Food and Agriculture Organization
of the United Nations

Guidelines for collecting data for sex-disaggregated and gender-specific indicators in national agricultural surveys

2nd Edition

Publication prepared in the framework of the Global Strategy to improve Agricultural and Rural Statistics

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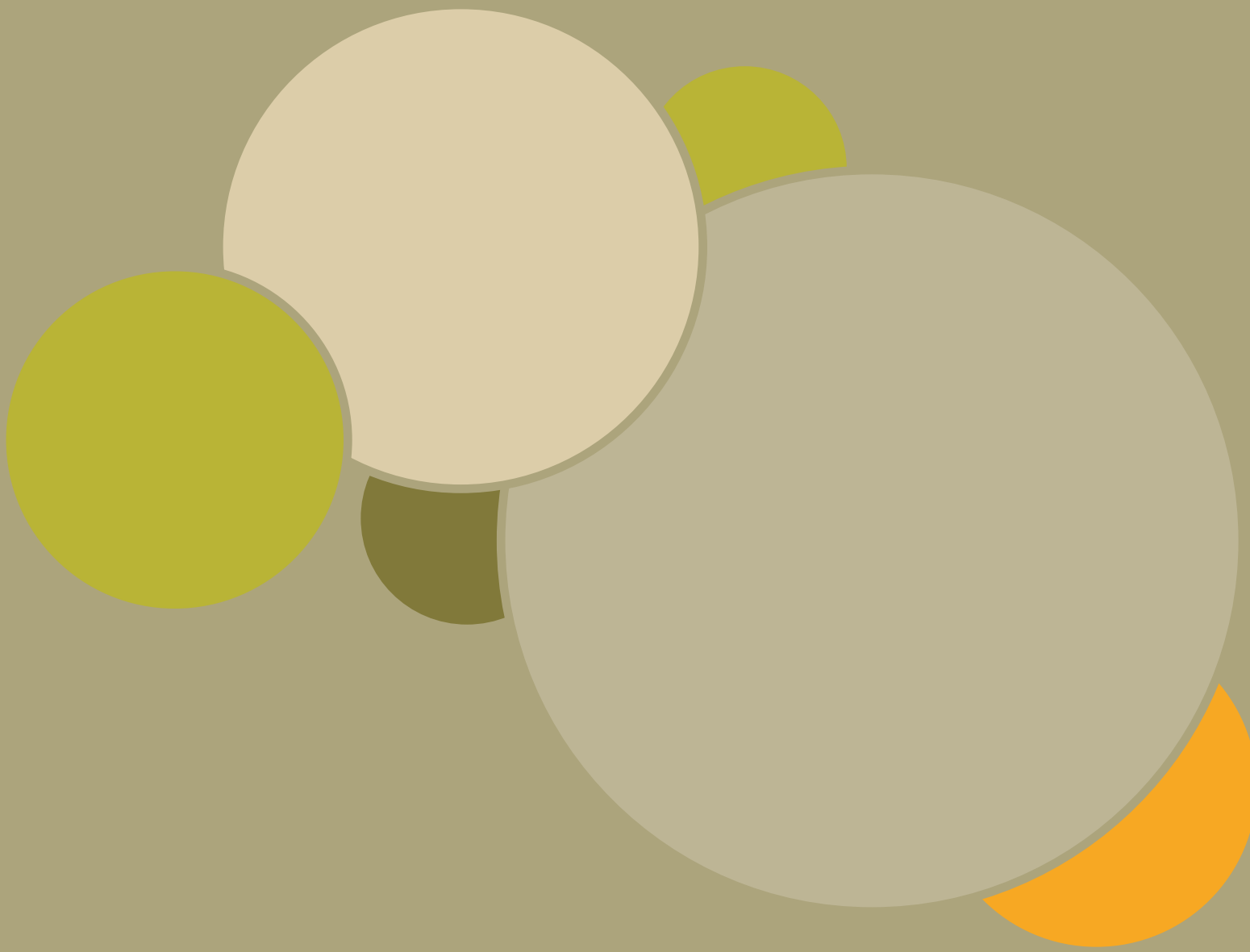
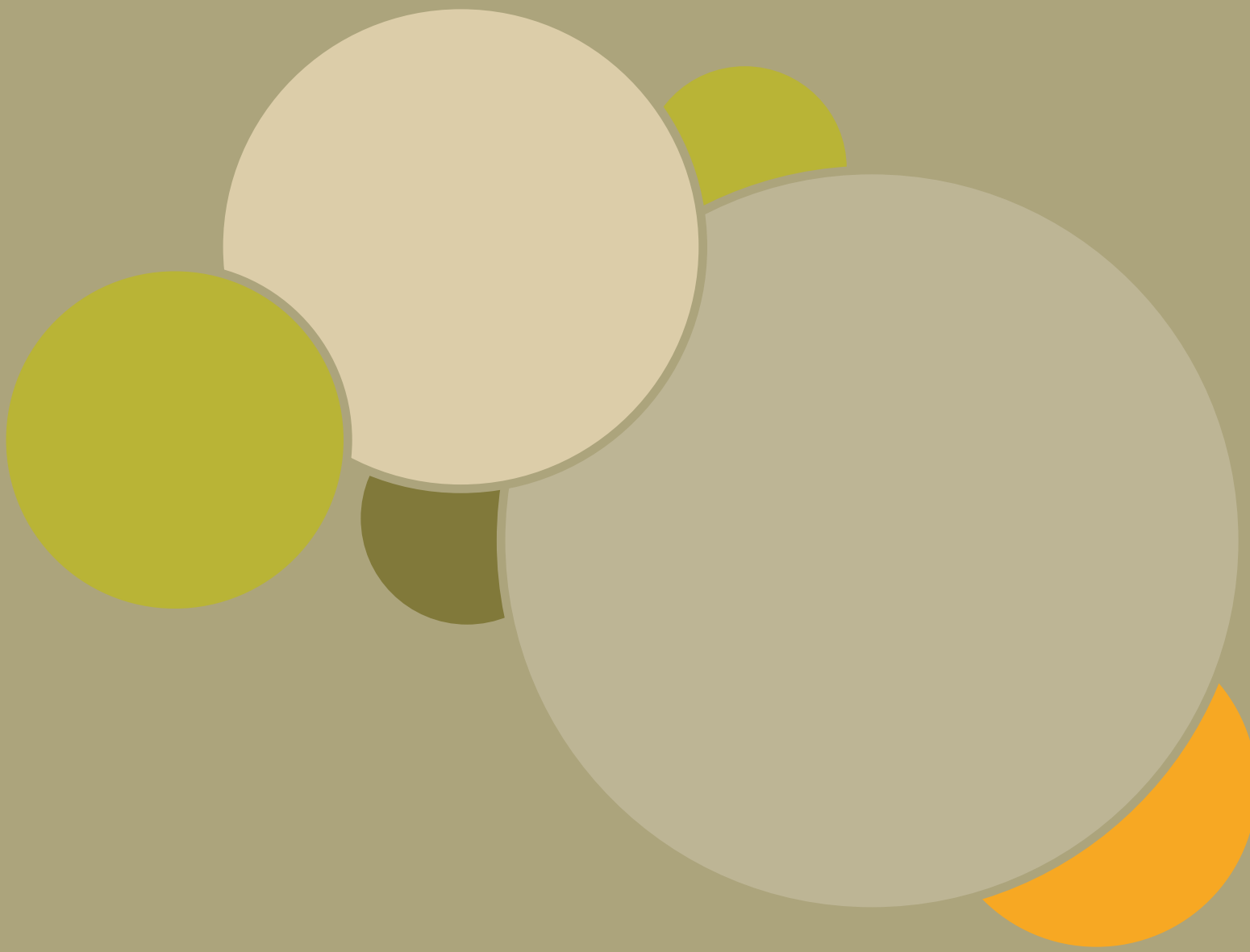
December 2018



Contents

Acronyms

ADB	Asian Development Bank
AfDB	African Development Bank
ATUS	American Time Use Survey
BPS	Badan Pusat Statistik (Indonesia)
CAPI	Computer-Assisted Personal Interviewing
FAO	Food and Agriculture Organization of the United Nations
GSARS	Global Strategy to improve Agricultural and Rural Statistics
ICATUS	International Classification of Activities for Time Use Statistics
ICLS	International Conference of Labour Statisticians
IFPRI	International Food Policy Research Institute
ILO	International Labour Organization
MEXA	Methodological Experiment on Measuring Asset Ownership from a Gender Perspective
OECD	Organisation for Economic Co-operation and Development
SDG	Sustainable Development Goal
SNA	System of National Accounts
UBOS	Uganda Bureau of Statistics
UNSD	United Nations Statistics Division
UN Women	United Nations Entity for Gender Equality and the Empowerment of Women
WEAI	Women's Empowerment in Agriculture (survey)



Purpose of these guidelines

Gender equality is a central theme of the international development agenda and, correspondingly, the elimination of discrimination against women is an aim of many countries. Article 14 of the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) focuses specifically on addressing the problems faced by rural women. This includes ensuring women have equal access as men to important resources, financial mechanisms, opportunities, and information. It also includes ensuring women have voice or decision-making power over productive activities in the household as well as voice at the community-level. Large data gaps, however, exist that would allow us to fully understand gender differences in these areas. These Guidelines aim to improve the availability of systematically integrated and comparable sex-disaggregated and gender-relevant data within agricultural surveys by bridging significant data gaps. Specifically, the Guidelines identify key indicators focusing on crop and livestock activities in developing countries where the agricultural sector is largely characterized by agricultural households, and propose adaptations to existing agriculture surveys based on the latest research in survey methods and gender analysis. ***The goal is to improve the quality and use of statistics to better monitor the status of gender inequalities in rural areas, provide important background information on gender dynamics in agriculture within countries, strengthen awareness of gender dimensions and gaps in agriculture, and provide evidence-based support for gender-based policy-making at the country level***. To estimate these indicators, the Guidelines suggest questions that can be mainstreamed in agricultural surveys.

Why publish a new edition

Goal 5 of the Sustainable Development Goals (SDGs) is gender equality. Under Target 5.a "*Equal rights to economic resources, property ownership and financial services*," sub-indicators 5.a.1(a) and (b) measure women's rights over agricultural land as compared to men's. The first version of the Guidelines was finalized before the methodology to estimate these sub-indicators was completely developed and approved by the international community. The methodology has since been fully developed and accepted. This version of the Guidelines updates the information on how to collect the data required (using one strategy of many applicable) and how to compute the sub-indicators with the data collected. In addition, it provides readers direction on where to obtain more information for further guidance, including guidance on other data collection strategies.

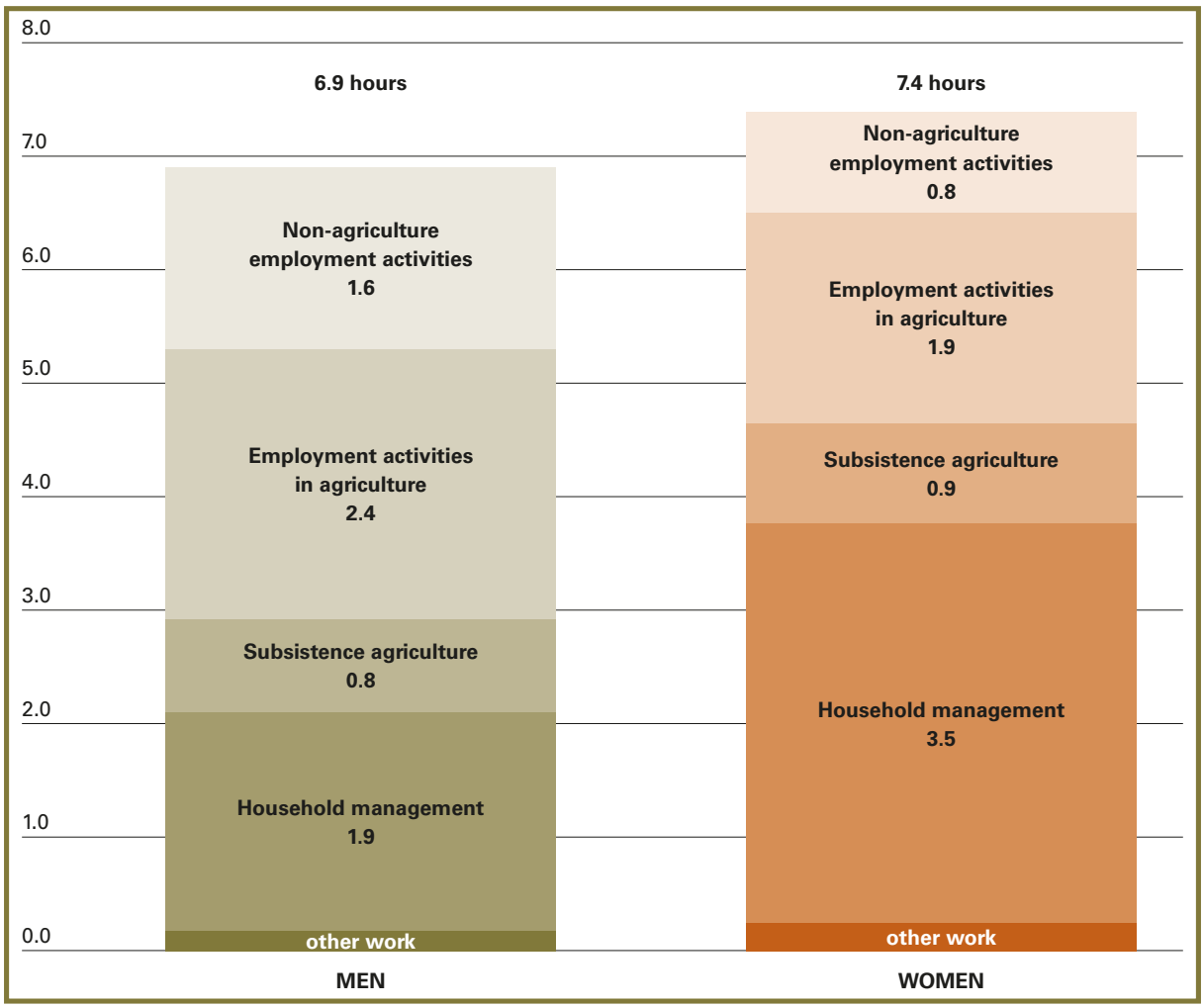
How do these guidelines differ from the women's empowerment in agriculture index?

The Women's Empowerment in Agriculture Index (WEAI) is a survey-based index. The WEAI survey is an instrument aimed at collecting the data needed to estimate women's empowerment within agricultural households with a focus on developing countries. Empowerment is measured through an empowerment index calculated using weighted estimates from five domains in agriculture, the household and the community. These domains are (1) decisions about agricultural production; (2) access to and decision-making power over productive resources; (3) control over use of income; (4) leadership in the community; and (5) time use. There is also a sub-index that measures the extent to which women are empowered relative to men. The WEAI survey is administered to one man and one woman within a household, which is typically the primary couple, when a primary couple is present. Proxy respondents are not possible as the questions are specific to the respondents' individual experiences, activities and empowerment processes.

As one of the few instruments with a well-developed comprehensive approach to collecting gender-specific data within agricultural households, the WEAI is discussed extensively in the GSARS Gender Methodologies Literature Review (GSARS, 2016; available at http://www.gsars.org). Similarly, the suggestions in these Guidelines refer to and build upon the tools, methodology and best practices from the WEAI.

There are some similarities between the WEAI and these Guidelines, the greatest of which is the methodology used to collect time use data (the 24-hour recall, diary time use module). In fact, the module proposed in the Guidelines is based on the module used in the WEAI survey, and refers to the WEAI resource center for best practices on implementation. A minor difference is that the module proposed in these Guidelines asks additional questions to capture whether work activities are unpaid or paid, whether they are on the holding or off, and whether the activities can be classified as employment or non-employment work. Figure (a) provides an example of how the data can be disaggregated to explore differences in hours by type of work using the data from the GSARS field test in Uganda. Both modules can provide information on men and women's differences in hours worked as is presented using WEAI data in figure (b).

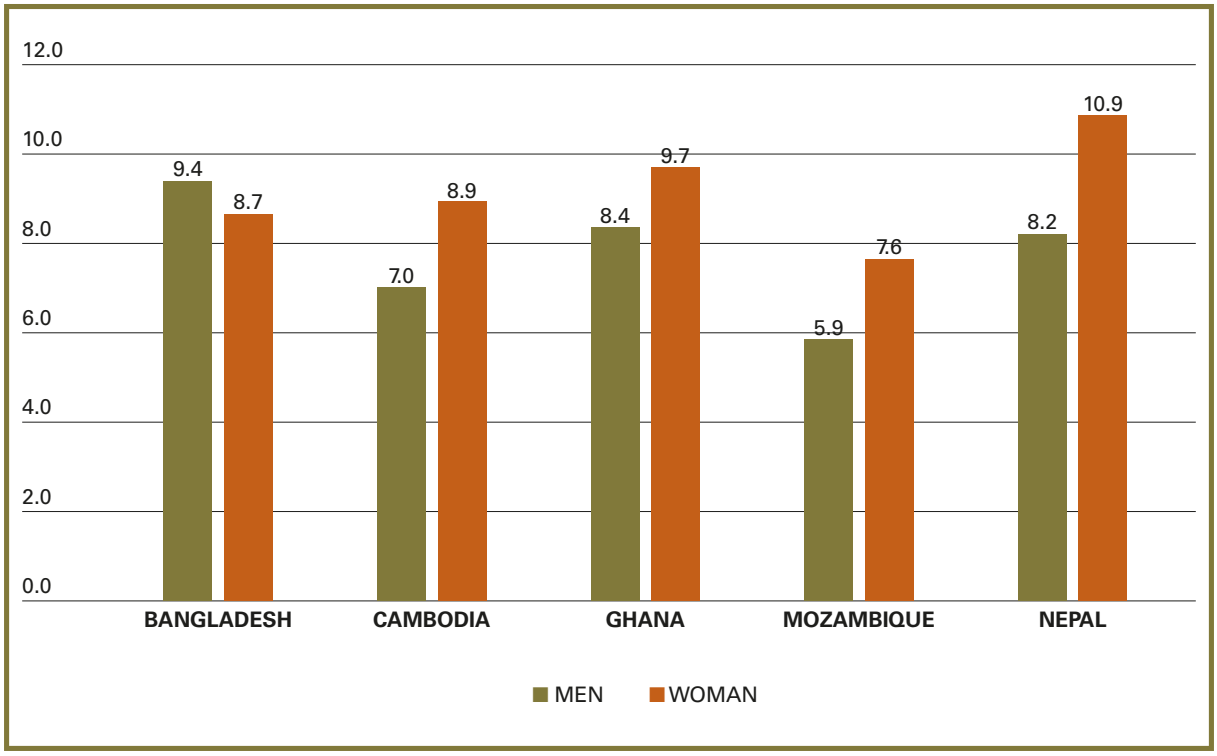
FIGURE (A). AVERAGE TIME MEN AND WOMEN SPENT IN THE LAST 24 HOURS BY EMPLOYMENT AND NON-EMPLOYMENT WORK ACTIVITY (IN HOURS)



Notes: Household management includes care of children, adults or the elderly; preparing meals; cleaning; collecting water and natural fuels for household use; shopping or buying food, clothes or other goods for the household; construction or repair of the household premises; and weaving, sewing, and textile care for household use. Other work includes helping a neighbour, friend or other individual who is not family; volunteer work for an enterprise, group or organization; and exchange agricultural work for another household.

Source: FAO, 2018. *Employment, work and time use in agricultural contexts: what data do we need for gender analysis?* Issues Brief. FAO Publication: Rome. Calculated by the authors using data from household survey administered by GSARS in partnership with the Uganda Bureau of Statistics (UBOS) in Bukedea, Kamelia and Buikwe districts in the Eastern Region of Uganda, July 2016.

FIGURE (B). AVERAGE TIME MEN AND WOMEN SPENT WORKING IN THE LAST 24 HOURS (IN HOURS)



Source: Komatsu, H., Malapit, H.J.L. & Theis, S. 2015.

Beyond time use, other themes in the Guidelines overlap with themes in the WEAI. However, the aim and approach of data collection and data estimation within these themes differ from the WEAI. As an example, for decisions made in agriculture on the holding, the Guidelines recommend questions that capture decision-making within the household on specific activities by parcel, plot, crop and livestock type. The aim is to be able to understand who participates in the major decisions in agriculture on the holding. A preliminary analysis in Uganda suggests that presenting only the sex distribution of holders may severely underestimate women's participation as primary decision-makers in agriculture. The data also allows for the exploration of topics such as men's and women's decision-making on which crops to be planted by plot and how this might affect crop diversity; whether joint or collaborative decision-making takes place at the crop or plot -level; and agricultural productivity by sex.

To collect the data on who makes the primary decisions in agriculture on the holding within agricultural surveys, the holder or an individual who is most informed about agricultural activities in the household is typically the respondent. In contrast, the questions in the WEAI are specific only to the respondent and can only be answered by the respondent. The aim is to understand decision-making power, or empowerment, of the individual. This is done with questions on agricultural and household activities in general broadly across all cropping and livestock activities. For example, the respondent is asked:

- When decisions are made regarding the types of crops to grow, who is it that normally takes the decision? To what extent do you feel you can make your own personal decisions regarding the types of crops to grow if you want(ed) to?
- When decisions are made regarding livestock raising, who is it that normally takes the decision? To what extent do you feel you can make your own personal decisions regarding livestock raising if you want(ed) to?

Similarly, both the Guidelines and the WEAI include questions on ownership and rights over assets. An agricultural survey typically asks detailed questions about the holding's land. It will also typically ask about livestock and agricultural equipment. However, normally, who in the household owns and has rights over these assets is not asked. These Guidelines recommend asking who in the household owns and has rights over these assets. For land ownership, the proposed methodological approach is based on data collection needs for the estimation of the two SDG sub-indicators 5.a.1(1) and (b). This means it needs to be representative of the male and female populations, requiring that either all adults in the household are administered the module or one randomly selected individual is administered it. (A third approach is to administer a module that collects data on ownership for all members in the household to holder or the person most informed about the agricultural household land holdings.) The questions include information on the land tenure, reported ownership, names on an ownership document, and rights to sell or bequeath. The ownership questions and the recommended approach are based on the latest research from the UN Methodological Guidelines for the Production of Statistics on Asset Ownership from a Gender Perspective (EDGE, forthcoming).

In contrast, the WEAI asks the respondent if the household owns any land and, if so, how much and who owns the most land; who can decide to sell the land most of the time; who can decide whether to give away the land most of the time; who can decide to rent or mortgage out the land most of the time; and who contributes most to the purchases of the land most of the time.[1] While the approach captures the bundle of rights across all agricultural land owned by the household, since the focus is on empowerment and not individual ownership, it does so in relation to other members in the household. With the WEAI data, we do not know if the individual owns land unless he or she owns most of the land in the household. Additionally, the WEAI does not capture details, such as tenure rights, documents showing ownership, and names are documents by parcel or plot.

If there is interest in appending the WEAI to an agricultural survey with the aim of measuring women's empowerment in agriculture, the full instrument is needed to estimate empowerment.[2] Since the WEAI instrument does not capture detailed data on agricultural land ownership and tenure rights, which is a particularly important dimension in gender, it is worth considering also incorporating a module that captures individual land ownership and tenure rights—in particular, the data needed for the sub-indicators 5.a.1(a) and (b).

If the aim is not to measure women's empowerment within agriculture, but instead to better understand gender dimensions and gaps in agriculture in detail, rather than appending the WEAI to the survey, questions instead can be incorporated directly into agricultural surveys using recommendations from these Guidelines.

1 See the WEAI survey instrument available on the WEAI Resource Center at http://www.ifpri.org/topic/weai-resource-center.

2 Different versions of the WEAI are available. The A-WEAI is a shortened instrument, which takes on average 25-30 minutes per person (Malapit, H., Kovarik, C., Sproule, K., Meinzen-Dick, R., & Quisumbing, A.R., 2015). The instrument is administered to two individuals per household a man and a woman who are "self-identified as primary members responsible for decisionmaking, both social and economic, within the household" (ibid), unless there is no adult household member of the opposite sex. As such, with only one enumerator, administering the A-WEAI would typically add 50-60 minutes to the agriculture survey.

Acknowledgements

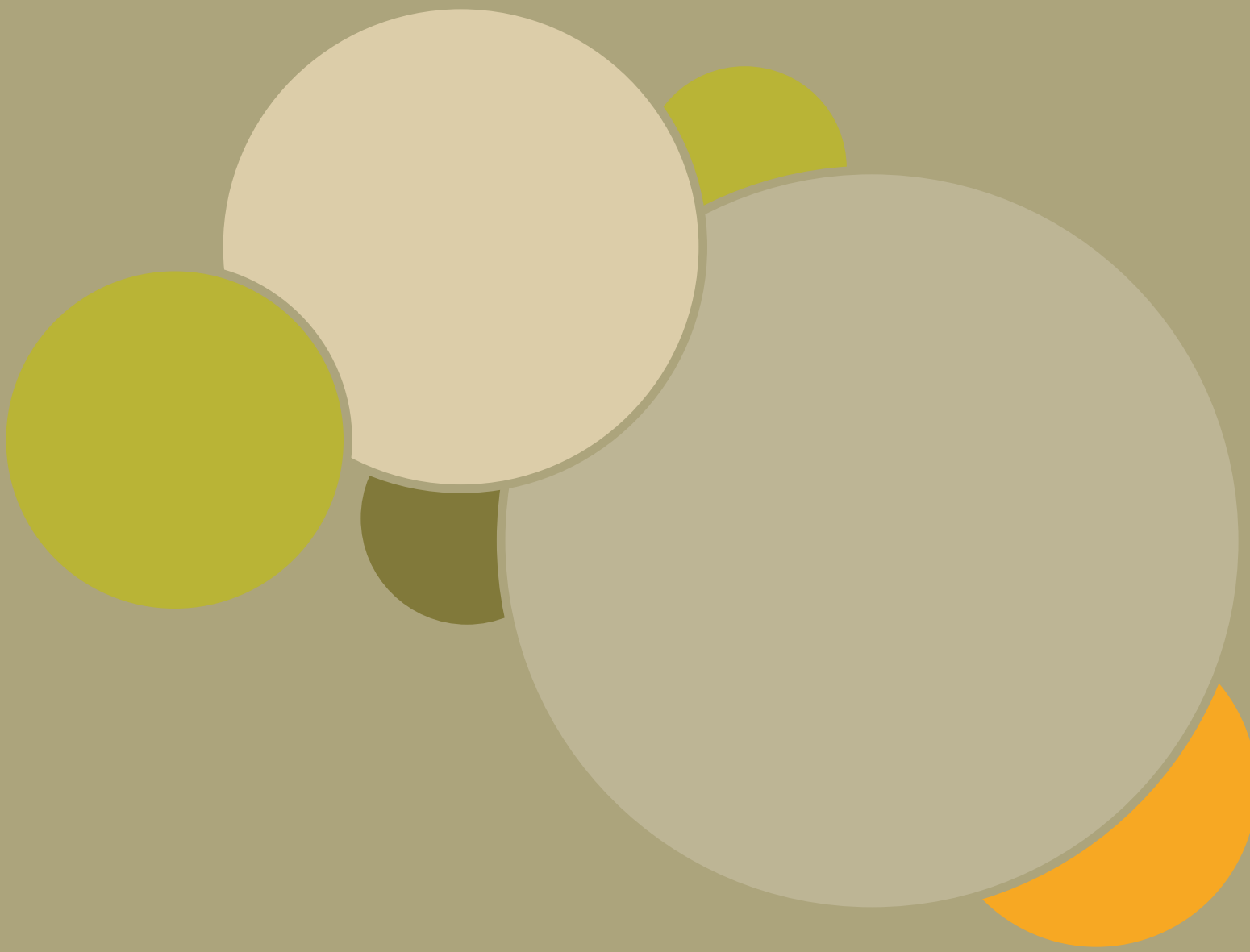
These Guidelines were prepared by Marya Hillesland, International Consultant and Economist on Gender and Development for the Global Strategy to improve Agricultural and Rural Statistics (GSARS) in the Statistics Division (ESS) of the Food and Agriculture Organization of the United Nations (FAO). The Guidelines are an output of the GSARS program area on "Mainstreaming sex-disaggregated data and gender indicators in agricultural statistics," (SUST1) coordinated by Chiara Brunelli, Food Security and Nutrition Officer of FAO ESS. Ms Brunelli also contributed to the Guidelines, particularly to the discussion on land in the chapter on asset ownership as well as to the chapter on hired labour.

We wish to extend our gratitude to Cheryl Doss, Senior Departmental Lecturer in Development Economics at the Oxford Department of International Development, Oxford University, and gender advisor for the CGIAR Research Program on Policies, Institutions, and Markets led by the International Food Policy Research Institute (IFPRI), and Carmen Diana Deere, Distinguished Professor Emerita of Latin American Studies and Food & Resource Economics at the Center for Latin American Studies of the University of Florida, for their insights and expertise which greatly assisted the development of these Guidelines, particularly the chapters on asset ownership and decision-making.

We also would like to thank the attendees of the Expert Meeting on Mainstreaming Sex-Disaggregated Data and Gender Indicators in Agricultural Statistics held in June 2016, whose comments and suggestions significantly improved the document. Attendees included Cheryl Doss, Carmen Diana Deere, Hazel Malapit, Talip Kilic, Lauren Pandolfelli, Eliana Rubiano Matulevich, Ana Paula De la O Campos, Veronica Boero, Ndeye Tacko Ndiaye, Libor Stloukal, Emmanuel Menyha and Yomin Tofri. The document also benefited from comments from Vanya Slavchevska, International Consultant and Economist on Gender and Development of the Social Policies and Rural Institutions Division, FAO, and, with regard to the chapter on time use, from Monica Castillo, Chief of the Standards and Methods Unit, Kieran Walsh, Senior Statistician, and Elisa Benes, Senior Statistician, at the Department of Statistics of the International Labour Organization (ILO), as well as Monika Percic, International Consultant and Specialist in Gender and Employment of the Social Policies and Rural Institutions Division, FAO. We are also grateful to Sophie Lambert, Consultant and Gender Expert, and Szilvia Lehel, Consultant and Gender Expert, of the Social Policies and Rural Institutions Division, FAO, for their contributions to the box on the concepts of gender, family, household and household head and Francesca Zoppi, Advocacy and Communications Specialist, GSARS, for her contributions to the foreword

Yonca Gurbuzer, Statistician, and Marcel Mucha, Economist, from the Statistics Division (ESS) of the Food and Agriculture Organization of the United Nations (FAO) calculated the SDG 5.a.1(a) and (b) indicators using data from Malawi's Fourth Integrated Household Survey 2016/17 (IHS4). Their suggestions on the updated land chapter were also greatly appreciated.

Finally, we wish to thank the Agricultural Statistics Divisions of the Uganda Bureau of Statistics (UBOS) and Badan Pusat Statistik (BPS) for their partnership with GSARS in implementing field tests that piloted versions of the decision-making and time-use modules proposed in these Guidelines.



1

Introduction

Large data gaps exist in agricultural surveys, which limit our understanding of gender dimensions in agriculture. Data is often collected at the household or holding level. For example, depending on the survey, data may be collected on all agricultural plots owned and managed by an agricultural household rather than by individuals within a household. As a result, the unit of analysis for empirical studies is often the agricultural household, and gender comparisons are made at the household level between male- and female-headed households. However, this can provide a much different picture of men and women's circumstances with regard to equality or agricultural production than from analyses between men and women at the individual level within households (see Deere, Alvarado and Twyman, 2012, for an analysis around asset ownership; Doss and Morris, 2000, and Peterman et al., 2011, for analyses specific to agricultural production).

These Guidelines, developed as part of the Global Strategy to improve Agricultural and Rural Statistics (GSARS), seek to increase individual-level, sex-disaggregated and gender-relevant data available from agricultural surveys. GSARS aims to develop cost-effective methods for agricultural statistics that serve as the basis for preparing handbooks and training material for ministries and statistical offices responsible for the design and implementation of agricultural surveys. Within the context of one of the GSARS priority areas, "Mainstreaming sex-disaggregated data and gender indicators in agricultural statistics," a literature review of gender data gaps, current approaches and good practices in agriculture was drafted (GSARS, 2016; available at http://www.gsars.org).

Building upon the review, these Guidelines aim to improve the availability of systematically integrated and comparable sex-disaggregated and gender-relevant data within agricultural surveys (or agricultural modules included in household surveys) by identifying key indicators relating to cropping and livestock activities and proposing adaptations to existing agriculture surveys to better capture these indicators. The hope is that the indicators will be useful in revealing gender dimensions and gaps, providing important background information on the gender dynamics within countries, and comparing the progress of gender equality of particular issues across countries and regions. Beyond the indicators, sex-disaggregated and gender-relevant data will also be useful for more in-depth analyses of men and women's engagement in agriculture.

In many cases, the construction of sex-disaggregated and gender-relevant indicators only requires changes to the way data is collected, so that it is collected by sex. An example is disaggregating hired workers on the agricultural holding by sex. However, there are also areas in which gender-relevant indicators require assessing how and what type of data is collected and proposing alternative approaches and additional questions. In the latter case, these Guidelines provide more in-depth explanations.

Twenty-seven national agricultural surveys, primarily from low and middle-income countries, were reviewed to help develop these Guidelines[1]. The sampling unit for these surveys is the agricultural holding, defined as a single production unit with land or livestock used for agricultural production[2]. There are two types of holdings: (1) holdings run by households; and (2) non-household-sector holdings run by juridical persons such as corporations, cooperatives, or government agencies, or by clans or communities and run according to customary or national law[3]. Depending on the country, agricultural surveys may cover both agricultural households and non-household-sector holdings[4]. However, for many developing countries, the agricultural sector is characterized by a significant presence of family farms, smallholders and self-subsistence agriculture. As a consequence, the national agricultural surveys of these countries are designed primarily to capture household-sector holdings[5].

The type of holding affects the type of data that is of interest from a gender perspective. For juridical holdings, where the holding is a corporation, the focus is solely on the factors of agriculture production. The primary goal of the enterprise is to maximize profit. Key relevant indicators focus exclusively on the characteristics of hired labour. Within agricultural household holdings, the goal may be to minimize risk and volatility, rather than maximize profit, and production choices may be based on consumption preferences, such as ease of food preparation and taste. Key indicators need to take into account the gender dimensions in the household with regard to both production (ownership over productive assets, who makes decisions, etc.) and well-being. These Guidelines present both types of indicators; however, emphasis is placed on data collection regarding household members in agricultural households in lower-income countries.

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1 The review was done in sections (hired and family labour, social organizations, etc.) and with the surveys readily available, focusing primarily on low- and middle-income countries. The goal of the review was to gain a general understanding of what is and is not included in national agricultural surveys, and a general sense of the wide differences between surveys and survey structures by topic. Because of time constraints, the review did not include in-depth review of differences in wording and sequencing. The review builds on the more systematic and in-depth review of agricultural surveys and censuses in "Sex-Disaggregated Data and Gender Indicators in Agriculture: A Review of Data Gaps and Good Practices" (GSARS, 2016). A full list of the surveys reviewed for the guide is available at the end of the document.

2 The World Programme for the World Census of Agriculture 2020 (WCA 2020) defines an agricultural holding as "…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. Single management may be exercised by an individual or household, jointly by two or more individuals or households, by a clan or tribe, or by a juridical person such as a corporation, cooperative or government agency. The holding's land may consist of one or more parcels, located in one or more separate areas or in one or more territorial or administrative divisions, providing the parcels share the same production means, such as labour, farm buildings, machinery or draught animals" (FAO, 2015).

3 The World Programme for the Census of Agriculture 2010 defines the two different holding sectors in paragraphs 11.8 and 11.9: "The sector where the holder belongs may be classified as household sector and non-household sector. Countries are encouraged to distinguish between these two sectors in the census tabulation. Holdings in the household sector are holdings that are operated by household members. Usually there is only one holding in a household (single-holding household), but there can be two or more holdings in a household (multiple-holding household). A holding may also consist of a partnership of two or more households. In many developing countries, most agricultural holdings are in the household sector.
"Non-household holdings are those in sectors other than the household sector. Corporations and cooperatives are defined within the context of national laws and customs. Cooperatives include several kinds of organizations in which the principles of individual, joint ownership or leasehold are combined to various degrees. The other sector includes tribes, clans, private schools and religious institutions. Government holdings are agricultural production entities operated by a central or local government directly or through a special body" (FAO, 2005).

4 In Argentina's 2001 Encuesta Nacional Agropecuaria, for example, the respondent is asked the holding's tipo jurídico, which includes categories for household agricultural holdings separate from non-household sector agricultural holdings. In the same questionnaire within the labour module, the respondent is then asked for the number of "Encargado/Mayordomo/Capataz (jefes de producción)", or production managers. In countries where non-household agricultural holdings are the norm, national agricultural surveys often specify the type of juridical entity.

5 These Guidelines use the terms "household-sector holdings", "agricultural household holdings" and "agricultural households" interchangeably.

Part 1, which includes chapters 2-6, focuses solely on household-sector holdings. Chapter 2 proposes indicators that capture gender differences in ownership of land and other important assets for agricultural production. Chapter 3 proposes indicators that capture the individuals responsible for the management of and major decisions made on the holding. Chapter 4 proposes indicators that capture access to and use of financial resources, and chapter 5 proposes indicators that capture differences in group membership and attendance of productivity trainings, such as extension services and farmer field schools. Chapter 6 proposes indicators and a time-use module to capture dimensions of men and women's paid and unpaid work on the holding. Part 2 includes both household- and non-household-sector holdings. Chapter 7 proposes simple sex-disaggregated indicators of holdings' hired labourers.

The Guidelines do not include indicators that capture differences in men and women's agricultural productivity. If this topic is of interest, we encourage the reader to refer to the GSARS technical report on Productivity and Efficiency Measurement in Agriculture: Literature Review and Gaps Analysis (GSARS, 2017b), and to section 5.6, chapter 5 of the GSARS technical report titled Sex-disaggregated data and gender indicators in agriculture: A review of data gaps and good practices (GSARS, 2016). Additionally, readers are encouraged to refer to Doss (2015) for a review of the literature and an overview of the many challenges to estimating individual-level agricultural productivity within agricultural households, where decisions are likely made in collaboration with others, men and women may work alongside each other, and individuals may be assigned different tasks in agriculture due to gender norms.

Another area of interest from a gender perspective, which is also not included in these Guidelines, is migration and its impact on those left behind in agricultural households (see Mueller et al., 2015) for a review of the literature on gender and migration in agricultural households within Asia). If this is of interest, a question could be incorporated into a household roster to capture any individuals who have joined or migrated out of the agricultural household within a particular reference period. If included over multiple years, this could capture migration trends (disaggregated by sex) of agricultural households over time.

These Guidelines focus on men and women 15 years of age and older following the definition of an adult used by the International Labour Organization (ILO); however, the proposed indicators can be defined for any or multiple age groups. For some of the proposed modules, the Guidelines recommend randomly selecting an individual from the household. Different randomization methods exist, some of which are explained in box 1.

BOX 1. RANDOMLY SELECTING AN INDIVIDUAL FROM THE HOUSEHOLD.

To randomly select an adult 15 years of age and older in the household, we suggest using a variation of the Kish method if implementing a paper format (see Kish, 1965) . If the survey includes a household roster with household members' age and sex, the enumerator need only assign a number beginning with one from the youngest to oldest for all members 15 years of age and older of the selected sex. To ensure that the sample consists of equal numbers of men and women (particularly in regions where migration trends may have affected one sex more than the other), the selected sex of the respondent within a household can be predetermined randomly. The proportion of households selected for male respondents and female respondents can be based on the likelihood of nonresponse rates by sex. Once the numbers of eligible respondents have been assigned, the enumerator refers to a Kish grid for a random number to select the appropriate respondent. Depending on the type of grid used, due to different household sizes (that is, an individual in a smaller household has a greater probability of being selected than he or she would in a larger household), sample weights are necessary to address the different probabilities of being chosen across households. If the survey is implemented using Computer-Assisted Personal Interviewing (CAPI), the appropriate respondent can be automatically randomly selected from the eligible respondents.

6 One problem with this method is the potential high nonresponse rate (Gaziano, 2005; Hamermesh, Frazis and Stewart, 2005). See Gaziano (2005) for additional methods.

Gender indicators in the literature often suggest ratios between men and women. For some indicators, such as the wage gap, this works well. However, for many indicators, focusing solely on the gender gap makes it difficult to compare across countries and to envisage appropriate policy recommendations. For example, one minus the ratio of female to male total time in paid and unpaid work could be used as a measure of the gender workload gap within a country. However, a country in which men and women both generally have heavy workloads would likely advance different policy recommendations from a country with the same gap value but in which men and women generally work reasonable hours. As such, instead of gaps, many of the indicators proposed in these Guidelines are proportions or averages disaggregated by sex, which are most informative when compared side-by-side rather than separately. The same data could also be used to estimate gaps, although they are not always presented here. When the indicators are distribution measures–such as the distribution of female landowners of all landowners – to obtain a full sense of gender parity, it needs to be presented alongside the proportion of men and women within the total population. There may be significant differences in the male and female adult populations, particularly in areas where migration is common and migration trends may affect one sex more than the other.

Many of the proposed indicators recommended in these Guidelines can be disaggregated further. For instance, they could be disaggregated by land tenure, land size, the number of full-time employees, and volume of production (for example, value of net annual output), as data allows. For household-sector holdings, it may be of interest to examine different indicators by household formation (for example, couple households, single female-headed households, single male-headed, etc.) as well as across the wealth distribution of agricultural households. In the absence of wealth data, a wealth index could help capture this using household-level asset data and characteristics of the dwelling. When implementing many of the proposed questions in these Guidelines, it is important that the supervisors and enumerators understand why a particular approach to collecting the data, as well as certain specific questions, are necessary for collecting accurate data from a gender perspective. Otherwise, there may be reluctance to collect this type of data, which can affect the overall quality of the data collected. Ensuring that supervisors and enumerators understand the importance of collecting these data is an essential component of the training and, as part of this, gender sensitivity training is crucial. Box 2 provides background information on important gender concepts and resources for training materials.

BOX 2. THE CONCEPTS OF GENDER, FAMILY, HOUSEHOLD AND THE HOUSEHOLD HEAD.

Gender is the social construction of what it means to be male and female. It is distinct from sex, which is biologically determined, constant and universal. Gender constructions are deeply rooted in the makeup of social order, through laws, institutions, social norms and practices, and are often assumed natural consequences of biological differences rather than learned through socialization (Jackson and Scott, 2002). There are differences in these learned social constructions by culture. What it means to be a female or male in one country is different from what it means to be female or male in another country. Gender constructs change over time and intersect across other social identities – thus defining people differently based on race, ethnicity, age and sexual orientation.

The family is a socially constructed group of two or more people who are related and/or interdependent. The family is often involved in the care of and/or procreation of children, socialization, maintenance of the home, and overall personal caregiving of each member within the family. The juncture of gender and family impacts both the private and public spheres, materializing explicitly and implicitly in differing forms to shape society. It affects institutions; work arrangements; living arrangements; individual lives, dreams and opportunities; and laws and conventions.

Each individual is an actor in the world, making sense of the world around him or her, in the best way he or she can with diverse ways of coping with society's gender/family structure. Gender stereotypes, which "describe the traits or attributes that people associate with the typical man or woman", urge men and women to act to fit these traits (Ridgeway, 2011). For example, the cultivation of the female to perform in particular ways, such as crossing her legs, wearing make-up, speaking with a particular intonation, and avoiding conflict, are ways in which a female may have learned to be a woman and is "acting" as a woman in a particular context. Similarly, there are examples of "acting" or "doing" in family. This can be seen in the performance of family rituals and celebrations, and in generational hierarchy roles.

The concept of the household, which is the unit of analysis for household-sector holdings, is intertwined in society's gender/family structure. The definition of a household differs by context. For instance, in the Uganda National Panel Survey 2010–2011, a household is defined as a group of people who have normally been living and eating their meals together for at least six of the 12 months preceding the interview. For the Tanzania National Panel Survey 2008–2009, a household is defined as a group of people who share meals in the household and contribute to the household income. Based on these definitions, households could be of many different forms. They could be small one-generational households with a spouse who has migrated, multigenerational households, extended family units, polygamous households, couple households, or multifamily units. Additionally, households may or may not be hierarchal, and there may be more than one household decision-maker and multiple economic providers.

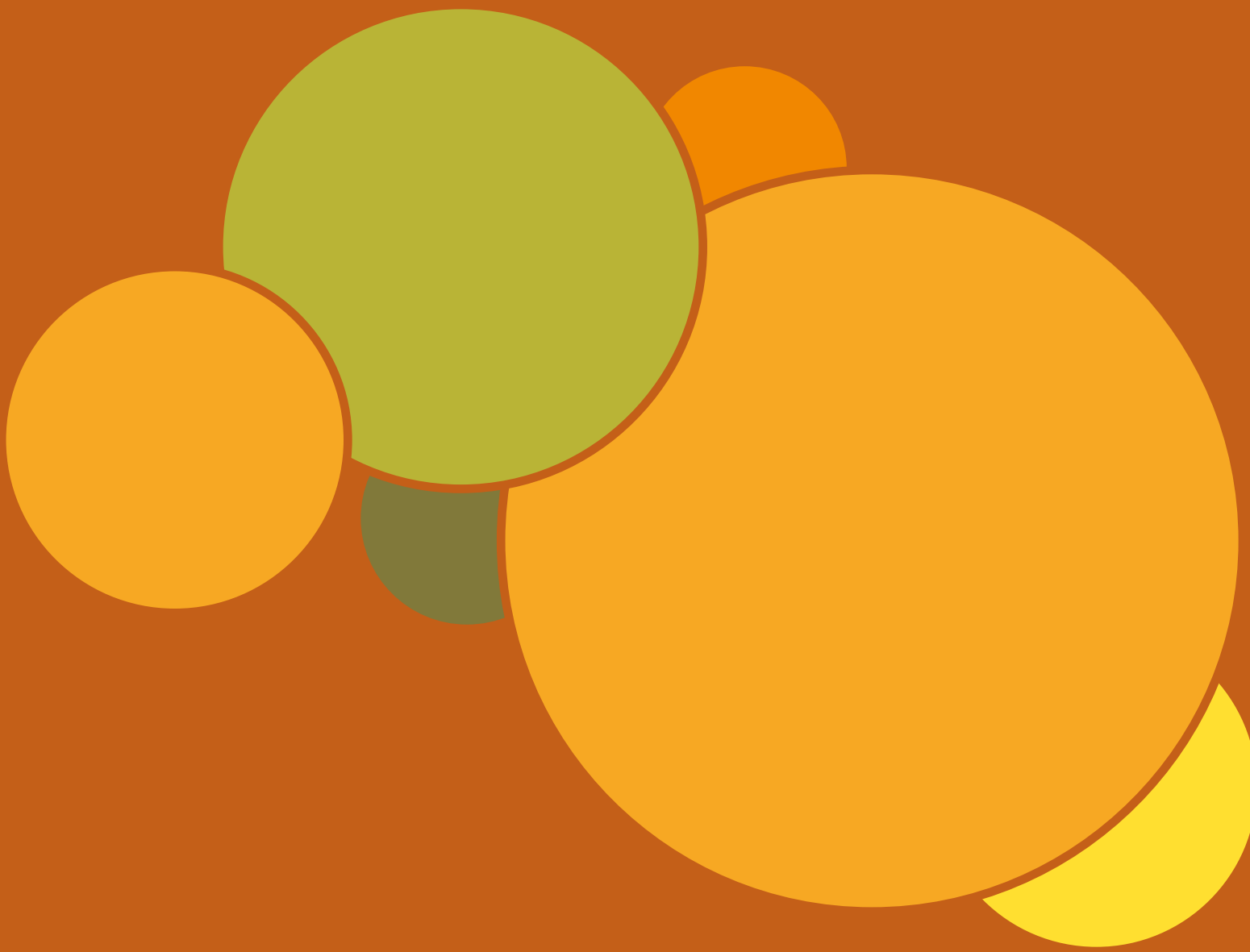
The head of the household is a concept projected onto households established on a presumed hierarchy based on society's gender/family structure. The household head may refer to either: (1) the household's primary economic provider; (2) the household's primary decision-maker; or (3) the person recognized by other household members as the authority figure within the household. Because of well-engrained social constructions of gender and family, enumerators and supervisors often presume this person is male unless an adult male is not present. The assumption is that there is a single household decision-maker or authority figure who represents all household members' interests. This can severely limit our understanding of the structure of the household and of intra-household decision-making dynamics.

These Guidelines recommend explicitly asking to interview the individual or individuals who are most informed about the household and the agricultural activities of the holding, rather than the head of the household. As a way to capture multiple decision-makers, agricultural surveys may include questions on which individual in the household makes decisions on major matters in agricultural production as discussed in chapter 3. When estimating individual-level indicators, marital status, in addition to the household members' biological sex, can provide additional information on individuals' relations to others in the household and provide a way to understand the household structure. Because the concept of the household head varies by context and because using the sex of the household head in analyses does not fully capture gender dynamics, these Guidelines recommend moving away from gender analyses that use the sex of the household head to make generalizations on men and women in favour of individual-level analyses based on data that is sex-disaggregated within the household. Comparing well-being (in terms of poverty, nutrition, etc.) and agricultural productivity of households by household formation is also appropriate, but the findings should not used to make assumptions regarding women and men as a whole.

Resources for training materials on gender concepts

Module 4 of the CARE Gender, Equity, and Diversity Training Materials (pp. 181–215) provides facilitator training tools to promote a better understanding of gender concepts.

More in-depth discussions of gender analysis, including the "Good Practices Framework – Gender Analysis (CARE, May 2012)", are available at http://gendertoolkit.care.org/Pages/core.aspx.

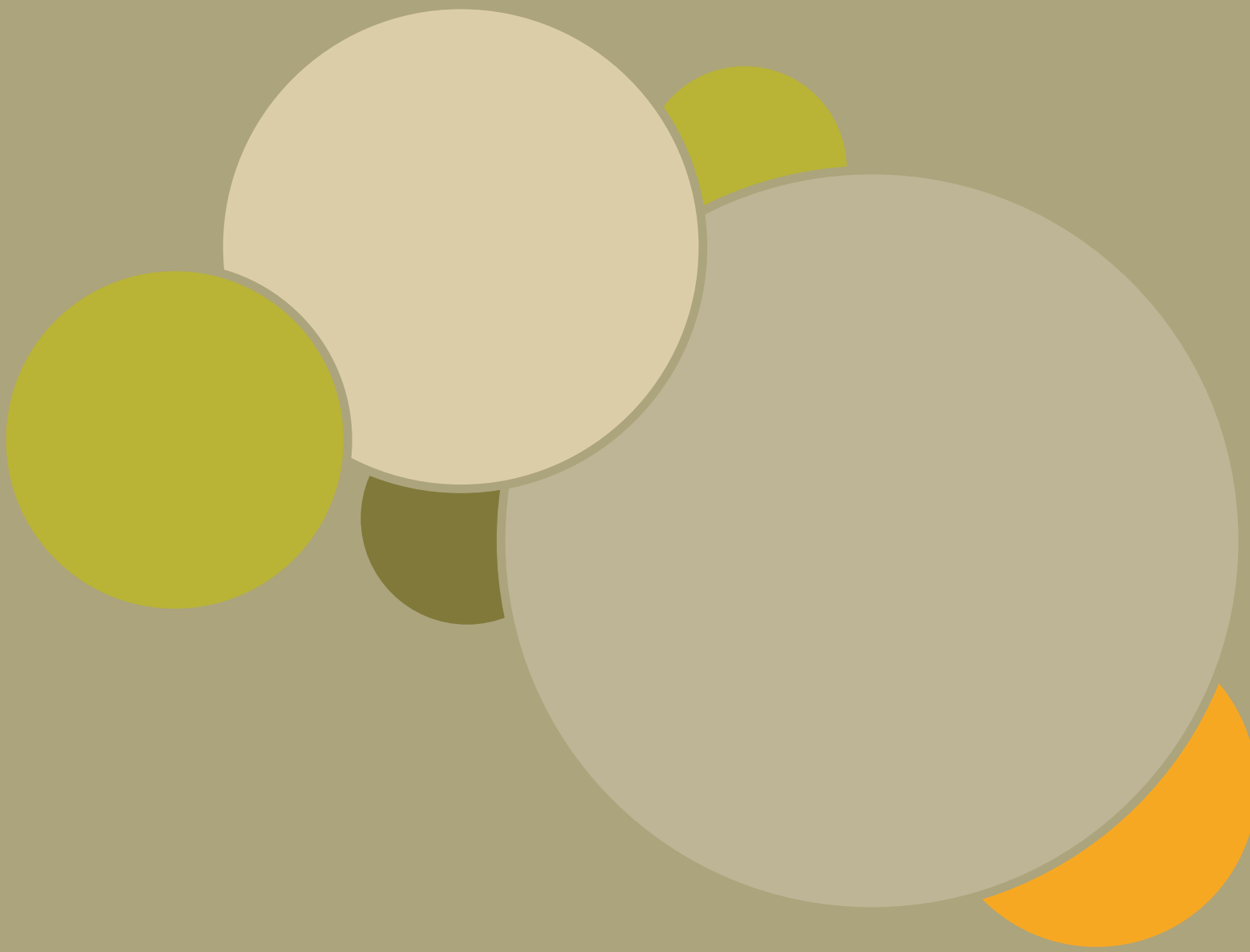


Part 1

Household-sector holdings

Household-sector holdings are holdings run by households or household members. Part 1 consists of five chapters on capturing gender-relevant and sex-disaggregated data from agricultural household holdings. Chapter 2 proposes indicators that capture gender differences in ownership of land, livestock and other physical assets within agricultural household holdings. Chapter 3 suggests a set of indicators that capture the distribution of managerial decisions made on the holding in agricultural households by sex. Chapter 4 proposes indicators on access and use of financial resources, and chapter 5 proposes indicators that measure differences in group membership and use of productivity trainings, such as extension services and farmer field schools. Chapter 6 proposes indicators to capture men and women's time use.

For gender analyses and many sex-disaggregated indicators, information from a household roster for agricultural household holdings is necessary. Figure 2 in the Annex provides an example of a household roster that captures basic information on all household members. The household members' relation to the respondent, and their age, sex, current marital status, and location of their spouse(s) provide information about the current formation of the household beyond whether a household is female- or male-headed, including the household composition (whether it is a single-family household, an extended family household, a multifamily household, a polygamous household or a mix) and size. When linked to information on ownership of assets, decision-making and roles in agricultural household production, and understood within the broader cultural context, this information can provide a greater understanding of how men and women's roles and responsibilities are interrelated and what this means in terms of agricultural outcomes.



2

Ownership of land and other assets in agricultural household holdings

Assets provide a means for production to generate income or goods for household consumption and can be used as collateral to gain access to credit for technological advancements or for other productive activities. In the face of shocks, assets can be a means of financial security and can reduce one's vulnerability to economic hardships. Additionally, ownership rights over important assets can often provide greater access to agriculture productivity groups, including cooperatives and contract farming schemes. Because data is often collected at the household level and not at the individual level, a limited number of studies have sought to analyse the magnitude of the gender asset gaps within and across countries. These few studies, however, suggest that the gender asset gap is not inconsequential (see, for example, Doss et al., 2014).

Such gender-based differences affect individual and household outcomes. For instance, empirical studies suggest that women's greater access to important productive assets in general, such as land, is associated with women's greater autonomy in household decision-making (Santos et al., 2014; Allendorf, 2007; Datta, 2006; Garikipati, 2009; Menon, Rodgers and Kennedy, 2013; Field, 2007; Fafchamps and Quisumbing, 2005; Swaminathan, Lahoti and Suchita, 2012; Kumar and Quisumbing, 2012). Empirical evidence from West Bengal, India, suggests women's greater land security increases women's ability to influence decisions concerning the household's finances, such as the use of income to purchase productive assets, household expenditures on food, and whether to take out a loan (Santos et al., 2014). In Nepal, women's greater land ownership is associated with the greater likelihood to have the final say in households' decisions on the use of income (Allendorf, 2007). In Ghana and Ecuador, greater wealth equality between married (or cohabiting) men and women is associated with a greater likelihood of egalitarian decision-making on how to spend one's own income (Deere and Tywman, 2012; Oduro, Boakye-Yiadom and Baath-Boaten, 2012). Additionally, empirical evidence from Ethiopia and China suggests that women's decision-making in matters relating to agricultural production and land is partly determined by the land that the women have brought to the marriage (Fafchamps and Quisumbing, 2005; Hare, Yang and Englander, 2007).

The international community has long recognized the importance of women's asset ownership for women's empowerment and decision-making. Both the Convention on the Elimination of All Forms of Violence against Women, which entered into force in 1979, and the Beijing Platform for Action held in 1995, appealed to the international community to strengthen women's access to resources, including land. The current Sustainable Development Goals (SDGs) also call to strengthen women's ownership and control of land. Target 5.a proposed by the UN General Assembly in 2013 aims for men and women's equal rights over economic resources. Specifically, the target is 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*." Recognizing that women's land ownership is particularly important within an agriculture context, two land indicators under this target were agreed upon (box 3).

BOX 3. INDICATORS UNDER TARGET 5.A OF THE SDGS.

Sub-indicator 5.a.1[1]

5.a.1(a) Percentage of **people with ownership or secure rights** over agricultural land (out of total agricultural population), by sex

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

Indicator 5.a.2

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

To measure land ownership, indicator 5.a.1 is divided into two sub-indicators. Each of these sub-indicators measures the extent to which men and women have equal rights and tenure security over agricultural land. Indicator 5.a.2 focuses on national legal frameworks for guaranteeing women's equal rights to land ownership, and monitors changes in the legal and policy frameworks that support women's equal rights to land ownership and control[2].
For both sub-indicators 5.a.1 (a) and 5.a.1(b), the reference population is the adult agricultural population, which is defined on the basis of the household's engagement in agriculture. It consists of all individuals aged 18 years and older who belong to a household that has operated land for agricultural purposes, or has held or tended livestock in the past 12 months. It does not matter if production from the household's agricultural activities are primarily for household consumption or are intended for sale.

The data sources recommended for monitoring the indicator 5.a.1 include agricultural surveys as well as national household surveys. Since the unit of analysis of agricultural surveys is the agricultural holding, agricultural surveys capture the reference population well, particularly when the agricultural sector is characterized primarily by agricultural household holdings. Additionally, agricultural surveys can easily accommodate questions on agricultural land tenure rights, as they frequently collect parcel-level information regarding tenure and production. The sub-indicators could also be estimated using data from national household surveys, as they can provide nationally representative estimates. Whichever survey is chosen, it is recommended that countries continue to use the same data source over time to ensure consistency.

1 As of July 2017, the methodology to be used for sub-indicators 5.a.1(a) and 5.a.1(b) is that submitted at the Fifth Interagency Expert Meeting on SDGs (IAEG-SDG) held in March 2017. Based on this methodology, ownership or secure rights over the land are determined on the basis of either:
   i. having one's own name listed as an owner on an ownership document that allows for protecting the individual's rights on the land;
   ii. having the right to sell the land, either exclusively or with someone else; or
   iii. having the right to bequeath the land, either exclusively or with someone else.

2 A proxy measure of the legal indicator is the FAO Legal Assessment Tool, which is available for 27 countries. It is disseminated through the Gender and Land Rights Data Base available at http://www.fao.org/gender-landrights-database.

Beyond the SDGs and land indicators, the WCA 2020 advises collecting ownership data on agricultural assets and livestock for each household member of agricultural households. Collecting individual-level data on ownership of land, livestock and other assets in agricultural surveys can provide a greater understanding of the relationship between ownership and women's decision-making within agricultural households. Additionally, depending on the scope and detail of the survey, it can better equip policy-makers in understanding how the sex distribution of land ownership and other assets on the holding within agricultural households affects households' livelihoods in agriculture, agricultural productivity and household members' well-being. This section proposes indicators that capture gender differences in asset ownership with a focus on agricultural land, as this is a fundamental asset in agriculture. The UN Methodological Guidelines for the Production of Statistics on Asset Ownership from a Gender Perspective (EDGE) initiative provides additional guidance on how to structure asset ownership modules to be integrated into surveys, depending on the key questions researchers seek to answer (see EDGE, forthcoming)[3].

A. AGRICULTURAL LAND INDICATORS[4]

These Guidelines follows the WCA 2020's definition of agricultural land as all land under temporary crops, land under temporary meadows and pastures, land temporarily fallow, land under permanent crops, and land under permanent meadows and pastures (FAO, 2015). This is the same definition of agricultural land used for the SDG 5.a.1 indicators. It excludes land under farm buildings and farmyards, such as barns, cellars, hangars, silos, as well as buildings for livestock such as stables and pens. In addition, these indicators focus exclusively on agricultural land held by agricultural households, and excludes land held by corporations, the state or the community, unless these lands have been allocated to households.

There are different proxies for ascertaining ownership of agricultural land: reported ownership and documented ownership. Reported ownership is most often used in the literature and captures the respondent's perceived ownership. Documented ownership implies that the owner's name is listed as an owner on a legal document, such as a title, deed, certificate, sales invoice or other form of documentation, and may imply a more secure form of ownership than reported ownership. Women are often more likely to be reported owners without their name appearing on the relevant documentation than men (Doss, Kovarik *et al*., 2015).

Depending on the country, the two proxies may be very different and need to be understood within their context. For instance, in Malawi, Nigeria, the United Republic of Tanzania, Uganda, Niger and Ethiopia, the incidence of documented ownership is very low compared to ownership without documents; whereas, in rural Ecuador, documented ownership is more in line with reported ownership (Slavchevska et al., 2016). While documented ownership may be preferred, for countries where documented ownership is low, these Guidelines recommend providing estimates for both types of ownership.

3 The EDGE initiative is jointly executed by the United Nations Statistics Division (UNSD) and the United Nations Entity for Gender Equality and the Empowerment of Women (UN Women) in collaboration with the African Development Bank (AfDB), the Asian Development Bank (ADB), FAO, the Organization for Economic Co-operation and Development (OECD) and the World Bank. The initiative seeks to accelerate existing efforts to generate internationally comparable gender indicators on health, education, employment, entrepreneurship and asset ownership, to better inform evidence-based policy-making through official statistics.

4 While this section focuses specifically on the ownership of agricultural land, the ownership concepts and survey methodologies discussed are also relevant to gender ownership indicators of the household dwelling and to non-agricultural land.

Full ownership rights imply the right to transfer the property, such as the rights to sell or bequeath (Doss, Kovarik *et al*., 2015). However, this definition of ownership may not reflect the reality of ownership in countries where much of the land is undocumented and where land is governed through customary laws. Further, the patterns around men and women's different types of ownership, and whether ownership is shared or individual, may vary as a result of national legal frameworks on equal rights to land ownership, cultural and community norms and laws, marital and inheritance regimes and norms on roles and arrangements within the household, as well as the prevailing tenure system (Doss, Grown and Deere, 2008). In the United Republic of Tanzania, for instance, 85 percent of agricultural plots owned by men solely can be transferred, whereas 76 percent of agricultural plots owned by women solely can be transferred (Slavchevska et al., 2016). In Malawi, only 55 percent of plots owned by men solely can be transferred, whereas 46 percent of plots owned by women solely can be transferred (Slavchevska et al., 2016). This implies that in both countries, ownership does not entail a full set of rights over the land and the differences between the two countries suggest differences in legal frameworks governing land ownership. Additionally, in both countries, women are less likely than men to hold the full set of ownership rights for the plots they own. In the United Republic of Tanzania, for land owned jointly by men and women, the gender gap in the right to transfer widens, putting women at risk of men selling or transferring jointly owned plots without their involvement (Slavchevska et al., 2016). The EDGE pilot studies conducted in seven countries – Georgia, Maldives, Mexico, Mongolia, the Philippines, Uganda, and South Africa – also find that female agricultural landowners are less likely than men to have the right to transfer their land (EDGE, forthcoming). In addition to documented and reported ownership, these Guidelines also recommend providing estimates of the rights to sell and bequeath, when appropriate.

Land tenure, which is the set of rules and arrangements according to which land is held, is also important to understand ownership and rights over land. The WCA 2020 divides land tenure into four broad categories:

1. Legal ownership or legal owner-like possession;
2. Non-legal ownership or non-legal owner-like possession;
3. Land contracted from someone else; and
4. Other types of land tenure (FAO, 2015).

Legal ownership or legal owner-like possession is land ownership governed by law and recognized by governing parties, thus providing security over ownership. It includes land with a formal land document as well as customary arrangements that are legally recognized by the state. Generally, it means the owner may determine how the land is used and may have the right to sell, rent or bequeath the land.

Non-legal ownership or non-legal owner-like possession is land ownership without secure legal land rights, but in which the owners may have held the land without rent or lease for a long period. Contracted land is land that is not owned by the individual but that is held in agreement with the owner, often in exchange for rent, goods or services. Other types of tenure include land that is squatted, land held under transitory forms, and independently held communal lands (FAO, 2015).

SDG indicator 5.a.1 is measured using only documented ownership or the possession of other ownership rights, such as the right to sell or bequeath the land, which falls under the first land tenure category, legal ownership or legal owner-like possession (FAO, 2017). However, it is recognized that in many countries, particularly in Africa, this may underestimate land ownership. In these cases, in addition to SDG indicator 5.a.1, countries may also wish to consider presenting estimates of both legal ownership or legal owner-like possession and non-legal ownership or non-legal owner-like possession by land tenure type. These Guidelines suggest using the land tenure type based on the country context, and to aggregate into the broader WCA 2020 ownership categories when needed.

i. Ownership or secure rights over agricultural land (SDG 5.a.1)

The following indicators are sub-indicators 5.a.1(a) and 5.a.1(b).

The first set of indicators measure the incidence of men and women's agricultural land ownership. It provides a sense of land ownership and rights over land within agricultural households and, if the proportion of men and women in the population is known, together they provide a full picture of the agricultural land ownership across agricultural households and the extent of sex inequality. To estimate sub-indicators 5.a.1(a) and 5.a.1(b) for SDG 5.a.1, ownership and secure rights over land are determined based on one of three proxies: (1) whether the individual's name is listed on the ownership document; (2) whether the individual has the right to sell; and (3) whether the individual has the right to bequeath. The presence of one of these proxies is sufficient to state whether an individual has ownership or secure rights over agricultural land. In addition to the SDG 5.a.1 sub-indicators, depending on the context, it may also be appropriate to report all four forms of ownership and rights over the land individually: reported ownership, documented ownership, right to sell, and right to bequeath. The second set of indicators provides a measure of the equality between men and women's ownership of land across tenure types. The tenure types should be based on the country context, which can be aggregated into boarder categories of tenure based on the WCA 2020.

Indicator set 1.1 (sub-indicator 5.a.1(a)).

- Proportion of women with ownership or secure rights over agricultural land, of all women in agricultural household holdings.
- Proportion of men with ownership or secure rights over agricultural land, of all men in agricultural household holdings.

Indicator 1.2 (sub-indicator 5.a.1(b)).

- Share of women with ownership or secure rights over agricultural land, of all land owners in agricultural household holdings, by tenure.

Indicator set 1.1 (sub-indicator 5.a.1(a)) is specified as $\left\{\frac{X_L}{X}, \frac{Y_L}{Y}\right\}$, where X_L and Y_L are the number of adult women and men, respectively, with ownership or secure rights over agricultural land, X is the total number of adult women in agricultural household holdings, and Y is the total number of adult men in agricultural household holdings. Indicator 1.2 (sub-indicator 5.a.1(b)) is specified as $\left\{\frac{X_{L_t}}{Y_{L_t}+X_{L_t}}\right\}$, where t is the type of tenure.

As part of the EDGE project, the Methodological Experiment on Measuring Asset Ownership from a Gender Perspective (MEXA) was implemented in Uganda in collaboration with the World Bank Living Standards Measurement Study and the Uganda Bureau of Statistics (UBOS). The findings from the study suggest that collecting data on an individual's self-reported ownership – rather than through the household head or a primary respondent for all individuals – reduces methodological biases (Kilic and Moylan, 2016). More specifically, the findings reveal that interviewing the head of household or the most knowledgeable household member on the assets owned by other household members yields statistically significantly dissimilar estimates of the incidence of asset ownership, compared to self-reported ownership data. Based on this, in order to reduce methodological biases, the EDGE project recommends conducting individual-level interviews in which one or more respondents self-report the assets they own (EDGE, forthcoming).

This can be done in various ways, depending on the ultimate objectives of the data. In one of the MEXA treatment groups, multiple adults within each household were interviewed on their individual and joint ownership[5]. This approach is ideal in that it allows for estimates of indicators 1.1 and 1.2, and as long as there is a way to match assets across different household members and reconcile disagreements over asset ownership within households, it can provide household-level asset estimates. It also provides the information needed to understand the distribution of assets within the household, and allow for intra-household analyses relating to asset ownership. A drawback to this approach is that data collection can be more costly and burdensome than interviewing a single individual within the household.

A less burdensome approach is to randomly select one adult household member from the household roster. Randomly sampling one adult within a household allows for estimates that describe the population as a whole. Additionally, assuming that the sample is large enough, the information could potentially explore differences based on positions within households (second wife, married son in extended family household, etc.). However, while this approach captures the information required for indicators 1.1 and 1.2, a drawback is that it cannot provide household-level asset estimates. Additionally, it would not allow for intra-household analyses of asset ownership, nor could it be used to understand the distribution of assets within the household. This means that the data could not be used to explore, for example, whether women's greater asset ownership relative to men's within the same household affects outcomes in terms of children's nutrition or household food security.

To obtain household-level asset estimates, the questionnaire can also include a household-level module to capture the household inventory of the asset. The individual ownership module can then be extended from the household asset inventory, as in the approach adopted in the Gender Asset Gap project (discussed in EDGE, forthcoming)[6]. To allow for intra-household analyses based on the couple, a randomly selected individual and his or her spouse or partner could be administered the individual ownership module for a subsample of households[7]. Another possibility is to ask the randomly selected individual questions on who in the household owns each asset. This would allow for intra-household analyses based on respondents' "perceived" relative wealth. In an empirical model, this would mean that the outcome variable (children's nutrition, school fees, food expenditure, food security, etc.) would be based on the perceived relative wealth of the randomly selected individual in the household, rather than on the wealth captured on the basis of the responses of the household head (as is traditional). The EDGE Guidelines provide more information on the MEXA project and on recent pilots that collect self-reported asset ownership data from one randomly selected adult household member. It also provides information on the various ways in which data can be collected, depending on the final objectives of the data (EDGE, forthcoming).

5 Arm 5 of MEXA interviewed up to four adults in the household.

6 The Gender Asset Gap project designed and carried out national-level sex-disaggregated asset surveys in multiple countries. It was a joint initiative of the Indian Institute of Management Bangalore, the University of Ghana, the Latin American Faculty of Social Sciences (FLACSO) – Ecuador, the Center for Latin American Studies, the University of Florida (United States of America), and the American University (United States of America); and was initially supported by the Ministry of Foreign Affairs of the Netherlands under Millennium Development Goal 3(MDG3) fund for gender equality.

7 This suggestion was made in the course of email correspondence with Hema Swaminathan, Co-Leader of the Gender Asset Gap Project (www.genderassetgap.org).

These Guidelines provide an example of an individual-level parcel ownership module that is extended from a household inventory parcel ownership module. Without multiple respondents per household, this approach cannot be used to explore intra-household sex distribution of assets or intra-household analyses; however, it can capture household-level asset estimates. Typically, agricultural surveys include parcel rosters, where a parcel is a portion of land under one land tenure type that is enclosed by other land, water, roads, forest or other features not forming part of the holding, or adjacent to land under a different tenure type in the same holding (FAO, 2015)[8]. Often, in agricultural surveys, the individual who is most informed about the holding is asked to list all parcels owned, held or cultivated by all members of the household. To capture all land owned, the roster must also include land that is owned but currently given or rented out. Figure 3 in the annex provides an example of questions that are to be included in the parcel roster. The example is consistent with the questions recommended by the EDGE Guidelines (forthcoming). The pre-codes to questions 3.3 and 3.4 relating to the tenure system and to how the parcel was acquired can be modified to fit countries' individual contexts.

Figure 4 in the annex provides an example of the individual-level parcel ownership module. It asks about the individual's ownership status for each parcel identified as owned in the household-level parcel roster, as well as any other parcels that he or she may own that were not identified in the roster. The modules require a household roster to first identify all household members (see part 1 and figure 2). Indicator set 1.1 can be calculated using the individual-level land ownership module (figure 4). Questions 4.1 and 4.2 capture reported ownership. Question 4.6 captures documented ownership. Question 4.8 captures the right to sell and question 4.10 explores whether there is the right to bequeath. Information on the individuals' sex is captured in the household roster (see part 1 and figure 2).

Indicator 1.2 can be calculated using questions 4.1 and 4.2 of the individual-level land ownership module (figure 4). Question 3.3 in the parcel roster (figure 3) captures the tenure status.

8 These Guidelines use the WCA 2020 definitions on how land is divided on an agricultural holding. The modules can be modified to fit the definitions currently used by national statistical offices.

BOX 4. EXAMPLE USING DATA FROM MALAWI'S FOURTH INTEGRATED HOUSEHOLD SURVEY 2016/17 (IHS4)

Indicator 5.a.1 (a): Percentage of people with ownership or secure rights over agricultural land (out of total agricultural population), by sex

Women with ownership or secure rights over the land	Men with ownership or secure rights over the land
45.2%	39.4%

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

Tenure type as proxied by how the land was acquired land	Share of female owners
Granted by local leaders	55.6%
Inherited	61.0%
Bride price	59.5%
Purchased	47.6%
Allocated by family member	59.6%
Gift from non-household member	43.8%

Tenure type	Share of female owners
Freehold	47.3%
Customary land	58.6%

Source: These estimates were provided by Yonca Gurbuzer and Marcel Mucha from the Statistics Division (ESS) of the Food and Agriculture Organization of the United Nations (FAO) using data from Malawi's Fourth Integrated Household Survey 2016/17 (IHS4), implemented between April 2016 and April 2017. The estimates are weighted using the household sampling weights provided as part of the data.

Notes: The estimates are of men and women in agricultural households and based on a proxy respondent, rather than self-reported. The agricultural population includes all individuals that are at least 18 years old and who live in a household that cultivated any land during the rain and/or dry season and that produced any product over the last 12 months. Ownership or secure rights over the land were regarded as existent if the household possessed a formal (offer of lease, title deed, certificate of lease) or informal (sales receipt, tax receipt, inheritance paper, letter from chief) document that certified the household's ownership or if any household member had the right to sell or bequeath the land. The estimates will not change significantly if only formal documents are used. Land that was rented, squatted, leased and any other land that was contracted from someone else or informally acquired was not included, even if a household has the use rights to that piece of land, as the questionnaire does not allow for further analysis. Tenure is assumed to be customary if the plot was granted by local leaders, inherited or allocated by family, or a gift from a non-household member unless there is an offer of lease, title deed or certificate of lease which suggests it is likely private land (freehold).

BOX 5. MORE INFORMATION ON DATA COLLECTION AND ESTIMATION STRATEGIES FOR CALCULATING SDG SUB-INDICATORS 5.A.1 (A) AND (B)

More information is available on FAO's SDG website. Information on SDG Indicator 5.a.1 is available at http://www.fao.org/sustainable-development-goals/indicators/5a1/en/.

The link gives users access to detailed PowerPoints that provide additional information on data collection and estimation strategies, including examples of modules depending on the survey scope and flexibility. An e-learning module is also available.

ii. Capturing differences in quantity and quality of land

For SDG 5.a.1, an owner of a large farm or of many parcels is treated the same as an owner with a small amount of poor quality agricultural land. To capture differences in both quality and quantity of land by sex within a region, we may wish to explore the distribution of the value of agricultural land owned.[9] Depending on the context, however, the value of land may not be easily captured, particularly where land markets are sparse. A simpler proxy indicator is land size. Doss, Kovarik et al. (2015) suggest a set of indicators to capture the distribution of total land area. With information on the land's characteristics – such as toposequence or plot slope, soil type, distance from home and whether it is irrigated – additional sex-disaggregated incidence indicators could provide estimates of the quality of women's plots or parcels compared to those of men. Similar indicators could also be constructed with the value of the land rather than land area, if such data is available.

Indicator set 1.3.

- Proportion of agricultural land area owned by women (either solely or jointly with other women) of total agricultural land area owned by individuals in household holdings.
- Proportion of agricultural land area owned jointly by women and men of total agricultural land area owned by individuals in agricultural household holdings.
- Proportion of agricultural land area owned by men (either solely or jointly with other men) of total agricultural land area owned by individuals in household holdings.

Indicator set 1.3 is specified as $\left\{\frac{A_X}{A_X+A_{XY}+A_Y}, \frac{A_{XY}}{A_X+A_{XY}+A_Y}, \frac{A_Y}{A_X+A_{XY}+A_Y}\right\}$, where A_X and A_Y are the total land area owned by adult women and men, respectively, and A_{XY} is the total land area owned jointly by men and women.

To derive indicator set 1.3, information on who owns the parcel can be obtained from the individual-level land ownership module (figure 4). Individual and joint ownership is captured from questions 4.1, 4.3, and 4.4 in figure 4 of the annex. The land area is derived from a question on parcel size in the household-level parcel roster (figure 3). Information on the individuals' sex is captured in the household roster (figure 2).

9 The value of assets owned are also of interest for wealth studies and comparing differences between men and women's individual wealth.

B. LIVESTOCK AND OTHER ASSET INDICATORS

National survey offices or ministries of agriculture may also consider collecting sex-disaggregated data on other non- financial assets – including livestock, agricultural equipment such as tractors and carts, non-agricultural enterprise assets, and some non-agricultural consumer durables such as refrigerators, vehicles and cell phones – in an extended individual asset questionnaire.[10] These particular assets are essential to the livelihoods of individuals in agricultural households. The EDGE Guidelines provide additional guidance on selecting which assets to include in the survey (EDGE, forthcoming).

iii. Incidence of livestock ownership

Indicator set 1.4.

- Proportion of women who own [TYPE OF LIVESTOCK] of all women in agricultural household holdings
- Proportion of men who own [TYPE OF LIVESTOCK] of all men in agricultural household holdings

Indicator set 1.4 is specified as $\left\{\frac{X_{LT_t}}{X}, \frac{Y_{LT_t}}{Y}\right\}$, where X_{LTt} and Y_{LTt} are the number of adult women and men, respectively, who own livestock type t; X is the total number of adult women in agricultural households; and Y is the total number of adult men in agricultural households.

iv. Incidence of ownership of other types of assets (agricultural equipment, agricultural enterprise assets, consumer durables, etc.)

Indicator set 1.5.

- Proportion of women who own [ASSET] of all women in agricultural household holdings
- Proportion of men who own [ASSET] of all men in agricultural household holdings

Indicator set 1.5 is specified as $\left\{\frac{X_{A_i}}{X}, \frac{Y_{A_i}}{Y}\right\}$, where X_{Ai} and Y_{Ai} are the number of adult women and men, respectively, who own asset i; X is the total number of adult women in agricultural household holdings; and Y is the total number of adult men in agricultural households.

Following the same format as the parcel modules, where an individual-level module is extended from a household-level module, figures 6 and 8 in the annex provide examples of individual-level modules where the respondent is asked about his or her livestock ownership following household livestock and agricultural equipment inventories (figures 5 and 7). The modules require that a household roster first identify all household members (see part 1 and figure 2).

Indicator set 1.4 can be calculated from question 6.2 in figure 6 in the annex and information on individuals' sex from the household roster (figure 2). To be comparable across countries, the Gender Asset Gap Project differentiated between large livestock (referring to cattle, buffaloes, horses, mules and donkeys), small livestock (pigs, sheep, goats and llamas), and poultry (hens, ducks, geese, turkeys and guinea pigs) (Doss, Deere *et al*., 2012). The livestock listed in the modules provided in the annex are specific to the context of Malawi, although they can be modified to better fit other countries. For agricultural equipment (indicator set 1.5), the numerator can be calculated from question 8.2; information on individuals' sex is captured in the household roster (figure 2).

10 Cell phones can be used for market information dissemination, networking and dissemination of technical information, as well as financial services such as Bitcoin and other mobile banking schemes. They are important productive assets within the rural agricultural context and estimates suggest that there may be a substantial gender gap in cell phone ownership (Doss, Deere et al., 2011; Vodafone Foundation, 2014).

3

Holders, managers and decision-makers of agricultural household holdings

Within the household sector, holders are civil persons or groups of people within a household who make the major decisions about the operation of the agricultural holding. How the definition is currently operationalized within most agricultural surveys, however, may not adequately capture the full reality of who makes major decisions about agricultural production in agricultural households. For agricultural households, the respondent is often asked to identify the household head rather than the holder (see, for example, Senegal and Uganda surveys), and the household head is often assumed to be the agricultural holder (FAO, 2015, paragraph 6.19).

Yet, within agricultural households, multiple individuals are often responsible for the management of and major decision-making on the holding. The standard approach of designating a holder of the agricultural household holding obscures the complexity of intra-household management of and decision-making relating to agricultural production, and as a result, may conceal the extent of women's participation in major decisions on the operation of the agricultural holding. When the household head is assumed to be the holder, the sex distribution of holders reflects the sex distribution of household heads, who are often male. Where the holder or holders are identified separately from the household head, decision-makers are often still presumed to be male in many contexts and the holder is again likely to be identified as a male, regardless of whether women also make decisions on agriculture production (Doss, 2014).

Indeed, the decision-making field test conducted by GSARS in Uganda revealed that the sex of the holder appeared to be primarily based on the household structure (female-headed vs. couple households; see GSARS, 2017a). The holder was assumed to be male unless a male was not present. Based on this standard approach, 71 percent of the holders in the sample were male and 29 percent were female. However, according to the holders' responses, in the most recent agricultural season, both men and women were primary decision-makers in agricultural activities in 67 percent of the holdings. In 19 percent of the holdings, women were the only primary decision-makers across all activities, and in 11 percent of holdings, men were the only primary decision-makers across all activities. Overall, in 86 percent of the holdings, women were primary decision-makers in at least one agricultural activity, either

exclusively or jointly with men, and in 78 percent of the holdings, men were primary decision-makers in at least one agricultural activity exclusively or jointly with women. The results suggest that women's involvement in the operation and managerial decisions of the holding is underestimated when only the sex distribution of the holder is presented (GSARS, 2017a)..

In the WCA 2010 Guidelines, the concept of sub-holder was instituted to ensure that women's managerial decision-making and participation in agricultural production in agricultural households would not be overlooked (FAO, 2005). Unfortunately, however, the WCA 2010 did not propose a standard operational definition for this concept. In the absence of clear guidance, countries poorly understood and used the concepts of sub-holding and sub-holder[1]. In the WCA 2020 Guidelines, this concept was replaced with the recommendation to ask specific questions on who makes the various managerial decisions in agricultural production, as a way to make the decision-making process more explicit. In particular, it was stated that

> *"[t]he concept of the agricultural holder being the major decision-maker for the holding alone may not provide a realistic picture of the often complex decision-making process within a holding in the household sector. Often, different members of the household take responsibility for managing different aspects of the operation of the holding, or the responsibilities are shared between household members"* (FAO, 2015).

Specifically, the WCA 2020 proposes focusing on the figure within the household who takes responsibility for managing the following on the holding:

- the area of land cultivated and area of land left fallow;
- investments made relating to the land;
- the types of crops grown;
- the marketing of agricultural products and/or livestock;
- the types of inputs used;
- the types of livestock raised; and
- whether to apply for agricultural credit.

With this in mind, for agricultural household holdings, this chapter suggests a set of indicators that captures the distribution by sex of the managerial decisions made on the holding. For many managerial decisions – such as decisions on what to plant, what investments to make in relation to the land, what inputs to use, and how to use the output – management is connected to specific parcels or plots of land. Knowing who makes the agricultural decisions regarding cropping is useful for studies that explore the gender dimensions and potential pathways towards increased household agricultural productivity. Similarly, because livestock output can also be a large part of household agricultural productivity and income in many agricultural households, understanding who makes the decisions on livestock use and production is also useful when analysing pathways towards increased household agricultural productivity and poverty alleviation.

Ownership of land and other productive assets are interconnected but distinct from the management of the asset and control over the output. Individuals may have individual or shared rights over the use of and products produced from the land or productive asset (including livestock); however, they may not have ownership rights, such as the right to transfer or sell the asset itself. While management of land and livestock as well as control over output are discussed in this chapter, the reported and documented ownership and control of productive assets (such as land) are discussed in chapter 2.

1 In several agricultural censuses, mainly in Africa, the term "sub-holder" became equivalent to "plot manager" and the relevant information was collected through the parcel or plot modules. This approach does not capture the ways in which household members may engage in managing all different aspects of the operation of the holding.

C. DECISION-MAKERS AND MANAGERS OF AGRICULTURAL HOUSEHOLD HOLDINGS

Building upon the managerial decisions proposed in the WCA 2020, these Guidelines propose capturing the gender distribution of the following three groups of "managerial decisions" (or the major decisions) made on the holding:

1. Activities relating to the management of the holding's agricultural land (by parcel)[2]:
   a. Have any permanent investments been made to [parcel], such as irrigation systems, fences or trees, in the last two years? Who made the decision about these permanent investments?
   b. In [reference period], was [parcel] cultivated, rented out, given out for free, left fallow, a forest or woodlot, a pasture, or other? Who made this decision (either to cultivate, rent out, give out for free, or leave follow)?

2. Activities relating to the management of cropping activities by plot and crop[3]:
   a. Who made the decisions concerning the crops to be planted, which inputs –such as purchased or home-produced fertilizers, pesticides, herbicides – to use and the timing of cropping activities on [plot] in [reference period][4]?
   b. Who made the decisions on how to pay for or finance – that is, whether to use savings or to take out credit, and, in this case, where to borrow – the cropping activities on [plot] in [reference period]?
   c. Who made the decision on what do to with the harvest from [the crop] (whether to sell, store, give away or consume at home)? Was any amount of the harvest or a product made from the harvest from [crop] sold? Who decided how to use the earnings from the sales of this crop?

3. Activities relating to the management of livestock (by livestock type):
   a. Who manages [livestock]?
   b. Who makes the decisions on the preventative or curative health treatments to be used on [livestock]?
   c. In [reference period], were any products produced from [livestock] consumed in the household or used on the holding? (Examples include using manure as fertilizer, milk from dairy cows, eggs from poultry, and wool from sheep.) Who made the decisions regarding which products from [livestock] to consume at home or to use on the holding?
   d. In [reference period], were any products produced from [livestock] sold for cash or bartered? Who made the decisions on which products to sell or trade that were produced from [livestock]?
   e. Who decided how to use the earnings from selling the products produced from [livestock]?
   f. In [reference period], were any [livestock] slaughtered for home consumption? Who made the decision to slaughter [livestock] for home consumption?
   g. In [reference period], were any [livestock] sold? Who made the decision to sell [livestock]?
   h. Who decided how to use the earnings from selling [livestock]?

2 These Guidelines use the WCA 2020 definitions on how land is divided on an agricultural holding. The modules can be modified to fit the definitions currently used by national statistical offices. A "parcel" is defined as land under one land tenure type that is enclosed by other land, water, road, forest or other features not forming part of the holding, or adjacent to land under a different tenure type in the same holding. A parcel may consist of one or more plots (FAO, 2015).

3 A plot is a piece of land within a parcel that is used predominantly for the same purpose and is managed by the same person or group of people. It is land used for the cropping activities of which a specific crop or crop mixture is cultivated or is left fallow (FAO, 2015).

4 These could also be asked as three separate questions. We keep them as a single question because they concern decisions that are generally made in conjunction with one another.

Rather than asking these questions for the holding as a whole, asking the respondent these questions by parcel, plot, crop and livestock lessens potential measurement error. Additionally, the more detailed data allows for the exploration of topics such as men and women's ownership of land and the decisions made on how the plot is used; men and women's decision-making on which crops to be planted by plot and how this might affect crop diversity; whether joint or collaborative decision-making takes place at the crop or plot level; and agricultural productivity by sex at the crop or plot level.

While capturing each decision-making activity only requires one or two additional questions each in a farm survey, for some agricultural surveys, it is simply not feasible to include all 14 decision-making activities. Two questions at a minimum on who manages agricultural production by plot or by crop and on who manages the livestock (by type of livestock) are particularly important from a gender perspective. These questions still allow for a number of interesting analyses, such as those mentioned above, and remain broad enough to use in estimating the sex distribution of the primary decision-makers of a holding (that is, the proportion of holdings where only women are primary decision-makers, the proportion of holdings were only men are primary decision-makers, and the proportion of holdings where both men and women are primary decision-makers). These two questions are the following:

- *"Who made the decisions concerning which crops to be planted, which inputs –such as purchased or home-produced fertilizers, pesticides, herbicides – to use and the timing of cropping activities on [plot] since the beginning of the first agricultural season?"*
- *"Who manages [livestock]?"*

The additional questions on decision-making to be included depends on what is deemed appropriate by each individual country and the research questions of interest. Knowing who manages agricultural production at the plot or crop level is useful in the context of studies that explore gender differences in agricultural productivity. Autonomy over the financing of cropping activities is also an important part of management, and while autonomy over financing is associated with the management of agricultural production, gender differences do exist. The GSARS decision-making field test conducted in Uganda suggests that the financing of the cropping activities is more likely to be taken care of exclusively by men than by women or jointly; while management is most likely to be a joint activity in the field test area (GSARS, 2017a). Similarly, who makes decisions on the health of the livestock is an important part of the management of the livestock. This is also more likely to fall exclusively to men than to women or jointly, even when management is a joint activity within the Uganda field test area (GSARS, 2017a).

Questions that capture control over the output and the economic benefits deriving from the land and livestock are useful in understanding intra-household dynamics of agricultural production, particularly in terms of households' food security and nutrition outcomes. The data from the Uganda field test suggest that who makes decisions on the use of the output is highly correlated with who makes decisions on how to use the earnings (if the output was sold) and could thus be combined into a single question (GSARS, 2017a). Additional research is needed to understand whether this is the case across countries.

Finally, the previous chapter recommends a set of indicators to capture ownership and rights over the land. Autonomy over the use of the land is included in those rights, and is associated with tenure security and the mechanisms through which the land is acquired. Given that these mechanisms are often gendered, decision-making questions on land investment and use could further tease out gender dimensions of rights over the land.

The following sets of indicators (one at the holding level and one at the individual level) are presented separately for each type of activity and explore managerial decisions made on the holding. Aggregate-level indicators – such as the proportion of women in agricultural households engaged in agriculture and make managerial decisions compared to men – provide less detail, but are also relevant in discussions on the sex distribution of management across holdings and are analogous to an indicator that only captures the sex distribution of holders.

v. Distribution of managerial decision-makers in agricultural household holdings

Indicator set 1.6.

- Proportion of agricultural households where only women make decisions on [ACTIVITY], in all agricultural household holdings
- Proportion of agricultural households where both men and women make decisions on [ACTIVITY], in all agricultural household holdings
- Proportion of agricultural households where only men make decisions on [ACTIVITY], in all agricultural household holdings

These are specified as $\left\{\frac{N_{WD_k}}{N_H}, \frac{N_{JD_k}}{N_H}, \frac{N_{MD_k}}{N_H}\right\}$, where N_{WDk} and N_{MDk} are the number of holdings where only women or only men make decisions on activity k respectively, and N_{JDk} is the number of holdings where men and women are both decision-makers with regard to activity k. N_H is the total number of agricultural households.

Indicator set 1.7.

- Proportion of women who make decisions on [ACTIVITY], of all adult women in agricultural households
- Proportion of men who make decisions on [ACTIVITY], of all adult men in agricultural households

These are specified as $\left\{\frac{X_{D_k}}{X}, \frac{Y_{D_k}}{Y}\right\}$, where X_{Dk} and Y_{Dk} are the number of adult women and men, respectively, who make decisions relating to activity, k; X is the total number of adult women in agricultural household holdings; and Y is the total number of adult men in agricultural households.

For studies on agricultural productivity of cropping activities, decision-making activities should be disaggregated by plot. An example of a plot-level indicator is the following:

Indicator set 1.8.

- Proportion of plots where women are the plot managers (defined as the primary decision-makers concerning which crops are to be planted, which inputs – such as fertilizers, pesticides, herbicides – to use and the timing of cropping activities), of all plots in agricultural household holdings
- Proportion of plots where men are the plot managers (defined as the primary decision-makers concerning which crops are to be planted, which inputs – such as fertilizers, pesticides, herbicides – to use and the timing of cropping activities), of all plots in agricultural household holdings
- Proportion of plots where both men and women are plot managers (defined as the primary decision-makers concerning which crops are to be planted, which inputs – such as fertilizers, pesticides, herbicides – to use and the timing of cropping activities), of all plots in agricultural household holdings

These are specified as $\left\{\frac{P_W}{P_H}, \frac{P_J}{P_H}, \frac{P_M}{P_H}\right\}$, where P_W and P_M are the number of plots that only women or only men manage respectively, and P_J is the number of holdings where men and women are joint managers. P_H is the total number of plots in the sample.

Figures 9, 10, 11 and 12 provide examples of how these different decision-making questions can be incorporated into parcel, plot and livestock modules. Primary decision-makers are defined as the individuals who determine the outcome of a specific activity or activities. One or more decision-maker per activity is possible. While some studies may rank the decision-makers by perceived order of influence or importance, the modules recommended in these Guidelines do not. This is because there are different styles in which a group of individuals can come to a decision. It may be the case that one individual primarily takes responsibility for the outcome. Whereas, in other cases, the decision may be determined collectively, based on consensus, or as part of a process of negotiation. Ranking decision-makers by importance in a way that is comparable across decisions and households requires either information on the group style used to make the decision or the assumption that decisions made in a group are based on a single style of group decision-making.

The GSARS Uganda field test sought to verify whether the response by proxy (rather than self-reported responses) results in different estimates of decision-making on cropping and livestock activities (GSARS, 2017a). Specifically, study compares what respondents self-declared in terms of their involvement in each decision-making activity with what another respondent (a proxy respondent) reports as his or her involvement in the decisions made in agricultural household holdings in Uganda. The assumption is that self-declared responses are the most accurate. The study finds that for estimates of the gender incidence of decision-making made at the holding level, the person designated as the holder in Uganda provides reasonably unbiased estimates (GSARS, 2017a).

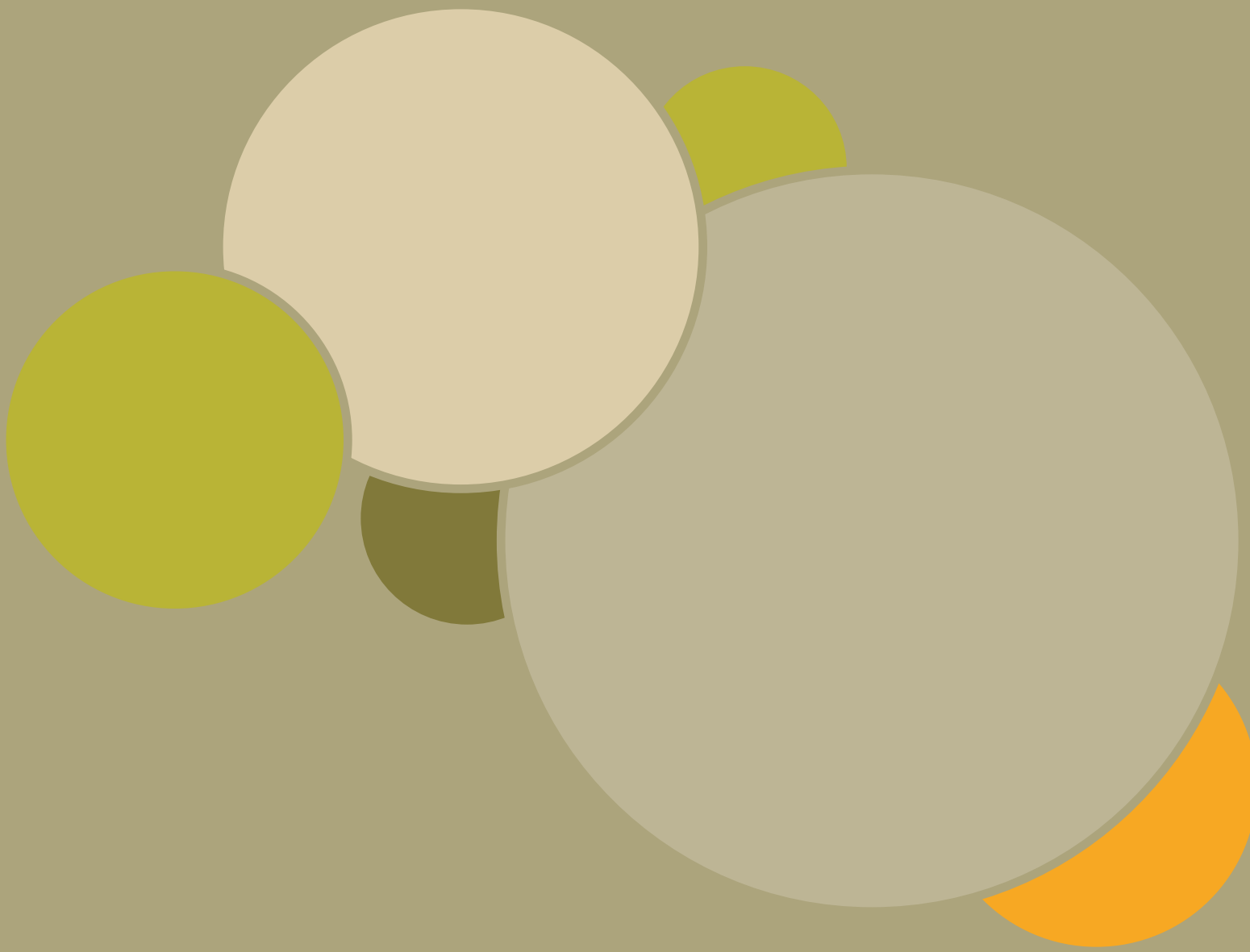
These results differ from those of the MEXA project, which finds that the standard approach of asking a single respondent (usually the household head or the 'most knowledgeable' individual) about who owns the household's assets overestimates the extent of the gender asset gap, compared to when each household member reports on his or her own ownership in Uganda (Kilic and Moylan, 2016). The results also differ from a study on labour statistics in the United Republic of Tanzania, where the proxy was found to underreport male employment rates; however, the results were reduced when the proxy was a spouse (Bardasi *et al*., 2011).

Additional analysis and further research is needed to draw decisive conclusions on whether using a proxy (rather than self-reported responses) allows for unbiased estimates of decision-making, particularly for the incidence of decision-making at the crop or plot level. However, because the indicators in these Guidelines capture decision-making with regard to the holding as a whole (as opposed to individual-level indicators, such as how many women make decisions with regard to the cropping activities of all women across the holdings), asking a respondent who is well-informed about the daily operations of the holding within a household-level module is appropriate. The decision-making questions can be incorporated into the parcel, plot, crop and livestock rosters at the household level.

The denominator for indicator set 1.6 is the number of agricultural households in the sample. The denominators for indicator set 1.7, which is the number of women (and men) in agricultural households, can be derived from the household roster (see the introduction to part 1 and figure 2). The numerators for each indicator set for each activity can be calculated using information from the household roster and questions 9.2, 9.4, 10.2, 10.3, 11.2, 11.4, 12.1, 12.2, 12.4, 12.6, 12.7, 12.9, 12.11 and 12.12 in the decision-making modules (figures 9, 10, 11 and 12 in the annex). The numerators of indicator set 1.8 can be derived from question 10.2 in figure 10 and the denominator can be derived from question 10.1.

If a primary objective is to investigate ownership, rights, control over assets and decision-making over those assets, national statistical offices may wish to consider incorporating the decision-making questions into individual-level parcel, plot, crop and livestock modules where an individual self-reports on his or her decision-making activities. The respondents to the individual-level modules can be determined based on one of the three approaches discussed in chapter 2.[5] If this approach is used, the individual-level decision-making questions should follow a similar format to the ownership questions. For example, question 9.2 in figure 9 should be changed from "Who made the decision to make these permanent investments?" to "Did you make the decision to make these permanent investments?" and, if the decision was jointly made, "Who jointly made the decision to make these permanent investment with you?" Similar changes would need to be made to questions 9.4, 10.2, 10.3, 11.2, 11.4, 12.1, 12.2, 12.4, 12.6, 12.7, 12.9, 12.11 and 12.12. This approach would not allow for estimates of the indicators proposed in this chapter. However, it would allow for estimates of the proportion of women who were involved in a particular decision-making activity, of all women in agricultural households (or the distribution of women to men who were involved in a particular decision-making activity).

5 The AGRIS QUESTIONNAIRE – OPTIONAL INDIVIDUAL MODULE has a simplified version of the decision-making module and is an example of one of these approaches. The approach does not allow for estimates of the sex distribution of the holdings' primary decision-makers. In addition, the data from this module cannot be used to explore important areas such as agricultural productivity by sex (that is, the proportion of holdings where only women are primary decision-makers, the proportion of holdings were only men are primary decision-makers, and the proportion of holdings where both men and women are primary decision-makers). However, it is capable of capturing the distribution of women and men who are involved in a particular decision-making activity of the population (AGRIS, n.d.).



4

Access and use of financial resources in agricultural household holdings

Studies suggest that access to savings and credit mechanisms positively impact self-employment activities. In Ghana and Rwanda, for example, access to savings accounts is strongly correlated with business success (Gamberoni *et al*., 2013). In India, greater access to financial services in rural areas is found to have a positive impact on small-business generation and women's self-employment activities (Banerjee *et al*., 2015; Menon and van der Muelen Rodgers, 2011). Other studies show that individuals with savings accounts are better able to smooth consumption and better manage consequences of shocks (Dupas and Robinson, 2009; Ashraf, Karlan and Yin, 2010).

There is evidence that fewer women than men report having an account with a formal financial institution in both low- and high-income countries, and the gap is larger in lower-income countries (Demirgüç-Kunt and Klapper, 2013). Additionally, women may also be less able to access informal financial mechanisms compared to men (Fletschner and Kenney, 2014). Fletschner and Kenney (2014) contend that women's lower access and use of financial tools may be because: (1) women are less likely to own and/or have control over important assets – such as land – that can be used as collateral for credit, compared to men; (2) social norms may restrict women's mobility and may thus limit women's access to information and trainings about financial services; and (3) lower literacy levels compared to men may prevent women from accessing information about financial services and understanding their benefits.

The proposed indicators on financial services in agricultural households seek to capture differences in men and women's use of credit for agriculture and livestock activities, savings accounts and crop insurance. While approximately one third of the national agricultural surveys reviewed include questions on credit and loans, these questions are often specific to the purchase of particular agricultural inputs and do not seek to enquire upon who took out and benefited from the loan. Few surveys pose questions on insurance and those that do only capture the cost of the service as a way to better understand profits for agricultural production. Two agricultural surveys, the Sierra Leone 2011 Integrated Household Survey and the United Republic of Tanzania 2010/2011 National Panel Survey, include questions on savings accounts for all members of the agricultural household. Only the Sierra Leone survey specifies the individual, thus allowing the information to be sex-disaggregated.

D. CREDIT INDICATORS

vi. Incidence of men and women's access to credit for agricultural and livestock activities

These sets of indicators capture men and women's use of formal and informal credit for cropping and livestock activities. Formal and informal credit are presented separately, as women may be less likely to access formal credit sources than men, resulting in women's higher demand for informal credit.

Because the indicators focus on credit for cropping and livestock activities, the indicators are best presented and interpreted alongside indicators on the incidence of men and women's involvement in cropping and livestock activities. If more women compared to men engage in cropping and livestock income activities within a particular country, we would expect the incidence indicators on credit for these activities to follow a similar pattern. If the patterns differ, it may be assumed that there are gender differences in the use of credit and insurance in agricultural household holdings.

Indicator set 1.9.

- Proportion of women who have taken out a formal loan for cropping and livestock activities, of all adult women in agricultural households.
- Proportion of men who have taken out a formal loan for cropping and livestock activities, of all adult men in agricultural households.

Indicator set 1.10.

- Proportion of women who have taken out an informal loan for cropping and livestock activities, of all adult women in agricultural households.
- Proportion of men who have taken out an informal loan for cropping and livestock activities, of all adult men in agricultural households.

Indicator set 1.9 are specified as $\left\{\frac{X_{FC}}{X}, \frac{Y_{FC}}{Y}\right\}$, where X_{FC} is the total number of adult women who have taken out a formal loan (or loans) for cropping and livestock activities; X is the total number of adult women in agricultural households; Y_{FC} is the total number of adult men who have taken out a formal loan (or loans) for cropping and livestock activities; and Y is the total number of adult men in agricultural households.

Indicator set 1.10 are specified as $\left\{\frac{X_{IC}}{X}, \frac{Y_{IC}}{Y}\right\}$, where X_{IC} is the total number of adult women who have taken out an informal loan (or loans) for cropping and livestock activities; X is the total number of adult women in agricultural households; Y_{IC} is the total number of adult men who have taken out an informal loan (or loans) for cropping and livestock activities; and Y is the total number of adult men in agricultural households.

The indicators could be further disaggregated by type of lending source. This would allow for estimates of differences in men and women's participation in different types of lending specific to the community. The EDGE project recommends collecting financial assets, including credit (or liabilities) in the same way as non-financial assets where individuals self-report their ownership of their assets (EDGE, forthcoming). Using this approach, in order to capture all loans taken out by all household members for agricultural proposes within a given reference period, multiple individuals per household need to be interviewed. If information on all loans taken out by the holding for agricultural and livestock purposes is not required, a household member can be randomly selected to self-report his or her loans (see EDGE, forthcoming, for examples on how to collect self-reported credit data).

Alternatively, since loans taken out for cropping and livestock activities are most likely known by the individuals who are most informed about the holding, these Guidelines propose a household-level module where a proxy respondent is asked about all loans taken out for agricultural and livestock activities on the holding. Figure 13 in

the annex provides an example of a household-level module of how this information could be captured. The module includes questions on who are the primary decision-makers on what to do with the money or item borrowed, and who made the decision to take out a loan. Indicator sets 1.9 and 1.10 can be derived from questions 13.3 and 13.4. Information on the individuals' sex is captured in the household roster (see part 1 and figure 2).

Analysts may be also interested in gender differences in the amounts borrowed and the amounts available to borrow, as well as differences in the fees and interest rates. Similarly, it may be of interest to know of any gender differences in the loans denied, and the reasons for denial. These questions could be added to the module. If readers wish to capture all liabilities of individuals beyond credit, they should refer to the EDGE Project Guidelines for additional guidance (EDGE, forthcoming).

E. SAVINGS INDICATORS

vii. Incidence of savings accounts

Savings accounts provide a reliable way to store money, help smooth consumption due to variable income, deal with emergencies, save for additional assets or a large event, and plan for the future. Additionally, savings accounts may provide a return on the investment, as well as access to other financial mechanisms such as credit. Within the context of developing countries, formal institutions may be scarce or, if they are available, fees or deposit requirements may exclude individuals from accessing them. Informal community-based savings programs provide an alternative to formal saving accounts (Demirguc-Kunt and Klapper, 2013). The following indicators estimate differences in men and women's savings methods.

Indicator set 1.11.

- Proportion of women who have a formal savings account, of all adult women in agricultural households.
- Proportion of men who have a formal savings account, of all adult men in agricultural households.

Indicator set 1.12.

- Proportion of women who have informal savings – in an account or with a group or an individual – of all adult women in agricultural households.
- Proportion of men who have informal savings – in an account or with a group or an individual of all adult men in agricultural households.

Indicator set 1.11 is specified as $\left\{\frac{X_{FS}}{X}, \frac{Y_{FS}}{Y}\right\}$, where X_{FS} is the total number of adult women who have a formal savings account; X is the total number of adult women in agricultural households; Y_{FS} is the total number of adult men who have a formal savings account; and Y is the total number of adult men in agricultural households.

Indicator set 1.12 is specified as $\left\{\frac{X_{IS}}{X}, \frac{Y_{IS}}{Y}\right\}$, where X_{IS} is the total number of adult women who have an informal savings account; X is the total number of adult women in agricultural households; Y_{IS} is the total number of adult men who have an informal savings account; and Y is the total number of adult men in agricultural households.

Since security and safekeeping of personal finances and savings is a concern, self-reported data may best capture this information. For savings, these Guidelines suggest that the data be self-reported and captured through either interviewing multiple individuals within the household or randomly selecting one household member, similar to what is proposed for other asset indicators in chapter 2. Figure 14 provides an example of an individual-level module that would capture the information required for these indicators (See EDGE, forthcoming, for additional examples on how to capture savings). Indicator sets 1.11 and 1.12 can be derived from questions 14.1 and 14.2. Information on the individuals' sex is captured in the household roster (see part 1 and figure 2).

Holding an account individually may suggest greater autonomy over the account, which may make a difference in how individuals decide to save. While additional questions are not necessary to calculate the indicators, they would enable a better understanding of eventual differences in men and women's savings accounts patterns.

F. FORMAL INSURANCE INDICATORS

Crop insurance can help buffer against the weather-related risks of agricultural activities by covering damage to the crop itself or the loss of revenue due to crop loss. Mitigating cropping risks can be particularly important to the well-being of the entire agricultural household. As such, the unit of analysis for the first set of indicators is the household. To capture the gender dimensions, the first set of indicators requires disaggregating by the sex of the primary decision-makers on the holding (female, male, joint) or of the cropping activities within the agricultural household (discussed in chapter 3). The second set of indicators are individual-level and capture men and women's use of crop insurance. While neither capture access to insurance, a large difference between men and women farmers' coverage could suggest that women have poorer access than men, all else being equal. If coverage in the community is low in general, it may suggest access is poor for that particular area in general.

viii. Incidence of crop insurance

Indicator set 1.13.

- Proportion of agricultural households that have purchased crop insurance.
- Proportion of agricultural households that have purchased crop insurance to insure level of crop revenue.
- Proportion of agricultural households that have purchased crop insurance to insure damage to the actual crop on the farm.

ix. Incidence of crop insurance by farmer

Indicator set 1.14.

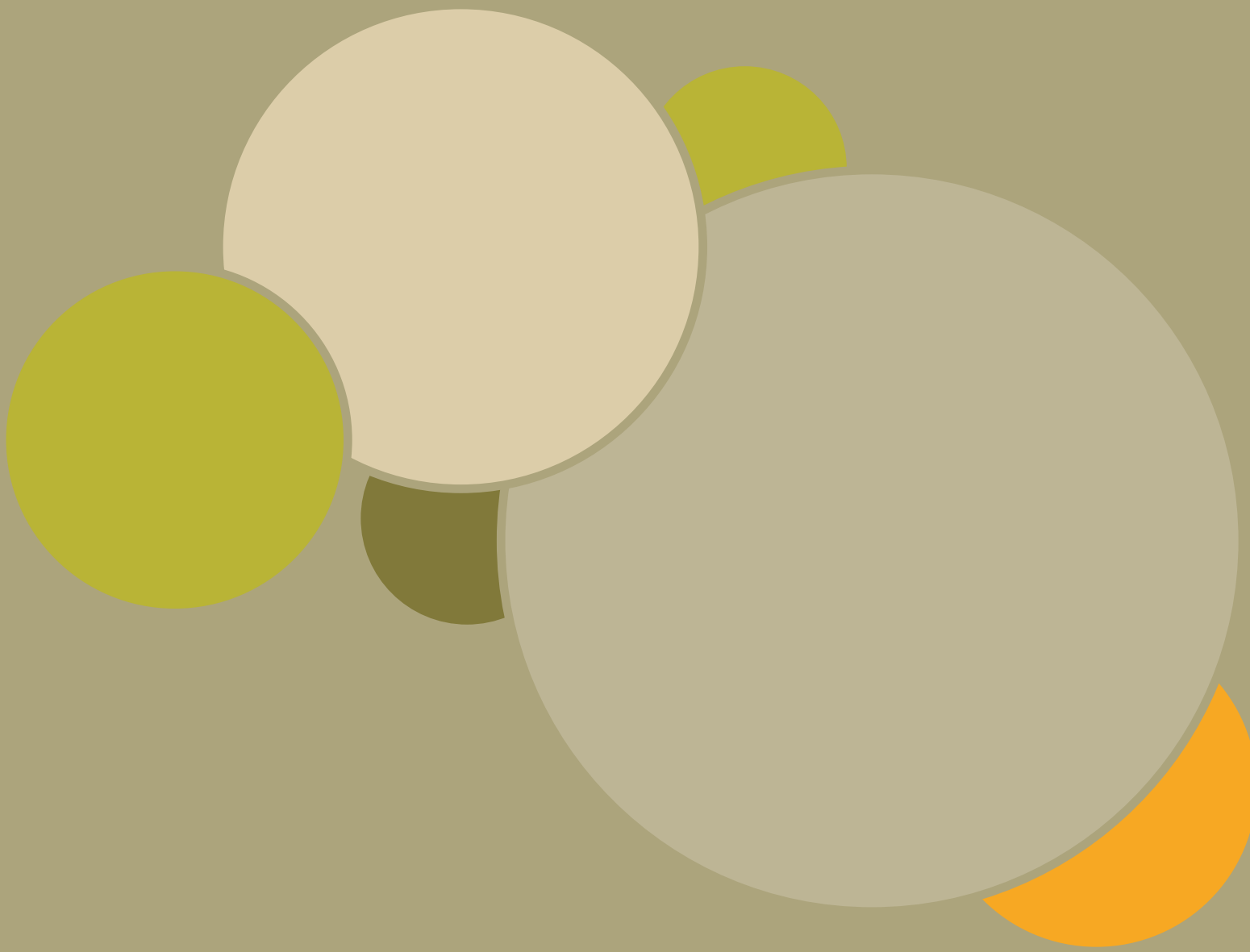
- Proportion of women who have purchased crop insurance in agricultural households.
- Proportion of men who have purchased crop insurance in agricultural households.

These are specified as $\left\{\frac{N_I}{N_H}, \frac{N_{I1}}{N_H}, \frac{N_{I2}}{N_H}\right\}$, where N_H is the number of agricultural households; N_I is the number of agricultural households that have purchased crop insurance; N_{I1} is the number of agricultural households that have purchased crop insurance to insure the level of crop revenue; and N_{I2} is the number of agricultural households that purchased crop insurance to insure against damage to the actual crop on the farm.

These are specified as $\left\{\frac{X_I}{X}, \frac{Y_I}{Y}\right\}$, where N_I is the number of agricultural households that have purchased crop insurance; N_H is the number of agricultural households; X_I is the total number of adult women who have purchased crop insurance; Y_I is the total number of adult men who have purchased crop insurance; X is the total number of adult women in agricultural households; and Y is the total number of adult men in agricultural households.

Figure 15 provides an example of a module that would capture the information needed for these indicators. Indicator set 1.13 is derived from question 15.0 and indicator set 1.14 is derived from question 15.5. Information on the individuals' sex is captured in the household roster (see part 1 and figure 2). For additional understanding of the gender dimensions of crop insurance, the numerators can be disaggregated by the type of insurance or by crop or use of crop.

The module includes a question on whether the insurance product was bundled with other financial products. This allows for a better understanding of the financial choices faced by smallholder farmers. While the insurance may be in the name of a man or a woman, the decision to purchase insurance coverage may have been taken jointly. Question 15.5 captures the primary decision-makers.



5

Productivity trainings and group membership

Productivity trainings, such as Farmer Field Schools (FFS), farmer-to-farmer extension, group extension methods and participatory methods, help facilitate increased crop productivity and can provide additional benefits such as a greater understanding of the nutritional value of the crops. These trainings are important for both male and female farmers. Studies suggest, however, that women are less likely than men to have access to and participate in productivity training services. This is in part because women are less likely to have access to land and other inputs than men, women are more likely to have lower educational attainment than men, women are more likely than men to have household commitments and caregiving responsibilities that keep them from having the time for trainings, and women are more likely than men to face constraints due to gender norms (Peterman, Behrman and Quisumbing, 2014; Waddington et al., 2014; Doss and Morris, 2000; Doss, 2001). According to a review of promising approaches in agriculture by Quisumbing and Pandolfelli (2010), extension designs are moving towards a more gender-sensitive approach; however, the impact of these changes is unclear.

In addition to training, social networks and organizations can be vehicles for disseminating new information and agricultural techniques. Farmers' groups and producer cooperatives can link smallholders to larger markets and increase farmers' bargaining power within the market, as well as reduce transaction expenses by sharing costs. In addition, strong social relations and networks can provide individuals with potential financial support or credit for agricultural investments, and can be also an important form of informal insurance to help mitigate loss resulting from idiosyncratic shocks. This chapter presents indicators on men and women's participation in agricultural trainings, producers' groups, and other associations and cooperatives within agricultural households. The denominators of the indicators include all adult men and women in agricultural households; however, they can be narrowed to only those who engage in agriculture or livestock activities, or compared to indicators on men and women's engagement in agriculture.

G. INCIDENCE OF AGRICULTURAL ADVISORY SERVICES INDICATORS

x. Participation in agricultural advisory services

Indicator set 1.15.

- Proportion of women who have participated in agricultural advisory services or agricultural training in the last 12 months, of all adult women in agricultural households.
- Proportion of men who have participated in agricultural advisory services in the last 12 months, of all adult men in agricultural households.

These are specified as $\left\{\frac{X_a}{X}, \frac{Y_a}{Y}\right\}$, where X_a is the total number of adult women who have participated in agricultural advisory services or agricultural training in the last 12 months; X is the total number of adult women in agricultural households; Y_a is the total number of adult men who have participated in agricultural advisory services or agricultural training in the last 12 months; and Y is the total number of adult men in agricultural households.

Many surveys include a question about extension services. With a household roster, only a small change in the wording of the questions to capture all individuals in the household who have received training, would be required to provide the information needed to calculate differences in men and women's participation in agricultural advisory services – see figure 16 for an example of a household-level module for both agriculture and livestock training services. The respondent is an individual who is well-informed about the holding. Indicator set 1.15 can be derived from questions 16.1 and 16.3 in figure 16 in the annex. Information on the individuals' sex is captured in the household roster (see part 1 and figure 2).

xi. Active member of advisory and producers' groups, and other associations

Indicator set 1.16.

- Proportion of women who are members of a participatory agricultural advisory group, of all adult women in agricultural households.
- Proportion of men who are members of a participatory agricultural advisory group, of all adult men in agricultural households.

- Proportion of women who are members of a producers' groups, of all adult women in agricultural households.
- Proportion of men who are members of a producers' group, of all adult men in agricultural households.

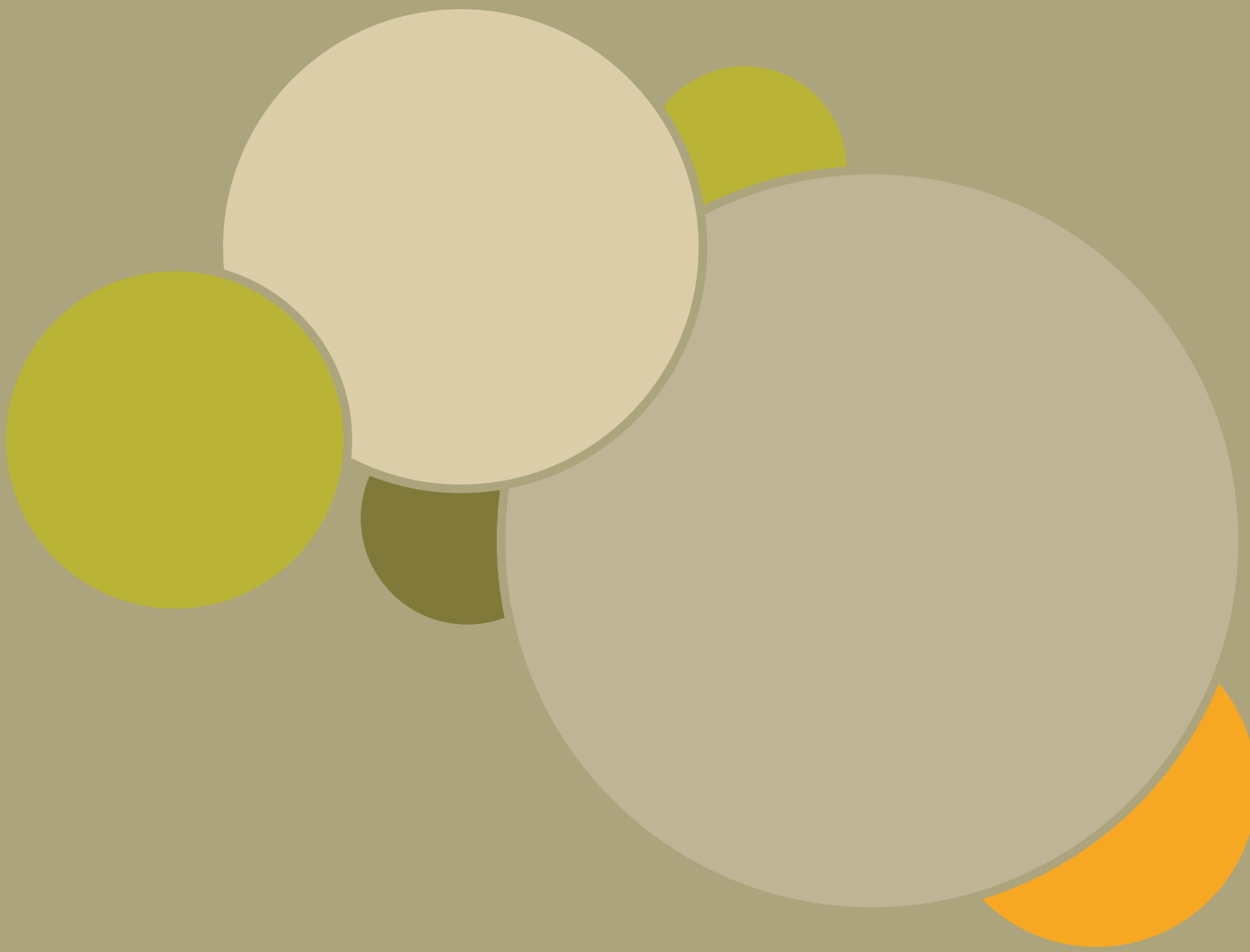
- Proportion of women who are members of trade or business associations for agriculture or livestock production, of all adult women in agricultural households.
- Proportion of men who are members of trade or business associations for agriculture or livestock production, of all adult men in agricultural households.

- Proportion of women who are members of a local government or council, of all adult women in agricultural households.
- Proportion of men who are members of a local government or council, of all adult men in agricultural households.

- Proportion of women who are members of a civic or religious group, of all adult women in agricultural households.
- Proportion of men who are members of a civic or religious group, of all adult men in agricultural households.

These are specified as $\left\{\frac{X_{G_l}}{X}, \frac{Y_{G_l}}{Y}\right\}$, where X_{Gl} and Y_{Gl} are the total number of adult women and active members of group l; and X and Y are the total number of adult women and men in agricultural households. The l groups are participatory agricultural advisory groups, producers' groups, trade or business associations, local governments or councils, and civic or religious groups.

Figure 17 illustrates an example of a household-level module to capture group member and participation. Depending on the community, these could also include forest users' groups and aquaculture. Producers' groups could be further disaggregated by type (dairy cooperatives, etc.) and by whether they are formal or informal associations. The respondent is an individual who is well-informed about the holding. Indicator set 1.16 can be derived from questions 17.4 in figure 16 in the annex. Information on the individuals' sex is captured in the household roster (see part 1 and figure 2).



6

Paid and unpaid work and time use in agricultural households

According to the Resolution on work, employment, and labour underutilization adopted by the Nineteenth International Conference of Labour Statisticians (ICLS) in 2013, work is any activity performed to produce goods or provide services with a market value, for use by others or for own use (ILO Resolution, 2013). It includes remunerated (in cash or in kind) and non-remunerated activities. Remunerated work is an activity that generates goods or provides services in exchange for compensation in cash or for other goods or services, for profit or gain. It includes formal and informal wage employment, self-employment activities such as agricultural production for profit, piece-rate work, paid domestic work and paid caregiving. Individuals engaged in paid work (and who are of working age) are classified as employed.

Non-remunerated work is an activity that generates goods or provides services with a market value, but for which there is no extrinsic exchange in cash or in kind. Unpaid work includes agricultural production for household consumption, unpaid caregiving services, and household maintenance such as cleaning, doing laundry, food preparation, gathering food and providing for children or the elderly. It also includes formal volunteer work in formally recognized institutions:

- such as schools, non-governmental organizations and international organizations.
- as well as informal volunteer work for the community or neighbours.

Unpaid production of household goods and services – including agricultural production for the household's consumption or family members living in other households – is considered own-use production work. Specifically, the Nineteenth ICLS Resolution (ILO Resolution 2013) considers the following activities as own-use production work when they are intended mainly for own final use:

- *producing and/or processing for storage agricultural, fishing, hunting and gathering products that are not intended for sale or profit;*
- *collecting and/or processing for storage mining and forestry products, including firewood and other fuels;*
- *fetching water from natural and other sources;*
- *manufacturing household goods (such as furniture, textiles, clothing, footwear, pottery or other durables, including boats and canoes);*
- *building, or effecting major repairs to, one's own dwelling, farm buildings, etc.;*
- *household accounting and management, purchasing and/or transporting goods;*
- *preparing and/or serving meals, household waste disposal and recycling;*
- *cleaning, decorating and maintaining one's own dwelling or premises, durables and other goods, and gardening;*
- *childcare and instruction, transporting and caring for elderly, dependent or other household members and domestic animals or pets, etc.*

These work activities can make up a large proportion of the household members' working time, and for poorer agricultural households within low-income countries, own-use production can be particularly important to the well-being of the household. When dealing with shocks or income shortfalls, households may substitute market goods and services with goods and services provided by household members. Since incomes tend to fluctuate, there can be a large amount of fluidity between the consumption of goods and services produced for home consumption and goods and services purchased in the market. It is often the combination of income from employment work activities and own-use production work in collaboration with other household members that sustains the household. A large part of agricultural production in agricultural households may be for own-use consumption.

Figure 1 is an adaptation of the classification of types of work from the Nineteenth ICLS Resolution (ILO Resolution 2013). The figure focuses exclusively on own-use production work of goods and services and highlights not only the intended use of the goods or service provided from the work, but also who engages in and who benefits from the work. The employment category includes work for pay or profit in cash or in kind (far-right column) as well as work as a contributing or assisting family worker (middle column). While also often not remunerated, contributing family work (formerly referred to as unpaid family work) and assisting family work are considered forms of employment[1]. Own-use production work (far left column) does not fall within the scope of the definition of employment provided in the Nineteenth ICLS Resolution.

If men and women's time is more or less equally spent on non-remunerated work, from a gender perspective, there would be less concern about who does the work and who benefits. However, evidence suggests that men and women do not dedicate their time equally to unpaid work. While it varies by country and gender norms, an established finding in the literature is that women generally perform the large majority of the household's own-use production work (see for example Ilahi, 2000; Bardasi and Wodon, 2006; Budlender, 2008; Antonopoulos, 2009). Similarly, depending on the context, a large proportion of employed women are contributing family workers, which is also not directly paid (left and middle columns in figure 1, respectively). For instance, ILO projections for 2016 estimate that 30 percent of female employment in Africa, 18 percent in Asian and the Pacific, and 7 percent in Latin America is contributing family work in the household's businesses, compared to 12, 6, and 5 percent of male employment in the respective regions (ILOSTAT).

1 A category similar to contributing family labourers is that of "assisting family labourers". Work as an assisting family labourer is non-remunerated work assisting another member in his or her wage or salaried work, whereas work as a contributing family labourer is non-remunerated work for a household member's enterprise or business.

FIGURE 1. OWN-USE PRODUCTION WORK AND EMPLOYMENT ACTIVITIES.

	Non-remunerated		Remunerated
	Own-use production	Employment activities	
Type of work activity	Own-use production work of goods and services	Work as a contributing family member or as an assisting family member	Work done in exchange for pay or profit
Intended use of product or service	Self, other household members, and other family members living in other households	Others outside the household and whose who are not family; sold in market or bartered	Others outside the household and those who are not family; sold in market or bartered
Who benefits from the work	Self, other household members, and other family members living in other households	Self, other household members, and other family members living in other households; indirect remuneration	Typically, remuneration goes to individual
	No extrinsic exchange; work done often based on expectations due to social norms, including family expectations	No extrinsic exchange; work done often based on expectations due to social norms including family expectations	There is an explicit or implicit contract and an extrinsic exchange for one's work
Who engages in the work	Men and women; however, women spend more time on own-use production than men	Men and women; however, women are more likely to be contributing family members and assisting family members than men	Men and women; however, women are often more constrained due at least in part to greater hours spent in own-use production of goods and services

Source: adapted from diagram 1 of Nineteenth ICLS Resolution (ILO Resolution 2013).

Women's greater role in non-remunerated work in own-use production and contributing family work compared to men results in women having less overall time available and fewer uninterrupted hours for their own income-earning activities. This makes women more likely to be income-reliant on others and more vulnerable to economic hardship if the household dissolves.

Additionally, women's greater role in unpaid work compared to men also results, in some contexts, to women working a greater number of hours than men. Based on data from 37 developing countries, the total number of hours spent on paid and unpaid work in a day is 7 hours and 9 minutes for women and 6 hours and 16 minutes for men (United Nations, 2015). For women who are employed in these same countries, the difference between men and women's time spent in paid and unpaid work is even greater (United Nations, 2015). The gap widens further in rural contexts. Bardasi and Wodon (2005), for instance, find that in Guinea in 2002-2003, time-poverty rates for women (that is, not having adequate time for rest and relaxation) are much greater in rural areas than in urban areas.

The proposed indicators on work in agricultural households capture the differences between men and women's working time in remunerated and non-remunerated work activities within agricultural households, highlighted in figure 1 using a time-use module. The guide does not include indicators that estimate the value of own-use production: although of interest from a gender perspective, it is beyond the scope of most national agricultural surveys. However, the value of own-production work could be estimated using the time-use data from the proposed module. For instance, the value of activities performed could be based on the wages paid for comparable market work. As a word of caution, there are different methods to measure the value of own-use production and there is not yet an international standardized approach. For own-use production of agricultural goods, the literature often estimates the value of goods based on the market value of the production output if sold (rather than through labour input).

An extensive labour module is beyond the scope of most agricultural surveys, and it is not the purpose of these Guidelines to provide an overview of how labour of household members is collected in agricultural surveys. From the gender perspective, however, it is important to remind readers that even with a short labour module, simple incidence indicators on engagement in types of work – such as the incidence of men and women within agricultural households engaged in agricultural and livestock activities – could be estimated with minimal changes and additions to most agricultural surveys by disaggregating questions about labour on the farm by sex. While most agricultural surveys collect the number of household members who work on the holding, not all disaggregate by sex. Fewer disaggregate external labourers by sex[2]. Other surveys ask about the number of workers who undertake different types of activities on the holding, and even distinguish between paid and unpaid work activities. Many of these questions could be easily disaggregated by sex. Chapter 7 provides examples of how agricultural households can capture gender differences in hired labour.

The rest of this chapter presents the time-use indicators and discusses the methodology behind collecting the data.

H. TIME-USE INDICATORS

Measuring the time spent on different work activities aids in making own-use production work more visible, and allows us to measure time poverty and intra-household patterns of time inequality and explore differences in types of work activities by sex. It could also allow us to identify intra-household trends of work allocation that might affect work in employment activities. If statistics were available and comparable across time, it could also be possible to identify changes to patterns of intra-household specialization, and, for instance, ascertain whether men allocate more time to childcare today than a decade ago.

Of the agricultural surveys reviewed, approximately one third capture household members' labour time in agriculture or livestock production or both. The information is often captured as an aggregate (a lump sum of time spent in an activity) over a long reference period such as a week or month, as necessary to estimate labour input and farm productivity on a holding, and may or may not be sex-disaggregated. As suggested above, it is recommended to sex-disaggregate all labour input, including labour time, on the holding.

In addition to capturing men and women's labour time over a long reference period, these Guidelines recommend a separate diary time-use module, where an individual is asked to recall all activities in chronological order for a short recent reference period, such as the last one or two 24-hour periods. Shorter recall periods result in more accurate data on the time spent on irregular activities and can capture a more detailed picture of men and women's paid and unpaid work activities within and outside of agricultural and livestock production in agricultural households. Summing the total time spent on an activity over a long reference period requires respondents to recall their own average time spent or other individuals' time spent (as is usually the case in agricultural surveys), and then to average or sum over the reference period. Therefore, this type of time-use data is prone to substantial measurement error (Kan and Pudney, 2008; Juster, Ono and Stafford, 2003). If a work activity is consistently performed over the time period, this approach provides unbiased estimates of the number of hours worked on a particular activity. However, for work activities that are not consistent or change every day or throughout the week, or that overlap with other activities, it is difficult to obtain unbiased estimates with this approach, and the bias can be more significant for

2 External agriculture labour is primarily paid or exchange labour with an explicit or implicit employment contract in agricultural production. It includes hired labour, exchange labour, contractors and volunteer labour, and excludes labour performed by household members and family members from another household.

some groups of individuals depending on the activity (Kan and Pudney, 2008). Generally, methods in which the aggregate time of an activity is asked over a week or month are best adopted when activities take place on a regular basis and when general trends are sought, such as regular employment activities, rather than the actual time spent (Juster, Ono and Stafford, 2003; Seymour *et al*., 2016). Because many own-use production activities are not regular activities that happen at the same time every day, shorter recall periods, such as a 24-hour recall module, provide less biased and more accurate estimates of these activities[3,4].

An issue with the 24-hour recall method is that within an agricultural setting, time spent on various activities varies by season. Additionally, it is often sought to examine time-use over a longer period of time than a single day. These factors make the 24-hour approach less appropriate when collecting data on overall labour input. With 24-hour recall data, however, it is possible to make inferences on men and women's average time use for the population of individuals within the agricultural households of the sampling time frame (Frazis and Stewart, 2012)[5]. To address seasonality, the survey would ideally be implemented in waves across one year and over one- month or longer sampling periods per wave, and implemented at the same time and time frame every year, to enable comparability across years. At a minimum, to be comparable across years, the survey module would need to be implemented at the same time every year. However, even if this is not possible, the data can be used to compare the time that women and men have spent on agricultural activities and other work.

Ideally, all household members are asked about their time use within the agricultural household holding. However, this is costly and can result in high non-response rates. Population estimates can be inferred by collecting time-use data from one randomly selected respondent per household.

Figure 18 provides an example of a 24-hour recall diary method, adapted from the time-use modules of the American Time Use Survey (ATUS) and the Women's Empowerment in Agriculture (WEAI) Survey. The time intervals are marked in 15-minute intervals and an activity can be marked for each time period, from the time the activity starts to the time it stops. If a respondent reports engaging in more than one activity at a given time, the enumerator first asks her if she can separate the activities into different time intervals. If she is unable to do this, the interviewer asks her which activity was her main activity and records the response.

The ATUS asks to list any secondary activities. The time-use module proposed here does not ask for all secondary activities; however, because childcare is often done simultaneously with other activities, the respondent is asked whether children were with her while performing the activity. Although less comprehensive than capturing all secondary activities, asking about the presence of children is a less burdensome way of identifying the degree to which individuals combine childcare with other activities[6]. This information is useful in that, among other things, it could allow researchers to expand the literature on the extent to which children affect the difference in men and women's participation and choice of paid work activities. For instance, Roncolato and Radchenko (2016) find that the concentration of women from low-income households in South Africa engaged in informal self-employment work is in part related to the greater ability to combine unpaid household work and paid work.

3 This approach tends to be less prone to measurement error than the stylized approach with which the time spent on an activity is reported as an aggregate (Kan and Pudney, 2008).

4 An experimental sampling method for time-use data collection, where an individual records their own activities at random times throughout a time period, tends to be even less prone to systematic measurement error than recall methods including time diaries. However, experimental sampling methods are more burdensome to respondents and more costly to implement.

5 However, because there may be day-to-day variations in the data, it is not possible to draw inferences on the median, nor use other distribution estimates on the time spent on given activities (Frazis and Stewart, 2012).

6 Juster, Ono and Stafford (2003) state that a "high-quality" time-use module similar to this requires approximately 18 minutes to implement. Based on feedback from WEAI experts at IFPRI, the WEAI time-use module that records only primary activities, rather than both primary and secondary activities, takes approximately eight to ten minutes to implement. The time-use module administered in the GSARS Uganda field test averaged 12 minutes to implement (GSARS, 2017a).

The pre-codes of the time activities are presented in figure 19. In figure 20, the time activites are matched with the correspondencing categories from the International Classification of Activities for Time Use Statistics (ICATUS) 2016 on the classification of activities from February 2017 (United Nations Statistical Division, 2017). Previously, own-use production of goods (but not services) was considered as a form of employment. This changed with the Nineteenth ICLS (ILO Resolution 2013). Like own-use services, own-use production of goods is now excluded as a form of employment. However, own-use production of goods (but not services) is still included in the System of National Accounts (SNA) production boundary. Because of this, the Nineteenth ICLS (ILO Resolution 2013) suggests classifying persons engaged in own-use production work by the types of work performed: (a) own-use production of goods only; (b) own-use provision of goods and services; or (c) own-use provision of services only as a way to highlight the different types of work. However, it is difficult to establish a clear boundary between own-use production of goods compared to services in smallholder household farms when much of the food for meals comes from crops and gardens on the farm. Indeed, *Report II – Statistics of Work, Employment and Labour Underutilization*, presented to the Nineteenth ICLS, recognizes the difficulty in establishing a boundary between own-use production of goods as compared to services (ILO 2013). For agricultural activities, it can also be difficult to distinguish between the time spent on cropping or livestock activities solely for household consumption versus that spent on the same activities for the products of which are destined for sale in the market. The 24-recall module aims to capture these distinctions, with the caveat that the boundary may not always be clear. Column 4 in figure 20 indicates whether the activity is own-use production of goods only or own-use provision of services only.

Using this 24-hour recall module, these Guidelines propose three time-use indicators; however, many more can be calculated from the 24-hour recall method proposed below.

xii. Time dedicated to agricultural production

This indicator captures the average time spent by men and women in agricultural household holdings on remunerated and non-remunerated agricultural activities, both on and off the household farm.

Indicator set 1.17.

- The average time that women spend on remunerated and non-remunerated work in agricultural production.
- The average time that men spend on remunerated and non-remunerated work in agricultural production.

These are specified as $\left\{\frac{\sum_i T_{pi}}{X_T}, \frac{\sum_j T_{pj}}{Y_T}\right\}$, where X_T is the total number of adult women in the time-use sample; Y_T is the total number of adult men in the time-use sample; and T_p is the time spent by the ith female or jth male on total agricultural and livestock production on the agricultural holding in the time-use sample. T_p is the sum of time spent on activities 1 and 2 from question 6.1, and on activities 5, 6, and 7 from question 18.1, if the activity involved agricultural, livestock or aquaculture production activities based on the response provided to question 18.2, plus any commuting or travelling time to and from these activities (code 8 from question 18.1). This sample is based on the time-use respondent, preferably a randomly selected individual within the household.

xiii. Time spent on all non-remunerated work activities

This indicator captures the average time spent by men and women in agricultural household holdings on all non-remunerated work in agricultural and non-agricultural activities.

Indicator set 1.18.

- The average time women that spend on all non-remunerated work in agriculture and non-agriculture activities.
- The average time men that spend on all non-remunerated work in agriculture and non-agriculture activities.

These are specified as $\left\{\frac{\sum_i T_{hi}}{X_T}, \frac{\sum_j T_{hj}}{Y_T}\right\}$, where X_T is the total number of adult women in the time-use sample; Y_T is the total number of adult men in the time-use sample; and T_h is the time spent by the ith female or jth male on non-remunerated work. This sample is based on the time-use respondents, preferably a randomly selected individual within the household. T_h is the sum of time spent on activities 2, 6, 7 and 16-27 from question 18.1; activity 1 from question 18.1 if the activity was primarily for home consumption as specified by the responses to questions 18.4 and 18.5, or the individual will not control any of the income from the incoming earning activity as specified in the responses to questions 18.6; and activity 4 if the individual will not control any of the income from the incoming earning activity as specified in the responses to questions 18.6, plus any commuting or travelling time to and from these activities (code 8 from question 18.1).

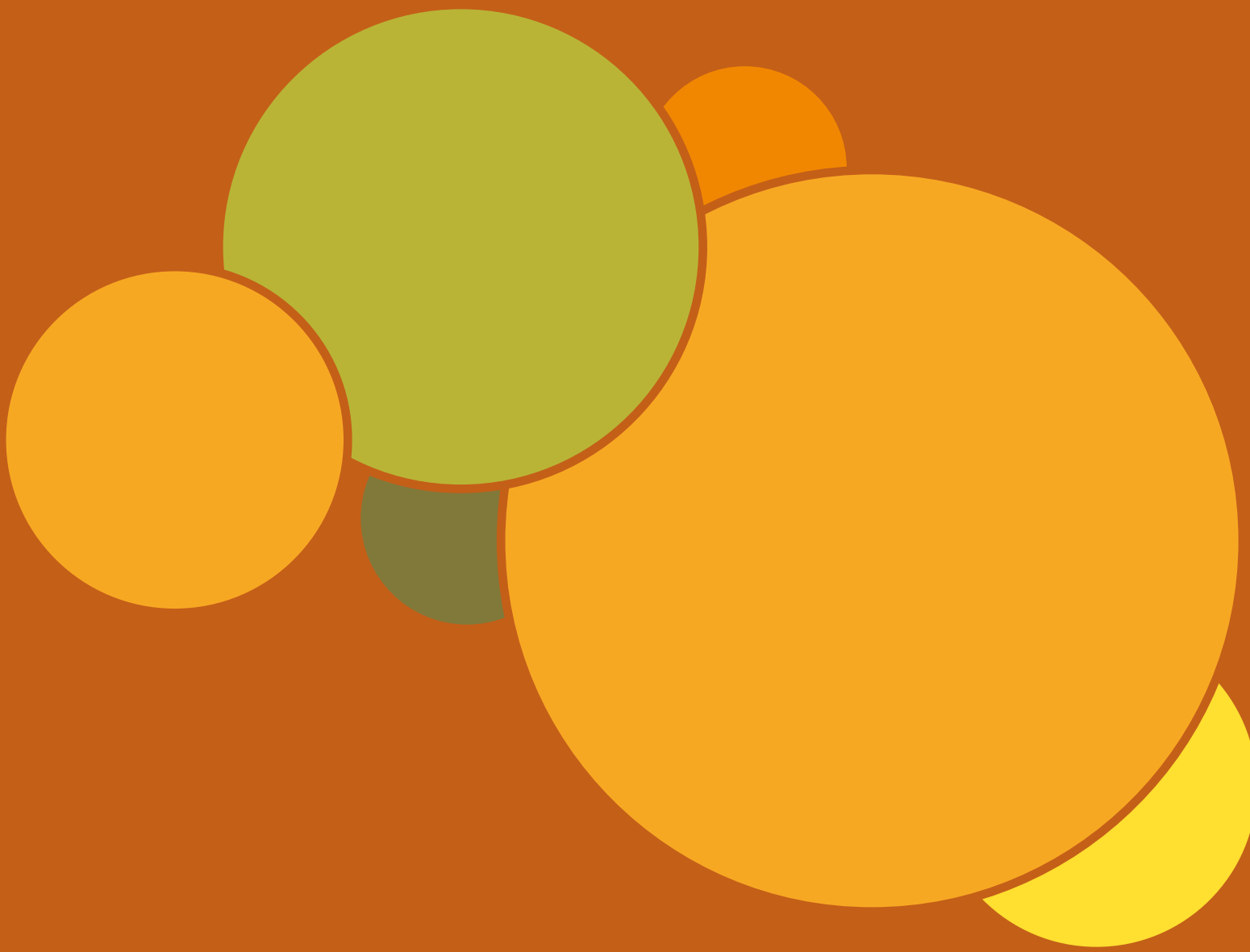
xiv. Total time dedicated to all work activities

This indicator captures the average time spent by men and women in agricultural household holdings on unpaid and paid work in agricultural and non-agricultural activities. This indicator could be used to assess differences in men and women's time poverty rates (see Bardasi and Wodon, 2005, for a discussion).

Indicator set 1.19.

- Average time that women spend on all work activities.
- Average time that men spend on all work activities.

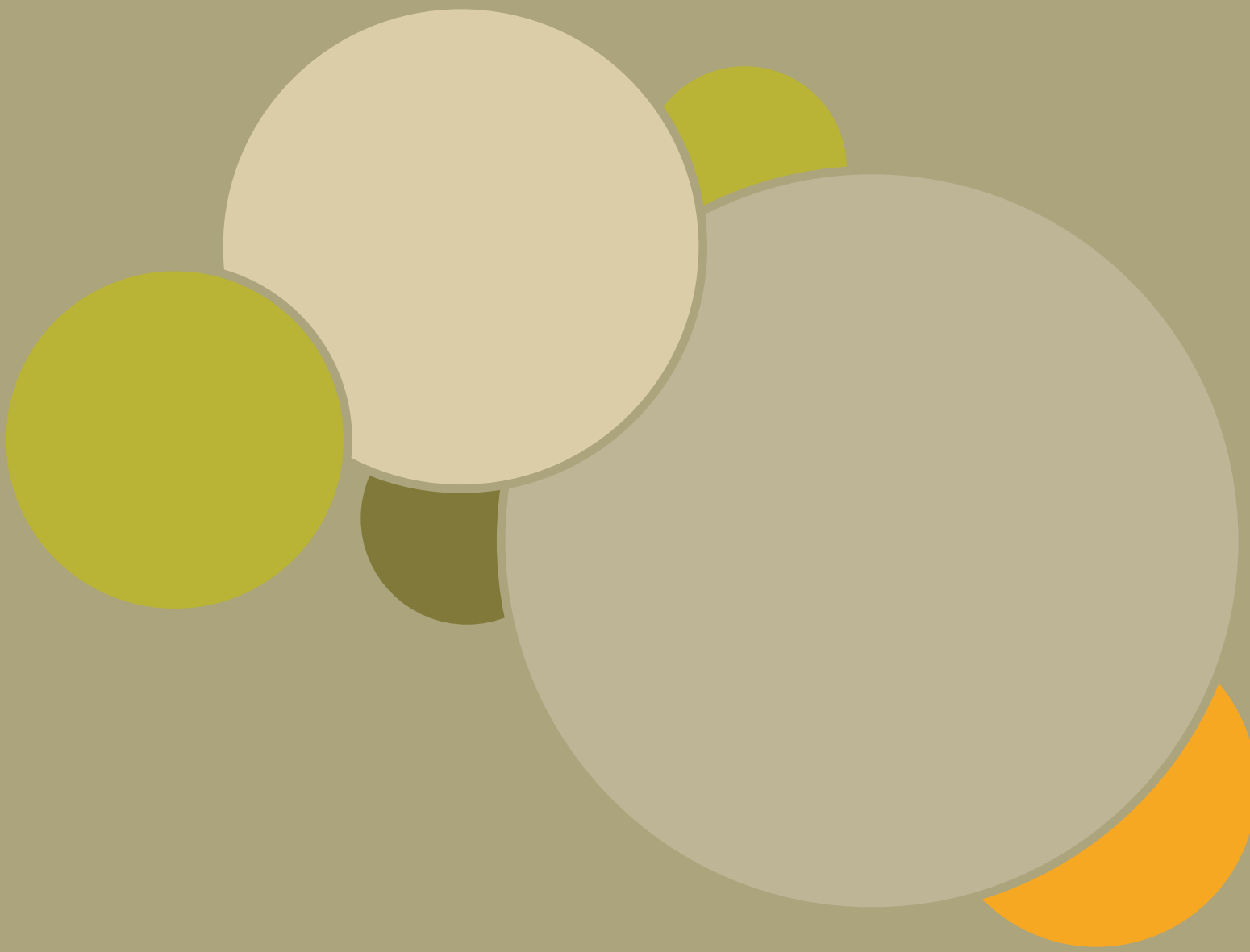
These are specified as $\left\{\frac{\sum_i T_{wi}}{X_T}, \frac{\sum_j T_{wj}}{Y_T}\right\}$, where X_T is the total number of adult women in the time-use sample; Y_T is the total number of adult men in the time-use sample; and T_w is the time spent by the ith female or jth male on all remunerated and non-remunerated work activities on the agricultural holding in the time-use sample; T_w is the sum of time spent on activities 1-7 and 16-27 from question 18.1, plus any commuting or travelling time to and from these activities (code 8 from question 18.1). This sample is based on the time-use respondents, preferably a randomly selected individual within the household. This indicator does not take into account the additional time spent on unpaid work when childcare is a secondary activity. An additional indicator could include non-work activities where childcare was the second activity, meaning that it includes activities 12-15 when the response to question 18.7 is 'Yes'. Figure 20 provides an example of how the time use module is filled in.



Part 2

External labour in agricultural household and non-household sector holdings

While part 1 of these Guidelines has focused on household-sector holdings only, part 2 focuses on both household and non-household sector holdings. Chapter 7 proposes simple sex-disaggregated indicators of holdings' external labourers, with particular attention on hired labour. External labour includes hired labour, exchange labour, contractors and volunteer labour. For non-household sector agricultural holdings, hired labour is the primary form of employment on the holding. For agricultural households, external labour excludes labour from household members.



7

Hired labour

Paid labour in both household and non-household sector holdings can be longer-term, more permanent or fixed-term salaried employment, or temporary employment. The latter includes seasonal as well as casual employment, which is work done on an occasional and intermittent basis. Casual employment tends to be lower-paying and less secure than permanent employment in agriculture, and is a prominent form of informal employment in developing countries. Workers can be paid in cash or in kind by the hour, day or month, or by piece of work. Seasonal and casual workers are more likely to be paid by the hour or day, or at a piece rate.

Although it varies by country, case studies suggest that women supply a considerable amount of casual labour in agriculture in some areas. For instance, in Malawi, women do a considerable amount of Ganyu, which is short-term casual labour, commonly piecework and often involves preparing fields, seeding, and weeding. Additionally, in Chile, Ecuador, Guatemala, Kenya, Mexico, South Africa and Zimbabwe, women occupy more than half of the wage labour in non-traditional agricultural export production, which is primarily casual labour (Dolan and Sorby, 2003). Reliable national-level sex-disaggregated data on labour in agriculture is not available in many countries, however, making it difficult to compare gender dimensions of contract labour in agriculture across countries and years.

This chapter presents indicators that capture the gender trends of hired labour in household and non-household sector agricultural holdings, focusing specifically on differences in the type of work and wages. While it is simple to disaggregate by sex, only about half of the agricultural surveys reviewed capture the number of hired employees on the holding by sex.

I. PERMANENT EMPLOYMENT

This section proposes indicators on permanent employment overall and then specifically on management. These Guidelines differentiate between permanent versus temporary work (including seasonal, short-term and casual work) as a way to proxy gender differences in the quality of employment and to be consistent with the approach currently adopted in national agricultural surveys.

xv. Permanent employees in non-household sector agricultural holdings and agricultural households

The following indicators capture the average proportion of women hired as permanent employees in non-household-sector agricultural holdings and in household agricultural holdings.

Indicator set 1.20.

- The average proportion of women hired as permanent employees in non-household-sector agricultural holdings, of all permanent employees who work in non-household-sector agricultural holdings.

Indicator set 1.21.

- The average proportion of women hired as permanent employees in household agricultural holdings, of all permanent employees who work in agricultural households.

xvi. Distribution of hired managers in non-household-sector agricultural holdings

The following indicators capture the distribution of managers in non-household-sector agricultural holdings.

Indicator set 1.22.

- Proportion of non-household-sector agricultural holdings where only women manage the holding.
- Proportion of non-household-sector agricultural holdings where men and women jointly manage the holding.
- Proportion of non-household-sector agricultural holdings where only men manage the holding.

xvii. Distribution of hired managers of agricultural household holdings

This set of indicators captures the proportion of agricultural household holdings that hire managers from outside the household and the proportion of those managers who are women.

Indicator set 1.23.

- Proportion of agricultural household holdings with managers hired to run the holding on behalf of the agricultural holder.
- Proportion of women hired as managers in agricultural household holdings, of all managers who work in agricultural household holdings.

Indicator set 1.20 is specified as $\left\{\frac{\sum_i^{N_N}\left(\frac{X_{PE_i}}{X_{PE_i}+Y_{PE_i}}\right)}{N_N}\right\}$, where X_{PE} and Y_{PE} are the total number of adult women and men hired as permanent employees of the *ith* non-household-sector agricultural holding of N_N holdings. Indicator set 1.21 is specified as $\left\{\frac{\sum_i^{N_H}\left(\frac{X_{PE_i}}{X_{PE_i}+Y_{PE_i}}\right)}{N_H}\right\}$, where X_{PE} and Y_{PE} are the total number of adult women and men hired as permanent employees of the *ith* agricultural household of N_H households.

Indicator set 1.22 is specified as $\left\{\frac{N_{NW}}{N_N}, \frac{N_{NJ}}{N_N}, \frac{N_{NM}}{N_N}\right\}$, where N_N is the total number of non-household-sector agricultural holdings in the sample population; N_{NW} is the total number of non-household-sector agricultural holdings where only women manage the holding; N_{NM} is the total number of non-household-sector agricultural holdings where only women manage the holding; and N_{NJ} is the number of non-household-sector agricultural holdings where women and men jointly manage the holding. Indicator set 1.22 can be derived from questions 21.2 and 21.3.

Indicator set 1.23 are specified as $\left\{\frac{N_{MH}}{N_H}, \frac{X_{ME}}{X_{ME}+Y_{ME}}\right\}$, where X_{ME} and Y_{ME} are the total number of adult women and men hired as managers in agricultural household holdings N_H. N_{MH} is the number of agricultural household holdings with hired managers.

Figure 21 in the annex provides an example of a module to attain sex-disaggregated information o n permanent and casual employees in agricultural household holdings and non-household-sector holdings. The respondent is an individual who is well-informed about the holding. Indicators 1.20, 1.21, 1.22, and 1.23 can be derived from questions 21.2 and 21.3 in figure 21.

J. TEMPORARY EMPLOYMENT

This section proposes indicators on temporary employment by type of holding.

xviii. Temporary employees in non-household-sector agricultural holdings and household agricultural holdings

The following indicator captures the average proportion of women hired as temporary employees who are employed in non-household-sector agricultural holdings and agricultural households.

Indicator set 1.24.
The average proportion of women hired as temporary employees in non-household-sector agricultural holdings, of all temporary employees who work in non-household-sector agricultural holdings

Indicator set 1.25.
The average proportion of women hired as temporary employees in household agricultural holdings, of all temporary employees who work in agricultural households.

Indicator set 1.24 is specified as $\left\{\frac{\sum_i^{N_N}\left(\frac{X_{CE_i}}{X_{CE_i}+Y_{cE_i}}\right)}{N_N}\right\}$, where X_{CE} and Y_{CE} are the total number of adult women and men hired as temporary employees of the *ith* non-household-sector agricultural holding of N_N holdings. Indicator 1.25 is specified as $\left\{\frac{\sum_i^{N_H}\left(\frac{X_{CE_i}}{X_{CE_i}+Y_{CE_i}}\right)}{N_H}\right\}$, where X_{CE} and Y_{CE} are the total number of adult women and men hired as temporary employees of the *ith* agricultural household of N_H households. These can be derived from questions 21.5 and 21.6 in the module in figure 21 of the annex.

K. WAGE GAP

xix. Ratio of women to men's hourly mean wages

The following indicator captures the gender wage gap in hired paid labour in both non-household-sector agricultural holdings and holdings in agricultural households. It can be interpreted as the percent difference in the earnings of women as external workers in agriculture compared to those of men in agricultural holdings. The proposed indicator is intentionally general, in that it includes all hired employees in agriculture from both types of holdings. As a general indicator, it is comparable across countries. However, because the wage rate may differ greatly between types of work, such as permanent and temporary labour, and case studies suggest that men and women's employment in agriculture vary widely between the two types of work, collecting and presenting average wages and the gender wage gap of permanent and temporary work separately could highlight additional employment patterns. For example, if there is a large gap between wages between permanent and temporary employment and little or no gap between men and women's wages in permanent and temporary work, then the wage gap between male and female hired workers in agriculture is largely due to greater female employment in temporary labour than in permanent labour compared to men. This has different implications from those ensuing from large gender wage gaps in both or either permanent or temporary work.

Indicator set 1.26.

- The percent mean difference in women's earnings as hired labourers in agriculture compared to those of men.[1]

Indicator 1.26 is specified as $\left\{(1-\frac{W_X}{W_Y})\times 100\ \%\right\}$, where W_X and WY_X are the mean hourly or daily wage of female and male external workers in agriculture, respectively, in both non-household sector agricultural holdings and household agricultural holdings.

Capturing the mean hourly or daily wage of external workers by sex requires both the time worked and the pay rate by sex. Of the surveys reviewed, 11 ask for the time spent on agricultural activities by sex, seven of which in a sex-disaggregated way. Fifteen surveys ask for the wage or salary of external workers; however, ten of these ask for total labour costs and are not disaggregated by sex. Only two surveys – Kosovo's Agricultural Household Survey 2005 and Niger's National Survey on Household Living Conditions and Agricultural 2010–2011 – include questions on both time and rate by sex. Rather than asking for the rate for each employee, surveys generally ask for total employment costs. Figure 22 presents an example of a module adapted from the AGRIS labour rotating modules to capture the hourly wage of external workers by sex in surveys (AGRIS, n.d.)[2]. The information is collected across all activities, but could also be collected for each type of activity: land preparation and planting, weeding, harvesting and livestock. Like the other employment indicators, this indicator could also be disaggregated by type of holding (non-household-sector and agricultural households) and holding size, to highlight additional employment patterns.

1 Because wage distributions are generally highly skewed and even a small number of outliers can greatly affect the mean and gap estimates, the median wage is more often used to calculate gender wage gaps than the mean in economic literature. The median wage gives a better idea of the general difference between men and women's wages. However, because of the way the data are currently collected in agricultural surveys – information is not collected on each employee, but rather as an aggregate – the mean wage is proposed.

2 The AGRIS Labour force module for agricultural holdings in the household and non-household sector provides a more detailed approach.

Conclusion

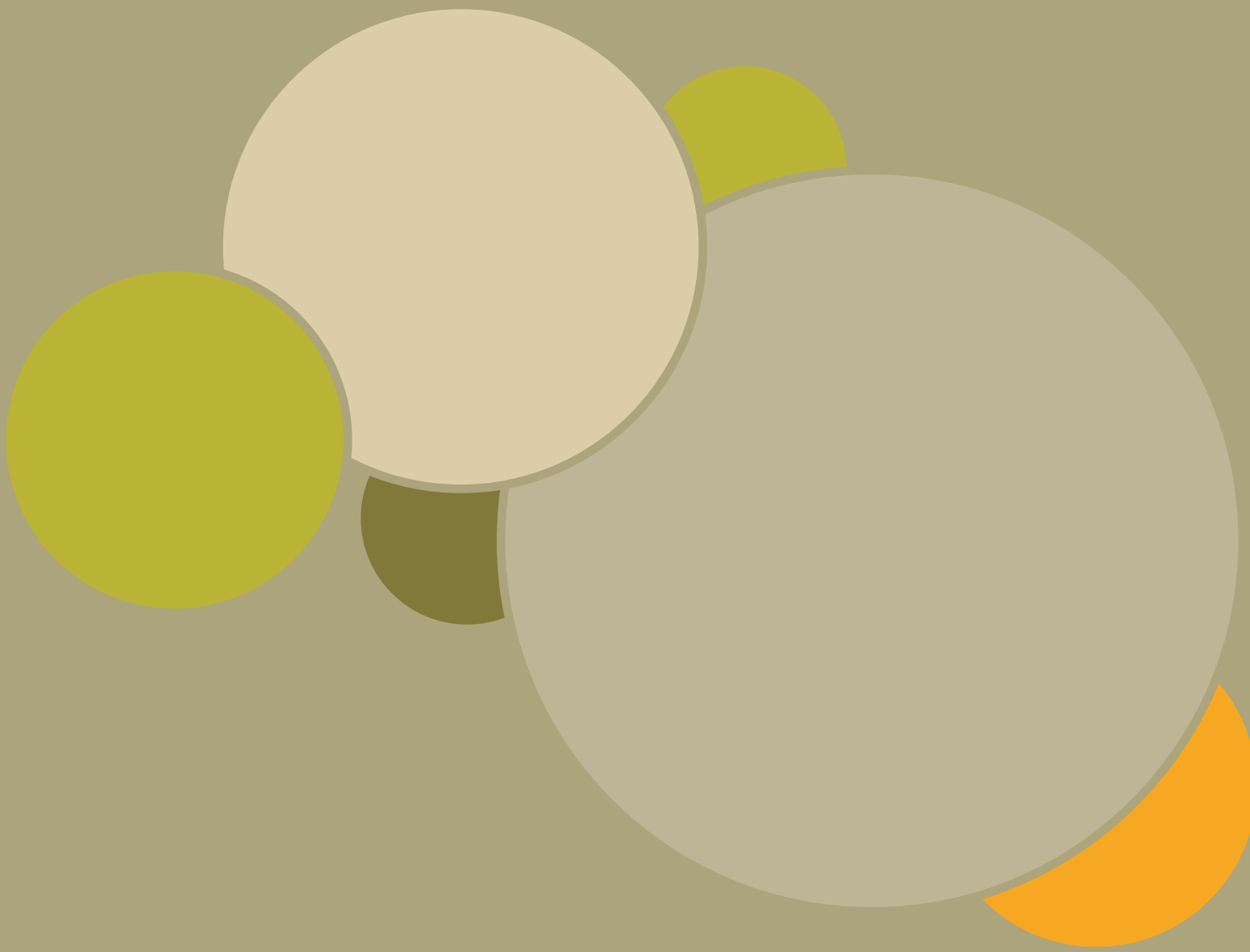
Although there is increasing awareness of the importance of sex-disaggregated data in agriculture, significant data gaps exist in gender and agriculture that hinder understanding of how men and women's differing responsibilities, privileges and constraints affect agricultural outcomes. Sex-disaggregated and gender-relevant data is important for understanding the role gender plays in agriculture production. In addition to providing a way to monitor progress toward greater equality over time, sex-disaggregated and gender-relevant data can broaden our understanding of the roles men and women play in agriculture and reveal differences in the opportunities and constraints men and women face that impact agricultural production. For instance, detailed data on men and women's time use allows for a deeper investigation into the differences in men and women's time constraints, and how this impacts men and women's involvement in agriculture. A better understanding of men and women's differing roles in agriculture is essential in designing successful policies and programs to increase agricultural productivity, reduce poverty and increase food security.

These Guidelines were developed as part of the GSARS research area on "Mainstreaming sex-disaggregated data and gender indicators in agricultural statistics". With the aim of improving the availability of comparable sex-disaggregated and gender-relevant data in agricultural surveys, the Guidelines propose 26 indicators across six themes: (1) asset ownership; (2) decision-making; (3) access and use of financial resources; (4) productivity trainings; (5) time use; and (6) external labour. The focus is primarily on agricultural household holdings in developing countries, with the exception of external labour, which is appropriate for both household and non-household-sector holdings. To capture these indicators, the Guidelines provide example modules that can be integrated into agricultural surveys, and recommendations for collecting the data. The recommendations are based on current research on survey methods for capturing sex-disaggregated data and results from field tests conducted in Uganda and Indonesia. While the indicators will be useful in uncovering important gender dimensions and gaps, the data may also be used for more in-depth analyses of men and women's engagement in agricultural production. For example, depending on the scope of the survey, the data could be used to explore the following:

- how gender gaps in inputs, such as productive assets, financial resources and productivity training affect differences in men and women's agricultural productivity in agricultural households[1];
- whether differences in crop productivity between male and female farmers is due to differences in access to improved technologies, access to credit and other financial services or other agricultural inputs;
- whether the way land is allocated within households affects crop diversification and household food security;
- how men and women's involvement in decisions made on agricultural production affects household agricultural productivity and household well-being;
- how men and women's asset ownership impacts men and women's involvement in decisions on agricultural production;
- whether there are large gender differences in the time worked in remunerated and non-remunerated activities in agricultural households, and whether this difference decreases as household wealth decreases; and
- whether women's time constraints in poorer agricultural households affects households' food security.

While the indicators and the topics presented in the Guidelines are not exhaustive, the Guidelines provide an important starting point for collecting sex-disaggregated and gender-relevant data focusing on cropping and livestock activities within agricultural surveys.

1 Section 5.6 in chapter 5 of the GSARS Technical Report entitled *Sex-disaggregated data and gender indicators in agriculture: A review of data gaps and good practices* provides important background information on how current empirical literature measures differences in men and women's agricultural productivity (GSARS, 2016). The GSARS *Technical Report on Productivity and Efficiency Measurement in Agriculture: Literature Review and Gaps Analysis* provides more technical background on measuring agricultural productivity at the holding level (GSARS, 2017b).



Annex

FIGURE 2. HOUSEHOLD ROSTER.

		ENUMERATOR: ONCE YOU HAVE LISTED ALL HOUSEHOLD MEMBERS, ASK QUESTIONS 2.2 – 2.7 FOR EACH HOUSEHOLD MEMBER.						
2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	
	List all household members MAKE A COMPLETE LIST OF ALL INDIVIDUALS WHO NORMALLY LIVE AND EAT THEIR MEALS TOGETHER IN THIS HOUSEHOLD BEGINNING WITH THE RESPONDENT.	What is [PERSON]'s relationship to the respondent? Self 1 Spouse 2 Daughter/son 3 Mother/ father 4 Sister/brother 5 Niece/ nephew 6 Uncle/aunt 7 Mother/ father in law 8 Sister/ brother in law 9 Grandparent 10 Grandchild 11 Other relative 12 Domestic employee who lives with the household 13 Other employee who lives with the household 14 Other non-relative 15	Indicate [PERSON's] sex. Male 1 Female 2	[PERSON's] age (in years) *If under 1 year, write 00.*	What is [PERSON]'s current marital status? Married, monogamous 1 Married, polygamous 2 Consensual union 3 Widow/ widower 4 Divorced or separated 5 Never married 6	If [PERSON] is married or in a consensual union: Does [PERSON'S] spouse or partner live in the household? Yes 1 No 2 *Mark 'yes' if the household member has more than one spouse and lives with at least one spouse.*	List ID code(s) of spouse(s) or partners who live in the household	
ID CODE				AGE (YEARS)			ID	ID ID ID
01		1						
02								
03								
04								
05								
06								

FIGURE 3. HOUSEHOLD-LEVEL MODULE – PARCEL ROSTER.

Please list ALL PARCELS that you or anyone in your household owned, held, and/or cultivated since [reference period] until now. **This includes land that is owned and currently given out.**			ENUMERATOR: ONCE THE PARCELS ARE LISTED, ASK THE FOLLOWING FOR EACH PARCEL RECORDED. GO THROUGH THE ENTIRE MODULE ONE PARCEL AT A TIME.		
3.0	3.1	3.2	3.3	3.4	3.5
PARCEL ID	PARCEL NAME	LOCATION & DESCRIPTION	Under which tenure system is this [PARCEL]? Freehold 1 Leasehold 2 Mailo 3 Customary 4 Renting or sharecropping 5 Other (specify) 6	How did you acquire this [PARCEL]? Granted by local leaders 1 Inherited 2 Received as gift 3 Purchased 4 Leased 5 Rental arrangement 6 Borrowed for free 7 Moved in without permission 8 Other (specify) 9	Do you or any member of your household own this [PARCEL] exclusively or jointly with someone? Yes 1 No 2
R01					
R02					
R03					

Questions on the characteristics of the parcel, such as size and whether it is irrigated, can be inserted here.

The decision-making questions in figure 9 regarding the parcel can be included here.

According to the WCA 2020, a parcel is land under one land tenure type that is enclosed by other land, water, road, forest or other features not forming part of the holding, or adjacent to land under a different tenure type in the same holding. A parcel may consist of one or more plots.

A plot is a piece of land within a parcel for which the land is used predominantly for the same purpose and is managed by the same person or group of people. It is land used for cropping activities of which a specific crop or crop mixture is cultivated or is left fallow (FAO, 2015).

The modules can be modified to fit the definitions used by the statistical office. Similarly, the pre-codes for 3.3 and 3.4 can be modified to fit the country's context.

FIGURE 4.A INDIVIDUAL-LEVEL MODULE – LAND OWNERSHIP QUESTIONS (A).

ENUMERATOR: REFER TO THE PARCELS LISTED IN HOUSEHOLD LEVEL MODULE THAT ARE OWNED (BASED ON QUESTION 3.5 IN FIGURE 3). SKIP PARCELS THAT ARE NOT OWNED BY THE HOUSEHOLD. GO THROUGH THE ENTIRE MODULE ONE PARCEL AT A TIME.

3.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7
PARCEL ID	Do you currently own this [PARCEL] exclusively or jointly with someone? Yes, alone 1 >> 4.5 Yes, jointly with someone else 2 No 3 >> Next Parcel	ENUMERATOR: Ask the respondent if he or she owns any other parcels not listed in the household roster. If the respondent does own other parcels, list each additional parcel.	Do you own this [PARCEL] jointly with someone? Yes 1 No 2 >> 4.5	Who owns [PARCEL] jointly with you? Household member: Use ID Other non-household member: Female……87 Male……88 ID ID ID ID	Is there an ownership document for this [PARCEL] issued by the land registry/cadastral agency? Yes, a title deed 1 Yes, a certificate of customary ownership 2 Yes, a certificate of occupancy 3 Yes, a will or certificate of hereditary acquisition 4 Yes, a purchase agreement 5 Yes, a certificate of perpetual / long term lease 6 Yes, other (specify) 7 No document 8 Don't know 98 Refuses to respond 99	Are you listed as an owner or a user right holder on the ownership document for this [PARCEL]? Yes, alone 1 >> Next Parcel Yes, jointly with someone else 2 No 3 >> Next Parcel	Who is listed as an owner on the document with you? Household member: Use ID Other non-household member: Female……87 Male……88 ID ID ID ID
R01							
R02							
R03							
S01							
S02							

If interested only the minimum questions needed to calculate the indicators in SDG 5.a.1 (and there is not a household parcel roster to which the parcels in the individual module may be linked), the module could begin by asking if the individual owns, or holds, user rights to any agricultural land individually or jointly. If the individual does indeed own agricultural land, all parcels are listed. For each parcel, he or she would then be asked about the tenure system (3.3 in figure 3), formal documents (4.5 and 4.6), and rights over the land (4.8 and 4.10).

Given the differences between legal systems across countries, it is not possible to clearly define an exhaustive list of legally recognized documents (in 4.5) that enable claiming ownership, property or use rights by law. However, depending on the national legal framework, the following documents may be considered legally recognized:

- Title deed
- Certificate of occupancy or land certificate
- Legally recognized purchase agreement
- Legally recognized will/certificate of hereditary acquisition
- Certificate of customary tenure
- Certificate of perpetual/long term lease or rental agreements
- Certificate issued for adverse possession

ENUMERATOR: REFER TO THE PARCELS LISTED IN HOUSEHOLD-LEVEL MODULE THAT ARE OWNED (BASED ON QUESTION 3.5 IN FIGURE 3). SKIP PARCELS THAT ARE NOT OWNED BY THE HOUSEHOLD. GO THROUGH THE ENTIRE MODULE ONE PARCEL AT A TIME.

3.0	4.8	4.9				4.10	4.11			
PARCEL ID	Do you have the right to sell this [PARCEL] exclusively or jointly with someone? Yes, alone 1 >> 4.10 Yes, jointly with someone else 2 No, someone else has the right 3 >> 4.10 No, [PARCEL] cannot be sold 4 >> 4.10	Who jointly has the right to sell this [PARCEL] with you? Household member: Use ID Other non-household member: Female……87 Male……88				Do you have the right to bequeath this [PARCEL] exclusively or jointly with someone? Yes, alone 1 >> Next Parcel Yes, jointly with someone else 2 No, someone else has the right 3 >> Next Parcel No, [PARCEL] cannot be sold 4 >> Next Parcel	Who has the right to jointly bequeath this [PARCEL] with you? Household member: Use ID Other non-household member: Female……87 Male……88			
		ID	ID	ID	ID		ID	ID	ID	ID
R01										
R02										
R03										
S01										
S02										

ENUMERATOR: GO THROUGH THE ENTIRE MODULE ONE LIVESTOCK TYPE AT A TIME.

5.0	5.1	5.2	5.3	5.4	5.5
Livestock ID	Livestock type The livestock list will vary by county.	Does the holding currently have any [LIVESTOCK TYPE]? Yes 1 No 2 >> Next livestock type	How many of [LIVESTOCK TYPE] does the holding have?	Are all of [LIVESTOCK TYPE] on the holding owned by you or a member of the household exclusively or jointly with someone? Yes 1 No 2	How many of [LIVESTOCK TYPE] are NOT owned by you or by members of the household?
			NUMBER		NUMBER
01	Dairy cows				
02	Other large ruminant (beef or mixed)				
03	Sheep, goats				
04	Poultry (chickens, ducks, turkeys, pigeons and other poultry)				
05	Pigs				
06	Donkeys, mules, horses				
07	Other (specify)				

FIGURE 6. INDIVIDUAL-LEVEL MODULE – LIVESTOCK OWNERSHIP QUESTIONS.

ENUMERATOR: GO THROUGH THE ENTIRE MODULE ONE LIVESTOCK TYPE AT A TIME.

5.0	6.1	6.2	6.3	6.4
Livestock ID	Livestock type	Do you currently own any [LIVESTOCK TYPE] exclusively or jointly with someone? Yes 1 No 2 >> Next livestock type	How many of [LIVESTOCK TYPE] do you own jointly? ENUMERATORS: IF NONE, MARK '0'.	How many of [LIVESTOCK TYPE] do you own alone? ENUMERATORS: IF NONE, MARK '0'.
			NUMBER	NUMBER
01	Dairy cows			
02	Other large ruminant (beef or mixed)			
03	Sheep, goats			
04	Poultry (chickens, ducks, turkeys, pigeons and other poultry)			
05	Pigs			
06	Donkeys, mules, horses			
07	Other (specify)			

In the Uganda EDGE pilot test, the person IDs of each joint owner of the large livestock are included in the individual module (EDGE, forthcoming). Countries can refer to the EDGE survey instruments for Uganda for more detail: http://unstats.un.org/edge.

FIGURE 7. HOUSEHOLD-LEVEL MODULE – AGRICULTURAL EQUIPMENT ROSTER.

ENUMERATOR: GO THROUGH THE ENTIRE MODULE ONE EQUIPMENT TYPE AT A TIME.

7.0	7.1	7.2	7.3	7.4	7.5
Equipment ID	Agricultural equipment	Does the holding currently have any [EQUIPMENT TYPE]? Yes 1 No 2 >> Next equipment type PLEASE LIST EACH TYPE OF LARGE AGRICULTURAL EQUIPMENT THAT THE HOUSEHOLD USES ON THE HOLDING.	How many [EQUIPMENT TYPE] does the holding have?	Are all of the [EQUIPMENT TYPE] on the holding owned by you or a member of the household exclusively or jointly with someone? Yes 1 No 2	How many [EQUIPMENT TYPE] are NOT owned by you or by members of the household?
	The equipment list will vary by country.		NUMBER		NUMBER
01	Ploughs				
02	Ox-ploughs				
03	Tractors				
04	Trailers				
05	Threshers				
06	Spraying machines				
07	Other (specify)				

FIGURE 8. INDIVIDUAL-LEVEL MODULE – QUESTIONS ON AGRICULTURAL EQUIPMENT OWNERSHIP.

ENUMERATOR: GO THROUGH THE ENTIRE MODULE ONE EQUIPMENT TYPE AT A TIME.

7.0	8.1	8.2	8.3	8.4	8.5
	Agricultural equipment	Do you currently own any [EQUIPMENT TYPE] exclusively or jointly with someone? Yes, alone 1 >>; Yes, jointly with someone else 2; Yes, both exclusively and jointly 3; No 4 >> Next livestock type	How many [EQUIPMENT TYPE] do you own jointly?	Who owns this [EQUIPMENT TYPE] jointly with you? Household member: Use ID Other non-household member: Female……87 Male……88	How many [EQUIPMENT TYPE] do you own alone?
Equipment ID			NUMBER	ID ID ID ID	NUMBER
01	Ploughs				
02	Ox-ploughs				
03	Tractors				
04	Trailers				
05	Threshers				
06	Spraying machines				
07	Other (specify)				

Another way to capture agricultural equipment is to list each piece of equipment separately. This means that if two tractors are owned, each tractor would be listed in the roster. See the EDGE Guidelines for more guidance on this approach (EDGE, forthcoming). This approach is more appropriate if it is important to tease out who are the joint owners of each piece of agricultural equipment and if the value of the equipment is to be estimated. Alternatively, a column after the question "How many [EQUIPMENT TYPE] do you own jointly?" could be added, with additional rows for each equipment type to capture each piece of equipment separately.

Regardless of the approach (whether a prelisted agricultural equipment list or an equipment roster), the equipment list at the individual level needs to be able to correspond to household-level inventory.

FIGURE 9. HOUSEHOLD-LEVEL MODULE – DECISION-MAKING QUESTIONS TO BE INCORPORATED INTO A PARCEL MODULE.

ENUMERATOR: ASK THE FOLLOWING FOR EACH PARCEL RECORDED. GO THROUGH THE ENTIRE MODULE ONE PARCEL AT A TIME.

3.0	9.1	9.2				9.3	9.4			
PARCEL ID	Have any permanent investments been made to the [PARCEL], such as irrigation systems, fences or trees, in the last 2 years? Yes 1 No 2 >> 9.3	Who made the decision to make these permanent investments? ENUMERATOR: ASK IF THERE IS MORE THAN ONE PRIMARY DECISION-MAKER. LIST ALL THE PRIMARY DECISION-MAKERS. Household member: Use ID Other non-household member: Female.....87 Male…….88				During the [REFERENCE PERIOD], was any part of this [PARCEL]… Cultivated 1 Rented out 2 Given out for free 3 Left fallow 4 Forest/ woodlot 5 Pasture 6 Other (Specify) 7 ENUMERATOR: PLEASE LIST ALL THAT APPLY.	Who made the decision on how to use this [PARCEL], such as whether to cultivate, rent out, give out for free, or leave follow? ENUMERATOR: ASK IF THERE IS MORE THAN ONE PRIMARY DECISION-MAKER. LIST ALL THE PRIMARY DECISION-MAKERS. Household member: Use ID Other non-household member: Female.....87 Male…….88			
		ID	ID	ID	ID		ID	ID	ID	ID
R01										
R02										
R03										

FIGURE 10. HOUSEHOLD-LEVEL MODULE – DECISION-MAKING QUESTIONS TO BE INCORPORATED INTO A PLOT MODULE.

		ENUMERATOR: ASK THE FOLLOWING FOR EACH PLOT ON EACH PARCEL RECORDED. GO THROUGH THE ENTIRE MODULE ONE PLOT AT A TIME.								
3.0	10.0	10.1	10.2				10.3			
PARCEL ID	PLOT ID	Was [PLOT] cultivated by your holding in [reference period]? Yes 1 No 2 >> Next PLOT	Who made the decisions concerning which crops to be planted, which inputs (such as purchased or home-produced fertilizers, pesticides, herbicides) to use and the timing of cropping activities on [PLOT]? ENUMERATOR: ASK IF THERE IS THERE MORE THAN ONE PRIMARY DECISION-MAKER. LIST ALL PRIMARY DECISION-MAKERS. Household member: Use ID Other non-household member: Female.....87 Male…….88				Who made the decisions on how to pay for or finance (such as whether to use savings or to take out credit, and where to borrow from) the cropping activities on [PLOT]? ENUMERATOR: ASK IF THERE IS THERE MORE THAN ONE PRIMARY DECISION-MAKER. LIST ALL PRIMARY DECISION-MAKERS. Household member: Use ID Other non-household member: Female.....87 Male…….88			
			ID	ID	ID	ID	ID	ID	ID	ID
	01									
	02									
R01	03									
	01									
	02									
R02	03									
…	…									

Primary decision-makers are defined as the individuals who determine the outcome of a specific activity or activities. It is possible to have one or more decision-makers per activity.
While some studies may rank the decision-makers by perceived order of influence or importance, the modules recommended in these guidelines do not. There are different styles in which a group of individuals can come to a decision. It may be the case that one individual primarily takes responsibility for the outcome; whereas in other cases, the decision may be determined collectively, based on a consensus, or as part of a process of negotiation.
Ranking decision-makers by importance assumes that decisions made in a group are made based on a single style of group decision-making.

Plots and parcels are defined above.

FIGURE 11. HOUSEHOLD LEVEL MODULE – DECISION-MAKING QUESTIONS TO BE INCORPORATED INTO A PLOT OR CROP MODULE.

			ENUMERATOR: ASK THE FOLLOWING FOR EACH CROP on EACH PLOT. GO THROUGH THE ENTIRE MODULE ONE CROP AT A TIME.									
10.0	11.0		11.1	11.2				11.3	11.4			
PLOT ID	Please list all crops that were planted in last rainy season on [PLOT]. apple.....1 pineapple..21 avocado ....2 potato.....22 banana .....3 rambutan ..23 cabbage ....4 wetland carrot .....5 paddy ……24 cassava .....6 dryland chilli .....7 paddy……25 clove.....8 salacca ……26 cocoa .....9 shallot.....27 coconut.....10 soybean ....28 coffee.....11 spring durian .....12 onion .....29 groundnut .13 sugar cane.30 maize .....14 sweet mango.....15 potato.....31 mustard tea.....32 green.....16 tobacco .....33 oil palm ....17 tomato .....34 orange.....18 other papaya .....19 (specify) ...35 pepper.....20		Was any amount of [CROP] harvested since the last [REFERENCE PERIOD]? Yes 1 No 2 >> Next CROP	Who made the decision on what do to with [CROP] (whether to sell, store, give away, or consume at home)? ENUMERATOR: ASK IF THERE IS MORE THAN ONE PRIMARY DECISION-MAKER. LIST ALL PRIMARY DECISION-MAKERS. Household member: Use ID Other non-household member: Female.....87 Male……88				Was any amount of the harvest or a product made from the harvest of [CROP] sold? Yes 1 No 2 >> Next CROP	Who decided how to use the earnings from [CROP] sales? ENUMERATOR: ASK IF THERE IS MORE THAN ONE PRIMARY DECISION-MAKER. LIST ALL PRIMARY DECISION-MAKERS. Household member: Use ID Other non-household member: Female.....87 Male……88			
				ID	ID	ID	ID		ID	ID	ID	ID
01	CROP 1											
	CROP 2											
	CROP 3											
	CROP 4											
	CROP 5											
	CROP 6											
	CROP 7											
	CROP 8											
	CROP 9											
	CROP 10											
	CROP 11											
	CROP 12											
02	CROP 1											
	CROP 2											
	CROP 3											
…	…											

The crop list will vary by country.

FIGURE 12.A HOUSEHOLD-LEVEL MODULE – DECISION-MAKING QUESTIONS TO BE INCORPORATED INTO A LIVESTOCK MODULE (A).

5.0	12.0	12.1				12.2				12.3	12.4				12.5	12.6				12.7			
Livestock ID	Livestock type The livestock list will vary by country.	Who manages the [LIVESTOCK] on the holding? ENUMERATOR: ASK IF THERE IS THERE MORE THAN ONE MANAGER. LIST ALL MANAGERS. Household member: Use ID Other non-household member: Female.....87 Male.....88				Who makes the decisions on what preventative or curative health treatments to be used on [LIVESTOCK]?				Since [reference period], were any products produced from [LIVESTOCK TYPE] consumed in the household or used on the holding? ENUMERATOR: EXAMPLES INCLUDE USING MANURE AS FERTILIZER, MILK FROM DAIRY COWS, EGGS FROM POULTRY, AND WOOL FROM SHEEP. Yes 1 No 2 >> 12.5	Who made the decisions regarding which products from [LIVESTOCK TYPE] to consume at home or to use on the holding? ENUMERATOR: ASK IF THERE IS THERE MORE THAN ONE PRIMARY DECISION-MAKER. LIST ALL PRIMARY DECISION-MAKERS. Household member: Use ID Other non-household member: Female.....87 Male.....88				Since [reference period], were any products produced or meat from [LIVESTOCK TYPE] sold? Yes 1 No 2 >> 12.8	Who made the decisions on which products to sell or trade produced from [LIVESTOCK TYPE] and where to sell? ENUMERATOR: ASK IF THERE IS THERE MORE THAN ONE PRIMARY DECISION-MAKER. LIST ALL PRIMARY DECISION-MAKERS. Household member: Use ID Other non-household member: Female.....87 Male.....88				Who decided how to use the earnings from selling the products from [LIVESTOCK TYPE]? ENUMERATOR: ASK IF THERE IS THERE MORE THAN ONE PRIMARY DECISION-MAKER. LIST ALL PRIMARY DECISION-MAKERS. Household member: Use ID Other non-household member: Female.....87 Male.....88			
		ID	ID	ID	ID	ID	ID	ID	ID		ID	ID	ID	ID		ID	ID	ID	ID	ID	ID	ID	ID
01	Dairy cows																						
02	Other large ruminant (beef or mixed)																						
03	Sheep, goats																						
04	Poultry (chickens, ducks, turkeys, pigeons and other poultry)																						
05	Pigs																						
06	Donkeys, mules, horses																						
07	Other (specify)																						

FIGURE 12.B HOUSEHOLD-LEVEL MODULE – DECISION-MAKING QUESTIONS TO BE INCORPORATED INTO A LIVESTOCK MODULE (B).

5.0	12.0	12.8	12.9				12.10	12.11				12.12			
	Livestock type	Since [reference period], were any [LIVESTOCK] slaughtered for home consumption? Yes 1 No 2 >> 12.10	Who made the decision to slaughter [LIVESTOCK] for home consumption?				Since [reference period], were any [LIVESTOCK TYPE] sold? Yes 1 No 2 >> NEXT LIVESTOCK TYPE	Who made the decision to sell [LIVESTOCK TYPE]? ENUMERATOR: ASK if there is more than one primary decision-maker. List all primary decision-makers. Household member: Use ID Other non-household member: Female.....87 Male.....88				Who decided how to use the earnings from selling the [LIVESTOCK TYPE]? ENUMERATOR: Ask if there is more than one primary decision-maker. List all primary decision-makers. Household member: Use ID Other non-household member: Female.....87 Male.....88			
	Livestock ID		ID	ID	ID	ID		ID	ID	ID	ID	ID	ID	ID	ID
01	Dairy cows														
02	Other large ruminant (beef or mixed)														
03	Sheep, goats														
04	Poultry (Chickens, ducks, turkeys, pigeons and other poultry)														
05	Pigs														
06	Donkeys, mules, horses														
07	Other (specify)														

FIGURE 13. HOUSEHOLD-LEVEL MODULE - CREDIT

			ENUMERATOR: ASK THE FOLLOWING FOR EACH LOAN. GO THROUGH THE ENTIRE MODULE ONE LOAN AT A TIME.													
13.0	13.1	13.2	13.3				13.4		13.5				13.6			
Has anyone in your household taken any loans or borrowed cash/resources in kind for agriculture and livestock activities in [reference period]? Yes…1 No.....2 >> Next module	LOAN ID	DESCRIPTION OF THE LOAN	Who borrowed? Household member: Use ID Other non-household member: Female.... .....87 Male……88 ENUMERATOR: LIST ALL ADULTS FROM THE HOUSEHOLD ROSTER, OR FROM CODES ABOVE FOR NON-HOUSEHOLD MEMBERS				What is the lending source? Friends, relatives, neighbour (individual credit) 1 VLSAs (Village Savings and Lending Associations) 2 SACCOs (Savings and Credit Cooperatives) 3 Merry-go-rounds 4 Other group-based micro-finance self-help groups 5 Microfinance institutions 6 Formal lender (ban /financial institution/non-governmental organization/government) 7 Other (specify) 8 The lending sources may vary by country.		Who made the decision to borrow? Household member: Use ID Other non-household member: Female.... .....87 Male……88 ENUMERATOR: LIST ALL ADULTS FROM THE HOUSEHOLD ROSTER, OR FROM CODES ABOVE FOR NON-HOUSEHOLD MEMBERS				Who makes the decision on what to do with the money/item borrowed most of the time? Household member: Use ID Other non-household member: Female.... .....87 Male……88 ENUMERATOR: LIST ALL ADULTS FROM THE HOUSEHOLD ROSTER, OR FROM CODES ABOVE FOR NON-HOUSEHOLD MEMBERS			
			ID	ID	ID	ID			ID	ID	ID	ID	ID	ID	ID	ID
	C01															
	C02															
	C03															

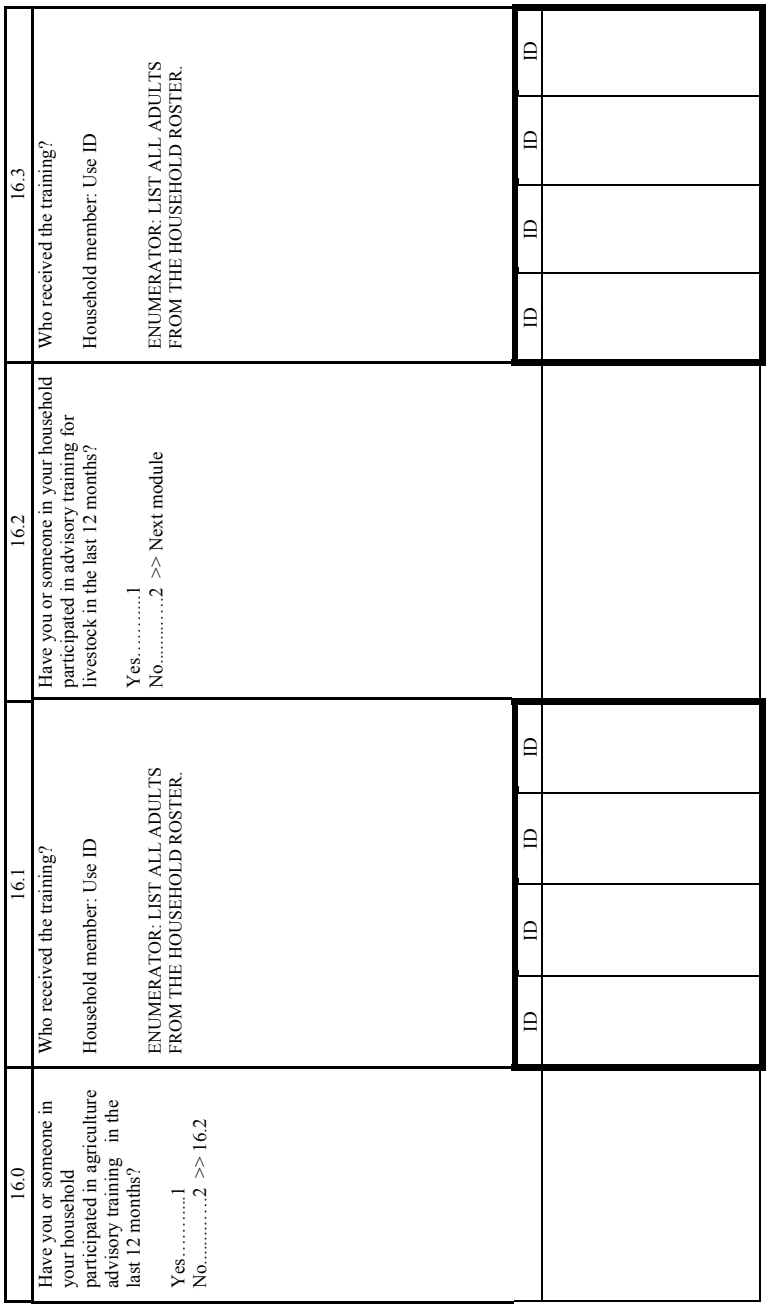
FIGURE 14. INDIVIDUAL-LEVEL MODULE – SAVINGS.

		ENUMERATOR: ASK THE FOLLOWING FOR EACH TYPE OF SAVING MECHANISM, ONE MECHANISM AT A TIME.		
14.0	14.1	14.2	14.3	14.4
SAVINGS ID	Savings mechanisms	Do you, either by yourself or jointly with someone else, currently have a savings account in a [savings mechanism]? Yes, my own account.....1 >> Next savings mechanism Yes, a joint account……2 >> Next savings mechanism No.……3	Could you participate in this type of [savings mechanisms] if you wanted? Yes ……..……1 >> Next savings mechanism No, this is not available in my community……..…...2 >> Next savings mechanism No, I do not have permission……..3 >> Next savings mechanism No, I do not meet the account requirements…… ..4 >> Next savings mechanism No (other, specify)..……5 >> Next savings mechanism	Do you use other methods of saving? Yes, by investing in physical assets (such as livestock or jewelry)…….……1 Yes, by hiding my cash……2 Yes, by loaning to an individual or individuals…….3 Yes, other (specify)……..…….4
S01	Informal savings group or club (e.g. ROCSAs)			
S02	Formal savings account at a bank or credit union			
S03	A post office			
S04	Other (specify)			

FIGURE 15. HOUSEHOLD-LEVEL MODULE – INSURANCE.

		ENUMERATOR: ASK THE FOLLOWING FOR EACH INSURANCE PRODUCT ONE PRODUCT AT A TIME.						
15.0	15.1	15.2	15.3	15.4	15.5	15.6		
Has anyone in your household taken out any crop insurance in the past 12 months? Yes……...1 No.....……2 >> Next Module	INSURANCE ID	What kind of insurance product is it? The insurance product is based on insuring a level of crop revenue… …1 The insurance product is based on insuring damage to the actual crop on the farm……..2	Which crop or crops does the insurance cover? *Mark all that apply per policy.* *[LIST OF CROPS BASED ON CONTEXT.]* Millet……1 Sorghum……2 Maize……3 Rice……...4 Cowpeas.....5 Cassava……6 Cotton……..7 Groundnuts……8 Onions……..9 Beans……..10 Sugar cane……..11 Tobacco……..12 Fallow……13 Other (specify)……14	Who made the decision to purchase the insurance? Household member: Use ID Other non-household member: Female.... .....87 Male……88 ENUMERATOR: LIST ALL ADULTS FROM THE HOUSEHOLD ROSTER, OR FROM CODES ABOVE FOR NON-HOUSEHOLD MEMBERS.	In whose name is the insurance? Household member: Use ID Other non-household member: Female.... .....87 Male……88 ENUMERATOR: LIST ALL ADULTS FROM THE HOUSEHOLD ROSTER, OR FROM CODES ABOVE FOR NON-HOUSEHOLD MEMBERS.	Is the insurance bundled with other financial products? Yes, with savings…..1 Yes, with credit…….2 Yes, with other (specify)……..…….3 No……..…….4		
				ID	ID	ID	ID	ID	ID	ID	ID	
	I01											
	I02											
	I03											

FIGURE 16. HOUSEHOLD-LEVEL MODULE – AGRICULTURAL ADVISORY SERVICES.



16.0	16.1				16.2	16.3			
Have you or someone in your household participated in agriculture advisory training in the last 12 months? Yes.....1 No.....2 >> 16.2	Who received the training? Household member: Use ID ENUMERATOR: LIST ALL ADULTS FROM THE HOUSEHOLD ROSTER.	ID	ID	ID	ID	Have you or someone in your household participated in advisory training for livestock in the last 12 months? Yes.....1 No.....2 >> Next module	Who received the training? Household member: Use ID ENUMERATOR: LIST ALL ADULTS FROM THE HOUSEHOLD ROSTER.	ID	ID	ID

FIGURE 17. HOUSEHOLD-LEVEL MODULE – AGRICULTURAL ADVISORY SERVICES, PRODUCERS' GROUPS AND OTHER ASSOCIATIONS.

17.0	17.1	17.2	17.3	17.4				
GROUP ID	GROUP OR ORGANIZATION	Is there the following [SERVICE OR GROUP(s)] in your community? Yes 1 No 2 >> Next service or group	Are you or someone in the household a member of [GROUP]? Yes 1 No 2 >> Next service or group	Who in the household participates in [GROUP]? Household member: Use ID	ID	ID	ID	ID
G01	Farmer field school (FFS) or participatory agricultural advisory group							
G02	Grassroots producer organization							
G03	Agricultural producer cooperative							
G04	Agricultural producer union							
G05	Agricultural producer federation (APEX)							
G06	Other formal agricultural producer organization							
G07	Other informal agricultural producer organization							
G08	Trade/business association							
G09	Civic group (improving community) or charitable group (helping others)							
G10	Local government body (including councils)							
G11	Religious group							
G12	Women's group							
G13	Other (specify)							

FIGURE 18.A TIME-USE GRID (A).

	18.0	18.1		18.2	18.3	18.4	18.5	18.6	18.7
	TIME	Activity (use TIME-USE codes) Activities 5 to 7 >> 18.2 Activity 1 >> 18.3 Activity 4 >> 18.6 Activities 2, 3, and 8 to 28 >> 18.7		Did the activity involve agricultural, livestock, or aquaculture production activities? Yes 1 No 2 >> 18.7	Did the activity take place on the holding? Yes 1 No 2 >> 18.7	What percentage of the product produced is for home consumption? 0 to 100 %	What is the percentage of the product produced to sell in the market? If 0 % >> 18.7. 0 to 100 %	Will you control any of the income earned from this activity? Yes, I will control the income earned from this activity exclusively 1 Yes, I will control the income earned from this activity jointly with another 2 No, someone else will control the income earned from selling the final products produced from this work 3	Did you care for children 5 years old or younger at the same time as you did this activity? Yes 1 No 2 >> 18.7
Night	04 am								
	04:30								
	05								
	05:30								
	06								
	06:30								
	07								
	07:30								
	08								
	08:30								
	09								
	09:30								
	10								
	10:30								
	11								
	11:30								
	12 pm								
	12:30								
	13								
	13:30								
	14								
	14:30								
	15								
Day	15:30								

To fill in the time grid, the enumerator asks the respondent what time he woke up and what time he went to sleep the day before. The enumerator writes '12' and marks the hours sleeping with a line from 4 am the previous day to when he woke. He also writes '12' at the time he went to sleep and marks a line from when he went to sleep for the night until 3:59 am the same day (see Figure 20 for an example). The enumerator then asks what the respondent did after he woke up and all activities thereafter until the respondent had gone to bed. Only one activity is marked for every 15 minute interval. For activities that end in the middle of the 15-minute interval, the time is rounded up to 15 minutes if the activity ended 8 minutes or more in the middle of the interval and rounded down if less than 8 minutes. In computer assisted personal interviewing (CAPI), there is not a grid, but a similar sequence of questions are asked. The WEAI time grid differs slightly from the time grid presented here; however, users may find a webinar explaining how the WEAI time use module is implemented useful. The link to the webinar is available on the International Food Policy Research Institute WEAI Training Materials Resource Center at https://www.ifpri.org/weai-training-materials.

FIGURE 18.B TIME-USE GRID (B).

	18.0	18.1		18.2	18.3	18.4	18.5	18.6	18.7
	TIME	Activity (use TIME-USE codes) Activities 5 to 7 >> 18.2 Activity 1 >> 18.3 Activity 4 >> 18.6 Activities 2, 3, and 8 to 28 >> 18.7		Did the activity involve agricultural, livestock, or aquaculture production activities? Yes 1 No 2 >> 18.7	Did the activity take place on the holding? Yes 1 No 2 >> 18.7	What percentage of the product produced is for home consumption? 0 to 100 %	What is the percentage of the product produced to sell in the market? If 0 % >> 18.7. 0 to 100 %	Will you control any of the income earned from this activity? Yes, I will control the income earned from this activity exclusively 1 Yes, I will control the income earned from this activity jointly with another 2 No, someone else will control the income earned from selling the final products produced from this work 3	Did you care for children 5 years old or younger at the same time as you did this activity? Yes 1 No 2
	16 pm								
	16:30								
	17								
	17:30								
	18								
	18:30								
	19								
	19:30								
	20								
	20:30								
Night	21								
	21:30								
	22								
	22:30								
	23								
	23:30								
	00 am								
	00:30								
	01								
	01:30								
	02								
	03:30								

FIGURE 18.C TIME-USE GRID (C).

ACTIVITY CODES	
Agriculture, aquaculture, livestock, and forestry activities (for own use and for the market). This includes self-employment work and own-use production.	1
Exchange agricultural work for another household	2
Self-employment or own business work not in agriculture	3
Work for family or the household business not in agriculture	4
Wage or salary work	5
Unpaid volunteer work, trainee work and other unpaid work for individual, household, enterprise, group or organization	6
Work helping a family member with their wage or salary	7
Commuting or traveling	8
Socializing, community participation, and religious practice including prayer, meditation or other spiritual activity	9
Movies, TV, reading, hobbies, sports practices, relaxing and other leisure activities	10
Educational activities including formal school, homework, trainings, self-study	11
Self-care and maintenance	
Sleeping, napping or resting	12
Eating or drinking	13
Personal hygiene and care e.g. dressing, grooming, bathing	14
Health or medical care from others or from oneself	15
Unpaid domestic work and caregiving services	16
Care of children, adults or elderly	
Cooking/food and meals management and preparation	17
Cleaning and upkeep of the dwelling and surroundings	18
Maintenance and small repair of buildings, grounds, vehicles	19
Washing, care and repair of clothes, shoes and other textiles	20
Shopping for food, clothes, or other goods and household economic management	21
Other unpaid domestic services	22
Collecting firewood and other natural fuels for household use	23
Collecting water for household use	24
Construction of buildings, roads, dams and other structures	25
Weaving, sewing, textile production for household use	26
Making and processing other goods for own final use	27
Other (specify)	28

FIGURE 19. ACTIVITY CODES WITH ICATUS 2016 CLASSIFICATION OF TIME-USE ACTIVITIES.

ACTIVITY CODES			
(1)	(2)	(3)	(4)
	Pre-codes	ICATUS 2016 Classification of Time-Use Activities, Major Division Codes*	Type of own-use production
Agriculture, aquaculture, livestock and forestry activities (for own use and for the market). This includes self-employment work and own-use production.	1	1, 2 (the distinction will be based on the response to question 6.5)	If 2, classified as own-use production of goods
Exchange agricultural work for another household	2	1	
Self-employment or own business work not in agriculture	3	1	
Work for family or the household business not in agriculture	4	1	
Wage or salary work	5	1	
Unpaid volunteer work, trainee work, and other unpaid work for individual, household, enterprise, group or organization	6	5	
Work helping a family member with their wage or salary	7	1	
Commuting or traveling	8	This will be determined by the adjacent activities.	
Socializing, community participation, and religious practice including prayer, meditation or other spiritual activity	9	7	
Movies, TV, reading, hobbies, sports practices, relaxing and other leisure activities	10	8	
Educational activities including formal school, homework, trainings, self-study	11	6	
Self-care and maintenance			
Sleeping, napping or resting	12	9	
Eating or drinking	13	9	
Personal hygiene and care e.g. dressing, grooming, bathing	14	9	
Health or medical care from others or from oneself	15	9	
Unpaid domestic work and caregiving services			
Care of children, adults, or elderly	16	4	
Cooking/food and meals management and preparation	17	3	Own-use provision of services
Cleaning and upkeep of the dwelling and surroundings	18	3	
Maintenance and small repair of buildings, grounds, vehicles	19	3	
Washing, care and repair of clothes, shoes and other textiles	20	3	
Shopping for food, clothes, or other goods and household economic management	21	3	
Other unpaid domestic services	22	3	
Collecting firewood and other natural fuels for household use	23	2	Own-use production of goods
Collecting water for household use	24	2	
Construction of buildings, roads, dams and other structures	25	2	
Weaving, sewing, textile production for household use	26	2	
Making and processing other goods for own final use	27	2	
other (Specify)	28		

* The major division groups are defined as the following: 1 - Employment and related activities; 2 - Production of goods for own final use; 3 - Unpaid domestic services for household and family members; 4 - Unpaid caregiving services for household and family members; 5 - Unpaid volunteer, trainee and other unpaid work; 6 – Learning; 7 - Socializing and communication, community participation and religious practice; 8 - Culture, leisure, mass-media and sports practices; 9 - Self-care and maintenance

FIGURE 20. TIME USE: EXAMPLE

	18.0	18.1		18.2	18.3	18.4	18.5	18.6	18.7
	TIME	Activity (use TIME-USE codes) Activities 5 to 7 >> 18.2 Activity 1 >> 18.3 Activity 4 >> 18.6 Activities 2, 3, and 8 to 28 >> 18.7		Did the activity involve agricultural, livestock, or aquaculture production activities? Yes 1 No 2 >> 18.7	Did the activity take place on the holding? Yes 1 No 2 >> 18.7	What percentage of the product produced is for home consumption? 0 to 100 %	What is the percentage of the product produced to sell in the market? If 0 % >> 18.7. 0 to 100 %	Will you control any of the income earned from this activity? Yes, I will control the income earned from this activity exclusively 1 Yes, I will control the income earned from this activity jointly with another 2 No, someone else will control the income earned from selling the final products produced from this work 3	Did you care for children 5 years old or younger at the same time as you did this activity? Yes 1 No 2
Night	04 am	12							2
	04:30								
	05								
	05:30								
	06								
	06:30								
	07	14							2
	07:30								
		18							2
	08	17							2
		13							2
	08:30								
		8							2
	09								
	09:30								
		5		1	2				2
	10								
	10:30								
	11								
	11:30								
	12 pm								
	12:30								
	13								
	13:30								
		13							2
	14								
		21							2
	14:30								
	15	5		1	2				2

FIGURE 21. PERMANENT AND TEMPORARY EMPLOYEES BY SEX.

21.0	21.1	21.2	21.3	21.4	21.5	21.6
	If the holding hired permanent employees:					
Did you hire any permanent employees in the last 12 months)? Yes 1 No 2 >> 21.4	How many permanent employees did you have in the last 12 months and for which position(s)?			Did you have any casual or temporary employees in the last 12 months? Yes 1 No 2 >> Next module	How many temporary employees did you have in the last 12 months?	
	Type of employment	No. Men	No. Women		No. Men	No. Women
	Production managers					
	Professional and technical production staff					
	Machinery, equipment and facilities operators					
	General labourers					
	Other (specify)					

FIGURE 22. DAYS AND RATES OF HIRED LABOUR.

22.0				22.1	22.2	22.3	22.4	22.5	22.6
				Number of workers	Total number of "days worked" on the holding during [the reference period] on average per worker.	What is the usual number of hours worked per day during [the reference period] on average per worker?	Total wages paid in cash for one worker for one day on average during [the reference period]	Estimated value of all in-kind payments for one worker for one day on average during [the reference period]	DERIVED VARIABLE Average hourly wage
					DAYS	HOURS	LOCAL CURRENCY	LOCAL CURRENCY	LOCAL CURRENCY
1 - Paid long-term employees who worked on the holding during the last 12 months	ADULTS	Males	1						
		Females	2						
	CHILDREN (< 15 years old)		3						
2 - Paid temporary workers (seasonal)	ADULTS	Males	4						
		Females	5						
	CHILDREN (< 15 years old)		6						
3 - Paid temporary workers (casual)	ADULTS	Males	7						
		Females	8						
	CHILDREN (< 15 years old)		9						

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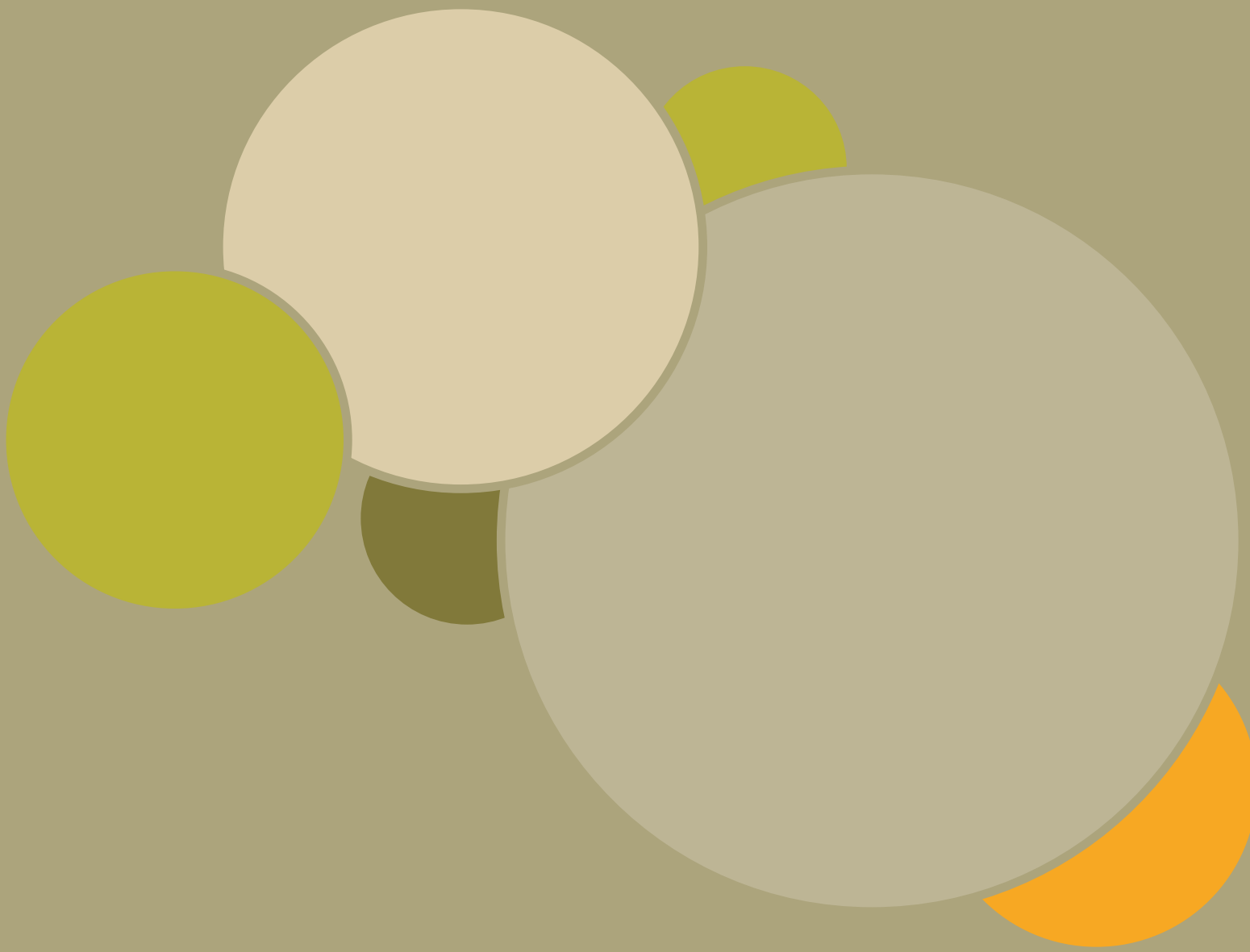

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Layout:

- Laura Monopoli

Cover photos:

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