; (2) introducing the survey to respondents, including respondent sensitization and consent forms; (3) building rapport; (4) interviewing selected respondents alone; (5) scheduling call-backs if selected respondents are not available at first approach; and (6) dealing with difficult scenarios (e.g. how to respond if respondents refuse to participate). The training may stimulate discussions and participatory formulation of solutions that could be employed in the field as done in Uganda EDGE pilot.[140]

548. All enumerators should be able to deliver the statement of purpose of the survey, which should be read or presented to all respondents in all households sampled. All EDGE pilots emphasized its importance as well as the struggle of some interviewers in delivering it. A statement of purpose may refer to non-controversial issues, for example, on how the findings of the survey would provide important information to the Government for developing policies and programs to improve the lives of men and women; emphasize the confidentiality of the survey; inform how that particular household was selected in the study; and stress that the interview should be conducted alone, without family or neighbours present. Issues known in the community to create negative reactions, including for example women's empowerment or asset ownership, and therefore negatively influence the survey participation should not be mentioned.

549. **Identifying eligible household respondents for interview**. This session should provide a detailed explanation of how enumerators will identify eligible respondents in each household. Enumerators should understand the difference between the household questionnaire and the individual questionnaire and who is eligible to complete each one. As mentioned before, the household questionnaire will be completed by a single person, ideally, a person knowledgeable about the topics covered in the household questionnaire, including for example, socio-demographic characteristics of the household members, or, where applicable, the assets owned by members of the household. The respondents for the individual questionnaire are one or more persons randomly selected in each household or all adult household members.

550. If the survey is administered based on a paper questionnaire, and one or more persons need to be randomly selected, sufficient time should be dedicated to learning how to apply correctly the selection method used in the survey.

551. **Supervisor training.** Field supervisors will need to understand all aspects of the interviewing and data collection processes, and must therefore receive extensive training so that they are prepared to manage the work load, and monitor and support interviewers during data collection. In some countries and surveys, the training of supervisors precedes interviewer training, in others the supervisors will be trained at the same time as interviewers. However, it is very important to plan separate training sessions for field supervisors.

[140] Kilic T., and Moylan, H., 2016. Methodological experiment on measuring asset ownership from a gender perspective (MEXA): technical report. Washington, DC: World Bank.

552. The following topics should be covered: (1) their roles and responsibilities in the field; (2) the process for distributing assignments; (3) the protocols for non-responsive households; (4) data quality assurance, including the importance of reviewing questionnaires to ensure that all questions have been asked and answers have been recorded; (5) what to do if mistakes are found in completed questionnaires; (6) how to deal with problems that may arise in the field; (7) maintaining contact with NSO headquarters, etc.

553. If countries are collecting data based on CAPI questionnaire, the sessions targeted to the supervisors should be scheduled after the CAPI-specific training has been conducted and include some focused on how to use electronic tools to manage the workload of their teams and perform quality checks.

Training approaches

554. To ensure that enumerators and supervisors fully understand the objectives of the survey, the questionnaire, and their roles and responsibilities in the field, three main types of training approaches should be used. First, interactive plenary presentations and discussions ensure that all key elements regarding the content of the questionnaire have been emphasized by the facilitators and understood by the enumerators. Second, role plays/mock interviews are an effective technique for developing interviewing skills as well as the ability to recognize and react effectively and professionally to challenging situations. They provide opportunities to observe and rehearse a variety of scenarios and to discuss strategies for meeting challenges. Finally, field practice is key in experiencing interview situations that are typical to survey data collection.

555. In countries where multiple languages are used for data collection, the statistical offices may find it useful to translate the questionnaire and the manuals in those major languages. At the minimum, there should be a glossary with key terms used in the questionnaire. During training, after the concepts have been understood in the main language, additional explanations and exercises in other major languages should be considered.

556. Quizzes may be used to evaluate enumerator learning and to potentially select the top performers if more enumerators than are needed for the field operations participate in the training, or for the purpose of identifying supervisors.

6.2.2. Training on CAPI-specific issues

557. Training on CAPI-specific issues should be conducted immediately after the training on the paper questionnaire. The training on CAPI should focus on all practical steps that enumerators will typically have to follow in the field, starting from signing into the software application used, accessing their work assignment, using the information given in the work assignment to identify the next household to be visited, completing the questionnaire, transferring the completed questionnaire(s) to supervisors, and signing out of the application.

558. Training on how to complete the CAPI questionnaire should be given enough time (3 to 5 days in a stand-alone survey). During this time, enumerators should become familiar with the display of the electronic questionnaire on the devise and the formulation and flow of

questions. They should know the significance of the different formatting used across the questionnaire, including for the information that needs to be read, information that contains instructions for them and potential probing questions or further explanations, and error messages. Key concepts learned during the training on the paper questionnaire should be recapped during the CAPI training and the similarities and differences in the formulation of questions in the paper questionnaire versus the CAPI questionnaire should be emphasized. If applicable, the feature of automatically selecting one or more persons to be interviewed should be explained.

559. Additional training for supervisors is crucial. It will emphasize their role in managing the workload in the field and will enable them to use specific case management tools. The following practical steps should be covered: (1) how to synchronize with the Headquarters server to receive the workload they and their team are responsible for and transfer completed and supervisor-approved questionnaires; (2) how to review the questionnaires completed and submitted by the enumerators and decide whether they should be approved and sent to the Headquarters or rejected and sent back for proper completion to the enumerators; (3) how to troubleshoot problems that interviewers may have with their devices; and (4) how to manage the assignments and re-assignments of the total workload, so that all interviews planned to be completed have been indeed completed, reviewed, and approved by both the supervisors and the headquarters, by the end of the fieldwork.

6.3. Field work

560. This section discusses aspects of the field work that are typical to household surveys, including workload distribution, information and management flow, and quality assurance during field observations. It also addresses the interviewing protocol that should be used in surveys collecting data on asset ownership, including specific issues such as identifying eligible respondents in the household, interviewing respondents alone, and simultaneous interviewing when more than one person needs to be interviewed.

6.3.1. Workload distribution and information and management flow

Setting up a management information system

561. A key aspect to the successful monitoring of field activities is an efficient management information system that integrates all types of information required for field operations and connects multiple members of the project team. The system relies on the continuous exchange of information between the coordinating office and field supervisors and between supervisors and enumerators. It enables the coordinating office to evaluate if the field operations are proceeding according to schedule, to make necessary adjustments in the distribution of the workload across the teams, and to correct some of the problems detected in the field, almost in real time.

562. Close control over the flow of materials and information to and from the field is essential for a rapid and orderly progress of data collection in the field. This task is usually performed by some central administrative unit in the statistical agency. This central unit is

responsible for sending instructional and training materials, blank forms and questionnaires and other necessary supplies to field personnel. This same unit should be responsible for receiving completed questionnaires and other materials from the field. Records on what has been sent and to whom and what has been received and from whom have to be maintained. Of particular importance is a control record identifying each and every unit (household) in the sample that should be interviewed and the outcome of the interview. Where regional offices exist, the material and information can flow back and forth between the central unit and supervisors and enumerators through these offices. It is important that each intermediate channel (regional officer or supervisor) maintains careful control records of its own.

563. A convenient way of controlling survey materials is to prepare a folder for each final sample cluster, identifying the corresponding geographical unit and indicating the supervisor and/or interviewer to whom it is assigned. This folder can include the relevant maps, the blank questionnaires and forms to be used and any special instructions. When the completed materials are received back by the administering unit, they should be checked against the control records. The most important matter is to account for every ultimate sample unit either as interviewed or not interviewed for some specific reasons. Where there are discrepancies, the matter must be followed up immediately with the field personnel.

Methods of communication and feedback loops

564. The management information system may use a variety of methods of communication and feedback loops, including telephone helplines, instant messages or SMS, online forums, or social media. For example, in the Mexico EDGE pilot, INEGI employed a web-based platform (forum) to facilitate communication between supervisors in the field and the central and state office staff involved in the survey. This forum is a standard approach in surveys implemented by INEGI. It is used to access survey materials, such as manuals, coding catalogues, training presentations or other support materials, informant collaboration certificates, work schedules and progress reports. It is available continuously during the field operations and accessed on a regular basis by both supervisors and office staff to ensure almost real-time responses to supervisors' queries and optimization of the fieldwork.

Survey management system in surveys using CAPI

565. Alternatively, in countries using a CAPI questionnaire, a survey management system could be designed to control the flow of information through the use of electronic tools available for each level of survey staff, including on the handheld electronic devices of enumerators and supervisors and on the headquarters' computers that are accessed by the field managers. Data and information received from the field through the synchronization procedures can be easily aggregated and used to generate progress reports feeding into the survey management system. Thus, one of the biggest advantages of such a system is the ability to continuously track the progress of data collection and identify immediately the teams that encounter challenges in the field.

Workload distribution

566. Workload for each enumerator may be decided by the coordinating team of the survey, regional offices involved in field operations, or the field supervisors. Before starting the fieldwork enumerators should have all necessary materials and information, including a list of households where they should conduct interviews and/or rules to develop or update that list. When a recent census was conducted in a country, the list of households to be approached by interviewers in an enumeration area may be already established by the coordinating unit. However, when the census is not recent, the listing of households in the enumeration area may need to be developed or updated. The new listing will be the basis on which the set of households to be interviewed will be extracted or updated respectively. The supervisors may also have a role in assigning interviews to the enumerators, particularly when the field staff is organized in small teams and when more than one person is interviewed in each household. As the field work is progressing, some interviews may also be re-assigned by supervisors or the coordinating unit, in order to complete the fieldwork in the time allocated for data collection.

6.3.2. Interview protocol

Identifying eligible respondents in the household

567. After successfully approaching a household, an enumerator has to identify the members of the household who should be interviewed. The basic rules for selecting the eligible respondents in each household should be formulated in advance and emphasized during the training, therefore enumerators should have no problems in following them in the field.

568. These guidelines recommend that in a stand-alone survey on asset ownership the enumerator should interview one person for the household questionnaire and one or more randomly selected adult members of the household for the individual questionnaire, as detailed below.

- The person providing information for the household questionnaire ideally should be a household member who is knowledgeable about the demographic and social characteristics of all household members and housing characteristics. In practice, however, the person interviewed for the household questionnaire is likely to be the person available at the time the enumerator first visits the household. It is considered that the information collected in the household questionnaire is generally common knowledge among all household members; therefore it can be satisfactorily obtained from a single household respondent that is available for the interview.

- However, when rosters of assets are constructed at the household level and incorporated in the household questionnaire, it is important that the respondent is specifically chosen to be a member who is knowledgeable about assets owned by all household members. This person should be identified by the enumerator immediately after she or he establishes contact with a household and obtains the permission to conduct the interview. A simple direct question may be used, such as “who in the

household is most familiar/knowledgeable about assets owned by all household members?" The entire household questionnaire should be administered to that person.

- The individual-level questionnaire, which includes questions related to asset ownership that require self-reporting, as presented in section 6, has to be administered to one or more randomly selected individuals age 18 or above. Whether one or more persons need to be interviewed is established at the planning stage of the survey, based on the objectives of the survey, sampling considerations and staff requirements. The enumerator will be able to identify the person(s) to be administered the individual-level questionnaire only after the household questionnaire has been completed and a listing (roster) of all the household members has been obtained. This listing includes information on the sex and age of each household member and it is the basis used by the enumerator (or by a software routine when using CAPI) to select one or more adult household members for the interview. If all adult members of the households need to be interviewed, the household members to be interviewed are identified based on age (those 18 years or older). If only a selected number of household members have to be administered the individual questionnaire, a method of selection such as the Kish method should be consistently applied across all households to ensure a probabilistic selection of the respondents, as explained in section 4 on Sampling design.

569. When data on asset ownership is collected based on a module of questions attached to a main survey, the household questionnaire is typically collected during the main survey and the respondent administered that questionnaire is selected based on the rules established in the main survey. However, the respondent for the individual questionnaire will still need to be identified based on the rules explained above.

Interviewing respondents alone

570. Questions about asset ownership can be sensitive and enumerators should make all efforts to establish an interview setting that is conducive to disclosure of information. Interviewing each respondent to the individual questionnaire alone is very important. When other people are around, the respondent may be less inclined to report owning certain types of assets. However, when a survey is taken, other persons, including family members or even neighbours may be curious and want to be present at, or even intervene, in an interview. It will require a good deal of tact on the part of the interviewer to operate in this kind of situation. There is no alternative except to ask specifically to see the respondent alone.

571. Nevertheless, evidence from the EDGE pilots shows that interviewing people alone is feasible. In Uganda and South Africa, the proportion of individual interviews conducted alone was very high across all modules, at 90 per cent or above, for both women and men.[141] In the EDGE pilots in Georgia, Mongolia and the Philippines, the corresponding proportions were above 93, 97 and 95 per cent, respectively.

[141] Kilic, T., and Moylan, H., 2016. Methodological experiment on measuring asset ownership from a gender perspective (MEXA): technical report. Washington, DC: World Bank.

Interviewing multiple household members simultaneously

572. When the individual questionnaire needs to be administered to multiple household members as per sample design and for the purpose of achieving survey objectives such as obtaining statistics on intrahousehold inequality in asset ownership, countries should consider using simultaneous interviewing. As presented in section 4, simultaneous interviewing prevents the potential contamination of answers from one respondent to another in the same household; however, its success is mixed, particularly in larger households with more than two adults.

573. Simultaneous interviewing has significant consequences in terms of how the field staff is organized in teams and how the workload is distributed among the members of the same team. Multiple enumerators need to be available for interviewing in the same household, which implies that the field staff is organized in small teams working and moving together from one household to another within the enumeration area (and to the next enumeration area as soon as the previous one has been covered). The supervisor should be part of the team. She or he will have a key role in efficiently assigning individual interviews to each of the enumerators, sometimes covering more than one household at a time.

574. One of the biggest operational challenges in using simultaneous interviews is related to making information collected in the household questionnaire, typically collected by one enumerator, available to all enumerators conducting simultaneous individual interviews. There are two types of information collected in the household questionnaire that may be required in completing the individual questionnaires: (1) the ID codes of the household members as collected in the roster of the household members; and (2) the ID codes of the assets listed in the household rosters of assets. The ID codes of the household members are needed only when the objective is to identify all patterns of joint ownership of assets, beyond joint ownership between spouses, as explained in section 5 on Questionnaire Design. The ID codes of the assets listed in the household roster of assets are needed for feeding the household roster of assets forward to the individual-level interviews. Respondents of the individual interviews will have to indicate which assets, among those listed, they own (exclusively or jointly with someone else).[142]

575. Two strategies may be used to make information collected in the household questionnaire available for use in the completion of the individual questionnaire. One strategy requires that after the enumerator responsible for the household-level interview has completed the household questionnaire, the information recorded is shared with additional enumerators that will be involved in simultaneously interviewing household members for the individual questionnaire. For example, if in a household there are three adults who should be administered the individual questionnaire, the enumerator conducting the interview for the household questionnaire will share the information obtained with two additional enumerators. The two additional enumerators will use their own empty household questionnaires to record some of the information shared. At the minimum, the information recorded in the additional questionnaires is the exact listing of the household members (their names, in the exact order)

[142] See Annex A for examples.

and the assets owned in the household (their short description, in the exact order). Following the exact order of items in the listings ensures consistent identification of household members and assets across all respondents administered the individual questionnaire. Without this consistency, the analysis of information obtained in the individual questionnaires has no value. Other information from the household questionnaire may help enumerators understand to which household members and assets the respondents of the individual questionnaire are referring, and improve the consistency of information recorded. Such information may refer to some characteristics of the household members, for example, their relation to the household head, the sex and age of the household members, and to some characteristics of the assets rostered, for example, location or use.

576. This strategy requires that the enumerators obtain a certain degree of cooperation and trust from the household. Household members should not become suspicious seeing the information they just gave being copied into new questionnaires. The additional enumerators will also need to copy correctly the information from the main questionnaire in their questionnaires in a short amount of time. When computer-assisted interviewing is used, it may be easier and less error-prone to copy first the information to be shared from the CAPI household questionnaire into a paper questionnaire and from there onto the tablets that will be used for the individual interviews.

577. Another strategy requires multiple enumerators being present for the interview for the household questionnaire and simultaneously recording the information provided by the respondent, each of them in their separate household questionnaires. It is imperative that the information provided is recorded in the same way by all enumerators present at the interview, particularly the order of listing the household members and the order of listing the assets owned by anybody in the household. As explained above, this will ensure the consistency of information recorded across the individual interviews within the same household, a key requirement for the reliability of the statistics derived.

578. This strategy may create less suspicion among the respondent households, compared to the previous one described, but it will work well only if the number of adults living in the household that need to be interviewed is known in advance. In addition, when using this strategy, the enumerators have to pay close attention during the interview for the household questionnaire not only to the respondent but also to the other members of the team to make sure that everybody is recording the information and particularly the rosters in the same way.

579. In either of the methods, it is important that there is a clear record of which household questionnaire should be considered the main questionnaire and used as the basis for entering and analysing the information obtained. The additional household questionnaires should be however preserved and used for quality checks.

Gender match-up

580. Gender matching between the enumerator and interviewer may also be important in some countries. As explained earlier, an assessment should be made by the core team in charge of planning and implementing the survey regarding whether gender matching will have an impact on the level of unit non-response and the quality of responses obtained. If the

assessment concludes that gender matching is important, teams including both female and male enumerators will have to be deployed to the same enumeration area so they can cover female and male respondents. In this case, supervisors will have a key role in distributing efficiently the assignments across households between the different team members.

Call-backs

581. All efforts should be made by enumerators to successfully interview all the units in the sample. If a significant proportion of households are missed by enumerators the probability sample chosen may lose its representative character, because households (and individuals) that are not interviewed may be different than those interviewed. Even if procedures exist for adjustment of non-response (as presented in section 4 on weighting in Part IV), the survey results are likely to be biased if more than a small percentage of cases is omitted.[143]

582. One of the most frequent reasons for non-response at the household level is the inability to find anyone at home in certain households. The usual approach in this instance is to plan a return visit on a different day and or at a different time of the day when it is likely that somebody in the household will be present. Enumerators may be able to obtain information on a more suitable time for a re-visit from neighbours or landlords. It is recommended that at least two re-visits should be attempted unless excessive costs are involved.[144] Statistical agencies should follow their typical protocol with regard to the number of call-backs allocated for each household and/or the time that a team can allocate to an enumeration area. In the EDGE pilot surveys, for example, the interviewing protocols required the enumerators to have a minimum of 3 call backs before considering a case to be a non-response. Information on reasons for non-response were also collected.

583. There may be some cases where respondents refuse to be interviewed. Enumerators should attempt to provide further explanations of the survey's purpose and reiterate the guarantees of confidentiality. They should also offer to (re)schedule the interview(s) at a more appropriate time. Enumerators should also refer the case to the field supervisor, who may then make an attempt to obtain cooperation.

6.3.3. Quality assurance during field operations

584. Quality management in any household survey should be comprehensive and applied at all stages of survey implementation including planning, sample design, questionnaire design, field operations and data processing and analysis. Each stage of survey implementation plays an important role in obtaining quality data. Field operations, in particular, have a great impact on the accuracy of data, which is defined as the degree to which the information gathered correctly describes the phenomena it was designed to measure. Training and quality control mechanisms during the fieldwork (such as supervision and monitoring of enumerators' activities) enable the achievement of key quality standards,

[143] United Nations, 1984. *Handbook of household surveys.*

[144] United Nations, 1984. *Handbook of household surveys.*

including high response rates from household and individuals (unit response rate), high response rates for all questions asked (item response rate) and consistency in asking questions and recording answers. Achieving these standards is very important. Unit non-response will affect the statistics obtained in the survey because those who are not immediately available for an interview or who refuse to participate may differ from those who agree to participate on characteristics that are relevant to the topic of the survey. In other words, the sample will not be representative for the population from which it was derived. Item non-response and errors in asking the questions and coding the answers received will also impact the accuracy of the data because they provide a partial or biased representation of what the survey tried to measure.

585. Quality assurance procedures may be used before the fieldwork starts and during the field data collection, while assessments of the quality of data collection may be conducted during the data collection or after it has concluded. Various strategies may be involved in reducing non-response rates before the fieldwork starts. To ensure high item response rates and consistency in administering the questionnaire, training of the enumerators and supervisors plays a crucial role, as described in section 6.2. For achieving high unit response rates, several strategies may be employed by NSOs in addition to training, including using publicity (see section 6.1.2), sending advance letters to inform about the upcoming survey, and offering incentives.

586. During data collection, field supervisors have a key role in quality control. They monitor all aspects of data collection in the field on a daily basis. They are checking the questionnaires submitted by the enumerators for completeness and errors in coding answers and may observe some of the interviews. Supervisors have a key role in identifying the enumerators who underperform and seek a solution for aiding or replacing those enumerators. For example, item non-response, referring to questions that are not answered, may occur as a result of the respondents' lack of knowledge or ambiguity about the questions, which cannot be addressed while in the field. But they may also be a sign of interviewers skipping questions or respondents disengagement due to the failure of the interviewer to create rapport.

587. Observation of interviewers is particularly important in a survey on asset ownership and supervisors should schedule this activity at the beginning of the fieldwork. Based only on completed questionnaires it is difficult to judge whether an interviewer asks correctly the questions on different types of ownership or, on the contrary, she or he assumes information about ownership or tries to reconcile answers with information on asset ownership obtained from other household members.

588. In this regard, countries may use an additional mechanism for quality control, especially when the country implements for the first time a data collection on asset ownership at the individual level. For example, in some EDGE pilot studies, headquarter teams of NSO staff that participated in the training as trainers and facilitators were deployed during the first week of data collection to observe the teams in the field, discuss challenges and provide additional guidance where necessary.

589. Finally, supervisors should make sure that field assignments progress as planned and all respondents are reached and interviewed, therefore ensuring high unit response rate. Interviewers are responsible for correctly identifying households and individuals who should be interviewed, and ensuring their participation in the survey, including through a proper introduction of the survey. When the respondents are not immediately available for interview, enumerators should be flexible in scheduling and rescheduling interviews. However, their efforts may not always be successful. In cases where respondents are more reluctant to participate, the supervisors may step in. In addition, a sample of each interviewer's work should be spot-checked to verify that the interview has been implemented only in the units in the sample.

590. At the end of the fieldwork, countries should make an overall assessment of the quality of the fieldwork, based on supervisors' quality checks and observations during the fieldwork. They may also consider conducting re-interviews on a small sub-sample of households and comparing the obtained responses with those obtained during the field data collection for the same sub-sample. This will give an indication of response reliability and assess the work of particular enumerators. For example, in the EDGE pilot in Georgia, 12 per cent of the household sample, or 2 households per enumerator, were re-interviewed after the fieldwork by staff from the national statistical office, Geostat. The re-interview survey covered both urban and rural areas and used a sub-set of items from the questionnaire administered during data collection.

Part IV. Data processing, analysis and dissemination

1. Data processing

591. Data processing refers to a range of activities aiming to convert the information collected in the field through the survey instrument into a database that can be used for tabulation and analysis of the data. Typically, it includes data entry, data editing, data imputation, and an assessment of data quality and the precision of the survey. Data processing has an impact on the quality of the final survey results and its efficiency is key in obtaining those results within a reasonable time period after data collection.

592. The overall processing plan should be developed early in the stage of the planning of the survey and the data managers involved should have a good understanding of the objectives of the survey and the questionnaire design. They will be key decision-makers on what data processing activities will be implemented, the timetable for each activity, the required personnel, equipment and computer software packages, and how best to organize the data in an electronic format.

593. Countries are encouraged to follow their typical protocol for data processing in household surveys when conducting a survey on asset ownership and control from a gender perspective. However, two aspects of data processing need particular attention. First, the data structure is complex, dealing with several statistical units of observation and analysis, including households, individuals, and assets (for those assets that are itemized, such as land, large agricultural equipment, other real estate, financial assets and unincorporated enterprises). It is important that the structure of the survey data set reflects the hierarchical relationships between the different statistical units, minimizes the storage requirements and interfaces well with statistical software at the analytic phase.[145] This issue is detailed in the next subsection on data entry and organization of the data sets. Second, it is important that no gender bias is introduced in any of the data processing steps, including any data adjustment activities undertaken to increase the consistency of data and ensure that the survey sample results are representative for the population targeted. This issue is covered in the subsections on data editing, imputations and weighting.

1.1. Data entry and organization of the data sets

594. Data entry refers to the recording of the information collected on the paper questionnaire into an electronic file that can be used for data tabulation and analysis and data sharing. A more general term for the process is data capture, which, in the case of a paper questionnaire, may consist of manual data entry by clerical staff, mark-character recognition and optimal-character recognition. In computer-assisted interviewing, the interviewing and the electronic data capture occur simultaneously, which is one of the advantages of using computer-assisted interviewing.

[145] Juan Munoz, 2005. A guide for data management of household surveys, in United Nations, *Household Sample Surveys in Developing and Transition Countries.*

595. In surveys using paper-based data collection, data entry may be done centrally or in the field. Data entry in the field, while enumerators and supervisors are still in an enumeration area, can improve the quality and timeliness of the data. Errors and inconsistencies identified during data checking and entry may be resolved by revisiting the households in that area. By comparison, office data entry may not reflect as well the realities observed in the field. Data capture in the field may also shorten the process of preparing the data for tabulations and analysis. However, field staff must be organized into teams that can ensure both data collection and data entry and these teams must be trained in data entry before the start of data collection. The approach also requires that the data entry and editing program has been developed, tested and finalized before field operations commence.

596. Data entry programs and the structure of the resulting data sets should be carefully considered. A household survey on asset ownership and control is a complex survey that collects information about a major statistical unit – the household – as well as a variety of subordinate units within the household – persons and itemised assets, including land, large agricultural equipment, other real estate, financial assets and liabilities, and unincorporated enterprises. Data entry and editing programs should be able to handle properly this complexity and provide additional capabilities related to data tabulation, data analysis and conversion of the data files into the most commonly used statistical programs such as CSPro, SAS, SPSS and Stata. One example of such a data entry and editing program widely used by national statistical offices is CSPro.

597. The structure of the survey data sets must reflect the hierarchic relationships between the different statistical units in a survey on asset ownership and control. Most of the questions on asset ownership refer to subordinate statistical units that appear in variable numbers within each household, including persons and different types of assets. The individuals are units of both observation and analysis nested within the units of households and the assets held by individuals are both units of observation and analysis nested within the units of individuals. The number of persons in a household varies across households and the number of assets owned by an individual varies across individuals and households.

598. The data corresponding to the three units of observation and analysis (households, individuals, assets) should *not* be stored in one simple rectangular file (called a "flat file") with one row for each household and columns for each of the fields on the questionnaire. A flat file is adequate only if all of the questions refer to the household as the statistical unit, but this is not the case in a survey that measures asset ownership at the individual level. Storing information related to individual persons and assets at the household level would be wasteful and extremely cumbersome at the analytical stage.

599. Instead, the data structure should maintain a one-to-one correspondence between each statistical unit observed and the records in the computer files, using a different record type for each kind of statistical unit. For example, to manage the data listed in the household roster, a record type would be defined for the variables in the roster and the data corresponding to each individual would be stored in a separate record of that type. A similar logic is applied to the roster of assets. For example, to manage the data listed in the agricultural land module, a

record type would be defined to include the variables in the module on agricultural land and the data corresponding to each parcel of land would be stored as a separate record.

600. Across the data sets, each record would be uniquely identified by a code in four parts:

- Part 1 – record type, appears at the beginning of each record – it tells whether the information is from the cover page, the household roster, or one of the asset modules (agricultural land module or the financial asset module, for example);
- Part 2 – refers to the household number;
- Part 3 – refers to the household member's identification number
- Part 4 – refers to the code of the asset item listed.

601. The survey data sets may need to be organized as separate flat files, one for each record type, for dissemination purposes. For example, one flat file would comprise records of all agricultural parcels owned by the respondents in the survey, while another flat file would comprise records of all financial assets owned by respondents in the survey. The identification codes for individual records described above will enable the linking of the data across the flat files.

602. When using a CAPI questionnaire, the organization of data follows the structure of the CAPI questionnaire design, reflecting the specified hierarchy and nesting of the different units of observation. After data collection has concluded and all of the questionnaires have been accepted at headquarters, data may be exported into formats compatible with the most commonly used statistical programs. For example, when using Survey Solutions (as done in the EDGE pilots in Uganda and South Africa), the data may be exported in .sav (for SPSS), .dta (for Stata) or .tab files. The number of files is one per each distinct level of hierarchy and unit of observation in the questionnaire.

1.2. Data editing

603. The file(s) obtained at the end of the data entry may be further checked and improved by means of data editing, imputations and weighting for the purpose of obtaining a database that can be analysed or shared.

604. A field review of questionnaires by supervisors, as discussed in Part III of these guidelines on field operations, should identify and rectify many of the problems and errors in the data. However, some further checking is nearly always needed at the data processing stage to catch remaining errors. The general types of content errors likely to be found at this stage are omissions, inconsistencies across different questions/variables, unreasonable entries and impossible entries.[146]

605. Generally, the best procedure is to resolve the problem based on information in the questionnaire. Some errors may have occurred in the course of data transfer and the correct information may actually appear in the questionnaire. In other cases, the information that appears to be incorrect may be corrected based on other information recorded in the questionnaire. For example, omissions for the variable on sex may be resolved from the name

[146] United Nations, 1984. *Handbook of household surveys*.

of the person, or omissions in age from information on date of birth. Inconsistencies can sometimes be resolved by considering the whole range of information and deciding which of the conflicting entries appears most reasonable. For example, from data on education, marital status and occupation it may be evident that a 13-year-old tertiary-educated married person working as a wage employee is more likely to be 31 years of age.

606. Using information from the questionnaire to resolve errors is typically applied for variables regarding the demographic characteristics of household members. It should also be applied to questions on asset ownership and control when errors occurred during data transfer and the correct information appears in the questionnaire. However, this procedure should not be applied when it comes to ambiguities, inconsistencies, or omissions on types and forms of ownership. Different answers given to questions on different types of ownership for a given asset should not be treated as inconsistencies. Similarly, omissions of answers to questions on some type of ownership (for example, documented ownership) should not be solved based on information on other types of ownership (for example reported ownership and rights to sell and bequeath).

607. Data editing processes should also aim to obtain a clear distinction between sample units (households and individuals) that are respondents, eligible non-respondents, ineligible units or non-responding units of unknown eligibility. A clear account of the status of each household and individual in the sample are required for the computation of survey weights, as described in the subsection on weighting. Also for the purpose of weighting, it is important to ensure that the sampling information – such as respondent units PSU and stratum – are available for each respondent data record.

1.3. Imputations

608. Imputations refer to placing estimated answers into data fields that have missing information or information that is assessed to be incorrect or implausible. In general, decisions on whether to impute values or to work with answer categories of "unknown" depend on a number of circumstances. A general rule of thumb is to make imputations for certain basic demographic items that are essential in analysis and also where the error rates are comparatively low. Another rule of thumb is to impute responses/values where considerable prior complementary information is available corresponding to the record/observation but to otherwise assign a value of "unknown" when such information does not exist.

609. The decision of whether to impute values has implications. On one hand, when the statistical agency does not use imputations, users are induced to make their own imputations for the "unknown' categories and do so on the basis of less adequate information than is available to the statistical agency. On the other hand, imputed values may be perceived as "made-up" data, regardless of how well the imputation might be done.

610. Examples of imputations typically used include (a) replacing the missing value with the mean or median for that variable, preferably at the level of a subgroup of population with similar characteristic with the respondent with missing values, or a value estimated based on

a regression procedure; and (b) borrowing a replacement value from a case in the dataset that is most similar to the case with missing data on a set of relevant variables ("hot-deck" imputation). In any of these methods it is particularly important that the estimates of replacement values are based on responses from respondents of the same sex as the respondent with missing data. In addition, when subgroups of a population or a regression-based method are considered to estimate the replacement value, individual characteristics that may be associated with one sex or another (such as marital status or education) should be taken into consideration among other variables that may be relevant.

611. Alternative methods of imputation, including based on information collected from other sources of data, may be carefully considered for items with high non-response rate. For example, a variable that is crucial for the calculation of the gender wealth gap is the value of assets owned. However, as shown by the results of the EDGE pilots discussed in Part I of these guidelines, valuation questions have a high non-response rate.

612. It should be noted that removing cases with missing values for variables in the analysis is equivalent to an implicit imputation. In this case, it is assumed that the results obtained for the respondents apply to the non-respondents as well, which is not necessary the case. The alternative is to make the imputation explicit and transparent, informing the users about the method for imputation. In this case, the analyses presented in a publication will be consistently based on the same number of cases, and all the data collected are used in the analysis.

613. Where imputations are made, it is important to provide information on the extent of imputation (the proportion of item non-response) and the method used. It is also valuable to create an imputation flag variable. Thus, tabulations can be made with and without the imputations, and external users are given the opportunity to decide for themselves whether they want to use imputed values or not, based on the objectives of their analyses.

1.4. Weighting[147]

614. Weighting is a process to adjust for (1) unequal probability of selection and (2) unit non-response. Post-stratification weights could also be used to align the sample population distribution with a target population distribution. The purpose of using weights in estimating asset ownership is to produce estimates that correspond as closely as possible to the real values in the target population. When weights are not used to compensate for differential selection rates and for the sample imperfections due to issues such as non-response, the resulting estimates of population parameters will, in general, be biased.

[147] Guidance on constructing sample weights is beyond the scope of these Guidelines. Readers interested in more guidance should consult Groves et. al., 2009. *Survey Methodology*, second edition. Wiley series in survey methodology; Valliant, R., Dever, JA and Kreuter F, 2013. *Practical tools for designing and weighting survey samples*. Springer.

1.4.1. Adjusting for unequal probability of selection

615. The first step in constructing weights is to adjust for unequal probability of selection of sampling units, at different stages of sample selection. The selection probability is determined by the sample design and the base weight of a respondent is calculated as the reciprocal or inverse of its probability of selection. For example, a respondent selected with probability 1/100 represents 100 in the population from which the sample was drawn. Thus, the base weight assigned to the respondent would be 100, the inverse of its selection probability. The sum of the sample weights provides an unbiased estimate of the total number of people in the target population.

616. For a multistage stratified sampling design for surveys on asset ownership from a gender perspective, the base weights must reflect the probabilities of selection at each stage of selection, including the last stage in which individual respondents are selected from households.

617. As discussed in Part II of these guidelines, two main respondent selection protocols are recommended for measuring asset ownership from a gender perspective: 1) randomly selecting one adult household member for interview; and 2) interviewing all household members. In the first approach, the weight assigned is the inverse of the selection probability within the household. For example, if there are 4 adult members in the households then the probability of selecting one person would be ¼ and the within-household weight adjustment should be 4. In the second approach, when all eligible persons in a household are selected, no weighting adjustment is required because everyone in the household has a conditional selection probability of 1. In a modified approach where multiple persons, but not all eligible members, of a household are selected, selection probability can be calculated accordingly. For example, if 3 out of 5 eligible household members are selected randomly from a household, the selection probability should be 3/5 and the weight should be 5/3. If the principal couple is always selected and a third person is selected from the remaining 3 eligible members of the household, the selection probability would be 1 for both members of the principal couple and 1/3 for the third respondent. The within household weight adjustment would be the inverse of those probabilities.

1.4.2. Adjusting for unit non-response

618. A second step in the weighting procedure is to adjust for unit non-response. If this is not done, the estimates may be biased in some way by the undercoverage or overcoverage of certain groups in the target population. The magnitude of bias due to non-response is associated with two factors: the overall non-response rate and the size of the difference in asset ownership between the respondent group and the non-responding group.

619. As in many household surveys, evidence from the EDGE pilot surveys showed that people living in urban areas tend to have higher non-response rates than those living in rural areas and males are more likely to be non-respondents than females (Georgia, Mongolia and the Philippines). The Uganda pilot also showed that respondents are on average older, more likely to be members of the principal couple and married. Overall, the respondents compared

to the original selected sample, has an overrepresentation of people who are female, living in rural areas, older ages, principal couples, and married.

620. To compensate for such overrepresentation due to nonresponse, an assumption is made in survey nonresponse weighting that generates the same kind of weighting adjustment discussed for unequal probability of selection. It is assumed that respondents are in some sense a random sample of the overall selected sample. Depending on the nature of the assumption, the inverse of the response rate can be used as a weight to restore the respondent distribution to the original sample distribution.[148]

621. The variables that are used for aligning the distribution of the respondent sample and the original sample should be correlated with outcome variables and they should be available for both the respondents and non-respondents. In the case of measuring individual-level asset ownership, variables that are collected on the household questionnaire are good candidates. They should include sex among other characteristics such as region, urban/rural residence, age, relationship to head of the household, marital status, education, and economic activity.

622. As an illustration, Table 4 shows how nonresponse adjustment weight can be calculated based on the variable education. Data for the table are from the Uganda pilot survey for Treatment arms 4 and 5 combined (See Box 3 in Part I for an overview of MEXA). As can be observed from the table, women with higher education levels (secondary and higher) are less likely to respond than those with lower education levels. If we can assume that within each education group the respondents are a random sample of all sampled persons, i.e., missing at random, then the nonresponse adjustment weights can be calculated as the inverse of the response rate for people under each education level.

Table 4
Calculating nonresponse adjustment weight

Sex	Education	Sample	Respondents	Response rate (R_i)	Nonresponse adjustment weight ($1/R_i$)
Women	None	236	175	0.74	1.35
	Primary	580	458	0.79	1.27
	Secondary	298	188	0.63	1.59
	Higher	79	52	0.66	1.52
	Total	1193	873		
Men	None	96	61	0.64	1.57
	Primary	510	340	0.67	1.50
	Secondary	350	168	0.48	2.08
	Higher	107	72	0.67	1.49
	Total	1063	641		

Source: Data from the Uganda EDGE pilot survey, Arms 4 and 5 combined, self-reporting only.

[148] Groves et. al., 2009. *Survey Methodology*, second edition. Wiley series in survey methodology.

623. A similar weighting adjustment can be done for household-level non-response. Variables that can be used for the adjustment are often limited to geographic location and urban/rural as other information is often not available. For this adjustment, one also needs to take into consideration households that are of unknown eligibility.[149]

1.4.3. Post-stratification weighting

624. In addition to adjusting for unequal probability of selection and non-response in the sample, the data can be weighted up to the total target population. This procedure is called "post-stratification" and it uses weights to assure that the sample distribution defined by some key variables follows the same distribution of some external population. Data for the variables used for post-stratification weighting should be available for both the sample population and the external total population. Commonly used variables used include region, urban/rural residence, sex, age, education and economic activity.

625. Continuing with the above example from the Uganda EDGE pilot survey, to align the distribution of the sample population to the total population in terms of education, a post-stratification exercise is illustrated in Table 5. A comparison of the population distribution and sample distribution by education showed that the sample over-represents those who are with primary education.[150] Post-stratification weights are then derived to compensate for the difference between the sample and population.

Table 5
Illustrative example of post-stratification

Sex	Education	Population size	Population distribution by education (a_i)	Sample size	Sample distribution by education (b_i)	Post-stratification weights (a_i/b_i)
Women	None	549872	0.15	236	0.20	0.76
	Primary	696242	0.19	580	0.49	0.39
	Secondary	2194102	0.60	298	0.25	2.41
	Higher	206541	0.06	79	0.07	0.86
	Total	3646757	1.00	1193	1.00	
Men	None	696242	0.13	96	0.09	1.39
	Primary	860821	0.16	510	0.48	0.32
	Secondary	3646757	0.66	350	0.33	2.00
	Higher	343331	0.06	107	0.10	0.61
	Total	5547151	1.00	1063	1.00	

Source: Data for the sample from the Uganda EDGE pilot survey, Arms 4 and 5 combined, self-reporting only. Data for the population from the 2002 Uganda population and housing census.

[149] For more information on eligibility, see Standard definitions: final dispositions of case codes and outcome rates for surveys, American Association for Public Opinion Research, 2016. (http://www.aapor.org/AAPOR_Main/media/publications/Standard-Definitions20169theditionfinal.pdf)

[150] Please note that this is only a hypothetical exercise as the population data is from the Uganda 2002 population census.

1.4.4. Developing weights for asset

626. For asset-based analysis, additional calculation of weights is necessary to assign to assets identified by respondents. The calculation of the asset weights depends on how respondent owns a particular asset, either exclusively or jointly and if jointly, how many persons shared the ownership. It also matters whether those who share ownership with the respondent are household members or not.

627. If we take the reported ownership as an example and assume one respondent was selected randomly within a household of 3 adult members. The asset reported by the respondent as exclusively owned will be assigned the same weight (3, the inverse of the intrahousehold selection probability 1/3) for the respondent (as discussed earlier in Part III, sampling design).

628. However for assets that are jointly owned by the respondent and others, multiplicity weights would need to be calculated, depending on the number of joint-owners and whether the joint owners are household members or not. For example if the randomly selected respondent reported joint ownership of a parcel of agricultural land with two additional persons – one household member and one from another household. The weight for this parcel will be calculated as the inverse of the total selection probability of all joint owners. In this example, the selection probability is 1/3 for both the respondent and the within-household joint owner. Since the selection probability for the non-household joint-owner cannot be derived and an assumption will be made that this person has the same selection probability as the respondent. Therefore for national indicator N10 proposed for agricultural land, namely, share (%) of reported agricultural land area owned by women out of total reported agricultural land owned by women and men, the weight assigned to this particular parcel will be the inverse of (1/3*2+1/3), which is 1.

629. It is more complicated when there are more than one respondent within the household. The respondents might not necessarily provide consistent report of asset ownership. In this case, a decision has to be made on how to reconcile the information before calculating those weights.

2. Recommended indicators

630. This section presents a set of indicators for monitoring women's and men's ownership and control of physical and financial assets at global and national levels. The selection of the indicators is consistent with the definitions and recommendations presented in these guidelines and based on the following statistical criteria:[151]

- The indicators should be relevant to policy making and sensitive to policy interventions at the appropriate level (global, regional, national, and local);

[151] United Nations Statistics Division, 2013. Lessons Learned from MDG Monitoring from a Statistical Perspective; Canadian International Development Agency, 1997. Guide to Gender-Sensitive Indicators.

- The indicators should be clear and easy to understand for policy makers, the general public and other stakeholders;
- The indicators are disaggregated by sex and can be further disaggregated by geographical region, income, or special population groups where applicable and relevant;
- The indicators should be a direct and unambiguous measure of progress in gender equality in asset ownership in society over time;
- The indicators should be consistent with and complementary to each other.

631. The following additional criteria are used for the selection of indicators for global monitoring:

- The number of indicators for global monitoring should be small;
- The indicators should be relatively comparable across countries;
- The indicators should be broadly consistent with global lists of indicators such as the SDGs and avoid imposing an unnecessary burden on Governments and other partners;
- The indicators can be measured in a cost-effective and practical manner by countries. A regular data collection mechanism has been or can be developed with reasonable costs and by involving the official statistical system;

Level of monitoring

632. The present guidelines distinguish between global indicators and national indicators. Global indicators are the standardised indicators for which all countries are encouraged to collect data to measure the prevalence of women's and men's ownership and control of the core assets: principal dwellings, agricultural land, and non-agricultural land. An indicator on the prevalence of women's and men's ownership of mobile phones is also proposed in line with SDG Indicator 5.b.1. The data for all of the global indicators listed below can be obtained by integrating the minimum set of questions into an existing household survey, as discussed in Part III of these guidelines, thus allowing national statistical agencies to monitor progress towards women's ownership and control of assets in a cost-effective manner.

633. National indicators are complementary indicators that countries may wish to compile data for based on their policy needs and the resources available for data collection. These indicators will necessarily be customised by countries to be relevant to policy making and sensitive to policy interventions within countries. For example, countries may wish to derive an indicator on joint documented ownership of agricultural land to monitor national land titling programs. Countries in which livestock constitutes an important component of the agrarian economy may choose to develop prevalence indicators on women's and men's ownership of cattle or other large stock while countries in which women store a bulk of their wealth in jewellery may opt to develop prevalence indicators of women's ownership of jewellery and other valuables.

634. The national indicators proposed below cover all assets discussed in these guidelines and their data requirements vary in complexity. For non-core assets, including livestock, small agricultural equipment, consumer durables and valuables, the guidelines recommend

one indicator each for national monitoring in order to estimate the gender gap in the prevalence of asset ownership.

Level of measurement

635. Most of the indicators use the individual as the unit of analysis.[152] This information can generate two different types of statistics on the prevalence of asset ownership: (1) the *proportion* of women (men) who own assets; and (2) the *share* of women among owners of assets.

636. Indicators on the *proportion* of women (men) who own assets are calculated using as the numerator the number of women (men) who own the asset, either individually or jointly, and as the denominator the total number of women (men) in the population. For example, for the indicator on the proportion of women (men) with documented ownership of principal dwellings, the numerator is the total number of women (men) in the population who are documented owners of principal dwellings and the denominator is the total number of women (men) in the population.

637. Indicators on the *share* of women among asset owners are calculated using as the numerator the number of women who own the asset, either individually or jointly, and as the denominator the total number of women and men who own the asset, either individually or jointly. For example, for the indicator on the share of women among documented owners of agricultural land, the numerator is the number of women who have documented ownership, either individually or jointly, of agricultural land, and the denominator is the total number of women and men who have documented ownership of agricultural land.

638. Although often used interchangeably, these types of indicators provide different information.[153] Indicators on the *proportion of women (men) who own assets* indicate how widespread ownership is in the population and are useful for gender comparisons across time and countries. The proportions for women and men must be presented together so that they can be compared to produce the gender asset gap, a gender inequality measure of the differential prevalence of women's and men's asset ownership. Indicators on the *share of women owners* indicate how many of the people who own assets are women and are useful for showing the under-representation of women among asset owners.

639. Two indicators use the asset as the unit of analysis. First, the share (%) of documented (reported) agricultural land owned by women out of total documented (reported) agricultural land owned by women and men, where the numerator is the sum of the areas of parcels owned exclusively by women and the areas of parcels owned jointly by women divided by the number of joint owners of the parcel and the denominator is the sum of the areas of parcels owned exclusively by women or men and the areas of parcels owned jointly by women or men divided by the number of joint owners of the parcel. Second, the gender

[152] All indicators using the individual as the unit of analysis refer to the adult population, age 18 or above, with the exception of the global indicators for agricultural land, which refer to the agricultural population, age 18 or above. The definition of the agricultural population is to be determined within the context of developing the metadata for SDG indicator 5.a.1 (a) + (b).

[153] Doss et. al., 2013. Gender Inequalities in Ownership and Control of Land in Africa. IFPRI.

wealth gap, where the numerator is the net worth of assets owned by women (the value of their assets less the value of their outstanding liabilities) and the denominator is the total net worth of assets owned by women and/or men.

Indicator construct

640. Substantively, the set of recommended indicators measures key concepts of asset ownership and wealth presented in Part I of these guidelines, including the bundle of ownership rights, forms of ownership, acquisition of core assets, and their quality and quantity. Table 6 presents indicators on the bundle of ownership rights to assets, including reported ownership, documented ownership, and the rights to bequeath and sell, as well as the rationale for the construction of each indicator.

Table 6
Indicators on the bundle of ownership rights: rationale and asset coverage

Indicator	Rationale	Asset coverage
Proportion of individuals with reported ownership of [asset], by sex	Provides the broadest indicator of asset ownership as it measures people's perceptions of whether they consider themselves owners, which has implications for the behaviours they adopt vis-à-vis the asset	All assets
Proportion of individuals with documented ownership of [asset], by sex	Provides a measure of the ability to claim ownership rights in law over an asset by function of the individual being listed as an owner on the ownership document and can be used to monitor national programs and policies on housing and land titling reform	Principal dwelling, agricultural land, non-agricultural land
Proportion of individuals with the right to sell or bequeath the [asset], by sex	Not all persons who consider themselves owners of an asset have alienation rights over that asset. As evidenced by the EDGE pilot data, male reported owners are more likely to have the rights to sell or bequeath assets than female reported owners.	Principal dwelling, agricultural land, non-agricultural land
Proportion of total population with documented ownership of the [asset] or the right to sell or bequeath the [asset], by sex	Provides a measure of the ability to claim ownership rights in law over an asset that is comparable across countries (or areas within countries) with disparate rates of documentation Because individuals may still have the right to sell or bequeath an asset in the absence of documented ownership, as evidenced by analysis of the EDGE pilot data, the indicator combines documented ownership with the right to sell or bequeath to render it comparable across countries.	Principal dwelling, agricultural land, non-agricultural land

641. Table 7 presents indicators measuring additional aspects of asset ownership, including forms of ownership, acquisition of assets, and the quality and quantity of assets owned, as well as the rationale in covering those aspects. This type of indicator is used for a sub-set of indicators for national monitoring.

Table 7
Indicators on additional aspects of asset ownership: rationale and asset coverage

Indicator	Rationale	Asset coverage
Proportion of individuals who share documented ownership of [asset] with their spouse or partner, by sex	Provides a measure of spouses'/partners' ability to claim ownership rights in law over an asset by function of them being listed as owners on the ownership document and can be used to monitor national policies and programs that aim to increase women's ownership of land and housing through joint titling	Principal dwellings, agricultural land, non-agricultural land
Proportion of individuals who acquired ownership of the [asset] through [specific mode of acquisition], by sex of individuals.	Provides information on how women and men acquire assets and whether their modes of acquisition differ in order to develop policies and programs that promote women's and men's accumulation of assets. Policy-relevant specific modes of acquisition may refer to inheritance, purchase, government programs.	Principal dwelling, agricultural land, non-agricultural land
Share (%) of documented (reported) agricultural land owned by women out of total documented (reported) agricultural land owned by women and men	Accounts for gender differentials in the size of the agricultural land owned by women and men.	Agricultural land
Gender wealth gap	Accounts for gender differentials in the quantity and quality of the core assets owned by women and men	Principal dwelling, agricultural land, non-agricultural land and other real estate, non-agricultural enterprise assets, financial assets

642. The list below presents the global and national indicators organized by type of asset.

Principal dwellings

Global indicators**:**

- Indicator G1. Proportion of total population with documented ownership of the principal dwelling or the right to sell or bequeath the principal dwelling, by sex
- Indicator G2. Share of women among individuals with documented ownership of the principal dwelling or the right to sell or bequeath the principal dwelling, by sex

National indicators:

- Indicator N1. Proportion of total population with reported ownership of principal dwelling, by sex
- Indicator N2. Share of women among reported owners of principal dwelling
- Indicator N3. Proportion of total population with reported ownership of principal dwelling and the right to sell or bequeath the principal dwelling, by sex
- Indicator N4. Share of women among individuals with reported ownership of principal dwellings and the right to sell or bequeath the principal dwelling
- Indicator N5. Proportion of total population with documented ownership of principal dwelling, by sex
- Indicator N6. Share of women among documented owners of principal dwelling
- Indicator N7. Proportion of individuals who share documented ownership of the principal dwelling with their spouse or partner, by sex
- Indicator N8. Proportion of individuals who acquired ownership of the dwelling through [specific mode of acquisition] (e.g. purchase/inheritance/government program), by sex

Agricultural land

Global indicators[154]:

- Indicator G3. Proportion of total agricultural population with documented ownership of agricultural land or the right to sell or bequeath agricultural land, by sex
- Indicator G4. Share of women among individuals with documented ownership of agricultural land or with the right to sell or bequeath agricultural land

[154] The global indicators on agricultural land are proposed to inform the measurement of SDG 5.a.1 (a) + (b). The final metadata for the SDG indicators will be determined following additional consultation with stakeholders.

National indicators:

- Indicator N1. Proportion of total population with reported ownership of agricultural land, by sex
- Indicator N2. Share of women among reported owners of agricultural land
- Indicator N3. Proportion of total population with reported ownership of agricultural land and the right to sell or bequeath agricultural land, by sex
- Indicator N4. Share of women among individuals with reported ownership of agricultural land and the right to sell or bequeath agricultural land
- Indicator N5. Proportion of total population with documented ownership of agricultural land, by sex
- Indicator N6. Share of women among documented owners of agricultural land
- Indicator N7. Proportion of individuals who share documented ownership of agricultural land with their spouse or partner, by sex
- Indicator N8. Proportion of individuals who acquired ownership of agricultural land through [specific mode of acquisition] (e.g. purchase/inheritance/government program), by sex
- Indicator N9. Share (%) of documented agricultural land area owned by women out of total documented agricultural land owned by women and men
- Indicator N10. Share (%) of reported agricultural land area owned by women out of total reported agricultural land owned by women and men

Non-agricultural land

Global indicators:

- Indicator G5. Proportion of total population with documented ownership of non-agricultural land or the right to sell or bequeath non-agricultural land, by sex
- Indicator G6. Share of women among individuals with documented ownership of non-agricultural land or with the right to sell or bequeath agricultural land

National indicators:

- Indicator N1. Proportion of total adult population with reported ownership of non-agricultural land, by sex
- Indicator N2. Share of women among reported owners of non-agricultural land
- Indicator N3. Proportion of total adult population with reported ownership of non-agricultural land and the right to sell or bequeath non-agricultural land, by sex
- Indicator N4. Share of women among individuals with reported ownership of non-agricultural land and the right to sell or bequeath non-agricultural land
- Indicator N5. Proportion of total adult population with documented ownership of non-agricultural land, by sex

- Indicator N6. Share of women among documented owners of non-agricultural land
- Indicator N7. Proportion of individuals who share documented ownership of non-agricultural land with their spouse or partner, by sex
- Indicator N8. Proportion of individuals who acquired ownership of non-agricultural land through [specific mode of acquisition] (e.g. purchase/inheritance/government program), by sex

Consumer durables

Global indicator:

- Proportion of individuals who own a mobile telephone, by sex

National indicators:

- Proportion of individuals who own [specific type of consumer durable], by sex of owner

Livestock

National indicators:

- Proportion of individuals who own [specific type of livestock], by sex of owner

Large agricultural equipment

National indicators:

- Proportion of individuals who own [specific type of large agricultural equipment], by sex
- Proportion of individuals who acquired ownership of [large agricultural equipment] through [specific mode of acquisition] (e.g. purchase/inheritance/government program), by sex

Small agricultural equipment

National indicators:

- Proportion of individuals who own any small agricultural equipment, by sex

Valuables:

National indicators:

- Proportion of individuals who own [specific type of valuable], by sex

Financial assets

National indicators:

- Proportion of individuals who have [specific type of financial asset] in their name, by sex

Overall indicator on wealth

National indicators:

- Gender wealth gap: the net worth of key assets owned by women (value of their key assets less the value of their outstanding liabilities) as a share in the total net worth of key assets owned by women and/or men.

4. Data analysis and dissemination of results

643. Data analysis and dissemination are the steps involved in preparing and communicating the key findings of the survey to stakeholders and a wide range of users. Data analysis refers to the process of transforming raw data into statistics and indicators presented in the form of numbers, tables and graphics and interpreted in analytical publications that discuss data patterns and trends and their significance for program development and policy-making. This is the survey stage aiming to answer the questions formulated as objectives of the survey. The dissemination of data refers to the release of survey findings and various statistical and analytical products as well as the sharing of data files and associated metadata.

644. The first part of this section focuses on data analysis and presentation and shows (1) how data analysis can be used to answer policy-relevant questions on asset ownership and control and (2) how to present the findings in a form that tells a story about existing gender differences in a particular country context. It uses data and statistics obtained in the EDGE pilots, for illustrative purposes. The second part of the section is focused on the dissemination of results and covers aspects related to dissemination strategies and products that would typically be prepared at the end of a household survey. (Work in progress.)

Annex A. Collecting a household roster of assets in a stand-alone survey

Questionnaire template for a stand-alone survey administered to multiple adult household members and/or for the purposes of estimating household wealth

645. Countries that want to collect data on household wealth and/or analyze intrahousehold asset ownership will need to make some modifications to both the household questionnaire and the individual questionnaire presented above. Most notably, countries will need to collect a household roster of assets; i.e. a list of all assets belonging to the household's members, in the household questionnaire. Countries should determine which assets to include in the household asset roster based on their policy needs, but it is recommended that information on financial assets is not collected at the household level because, as discussed in Part I of these guidelines, respondents are less likely to know about the financial assets owned by other household members. It is also suggested that non-agricultural enterprise assets be excluded from the household asset roster since the owner of the enterprise is likely to be most knowledgeable about the assets used for the enterprise. As such, these guidelines recommend that the household asset roster comprise agricultural land, large agricultural equipment and other real estate. If countries wish to collect itemized data on other assets (such as consumer durables) because they comprise a large share of wealth in the country, they can opt to include them in the household roster as well. Below, a template for collecting a household roster of assets is provided that countries should contextualize, accordingly.

Household questionnaire

Household roster of assets

Agricultural land

1. *Do you or any member of your household currently own any agricultural parcels exclusively or jointly with someone?*
   - Codes: yes; no (skip to next asset)

646. This is the screening question to determine whether anyone in the household owns agricultural land. Agricultural parcels of interest include those that are owned and cultivated by the household and those that are currently fallow, rented out or given away for nothing in return on a temporary basis. Because the module is concerned with the ownership of agricultural land, parcels that are rented in and farmed should not be included. If nobody in the household owns any agricultural land, skip to the next asset as the remainder of this parcel roster is only administered if someone in the household owns agricultural land.

Household parcel roster

2. *Parcel name and description*

647. All parcels owned by the household's members should be listed, from largest to smallest, to generate a household roster of agricultural land. The respondent should provide a

name for each parcel (e.g. “road parcel” or “swamp parcel”) and a brief description of each parcel so that the parcels are easily identifiable to other household members. After the respondent finishes the initial listing of the parcels of land, prompt him/her to recall other parcels of agricultural land held by any member of the household that he or she might have missed listing. This information should be provided for each agricultural parcel owned in the household before proceeding to the next question.

3. *Is this [agricultural parcel] located inside or outside of the country?*”
    - Codes: inside; outside

648. Note that this question is only necessary if countries wish to use the data collected on agricultural land for informing their System of National Accounts, as land located outside of the country is not included in the SNA.

Parcel characteristics

649. It is suggested that if a household roster of agricultural parcels is collected, then the following questions on the characteristics of the agricultural parcels be asked in the household questionnaire rather than in the individual questionnaire.

4. *What is the size of this [parcel]?*

650. In the absence of GPS-based area parcel measurements, this question measures the size of the parcel as self-reported by the respondent and can serve as a proxy to assess differences in the quality of land owned by women and men. The respondent should estimate the size of the parcel in the unit(s) of measure commonly used in the national survey program (e.g. hectares, acres).

5. *Is this [parcel] irrigated?*
    - Codes: yes; no

651. This question measures whether the parcel uses any form or irrigation or relies entirely on rainfall and can serve as a proxy to assess differences in the quality of land owned by women and men.

6. *What was the primary use of this [parcel] during the last cropping season?*
    - Codes: livestock production; poultry production; grains and legumes; industrial crops; fruit and vegetable production; fodder, grazing pasture or grass for animals; fish farming/aquaculture; forestry plantation; fallow; woodland/ forest; swamp; rented out

652. This question captures the primary use of the agricultural parcel during the last cropping season and can provide for further disaggregation of gender statistics on land

ownership. If the parcel had more than one use, the activity which earned the highest revenue should be considered primary.

Tenure security

653. It is suggested that if a household roster of agricultural parcels is collected, then the following question on tenure security be asked in the household questionnaire rather than in the individual questionnaire.

7. *What is the tenure status of this [parcel]?*
    - Each county will have to determine the appropriate coding for this question

654. The World Programme for the Census of Agriculture 2010 guidelines define land tenure as the arrangements or rights under which the holder operates the land making up the holding.[155] The guidelines recognize that there are many different systems of formal and informal land tenure around the world and the distinction between legal and non-legal ownership (one of the keys to tenure security) is often blurred. Consequently, only four broad categories of land tenure are offered by the WCA recommendations, as follows:

655. Legal ownership or legal owner-like possession refers to legal ownership obtained through either a formal land title system or customary land tenure arrangements that are registered or certified in some way. Such arrangements might include: possession of an ownership title by the holder; operation of the land by the holder under hereditary tenure arrangements; perpetual or long-term lease (with nominal or no rent) and; the land is held under tribal or traditional form of tenure recognized by the state[156];

656. Non-legal ownership or non-legal owner-like possession covers situations where the holder: a) operates the land without interruption for a long period of time without any legal form of legal ownership, title, long–term lease or payment rent; b) is operating land owned by the state without any legal rights or; c) is operating land held under tribal or traditional form of tenure which is not recognized by the state;

657. Rented from someone else: land may be rented for: a) an agreed amount of money and/or produce; b) a share of the produce, or; c) in exchange for services. Land may be also granted for free. At the parcel level, rental arrangements are noted in Item 0103 (Land Tenure) and explored in more detail in Item 0104 (Terms of Rental) for rented parcels. The categories here are rented: a) for an agreed amount of money and/or produce) b) for a share of produce; c) in exchange for services, and; d) under other rental arrangements;

[155] FAO, 2005. *The World Programme for the Census of Agriculture 2010.*

[156] This was reported in Neciu, A. 2013. Approaches to measuring asset ownership and control in Agricultural Censuses and Surveys. Paper prepared by the FAO Junior Consultant for the EDGE Project. Draft. 17 September 2013. Statistics Division (ESS). Rome: The Food and Agriculture Organization of the United Nations.

658. Other types of land tenure include land: a) operated on squatter basis; b) operated under transitory tenure forms such as trusteeship; c) received by members of collective holdings for individual use, and; d) under inheritance proceeding.

659. Because this module collects information only on agricultural land owned by the respondent, the tenure status of the parcels reported by the respondent should fall under either legal ownership or legal owner-like possession or non-legal ownership or non-legal owner-like possession. In some contexts, squatting may constitute a form of informal ownership and thus the "other types" category would also be applicable.

660. Because the WCA categories of land tenure are purposely broad, each country should use its own categories of land tenure, which allows for more in-depth analysis. For example, the categories used in the EDGE pilot study in Uganda were: "Mailo," "Customary," "Leasehold" and "Freehold," while in South Africa, the categories were "Owns and farms the land," "Owns and rents out the land," "Owns and sharecrops out the land," "Tribal authority," "State land," and "Other." Note that land rented in or sharecropped in should not be included in the module and thus, a tenure category for said tenure arrangement is not needed unless for the purposes of data validation. The tenure status categories used by the countries can then be collapsed into the WCA categories as additional analysis warrants.

Value of agricultural land

661. It is suggested that if a household roster of agricultural parcels is collected for the purposes of estimating household wealth, then the following question on the value of the asset be asked in the household questionnaire rather than in the individual questionnaire.

8. *If this [parcel] were to be sold today, how much could be received for it?*

662. This question measures the value of the agricultural parcel. The respondent should estimate the current value based on the location and quality of the particular parcel. The full amount that would be received in the sale should be listed, regardless of how the money would be apportioned among household or non-household members. If the respondent is not sure how to answer, enumerators should probe on this question by encouraging the respondent to consider the price received for other parcels that have been sold in the area. If markets are thin for land, investigators may want to use information on the characteristics of the plot (such as the size of the parcel and irrigation status) so that a value can be imputed.

Large agricultural equipment

1. *Do you or any other household members own any large agricultural equipment, such as tractors, ploughs, irrigation systems or trailers?*
    - Codes: yes; no

663. This is the screening question to determine whether anybody in the household owns large agricultural equipment. Categories of large agricultural equipment may include, but are

not limited to, ploughs, ox-ploughs, tractors, trailers, threshers, irrigation systems, and spraying machines. Countries will need to determine the categories of large agricultural equipment to include based on prevalence rates from prior agricultural or household surveys as well as policy needs. If nobody in the household owns any large agricultural equipment, skip to the next module as the remainder of this household roster of large agricultural equipment is only administered if somebody in the household owns any large agricultural equipment.

Household roster of large agricultural equipment

2. *Please list each piece of large agricultural equipment owned by anyone in the household*

664. All pieces of large agricultural equipment owned by the household's members should be listed to generate a household roster of large agricultural equipment. The respondent should provide a brief description of each piece of equipment so that it is easily identifiable to other household members. After the respondent finishes the initial listing of the pieces of agricultural equipment, prompt him/her to recall other pieces of agricultural equipment held by any member of the household that he or she might have missed listing. This information should be provided for each piece of large agricultural equipment owned in the household before proceeding to the next question.

Value of agricultural equipment

665. It is suggested that if a household roster of large agricultural equipment is collected for the purposes of estimating household wealth, then the following question on the value of the asset be asked in the household questionnaire rather than in the individual questionnaire.

3. *If this [agricultural equipment] were to be sold today, how much could be received for it?*

666. This question measures the value of the large agricultural equipment. Respondents should estimate the current value based on the location and quality of the particular piece of equipment. The full amount that would be received in the sale should be listed, regardless of how it might be apportioned between household members or non-household members or a bank or other lender if there is money owed on the equipment. If the respondent is not sure how to answer, enumerators should probe on this question by encouraging the respondent to consider the price received for other pieces of large agricultural equipment of the same type that have been sold in the area.

Other real estate

1. *Do you or any other household member own any other real estate, including other residential dwellings/buildings, commercial buildings or non-agricultural plots of land?*
    - Codes: yes; no (skip to next module)

667. This is the screening question to determine whether anyone in the household owns any other real estate. Categories of real estate may include residential dwellings/buildings, commercial buildings or non-agricultural plots of land. Countries will need to determine the categories of other real estate to include based on prevalence rates from prior household surveys as well as policy needs and may want to further disaggregate the suggested categories based on analytical needs. If nobody in the household owns any other real estate, skip to the next module as the remainder of this household roster of other real estate is only administered if somebody in the household owns any other real estate.

Household roster of other real estate

2. *Please list each piece of other real estate owned by anyone in the household*

668. All pieces of other real estate owned by the household's members should be listed to generate a household roster of other real estate. The respondent should provide a brief description of each piece of other real estate so that real estate is easily identifiable to other household members. After the respondent finishes the initial listing of the pieces of other real estate, prompt him/her to recall other pieces of real estate held by any member of the household that he or she might have missed listing. This information should be provided for each piece of other real estate owned in the household before proceeding to the next question.

3. *Is this [real estate] located inside or outside of the country?*"
    - Codes: inside; outside

669. Note that this question is only necessary if countries wish to use the data collected on other real estate for informing their System of National Accounts as real estate located outside of the country is not included in the SNA.

Value of other real estate

670. It is suggested that if a household roster of other real estate is collected for the purposes of estimating household wealth, then the following question on the value of the asset be asked in the household questionnaire rather than in the individual questionnaire.

4. *If this [other real estate] were to be sold today, how much could be received for it?*

671. This question measures the value of the other real estate. Respondents should estimate the current value based on the location and quality of the particular piece of real estate. The full amount that would be received in the sale should be listed, regardless of how it might be apportioned between household members or non-household members. If the respondent is not sure how to answer, enumerators should probe on this question by encouraging the respondent to consider the price received for other pieces of real estate of the same type that have been sold in the area where the real estate is located.

Household roster of members

672. In addition to adding a household roster of assets to the household questionnaire, countries interviewing multiple household members may wish to include the following questions in the household roster of household members to facilitate intrahousehold analysis of asset ownership and control.

Question on marital status

1. *What is [Name]'s present marital status?*
    - Codes: never married; divorced; separated; widowed; customary/ religious marriage, monogamous; customary/ religious marriage, polygamous; civil marriage, monogamous; civil marriage, polygamous; cohabitating, single partner; cohabitating, multiple partners

673. While household surveys usually ask the marital status of all household members, countries may want to collect information on the type of marriage for each household member because the laws regarding property in many countries differ according to the marital regime. While the categories of marital status will differ by country, generally marriages are customary, civil or religious. In addition, consensual unions or cohabitation may confer some legal rights to property so these categories should be included as well.[157]

Questions to identify respondents' spouse(s)/partners(s)

674. To enable intrahousehold analysis of asset ownership and control between spouses, it is suggested that the following questions to identify spouses/partners within the household be asked.

2. *Is [Name's] spouse/partner a member of the household?*
    - Codes: yes; no (skip to Q4)

3. *Who is [Name's] spouse/partner?*

4. *What year did [Name] marry or form a consensual union with spouse/partner?*

[157] Doss, C. et al., 2011. Lessons from the field: Implementing individual asset surveys in Ecuador, Ghana, India and Uganda.

Questions for polygamous households

5. *Does [Name] have another spouse that lives in this household now?*
   - Codes: yes; no (skip to Q8)

6. *Who is [Name's] second spouse?*

7. *What year did [Name] marry or formal consensual union with second spouse/partner?*

8. *Does [Name] have a spouse/partner living outside of this household now?*
   - *Codes: yes; no (skip to end of module)*

9. *How many spouses/partners does [Name] have living outside of this household?*

Individual questionnaire

675. In place of asking the respondent to list all of the assets that he/she owns (e.g. all agricultural parcels), the respondent will be asked to review the list of assets generated at the household level and to report whether or not he/she owns any of the listed assets. In addition, the respondent will be given the opportunity to report any additional assets of the same type (e.g. agricultural parcels) not included in the household roster of assets. These modifications are highlighted below for agricultural land, large agricultural equipment, and other real estate.

Agricultural land

1. *Do you own any agricultural land?*
   - Codes: yes; no (skip to next module)

676. This is the screening question to determine whether the respondent should complete the module. If the respondent does not own any agricultural land, skip to the next module as the remainder of this module is only administered to the respondent if she/he self-reports owning agricultural land.

2. *Parcel roster*

677. If the respondent reports owning any agricultural land in Q1, he/she will report which of the agricultural parcels listed in the household roster he/she owns. If using CAPI, the parcel roster can be prefilled with the list of parcels collected in the household roster of assets. If using PAPI, the enumerator will need to list in this section the ID codes from the household questionnaire of the parcels that are ***owned*** individually or jointly by the respondent. In both cases, the opportunity should be given to add additional parcels the respondent reports owning that were not included in the household roster. The remainder of

questions in the module will only be asked about the agricultural parcels owned by the respondent. Note that the questions on the characteristics and value of the agricultural parcels should not be included in the individual questionnaire because they are asked at the household level.

Large agricultural equipment

1. *Do you own any large agricultural equipment?*
   - Codes: yes; no (skip to next module)

678. This is the screening question to determine whether the respondent should complete the module. If the respondent does not own any large agricultural equipment, skip to the next module as the remainder of this module is only administered to the respondent if she/he self-reports owning large agricultural equipment.

2. *Large agricultural equipment roster*

679. If the respondent reports owning any large agricultural equipment in Q1, he/she will report which of the pieces of large agricultural equipment listed in the household roster he/she owns. If using CAPI, the equipment roster can be prefilled with the list of equipment collected in the household roster of assets. If using PAPI, the enumerator will need to list in this section the ID codes from the household questionnaire of the pieces of equipment that are ***owned*** individually or jointly by the respondent. In both cases, the opportunity should be given to add additional pieces of large agricultural equipment the respondent reports owning that were not included in the household roster. The remainder of questions in the module will only be asked about the large agricultural equipment owned by the respondent. Note that the question on valuing the large agricultural equipment should not be included in the individual questionnaire because it is asked at the household level.

Other real estate

1. *Do you own any other real estate?*
   - Codes: yes; no (skip to next module)

680. This is the screening question to determine whether the respondent should complete the module. If the respondent does not own any other real estate, skip to the next module as the remainder of this module is only administered to the respondent if she/he self-reports owning other real estate.

2. *Roster of other real estate*

681. If the respondent reports owning any other real estate in Q1, he/she will report which of the pieces of other real estate listed in the household roster he/she owns. If using CAPI, the real estate roster can be prefilled with the list of real estate collected in the household roster of assets. If using PAPI, the enumerator will need to list in this section the ID codes from the

household questionnaire of the pieces of real estate that are ***owned*** individually or jointly by the respondent. In both cases, the opportunity should be given to add additional pieces of real estate the respondent reports owning that were not included in the household roster. The remainder of questions in the module will only be asked about the real estate owned by the respondent. Note that the question on valuing the real estate should not be included in the individual questionnaire because it is asked at the household level.