Instructional Guide on the Abbreviated Women's Empowerment in Agriculture Index (A-WEAI)[1]

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Introduction

The Women's Empowerment in Agriculture Index (WEAI) is a survey-based index designed to measure the empowerment, agency, and inclusion of women in the agricultural sector. The WEAI was initially developed in 2012 as a tool to reflect changes in women's empowerment that may result from the US government's Feed the Future Initiative, which commissioned the development of the WEAI. However, the WEAI has also been used extensively since 2012 by a variety of organizations to assess the state of empowerment and gender parity in agriculture, to identify key areas in which empowerment needs to be strengthened, and to track progress over time.

The WEAI builds on research to develop indicators of agency and empowerment (for example, Narayan 2005; Narayan and Petesch 2007; Alsop, Bertelsen, and Holland 2006; Ibrahim and Alkire 2007) that propose domain-specific measures of empowerment obtained using questions that can be fielded in individual or household surveys. Based on the Alkire-Foster methodology (Alkire and Foster 2011) for the multi-dimensional poverty index, the WEAI is also an aggregate index, reported at the country or regional level, based on individual-level data collected by interviewing men and women within the same households. The WEAI comprises two subindexes. The first assesses the degree to which women are empowered in five domains of empowerment (5DE) in agriculture. It also takes into account the percentage of individual domains in which women are empowered among those who do not meet the combined empowerment threshold.[3] These domains are (1) decisions about agricultural production, (2) access to and decision-making power about productive resources, (3) control of use of income, (4) leadership in the community, and (5) time allocation. The second subindex (the Gender Parity Index [GPI]) measures gender parity within surveyed households. GPI reflects the percentage of women who are equally empowered as the men in their households. For those households that have not achieved

[1] This instructional guide is an updated version of the instructional guide developed for the original WEAI (Alkire et al. 2013). You can view this original version here: https://www.ifpri.org/sites/default/files/Basic%20Page/weai_instructionalguide_1.pdf

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[3] Empowerment within a domain means that the person has adequate achievements or has achieved adequacy (that is, surpasses a threshold) for that domain.

gender parity, GPI shows the empowerment gap that needs to be closed for women to reach the same level of empowerment as men.

A Brief History of the WEAI

The Index evolved in late 2010 and early 2011 out of discussions led by the U.S. Agency for International Development (USAID) among US government agencies involved in the Feed the Future Initiative. During these discussions, the need for an aggregate index to monitor women's inclusion in agriculture sector growth was raised. Building on the literature and experience, the preparatory period identified five domains that are core to the concept of empowerment. USAID continued discussions with the International Food Policy Research Institute (IFPRI) in June and July of 2011 to develop questionnaire modules that could be used to elicit responses on each of these domains, and with the Oxford Poverty and Human Development Initiative (OPHI) to adapt the methodology of the Multidimensional Poverty Index. This included a technical workshop with outside experts prior to the development of the questionnaire in July 2011. The full survey—with household and individual questionnaires, administered to a primary male and a primary female respondent in each household[4]—was piloted from September to November 2011 in Feed the Future zones of influence in Bangladesh, Guatemala, and Uganda. Index development took place from November 2011 to January 2012. Qualitative interviews and case studies with individuals, as well as a technical consultation with additional outside experts in January 2012, provided further input into the choice of indicators that comprise the Index. The WEAI itself was launched on February 28, 2012, at the 56th session of the Committee on the Status of Women at the United Nations, New York, and subsequently in three separate presentations in March 2012 in London, New Delhi, and Washington, DC.

The questionnaire modules drew on past surveys developed by IFPRI, Demographic and Health Surveys (DHS), and the Gender Asset Gap Project to develop modules on agricultural decision-making, assets, credit, and income, as well as OPHI questions related to relative autonomy that drew from Ryan and Deci (2000) and Chirkov, Ryan, and Deci (2011) for cross-country work. The time use module drew upon the Lesotho Time Use Survey (2003) specifically allowing for both primary and secondary activities in any 15-minute period.

The pilot survey instruments were subsequently adapted for country-specific piloting and later revised to include only the indicators used to construct the WEAI. The pilot and final versions of the survey instruments are available along with other documentation at: https://www.ifpri.org/topic/weai-resource-center.

In 2012 and 2013, the Feed the Future country missions undertook a population-based baseline survey in the geographic areas that FTF concentrates their programming, also called the Zones of Influence. The survey includes several modules, of which the WEAI is one, that capture data on key outcomes and impacts of interest to USAID such as poverty and nutrition. Findings from the WEAI modules of the baselines surveys for 13 of the 19 countries can be found in the baseline report, which is available at: http://www.ifpri.org/publication/measuring-progress-toward-empowerment

[4] This index purposely does not use the concepts of male-headed and female-headed households, which are fraught with difficulties and assumptions about "headship" (see Buvinić and Rao Gupta 1997; Budlender 2003; Deere, Alvarado, and Twyman 2012). Rather, we classify households in terms of whether there are both male and female adults (dual-adult households), only female adults, or only male adults. Because households with only male adults are very rarely found in our study areas, our sample and analysis compare dual-adult and female-only households.

The A-WEAI:

Following the FTF baseline surveys, a Learning Event was held at IFPRI in November of 2013. The purpose of this event was to discuss how the WEAI module performed in the baseline surveys and how it could be improved for the future. A variety of stakeholders, including USAID implementing partners, field teams, researchers, and representatives from organizations that had also used the WEAI gathered to discuss experiences and share lessons learned. Several key messages emerged from the event. Foremost among them was the feedback that the WEAI is very resource-intensive (i.e., in terms of time to administer and field costs) and that a few key modules in the WEAI proved problematic. In particular, the sections on time use, autonomy in production, and speaking up in public were identified as time consuming, sensitive in nature, and difficult to understand.

Based on this feedback, the WEAI teams from IFPRI and USAID, in consultation with OPHI, undertook an extensive process of revising the WEAI to clarify the questions that had proved challenging in the field while at the same time maintaining cross-cultural applicability. This process resulted in two tools: (1) an updated version of the original WEAI, also known as WEAI 1.1[5]; and (2) a shorter, streamlined version known as the Abbreviated WEAI (A-WEAI). WEAI 1.1 contained primarily the same indicators and questions as the original WEAI, except for the autonomy module which was revised to include vignettes (short hypothetical stories). The WEAI 1.1 also includes minor changes such as streamlined response codes, improved formatting, and additional instructions. On the other hand, the A-WEAI retains the five domains of empowerment, but the 10 indicators are reduced to six, and therefore takes about 30% less time to administer than the original WEAI.[6] It also includes the new autonomy vignettes, a simplified 24-hour recall time module that collects only primary activities, and streamlined sections on production decisions and resources. A comparison of the domains and indicators in the original WEAI and A-WEAI can be found in Table 1, below.

Table 1: Comparison of Original WEAI and A-WEAI

Original WEAI (1.0, 1.1)		**A-WEAI**	
Domains	**Indicators**	**Domains**	**Indicators**
Production	Input in productive decisions Autonomy in production	Production	Input in productive decisions
Resources	Ownership of assets Purchase, sale, or transfer of assets Access to and decisions on credit	Resources	Ownership of assets Access to and decisions on credit
Income	Control over use of income	Income	Control over use of income
Leadership	Group membership Speaking in public	Leadership	Group membership
Time	Workload Leisure	Time	Workload

[5] The original WEAI is also referred to as WEAI 1.0, to distinguish it from the slightly modified version WEAI 1.1.
[6] Please note that survey times may still vary depending on the context (e.g., gender and training of enumerators, and whether the WEAI is implemented as a stand-alone survey or appended to a larger multi-purpose survey).

In addition to revising the questions and attempting to cut down on the length of the survey, the WEAI team also conducted cognitive pre-testing, a qualitative method used to assess whether survey questions are accurately capturing topics of interest to researchers. Cognitive testing had previously been used on the original version of the WEAI for the Haiti baseline, and the WEAI team relied heavily upon that experience to design the cognitive testing for the new pilots.[7] A cognitive testing questionnaire was developed to be asked alongside the pilot WEAI questionnaire.[8]

Bangladesh and Uganda were chosen as the two pilot sites for the A-WEAI for a variety of reasons.[9] Bangladesh and Uganda were two of the original three pilot countries in 2011, as well as two of the 19 Feed the Future baseline survey countries, providing much data for comparative purposes. In addition, IFPRI had an established relationship with the data firms in both countries and thus felt comfortable working with them on this extended process.

Enumerator training and pre-testing began in June of 2014. Two rounds of pre-testing and cognitive testing were conducted, and the results of these rounds influenced the final choice of questions that were included in the pilot, which occurred in August and September of 2014. Half of the villages were randomly selected to receive either the original WEAI or the new set of questions, so that comparisons could be made between the two versions. Note that some of the questions tested were ultimately dropped in the A-WEAI, such as the speaking in public section, 7-day recall time module, and the autonomy vignettes. Thus, the A-WEAI comprise only a subset of the new questions that were piloted.

What This Guide Is About

This instructional guide was written by researchers from IFPRI with input from USAID and OPHI to assist practitioners in implementing the A-WEAI. This report is intended as a guidance piece that points out the most critical issues for consideration and good practices in the survey design, data collection, calculation, and analysis of the A-WEAI. This version of the guide has been updated from the original version (published in 2013) to reflect the changes made to the original version of the WEAI. For more information on how the original WEAI differs from the A-WEAI, refer to the WEAI versions table at: https://www.ifpri.org/sites/default/files/Basic%20Page/weai_versions_table.pdf

This guide is organized in three parts. Part A covers issues related to survey design and data collection; Part B provides details on how the indicators are defined and how the 5DE, GPI and A-WEAI indices are constructed using the Stata do files; and, Part C provides guidance on how the A-WEAI results can be presented, analyzed, and interpreted. The A-WEAI survey, do files, tables, and other materials are provided in the Annex. More information on administering the A-WEAI and analyzing the results can be found on the WEAI Resource Center website at: https://www.ifpri.org/topic/weai-resource-center

[7] See: http://surveypractice.org/index.php/SurveyPractice/article/view/288

[8] The cognitive interviewing questionnaire that was used alongside the pilot questionnaire can be found at: https://www.ifpri.org/sites/default/files/Basic%20Page/weai_cognitive_testing_guide.pdf

[9] The data from the Bangladesh 2014 pilot can be found here: https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/0R5WTU and the data from the Uganda 2014 pilot can be found here: https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/KUSXJR

Part A: Survey Design and Data Collection

A1. Ethics Review and Informed Consent

The data collection firm must obtain the required ethics approvals from the appropriate institutions and agencies in the country where the A-WEAI will be implemented. Research plans and instruments, as well as guidelines around informed consent of interview subjects must be submitted for ethics review.

Good Practice Tips for Maintaining Ethical Standards

- Translate informed consent pages into local languages (multiple if applicable)
- Leave one copy of the informed consent page with respondents so that they have the contact information for the study on hand
- Carefully modify informed consent wording for case studies/narratives, especially if they include photographs or video footage
- Use pseudonyms when presenting results from qualitative work to protect the identity of the case study respondents
- Keep data with identifying information such as names, addresses, telephone numbers or GPS coordinates on password protected computers
- Refer to informed consent examples in the WEAI pilot questionnaires [10]

A2. Sampling

Sampling guidelines will depend on the overall objectives of the survey and the motivations for using the A-WEAI. As a monitoring tool for the Feed the Future Initiative, the relevant population is located in the Feed the Future "zones of influence" (ZoI), or geographic areas where Feed the Future programming is concentrated.[11] The results are therefore not representative of the country as a whole[12]; rather they reflect regional implementation of Feed the Future programs and should be interpreted accordingly.

Note that the A-WEAI can be disaggregated to the level at which the survey is representative. For example, if the survey is representative at the regional level, then the A-WEAI can be calculated at the region level, and these region level indices can also be aggregated into a country level index. However, the region level indices cannot be further disaggregated at the sub-regional level (say province or municipal level) because the survey is not designed to be representative at those sub-levels.

Because the objective of the A-WEAI is to produce empowerment measures for women in the agriculture sector, and for women in relation to men in their households, the survey must include sufficient sample sizes for single female households and dual adult households (i.e. those with male and female adults). In some contexts it may be necessary to oversample single female households, as well as other specific sub-groups of interest. In the pilot surveys, for example, the sampling strategy oversampled single female households (approximately 20 percent of total samples) in order to obtain sufficient sample sizes for analysis.

[10] The household pilot questionnaire for Uganda can be found here: https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/KUSXJR

[11] For survey sampling guidance in the context of Feed the Future, please refer to Volume 8: Population-Based Survey Instrument for the Feed the Future Zone of Influence Indicators with Revised WEAI Module, October 2012", Feed the Future M&E Guidance Series (USAID/BFS, 2012).

[12] Except for Bangladesh, where the survey is nationally representative of rural areas.

Good Practice Tips

- Ensure that the WEAI is collected in the same households from which other key outcomes of interest (e.g., poverty, nutrition, etc.) are being collected. Otherwise, you will not be able to analyze the linkages between the A-WEAI and those other indicators.
- If all households within a larger survey cannot be surveyed due to time or budget constraints, we recommend random exclusion (inclusion) of households for the A-WEAI module.

A3. Household Structure and Choice of Respondents

A very important issue in measurement and monitoring of the A-WEAI is *who* is being measured or tracked. Feed the Future does not characterize or categorize households based on 'headship,' given the diverse nature of family and household structure in many regions of the world and problematic assumptions inherent in definitions of "headship" and instead disaggregated by gendered household type. A clear and standardized definition of the household is important, as research from IFPRI and others have found that different household definitions result in different household compositions, and can have significant impacts on variation of outcome indicators particularly surrounding labor and consumption (Beaman and Dillon 2012).

To facilitate cross-country comparisons, we recommend the definitions used in the pilot surveys to identify who qualifies as a "household", and who qualifies as an interview subject, or a "primary" and "secondary" respondent.

Several multi-purpose household surveys define a *household* as a group of people who live together and take food from the "same pot" (Ayad et. al., 1994; Glewwe, 2000). The important part of this definition is that the group of individuals shares at least some common resources and makes some common budget and expenditure decisions. A household member is someone who has lived in the household at least six months, and at least three days in each week in those months. Even those persons who are not blood relations (such as servants, lodgers, or agricultural laborers) are members of the household if they meet these qualifications, and alternatively, individuals who sleep in the household, but do not bear any costs for food or do not take food from the same pot, are not considered household members. This definition, including more specific examples and guidelines, is found in the A-WEAI Enumeration Manual and embedded in the pilot questionnaires.[13]

Good Practice Tips

- We advise users to use this standard household definition without adaptation to maintain comparability across projects and countries.
- WEAI users who do not need or wish to maintain comparability may add or subtract from the definition used in the pilot, or substitute an alternative definition if the standard household definition does not make sense in the context where the surveys will be implemented. The most important part is to ensure that enumerators have the same understanding of definitions and that this definition is available when presenting methods and/or results so that implementation is consistent across households and the results can be interpreted based on the varying definitions.

[13] Available at: https://www.ifpri.org/sites/default/files/Basic%20Page/a-weai_enumerator_manual.pdf

The *primary* and *secondary respondents* are those who are *self-identified* as the primary members responsible for decisionmaking, both social and economic, within the household. They are usually husband and wife; however, they can also be other members as long as there is one male and one female aged 18 and over. For example, one might find a widowed mother and her adult son as the primary female and male respondents. It may also be the case that there is only one primary respondent if there is only an adult female and no adult male present in the household.[14]

Good Practice Tips

- Pre-fill member IDs and relevant information (such as name, age, and sex) for the same members (*primary* and *secondary respondents*) for follow-up A-WEAI surveys. This will enable you to track empowerment of the same individuals over time.
- In settings where polygamous households are common, the choice of female decisionmaker can be done by randomly selecting a wife to be interviewed. If there are two wives you may flip a coin. If there are more than two wives, then each wife's name can be written on a piece of paper and drawn randomly from a hat.

A4. Logistics

We strongly recommend that enumerators travel in male and female pairs and carry duplicate copies of the A-WEAI module. This facilitates interviewing the primary male and female decision-maker separately and in private. Having two enumerators can also reduce the total time spent interviewing the household by dividing up the modules in the survey that require different respondents if the survey is collecting information on variables in addition to the A-WEAI.

Good Practice Tips

- Have enumerators travel in teams of two, ideally, male and female pairs. Having more than one male and female pair in a locality also improves security for the females in the survey team (who can then stay together locally).
- Carry duplicate copies of the A-WEAI module. If data collection is done through tablets, each enumerator should have her or his own tablet to use.

Be sure that the survey is introduced to community leaders before it begins, and phrased in a way such that you build community support for interviewing men and women separately. In very conservative areas, you might want to say that you want to enable women to better fulfill their roles as mothers and guardians of their families' food security.

A5. Adapting the A-WEAI Module to the Local Context

The primary instrument for measuring empowerment is the individual-level A-WEAI module which is administered to women and men in the same households. In addition to the individual-level A-WEAI module, a household-level module should also be collected to solicit background information on household demographics and related outcomes. This module is administered to the most knowledgeable household member regarding age, completed education, and other characteristics of household members. This will enable the analysis of correlates and conditioning factors that affect individual empowerment.

[14] Male-only households are possible, but very rarely found. Because the A-WEAI requires data on at least a woman respondent, male-only households should be excluded from the A-WEAI sample.

Translation

Ensuring that survey instruments are accurately translated to the appropriate local languages and dialects is especially important for making meaningful cross-country comparisons of the A-WEAI (Üstun et al, 2005). The most important thing is to ensure that the translation conveys the original intent and meaning of the questions, so that the same concepts are measured within and across countries. One way to check whether the translation is adequate is to have the questionnaire translated, and then have someone else to do a back-translation. In the pilots, the emphasis in training was given to translations and particularly how to interpret questions in the local language to convey complex concepts such as empowerment across different dialects. This required building on the expertise of the research team and local collaborators and drawing on the social science literature on women's empowerment in each country. Where the organization implementing the survey does not have extensive experience and understanding of gender gaps in that country, it is recommended to involve someone who does have this expertise to adapt and pretest the questionnaire.

Good Practice Tips

- Focus groups can be used to talk through translations and verify that they convey the original intent and meaning of the questions.

- Use cognitive pretesting to check whether respondents understand the intended meaning of questions. This can reveal not only translation issues, but other sources of response error. See a recent paper by Johnson & Diego-Rosell (2015) for more guidance on conducting cognitive interviews[15].

Modifying response codes and lists

The response codes and lists must be carefully reviewed and modified to reflect local conditions. For example, assets lists can be modified to reflect commonly-held durables and production assets between countries. In some cases, it may be necessary to add response codes or categories to capture country-specific productive activities which were deemed to be important to gender and agriculture. For example, in the original Bangladesh pilot survey, a module was added to specifically measure men's and women's participation in and decisionmaking on aquaculture. In the final version of the original WEAI module, aquaculture is included under Activity 6, "Fishing or fishpond culture". These local adaptions are an essential part of questionnaire design and should be done in consultation with local partners, using previously implemented household surveys in the country and regions if possible.

Note that any such modifications will also require additional changes in the standard Stata do files provided for the calculation of the Index. In general, adding categories to the lists, or adding response codes, is more straightforward than combining or removing categories or codes.[16] For example, adding row O for "Jewelry" in the asset list in the section on **Access to Productive Capital** [A-WEAI Module G3(A)] has minimal impact in the calculation of the Index. On the other hand, combining rows C "Small livestock (goats, pigs, sheep) and D "Chickens, ducks, turkeys, pigeons" into one category, "Small livestock (goats, pigs, sheep, chickens, ducks, pigeons)", does affect calculation because poultry is counted in the A-WEAI as a small asset and is used as part of the definition of the inadequacy cut-off. Merging the categories means that a woman who reports owning "small livestock", may in fact own

[15] The paper, published in the journal *Survey Practice* can be found here: http://surveypractice.org/index.php/SurveyPractice/article/view/288

either small livestock (goats, pigs or sheep), **or** poultry (chickens, ducks, and pigeons), **or both**. In this case, it is not clear that an individual who only owns small livestock should be considered empowered or disempowered (this may depend on the context). Therefore, before finalizing modifications to the questionnaire, it is good practice to first check how such changes would impact the calculation of the Index and then decide whether the results are consistent with the local conditions. See Part B.2 for detailed information on the indicators, the aggregation method, and inadequacy cut-offs.

Good Practice Tips

- Consult with local partners on which local adaptations are appropriate.
- Whenever possible, refer to previously implemented household surveys in the country and/or region.
- Before finalizing modifications on lists and response categories, review the potential impact on the calculation of the Index based on the inadequacy cut-offs and aggregation method.
- If certain questions are more sensitive in a given culture, it is possible to re-order the sub-modules of the questionnaire so that the sensitive sections are asked towards the end of the interview. As long as all the questions are collected, you will still be able to calculate the A-WEAI. Note, however, that you will need to check that the correct question numbers are used in the Stata dataprep and calculation do files.

A6. Training

The A-WEAI module is a new survey that focuses on concepts that are not traditionally collected in standard household surveys. Therefore, extensive training is necessary to ensure the quality of the data collected. Beyond basic interviewer training, field staff must also undergo specific training on the distinctive features of the A-WEAI. Some issues that may require additional attention include:

- Selecting primary male and primary female respondents (not based on household headship)
- Interviewing men and women separately, and tips on how to interview respondents alone
- How to interpret questions in the local language to convey complex concepts, such as empowerment, across different dialects
- How to solicit responses, classify activities, and mark the Time Allocation grid [A-WEAI Module G4.01]

In the pilot surveys, it was especially useful for trainers to go over different cases and examples, especially on how to mark the time grid. We also recommend allocating sufficient time for hands-on training, such as role playing and mock interviews. Pretesting is also important to make sure that enumerators are implementing the questionnaire and entering responses correctly.

In selecting enumerators, it is important to consider the local languages and dialects spoken in the areas where the survey is conducted, as well as cultural norms that may require matching interviewers to respondents by gender, race, religion, or other characteristics (Kirsten Alcser and Judi Clemens, 2011). Also, because the subject of the survey is highly sensitive, it is important to choose enumerators that respondents would feel comfortable speaking privately with. Unless cultural norms suggest otherwise, we

recommend that male enumerators interview the male respondents, and female enumerators interview the female respondents, as was done in the pilot surveys.

Good Practice Tips

- Manuals for interviewers, supervisors and data entry staff should explain the purpose of survey, how to do basic tasks, how to deal with unusual cases, and general guidelines or procedures for dealing with unforeseen problems.
- Prepare manuals before training begins, and update them with additional information as needed.
- Ensure that training procedures and manuals are culturally sensitive.
- Allocate sufficient time for hands-on training, such as role playing and mock interviews.
- Pretest questionnaires (in multiple languages if applicable), fieldwork, data entry plans and all other aspects of the survey.
- Schedule daily/biweekly debriefing sessions with enumerators to address any problems/issues that arise and make adjustments on the questionnaires, work and data entry plans, and manuals.

A7. Survey Design and Data Collection FAQs

- **Q1: The entire A-WEAI module may not be relevant to the interventions we are implementing. Is it possible to only measure particular domains of the A-WEAI and not administer the Index in its entirety without threats to validity and reliability?**

  A1: You can certainly measure particular domains (or even indicators) by themselves, but please note that doing so does not result in the A-WEAI. The A-WEAI is obtained by taking a weighted average of two subindexes, the 5DE and GPI, and both of them are obtained by taking the weighted average of the 6 indicators representing the 5 domains. These 6 indicators can each be interpreted on their own, so if you do not have time to administer the entire module but wish to collect some gender-relevant indicators, you can try to see which domains/indicators are most relevant to you. There is a discussion paper available that describes some of the validity testing that was done for the original WEAI indicators,[17] please see: http://www.ifpri.org/publication/women-s-empowerment-agriculture-index. In addition, please refer to the table of various versions of the WEAI to see which version is best for your purposes: https://www.ifpri.org/sites/default/files/Basic%20Page/weai_versions_table.pdf

- **Q2: Can the A-WEAI be implemented as a separate survey from the rest of the FTF Population-Based Survey (PBS)?**

  A2: Yes, the A-WEAI can be implemented as a stand-alone survey, or appended as part of a larger household survey, such as the FTF Population-based Survey. If you are including the A-WEAI as part of a larger survey, it should be administered to the same households sampled for the rest of the survey. If the A-WEAI is administered to households that are different from the rest of your household survey, it will still be possible to compute the overall Index, but it will not be possible to link the Index with any other individual or household level outcomes

[17] A technical paper documenting the development and validity testing of the A-WEAI is in progress.

collected in the other modules, such as nutrition or poverty. This very much limits the usefulness of the A-WEAI.

- **Q3: Should the A-WEAI be administered to rural areas only since the focus is on empowerment in agriculture?**

  A3: Yes, in most cases it would not be necessary to include urban areas since the A-WEAI was designed to monitor agriculture programs. Even if there is some programming that creeps into urban areas, it is usually a different type of programming such as health or nutrition interventions, rather than programs that are likely to "move" the A-WEAI indicators. In many countries, small urban centers may just be living/trading areas for people who are still doing agricultural work, but the distinction should be made at some higher strategy level for what is/is not included in the sampling and how these classifications are made. This decision should be made taking a lot more into account than impacts for the A-WEAI.

- **Q4: Can we exclude non-agricultural households using a screening or filter question similar to the LSMS-ISA?**

  A4: No, we do not recommend systematically excluding non-agricultural households for a number of reasons.

  Some surveys do screen for agricultural households, but this is not appropriate for the A-WEAI. For instance, the LSMS-ISA uses the following screening question: *"In the last 12 months, did a member of this household cultivate any land?"* When used to screen households for the WEAI module, this means that the survey will capture the WEAI indicators and agriculture activities of only those households that have been "cultivating" land. This is potentially misleading because the survey will not capture livestock activities, small kitchen gardens, access to forest land (gathering), etc. Rural livelihoods are often linked to the agricultural sector in both direct and indirect ways, which is why it is very difficult in practice to come up with a standardized definition of what an agricultural household is, and especially one that would be applicable across countries. For example, in Bangladesh, women typically do post-harvest activities and processing but do not consider themselves as working in agriculture, even though they are clearly tied to the agriculture sector. Landless households who do farm wage work are not considered agricultural cultivators and yet their livelihood is directly tied to agriculture. There are potentially many other ways that livelihoods are tied to agriculture and these could vary in different contexts.

  Another important implication of screening is that the survey will not be able to capture movements in and out of agriculture. If programming, such as in FTF are providing agricultural and other support (e.g., credit) services, then these movements are among the key issues that the survey is trying to capture with the A-WEAI (and presumably other key indicators) – so this would be a significant loss.

  Lastly, surveys that screen for agricultural households will not be comparable to surveys in other countries that do not screen. This will limit the potential for analyzing the A-WEAI across countries.

- **Q5: How long does it take to administer the A-WEAI?**

  A5: Based on IFPRI's experience implementing the second round of WEAI pilots, the final A-WEAI questionnaire is estimated to take 25-30 minutes per person. If the surveys are done

concurrently with men and women, then the additional time per dual-adult household is also 25-30 minutes.

- **Q6: How can we reduce interview fatigue?**

  A6: One option is to administer the A-WEAI at a lag. For example, the A-WEAI team could follow a survey team and go into a cluster that has been completely finished; since in this case the A-WEAI survey will be collected at a different time, interviewer fatigue will be minimized. One advantage of doing this might be that the interviewer would have already built rapport with the household, and a follow-up interview (particularly with sensitive questions about decisionmaking) would not be viewed as an imposition. Another recommendation is to split enumeration of other non-A-WEAI modules between members of the household (primary male and female decision-makers) based on who is best suited to know about the subject matter and administer them concurrently. For example, modules on dietary diversity are typically administered to a female respondent while the household roster, dwelling characteristics, and expenditure modules might be administered to a male respondent. Grouping different modules together based on the sex of the respondent will require preparing the survey instrument, data collection tools and interview plan in advance.

- **Q7: In the time-use module, were respondents able to recount prior day activities at the 15 minute level?**

  A7: The key issue with the administration of the time use module is that enumerators did not ask respondents to recount activities or assign 15 min intervals to them. Rather, respondents were asked to narrate their days and they themselves allocated time periods. It is very true that many respondents do not have time in minutes and hours "in their heads" as we do where our days are structured around a 24 hour time period. In this way, time spans allocated to activities will be more of an approximation, especially because there is rounding, than a strict 15 minute interval. In these calculations, it is imperative that the enumerators have an understanding of the local culture and context where the respondents live – i.e., knowing at what time the sun rises, at what time it sets, how long it takes to travel to the nearest water point or market, what the prayer times are in Islamic societies, etc. The A-WEAI no longer collects secondary activities, choosing instead to just collect primary activities to save collection time. An analysis by IFPRI colleagues found that collecting only primary activities, rather than primary and secondary activities, did not have an impact on whether a respondent was ultimately empowered or disempowered. Modifications to the time use module should be made prior to survey administration and tested in the field. (Please refer to section A5 above on adaptations to the WEAI and section A6 on training and debriefing.)

- **Q8: How do we account for the fact that the prior day might not have been a typical day, and how should this distinction factor into the A-WEAI 5DE and GPI calculations? For example, a mother may have taken her child to the clinic the previous day, and spent the entire day traveling or in clinic, whereas on a typical day she would be engaged in labor or home work. Or, should we assume homogenous days throughout the week?**

  A8: The question on whether the day was typical is included in the A-WEAI. With such information you can re-compute the 5DE/GPI/WEAI for the sample with and without the atypical cases, so you can see whether or not this makes a difference. It is recommended that enumeration schedules be planned to not collect data the day after a cultural or religious day or any other event that is not considered a "typical" day to minimize the effects on this indicator.

- **Q9: We are using Computer-Assisted Personal Interviewing (CAPI) in our survey so we will be capturing the time use information differently from the time grid in the pilots. Are there any specific implementation issues we need to be aware of to ensure that we are collecting the data in a comparable way?**

  A9: Many of the FTF PBS surveys used CAPI to collect the baseline WEAI. In some cases those surveys were not able to use a time grid to "draw" the responses as in the pilots, although others chose to collect the time module using the paper version and transferred the responses to the tablets at the end of the day. As far as capturing the time information, it should be the same so long as enumerators follow the same procedure of asking respondents to narrate their activities throughout the 24 hour period. Respondents themselves assign the time periods, and the enumerators log the information at 15 minute intervals. In CAPI, entering information in smaller chunks of time may take longer. Time grids are usually easier for enumerators to "map" activities and see them visually, which may also lead to less error in marking end/beginning points. In addition, it may not be possible to view the entire 24 hour time grid at the same time on the CAPI screen, which may require the enumerators to shift back and forth between screens. However, CAPI software can also be pre-programmed to flag common errors in the time use module - such as multiple primary activities in the same time period, and recording total time less than or more than the 24 hours – so that they can be addressed by enumerators before completing the survey.

- **Q10: How much does it cost to collect the A-WEAI module?**

  A10: Field costs for the original WEAI pilots (including enumerator training, translation, and data entry) were $38,000 in Bangladesh (450 households), $56,000 in Guatemala (350 households), and $36,000 in Uganda (367 households). The second WEAI pilot costs ranged from $44,000 to $84,000 in Bangladesh and Uganda. Costs differ across countries owing to basic field costs, costs of transportation, as well as translation. Note however that these field costs may not provide an accurate picture; the pilot questionnaires were much longer than the final WEAI and A-WEAI modules, as various questions were still being tested at that time. For the second pilot, these costs also include two rounds of cognitive testing, which required a higher sample size in Uganda than in Bangladesh because of the number of language groups.[18] The cost information on the pilot surveys is likely to be more helpful for stand-alone surveys rather than larger multi-purpose household surveys.

  In the FTF Population-Based Surveys, the WEAI has been collected along with several other modules, making it difficult to isolate the costs for the WEAI alone. However, to give some general parameters, the FTF survey in Rwanda (2000 households) cost approximately $400,000 and collected the WEAI along with two dietary diversity modules and the Household Hunger Scale. The WEAI would likely have accounted for half of the enumeration time in that survey. All other indicators were calculated for FTF using secondary data from the DHS and Rwandan national household expenditure survey. In Tajikistan (2000 households), data collection cost $500,000, but the survey collected many more modules for consumption-expenditure, dietary diversity, and anthropometric measurement, as well as other nutrition/food security information.

[18] Cognitive pretesting guidelines recommend a sample size of 10-15 respondents per language group. See article by Johsonson & Diego Rosell (2015) for more information: http://surveypractice.org/index.php/SurveyPractice/article/view/288

Part B: Index Construction

B1. Data Cleaning and Consistency Checking

Before proceeding to the construction of the Index, some standard data checks should be performed to ensure that the data is consistent and free from errors. Any remaining errors should be rechecked and resolved as much as possible to minimize any loss of observations for the Index calculations. It may be necessary to consult the original questionnaires for possible data entry errors.

Standard checks include the following:

- Verify the structure of data and check for duplicate observations
- Check that reported values are within an acceptable range
    - Response codes should correspond with the survey
    - Check for extreme and implausible values
- Check that responses are consistent with skip patterns
- Check the distribution of missing responses

For the A-WEAI, the most common inconsistencies are in the time use section. Standard checks include the following:

- Total time spent in all primary activities must sum to **exactly** 1440 minutes (24 hours)
    - If total time exceeds 1440 minutes, then there may be multiple primary activities recorded for the same time interval
    - If total time is less than 1440 minutes, then there may be missing primary activities for some time intervals

Other data issues that must be checked include:

- Check non-response in A-WEAI questions to ensure that at least some domains or categories have responses (so aggregated indicators have low non-response)
- Check the percentage of respondents who are engaged in any agricultural activity (thus have the potential of being empowered in agriculture)
- Check the percentage of female-only households

B2. 5DE Indictors and Cut-offs for the A-WEAI

Based on evidence of the causal pathways underpinning women's empowerment in agriculture[19], USAID defined the Five Domains of Empowerment in Agriculture (5DE) as follows:

1. **Production:** This dimension concerns decisions about agricultural production and refers to sole or joint decisionmaking about food and cash crop farming, and livestock and fisheries. No

[19] For an empirical review of the most critical constraints to women empowerment in the agriculture sector, please see: https://agrilinks.org/library/causal-mapping-gender-integration-framework

judgment is made on whether sole or joint decisionmaking was better or reflected greater empowerment.

2. **Resources:** This dimension concerns ownership of and access toproductive resources such as land, livestock, agricultural equipment, consumer durables, and credit.
3. **Income:** This dimension concerns sole or joint control over the use of income and expenditures.
4. **Leadership:** This dimension concerns leadership in the community, here measured by membership in formal or informal economic or social groups.
5. **Time:** This dimension concerns the allocation of time to productive and domestic tasks.

For the A-WEAI, the 5DE are measured using 6 indicators with their corresponding weights (see Table 2). Each indicator is designed to measure whether each individual reached a certain threshold (has adequate achievement) with respect to each indicator.

Table 2: The domains, indicators, survey questions, aggregation method, inadequacy cut-offs, and weights in the A-WEAI

Dimension	Indicator name	Survey questions	FTF Variables	Aggregation method	Inadequacy cut-off	Weight
Production	Input in productive decisions	How much input did you have in making decisions about: food crop farming, cash crop farming, livestock raising, fish culture? |To what extent do you feel you can make your own personal decisions regarding these aspects of household life if you want(ed) to: food crop farming, cash crop farming, livestock raising, fish culture?	G2.03 A-C, F G2.04 A-C, F	Achievement in two	Inadequate if individual participates BUT does not has not at least some input in decisions; or she does not make the decisions nor feels she could.	1/5
Resources	Ownership of assets	Does anyone in your household currently have any [ITEM]? Do you own any of the [ITEM]?Agricultural land, Large livestock, Small livestock, Chicks etc; Fish pond/equip; Farm equip (non-mech); Farm equip (mechanized) Nonfarm business equipment House; Large durables; Small durables; Cell phone; Non-ag land (any); Transport	G3.01 – G3.02 A-N	Achievement in any if not only one small asset (chickens, non-mechanized equipment and no small consumer durables)	Inadequate if household does not own any asset or if household owns the type of asset BUT she/he does not own most of it alone	2/15
	Access to and decisions on credit	Has anyone in your household taken any loans or borrowed any cash/in-kind from [SOURCE] in the past 12 months? Who made the decision to borrow/what to do with money/item borrowed from [SOURCE]? Non-governmental organization (NGO); Informal lender; Formal lender (bank); Friends or relatives; ROSCA (savings/credit group)	G3.06 – G3.08 A-F	Achievement in any	Inadequate if household has no credit OR used a source of credit BUT she/he did not participate in ANY decisions about it	1/15
Income	Control over use of income	How much input did you have in decisions on the use of income generated from: Food crop, Cash crop, Livestock, Non-farm activities, Wage& salary, Fish culture? | To what extent do you feel you can make your own personal decisions regarding these aspects of household life if you want(ed) to: Non-farm economic activities? Your own wage or salary employment? Major and minor household expenditures?	G2.05 A-F G2.04 D-E, G-H	Achievement in any if not only minor household expenditures	Inadequate if participates in activity BUT has no input or little input in decisions about income generated, or does not feels she/he can make decisions regarding wage, employment and major household expenditures	1/5
Leadership	Group membership	Are you a member of any: Agricultural / livestock/ fisheries producer/mkt group; Water; Forest users'; Credit or microfinance group; Mutual help or insurance group (including burial societies); Trade and business association; Civic/charitable group; Local government; Religious group; Other women's group; Other group	G5.03 – G5.04 A-J	Achievement in any	Inadequate if is not part of AT LEAST ONE group; inadequate if no groups reported in community	1/5
Time	Workload	Worked more than 10.5 hours in previous 24 hours.	G4.01	NA	Inadequate if works more than 10.5 hours a day	1/5

Source: Authors. Adapted from Alkire et al. (2012)

Domain 1: Production

In the arena of agricultural production we use one indicator: input in productive decisions. In the original version of the WEAI, a second indicator, autonomy in production, was included. This was removed from the A-WEAI because the questions were problematic and difficult to field. However, an improved methodology for collecting data on autonomy using vignettes is available as an add-on module for those interested. [20]

Input in production decisions

Input in productive decisions is constructed from answers to the following questions regarding the following activities: [A] food crop farming, [B] cash crop farming, [C] livestock raising, and [F] fishing or fishpond culture. Respondents were asked whether (1) they participated in activities [A-C, F] in the past year; (2) if they did participate in said activity, who in the household normally makes decisions regarding that activity; (3) if they participated in the activity, how much input they had in making decisions about the activity and; (4) to what extent they feel as though they can make their own personal decisions regarding activities [A-C, F] if they wanted to. The specific questions can be found in Annex 1 of this paper (Module G2, question G2.01-G2.04 in the A-WEAI). Although these categories may be modified to reflect the local context, the same analytical procedure will apply.

The answer scale for the question regarding input in decisions is: 1 = *no input or input into a few decisions,* 2 = *input into some decisions*, 3 = *input into most or all decisions*. For each activity, a sub-indicator was created that considers the individual adequate if he or she participates in that activity and has at least input into some decisions related to that activity.

The answer scale for questions regarding the extent to which the individual feels he or she can participate in decisions is: 1 = *not at all*, 2 = *small extent*, 3 = *medium extent*, and 4 = *to a high extent*. For each type of decision a sub-indicator was created that considers the respondent adequate if he or she makes the decisions or if the respondent feels that he or she could participate in the decisionmaking to at least a medium extent.

All these sub-indicators are then aggregated into the indicator "input in productive decisions." The respondent is considered adequate on input in productive decisions if there are at least two types of decisions in which he or she has some input in decisions, makes the decision, or feels he or she could make it to a medium extent if he or she wanted to.[21]

Domain 2: Resources

To capture the individual's control over productive resources, two indicators are used: ownership of assets and access to and decisionmaking about credit. Decisionmaking about productive resources was a third indicator that was included in the original WEAI but that was excluded in the A-WEAI because respondents who can make decisions over productive assets are also more likely to own assets.

Ownership of assets

The ownership indicator examines whether an individual has sole or joint asset ownership of land and other productive assets, based on a comprehensive list of asset types (including agricultural land, large

[20] The version of the WEAI with vignettes can be found here: http://www.ifpri.org/sites/default/files/Basic%20Page/weai_1_1_3-stepvignettes_mar2015_0.pdf

[21] Note that households or individuals who are not involved in agriculture but are involved in other nonagricultural enterprises might appear disempowered in this domain because the survey focuses on agriculture and does not capture all other economic activities.

and small livestock, fish ponds, farm equipment, nonfarm business equipment, house, large and small household durables, cell phone, nonagricultural land, and means of transportation). A person is considered adequate in this area if he or she reports having sole or joint ownership of any of the items, conditional on the household's owning those assets.[22] Furthermore, for the individual to be considered adequate in this domain, ownership cannot be limited to one minor asset only (poultry, nonmechanized equipment, or small consumer durables).

First, for each type of major asset we created an indicator to reflect whether anyone in the household currently has that type of asset (see Annex 1, question G3.01 in the A-WEAI). Then, these indicators were summed across assets, creating the indicator of household ownership, which measures the number of assets that the household owns across all asset types. Second, for each type of asset we created an indicator of an individual's ownership (see Annex 1, question G3.02 in the A-WEAI), which equals 1 if the individual, alone or jointly, owns any of that type of asset.

The asset-specific indicators are aggregated into the indicator of the respondent's ownership of assets. According to this indicator, an individual is adequate on ownership if he or she owns at least one asset, as long as it is not only chickens, ducks, turkeys, pigeons, nonmechanized farm equipment, or small consumer durables. The individuals who live in households that do not own any type of asset are considered inadequate on ownership.

Access to and decisions about credit

This indicator examines decisionmaking about credit: whether to obtain credit and how to use the credit obtained from various sources (nongovernmental organizations, formal and informal lenders, friends or relatives, rotating savings and credit associations). To have adequacy in this indicator, a person must belong to a household that has used a source of credit in the past year, and must have participated in at least one decision about it.

First, the respondent is asked whether anyone in the household (including him/herself) would have been able to take a loan or borrow cash/in-kind if he/she wanted to. This question was not included in the original version of the WEAI but was added to the A-WEAI to distinguish between households that had access to credit but chose not to borrow, and households who wanted to borrow but were unable to do so (i.e., credit constrained households). Next, the indicator "access to credit" is created, which assumes the value of 1 if the respondent lives in a household that has taken a loan in the past 12 months from at least one of the potential sources of credit (see Annex 1, question G3.04 in the A-WEAI). Then, for each potential source of credit, types of decisions are aggregated into an indicator that assumes the value 1 if the respondent makes, alone or jointly, at least one of the two decisions considered—borrowing or how to use the credit—for that particular source of credit (see Annex 1, question G3.05-06 in the A-WEAI). Finally, these indicators are aggregated across potential sources of credit, generating the indicator "access to and decisions about credit." The respondent is classified as adequate on credit if he or she makes at least one decision relative to credit from at least one source of credit. Individuals who live in households that do not use any source of credit are considered inadequate on access to credit and hence are assigned the value 0 for this indicator.

Domain 3: Income

[22] Self-reported ownership is used rather than any externally imposed definitions of ownership or reference to titles and other documentation (see Doss et al. 2011).

To capture the individual's control over income and expenditures only one indicator is used that reflects the individual's role in decisionmaking regarding the use of income. This indicator remains the same as in the original WEAI.

Control over use of income

Control over use of income is constructed from answers regarding input into decisions about the use of income: (1) if an individual participated in activities [A-F] from the section (above) on input in productive decisions[23], how much input did he or she have in decisions about the use of income generated from that activity. (see Annex 1, question G2.05 in the A-WEAI), and (2) for activities [D] non-farm economic activities, [E] wage or salary employment, [G] major household expenditures, and [H] minor household expenditures, to what extent does the individual feel he or she can make his or her own personal decisions regarding those aspects of household life if he or she wanted to.[24]

The answer scale for the question regarding input in decisions is: 1 = *no input or input into very few decisions,* 2 = *input into some decisions,* 3 = *input into most or all decisions.* For each activity an indicator is created that considers the individual adequate on input in decisions about the use of income if he or she participates in that activity and has at least some input into decisions related to that activity.

The answer scale for the question regarding the extent to which the individual feels he or she can participate in decisions is: 1 = *not at all,* 2 = *small extent,* 3 = *medium extent,* and 4 = *to a high extent.* For each type of decision an indicator is created that considers the respondent adequate if he or she makes the decisions himself or herself or if the respondent feels that he or she could participate in the decisionmaking at least to a medium extent.

Then, all these sub-indicators are aggregated into the indicator for control over income. The respondent is considered adequate on control over use of income if he or she is considered adequate in at least one of the sub-indicators described above, as long as it is not the sub-indicator for making decisions regarding household minor expenditures.

Domain 4: Leadership

This domain aims to capture the individual's potential for leadership and influence in his or her community. One indicator is used as a proxy for that potential: active membership in community groups. The original WEAI included an indicator on speaking in public, which proved to be a highly sensitive topic in many settings, and is no longer included in the A-WEAI.

Group membership

Recognizing the value of social capital as a resource, this shows whether the person is an active member of at least one group (see Annex 1, question G5.02 in the A-WEAI), including [A] agriculture producers' or marketing groups, [B] water users' groups, [C] forest users' groups, [D] credit or microfinance groups; [E] mutual help or insurance groups (including burial societies), [F] trade and business associations, [G] civic or charitable groups, [H] religious groups, and [I] other women's or men's groups. Group membership is deliberately not restricted to formal agriculture-related groups because other types of civic or social groups provide important sources of networks and social capital that are empowering in themselves and may also be an important source of agricultural information or inputs (Meinzen-Dick et

[23] Activities G and H are excluded from this question because they refer to major and minor household expenditures and thus are not income-generating activities

[24] The pilot included only minor household expenditures; however, we recommend including major household expenditures as well.

al., 2012). An individual is considered adequate if they are an active member of at least one group. If there are no groups in the community, he/she is inadequate for this indicator.

Domain 5: Time

The time allocation domain includes one indicator: workload. This refers to the allocation of time to primary productive and domestic tasks. The original WEAI previously collected time spent in secondary tasks, but our analysis suggests that individuals who were time poor were classified as time poor regardless of whether we counted secondary activities. For this reason, secondary activities are no longer required for the A-WEAI, although it is important to note that this change did not save much time in implementation. Based on the second pilot results, the 24 hour recall time module with primary activities only took about 3 minutes less time to collect, compared to the version that collected both primary and secondary activities. The original WEAI also included a second indicator measuring respondents' satisfaction with leisure time, which is no longer included in the A-WEAI.

Workload

The productive and domestic workload is derived from a detailed 24-hour time allocation module in which respondents are asked to recall the time spent on primary activities in the 24 hours prior to the interview, starting at 4:00 a.m. on the day before the interview (see Annex 1, question G4.01 in the A-WEAI). The amount of hours worked is defined as the sum of the time the individual reported spending on work-related tasks as the primary activity. The definition of work-related tasks includes wage and salary employment, own business work, farming, construction, shopping/getting service, fishing, weaving/sewing, textile care, cooking, domestic work, caring for children/adults/elderly, commuting, and traveling. The individual is defined as adequate on workload if the number of hours he or she worked per day was less than the time poverty line of 10.5 hours in the previous 24 hours. This cut-off was based on a methodology similar to that of Bardasi and Wodon (2006), who used a lower threshold equal to 1.5 times the median of the total individual working hours distribution and a higher threshold equal to 2 times the median, which was equivalent to 10.07 hours per day and 13.4 hours per day for the lower and the higher thresholds, respectively, using data from Guinea.[25]

We recognize that a 24-hour recall does not adequately represent time allocation, especially in an agricultural society. If the previous day was a holiday, the workload might have been less (or even greater if there was extra food preparation or other domestic work). The observations for which the reference day for the time use module was a holiday or a nonworking day are not dropped in the pilots because that would imply a sample reduction of approximately 25 percent. More problematic from the standpoint of an agricultural index is the issue of seasonality of labor, which cannot be captured in 24-hour recall. However, recall of time allocation longer than 24 hours generally has higher recall error, and the recommended revisiting of households on multiple days was not possible, so we have used this approach provisionally but, as was mentioned above, an alternative time use module could also be considered (Harvey and Taylor 2000).[26] The pilots for the A-WEAI did test using a 7-day recall method, where

[25] In the Bardasi and Wodon (2006) study, the upper and lower thresholds for adults were expressed in hours per week (70.5 and 94 hours per week for the lower and higher thresholds, respectively); we express the thresholds in hours per day for comparability with the thresholds used in this study.

[26] There are different guidelines for collecting time use data in studies that focus on time allocation and those that collect time allocation data in the context of a multi-topic household survey. The former focuses on obtaining information about time use over a period of time, typically requiring multiple visits. The need for the time use data to reflect women's achievements across seasons is, of course, of paramount importance when the time use data are interpreted as accurate at the individual level as in the case of WEAI. In almost all time use studies, data are taken as accurate at the group level (women), not at the individual level as required by WEAI. A study of time use surveys in Mexico, India, and Benin found that the modules required specially trained enumerators; in India they visited four times to capture seasonality. There were also guidelines (if yesterday was a funeral/holiday) about which day to

respondents were asked, on average, how much time they had spent on various activities over the previous 7 days. However, this format proved more challenging, both for respondents and for enumerators, who were tasked with having to multiply hours to come up with a weekly total.

The A-WEAI does include a question that was not included in the original WEAI, which asks respondents whether in the last 24 hours they worked (either at home or outside the home) more than usual, about the same as usual, or less than usual. This information can be used to exclude observations where the last 24 hours was not a typical work day.

Individual Empowerment Scores

Using individual responses to the survey questions outlined above, each of the six indicators are assigned a value of 1 if the individual's achievement is adequate, i.e., it exceeds the defined inadequacy cut-off for the specific indicator, and a value of 0 otherwise. An individual's empowerment or adequacy score is simply the weighted average of these six indicators using the weights defined in Table 2.1. In other words, the empowerment score reflects the weighted percentage of dimensions in which a person has achieved adequacy.

B3. Constructing the A-WEAI Using the Stata do files

This section focuses on how to use the Stata do files to construct the Index. For a detailed discussion of the WEAI methodology, please refer to the discussion paper: http://www.ifpri.org/publication/women-s-empowerment-agriculture-index.

There are two Stata do files that you will need to construct the Index:

1. WEAI-dataprep_Pilot_2.0.do ("*dataprep*") This do file constructs the six indicators
2. Calculating-the-A-WEAI_Pilot_2.0.do ("*calculation*") This do file constructs the 5DE and the GPI

Note: In both do files there are four indicators that have been "starred" out. Should you wish to calculate the full 10 indicator WEAI, simply un-star these lines of code.

Data requirements

To run the *dataprep* do file, you will need clean individual-level survey data for all respondents. Below are some tips to ensure you have the correct information:

- Data must have already been cleaned and checked for consistency (see section B1 for details)
- Must have all the questions on the A-WEAI module
- Must have identifiers and variables you need for merging and grouping (IDs, sex, region, individual sampling weights if any)
- The *dataprep* do file assumes that the time use data has the following structure:
    - Long format: each individual has 18 observations for every activity category (activities A-X)
    - Must already contain the variable that sums up the total number of minutes in each activity category spent as a primary activity (f01_1)

pick, which was not done in the pilot but should be included in future time use surveys (see http://www.levyinstitute.org/undp-levy-conference/papers/paper_Vacarr.pdf).

- Note: If the structure of your time use data is at the individual level (one observation per individual), you do not need to run lines 415-420 in the *dataprep* do file (enclose these lines in /* */) so long as you have the corresponding variable for f01_1.

Procedure

Step 0: First, run the *dataprep* and *calculation* do files using the pilot data sets to ensure that you are able to replicate the pilot results. This step also ensures that there are no software issues that will interfere with your calculations.

- Check that you obtain the same A-WEAI values as reported for the pilots

Step 1: Modify the *dataprep* do file to run on your data set

- Change relevant details: change directory, file names (log and data), variable names
- Make sure that correct variable names are picked up for each indicator
  - If you made modifications in your questionnaire, check that the categories and codes are properly matched
  - This step is the most important part of this process; review each variable and response code carefully

Step 2: Run the *dataprep* do file

- This creates the new individual-level data set "*all_indicators.dta*", which contains the ten 5DE indicators coded such that "1" represents **adequate** achievement, and "0" otherwise

Step 3: Run the *calculation* do file

- Use individual sampling weights if available (replace "1" with sampling weight in line 40)
- You may wish to also save the GPI results for later use (add line: "*save results_GPI.dta, replace*" before "*log close*")
- This creates the following data files:
  - "*all_depr_indicators.dta*" –individual-level data set which contains the six 5DE indicators that have been recoded such that "1" represents **inadequate** achievement, and "0" otherwise
  - "*individual_indices_c.dta*" – individual-level data set for each country 'c', which includes the individual inadequacy count, variables that identify the disempowered for each cut-off, and the value of the disempowerment index (DAI) and the empowerment index (EAI) for each cut-off
  - "*results_c_gender.dta*" – saves a data set for each country '*c*' with the relevant empowerment figures for each gender (in rows); these include disempowerment figures for all cut-offs between 1% and 100%
  - "*results_GPI.dta*" – (optional) individual-level data set which includes variables that identify women with no gender parity and the average empowerment gap

Step 4: Extract results to fill out basic tables

- Interactively run lines 309-341 from the *calculation* do file to extract 5DE results
- Refer to the *calculation* log file for GPI results

- Additional instructions on how to fill out the basic tables are available on the excel spreadsheet downloadable from http://agrilinks.org/events/webinar-ftfs-womens-empowerment-agriculture-index-weai)

How to decompose using alternative grouping variables

One of the most useful features of the WEAI is its decomposability. This feature allows users to understand not only which groups of individuals are empowered or disempowered, but also how each indicator and domain contributes to their disempowerment. This is particularly useful for designing policy interventions that address the most binding constraints to empowerment in agriculture.

The standard *calculation* do file decomposes the 5DE index by gender, but it is also possible to decompose the results using alternative grouping variables. Examples of possible grouping variables include:

- Education, ethnicity, age group, and other individual characteristics
- Primary agricultural activity, poverty status, income quintile, and other household characteristics
- Strata, region, climate and other location characteristics, but only IF the survey is representative at these levels

To construct decomposed scores using a different grouping variable, simply revise lines 186 and 188 in the *calculation* do file as follows:

- Line 181: `gen group = groupvar`
- Line 183: `local r = "group"`

Where "groupvar" is the categorical variable that corresponds to the new grouping variable, and "group" is the new variable name assigned to the group. Make sure that "groupvar" is coded in integers beginning with "1". The new results data sets will also be assigned new file names based on your grouping variable: "*results_c_group.dta*".

B4. Index Construction FAQs

- **Q1: Our survey uses complex sampling design. Should we use sampling weights in constructing the Index?**

  A1: You can use the same *dataprep* and *calculation* do files to construct the Index. The only adjustment you need to make is to specify the individual sampling weight in line 40 of the *calculation* do file. Below is a comparison of line 40 for the unweighted and weighted versions, where "ind_sampling_weight" is the individual sampling weight (inverse probability of selection into the sample):

  Unweighted: `gen weight=1`
  Weighted: `gen weight=ind_sampling_weight`

- **Q2: Some individuals have missing indicators, should we drop them?**

  A2: We would normally drop any individual that is missing in any indicator, especially if the reduction in the sample is negligible. The reason is that you cannot make a deprivation score with different indicators for different people and then decompose it. The only other alternative is to score the respondents directly as non-deprived or deprived in the missing

indicator. However, imputation has to be accurate at the ***individual*** level, whereas standard techniques are to get it accurate ***on average***. This is why dropping these observations may be preferable to imputation. If there are a large number of observations with missing indicators, you may also wish to do a bias analysis of the retained versus the full sample.

- **Q3: How should we weight the A-WEAI score for each country if we want to aggregate for a multi-country portfolio? Even though the A-WEAI is not a straightforward "prevalence" indicator, it does create a score based on prevalence(s), so not weighting the average would allow countries with large populations to skew the outcome.**

  A3: Yes, the A-WEAI should be weighted by the populations in the regions or countries you are working in. However, when surveys come from different years, there is also a question of whether to ascribe the survey year population to each country, or whether to aggregate them using the population data from a single year. To address this question, 'robustness tests' can be done by taking the (FTF, or whatever relevant) population and then estimating the rates of population growth. This will allow you to aggregate across countries using different time references.

Part C: Analysis

C1. Tabulations

In this section we present the stand tables for reporting the A-WEAI results and explain how to interpret them using the 2014 A-WEAI pilot data from Bangladesh and Uganda. Table 1 reports the overall A-WEAI, and its subindices, the 5DE and GPI, for Bangladesh and Uganda. To identify the areas that contribute most to disempowerment for women and men, we decompose the disempowerment index (M0) by domain in Tables 2 & 3. Drawing from the decomposition presented in Tables 2 & 3 Figures 1 & 2 visually presents how the configuration of disempowerment differs between women in Bangladesh and Uganda.

The overall A-WEAI results are presented in Table 1, which is similar to the format used for the WEAI Baseline Report (see Malapit et al, 2014). To facilitate the interpretation of the disempowered headcount (H), the average inadequacy score (A), and the percentage of women with no gender parity (HGPI), we also include the positive counterpart of these numbers, the empowered headcount (1-H), the average adequacy score (1-A), and the percentage of women with gender parity (1-HGPI). This is to demonstrate that the subindices and their components can be presented and interpreted both in terms of empowerment and disempowerment.

Table 1: Bangladesh and Uganda A-WEAI Pilot Scores

Indicator	**Bangladesh**		**Uganda**	
	Women	**Men**	**Women**	**Men**
5DE (1 - M0)	0.83	0.90	0.83	0.92
Disempowerment score (1 - 5DE)	0.17	0.10	0.17	0.08
N (number of observations)	222	173	144	130
% of women achieving empowerment (1 - H)	53.61	72.83	59.72	76.93
% of women not achieving empowerment (H)	46.39	27.17	40.28	23.07
Mean 5DE score for not yet empowered women (1 - A)	0.63	0.63	0.58	0.65
Mean disempowerment score (1-5DE) for not yet empowered women (A)	0.37	0.37	0.42	0.35
GPI score (1 - H_{GPI} x I_{GPI})	0.92		0.89	
N (number of dual-adult households)	173		130	
% of women achieving gender parity (1 - H_{GPI})	62.58		65.91	
% of women not achieving gender parity (H_{GPI})	37.42		34.09	
Average empowerment gap (I_{GPI})	0.22		0.31	
A-WEAI score (0.9 x 5DE + 0.1 x GPI)	0.84		0.84	

A-WEAI

Overall the A-WEAI for Bangladesh is 0.837. It is a weighted average of the 5DE subindex value of 0.837 and the GPI subindex value of 0.919. The A-WEAI for Uganda is 0.836, with a 5DE value of 0.831 and a GPI value of 0.894.

5DE

The 5DE for Bangladesh shows that 53.6 percent of women are empowered. Among the 46.4 percent of women who are not yet empowered have, on average, they have inadequate achievements in 37.0 percent of domains. Thus, the women's disempowerment index (M0) is 46.4 percent × 37.0 percent = 0.171 and 5DE is 1 – 0.464 = 53.6 percent + (46.4 percent × [1 – 37.0 percent]) = 0.828. 27.2 percent of men are not yet empowered, and the average inadequacy score among these men is also 37.0 percent. So the men's disempowerment index (M0) is 27.2 percent × 37.0 percent = 0.100 and men's 5DE is 1 – 0.100 = 0.900.

The 5DE for Uganda shows that 59.7 percent of women are empowered. Among the 40.3 percent of women who are not yet empowered have, on average, they have inadequate achievements in 42.0 percent of domains. Thus, the women's disempowerment index (M0) is 40.3 percent × 42.0 percent = 0.17 and 5DE is 1 – 0.403 = 59.7 percent + (40.3 percent × [1 – 42.0 percent]) = 0.831. 23.1 percent of men are not yet empowered, and the average inadequacy score among these men is 35.0 percent. So the men's disempowerment index (M0) is 23.1 percent × 35.0 percent = 0.081, and men's 5DE is 1 – 0.081 = 0.919.

The disempowerment measures (M0) for women and men decomposed by domain and indicator are presented in Table 2 and Figures 1 - 3. Based on the decomposition of M0 in Table 3, the domains in the Bangladesh sample that contribute most to women's disempowerment are leadership (39.3 percent), access to productive resources (19.2 percent), and time allocation (18.9 percent). Over 42.3 percent of women in the survey are not yet empowered and lack access to credit, while about one-third are not a member of any group (33.78 percent) and 16.2 percent are overburdened for the workload indicator.

The disempowerment measures (M0) for women and men decomposed by domain and indicator are presented in Table 3 and Figures 2 and 4. Based on the decomposition of M0 in Table 3, the domains in the Uganda sample that contribute most to women's disempowerment are time allocation (24.5 percent), control over use of income (24.5 percent), and production decisionmaking (19.6 percent). Almost 30 percent of women in the survey are not yet empowered and lack access to credit and the ability to make decisions about it (29.9 percent), while about one-fifth (20.8%) do not have adequate control over use of income and are overburdened in workload.

GPI

The GPI for Bangladesh shows that 62.6 percent of women have gender parity with the primary male in their households (Table 1). Of the 37.4 percent of women who are less empowered than the primary male in their household, the empowerment gap is 22.0 percent. Thus the overall GPI in Bangladesh is (1 – [37.4 percent x 22.0 percent]) or 0.92.

The GPI for Uganda shows that 65.9 percent of women have gender parity with the primary male in their households (Table 2). Of the 34.1 percent of women who are less empowered than the primary male in their household, the empowerment gap is 31.0 percent. Thus the overall GPI in Uganda is (1 – [34.1 percent x 31.0 percent]) or 0.89.

Table 2: Bangladesh 5DE decomposed by dimension and indicator

Statistics	Production	Resources		Income	Leadership	Time
	Input in productive decisions	Ownership of assets	Access to and decisions on credit	Control over use of income	Group member	Workload
Indicator weight	0.20	0.13	0.07	0.20	0.20	0.20
Women						
Censored headcount	7.21%	3.60%	42.34%	12.16%	33.78%	16.22%
% Contribution	8.39%	2.80%	16.43%	14.16%	39.34%	18.88%
Contribution	0.01	0.00	0.03	0.02	0.07	0.03
% Contribution by dimension	8.39%	19.23%		14.16%	39.34%	18.88%
Men						
Censored headcount	0.58%	0.58%	17.92%	4.05%	24.28%	15.03%
% Contribution	1.15%	0.77%	11.88%	8.05%	48.28%	29.89%
Contribution	0.00	0.00	0.01	0.01	0.05	0.03
% Contribution by dimension	0.58%	18.50%		4.05%	24.28%	15.03%

Table 3: Uganda 5DE decomposed by dimension and indicator

Statistics	Production	Resources		Income	Leadership	Time
	Input in productive decisions	Ownership of assets	Access to and decisions on credit	Control over use of income	Group member	Workload
Indicator weight	0.13	0.07	0.20	0.20	0.20	1.00
Women						
Censored headcount	16.67%	2.08%	29.86%	20.83%	15.28%	20.83%
% Contribution	19.62%	1.63%	11.72%	24.52%	17.98%	24.52%
Contribution	0.03	0.00	0.02	0.04	0.03	0.04
% Contribution by dimension	19.62%	13.35%		24.52%	17.98%	24.52%
Men						
Censored headcount	7.69%	0.00%	18.46%	2.31%	13.85%	10.77%
% Contribution	18.87%	0.00%	15.09%	5.66%	33.96%	26.42%
Contribution	0.02	0.00	0.01	0.00	0.03	0.02
% Contribution by dimension	18.87%	15.09%		5.66%	33.96%	26.42%

Figure 1: Contribution of each indicator to disempowerment (Bangladesh)

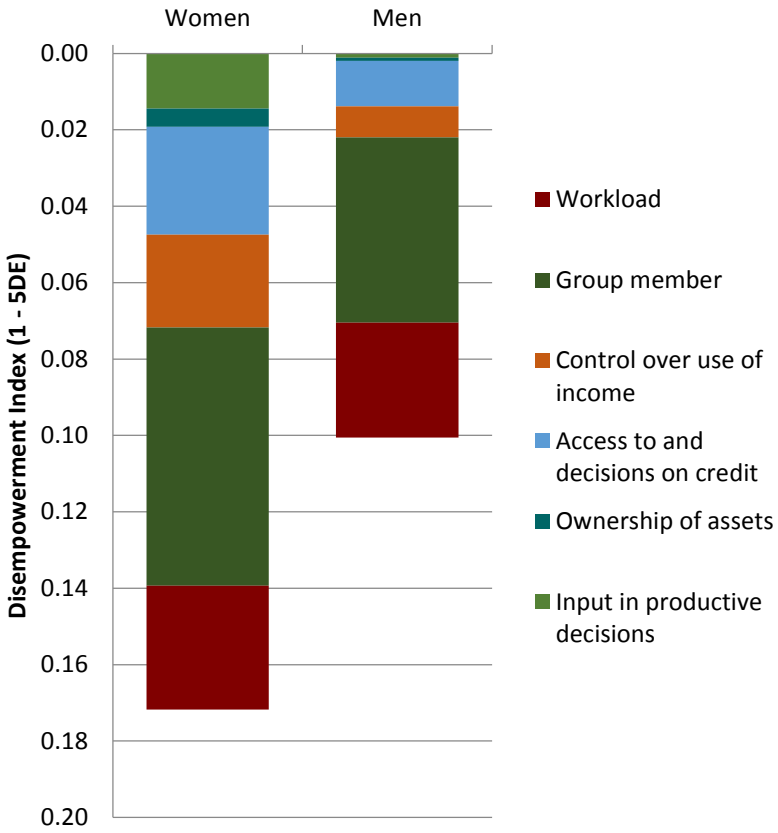


Figure 2: Contribution of each indicator to disempowerment (Uganda)

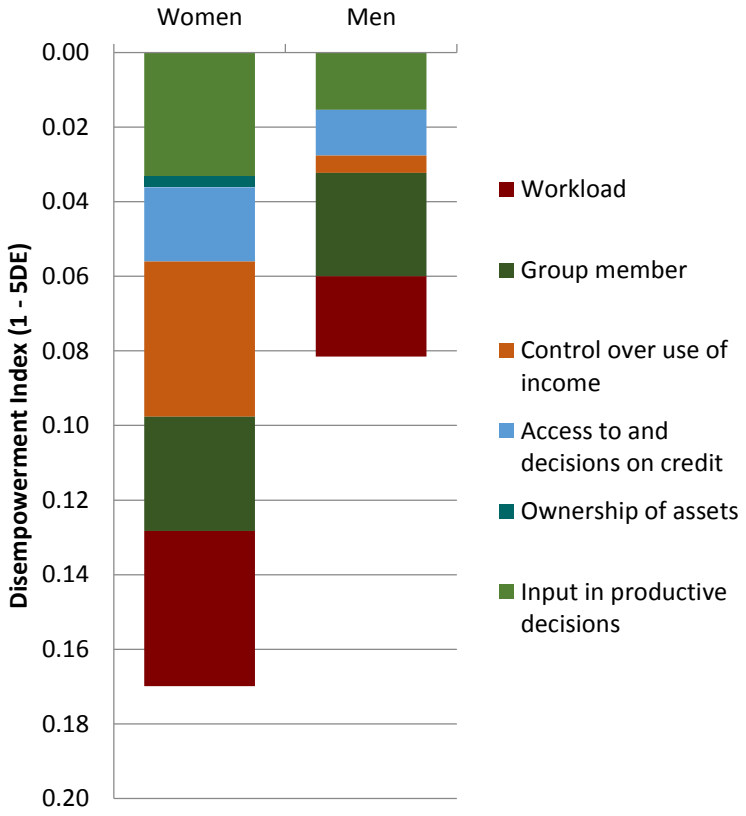


Figure 3: Contribution of each of five domains to the disempowerment of women (Bangladesh)

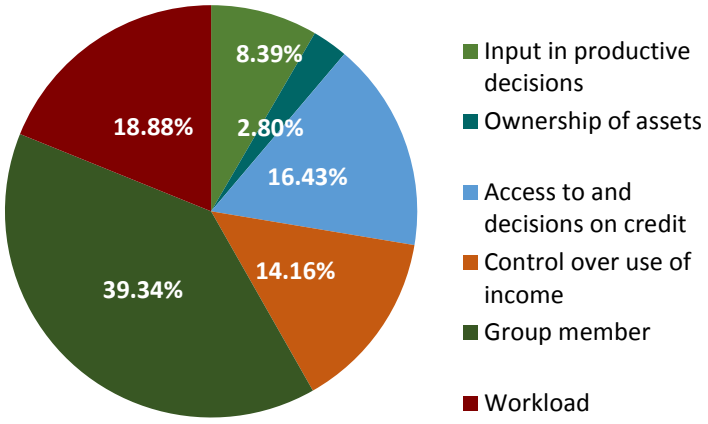


Figure 4: Contribution of each of five domains to the disempowerment of men (Bangladesh)

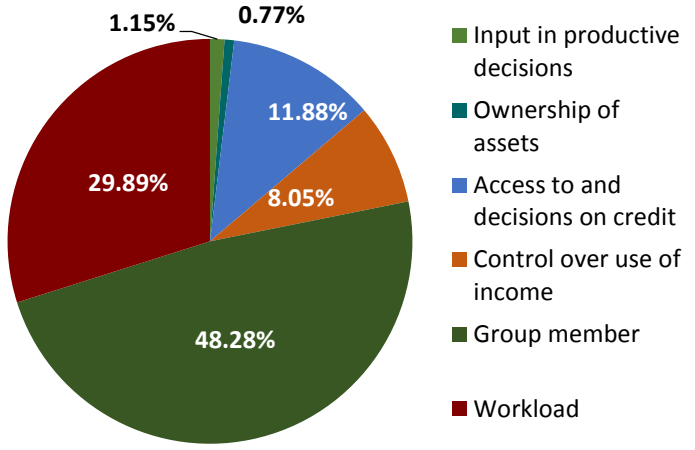


Figure 5: Contribution of each of five domains to the disempowerment of women (Uganda)

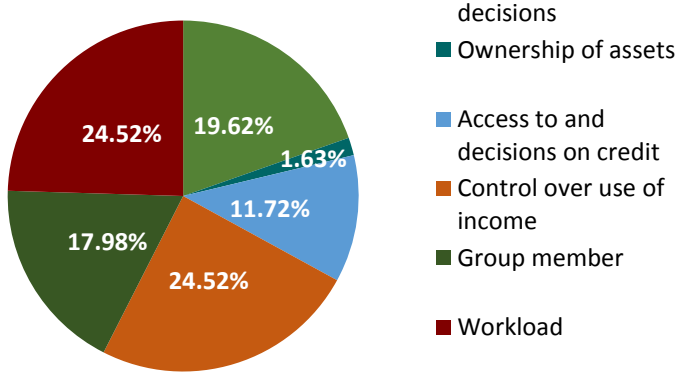
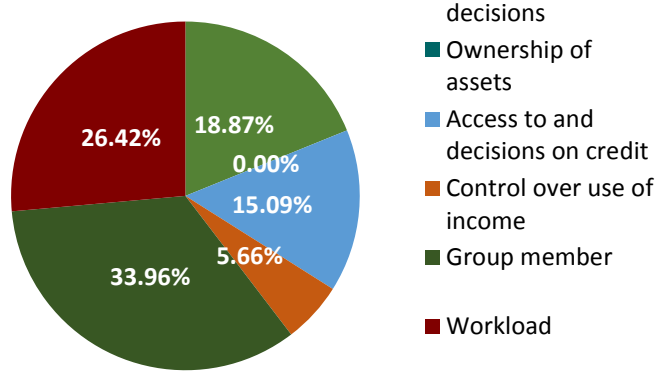


Figure 6: Contribution of each of five domains to the disempowerment of men (Uganda)



Guide Questions for WEAI Reporting

Our discussion above is an example of how a narrative report can be structured using the following guide questions:

GENERAL GUIDE QUESTIONS FOR REPORTING	
Overall	
What are the overall patterns of women's empowerment?	How does the WEAI, 5DE, and GPI compare with (see Table 2): ▪ Other FTF focus countries in the region? ▪ Other regions? ▪ The previous period/s? (if applicable)
By Gender	
How do women compare with men in terms of empowerment in the five domains of agriculture?	Compare the 5DE index for women and men (see Table 2). Are women more, less, or equally empowered compared to men? How large is the gap between the men's and women's disempowerment indexes? How does this gap compare with: ▪ Other FTF focus countries in the region? ▪ Other regions? ▪ The previous period/s? (if applicable)
By Gender and Domain/Indicator	
How similar or different are women's configuration of disempowerment in the five domains of agriculture compared to men's?	Compare the percentage contributions of the 5 domains/6 indicators to the disempowerment scores of women and men (see Table 3 and Figure 1). What are the largest contributors to women's disempowerment? What are the largest contributors to men's disempowerment? How different are the two?

**Compare by subgroup (e.g., strata, region, etc.) if applicable.*

These questions can also be used to report on more detailed decompositions of the A-WEAI, 5DE and GPI.

C2. Using A-WEAI for Diagnostics

In the previous section, we presented the standard tables and a brief discussion of the results. In this section we will go beyond the basic tabulations to demonstrate how the A-WEAI results can be used for diagnostics using the results from the Bangladesh and Uganda pilots. Below is a set of guide questions to assist practitioners in thinking about how their programs will affect the different components of the Index.

Note that these guide questions are not meant to provide concrete activities or programmatic solutions to each issue. Rather, they are designed to guide users in identifying the critical gaps that need to be addressed in existing or new programs. The questions in the left-hand column are initial suggested questions, and those in the right-hand column are suggested follow-up questions or points for further discussion and data collection/analysis where warranted. In some cases, the questions go beyond the data collected for the Index, but may be obtained through other means, such as focus groups or consultations with local gender experts.

GUIDE QUESTIONS FOR WEAI DIAGNOSTICS	
Which region/area is most disempowered in the five domains?	What are the average characteristics of individuals and households in these most disempowered areas? ▪ What types of livelihoods do they participate in? ▪ What crops do they grow?
What is the configuration of their disempowerment?	Which domains/indicators contribute the most to women and men's disempowerment scores?
What type of project or aspects of a project would affect women and men in key domains that contribute most to their disempowerment? How?	What are the cultural, social, religious, or other constraints to women participating in and benefiting from the project? Are there tradeoffs between participation in the program and achievement in other domains? Are there risks to women's dispossession of assets or loss of control over production activities?
What projects or activities exist that are addressing the key domains that contribute to disempowerment?	Do existing activities adequately address the critical domains?
Can existing projects be improved to address the constraints faced by women and men in the key domains?	Are there any complimentary programs or design features that can enhance the status of women and girls and promote greater opportunities for them in the five domains? Possible areas for refinement include: - Addressing women's constraints to participation (e.g., transportation costs, lack of social networks, timing of activities during the day) - Enhancing women's control over income generated from the project (e.g., providing opportunities for individual saving accounts) - Providing opportunities to join and participate in community groups

The Gender Checklist by WEAI Domain

So far we have only done a very general attempt at diagnostics, based on limited information on actual projects and how they are implemented. Ideally, however, the diagnostics are intended to shape the projects themselves, so that the interventions are designed from the onset with the goal of gender equality in mind. To accomplish this, we recommend a more detailed set of guide questions that draws from the

Gender Checklist developed by IFPRI and ICRW for the Bill & Melinda Gates Foundation (2011). The questions in this checklist are designed to guide the mission and their implementing partners at the project development phase to help draw out the underlying mechanisms that may influence the various domains in the WEAI and anticipate how their projects might contribute to improving the Index. The checklist may also be used throughout the project cycle to assess progress and identify new opportunities for interventions. The checklist is presented in Annex 4. 5Readers can also refer to the WEAI intervention guide developed by ACDI/VOCA[27] and USAID's Gender Integration Framework (GIF)[28].

C3. Econometric Analysis

Beyond describing overall patterns in empowerment and diagnostics, the A-WEAI can also be used to investigate the linkages between empowerment in agriculture and other outcomes of interest, such as child and maternal nutrition, food security, agricultural productivity, and poverty. The collection of individual and household level data for these indicators makes it possible to do individual level and household level analyses, provided that the data are collected for the same households. Econometric analysis is especially important in understanding the relationship between women's empowerment and these other outcomes.

Using the A-WEAI survey questions, we can construct the following alternative measures of empowerment, which are constructed in the *calculation* do file:

a. Indicator variables for whether the primary male and primary female in the household is disempowered (binary) – *variable name*: `ch_20p`
b. The disempowerment scores of the primary male and primary female; this is equal to zero if the individual is empowered (continuous) – *variable name*: `a_20p`
c. An indicator variable for whether or not the female in the household has gender parity with her male counterpart (binary) – *variable name*: `ci_above`
d. The empowerment gap between the primary male and primary female in the household, equal to zero if there is gender parity and the 'gap' if not (continuous) – *variable name*: `ci_gap`

These individual-level empowerment measures can then be used as either dependent (left-hand side) variables, in analyses that seek to understand the determinants of empowerment, or as explanatory (right-hand side) variables, in analyses that examine the relationship between the dependent variable of interest (e.g., food security) and empowerment.

Further reading:
A variety of recent papers (Sraboni et al. 2014; Malapit & Quisumbing 2015; Malapit et al. 2015[29]) have explored empowerment across different socio-cultural contexts (Bangladesh, Ghana, and Nepal, respectively) using the WEAI. The papers (1) calculate the WEAI and decompose it into its indicators to diagnose areas with empowerment gaps; (2) use regression analysis to examine what indicators that

[27] The WEAI Intervention Guide is available at: https://www.microlinks.org/library/intervention-guide-womens-empowerment-agriculture-index-weai-practitioners-guide-selecting-a
[28] More information on the Gender Integration Framework can be found here: http://agrilinks.org/events/increasing-feed-future-impacts-through-targeted-gender-integration
[29] The papers can be found at the following links: Sraboni et al. (2014): http://www.sciencedirect.com/science/article/pii/S0305750X14000989. Malapit & Quisumbing (2015): http://www.sciencedirect.com/science/article/pii/S0306919215000202. Malapit et al. (2015): http://www.tandfonline.com/doi/full/10.1080/00220388.2015.1018904

contribute to disempowerment are correlated with a range of food security and nutrition outcomes; and (3) compare the similarities and differences from the results in the three countries to hypothesize how empowerment matters for food security and nutrition. The papers find that patterns of women's disempowerment vary across country and context. In Bangladesh, women's empowerment is positively associated with household-level calorie availability and dietary diversity. In Ghana, women's empowerment is more strongly associated with the quality of infant and young child feeding practices and only weekly associated with child nutrition status. Women's empowerment in credit decisions in Ghana is positively associated with women's dietary diversity, but not with BMI. In Nepal, the negative effect of low production diversity on maternal and child dietary diversity and HAZ is mitigated by women's empowerment. Women's group membership, income control, reduced workload and overall empowerment are positively associated with better maternal nutrition, while income control is positively associated with HAZ, and a lower gender parity gap improves children's diets and HAZ.

References

Ayad, M., A. Piani, B. Barrere, K. Ekouevi, J. Otto. 1994. "Demographic Characteristics of Households." Demographic and Health Surveys Comparative Studies No. 14.

Alcser, K. and J. Clemens. 2011. Chapter X: Interviewer Recruitment, Selection, and Training. In Survey Research Center (Eds.). *Guidelines for Best Practice in Cross-Cultural Surveys*. Ann Arbor, MI: Survey Research Center, Institute for Social Research, University of Michigan. Retrieved January 4, 2013, from http://www.ccsg.isr.umich.edu/

Alkire, S. 2007. "Measuring Agency: Issues and Possibilities." *Indian Journal of Human Development* 1 (1): 169–178.

Alkire, S., and J. Foster. 2011. "Counting and Multidimensional Poverty Measurement." *Journal of Public Economics* 95 (7/8): 476–487.

Alkire, S., Meinzen-Dick, R., Peterman, A., Quisumbing, A. R., Seymour, G. and A. Vaz. 2012. "The Women's Empowerment in Agriculture Index," Poverty, Health & Nutrition Division, International Food Policy Research Institute, IFPRI Discussion Paper No. 01240, December 2012. http://www.ifpri.org/publication/women-s-empowerment-agriculture-index

Alsop, R., M. Bertelsen, and J. Holland. 2006. *Empowerment in Practice from Analysis to Implementation.* Washington, DC: World Bank.

Bardasi, E., and Q. Wodon. 2006. "Measuring Time Poverty and Analyzing Its Determinants: Concepts and Applications to Guinea." In *Gender, Time Use, and Poverty in Sub-Saharan Africa*, edited by M. Blackden and Q. Wodon. World Bank Working Paper No. 73. Washington, DC: World Bank.

Beaman, L., and A. Dillon. 2012. "Do Household Definitions Matter in Survey Design? Results from a Randomized Survey Experiment in Mali." *Journal of Development Economics*, forthcoming.

Bill and Melinda Gates Foundation. 2011. "Gender Checklist". Retrieved March 6, 2013, from http://asia.ifad.org/web/enrap/resources?p_p_id=1_WAR_resource_libraryportlet&_1_WAR_resource_libraryportlet_jspPage=%2F%2Fhtml%2Fresource_library%2Fentry_detail.jsp&_1_WAR_resource_libraryportlet_entryId=237.

Bomuhangi, A., C. Doss, and R. Meinzen-Dick. 2011. *Who Owns the Land? Perspectives from Rural Ugandans and Implications for Land Acquisitions.* IFPRI Discussion Paper 1136. Washington, DC: International Food Policy Research Institute.

Budlender, D. 2003. "The Debate about Household Headship*" Social Dynamics: A Journal of African Studies* 9 (2) (Special issue: Households and Families in Southern Africa): 48–72.

Buvinić, Mayra, and Geeta Rao Gupta. (1997). Female-Headed Households and Female-Maintained Families: Are They Worth Targeting to Reduce Poverty in Developing Countries? *Economic Development and Cultural Change* 45(2): 259–280.

Chirkov, V., R. M. Ryan, and E. L. Deci. 2011. *Human Autonomy in Cross-cultural Context: Perspectives on the Psychology of Agency, Freedom, and Well-being (Cross-Cultural Advancements in Positive Psychology)*. Dordrecht, the Netherlands: Springer.

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

Doss, C., C. D. Deere, A. D. Oduro, H. Swaminathan, J. Y. Suchitra, R. Lahoti, W. Baah-Boateng, L. Boakye-Yiadom, J. Contreras, J. Twyman, Z. Catanzarite, C. Grown, and M. Hillesland. 2011. *The Gender Asset and Wealth Gaps: Evidence from Ecuador, Ghana, and Karnataka, India.* Bangalore: Indian Institute of Management Bangalore.

Glewwe, P. 2000. "Household Roster," In *Designing Household Survey Questionnaires: Lessons from Fifteen Years of the Living Standards Measurement Study, Volume 1, Chapter 6,* edited by M. Grosh and P. Glewwe. Washington, DC: World Bank.

Harvey, A. S., and M. E. Taylor. 2000. "Time Use." In *Designing Household Survey Questionnaires: Lessons from Fifteen Years of the Living Standards Measurement Study*, edited by M. Grosh and P. Glewwe. Washington, DC: World Bank.

Ibrahim, S., and S. Alkire. 2007. "Agency and Empowerment: A Proposal for Internationally Comparable Indicators." *Oxford Development Studies* 35 (4): 379–403.

Klasen, S., and F. Lamanna. 2008. *The Impact of Gender Inequality in Education and Employment on Economic Growth in Developing Countries: Updates and Extensions*. Ibero-America Institute for Economic Research Working Paper No. 175. Goettigen, Germany: University of Goettigen.

Lesotho, Bureau of Statistics. 2003. *Household Budget Survey Report, Lesotho, 2002–2003.* Maseru, Lesotho.

Malapit, H. J., and A. R. Quisumbing. 2015. "What Dimensions of Women's Empowerment in Agriculture Matter for Nutrition in Ghana?" *Food Policy* 52: 54-63.

Malapit, H.J., Kadiyala, S., Quisumbing, A.R.,Cunningham, K. and Tyagi, P. 2015. "Women's Empowerment Mitigates the Negative Effects of Low Production Diversity on Maternal and Child Nutrition in Nepal". *The Journal of Development Studies*, 51(8): 1097-1123.

Malapit, H., Sproule, K., Kovarik, C., Meinzen-Dick, R., Quisumbing, A., Ramzan, F., Hogue, E., and Alkire, S. 2014. "Measuring Progress Toward Empowerment: Women's Empowerment in Agriculture Index: Baseline Report." International Food Policy Research Institute., Washington, D.C.

Meinzen-Dick, R., J. A. Behrman, L. Pandolfelli, A. Peterman, and A. Quisumbing. 2012. "Gender and Social Capital for Agricultural Development." In *Gender in Agriculture and Food Security: Closing the Knowledge Gap,* edited by A. Quisumbing, R. Meinzen-Dick, T. Raney, A. Croppenstedt, J. A. Behrman, and A. Peterman. Dordrecht, the Netherlands; Rome: Springer; Food and Agriculture Organization of the United Nations, forthcoming.

Narayan, D. editor. 2005. *Measuring Empowerment: Cross-disciplinary Perspectives*. Washington, DC: World Bank.

Narayan, D., and P. Petesch. 2007. *Moving Out of Poverty: Cross-disciplinary Perspectives on Mobility*. Washington, DC: World Bank.

Pandolfelli, L., R. Meinzen-Dick, and S. Dohrn. 2008. "Gender and Collective Action: Motivations, Effectiveness, and Impact." *Journal of International Development* 20 (1): 1–11.

Peterman, A., A. Quisumbing, J. Behrman, and E. Nkonya. 2011. "Understanding the Complexities Surrounding Gender Differences in Agricultural Productivity in Nigeria and Uganda." *Journal of Development Studies* 47 (10): 1482–1509.

Quisumbing, A. R., and N. Kumar. 2011. "Does Social Capital Build Women's Assets? The Long-Term Impacts of Group-Based and Individual Dissemination of Agricultural Technology in Bangladesh." *Journal of Development Effectiveness* 3 (2): 220–242.

Ryan, R. M., and E. L. Deci. 2000. "Self-determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-being." *American Psychologist* 55 (1): 68–78.

———. 2011. "Self-determination Theory Perspective on Social, Institutional, Cultural, and Economic Supports for Autonomy and Their Importance for Well-Being." In *Human Autonomy in Cross-Cultural Context: Perspectives on the Psychology of Agency, Freedom, and Well-Being*, edited by V. I. Chirkov, R. M. Ryan, and K. M. Sheldon, 45–64. Dordrecht, the Netherlands: Springer.

Sraboni, E., Malapit, H. J., Quisumbing, A. R., and Akhter U. Ahmed. 2014. "Women's Empowerment in Agriculture: What Role for Food Security in Bangladesh?" *World Development* 61: 11-52.

Udry, C. 1996. "Gender, Agricultural Production, and the Theory of the Household." *Journal of Political Economy* 104 (5): 1010–1046.

USAID/BFS. 2012. "Volume 8: Population-Based Survey Instrument for the Feed the Future Zone of Influence Indicators with Revised WEAI Module, October 2012", Feed the Future M&E Guidance Series.

USAID/Ghana. 2012. *FTF Ghana Population-Based Survey: Baseline Protocol*.

Üstun, T. B., Chatterji, S., Mechbal, A., and C. J. L. Murray. 2005. Chapter X: Quality assurance in surveys: Standards, guidelines, and procedures. In United Nations Statistical Division, United Nations Department of Economic and Social Affairs (Eds.), *Household surveys in developing and transition countries*. New York, NY: United Nations. Retrieved March 26, 2010, from http://unstats.un.org/unsd/HHsurveys/pdf/Household_surveys.pdf

Annexes

Annex 1: A-WEAI survey module

Annex 2a: *Dataprep* do file

Annex 2b: *Calculation* do file

Annex 3: How to construct tables and graphs

Annex 4: Gender Checklist by WEAI Domain

Annex 1: A-WEAI

MODULE G. WOMEN'S EMPOWERMENT IN AGRICULTURE INDEX – A-WEAI Version

Note: the information in module G1 can be captured in different ways; however there must be a way to a) identify the proper individual within the household to be asked the survey, b) link this individual from the module to the household roster, c) code the outcome of the interview, especially if the individual is not available, to distinguish this from missing data, d) record who else in the household was present during the interview. This instrument must be adapted for country context including translations into local languages when appropriate.

Enumerator: *This questionnaire should be administered separately to the primary and secondary respondents identified in the household roster (Section B) of the household level questionnaire. You should complete this coversheet for each individual identified in the "selection section" even if the individual is not available to be interviewed for reporting purposes.*

Please double check to ensure:

- You have completed the roster section of the household questionnaire to identify the correct primary and/or secondary respondent(s);
- You have noted the household ID and individual ID correctly for the person you are about to interview;
- You have gained informed consent for the individual in the household questionnaire;
- You have sought to interview the individual in private or where other members of the household cannot overhear or contribute answers.
- Do not attempt to make responses between the primary male decisionmaker and the primary female decisionmaker the same—it is ok for them to be different.

MODULE G1. INDIVIDUAL IDENTIFICATION

	Code		Code
G1.01. HOUSEHOLD IDENTIFICATION:	☐☐☐☐☐☐	**G1.05.** OUTCOME OF INTERVIEW:	COMPLETED .....1 HOUSEHOLD MEMBER TOO ILL TO RESPOND/COGNITIVELY IMPAIRED ..... 2 RESPONDENT NOT AT HOME/TEMPORARILY UNAVAILABLE...3 RESPONDENT NOT AT HOME/EXTENDED ABSENCE..... .....4 REFUSED..... ....5 COULD NOT LOCATE 6
G1.02. NAME OF RESPONDENT CURRENTLY BEING INTERVIEWED (ID CODE FROM ROSTER IN SECTION B HOUSEHOLD ROSTER): **SURNAME, OTHER NAME** **NAME:**_____	☐☐	**G1.06.** ABILITY TO BE INTERVIEWED ALONE:	ALONE..... 1 WITH ADULT FEMALES PRESENT..... 2 WITH ADULT MALES PRESENT ..... 3 WITH ADULTS MIXED SEX PRESENT..... 4 WITH CHILDREN PRESENT ..... 5 WITH ADULTS MIXED SEX AND CHILDREN PRESENT.....6
G1.03. SEX OF RESPONDENT:	MALE..... 1 FEMALE..... 2		
G1.04 TYPE OF HOUSEHOLD	MALE AND FEMALE ADULT.....1 FEMALE ADULT ONLY.....2		

MODULE G2: ROLE IN HOUSEHOLD DECISION-MAKING AROUND PRODUCTION AND INCOME GENERATION

HOUSEHOLD IDENTIFICATION (IN DATA FILE, EACH SUB-MODULE (G2-G6) MUST BE LINKED WITH HH AND RESPONDENT ID | | | | | | |

RESPONDENT ID CODE | |

"Now I'd like to ask you some questions about your participation in certain types of work activities and on making decisions on various aspects of household life"		Did you yourself participate in [ACTIVITY] in the past 12 months (that is, during the last [one/two] cropping seasons), from [PRESENT MONTH] last year to [PRESENT MONTH] this year?	When decisions are made regarding [ACTIVITY], who is it that normally takes the decision? **CIRCLE ALL APPLICABLE** **IF THE RESPONSE IS SELF ONLY SKIP TO QUESTION G2.05**	How much input did you have in making decisions about [ACTIVITY]? **USE DECISION CODES FOR G2.03/G2.05;** **IF NO DECSION MADE, ENTER 98 AND MOVE TO THE NEXT ACTIVITY**	To what extent do you feel you can make your own personal decisions regarding [ACTIVITY] if you want(ed) to? **CIRCLE ONE**	How much input did you have in decisions on the use of income generated from [ACTIVITY] **USE CODES FOR G2.03/G2.05**
ACTIVITY CODE	**ACTIVITY DESCRIPTION**	**G2.01**	**G2.02**	**G2.03**	**G2.04**	**G2.05**
A	Food crop farming: These are crops that are grown primarily for household food consumption	YES ..... 1 NO ..... 2 → *ACTIVITY B*	SELF……..1 SPOUSE……..2 OTHER HH MEMBER……3 OTHER NON-HH MEMBER……..4 NOT APPLICABLE……98 → *NEXT ACTIVITY*		NOT AT ALL ..... 1 SMALL EXTENT..... 2 MEDIUM EXTENT..... 3 TO A HIGH EXTENT .. 4	
B	Cash crop farming: These are crops that are grown primarily for sale in the market	YES ..... 1 NO ..... 2 → *ACTIVITY C*	SELF……..1 SPOUSE……..2 OTHER HH MEMBER……3 OTHER NON-HH MEMBER……..4 NOT APPLICABLE……98 → *NEXT ACTIVITY*		NOT AT ALL ..... 1 SMALL EXTENT..... 2 MEDIUM EXTENT..... 3 TO A HIGH EXTENT .. 4	
C	Livestock raising	YES ..... 1 NO ..... 2 → *ACTIVITY D*	SELF……..1 SPOUSE……..2 OTHER HH MEMBER……3 OTHER NON-HH MEMBER……..4 NOT APPLICABLE……98 → *NEXT ACTIVITY*		NOT AT ALL ..... 1 SMALL EXTENT..... 2 MEDIUM EXTENT..... 3 TO A HIGH EXTENT .. 4	
D	Non-farm economic activities: This would include things like running a small business, self-employment, buy-and-sell	YES ..... 1 NO ..... 2 → *ACTIVITY E*	SELF……..1 SPOUSE……..2 OTHER HH MEMBER……3 OTHER NON-HH MEMBER……..4 NOT APPLICABLE……98 → *NEXT ACTIVITY*		NOT AT ALL ..... 1 SMALL EXTENT..... 2 MEDIUM EXTENT..... 3 TO A HIGH EXTENT .. 4	

G2.03/G2.05 DECISION CODES:

NO INPUT OR INPUT IN FEW DECISIONS……..01
INPUT INTO SOME DECISIONS……02
INPUT INTO MOST OR ALL DECISIONS……03
NO DECISION MADE ……98

		Did you yourself participate in [ACTIVITY] in the past 12 months (that is, during the last [one/two] cropping seasons), from [PRESENT MONTH] last year to [PRESENT MONTH] this year?	When decisions are made regarding [ACTIVITY], who is it that normally takes the decision? **CIRCLE ALL APPLICABLE; IF THE RESPONSE IS SELF ONLY SKIP TO QUESTION G2.05**	How much input did you have in making decisions about [ACTIVITY]? **USE DECISION CODES FOR G2.03/G2.05** **IF NO DECSION MADE, ENTER 98**	To what extent do you feel you can make your own personal decisions regarding [ACTIVITY] if you want(ed) to? **CIRCLE ONE**	How much input did you have in decisions on the use of income generated from [ACTIVITY] **USE CODES FOR G2.03/G2.05**
ACTIVITY CODE	**ACTIVITY DESCRIPTION**	**G2.01**	**G2.02**	**G2.03**	**G2.04**	**G2.05**
E	Wage and salary employment: This could be work that is paid for in cash or in-kind, including both agriculture and other wage work	YES .....1 NO .....2 → *ACTIVITY F*	SELF……..1 SPOUSE……..…2 OTHER HH MEMBER……3 OTHER NON-HH MEMBER……..4 NOT APPLICABLE……98 → *NEXT ACTIVITY*		NOT AT ALL .....1 SMALL EXTENT.....2 MEDIUM EXTENT .....3 TO A HIGH EXTENT ...4	
F	Fishing or fishpond culture	YES .....1 NO .....2 → *ACTIVITY G*	SELF……..1 SPOUSE……..…2 OTHER HH MEMBER……3 OTHER NON-HH MEMBER……..4 NOT APPLICABLE……98 → *NEXT ACTIVITY*		NOT AT ALL .....1 SMALL EXTENT.....2 MEDIUM EXTENT .....3 TO A HIGH EXTENT ...4	
G	Major household expenditures (such as a bicycles, land, boda boda)		SELF……..1 SPOUSE……..…2 OTHER HH MEMBER……3 OTHER NON-HH MEMBER……..4 NOT APPLICABLE……98 → *NEXT ACTIVITY*		NOT AT ALL .....1 SMALL EXTENT.....2 MEDIUM EXTENT .....3 TO A HIGH EXTENT ...4	
H	Minor household expenditures (such as food for daily consumption or other household needs)		SELF……..1 SPOUSE……..…2 OTHER HH MEMBER……3 OTHER NON-HH MEMBER……..4 NOT APPLICABLE……98 → *MODULE G3(A)*		NOT AT ALL .....1 SMALL EXTENT.....2 MEDIUM EXTENT .....3 TO A HIGH EXTENT ...4	

G2.03/G2.05 DECISION CODES:
NO INPUT OR INPUT IN FEW DECISIONS……..01
INPUT INTO SOME DECISIONS……..02
INPUT INTO MOST OR ALL DECISIONS……..03
NO DECISION MADE ……..98

MODULE G3(A): ACCESS TO PRODUCTIVE CAPITAL

"Now I'd like to ask you about your household's access to and ownership of a number of items that could be used to generate income."		Does anyone in your household currently have any [ITEM]?	Do you own any of the item? **CIRCLE ALL APPLICABLE**
PRODUCTIVE CAPITAL[30]		**G3.01**	**G3.02**
A	Agricultural land (pieces/plots)	YES.....1 NO.....2 → *ITEM B*	YES, SOLELY.....1 YES, JOINTLY.....2 NO.....3
B	Large livestock (oxen, cattle)	YES.....1 NO.....2 → *ITEM C*	YES, SOLELY.....1 YES, JOINTLY.....2 NO.....3
C	Small livestock (goats, pigs, sheep)	YES.....1 NO.....2 → *ITEM D*	YES, SOLELY.....1 YES, JOINTLY.....2 NO.....3
D	Chickens, Ducks, Turkeys, Pigeons	YES.....1 NO.....2 → *ITEM E*	YES, SOLELY.....1 YES, JOINTLY.....2 NO.....3
E	Fish pond or fishing equipment	YES.....1 NO.....2 → *ITEM F*	YES, SOLELY.....1 YES, JOINTLY.....2 NO.....3
F	Farm equipment (non-mechanized: hand tools, animal-drawn plough)	YES.....1 NO.....2 → *ITEM G*	YES, SOLELY.....1 YES, JOINTLY.....2 NO.....3
G	Farm equipment (mechanized: tractor-plough, power tiller, treadle pump)	YES.....1 NO.....2 → *ITEM H*	YES, SOLELY.....1 YES, JOINTLY.....2 NO.....3
H	Nonfarm business equipment (solar panels used for recharging, sewing machine, brewing equipment, fryers)	YES.....1 NO.....2 → *ITEM I*	YES, SOLELY.....1 YES, JOINTLY.....2 NO.....3
I	House or other structures	YES.....1 NO.....2 → *ITEM J*	YES, SOLELY.....1 YES, JOINTLY.....2 NO.....3

[30] Examples given within productive capital categories are not extensive and should be adapted to local context by either adding to or replacing suggestions in parentheses.

"Now I'd like to ask you about your household's access to and ownership of a number of items that could be used to generate income."		Does anyone in your household currently have any [ITEM]?	Do you own any of the item? **CIRCLE ALL APPLICABLE**
PRODUCTIVE CAPITAL[30]		**G3.01**	**G3.02**
J	Large consumer durables (refrigerator, TV, sofa)	YES.....1 NO.....2 → *ITEM K*	YES, SOLELY.....1 YES, JOINTLY.....2 NO.....3
K	Small consumer durables (radio, cookware)	YES.....1 NO.....2 → *ITEM L*	YES, SOLELY.....1 YES, JOINTLY.....2 NO.....3
L	Cell phone	YES.....1 NO.....2 → *ITEM M*	YES, SOLELY.....1 YES, JOINTLY.....2 NO.....3
M	Other land not used for agricultural purposes (pieces/plots, residential or commercial land)	YES.....1 NO.....2 → *ITEM N*	YES, SOLELY.....1 YES, JOINTLY.....2 NO.....3
N	Means of transportation (bicycle, motorcycle, car)	YES.....1 NO.....2 → *MODULE G3(B)*	YES, SOLELY.....1 YES, JOINTLY.....2 NO.....3

MODULE G3(B): ACCESS TO CREDIT

"Next I'd like to ask about your household's experience with borrowing money or other items in the past 12 months."		Would you or anyone in your household be able to take a loan or borrow cash/in-kind from [SOURCE] if you wanted to? *	Has anyone in your household taken any loans or borrowed cash/in-kind from [SOURCE] in the past 12 months? **CIRCLE ONE**	Who made the decision to borrow from [SOURCE] most of the time? **CIRCLE ALL APPLICABLE**	Who makes the decision about what to do with the money/ item borrowed from [SOURCE] most of the time? **CIRCLE ALL APPLICABLE**
LENDING SOURCE NAMES[31]		**G3.03**	**G3.04**	**G3.05**	**G3.06**
A	Non-governmental organization (NGO)	YES.....1 NO.....2 → *NEXT SOURCE* MAYBE.....3	YES, CASH.....1 YES, IN-KIND.....2 YES, CASH AND IN-KIND.....3 NO.....4 → *NEXT SOURCE* DON'T KNOW.....97	SELF.....1 SPOUSE.....2 OTHER HH MEMBER.....3 OTHER NON-HH MEMBER.....4 NOT APPLICABLE.....98	SELF.....1 SPOUSE.....2 OTHER HH MEMBER.....3 OTHER NON-HH MEMBER.....4 NOT APPLICABLE.....98
B	Formal lender (bank/financial institution)	YES.....1 NO.....2 → *NEXT SOURCE* MAYBE.....3	YES, CASH.....1 YES, IN-KIND.....2 YES, CASH AND IN-KIND.....3 NO.....4 → *NEXT SOURCE* DON'T KNOW.....97	SELF.....1 SPOUSE.....2 OTHER HH MEMBER.....3 OTHER NON-HH MEMBER.....4 NOT APPLICABLE.....98	SELF.....1 SPOUSE.....2 OTHER HH MEMBER.....3 OTHER NON-HH MEMBER.....4 NOT APPLICABLE.....98
C	Informal lender	YES.....1 NO.....2 → *NEXT SOURCE* MAYBE.....3	YES, CASH.....1 YES, IN-KIND.....2 YES, CASH AND IN-KIND.....3 NO.....4 → *NEXT SOURCE* DON'T KNOW.....97	SELF.....1 SPOUSE.....2 OTHER HH MEMBER.....3 OTHER NON-HH MEMBER.....4 NOT APPLICABLE.....98	SELF.....1 SPOUSE.....2 OTHER HH MEMBER.....3 OTHER NON-HH MEMBER.....4 NOT APPLICABLE.....98
D	Friends or relatives	YES.....1 NO.....2 → *NEXT SOURCE* MAYBE.....3	YES, CASH.....1 YES, IN-KIND.....2 YES, CASH AND IN-KIND.....3 NO.....4 → *NEXT SOURCE* DON'T KNOW.....97	SELF.....1 SPOUSE.....2 OTHER HH MEMBER.....3 OTHER NON-HH MEMBER.....4 NOT APPLICABLE.....98	SELF.....1 SPOUSE.....2 OTHER HH MEMBER.....3 OTHER NON-HH MEMBER.....4 NOT APPLICABLE.....98
E	Group based micro-finance or lending including VSLAs / SACCOs	YES.....1 NO.....2 → *NEXT SOURCE* MAYBE.....3	YES, CASH.....1 YES, IN-KIND.....2 YES, CASH AND IN-KIND.....3 NO.....4 → *NEXT SOURCE* DON'T KNOW.....97	SELF.....1 SPOUSE.....2 OTHER HH MEMBER.....3 OTHER NON-HH MEMBER.....4 NOT APPLICABLE.....98	SELF.....1 SPOUSE.....2 OTHER HH MEMBER.....3 OTHER NON-HH MEMBER.....4 NOT APPLICABLE.....98
F	Informal credit/savings groups such as merry-go-rounds, tontines, funeral societies, etc.	YES.....1 NO.....2 → *NEXT SOURCE* MAYBE.....3	YES, CASH.....1 YES, IN-KIND.....2 YES, CASH AND IN-KIND.....3 NO.....4 → *MODULE G4* DON'T KNOW.....97	SELF.....1 SPOUSE.....2 OTHER HH MEMBER.....3 OTHER NON-HH MEMBER.....4 NOT APPLICABLE.....98	SELF.....1 SPOUSE.....2 OTHER HH MEMBER.....3 OTHER NON-HH MEMBER.....4 NOT APPLICABLE.....98

***** This question is not included in the calculation of the index, but should be collected to be able to identify whether there is a credit constraint, for programming purposes

[31] To adapt to country context, locally relevant examples may be given within lending sources categories.

MODULE G4: TIME ALLOCATION

G4.01: PLEASE RECORD A LOG OF THE ACTIVITIES FOR THE INDIVIDUAL IN THE LAST COMPLETE 24 HOURS (STARTING YESTERDAY MORNING AT 4 AM, FINISHING 3:59 AM OF THE CURRENT DAY). THE TIME INTERVALS ARE MARKED IN 15 MIN INTERVALS AND ONE ACTIVITY CAN BE MARKED FOR EACH TIME PERIOD BY DRAWING A LINE THROUGH THAT ACTIVITY.

"Now I'd like to ask you about how you spent your time during the past 24 hours. We'll begin from yesterday morning, and continue through to this morning. This will be a detailed accounting. I'm interested in everything you do (i.e. resting, eating, personal care, work inside and outside the home, caring for children, cooking, shopping, socializing, etc.), even if it doesn't take you much time."

		Night								Morning																Day																							
	Activity	4				5				6				7				8				9				10				11				12				13				14				15			
A	Sleeping and resting																																																
B	Eating and drinking																																																
C	Personal care																																																
D	School (also homework)																																																
E	Work as employed																																																
F	Own business work																																																
G	Farming/livestock/fishing																																																
J	Shopping/getting service (incl health services)																																																
K	Weaving, sewing, textile care																																																
L	Cooking																																																
M	Domestic work (incl fetching wood and water)																																																
N	Care for children/adults/elderly																																																
P	Travelling and communiting																																																
Q	Watching TV/listening to radio/reading																																																
T	Exercising																																																
U	Social activities and hobbies																																																
W	Religious activities																																																
X	Other, specify…																																																

MODULE G4 continued: TIME ALLOCATION

								Evening						Night																																				
	Activity	16				17				18				19				20				21				22				23				24				1				2				3			
A	Sleeping and resting																																																
B	Eating and drinking																																																
C	Personal care																																																
D	School (also homework)																																																
E	Work as employed																																																
F	Own business work																																																
G	Farming/livestock/fishing																																																
J	Shopping/getting service (incl health services)																																																
K	Weaving, sewing, textile care																																																
L	Cooking																																																
M	Domestic work (incl fetching wood and water)																																																
N	Care for children/adults/elderly																																																
P	Travelling and commuting																																																
Q	Watching TV/listening to radio/reading																																																
T	Exercising																																																
U	Social activities and hobbies																																																
W	Religious activities																																																
X	Other, specify																																																

QNO.	QUESTION	RESPONSE
G4.02	In the last 24 hours did you work (at home or outside of the home) more than usual, about the same as usual, or less than usual?	MORE THAN USUAL……………………………………..……1 ABOUT THE SAME AS USUAL……………………………….2 LESS THAN USUAL……………………………………………3

MODULE G5: GROUP MEMBERSHIP

"Now I'm going to ask you about groups in the community. These can be either formal or informal and customary groups."		Is there a [GROUP] in your community?	Are you an active member of this [GROUP]?
	GROUP CATEGORIES	**G5.01**	**G5.02**
A	Agricultural / livestock/ fisheries producer's group (including marketing groups)	YES.....1 NO .....2 → *GROUP B* DON'T KNOW.....97 → *GROUP B*	YES.....1 NO 2
B	Water users' group	YES.....1 NO .....2 → *GROUP C* DON'T KNOW.....97 → *GROUP C*	YES.....1 NO 2
C	Forest users' group	YES.....1 NO .....2 → *GROUP D* DON'T KNOW.....97 → *GROUP D*	YES.....1 NO 2
D	Credit or microfinance group (including SACCOs/merry-go-rounds/ VSLAs)	YES.....1 NO .....2 → *GROUP E* DON'T KNOW.....97 → *GROUP E*	YES.....1 NO 2
E	Mutual help or insurance group (including burial societies)	YES.....1 NO .....2 → *GROUP F* DON'T KNOW.....97 → *GROUP F*	YES.....1 NO 2
F	Trade and business association group	YES.....1 NO .....2 → *GROUP G* DON'T KNOW.....97 → *GROUP G*	YES.....1 NO 2
G	Civic groups (improving community) or charitable group (helping others)	YES.....1 NO .....2 → *GROUP H* DON'T KNOW.....97 → *GROUP H*	YES.....1 NO 2
H	Religious group	YES.....1 NO .....2 → *GROUP J* DON'T KNOW.....97 → *GROUP J*	YES.....1 NO 2
I	Other [women's/men's] group (only if it does not fit into one of the other categories)	YES.....1 NO .....2 → *GROUP K* DON'T KNOW.....97 → *GROUP K*	YES.....1 NO 2
J	Other (SPECIFY)_____	YES.....1 NO .....2 DON'T KNOW.....97	YES.....1 NO 2

END OF QUESTIONAIRE. FILL OUT COVER PAGE OUTCOME G1.05.

Annex 2a: *Dataprep* do file

A-WEAI-dataprep_stars.do - Printed on 10/8/2015 2:39:47 PM

```
1   ** DO FILE HAS BEEN PREPARED BY AMA VAZ AND SABINA ALKIRE AT WWW.OPHI.ORG.UK AND ADAPTED BY HAZEL MALAPIT AND
    KATIE SPROULE AT IFPRI
2   ** FOR THE CALCULATION OF THE WOMEN'S EMPOWERMENT IN AGRICULTURE INDEX OF USAID.
3   ** THESE ARE TWO FILES YOU NEED TO MAKE THE INDEX: THIS ONE (DATAPREP) AND A-WEAI.
4   ** Do FILES CALLED WEAI-dataprep_Pilot_2.0 (DATAPREP) and Calculating-the-A-WEAI_Pilot_2.0 (A-WEAI)
5   ** DO FILES AND DATA AVAILABLE AT:
    https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/HUSKJB
6   ** AND https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/OR5WTO
7   ** LAST UPDATE: HAZEL MALAPIT / MARCH 2015
8
9   cd "D:\Users\ksproule\Dropbox\WEAI_Pilot\Public Release" // IMPORTANT: Change directory
10  capture log close
11  clear all
12  set more off
13  log using "logs\dataprep_Pilot_2.0_24hr.txt", text replace
14
15
16  ********************************
17  ***  PREPARATION OF DATASET ***
18  ********************************
19
20  use "clean data\ind_allcountries_merged_2.0_clean.dta", clear
21  renvars, subst(_p2) // harmonize varnames across pilot types
22
23  ***********************************************************
24  *** Production and Income Domains: Modules G2 and G4 ***
25  ***********************************************************
26
27  qui recode g2_0* (98=.) // code as missing: 98=decision not made/not applicable
28
29  ***g2.01***
30
31  foreach x in a b c d e f {
32      gen partact_`x'=(g2_01_`x'==1)
33      replace partact_`x'=. if g2_01_`x'==.
34      }
35  egen partact=rowtotal(partact_*), missing
36  label var partact "Number of activities in which individual participates"
37  egen partactagr=rowtotal(partact_a partact_b partact_c partact_f), missing
38  label var partactagr "Number of agricultural activities in which individual participates"
39
40  ***g2.03, g2.05***
41
42  *Adequate if respondent has at least some decisionmaking power
43  foreach x in a b c d e f {
44      gen skip_`x'=((g2_02a_`x'==1) | (g2_02b_`x'==1) | (g2_02c_`x'==1)) | /*up to 3 decisionmakers mentioned */
45      gen inputdec_`x'=(g2_03_`x'>2) if partact_`x'==1
46      replace inputdec_`x'=1 if skip_`x'==1 & partact_`x'==1
47      replace inputdec_`x'=. if g2_03_`x'==. & partact_`x'==0
```

Page 1

```
        replace inputdec_`x'=. if g2_02a_`x'==. & g2_02b_`x'==. & g2_02c_`x'==. & g2_03_`x'==. & partact_`x'==.
        }
drop skip*

label var inputdec_a "Has some input in decisions regarding food crop farming"
label var inputdec_b "Has some input in decisions regarding cash crop farming"
label var inputdec_c "Has some input in decisions regarding livestock raising"
label var inputdec_d "Has some input in decisions regarding non-farm activity"
label var inputdec_e "Has some input in decisions regarding wage & salary employment"
label var inputdec_f "Has some input in decisions regarding fishing"

foreach x in a b c d e f {
    gen incomedec_`x'=(g2_05_`x'>3) if partact_`x'==1
    replace incomedec_`x'=. if g2_05_`x'==. & partact_`x'==1
    }

label var incomedec_a "Has some input in decisions regarding income from food crop farming"
label var incomedec_b "Has some input in decisions regarding income from cash crop farming"
label var incomedec_c "Has some input in decisions regarding income from livestock raising"
label var incomedec_d "Has some input in decisions regarding income from non-farm activity"
label var incomedec_e "Has some input in decisions regarding income from wage & salary employment"
label var incomedec_f "Has some input in decisions regarding income from fishing"

**g2.02, g2.04**

foreach x in a b c d e f g h {
    gen skip_`x'=(g2_02a_`x'==1) | (g2_02b_`x'==1) | (g2_02c_`x'==1) /*up to 3 decisionmakers mentioned */
    *Adequate if feel can make decisions to a medium extent (g2_04)
    *or actually makes decision (g2_02)
    gen feelmakedec_`x'=(g2_04_`x'>2)
    replace feelmakedec_`x'=1 if skip_`x'==1
    replace feelmakedec_`x'=. if skip_`x'!=1 & g2_04_`x'==.
    replace feelmakedec_`x'=. if g2_02a_`x'==. & g2_02b_`x'==. & g2_02c_`x'==. & g2_04_`x'==.
    }
drop skip*

label var feelmakedec_a "Feels can make decisions regarding food crop farming"
label var feelmakedec_b "Feels can make decisions regarding cash crop farming"
label var feelmakedec_c "Feels can make decisions regarding livestock raising"
label var feelmakedec_d "Feels can make decisions regarding nonfarm economic activities"
label var feelmakedec_e "Feels can make decisions regarding own wage or salary employment"
label var feelmakedec_f "Feels can make decisions regarding fishing"
label var feelmakedec_g "Feels can make decisions regarding major household expenditures"
label var feelmakedec_h "Feels can make decisions regarding minor household expenditures"


*AGGREGATION
*INPUT IN PRODUCTIVE DECISIONS: adequate if there is AT LEAST TWO domains in which individual has some input in
decisions,
```

```
 96   *or makes the decision, or feels he/she could make it if he/she wanted
 97   egen feelinputdecagr_sum=rowtotal(feelmakedec_a feelmakedec_b feelmakedec_c feelmakedec_f inputdec_a inputdec_b
      inputdec_c inputdec_f), missing
 98   gen feelinputdecagr=(feelinputdecagr_sum>1)
 99   replace feelinputdecagr=. if feelinputdecagr_sum==.
100   label var feelinputdecagr_sum "No. agr. domains individual has some input in decisions or feels can make
      decisions"
101   label var feelinputdecagr "Has some input in decisions or feels can make decisions in AT LEAST TWO domains"
102
103   *CONTROL OVER USE OF INCOME: adequate if there is AT LEAST ONE domain in which individual has some input in
      income decisions or feels she/he can make decisions regarding wage, employment and minor hh
104   *expenditures; as long the only domain in which the individual feels that he/she makes decisions IS NOT minor
      household expenditures
105   egen incomedec_sum=rowtotal(incomedec_a incomedec_b incomedec_c incomedec_d incomedec_e incomedec_f
      feelmakedec_d feelmakedec_e feelmakedec_g feelmakedec_h), missing
106   gen incdec_count=(incomedec_sum>0)
107   replace incdec_count=0 if incdec_count==1 & incomedec_sum==1 & feelmakedec_h==1
108   replace incdec_count=. if incomedec_sum==.
109   label var incomedec_sum "No. domains individual has some input in income decisions or feels can make decisions"
110   label var incdec_count "Has some input in income dec or feels can make dec AND not only minor hh expend"
111
112   *drop parsach_* inputdec_l-incomedec_h feelmakedec_a-feelmakedec_h
113
114   **g4A, g4B, g4C***
115
116   qui recode g4* (98=.)
117
118   label define motivationind_lab 1 "Never true" 2 "Not very true" 3 "Somewhat true" 4 "Always true"
119
120   foreach x in a1 a2 a3 a4 {
121       foreach v in q4a q4b q4c {
122           recode `v'_`x' 2 (98=.) (2=3) (1=4) /*recodes somewhat true, always true */
123           gen v_`v'_`x'=`v'_`x'_3 /*pick up response from q3, codes already match: never true, not very true */
124           replace v_`v'_`x'=`v'_`x'_2 if `v'_`x'_1==1
125           label values v_`v'_`x' motivationind_lab
126           tab v_`v'_`x' `v'_`x'_3 if `v'_`x'_1==2, miss
127           tab v_`v'_`x' `v'_`x'_2 if `v'_`x'_1==1, miss
128           tab v_`v'_`x', miss
129           }
130       }
131
132
133   foreach x in a b c {
134       gen rai_`x' = -2*v_q4`x'_a2 - v_q4`x'_a3 + 3*v_q4`x'_a4
135       gen raiabove_`x'=( rai_`x'>1)
136       replace raiabove_`x'=. if rai_`x'==.
137       }
138
139
```

```
label var raiabove_a "RAI above 1 regarding types of crops to grow for consumption and sale at market"
label var raiabove_b "RAI above 1 regarding taking crops to the market"
label var raiabove_c "RAI above 1 regarding livestock raising"


*AGGREGATION

** AUTONOMY IN PRODUCTION: adequate if RAI>1 in AT LEAST ONE domain/activity linked to production
*Note:  autonomy in production indicator not required for A-WEAI; unstar next 3 lines if you wish to calculate it
*egen raiprod_any=rowmax(raiabove_a raiabove_b raiabove_c)
*replace raiprod_any=1 if raiprod_any==. & partactagr==0
*label var raiprod_any "Has RAI above one in at least on production activity"



*********************************
*** Resources Domain: Module G3 ***
*********************************

qui recode g3a_0* g3b_0* (98=.)

***g3.01***

foreach x in a b c d e f g h i j k l m n i
    gen own_`x'=(g3a_01_`x'==1)
    replace own_`x'=. if g3a_01_`x'==.
    }
label var own_a "Household owns agricultural land"
label var own_b "Household owns large livestock"
label var own_c "Household owns small livestock"
label var own_d "Household owns chickens, ducks, turkeys, pigeons"
label var own_e "Household owns agricultural fish pond or fishing equipment"
label var own_f "Household owns farm equipment (non-mechanized)"
label var own_g "Household owns farm equipment (mechanized)"
label var own_h "Household owns non-farm business equipment"
label var own_i "Household owns house (or other structures)"
label var own_j "Household owns large consumer durables (fridge, TV)"
label var own_k "Household owns small consumer durables (radio, crockware)"
label var own_l "Household owns cell phone"
label var own_m "Household owns non agricultural land"
label var own_n "Household owns means of transportation"


*Aggregation
*Sum types of assets hh owns
egen own_sum=rowtotal(own_a-own_n), missing
egen ownagr_sum=rowtotal(own_a-own_g), missing

label var own_sum "No. of types of assets household owns"
```

```
109   label var cwnagr_sum "No. of types of agricultural assets household owns"
110
111
112   ***q3.02 - q3.04***
113   foreach x in a b c d e f g h i j k l m n{
114       *Self or joint own ANY
115       gen selfjointown_`x'=(q3a_02_`x'<3) if own_`x'==1
116       replace selfjointown_`x'=. if q3a_02_`x'==. & own_`x'==1
117
118       *Self or joint decide to sell, give away, mortgage or rent
119       gen selfjointsell_`x'=(q3a_03a_`x'==1 | q3a_03b_`x'==1 | q3a_03c_`x'==1) if own_`x'==1
120       replace selfjointsell_`x'=. if q3a_03a_`x'==. & q3a_03b_`x'==. & q3a_03c_`x'==. & own_`x'==1
121
122       *Self or joint buy
123       gen selfjointbuy_`x'=(q3a_04a_`x'==1 | q3a_04b_`x'==1 | q3a_04c_`x'==1) if own_`x'==1
124       replace selfjointbuy_`x'=. if q3a_04a_`x'==. & q3a_04b_`x'==. & q3a_04c_`x'==.  & own_`x'==1
125
126
127       *Rights
128       **Makes AT LEAST ONE type of decision
129       egen selfjointrightany_`x'=rowmax(selfjointsell_`x' selfjointbuy_`x')
130       replace selfjointrightany_`x'=. if own_`x'==.
131       }
132
133   **Labels
134   foreach x in own{
135       label var selfjoint`x'_a "Jointly `x'e any of agricultural land"
136       label var selfjoint`x'_b "Jointly `x'e any of large livestock"
137       label var selfjoint`x'_c "Jointly `x'e any of small livestock"
138       label var selfjoint`x'_d "Jointly `x'e any of chickens, turkeys, ducks"
139       label var selfjoint`x'_e "Jointly `x'e any of fish pond or fishing equipment"
140       label var selfjoint`x'_f "Jointly `x'e any of farm equipment (non-mechanized)"
141       label var selfjoint`x'_g "Jointly `x'e any of farm equipment (mechanized)"
142       label var selfjoint`x'_h "Jointly `x'e any of non-farm business equipment"
143       label var selfjoint`x'_i "Jointly `x'e any of the house (or other structures)"
144       label var selfjoint`x'_j "Jointly `x'e any of large consumer durables"
145       label var selfjoint`x'_k "Jointly `x'e any of small consumer durables"
146       label var selfjoint`x'_l "Jointly `x'e any of cell phone"
147       label var selfjoint`x'_m "Jointly `x'e any of non-agricultural land"
148       label var selfjoint`x'_n "Jointly `x'e any of means of transportation "
149   }
150   foreach x in sell buy{
151       label var selfjoint`x'_a "Jointly can `x' agricultural land"
152       label var selfjoint`x'_b "Jointly can `x' large livestock"
153       label var selfjoint`x'_c "Jointly can `x' small livestock"
154       label var selfjoint`x'_d "Jointly can `x' chickens, turkeys, ducks"
155       label var selfjoint`x'_e "Jointly can `x' fish pond or fishing equipment"
156       label var selfjoint`x'_f "Jointly can `x' farm equipment (non-mechanized)"
157       label var selfjoint`x'_g "Jointly can `x' farm equipment (mechanized)"
```

```
        label var selfjoint`x'_h "Jointly can `x' non-farm business equipment"
        label var selfjoint`x'_i "Jointly can `x' the house (or other structures)"
        label var selfjoint`x'_j "Jointly can `x' large consumer durables"
        label var selfjoint`x'_k "Jointly can `x' small consumer durables"
        label var selfjoint`x'_l "Jointly can `x' cell phone"
        label var selfjoint`x'_m "Jointly can `x' non-agricultural land"
        label var selfjoint`x'_n "Jointly can `x' means of transportation "
    }

    label var selfjointrightany_a "Jointly has AT LEAST ONE right over agricultural land"
    label var selfjointrightany_b "Jointly has AT LEAST ONE right over large livestock"
    label var selfjointrightany_c "Jointly has AT LEAST ONE right over small livestock"
    label var selfjointrightany_d "Jointly has AT LEAST ONE right over chickens, turkeys, ducks"
    label var selfjointrightany_e "Jointly has AT LEAST ONE right over fishing equipment"
    label var selfjointrightany_f "Jointly has AT LEAST ONE right over farm equipment (non-mechanized)"
    label var selfjointrightany_g "Jointly has AT LEAST ONE right over farm equipment (mechanized)"
    label var selfjointrightany_h "Jointly has AT LEAST ONE right over non-farm business equipment"
    label var selfjointrightany_i "Jointly has AT LEAST ONE right over house (or other structures)"
    label var selfjointrightany_j "Jointly has AT LEAST ONE right over large consumer durables"
    label var selfjointrightany_k "Jointly has AT LEAST ONE right over small consumer durables"
    label var selfjointrightany_l "Jointly has AT LEAST ONE right over cell phone"
    label var selfjointrightany_m "Jointly has AT LEAST ONE right over non agricultural land"
    label var selfjointrightany_n "Jointly as AT LEAST ONE right over means of transportation"

    *AGGREGATION
    *OWNERSHIP: Adequate if selfjoint owns AT LEAST two small assets (chicken,  farming equipment non-mechanized,
    and small consumer durables)  OR one large asset (all the other).
        * This is the same to say: empowered if owns AT LEAST one asset and that asset is not a small asset.
        * Inadequate if lives in a household that owns no assets
    foreach x in own {
        egen selfjoint`x'sum=rowtotal(selfjoint`x'_*), missing
        egen j`x'count=rownonmiss(selfjoint`x'_*)
        replace j`x'count=0 if j`x'count==1 & selfjoint`x'sum==1 &(selfjointown_d==1|selfjointown_f==1|
    selfjointown_k==1)
        replace j`x'count=0 if own_sum==0

        rename j`x'count j`x'_count
        rename selfjoint`x'sum selfjoint`x'_sum

        }

    *PURCHASE, SALE OR TRANSFER OF ASSETS: Adequate if selfjoint has AT LEAST ONE type of right
    *over AT LEAST ONE type of asset as long as it is not chicken nor farming equipment non mechanized.
    *Inadequate if living in households with no assets are automatically adequate
    *Note:  purchase, sale of transfer of assets not required for A-WEAI; however, uncter code lines if you wish to
    calculate it.

    *foreach x in rightany {
        *Agricultural assets
```

```
204         *egen selfjoint`x'agrsum=rowtotal(selfjoint`x'_a selfjoint`x'_b selfjoint`x'_c selfjoint`x'_d
    selfjoint`x'_e selfjoint`x'_f selfjoint`x'_g), missing
205         *egen selfjoint`x'agrcount=rowmax(selfjoint`x'_a selfjoint`x'_b selfjoint`x'_c selfjoint`x'_d
    selfjoint`x'_e selfjoint`x'_f selfjoint`x'_g)
206         *replace selfjoint`x'agrcount=0 if selfjoint`x'agrcount==1 & selfjoint`x'agrsum==1 &
    (selfjoint`x'_d==1|selfjoint`x'_f==1)
207         *replace selfjoint`x'agrcount=0 if ownagr_sum==0
208
209         *rename selfjoint`x'agrsum selfjoint`x'agr_sum
210         *rename selfjoint`x'agrcount j`x'agr
211
212         *)
213
214     *label var jrightanyagr "Jointly has AT LEAST ONE right in AT LEAST ONE agricultural asset the hh owns"
215
216
217     ***g3.06***
218     foreach x in a b c d e f {
219         gen creditaccess_`x'=(g3b_06_`x'>=1 & g3b_06_`x'<=5)
220         replace creditaccess_`x'=. if g3b_06_`x'==. | g3b_06_`x'==97
221         gen creditconstrained_`x'=(g3b_05_`x'==2)
222         replace creditconstrained_`x'=. if g3b_05_`x'==.
223         label var creditconstrained_`x' "Unable to borrow from source `x'"
224         }
225     egen creditaccess=rowtotal(creditaccess_*), missing
226     label var creditaccess "No. of credit sources that the hh uses"
227     egen creditconstrained=rowtotal(creditconstrained_*), missing
228     label var creditconstrained "No. of credit sources that the hh cannot borrow from"
229
230
231     ***g3.07, g3.08***
232     foreach y in a b c d e f {
233         *Self or joint decide to borrow
234         gen creditselfjointborrow_`y'=(g3b_07a_`y'==1 | g3b_07b_`y'==1 | g3b_07c_`y'==1) if creditaccess_`y'==1
235         replace creditselfjointborrow_`y'=. if g3b_07a_`y'==. & g3b_07b_`y'==. & g3b_07c_`y'==. & creditaccess_`y'==1
236
237         *Self or joint decide how to use
238         gen creditselfjointuse_`y'=(g3b_08a_`y'==1 | g3b_08b_`y'==1 | g3b_08c_`y'==1) if creditaccess_`y'==1
239         replace creditselfjointuse_`y'=. if g3b_08a_`y'==. & g3b_08b_`y'==. & g3b_08c_`y'==. & creditaccess_`y'==1
240
241         *Self or joint makes AT LEAST ONE decision regarding credit
242         egen creditselfjointanydec `y'=rowmax(creditselfjointborrow `y' creditselfjointuse `y')
243
244         }
245
246     foreach x in borrow use {
247         label var creditselfjoint`x'_a "Jointly made decision about `x' credit from NGO"
248         label var creditselfjoint`x'_b " Jointly made decision about `x' credit from formal lender"
249         label var creditselfjoint`x'_c " Jointly made decision about `x' credit from informal lender"
```

```
330         label var creditselfjoint`x'_d " Jointly made decision about `x' credit from friends & relatives"
331         label var creditselfjoint`x'_e " Jointly made decision about `x' credit from group-based MFI"
332         label var creditselfjoint`x'_f " Jointly made decision about `x' credit from informal group-based"
333         }
334
335     label var creditselfjointanydec_a "Jointly made AT LEAST ONE decision regarding credit from NGO"
336     label var creditselfjointanydec_b "Jointly made AT LEAST ONE decision regarding credit from formal lender"
337     label var creditselfjointanydec_c "Jointly made AT LEAST ONE decision regarding credit from informal lender"
338     label var creditselfjointanydec_d "Jointly made AT LEAST ONE decision regarding credit from friends & relatives"
339     label var creditselfjointanydec_e "Jointly made AT LEAST ONE decision regarding credit from group-based MFI"
340     label var creditselfjointanydec_f "Jointly made AT LEAST ONE decision regarding credit from informal group-based"
341
342     *AGGREGATION
343     *ACCESS TO AND DECISIONS ON CREDIT: Adequate if self/selfjoint makes dec regarding AT LEAST ONE source of
        credit AND has at least one source of credit
344     foreach x in anydec {
345         egen creditselfjoint`x'any=rowmax(creditselfjoint`x'_*)
346         replace creditselfjoint`x'any=0 if credit_access==0
347         rename creditselfjoint`x'any cred_`x'_any
348         }
349
350     label var cred_anydec_any "Jointly makes AT LEAST ONE decision regarding AT LEAST ONE source of credit"
351
352
353
354     ************************************
355     ***Leadership Domain: Module G6 ***
356     ************************************
357
358     qui recode g6* (97 98=.)
359
360
361     ***g6a.01, g6a.02***
362     *empowered if comfortable speaking in public OR have spoke up in public in last 3 months
363     *Note: speaking in public indicator not required for A-WEAI; however, unstar lines if you wish to calculate it.
364     *gen spkpublic_1=(g6a_01==2 | g6a_01==3)
365     *replace spkpublic_1=. if g6a_01==.
366
367     *gen spkpublic_2=(g6a_02==1)
368     *replace spkpublic_2=. if g6a_02==.
369
370
371     *AGGREGATION
372     *SPEAK IN PUBLIC: Adequate if comfortable speaking in public OR have spoken up in public in last 3 months
373     *egen spkpublic_any=rowmax(spkpublic_1 spkpublic_2)
374
375
376     ***g6.03, g6.04***
377     foreach x in a b c d e f g h i j {
```

```
370         *Active group member
371         gen groupmember_`x'=(g5b_04_`x'==1)
372         replace groupmember_`x'=. if g4b_04_`x'==.
373         gen nogroup_`x'=(g4b_03_`x'==2 | g5b_03_`x'==.)
374         }
375
376     *AGGREGATION
377     *GROUP MEMBERSHIP: Adequate if individual is part of AT LEAST ONE group
378     egen groupmember_any=rowmax(groupmember_*)
379     replace groupmember_any=0 if groupmember_any==. /*inadequate if no groups in community*/
380
381
382     ******************************
383     *** Time Domain: Module G5 ***
384     ******************************
385
386     ***g5.04***
387     *LEISURE TIME: Adequate if does not express any level of dissatisfaction with the amount of leisure time
        available
388     *Note:  leisure indicator not required to calculate A-WEAI; however if you wish to calculate it, unstar the
        code lines.
389     *gen leisuretime=(g5_04>4)
390     *replace leisuretime=. if g5_04==.
391
392     rename g1_02 mid
393     rename g1_03 sex
394     save "modifieddata\all_indicators_2.0.dta", replace
395
396
397     ***g5.01***
398
399     ******************************************
400     ** 24 HOUR RECALL - PRIMARY ACTIVITES ONLY **
401     ** Create time poverty measure ***********
402     ******************************************
403
404     // Open dataset with time use information //
405
406     use "clean data\ind_time_public_release_2.0.dta", clear
407     renvars, subst( p2) // Harmonize varnames across pilot types
408     rename g1_02 mid
409     rename g1_03 sex
410
411
412     *Define work (w/ commuting/travelling)
413     qui gen w=(act=="E" | act=="F" | act=="G" | act=="J" | act=="K" | ///
414                act=="L" | act=="M" | act=="N" | act=="O")
415     drop if w==0
416
```

```
*Calculate total time spent working as primary and secondary activity
collapse (sum) time24_1 (mean) sex, by(country hhid mid)
gen work=time24_1



***Define poverty lines
*10 hr/day
qui gen z10=10*60
*10.5 hr/day
qui gen z105=10.5*60
*11 hr/day
qui gen z11=11*60
*75 hr/week
qui gen z75=(75/7)*60

foreach x of var z*{
    qui gen H_`x'=.
    foreach y in 1 2{
        qui gen H_`x'_`y'=.
        }
    }

foreach x of var z*{
    qui gen poor_`x'=(work>`x')
    foreach y in 1 2 {
        *Headcount
        qui sum poor `x' if country==`y'
        local q=r(sum)
        qui sum work if country==`y'
        local n=r(N)
        qui replace H_`x'=`q'/`n' if country==`y'
        foreach x in 1 2{
            *Headcount
            qui sum poor_`x' if country==`y' & sex==`x'
            local q=r(sum)
            qui sum work if country==`y' & sex==`x'
            qui replace H_`x'_`x'=`q'/r(N) if country==`y'
            }
        }
    }



foreach y in 1 2 {
    foreach x in 10 105 11 75{
        qui sum H_`x'`x' if country==`y'
        local overall=r(mean)
        qui sum H_`x'`x'_1 if country==`y'
```

```
474             local mean=r(mean)
475             qui sum H_`x'_2 if country== `y'
476             local women=r(mean)
477     *       post results (`y') (`x') ("overall") ("men") ("women")
478             }
479         }
480
481     save "modifieddata\time measure_2.0_24hr.dta", replace
482
483
484     // Merge time poverty measure with all indicators dataset //
485
486     use "modifieddata\all_indicators_3.0.dta", clear
487
488     merge 1:1 country hhid mid using "modifieddata\time measure_2.0_24hr.dta", keepusing(work poor_x10 poor_x105
        poor_x75 poor_x11)
489
490     foreach x in 10 105 75 11 {
491         gen npoor_`x'=1-poor_`x'
492         }
493
494     drop _merge
495     save "modifieddata\all_indicators_2.0_24hr.dta", replace
496
497
498     log close
499
500
```

Annex 2b: *Calculation* do file

Calculating-the-A-WEAI.do - Printed on 10/8/2015 2:58:08 PM

```
** DO FILE HAS BEEN PREPARED BY ANA VAZ AND SABINA ALKIRE AT WWW.OPHI.ORG.UK AND ADAPTED BY HAZEL MALAPIT AND
KATIE SPROULE AT IFPRI
** FOR THE CALCULATION OF THE ABBREVIATED WOMEN'S EMPOWERMENT IN AGRICULTURE INDEX OF USAID.
** THERE ARE TWO FILES YOU NEED TO MAKE THE INDEX: THIS ONE (DATAPREP) AND A-WEAI.
** Do FILES CALLED WEAI-dataprep Pilot 2.0 (DATAPREP) and Calculating-the-A-WEAI Pilot 2.0 (A-WEAI)
** DO FILES AND DATA AVAILABLE AT:
https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/HUSXJR
** AND https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/0R8WTU

cd "D:\Users\zsproule\Dropbox\WEAI_Pilot\Public Release" // IMPORTANT: Change directory
clear all
set more off
*set maxvar 10000
set mem 500m
set more off
cap log close
log using "logs\WEAI_calculation_Pilot_2.0_24hr_core.txt", text replace


*** OPEN DATA FILE
*************************************************

use "modifieddata\all_indicators_2.0_24hr.dta", clear


*************************************************
*******   FIVE DOMAINS EMPOWERMENT (5DE)   *******
*************************************************

// So far all indicators were defined so 1 identifies adequate. //
// Now we transform indicators so 1 identifies inadequate. //

foreach var in  feelinputdecagr raiprod_any own_count jrightanyagr credjanydec_any incdec_count groupmember_any
 speakpublic_any nncor_z105 leisuretime {
    rename `var' `var'_ndepr
    gen `var'=1 if `var'_ndepr==0
    replace `var'=0 if `var'_ndepr==1
    }

*We are now starting with 0-1 variables where 1 means that the person is inadequate in that indicator.

gen weight=1 // Note: =1 if unweighted; otherwise, assign variable containing individual sampling weights

save "modifieddata\all_depr_indicators_2.0_24hr_core.dta", replace

// CONSTRUCTING A LOOP FOR EACH COUNTRY. //

forvalues c=1(1)3 { //NOTE: add * at beginning of this line for single-country calculation

```

Page 1

```
47  preserve //NOTE: add * at beginning of this line for single-country calculation
48
49  keep if country=="c" //NOTE: add * at beginning of this line for single-country calculation
50
51
52
53  ***********************************************************************
54  ********  Create a local variable with all CORE indicators varlist_emp ******
55  ***********************************************************************
56
57  #delimit;
58  *local varlist_emp feelinputdecagr raiprod_any jown_ccunt jrightanyagr credjanydec_any incdec_count
    groupmember_any speakpublic_any npcor_z105 leisuretime;
59  local varlist_emp feelinputdecagr jown_count credjanydec_any incdec_count groupmember_any npcor_z105;
60
61  *gen sample1=(feelinputdecagr>=. & raiprod_any>=. & jown_count>=. & jrightanyagr>=.& credjanydec_any>=. &
    incdec_count>=. & groupmember_any>=. & speakpublic_any>=. & npcor_z105>=. & leisuretime>=.);
62  gen sample1=(feelinputdecagr>=. & jown_count>=. & credjanydec_any>=. & incdec_count>=. & groupmember_any>=. &
    npcor_z105>=.);
63  #delimit cr
64
65  ***********************************************************************
66  **** Define the CORE weights. Weights sum to 1 (not to the number of indicators)**
67  ***********************************************************************
68  ********** Create a loop for the variables with the same weight ***************
69  ***********************************************************************
70
71  *We now create the indicators' weights.*
72
73  foreach var in feelinputdecagr /*raiprod_any*/{
74      gen w_'var'=1/5
75      }
76  foreach var in jown_count {
77      gen w_'var'=2/15
78      }
79  foreach var in /*jrightanyagr*/ credjanydec_any {
80      gen w_'var'=1/15
81      }
82  foreach var in incdec_count {
83      gen w 'var'=1/5
84      }
85  foreach var in groupmember_any /*speakpublic_any*/{
86      gen w 'var'=1/5
87      }
88  foreach var in npcor_z105 /*leisuretime*/{
89      gen w_'var'=1/5
90      }
91
92
```

```
93  ***************************************************************
94  *********     Define the weighted inadequacy g0* matrix       ****
95  ***************************************************************
96
97  // WE FOCUSED ON THE MEASURE OF INADEQUACIES (DISEMPOWERMENT). //
98
99  foreach var in 'varlist_emp'{
100     gen wg0_'var'= 'var'*w_'var'
101 }
102
103 ********************************************************************************
104 ********** Compute the frequency of missing values for indicator ***************
105 ********************************************************************************
106
107 foreach var in 'varlist_emp' {
108 gen 'var'_miss=1 if 'var'==.
109 replace 'var'_miss=0 if 'var'!=.
110 }
111
112 sum *_miss
113
114 ********************************************************************************
115 ************   Define the (weighted) inadequacy count vector "ci" ************
116 ********************************************************************************
117
118 egen ci=rsum(wg0_*)
119
120 label variable ci "Inadequacy Count"
121
122 egen n_missing=rowmiss(wg0_*)
123 label variable n_missing "Number of missing variables by individual"
124 gen missing=(n_missing>0)
125 label variable missing "Individual with missing variables"
126
127 *** Check sample drop due to missing values
128 tab missing
129 *drop if missing
130
131 ********************************************************************************
132 ***** Create the identification vector (inadequate/adequate) ***********
133 ***** and compute individual average of inadequacy    *****************
134 ********************************************************************************
135
136 egen total_w=total(weight) if missing==0
137
138 // FIRST, WE COMPUTED THE DISEMPOWERMENT IN AGRICULTURE INDEX (DAI). //
139 // AFTERWARDS, WE COMPUTE THE EMPOWERMENT IN AGRICULTURE INDEX (HERE CALLED EAI): EAI = 1 - DAI. //
140
141 *These are now percentages - this creates DAI by each percentage.
```

```
forvalues x=1(1)100 { // FOR EACH POSSIBLE CUTOFF X BETWEEN 1% AND 100% //
gen ch_`x'p=(ci>float(`x'/100)) // WE CREATE A VARIABLE THAT IDENTIFIES THE DISEMPOWERED INDIVIDUALS (THOSE WHO HAVE AN INADEQUACY SCORE HIGHER THE X%). //
replace ch_`x'p=. if missing==1
gen a_`x'p=(ci) if ch_`x'p==1 // WE COMPUTE THE INDIVIDUAL INADEQUACY OF THOSE WHO ARE DISEMPOWERED. //
replace a_`x'p=. if missing==1
egen DAI_`x'p= total(ci*ch_`x'p*weight/total_w) // WE COMPUTE THE DISEMPOWERMENT INDEX (FOR EACH POSSIBLE CUTOFF X) //
gen EAI_`x'p=1-DAI_`x'p // THEN, WE OBTAIN THE EMPOWERMENT INDEX. //
label var ch_`x'p "Condition of disempowerment  k=`x'%"
label var a_`x'p "Individual Average inadequacy  k=`x'"
label var DAI_`x'p "National Disempowerment Index k=`x'%"
label var EAI_`x'p "Combined Empowerment Index k=`x'%"

}

// PLEASE NOTE THAT THESE ARE NOT YET THE 5DE. SO FAR WE ARE STILL LOOKING AT WOMEN AND MEN TOGETHER AND WE HAVE NOT YET DEFINED THE CUTOFF WE WANT TO USE. //

summarize ch_* a_* DAI_* EAI_* [aw=weight]

*****************************************************************************
******* Compute raw headcounts        ******************************
*****************************************************************************

foreach var in `varlist_emp' {
gen `var'_raw=(`var')
replace `var'_raw=. if missing==1
}

su *_raw  [iw=weight]

*****************************************************************************************
*********** Compute Censored headcount by subgroups (gender or region etc)   ******
*****************************************************************************************

// NOW WE DEFINE THE CUTOFF THAT WE WANT TO USE AND WE START LOOKING AT WOMEN AND MEN SEPARATELY //

* Please define in the first line your cutoff, the example shows k=20 is 20% of the variables
* In the second line replace with the name of the categorical variable (the variable name by which censored headcount is to be generated for the variables)
* that represents the different subgroups.
* The subgroup variable must be coded in consecutive natural numbers starting in 1

pause
gen nation=`c'

local k=20
```

```
107   *decode sex, gen(n)
108   *encode n, gen (gender)
109   gen gender=sex
110
111   local r="gender"
112
113   foreach var in `varlist_emp' {
114   gen `var'_CH_`r'p=(`var'==1 & ch_`k'==1)
115   replace `var'_CH_`k'p=. if missing==1
116   }
117
118   summarize *_CH_`k'p [iw=weight]
119
120   ********************************************************************************
121   ********************************************************************************
122   **** Define decomposition rule (country, sex)
123   **** We keep the information of the weighted population before reducing the sample to only
124   **** those cases with information in all the indicators considered
125
126   egen total_h = total(weight)
127   label var total_h "Total Population Before Sample Drop"
128   egen pop_shr_before = total(weight/total_h), by(`r')
129   label var pop_shr_before "Weighted Population Share of Each `r' before Sample Reduction"
130   gen temp=1 // We generate this variable for counting observations
131   egen sample_r_before = total(temp), by(`r')
132   label var sample_r_before "Sample Size of each `r' before Sample Reduction"
133
134   egen pop_shr_after = total(weight/total_w) if miss==0, by(`r')
135   label var pop_shr_after "Weighted Population Share of Each `r' after Sample Reduction"
136   egen sample_r_after = total(temp) if missing==0, by(`r')
137   label var sample_r_after  "Sample Size of Each `r' after Sample Reduction"
138   gen sample_lost_ratio= sample_r_after/sample_r_before
139   label var sample_lost_ratio  "Relative size of the final sample after reduction in each `r'"
140
141
142
143   ********************************************************************************
144   **** Collapsing ****************************************************************
145   * So far, our database has individual level data, if we want to aggregate
146   * at any level, we use the command "collapse". Collapse calculates weighted
147   * averages at the  level defined by the user (gender), if the option "by(gender)"
148   * is not specified, the observations are aggregated at the national level.
149   * Before collapse, save your results using the following command
150   ********************************************************************************
151
152   save "modifieddata\individual_indices_`c'_2.0_24hr_new.dta", replace  // SAVES, FOR EACH COUNTRY, A DATASET
      WITH INDIVIDUAL DATA. //
153   // THIS DATASET INCLUDES INDIVIDUAL INADEQUACY COUNT, VARIABLES THAT IDENTIFY DISEMPOWERED FOR EACH CUTOFF AND
      VALUE OF DAI AND FAI FOR EACH CUTOFF. //
```

```
234  // PLEASE REMEMBER THAT DAI AND EAI WERE COMPUTED CONSIDERING WOMEN AND MEN TOGETHER. //
235
236  * You can use also the commands preserve before the command "collapse" and restore just after
237  * preserve
238
239  // NOW WE COMPUTE RELEVANT VARIABLES BY GENDER. //
240
241  egen pop_shr = total(weights/total_w) if miss==0, by(`r')
242
243  * collapse
244  * The following command will "collapse" our individual results according to the subgroup previously defined.
245  //pause
246  collapse nation ch_* a_* *_CH_`k'p *_raw w_* EAI_* *_miss missing DAI_* pop_shr* sample_r_* sample_lost_ratio [
     aw=weight],by(`r')
247
248  * You have already calculated the national DAI. With the following lines you will calculate the
249  * DAI for every region using the formulation M0=H*A obtained after collapsing the dataset.
250
251  // ATTENTION: DAI AND EAI REFER TO NATIONAL FIGURES. M0 AND EA REFER TO GENDER FIGURES. //
252
253  forvalues x=1(1)100 {
254  gen M0_`x'p=ch_`x'p*a_`x'p
255  label var M0_`x'p "Population Subgroup DAI k=`x'%"
256  gen EA_`x'p=1-M0_`x'p
257  label var EA_`x'p "Population Subgroup EAI k=`x'%"
258  ren ch_`x'p H_`x'p
259  label var H_`x'p "Population Subgroup Multidimensional Headcount Ratio k=`x'%"
260  ren a_`x'p A_`x'p
261  label var A_`x'p "Population Subgroup Average Inadequacy k=`x'%"
262  label var DAI_`x'p "National DAI k=`x'%"
263  }
264
265  foreach var in `varlist_emp' {
266  gen `var'_cont_`k'_EAI=(1-`var'_CH_`k'p* w_`var')/ EA_`k'p
267  label var `var'_cont_`k'_EAI "Decomposed Contribution of `var' to the total Empowerment k=`k'"
268
269  gen `var'_cont_`k'_DAI=(1-`var'_CH_`k'p* w_`var')/ M0_`k'p
270  label var `var'_cont_`k'_DAI "Decomposed Contribution of `var' to the total Disempowerment k=`k'"
271
272  label var  `var' CH_`k'p  "Decomposed Censored Headcount `var' k=`k'"
273  label var  `var' raw  "Decomposed Raw Headcount `var'"
274  label var  `var' miss  "Decomposed Missing values `var'"
275  }
276
277  label variable pop_shr "Population Share"
278  gen cont_group_`k'=M0_`k'p/DAI_`k'p*pop_shr
279  label variable cont_group_`k' "Decomposed Contribution"
280
281  gen cont_subgroup_DAI_`k'=M0_`k'p/DAI_`k'p*pop_shr_after
```

```
label variable cont_subgroup_DAI_`k' "Population Subgroup Contribution to DAI"

gen cont_subgroup_EAI_`k'=EA_`k'*p/EAI_`k'*prop_shr_after
label variable cont_subgroup_EAI_`k' "Population Subgroup Contribution to EAI"

capture decode `r', gen(level)
drop `r'

gen gender_n
label define gender_lab 1 "Male" 2 "Female"
label values gender gender_lab

save "modifieddata\results_`c'_`r'_2.0_24hr_core.dta", replace
// FOR EACH COUNTRY, SAVES A DATASET WITH THE RELEVANT EMPOWERMENT FIGURES FOR EACH GENDER. //
// THE DATASETS INCLUDE THE DISEMPOWERMENT FIGURES FOR ALL CUTOFFS BETWEEN 1% AND 100%. WHEN EXTRACTING THE
INFO WE FOCUS ON THE RELEVANT CUTOFF. //
// PLEASE SEE BELOW HOW TO EXTRACT RELEVANT INFORMATION FOR CUTOFF 20%. //

//collapse *_cont [iw=weight],by(`r')

restore  //NOTE: add stars for single-country calculation
}       //NOTE: add stars for single-country calculation

clear

*exit
/*
*** EXTRACT TABLES

// HOW TO EXTRACT RELEVANT INFO. EXAMPLE FOR COUNTRY 1 WITH CUTOFF 20% //

use "H:\OPHI\WEI\Do-files\results_1_gender.dta", clear // Example for country = 1 //

browse H_20p A_20p M0_20p EA_20p if gender==2 // DISEMPOWERED HEADCOUNT (H_20p), AVERAGE INADEQUACY SHARE
(A_20p), 5 DOMAINS DISEMPOWERMENT INDEX (M0_20p) AND 5 DOMAINS EMPOWERMENT INDEX (EA_20p) FOR THE SAMPLE OF
WOMEN. //
browse H_20p A_20p M0_20p EA_20p if gender==1

browse *_CH_20p if gender==2  // INDICATORS CENSORED HEADCOUNTS FOR WOMEN. //
browse *cont_20_DAI if gender==2  // INDICATORS CONTRIBUTION TO DISEMPOWERMENT FOR WOMEN. //
browse * CH_20p if gender==1
browse *cont_20_DAI if gender==1

*/
*****************************************
*******   GENDER PARITY INDEX (GPI)   *******
*****************************************

use "modifieddata\all_depr_indicators_2.0_24hr_core.dta", clear
```

```
328
329   ** Focus on male and female households
330
331   sort hhid sex
332   byx hhid: gen i=_n
333   byx hhid: egen n=max(i)
334
335   tab hh_type n, miss
336   drop if n==1
337
338   ********************************************************************************
339   ********  Create a local variable with all CORE indicators varlist_exp ******
340   ********************************************************************************
341
342   #delimit;
343   *local varlist_5dc feelinputdecagr raiprod_any jown_count jrightanyagr credjanydec_any inodec_count
      groupmember_any speakpublic_any npcor_x105 leisuretime;
344   local varlist_5dc feelinputdecagr jown_count credjanydec_any inodec_count groupmember_any npcor_x105;
345
346   *gen sample5dc=(feelinputdecagr<=. & raiprod_any<=. & jown_count<=. & jrightanyagr<=.& credjanydec_any<=. &
      inodec_count<=. & groupmember_any<=. & speakpublic_any<=. & npcor_x105<=. & leisuretime<=.);
347   gen sample5dc=(feelinputdecagr<=. & jown_count<=.& credjanydec_any<=. & inodec_count<=. & groupmember_any<=. &
      npcor_x105<=.);
348   #delimit cr
349
350   ******************************
351   **** Define the weights.  ****
352   ******************************
353
354   foreach var in feelinputdecagr /*raiprod_any*/{
355       gen w_'var'=1/5
356       }
357   foreach var in jown_count {
358       gen w_'var'=2/15
359       }
360
361   foreach var in credjanydec_any /*jrightanyagr*/ {
362       gen w_'var'=1/15
363       }
364
365   foreach var in inodec_count {
366       gen w_'var'=1/5
367       }
368   foreach var in groupmember_any /*speakpublic_any*/ {
369       gen w_'var'=1/5
370       }
371   foreach var in npcor_x105 /*leisuretime*/{
372       gen w_'var'=1/5
373       }
```

```
*****************************************************************
*********     Define the weigted inadequacy g0*      ****
*****************************************************************

foreach var in 'varlist_5do'{
    gen wg0_'var'= 'var'*w_'var'
    }

*****************************************************************************
*************   Define the (weighted) inadequacy count vector "ci" ************
*****************************************************************************

egen ci=rsum(wg0 *)
replace ci = . if sample5do==0

label variable ci "Inadequacy Count without Parity"

*****************************************
*** Compute censored inadequacy scores  ***
*****************************************

bys hhid: gen w_ci_id=ci if sex==2
bys hhid: gen m_ci_id=ci if sex==1
bys hhid: egen W_ci=max(w_ci_id)
bys hhid: egen M_ci=max(m_ci_id)
drop w_ci_id m_ci_id

bys hhid: gen float W_cen_ci=W_ci
bys hhid:replace W_cen_ci=0.20 if W_cen_ci<=0.2 & W_cen_ci!=.
bys hhid: gen M_cen_ci=M_ci
bys hhid:replace M_cen_ci=0.20 if M_cen_ci<=0.20 & M_cen_ci!=.

/*****************************************
*** Imputation of Guatemalan men ci  ***
*****************************************

*** To avoid the massive drop of observations for Guatemala, we are going to impute an average male ci to the
men with missing ci ***

count if country==3 & sex==1 & ci==.
count if country==3 & sex==1 & ci==. & W_ci!=.

sum M_cen_ci if country==3 & sex==1
egen M_cen_ci_mean_id=mean(M_cen_ci) if country==3 & sex==1
sum M_cen_ci_mean_id
bys hhid: egen M_cen_ci_mean=max(M_cen_ci_mean_id)
```

```
422   replace M_cen_ci=M_cen_ci_mean if M_cen_ci==. & M_cen_ci!=. & country==3
423
424   // Unfortunately, we are only able to recover 15 women observations. //
425   */
426
427   ***********************************************************
428   *** Identify inadequate in terms of gender parity  ***
429   ***********************************************************
430
431   bys hhid: gen ci_above=(W_cen_ci>M_cen_ci)
432   bys hhid: replace ci_above=. if W_cen_ci==.|M_cen_ci==.
433   label var ci_above "Equals 1 if individual lives in HH where the depr score of the woman is higher than the
      man - EI 1"
434
435   bys country: sum ci_above
436   bys country: sum ci_above [aw=weight]
437
438   ***********************************
439   *** Compute Gender Parity Index  ***
440   ***********************************
441
442   ** Full sample
443
444   gen female=(sex==2 & ci_above!=.)
445   bys country: egen women_n=total(female)
446   bys country: egen women_wt=total(female*weight)
447   drop female
448
449   * Verification
450   bys country: gen women_i=(sex==2 & M_cen_ci!=. & W_cen_ci!=.)
451   bys country: egen women_wt2=total(women_i*weight)
452   bys country: tab women_wt women_wt2, miss
453   drop women_i women_wt2
454
455   ** Headcount ratio of inadequate women
456
457   gen inadequate=(ci_above==1 & sex==2)
458   bys country: egen float inadequate_n = total(inadequate)
459   gen M=inadequate_n/women_n // Considering unweighted sample //
460   bys country: egen float Inadequate_wt = total(inadequate*weight)
461   gen M_wt=inadequate_wt/women_wt // Considering weighted sample //
462
463
464   *Verification
465   bys country: gen inadequate_i=(M_cen_ci<W_cen_ci & sex==2 & M_cen_ci!=. & W_cen_ci!=.)
466   bys country: egen inadequate_wt2=total(inadequate_i*weight)
467   bys country: tab inadequate_wt inadequate_wt2, miss
468   drop inadequate_i inadequate_wt2
469
```

```
470
471   ** Computation of normalized gap
472
473   gui gen ci_gap=(M_cen_ci-M_cen_ci)/(1-M_cen_ci) if ci_above==1 & sex==2
474
475
476   bys country: egen float ci_gap_sum = total(ci_gap*weight)
477   bys country: gen ci_average=ci_gap_sum/inadequate_wt
478
479
480   ** Computation of GPI
481
482   bys country: gen H_GPI=inadequate_wt/women_wt
483   bys country: gen PI=H_GPI*ci_average
484   bys country: gen GPI=1-PI
485
486   ************************
487   *** Summarize results ***
488   ************************
489
490   bys country: sum H_GPI ci_average PI GPI
491   bys country: count if sex==2
492   bys country: tab women_n women_wt
493
494   save "modifieddata\results_GPI_2.0_24hr_core.dta", replace
495
496   log close
497
```

Annex 3: How to construct tables and graphs

Table 1: Uganda pilot WEAI

Indexes	Uganda	
	Women	**Men**
Disempowered Headcount (H)	40.3%	23.1%
Average Inadequacy Score (A)	42.2%	35.3%
Disempowerment Index (M0)	0.170	0.082
5DE Index (1-M0)	**0.830**	**0.918**
Number of observations	144	130
% of Data Used	74.6%	89.7%
% of women with no gender parity (H_{GPI})	34.1%	
Average Empowerment Gap (I_{GPI})	31.0%	
GPI	**0.894**	
No. of women in dual households	132	
% of Data Used	71.2%	
WEAI	**0.836**	

This column of results (H, A, M0 & EA) for cutoff k=20 is obtained using the following code:

File: Calculating-the-A-WEAI_Pilot_2.0.do
For women, Line: 315
Code: browse H_20p A_20p M0_20p EA_20p if gender==2
For men, Line: 312
Code: browse H_20p A_20p M0_20p EA_20p if gender==1

NOTE: the 5DE Index (1-M0) is referred to as EA_20p in the do files.

No. of obs = sample_r_after

% of data used = sample_r_after / sample_r_before

Data file: individual_indices_`c'.dta

Code: bys sex: su sample_r_before sample_r_after

This column of results (H_GPI, ci_average & GPI) is obtained (for women only) using the following code:

File: Calculating-the-A-WEAI_Pilot_2.0
Line: 491
Code: bys country: sum H_GPI ci_average P1 GPI

NOTE: the average empowerment gap (I_GPI) is called ci_average in the do files; P1 = H_GPI * ci_average; GPI = 1- P1

No of women whose data is used in GPI is obtained using the following code:

Calculating-the-A-WEAI_Pilot_2.0
Line: 493
Code: bys country: tab women_n

From the log file, WEAI_dofile.txt:

```
bys country: sum H_GPI ci_average P1 GPI

-> country = Uganda

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
       H_GPI |       371    .3409091           0    .3409091   .3409091
  ci_average |       371    .3102413           0    .3102413   .3102413
          P1 |       371    .1057641           0    .1057641   .1057641
         GPI |       371    .8942359           0    .8942359   .8942359
```

This row is obtained using the following Stata code:
File: Calculating-the-A-WEAI_Pilot_2.0.do
Line: 318
Code: browse *_CH_20p if gender==2
Note: Illustrated in figure 1 below.

This row is obtained using the following Stata code:
File: Calculating-the-A-WEAI_Pilot_2.0.do
Line: 319
Code: browse *cont_20_DAI if gender==2

This is the absolute contribution, which is obtained by multiplying the censored headcount with the indicator weight.

Table 2: Uganda 5DE Decomposed by Dimension and Indicator

Statistics	Production	Resources		Income	Leadership	Time
	Input in productive decisions	Ownership of assets	Access to and decisions on credit	Control over use of income	Group member	Workload
WOMEN						
Censored headcount	0.167	0.021	0.299	0.208	0.153	0.208
% Contribution	9.1%	2.6%	13.2%	23.7%	14.6%	8.3%
Contribution	0.028	0.008	0.041	0.073	0.045	0.026
% Contr. by dimension	9.1%	15.8%		23.7%	14.6%	8.3%
MEN						
Censored headcount	0.077	0.000	0.185	0.023	0.138	0.108
% Contribution	18.9%	0.0%	15.1%	5.7%	34.0%	26.4%
Contribution	0.015	0.000	0.012	0.005	0.028	0.022
% Contr. by dimension	18.9%	15.1%		5.7%	34.0%	26.4%

Figure 1: Proportion of disempowered women who have inadequate achievements by indicator in Uganda sample

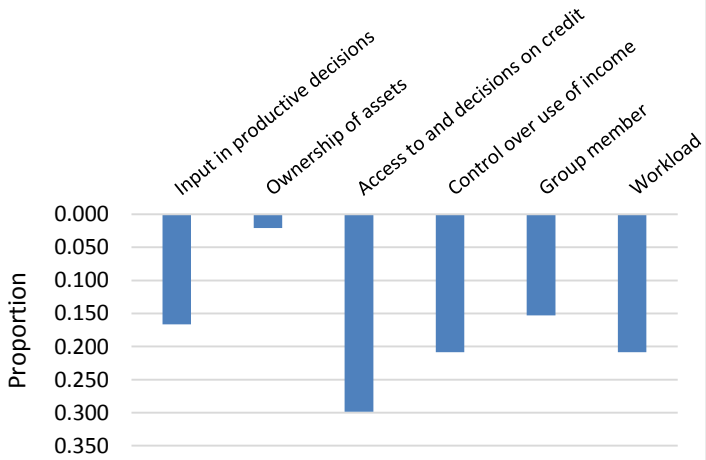
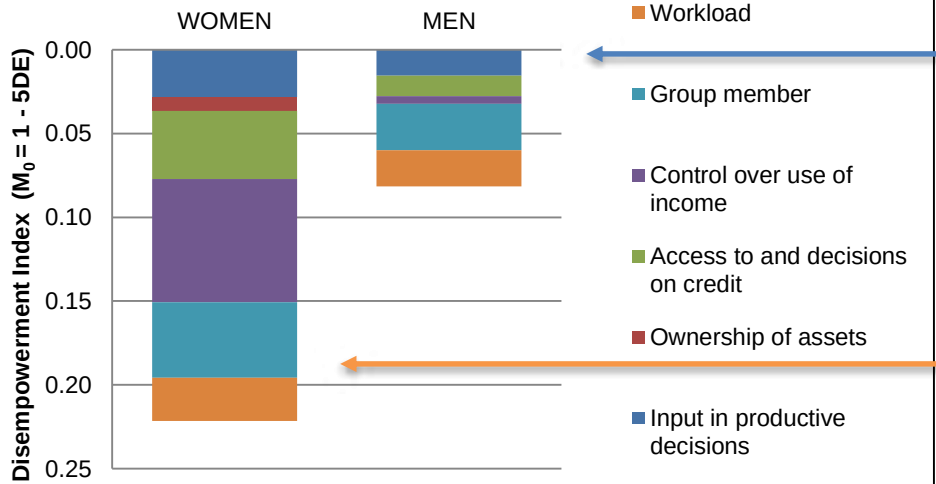


Figure 2: Contribution of each indicator to disempowerment in Uganda sample



Annex 4: The Gender Checklist by WEAI Domain

This Gender Checklist was developed by IFPRI and ICRW for the Gates Foundation (2011). The questions in this checklist are designed to guide users at the project development phase to help draw out the underlying mechanisms that may influence the various domains in the WEAI and anticipate how their projects might contribute to improving the Index. The checklist may also be used throughout the project cycle to assess progress and identify new opportunities for interventions.

The checklist questions are divided into several sections:

- Overarching questions refer to broad issues relating to the overall project or program;
- Specific questions relating to each of the five domains[32], which identify some of the underlying pathways and mechanisms that may be reflected in the indicators that measure women and men's achievements in the domains; and,
- Questions regarding risks and opportunities also relate to the overall project or program, and are important for identifying possible tradeoffs or synergies between achievements in different domains.

Gender Checklist by WEAI Domain

<table>
<tr><th colspan="3">OVERARCHING QUESTIONS</th></tr>
<tr><td colspan="3">How is the project linked to the five domains of empowerment in agriculture?</td></tr>
<tr><td colspan="3">How does the project affect women and men in these five domains?</td></tr>
<tr><td colspan="3">How can the project contribute, long-term, to the significant involvement of women and their empowerment as leaders?</td></tr>
<tr><th colspan="3">DOMAIN 1: AGRICULTURAL PRODUCTION</th></tr>
<tr><td>What are the major productive and reproductive activities that women and men are responsible for before the project? What are the responsibilities of boys and girls?</td><td colspan="2">What is the mission/implementing partner's understanding of men's and women's roles in on and off-farm work, family care and other main tasks in the household and the community? Do women or men participate in other forms of income earning activities? If so, how will these additional activities affect the success of the project? To what extent is labor by boys and girls used as a substitute/complement for men's and women's labor?</td></tr>
<tr><td rowspan="2">What is the existing division of labor in household farming system? Does the project address the division of labor by age and sex?</td><td>Crops: What are M, F roles in seed selection, land preparation, planting, weeding, harvest, storage, processing, and marketing?</td><td rowspan="2">Livestock: What are M, F roles in collection and fodder preparation, feeding, watering, cleaning, herding, milking, shearing, other harvest activities, and care of sick animals?</td></tr>
<tr><td>In some contexts, men may be responsible for mono-cropping systems and women for more diversified sites (e.g. home gardens) that are often used for in situ conservation of a wide range of plant genetic resources.</td></tr>
<tr><td>Are agricultural decisions made by women, men, or jointly?</td><td colspan="2">Who decides on the planting, harvesting, post harvesting, marketing and consumption of crops and water usage for agricultural or domestic consumption?</td></tr>
</table>

[32] Questions may be repeated if they are relevant for more than one domain.

Are there gender specific crops in the region?	What decisions do women make regarding planting, marketing and consumption for these crops? How is the income from these activities controlled?
Are women's and men's motives (and how these may differ) for saving local seed varieties understood?	Are there priorities that can be identified such as enhancing nutrition, overcoming agricultural constraints, diversifying livelihoods (e.g., from seed loans), building social capital and maintaining a degree of autonomy?
What are male and females' ownership and use rights to animals and their products?	How strong is control of these assets among women? For example, can women make decisions about whether to sell or slaughter the animals they care for? Do they retain control of the income or meat? Are there instruments – such as mobile phones - for women to keep their income under their control? What opportunities are there to strengthen women's control of assets?
Will the project affect women's control of crops or animals?	Is there an opportunity to increase women's control of assets? Is there a risk that men will claim control of production and marketing if there is improved productivity and profitability?
What market barriers do women face? How can the project facilitate women's market access?	Are women able to access markets? What is the distance to markets? Is time a constraint for women to travel to distant markets and/or to seek out the best prices for their products? Do women have access to transport they can afford? Can women afford the cost of permits required to sell their products at market? Do market chain actors throughout the project recognize women's roles as producers and marketers or do they only approach men? Does the mission/implementing partner understand the additional household responsibilities of women as they relate to travel and transport to markets? Do women face travel or social barriers that prevent them from attending regional training activities? What measures can be taken to mitigate the risks associated with travel for women?
Will women's or men's traditional markets/ trading activities be affected by the project?	Will women face more competition in their traditional crop markets? Will male or female traders gain or lose from the project?
What are the barriers to markets (both input markets and output markets) for women and for men?	Are transport time, transport fees, childcare, or restrictions on mobility barriers to market access? Geographical barriers? What other barriers exist? Are there barriers to collectivization for buying or selling in markets? Which barriers are more important for women and which for men?

DOMAIN 2: ACCESS TO PRODUCTIVE RESOURCES	
Can women produce the project's crops on their parcels? (What impact might this have on the production of their existing crops or vegetables?)	Do women own or have access to land? Is it suitable for production or irrigation? What opportunities exist to improve women's access to land?
Do women have access to irrigated land? Will the project strengthen or weaken their access?	If irrigation is being introduced, how might women be included in a negotiation of land and water rights within the traditional land framework? What local associations, such as water user associations, exist in the community and how might they be incorporated?
Do women and men differ in their water use and future irrigation needs?	What types of crops are being irrigated? What non-agricultural uses do women and men have for water? What are the preferred sites of water use for men and women and what distance is required to reach them?
Could increased cash crop production lead to a loss of land for women's household food production?	What is the mission/implementing partner's understanding of the local land tenure system, tenure security for women, and how traditional women's parcels are allocated (e.g. inheritance laws and customs)?
Are certain types of animals considered women's responsibility? What rights do women have to these animals and their products?	How strong is control of these assets among women? For example, can women make decisions about whether to sell or slaughter the animals they care for? Do they retain control of the income or meat? What opportunities are there to strengthen women's control of assets?
Will the project affect women's control of crops or animals?	Is there an opportunity to increase women's control of assets? Is there a risk that men will claim control of production and marketing if there is improved productivity and profitability?
Who makes the investment and expenditure decisions in the household? Who will bear the financial costs of participating in the project?	Will the person that controls the finances in the household have the incentive to spend money to participate? If men and women have separate funds, will women have enough finances to participate? Is there an opportunity to encourage more productive investments when both men and women are involved in the decision-making process?
What are the present gender differences in access to capital, credit, and savings? Are there differences in size, duration, use, and repayment of loans?	Do the eligibility criteria (commodity, collateral, size of the loan, social factors, membership of cooperatives etc) result in men and women having unequal access to credit? Are women able to use land as collateral for credit? If not, what opportunities are there to increase women's access to capital, credit and savings? (versus a project that is specifically designed to make opportunities to open up access to capital)
What strategies does the project offer to address women's constraints to accessing land or credit?	What methods does the mission/implementing partner have for monitoring access to these resources? What alliances can be formed within the community to increase access (governments, NGOs)? Is there an opportunity to utilize nontraditional collateral, small loans or group-based savings and credit?
How will women and men access agricultural inputs and technology? Are these inputs and technology appropriate?	How will women learn about the intervention (technology, farming practices, and market options)? Will they be able to afford the inputs and technology? Will inputs be available where women can access them? Does the mission/implementing partner understand what inputs and technology might be most useful to women or men? (For example, long hoes vs. short hoes, 25 lb. bags of fertilizer vs. 50 lb. bags) Does access differ across different types of women (e.g. older vs. younger?)

What barriers exist to women's and men's access to and use of agricultural training and extension at local and regional levels?	What is the relative availability of trainings and expertise for the crops women farm, animals women raise, and agricultural tasks women perform compared to those of men? Are transport time, transport fees, childcare, or restrictions on mobility barriers to attendance at regional trainings? Are there social barriers against women's organization or interaction with extension workers, especially if they are men or outsiders?
How will the project ensure that women have access to agricultural extension, training, and other services, especially where women may face travel or social barriers to attending trainings outside of their villages? Will the project need a communication strategy and innovative teaching methods for illiterate women and men? Will local dialects be used to ensure information flow between project staff and beneficiaries?	What are the criteria used to contact farmers? What are the criteria for membership of groups or cooperatives receiving extension? Has the mission/implementing partner considered how location, timing and type of activities will affect the participation of women? If there are women who have limited contact with outsiders, what is the mission/implementing partner's strategy for reaching them? Will information (e.g. about new technologies) be communicated in the simplest way possible? Do women have ownership of or access to mobile or other information technologies?
Do extensionists understand community-based farming systems and the agricultural potential of landless and marginal farm families? To what extent do extensionists understand the role of women in agriculture and their specific farming needs? To what extent do they make an effort to work with women in farm households?	Is it culturally acceptable for male extension agents to work with women farmers? What is the gender balance of extension agents? Will the project establish targets/quotas to make sure there is a balance in the gender ratio of extension agents and train women as lead farmers? *If there is a current lack of women extensionists, is there an opportunity to train or mentor future women extensionists?* If male extension agents will be working, training or otherwise interacting with women, what is the strategy to ensure gender awareness? Is there a need to update extension training curricula to build awareness of the role of women, marginal farmers and landless persons?

DOMAIN 3: CONTROL OVER INCOME	
Who makes the investment and expenditure decisions in the household? Who will bear the financial costs of participating in the project?	Will the person that controls the finances in the household have the incentive to spend money to participate? If men and women have separate funds, will women have enough finances to participate? Is there an opportunity to encourage more productive investments when both men and women are involved in the decision-making process?
Who receives the income benefits from the projects?	Are there specific actions being taken to negotiate how household income is shared among men and women? What are they? Are there opportunities to encourage activities that would improve women's access to income benefits, such as joint bank accounts, or direct payments to women? Are women able to own or control technology (mobile phones) for accessing income?
Do men and women receive different wages and benefits?	If a key indicator for this project is "jobs created" how has pay equity been addressed? Is the reasoning clear behind job creation and pay scale as it relates to the hiring of men and women?

Who markets farm and household produce? What about products produced solely by women?	Is marketing done by women, men in the household or male or female middlemen? If there are products that are marketed primarily by men or by women, does the mission/implementing partner understand how this affects control of income within the household?
If there are income gains, will there be enough to offset any loss of subsistence food production or other activities?	How does the data collection strategy address consumption measurements which can often be difficult to understand? Is there a way to determine subtleties in spending that will better inform our understanding of this issue as it relates to men and women?

DOMAIN 4: LEADERSHIP	
What type of social, community, and farmer organizations exist in the project area and what control do they have over resource distribution?	What are the differences, if any, between participation of women or men in these organizations? How does the strategy to engage these organizations ensure that participation will be representative of the farmer community?
When women participate in farmer organizations, how will the mission/implementing partner ensure that their voices are heard? Do they hold positions of leadership?	If women have leadership roles, are they nominal or real? How will the mission/implementing partner know that women's voices have been heard and their input has been incorporated?
What, if any, women-only organizations exist? How effective are these women's organizations?	Is there an opportunity to support or 'grow' pre-existing women's organizations? If there are no pre-existing organizations, is there an opportunity or reason to create one? What support will be needed to achieve creation of an effective women's organization?
Are households with lone females and dependents represented in proportion to their share of the population?	Are households with lone females and dependents treated in a uniform manner, or are special efforts made to reach the most vulnerable women-headed households, such as those headed by grandmothers and older girls?

DOMAIN 5: TIME ALLOCATION		
What are the major productive and reproductive activities that women and men are responsible for before the project? What are the responsibilities of boys and girls?	What is the mission/implementing partner's understanding of men's and women's roles in on and off-farm work, family care and other main tasks in the household and the community? Do women or men participate in other forms of income earning activities? If so, how will these additional activities affect the success of the project? To what extent is labor by boys and girls used as a substitute/complement for men's and women's labor?	
What is the existing division of labor in household farming system? Does the project address the division of labor by age and sex?	**Crops:** What are M, F roles in seed selection, land preparation, planting, weeding, harvest, storage, processing, and marketing?	**Livestock:** What are M, F roles in collection and fodder preparation, feeding, watering, cleaning, herding, milking, shearing, other

	In some contexts, men may be responsible for mono-cropping systems and women for more diversified sites (e.g. home gardens) that are often used for *in situ* conservation of a wide range of plant genetic resources.	harvest activities, and care of sick animals?
What effect will the project have on time spent or saved for different household members? (Women and men, boys and girls?)	If there is an increase in the time or labor required, what is the anticipated effect on members of the household? (e.g. time is diverted from food production or child care; girl-labor is substituted for adult labor). If there is a decrease in time required, how will this affect the household?	

RISKS AND OPPORTUNITIES	
How might cultural norms and practices related to gender and intrahousehold or community level issues inhibit the success of the project?	What norms exist around appropriate work and access to assets for men and women? How might these norms influence women's adoption of new technologies? Are there cultural limitations that may limit participation of men or women in particular projects?
What are the potential risks that the project may further exacerbate gender inequality, for example, men may take over activities, increased income may stay in men's hands, or that gender conflict may increase? Does the project identify potential health risks to women and girls from the use of new technologies?	Are there creative strategies that can be built into the project that can guard against these risks? Are there strategies that could strengthen women's control of assets as part of the project?
What potential opportunities can be leveraged through the project to improve the gender imbalance among beneficiaries or key actors in the grant?	What opportunities are there to employ a creative approach for greater inclusion of women in our grant-making?
If the project is successful in every respect, will this change the current gender balance? How so?	What is the vision of success related to empowerment of women or men? What effects might this empowerment have?
Does the project itself pose any risks to participants (health risks, time away from education, etc.)? Are women and girls relatively more subject to any risks?	