Instructional Guide on the Women's Empowerment in Agriculture Index

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Introduction

The Women's Empowerment in Agriculture Index (WEAI) is a new survey-based index designed to measure the empowerment, agency, and inclusion of women in the agricultural sector. The WEAI was initially developed as a tool to reflect changes in/increases 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 can also be used more generally by other 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 recent 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 (Alkire and Foster 2011) methodology 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.[2] 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 gender parity, GPI shows the empowerment gap that needs to be closed for women to reach the same level of empowerment as men.

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

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 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 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[3]—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, 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.[4]

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 survey instruments are available along with other documentation at: http://www.ifpri.org/publication/womens-empowerment-agriculture-index .

What This Guide Is About

This instructional guide was written by researchers from IFPRI and OPHI to assist practitioners in implementing the Index. 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 WEAI.

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 WEAI indices are constructed using the Stata do files; and, Part C provides guidance on how the WEAI results can be presented, analyzed, and interpreted. The WEAI survey, do files, tables, and other materials are provided in the Annex.

[3] 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.

[4] See http://surveynetwork.org/home/index.php?q=activities/catalog/surveys/ihsn/426-2002-002

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 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 questionnaires available on the IFPRI webpage [http://www.ifpri.org/sites/default/files/publications/weaimodules.zip]

A2. Sampling

Sampling guidelines will depend on the overall objectives of the survey and the motivations for using the 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 priority areas where Feed the Future programming is running and will take place in the future.[5] The results are therefore not representative of the country as a whole; rather they reflect regional implementation of Feed the Future programs and should be interpreted accordingly.

Note that the 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 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 WEAI is to produce empowerment measures for women, 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.

[5] 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).

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 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 WEAI module.

A3. Household Structure and Choice of Respondents

A very important issue in measurement and monitoring of the WEAI is *who* is being measured or tracked. Feed the Future monitoring aims to move away from characterizing 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". 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 survey Enumeration Manual and embedded in the pilot questionnaires.

Good Practice Tips

- We advise USAID users to use this standard household definition without adaptation to maintain comparability across countries.
- Other WEAI users who do not need to maintain comparability with USAID/Feed the Future 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 so that implementation is consistent across households.

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.[6]

Good Practice Tip

- Pre-fill member IDs and relevant information (such as name, age, and sex) for the same members (*primary* and *secondary respondents*) for follow-up WEAI surveys. This will enable you to track empowerment of the same individuals over time.

A4. Logistics

We strongly recommend that enumerators travel in male and female pairs and carry duplicate copies of the 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 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 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 WEAI Module to the Local Context

The primary instrument for measuring empowerment is the individual-level WEAI module (Module G in the Feed the Future Population-Based Survey), which is administered to women and men in the same households. This module is designed to elicit responses on the 5DE, which were broadly established by USAID based on their priorities for Feed the Future programming in 19 focus countries.

The final WEAI module reflects the results of instrument testing and validation exercises conducted in the pilot surveys. The questions included in the final module were those found to be most consistent and robust without being too complex or burdensome in terms of survey administration, those that have the ability or the feasibility to show change over time, and those that have the potential to reflect the impact of Feed the Future interventions.

In addition to the individual-level WEAI module, a household-level module (Module C in the Feed the Future Population-Based Survey) 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.

[6] Male-only households are possible, but very rarely found. Because the WEAI requires data on at least a woman respondent, male-only households can be excluded from the 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 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 having 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, 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 Tip

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

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 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 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.[7] For example, adding row O for "Jewelry" in the asset list in Module G3 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 "Small livestock (goats, pigs, sheep, chickens, ducks, pigeons)" does affect calculation because poultry is counted in the 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 **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.

[7] One exception is the response codes for the autonomy questions, G5.03-05. Modifications on these responses are not recommended because the codes are also the scores used to calculate the Relative Autonomy Indicator (RAI). Changes to the response scale of these questions must be resolved on a case-to-case basis, and weakens the cross-country comparability of the WEAI. Please refer to the Index Construction FAQs, section B.4, question Q4 for a specific example on this issue.

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 inadequacy cut-offs and aggregation method.

A6. Training

The 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 WEAI. Some issues that may require additional attention include:

- Selecting primary male and primary female respondents (not based on headship)
- Interviewing men and women separately, and tips on how to get respondents alone
- How to interpret questions in the local language to convey complex concepts, such as empowerment, across different dialects
- How to implement, enter responses, and provide clarifications for the questions on Motivation for Decisionmaking (G5.03-05)[8]
- How to solicit responses, classify activities, and mark the Time Allocation grid (G6.01), particularly on how to distinguish between primary and secondary activities

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.

[8] For more information on how to implement these questions, please refer to the audio recording available at the OPHI website: http://www.ophi.org.uk/wp-content/uploads/Explaining-the-WEAI-autonomy-module-questions-G03a-G035-audio.mp3

- 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.
- Following the pretest, 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: We are not sure we have the time to collect the entire WEAI module. Is it possible to only measure particular domains of the 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 WEAI. The 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 10 indicators representing the 5 domains. These 10 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 indicators; please see: http://www.ifpri.org/publication/women-s-empowerment-agriculture-index

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

  A2: We strongly recommend completing the WEAI on the same households sampled for the rest of the survey. If the WEAI is administered to households that are different from the rest of the Feed the Future PBS or another similar 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 collected in the other Feed the Future modules, such as nutrition or poverty. This very much limits the usefulness of the WEAI.

- **Q3: Should the 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 WEAI was designed to monitor FTF agriculture programs. Even if there is some FTF 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 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 FTF 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 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 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. For this reason, the WEAI Bangladesh survey did not screen for agricultural households.

Another important implication of screening is that the survey will not be able to capture movements in and out of agriculture. If FTF is 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 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 WEAI across countries.

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

  A5: Based on IFPRI's experience implementing the pilots, the final WEAI questionnaire is estimated to take 30-40 minutes per person. If the surveys are done concurrently with men and women, then the additional time per dual-adult household is also 30-40 minutes.

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

  A6: One option is to administer the WEAI at a lag. For example, the WEAI team could follow the Baseline survey team and go into a cluster that has been completely finished. Since the WEAI survey will be collected at a different time, this will help minimize interview fatigue. 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-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.

- **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. In the pilots, the 15 minute intervals were actually more useful in portioning out secondary activities. For example, if someone is eating for 30 minutes and they say they were watching TV for part of the time, "watching TV" could be 15 minutes. However, if the intervals are longer, say 30 minute segments, we would simply lose the watching TV activity. That said, several WEAI collection efforts (the Nepal Suaahara IFPRI survey and the Cambodia FTF PBS) have changed the time intervals to 30 minutes. That change will essentially reduce the diversity in activities, and in the case of the FTF surveys that adopt this modification, their WEAI will no longer be strictly comparable to other countries.

- **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 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 was originally asked in the pilot survey but was later excluded in the FTF PBS to reduce its length since this question is not used to construct the Index. However, the WEAI team highly recommends including this question if time and budget permits (recommended questions are highlighted in blue in the Uganda pilot questionnaire). So it would be optional extra information, but as the example in this question points out, it can be very useful for interpreting the data. 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 religious day or Sabbath 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 will be using CAPI, so these surveys will not be able to use a time grid to "draw" the responses as in the pilots. 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. Whether paper-based or computerized, the most important issue is to verify that the data entry instrument is set up in a way that can differentiate and capture secondary versus primary activities—especially when one activity is marked as a primary activity in some time periods, and a secondary activity in other time periods. This issue came up in the Uganda and Guatemala pilots, and resulted in re-examining individual questionnaires. 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. 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.

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

  A10: Field costs for the 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 (350 households). Costs differed across the three pilot 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 module, as various questions were still being tested at that time. 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 $160,000 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 $425,000, but the survey collected many more modules for consumption-expenditure, dietary diversity, and anthropometric measurement, as well as other nutrition/food security information.

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 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
- Total time spent in all secondary activities cannot exceed 1440 minutes, but may be less than 1440 minutes if there were no secondary activities during some periods

Other data issues that must be checked include:

- Check non-response in 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

Based on its priorities for Feed the Future programming in 19 focus countries, 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, livestock and fisheries, and autonomy in agricultural production, with no judgment on whether sole or joint decisionmaking was better or reflected greater empowerment.
2. **Resources:** This dimension concerns ownership of, access to, and decisionmaking power about productive 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 economic or social groups and comfort speaking in public.
5. **Time:** This dimension concerns the allocation of time to productive and domestic tasks and satisfaction with the time available for leisure activities.

The 5DE are measured using 10 indicators with their corresponding weights (see Table 1). Each indicator is designed to measure whether each individual reached a certain threshold (has adequate achievement) with respect to each indicator.

Table 1: The domains, indicators, survey questions, aggregation method, inadequacy cut-offs, and weights in the Women's Empowerment in Agriculture Index

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: agriculture production, what inputs to buy, what types of crops to grow for agricultural production, when or who would take crops to market, livestock raising	G2.02 A-C, F G5.02 A-D	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.	1/10
	Autonomy in production	My actions in [DOMAIN] are partly because I will get in trouble with someone if I act differently. Regarding [DOMAIN] I do what I do so others don't think poorly of me. Regarding [DOMAIN] I do what I do because I personally think it is the right thing to do Agricultural production, inputs to buy, crops to grow, take to market, livestock	G5.03-G5.05 A-D	Achievement in any	Inadequate if RAI below 1	1/10
Resources	Ownership of assets	Who would you say owns most of the [ITEM]? Agricultural land,Large livestock, Small livestock, Chicks etc; Fish pond/equip; Farm equip (non-mech); arm equip (mechanized) Nonfarm business equipment House; Large durables; Small durables; Cell phone; Non-ag land (any); Transport	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	1/15
	Purchase, sale, or transfer of assets	Who would you say can decide whether to sell, give away, rent/mortgate [ITEM] most of the time? Who contributes most to decisions regarding a new purchase of [ITEM]? Ag land; Lg livestock, Sm livestock; Chicks etc; Fish pond; Farm equip (non); Farm equip (mech)	G3.03-G3.05 A-G G3.06 A-G	Achievement in any if not only chickens and farming equipment non-mechanized	Inadequate if household does not own any asset or household owns the type of asset BUT she does not participate in the decisions (exchange or buy) about it	1/15
	Access to and decisions on credit	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)	G3.08-G3.09 A-E	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: Your own wage or salary employment? Minor household expenditures?	G2.03 A-F G5.02 E-G	Achievement in any if not only minor household expenditures	Inadequate if participates in activity BUT has no input or little input on indecisions about income generated	1/5
Leadership	Group member	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	G4.05 A-K	Achievement in any	Inadequate if is not part of AT LEAST ONE group	1/10
	Speaking in public	Do you feel comfortable speaking up in public: To help decide on infrastructure (like sm wells, roads) to be built? To ensure proper payment of wages for public work or other similar programs? To protest the misbehavior of authorities or elected officials? To intervene in case of a family dispute?	G4.01 - G4.03	Achievement in any	Inadequate if not comfortable speaking in public	1/10
Time	Workload	Worked more than 10.5 hours in previous 24 hours.	G6.01		Inadequate if works more than 10.5 hours a day	1/10
	Leisure	How would you rate your satisfaction with your available time for leisure activities like visiting neighbors, watching TV, listening to radio, seeing movies or doing sports?	G6.02		Inadequate if not satisfied (<5)	1/10

Source: Alkire et al. (2012).

Domain 1: Production

In the arena of agricultural production we use two indicators: input in productive decisions and relative autonomy in making productive decisions.

Indicator 1.1: Input in production decisions

Input in productive decisions is constructed from answers to the following questions regarding participation in decisionmaking: (1) if an individual participated in the activity, how much input did the individual have in making decisions about (a) food crop farming, (b) cash crop farming, (c) livestock raising, and (d) fish culture (see Annex 1, question G2.02), and (2) to what extent does the individual feel he or she can make his or her own personal decisions regarding the following aspects of household life if he or she wanted to: (a) which inputs to buy, (b) which types of crops to grow for agricultural production, (c) when to take or who should take crops to market, and (d) whether to engage in livestock raising (see Annex 1, question G5.01-02). Although these categories may be modified, the same analytical procedure will apply, albeit with relevant modification.

The answer scale for the question regarding input in decisions is: 1 = *no input,* 2 = *input into very few decisions,* 3 = *input into some decisions,* 4 = *input into most decisions,* and 5 = *input into 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 he or she is considered adequate in at least two of the sub-indicators described above; in other words, the individual is considered adequate 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.[9]

Indicator 1.2: Autonomy in production

The Relative Autonomy Indicator (RAI) measures the ability of a person to act on what he or she values, to have his or her own intrinsic motivations prevail over motivations to please others or avoid punishment, for example. This indicator probes the person's own understanding of the situation and enables the respondent to easily explain the different motivations that influence activities (Alkire 2007).

RAI is constructed from answers to the following (see Annex x, questions G5.03-05): (1) My actions in [activity area] are partly because I will get in trouble with someone if I act differently, (2) Regarding [activity area] I do what I do so others don't think poorly of me, and (3) Regarding [activity area] I do what I do because I personally think it is the right thing to do. The activity areas refer to (1) which inputs to buy, (2) which types of crops to grow, (3) when to take or who should take crops to market, and (4) livestock production. The answer scale for these questions is 1 = *never true,* 2 = *not very true,* 3 = *somewhat true,* and 4 = *always true.*

[9] 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.

Each of the three questions mentioned above is aimed at capturing a different kind of motivation: external (coerced), introjected (trying to please), and identified (own values), respectively.[10] External motivations occur when one's action is effectively coerced. Introjected motivations are those in which the respondent acts to please others or to avoid blame—regardless of whether or not he or she personally values this particular course of action. Identified motivations, which are here associated with empowerment, occur when the person's actions are shaped based on his or her own values. Because motivations are often mixed in real life—we act in part to please others as well as based on our own personal convictions—RAI enables the respondent to articulate the extent to which his or her actions are shaped by all three motivations. If the motivation related to the person's own values is relatively stronger than the motivations related to coercion or trying to please others, then the person has adequacy in autonomy.

For each area of decisionmaking, Ryan and Deci's (2000, 2011) Relative Autonomy Index (RAI) is computed. This index corresponds to the weighted sum of the different types of regulations' subscales. The conventional weights are –2 for external regulation (coercion), –1 for introjected regulation (trying-to-please), and in this case 3 for identified regulation (own values).[11] The index varies between –9 and 9. A RAI value that is greater than 0 means that the individual is moved more by his or her own values than by coercion or others' influence.

All these area-specific relative autonomy indexes are then aggregated into the indicator "autonomy in production." The respondent is considered to have adequate autonomy in production if his or her RAI is greater than 1 in at least one of the four areas of decisionmaking.

Domain 2: Resources

To capture the individual's control over productive resources, three indicators are used: ownership of assets, decisionmaking about productive resources, and access to and decisionmaking about credit.

Indicator 2.1: Ownership of assets

The ownership indicator examines whether an individual has sole or joint ownership of land and assets, based on a comprehensive list of assets (including agricultural land, large and small livestock, fish ponds, farm 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, conditional on the household's owning those assets.[12] Furthermore, for the individual to be considered adequate in this domain, ownership cannot be limited to minor assets only (poultry, nonmechanized equipment, or small consumer durables).

First, for each type of major asset we created an indicator to reflect if someone in the household reports owning that type of asset (see Annex 1, question G3.01a). Then, these indicators were summed across assets, creating the indicator of household ownership, which measures the number of assets that the

[10] According to Ryan and Deci (2000, 235–236), external regulation "is the classic case of extrinsic motivation in which people's behavior is controlled by specific external contingencies. People behave to attain a desired consequence such as tangible rewards or to avoid a threatened punishment. … Whereas with external regulation the control of behavior comes from contingent consequences that are administered by others, with introjected regulation the contingent consequences are administered by the individuals to themselves. The prototypic examples are contingent self-worth (pride) or threats of guilt and shame." Identification "is the process through which people recognize and accept the underlying value of a behavior. By identifying with a behavior's value, people have more fully internalized its regulation; they have more fully accepted it as their own."

[11] As the cross-cultural applicability of the Relative Autonomy Indicator has already been explored extensively we used the conventional weights.

[12] 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).

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), which equals 1 if the individual, alone or jointly, owns the majority 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.

Indicator 2.2: Purchase, sale, or transfer of assets

In many societies, full ownership of assets may not apply, but holding other bundles of rights—especially control rights over the purchase and disposal of assets—can also be empowering. We therefore asked, "Who is the person who can decide regarding the purchase, sale, or transfer of land and assets?" (see Annex 1, questions G3.04-06) As in the ownership indicator, a person has adequacy in this area if the household owns any of those assets and if he or she participates in decisions to buy, sell, or transfer the asset, conditional on the household's owning it. Although the ownership indicator covers all types of assets, this indicator refers only to agricultural productive assets, namely, agricultural land; large livestock; small livestock; chickens, ducks, turkeys, and pigeons; fish ponds or fishing equipment; nonmechanized farm equipment; and mechanized farm equipment.

First, for each type of right (sell, give, rent, and buy) and asset, an indicator is created that equals 1 if the respondent has, alone or jointly, that right over that type of asset; otherwise the indicator is 0. Second, for each type of agricultural asset the types of rights are aggregated into an indicator of whether the individual has those rights over that asset. This indicator assumes the value 1 if the respondent has, alone or jointly, at least one of the rights considered—to sell, to give, to rent, or to buy—over that type of asset. Third, these indicators of rights are aggregated across types of assets, generating the indicator "purchase, sale, or transfer of assets." This indicator classifies the individual as adequate if he or she has at least one type of right over at least one type of agricultural asset. Individuals who live in households that do not own any type of agricultural asset are considered inadequate and hence are assigned the value 0 for this indicator.

Indicator 2.3: 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 on this indicator, a person must belong to a household that has access to credit and if the household used a source of credit, must have participated in at least one decision about it.

First, 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 G3.07). Second, 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 decisions considered—borrowing or how to use the credit—for that particular source of credit (see Annex 1, question G3.08-09). 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

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.

Indicator 3: 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 the activity, how much input did the individual have in decisions about the use of income generated from (a) food crop farming, (b) cash crop farming, (c) livestock raising, and (d) fish culture (see Annex 1, questions G2.03), and (2) to what extent does the individual feel he or she can make his or her own personal decisions regarding the following aspects of household life if he or she wanted to: (a) his or her wage or salary employment, (b) major household expenditures, and (c) minor household expenditures (see Annex 1, questions G5.01-02).[13]

The answer scale for the question regarding input in decisions is: 1 = *no input,* 2 = *input into very few decisions,* 3 = *input into some decisions,* 4 = *input into most decisions,* and 5 = *input into 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. Two indicators are used as proxies for that potential: active membership in community groups and comfort speaking in public.

Indicator 4.1: 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 G4.05), including (1) agriculture producers' or marketing groups, (2) water users' groups, (3) forest users' groups, (4) credit or microfinance groups; (5) mutual help or insurance groups (including burial societies), (6) trade and business associations, (7) civic or charitable groups, (8) local government groups, (9) religious groups, and (10) other women'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 al., 2012).

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

Indicator 4.2: Speaking in public

The indicator for whether the individual is comfortable speaking up in public is constructed based on responses to questions regarding the individual's ease in speaking up in public for three reasons (see Annex 1, questions G4.01-03): (1) to help decide on infrastructure (such as small wells, roads) to be built, (2) to ensure proper payment of wages for public work or other similar programs, and (3) to protest the misbehavior of authorities or elected officials. The answer scale for these questions is 1 = *no, not at all comfortable*, 2 = *yes, but with a great deal of difficulty*, 3 = *yes, but with a little difficulty*, 4 = *yes, fairly comfortable*, and 5 = *yes, very comfortable.*

For each of the three reasons, an indicator of the individual's comfort in speaking for that specific reason was created. The answer 2, *yes, but with a great deal of difficulty,* is the cut-off. So the respondent is considered to be comfortable speaking in public if he or she does not answer *no, not at all comfortable.* The three reason-specific indicators are aggregated into the indicator "speaking in public." The respondent is considered adequate in speaking in public if he or she is comfortable speaking in public for at least one of the three reasons listed above.

Domain 5: Time

The time allocation domain includes two indicators: workload and leisure. The first refers to the allocation of time to productive and domestic tasks; the second captures the individual's satisfaction with the time available for leisure activities.

Indicator 5.1: 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 and secondary 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 G6.01). 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 plus 50 percent of the time she or he reported spending on work-related tasks as the secondary 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.[14]

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

[14] 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.

provisionally but, as was mentioned above, an alternative time use module could also be considered (Harvey and Taylor 2000).[15]

Indicator 5.2: Leisure

Respondents were asked to rank their level of satisfaction with the time available for leisure activities such as visiting neighbors, watching TV, listening to the radio, seeing movies, or doing sports from 1 = *not satisfied* to 10 = *very satisfied* (see Annex 1, question G6.02). The indicator "leisure time" considers the respondent adequate if he or she ranks his or her level of satisfaction equal to or higher than 5, which means he or she is indifferent to or satisfied with the time available for leisure. The percentage of women with adequate leisure time is 65.8 in Bangladesh, 83.1 in Guatemala, and 68.3 in Uganda. As this is a subjective question, it reflects respondents' frames of reference as well as their actual achievements. Male and female reference standards may differ, making gendered and trend comparisons problematic. For example, in Bangladesh men's dissatisfaction with their leisure was higher than women's. In large scale multi-purpose household surveys, a more accurate short time use module could be used for both time use questions, and survey administration could be staggered to better capture seasonality.

Individual Empowerment Scores

Using individual responses to the survey questions outlined above, each of the ten 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 ten 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 Index 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.do ("*dataprep*") This do file constructs the ten indicators
2. Calculating-the-WEAI.do ("*calculation*") This do file constructs the 5DE and the GPI

[15] 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. For example, Eurostat's official time use guidelines (see http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-RA-08-014/EN/KS-RA-08-014-EN.PDF) state, "**It is recommended** that the survey days/dates be representative of, and cover a full 12-month period, i.e. 365 consecutive days, preferably including potentially problematic days and periods like Christmas and New Year." A similar point is made for developing countries on page 48 of http://unstats.un.org/unsd/publication/SeriesF/SeriesF_93E.pdf: "Given the likely cyclical pattern of activities over a year, the time period for a time-use survey is ideally taken to be 12 months. The 12-month period may be a calendar year, or it may be any other 12-month period (for example, from June 1 of one year to May 31 of the following year)." 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 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).

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 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) [16]
    - Must already contain the two variables that sum up the total number of minutes in each activity category spent as a primary activity (f01_1) and as a secondary activity (f01_2)
    - 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 418-435 in the *dataprep* do file (enclose these lines in /* */) so long as you have the corresponding variables for f01_1 and f01_2.

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 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 32)
- 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:

[16] There are 24 activity categories in the pilot surveys, which was reduced to 18 in the final FTF PBS WEAI module.

- "*all_depr_indicators.dta*" –individual-level data set which contains the ten 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 300-308 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 (see "*WEAI Tables with Instructions*" in Annex 3, also 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 177 and 179 in the *calculation* do file as follows:

- Line 177: `gen group = groupvar`
- Line 179: `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 32 of the *calculation* do file. Below is a comparison of line 32 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: The survey did not collect the questions for one of the indicators. Can we still construct the Index?**

  A3: So long as you are not missing all the indicators for a dimension, it is possible to re-weight the Index. Please note, however, that the resulting Index will NOT be strictly comparable with other countries.

  For example, consider the Leadership domain, which is measured by two indicators: group membership and speaking in public. Suppose that our survey was unable to ask the questions on speaking in public. The weight of remaining indicator for this domain, group membership, can therefore be increased from 1/10 to 1/5. The weights for the rest of the indicators remain unchanged.

  The adjustments in the do files are as follows:

  - In the *dataprep* do file, delete/star the section that creates the *speakpublic_any* variable
  - In the *calculation* do file:
    - In the loop on lines 73-75 and 349-351, change the weight to 1/5 and delete *speakpublic_any*
    - Exclude *speakpublic_any* in all varlists (include only 9 indicators), lines 24, 51, 53, 331, 333

  You can follow the same re-weighting method to compensate for any missing indicator, so long as there is at least one indicator for each domain. This is the same approach followed by the Multidimensional Poverty Index (MPI) in dealing with countries with missing indicators. Both the WEAI and the MPI are based on the Alkire-Foster methodology.

- **Q4: Our survey used a 5-category scale for the autonomy questions rather than the 4 categories:**

WEAI codes	*Modified codes*
1 Never true	1 Strongly disagree
2 Not very true	2 Disagree
3 Somewhat true	3 Somewhat agree/disagree
4 Always true	4 Agree
	5 Strongly agree

How should we reallocate these responses into the 4 categories required to construct the RAI?

A4: In implementing these (and similar) questions, it is good practice to avoid having an odd number of response codes because a lot of people tend to choose the 'middle' value; having an even number of possible responses requires a choice.

Before reallocating these responses to construct the RAI, it is important to check the frequency distribution of responses across the activities. The best approach to reallocating would depend on where the majority of the responses usually 'heap', so there is really no one clear approach to solving this issue.

Suppose we find that the 'heap' occurs in code 4 "Agree", and code 3 "Somewhat agree/disagree" only represents a small proportion of responses across the different autonomy questions. We can then recode the responses as follows:

WEAI codes	*Recode*
1 Never true	1 Strongly disagree
2 Not very true	2 Disagree
	2.5 Somewhat agree/disagree
3 Somewhat true	3 Agree
4 Always true	4 Strongly agree

So by coding the middle response at 2.5, we are basically 'whiting out' those results without reducing the sample size, and letting the other responses determine the RAI. This is acceptable as long as this is not where the responses 'heap'.

- **Q5: How should we weight the WEAI score for each country when we aggregate the total FTF value? Even though the 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 in their ZOI to skew the outcome (i.e. Bangladesh).**

A5: Yes, the WEAI should be weighted by populations in the FTF ZOI. However, in the future, surveys will be from different years, so there is always 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 population and then estimating the rates of population growth. This allows us to do some aggregations across countries using different time references.

Part C: Analysis

C1. Tabulations

In this section we present the standard tables for reporting the WEAI results and explain how to interpret them using the 2012 baseline data from the Ghana Feed the Future Population-Based Survey as an example. Table 2 reports the overall WEAI, and its subindexes, the 5DE and GPI, for the Ghana zone of influence. To identify the areas that contribute most to disempowerment for women and men, we decompose the disempowerment index (M0) by domain and indicator in Table 3. Drawing from the decomposition presented in Table 3, Figure 1 visually presents how the configuration of disempowerment differs between women and men.

The overall WEAI results are presented in Table 2, which is similar to the format used for the WEAI pilot results (see Alkire et al., 2012: Tables 9.1, 9.3, and 9.5). To facilitate the interpretation of the disempowered headcount (H), the average inadequacy score (A), and the percentage of women with no gender parity (H_{GPI}), 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-H_{GPI}). This is to demonstrate that the subindexes and their components can be presented and interpreted both in terms of empowerment and disempowerment.

Overall WEAI

The WEAI for Ghana is 0.716. It is a weighted average of the 5DE subindex value of 0.705 and the GPI subindex value of 0.807.

Setting WEAI targets

Being a new monitoring tool, there is still little evidence on which to set targets for the WEAI. For this reason, USAID missions are encouraged to set aspirational targets, such as a standard 10 percent increase in the 5DE and a similar percent increase in the GPI.

Below are some resources on evidence related to the domains:

- Production: Udry (1996), Peterman et al. (2011)
- Resources: Bohumangi, Doss, and Meinzen-Dick (2011), Quisumbing and Kumar (2011)
- Leadership: Pandolfelli, Meinzen-Dick, and Dohrn (2008)
- Gender Parity: Klasen and Lamanna (2008)

5DE

The 5DE for Ghana shows that 27.9 percent of women are empowered. In the FTF zone, 72.1 percent of women who are not yet empowered have, on average, inadequate achievements in 40.8 percent of domains. Thus, the women's disempowerment index (M0) is 72.1 percent × 40.8 percent = 0.295 and 5DE is 1 – 0.295 = 27.9 percent + (72.1 percent × [1 – 40.8 percent]) = 0.705. In the FTF zone, 23.8 percent of men are not yet empowered, and the average inadequacy score among these men is 31.5 percent. So the men's disempowerment index (M0) is 23.8 percent × 31.5 percent = 0.075, and men's 5DE is 1 – 0.075 = 0.925.

The disempowerment measures (M0) for women (0.295) and men (0.075) decomposed by domain and indicator are presented in Table 3 and Figure 1. Based on the decomposition of M0 in Table 3, the

domains in the Ghana sample areas that contribute most to women's disempowerment are lack of control over resources (36 percent), weak leadership (17.7 percent), and little decision-making power in agricultural production (17.2 percent). Over 60 percent of women in the survey are not yet empowered and lack access to credit and the ability to make decisions about it (61.9 percent), and more than half are not yet empowered and have little decisionmaking power over the purchase, sale, or transfer of assets (58.3 percent). More than a quarter of women are not yet empowered and do not belong to any group (26.4 percent), and 28.7 percent have little input in productive decisions.

Table 2: Ghana WEAI, Feed the Future Zone of Influence (ZOI)

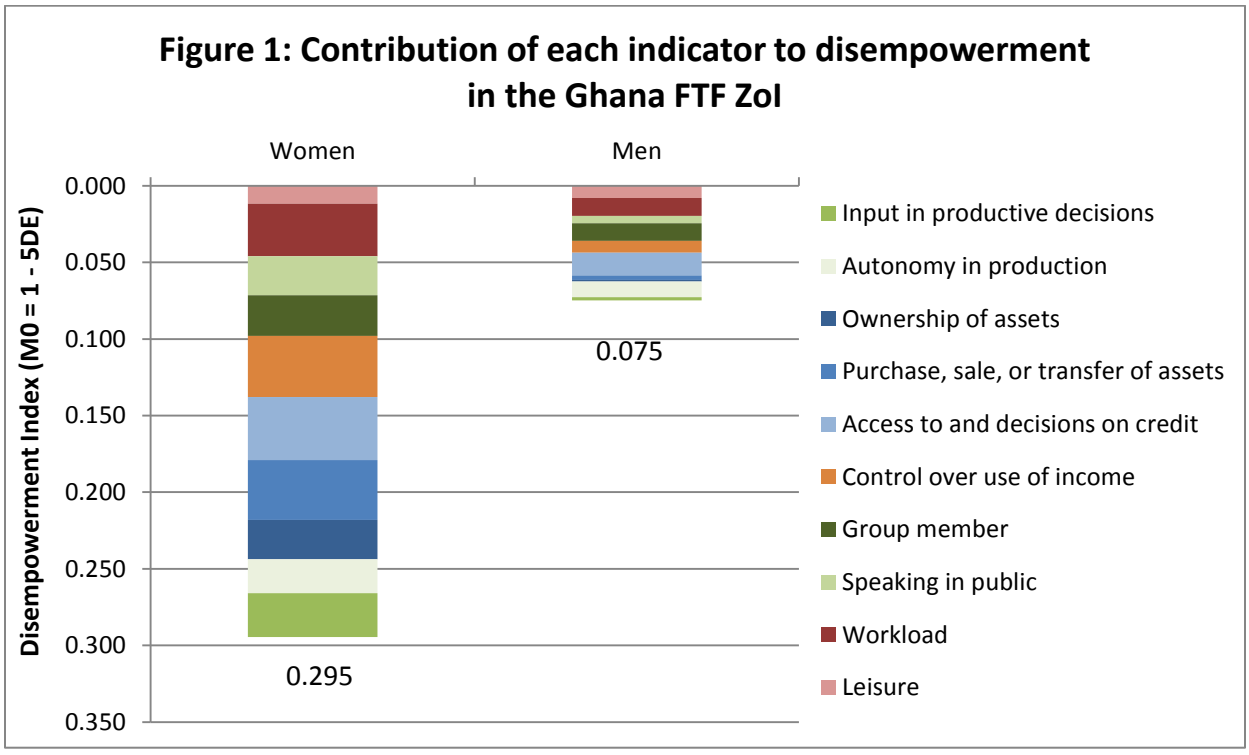
Indexes	Overall ZOI	
	Women	Men
Disempowered Headcount (H)	72.1%	23.8%
Empowered Headcount (1-H)	27.9%	76.2%
Average Inadequacy Score (A)	40.8%	31.5%
Average Adequacy Score (1- A)	59.2%	68.5%
Disempowerment Index (M0 = H x A)	0.295	0.075
5DE Index (1-M0)	0.705	0.925
No. of observations used	2160	2350
Total observations	3407	3684
% of Data used	63.4%	63.8%
% of women without gender parity (H_{GPI})	73.1%	
% of women with gender parity (1-H_{GPI})	26.9%	
Average Empowerment Gap (I_{GPI})	26.4%	
GPI (1 - H_{GPI} x I_{GPI})	0.807	
No. of observations used	1421	
Total no. of dual households	2723	
% of Data Used	52.2%	
WEAI (0.9 x 5DE + 0.1 x GPI)	0.716	

Note: Calculations weighted to adjust for sampling design.

Figure 1 compares the configuration of men and women's disempowerment. The length of the bars represents the disempowerment index for women and men, respectively, while the composition of the bars represents the absolute contributions of each of the indicators to the disempowerment index. The most striking result from this figure is the large gap between the disempowerment of women compared to men, and the extent of women's disempowerment in every indicator. There are also some notable differences in the configuration of men's disempowerment relative to women's. Lack of access to credit (19.5 percent), time poverty (15.7 percent), and lack of group membership (15.5 percent) are the indicators with the largest contributors to men's disempowerment. While the leadership domain contributed large shares to both women and men's disempowerment, 17.7 percent and 21.7 percent respectively, both group membership and speaking in public were equally important contributors of disempowerment for women, whereas for men, it is lack of group membership that was much more important. Nevertheless, because more women are disempowered overall, 26.4 percent of women are not yet empowered and do not participate in any group, compared with only 11.8 percent of men. Similarly, the work burden contributed only 11.6 percent to women's disempowerment, compared with 15.7 percent for men. However, over a third of women, 34.3 percent, are not yet empowered and are overburdened with work, compared with only 11.7 percent of men.

Table 3: Ghana 5DE decomposed by dimension and indicator

Statistics	Production		Resources			Income	Leadership		Time	
	Input in productive decisions	Autonomy in production	Ownership of assets	Purchase, sale, or transfer of assets	Access to and decisions on credit	Control over use of income	Group member	Speaking in public	Workload	Leisure
Indicator Weight	0.10	0.10	0.0667	0.0667	0.0667	0.20	0.10	0.10	0.10	0.10
WOMEN										
Censored headcount	0.287	0.221	0.387	0.583	0.619	0.200	0.264	0.256	0.343	0.117
% Contribution	9.7%	7.5%	8.7%	13.2%	14.0%	13.5%	9.0%	8.7%	11.6%	4.0%
Contribution	0.029	0.022	0.026	0.039	0.041	0.040	0.026	0.026	0.034	0.012
% Contr. by dimension	17.2%		36.0%			13.5%	17.7%		15.6%	
MEN										
Censored headcount	0.023	0.102	0.015	0.045	0.220	0.039	0.116	0.047	0.117	0.080
% Contribution	3.0%	13.6%	1.4%	4.0%	19.5%	10.5%	15.5%	6.3%	15.7%	10.6%
Contribution	0.002	0.010	0.001	0.003	0.015	0.008	0.012	0.005	0.012	0.008
% Contr. by dimension	16.6%		24.9%			10.5%	21.7%		26.3%	



GPI

The GPI shows that 26.9 percent of women have gender parity with the primary male in their households (Table 2). Of the 73.1 percent of women who are less empowered, the empowerment gap between them

and the males in their households is quite large at 26.4 percent. Thus the overall GPI in the Ghana FTF zone of influence is (1 – [73.1 percent x 26.4 percent]) or 0.807.

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/10 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 WEAI, 5DE and GPI. For example, Table 4 reports the same indexes for the overall Ghana FTF ZOI, but also reports the decomposed indexes by strata of intervention (agriculture and nutrition interventions, or agriculture-only interventions), and by region within each strata. Table 5 reports the decomposition of the 5DE by domain and indicator, and again by strata and by region. Figure 2 presents the configuration of disempowerment for women and men in each of these strata-region subgroups.

Table 4: Ghana WEAI, FTF ZOI, by region, and strata of intervention

Indexes	RING: nutrition + ag		non-RING: ag only										Overall ZOI	
	Northern		Brong Ahafo		Northern		Upper East		Upper West		All non-RING			
	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
Disempowered Headcount (H)	83.9%	25.6%	49.4%	19.9%	80.6%	16.7%	62.2%	28.3%	64.0%	17.9%	62.7%	21.9%	72.1%	23.8%
Empowered Headcount (1-H)	16.1%	74.4%	50.6%	80.1%	19.4%	83.3%	37.8%	71.7%	36.0%	82.1%	37.3%	78.1%	27.9%	76.2%
Average Inadequacy Score (A)	43.2%	32.1%	36.8%	30.9%	41.2%	32.3%	38.3%	30.8%	36.9%	29.1%	38.4%	30.8%	40.8%	31.5%
Average Adequacy Score (1- A)	56.8%	67.9%	63.2%	69.1%	58.8%	67.7%	61.7%	69.2%	63.1%	70.9%	61.6%	69.2%	59.2%	68.5%
Disempowerment Index (M0 = H x A)	0.362	0.082	0.182	0.062	0.332	0.054	0.238	0.087	0.236	0.052	0.241	0.067	0.295	0.075
5DE Index (1-M0)	0.638	0.918	0.818	0.938	0.668	0.946	0.762	0.913	0.764	0.948	0.759	0.933	0.705	0.925
No. of observations used	958	1199									1202	1151	2160	2350
Total observations	1707	1982	418	365	321	372	579	590	378	383	1700	1702	3407	3684
% of Data used	56.1%	60.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	70.7%	67.6%	63.4%	63.8%
% of women without gender parity (H_{GPI})	81.7%		57.6%		80.3%		58.7%		67.9%		65.5%		73.1%	
% of women with gender parity (1-H_{GPI})	18.3%		42.4%		19.7%		41.3%		32.1%		34.5%		26.9%	
Average Empowerment Gap (I_{GPI})	29.1%		21.7%		27.0%		22.9%		21.3%		23.4%		26.4%	
GPI (1 - H_{GPI} x I_{GPI})	0.762		0.875		0.783		0.866		0.856		0.846		0.807	
No. of observations used	668		158		173		254		168		753		1421	
Total no. of dual households	1459		230		305		435		294		1261		2723	
% of Data Used	45.8%		68.7%		56.7%		58.4%		57.1%		59.7%		52.2%	
WEAI (0.9 x 5DE + 0.1 x GPI)	0.650		0.824		0.680		0.772		0.773		0.768		0.716	

Note: Calculations weighted to adjust for sampling design. RING stands for Resilience in Northern Ghana (USAID/Ghana, 2012).

Figure 2: Contribution of each indicator to disempowerment, by strata, Ghana FTF ZOI

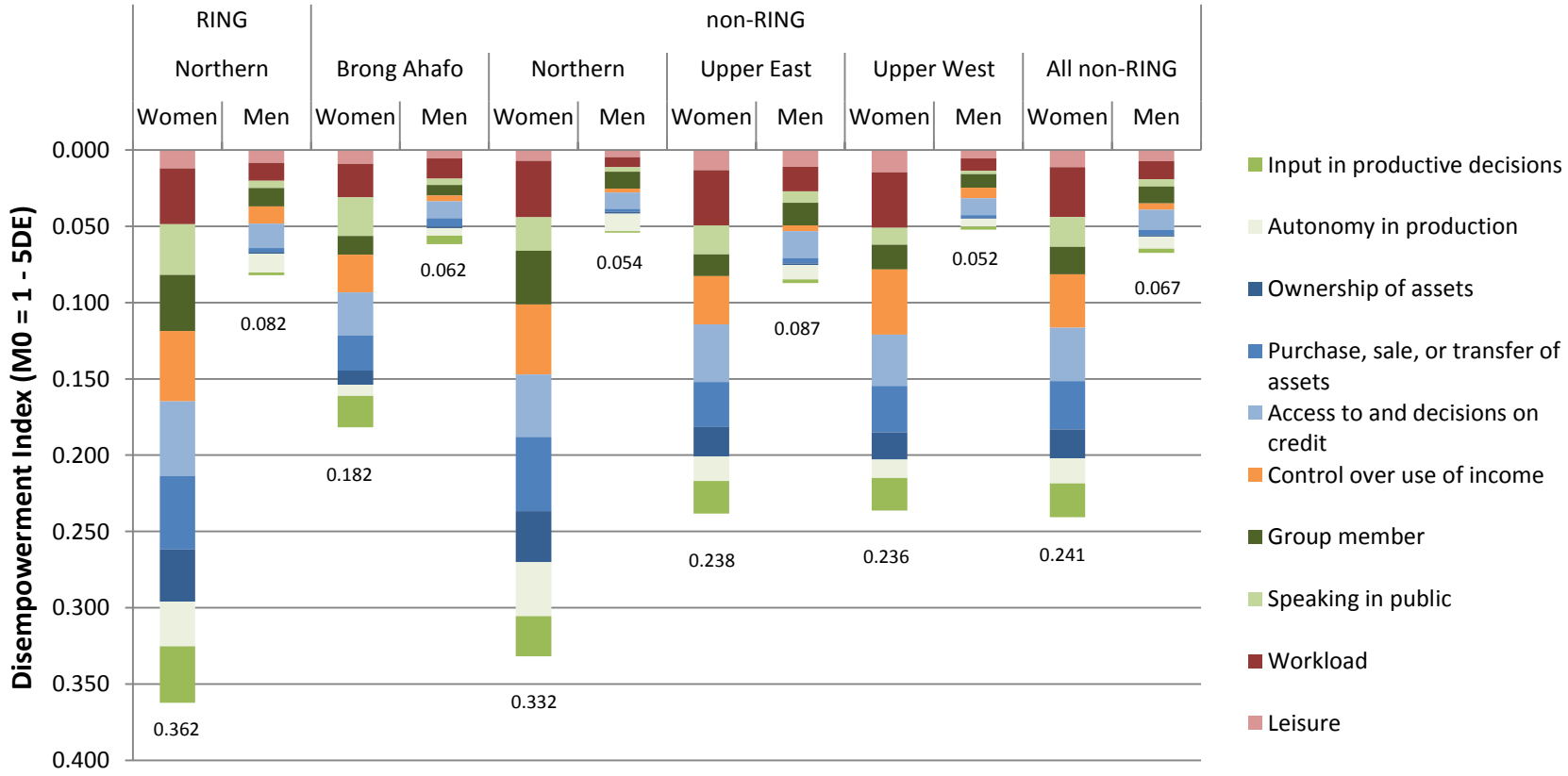


Table 5: Ghana 5DE by strata and region, decomposed by dimension and indicator

Statistics	Production		Resources			Income	Leadership		Time	
	Input in productive decisions	Autonomy in production	Ownership of assets	Purchase, sale, or transfer of assets	Access to and decisions on credit	Control over use of income	Group member	Speaking in public	Workload	Leisure
Indicator Weight	0.10	0.10	0.0667	0.0667	0.0667	0.20	0.10	0.10	0.10	0.10
RING: nutrition + agriculture interventions										
Northern										
WOMEN										
Censored headcount	0.368	0.292	0.514	0.720	0.737	0.231	0.367	0.333	0.364	0.121
% Contribution	10.2%	8.1%	9.5%	13.3%	13.6%	12.7%	10.1%	9.2%	10.1%	3.3%
Contribution	0.037	0.029	0.034	0.048	0.049	0.046	0.037	0.033	0.036	0.012
% Contr. by dimension	18.2%		36.3%			12.7%	19.3%		13.4%	
MEN										
Censored headcount	0.018	0.123	0.017	0.040	0.239	0.057	0.121	0.047	0.117	0.085
% Contribution	2.1%	15.0%	1.4%	3.3%	19.4%	13.8%	14.7%	5.7%	14.2%	10.4%
Contribution	0.002	0.012	0.001	0.003	0.016	0.011	0.012	0.005	0.012	0.009
% Contr. by dimension	17.2%		24.0%			13.8%	20.4%		24.6%	
non-RING: agriculture interventions only										
Brong Ahafo										
WOMEN										
Censored headcount	0.206	0.073	0.139	0.345	0.424	0.123	0.123	0.253	0.218	0.092
% Contribution	11.3%	4.0%	5.1%	12.7%	15.6%	13.6%	6.8%	13.9%	12.0%	5.0%
Contribution	0.021	0.007	0.009	0.023	0.028	0.025	0.012	0.025	0.022	0.009
% Contr. by dimension	15.3%		33.3%			13.6%	20.7%		17.1%	
MEN										
Censored headcount	0.055	0.048	0.015	0.085	0.166	0.018	0.070	0.041	0.133	0.055
% Contribution	9.0%	7.8%	1.6%	9.2%	18.0%	6.0%	11.4%	6.6%	21.6%	9.0%
Contribution	0.006	0.005	0.001	0.006	0.011	0.004	0.007	0.004	0.013	0.006
% Contr. by dimension	16.8%		28.7%			6.0%	18.0%		30.5%	
Northern										
WOMEN										
Censored headcount	0.264	0.352	0.502	0.731	0.612	0.229	0.352	0.220	0.370	0.070
% Contribution	8.0%	10.6%	10.1%	14.7%	12.3%	13.8%	10.6%	6.6%	11.2%	2.1%
Contribution	0.026	0.035	0.033	0.049	0.041	0.046	0.035	0.022	0.037	0.007
% Contr. by dimension	18.6%		37.1%			13.8%	17.3%		13.3%	
MEN										
Censored headcount	0.009	0.116	0.017	0.030	0.159	0.013	0.112	0.030	0.064	0.047
% Contribution	1.6%	21.4%	2.1%	3.7%	19.6%	4.8%	20.6%	5.6%	11.9%	8.7%
Contribution	0.001	0.012	0.001	0.002	0.011	0.003	0.011	0.003	0.006	0.005
% Contr. by dimension	23.0%		25.4%			4.8%	26.2%		20.6%	

Table 5: Ghana 5DE by Strata and Region, Decomposed by Dimension and Indicator (cont'd)

Statistics	Production		Resources			Income	Leadership		Time	
	Input in productive decisions	Autonomy in production	Ownership of assets	Purchase, sale, or transfer of assets	Access to and decisions on credit	Control over use of income	Group member	Speaking in public	Workload	Leisure
Indicator Weight	0.10	0.10	0.0667	0.0667	0.0667	0.20	0.10	0.10	0.10	0.10
RING: nutrition + agriculture interventions										
Upper East										
WOMEN										
Censored headcount	0.214	0.161	0.291	0.441	0.566	0.158	0.143	0.189	0.362	0.133
% Contribution	9.0%	6.7%	8.1%	12.3%	15.8%	13.3%	6.0%	7.9%	15.2%	5.6%
Contribution	0.021	0.016	0.019	0.029	0.038	0.032	0.014	0.019	0.036	0.013
% Contr. by dimension	15.7%		36.3%			13.3%	13.9%		20.8%	
MEN										
Censored headcount	0.024	0.094	0.017	0.051	0.264	0.019	0.148	0.075	0.160	0.111
% Contribution	2.8%	10.8%	1.3%	3.9%	20.2%	4.4%	16.9%	8.6%	18.3%	12.8%
Contribution	0.002	0.009	0.001	0.003	0.018	0.004	0.015	0.008	0.016	0.011
% Contr. by dimension	13.6%		25.3%			4.4%	25.5%		31.1%	
Upper West										
WOMEN										
Censored headcount	0.213	0.120	0.266	0.457	0.506	0.213	0.161	0.112	0.363	0.146
% Contribution	9.0%	5.1%	7.5%	12.9%	14.3%	18.1%	6.8%	4.8%	15.4%	6.2%
Contribution	0.021	0.012	0.018	0.030	0.034	0.043	0.016	0.011	0.036	0.015
% Contr. by dimension	14.1%		34.7%			18.1%	11.6%		21.6%	
MEN										
Censored headcount	0.021	0.051	0.004	0.030	0.167	0.034	0.090	0.021	0.081	0.056
% Contribution	4.1%	9.8%	0.5%	3.8%	21.3%	13.1%	17.2%	4.1%	15.5%	10.6%
Contribution	0.002	0.005	0.000	0.002	0.011	0.007	0.009	0.002	0.008	0.006
% Contr. by dimension	13.9%		25.6%			13.1%	21.3%		26.2%	
All non-RING										
WOMEN										
Censored headcount	0.221	0.165	0.285	0.474	0.524	0.175	0.181	0.195	0.326	0.113
% Contribution	9.2%	6.8%	7.9%	13.1%	14.5%	14.5%	7.5%	8.1%	13.6%	4.7%
Contribution	0.022	0.016	0.019	0.032	0.035	0.035	0.018	0.019	0.033	0.011
% Contr. by dimension	16.0%		35.6%			14.5%	15.6%		18.3%	
MEN										
Censored headcount	0.028	0.079	0.014	0.050	0.200	0.021	0.110	0.047	0.118	0.074
% Contribution	4.1%	11.7%	1.4%	5.0%	19.8%	6.2%	16.4%	7.0%	17.5%	11.0%
Contribution	0.003	0.008	0.001	0.003	0.013	0.004	0.011	0.005	0.012	0.007
% Contr. by dimension	15.9%		26.1%			6.2%	23.3%		28.5%	

C2. Using 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 WEAI results can be used for diagnostics using the results from the Ghana baseline. 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

Example: Ghana Baseline

Which region/area is least empowered in the five domains? Table 4 presents the WEAI results for the Resilience in Northern Africa (RING) stratum, which receives both nutrition and agriculture interventions, and the non-RING stratum, which receives only agriculture interventions. The results show that women in the RING stratum are the least empowered in the Ghana FTF ZOI. This suggests that

greater focus be placed on the gender impacts of projects in this area, to ensure that projects contribute to women's inclusion and empowerment in the agriculture sector.

Targeting beneficiaries in this stratum can be improved by further disaggregating the characteristics of the individuals and households in this area, and identifying the least empowered women and men across different types of characteristics. For example, the 5DE and GPI scores can be decomposed according to types of crops grown, farming system, tenure status, dependency ratio, presence of vulnerable children/elderly, and other characteristics that might be of interest.

What is the configuration of their disempowerment? Based on the 5DE decomposition by strata and region in Table 5, we can summarize the key constraints to women and men's empowerment as follows:

Table 6: Key contributors to disempowerment, Ghana ZOI, by gender, strata & region

	Women		Men	
Strata/Region	**Domains**	**Indicators**	**Domains**	**Indicators**
RING, Northern	Resources Leadership	Credit Group membership	Resources Time	Credit Workload
Non-RING, all regions	Resources Time	Credit Workload	Time Resources	Workload Credit
Brong Ahafo	Resources Leadership	Credit Speaking in public	Time Resources	Workload Credit
Northern	Resources Production	Rights over assets Autonomy	Leadership Resources	Group membership Credit
Upper East	Resources Time	Credit Workload	Time Leadership	Workload Group membership
Upper West	Resources Time	Credit Workload	Time Resources	Workload Credit

Note: Includes the top two domains and the top indicator within each identified domain with the highest percentage contribution to disempowerment for each subgroup.

There appears to be much similarity in the most important contributors to disempowerment for women and for men across the different regions. Access to productive resources, particularly credit, appears to be a key domain for both women and men in all regions, while the time burden is a key domain for men in all regions, and for women in the Upper East and Upper West regions. As for the least empowered area, the RING Northern region, the largest contributors to women's disempowerment are access to productive resources andlack of leadership in the community.

How does the project affect women and men in key domains that contribute most to their disempowerment? Can the project be improved to address these constraints? Answering these questions requires detailed information on the programs, projects and activities that are being assessed. For USAID missions in particular, the FTF Gender Integration Framework is a useful tool for thinking through how FTF programs are linked to the five domains of the WEAI[17], and how addressing these domains can lead to inclusive agricultural growth. The full framework is presented in Annex 4.

Below is a brief description of the FTF projects in Ghana, from the FTF Ghana PBS Protocol (USAID/Ghana 2012):

[17] The FTF Gender Integration Framework covers seven domains: the five domains of agriculture in the WEAI, human capital, and technology.

Table 6: Implementing partners and activity summary

Implementing Partner	Project Title	Project Timeline	Activity Summary
ACDI/VOCA	ADVANCE	2009-13	Integration of small-holder agriculture into supply chain of agro-processing and export markets.
Engineering, Environmental Science & Economics (Danish/EU/USAID)	BUSAC II	2011-14	Increasing capacity of business association, trade unions, business media to research and advocate change.
1. Technical Assistance Provider To Be Determined 2. District Assemblies in 15 RING regions.	RING	2012-17	Focus on rural agricultural households with women of reproductive age and children under 2; increase consumption of diverse quality foods, especially among women and children, improving behaviors related to nutrition of women and young children, strengthening local support networks of vulnerable households.
MoFA (World Bank, USAID)	GCAP	2012-17	Increased access to land, private sector finance, input-and output markets by smallholder farmers from private-public partnerships in commercial agriculture

Source: Table 1, FTF Ghana Population-Based Survey: Baseline Protocol (USAID/Ghana 2012).

While there is no direct mention of credit in any of the agricultural projects, in the GCAP project, access to credit may be facilitated by increased access to land (which may be used as collateral), as well as private sector finance. However, depending on the how beneficiaries are identified, it is not clear that women will benefit equally from this intervention. The project must be cognizant of any cultural, social, religious, or other constraints to women participating in and benefiting from the project, as well as risks to women's dispossession of assets or potential loss of control over production activities.

The ADVANCE and GCAP project may also tap farmer's groups in a way that encourages broader membership, especially of women. Group-based approaches to delivery of the project inputs/benefits, for example, may be one way to improve both access to credit and group membership at the same time.

Finally, although the nutrition project may appear to be directly related to empowerment in agriculture, there may be potential unintended negative consequences of adopting improved nutrition and feeding behaviors. For example, exclusive breastfeeding may not be compatible with certain types of livelihoods, so that improved nutrition indicators may come at the expense of empowerment in agriculture. Another example is that a more diversified diet may require more preparation time, which might mean less time for productive activities, or less leisure time. If that is the case, complimentary programs to help women save time elsewhere will encourage women to improve nutrition behaviors and at the same time maintain

their status in agriculture. It is important to stress that, unless time constraints are addressed up front in project design, there may be missed opportunities to maximize project benefits.

The nutrition project also mentions strengthening local support networks of vulnerable households. This might also provide an opportunity for women to participate in community groups and develop leadership roles in the community.

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 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 5.

C3. Econometric Analysis

Beyond describing overall patterns in empowerment and diagnostics, the 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 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.

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Annexes

Annex 1: WEAI survey module (10 pages)

Annex 2a: *Dataprep* do file

Annex 2b: *Calculation* do file

Annex 3: WEAI tables with instructions

Annex 4: FTF Gender Integration Framework

Annex 5: Gender Checklist by WEAI Domain

Annex 1: WEAI Survey Module -- MODULE G. WOMEN'S EMPOWERMENT IN AGRICULTURE INDEX

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 C) 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 and secondary respondent the same—it is ok for them to be different.*

MODULE G1. INDIVIDUAL IDENTIFICATION

	Code
G1.01. Household Identification:.....	
G1.02. Name of respondent currently being interviewed (ID Code from roster in Section C Household Roster): **Surname, First name:**.....	
G1.03. Sex of respondent**:** Male..... 1 Female..... 2	
G1.04. Type of household Male and female adult ……..1 Female adult only……2	

	Code
G1.05. Outcome of interview	
G1.06. Ability to be interviewed alone:	

G05
Completed 1
Incomplete 2
Absent.....3
Refused 4
Could not locate.....5

G06
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

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 | |

Activity		Did you (singular) participate in [ACTIVITY] in the past 12 months (that is during the last [one/two] cropping seasons)? Yes..... 1 No ..... 2 >> next activity	How much input did you have in making decisions about [ACTIVITY]?	How much input did you have in decisions on the use of income generated from [ACTIVITY]
ActivityCode	Activity Description	**G2.01**	**G2.02**	**G2.03**
A	Food crop farming: crops that are grown primarily for household food consumption			
B	Cash crop farming: crops that are grown primary for sale in the market			
C	Livestock raising			
D	Non-farm economic activities: Small business, self-employment, buy-and-sell			
E	Wage and salary employment: in-kind or monetary work both agriculture and other wage work			
F	Fishing or fishpond culture			
			G2.02/G2.03: Input into decision making No input..... 1 Input into very few decisions..... 2 Input into some decisions..... 3 Input into most decisions..... 4 Input into all decisions..... 5 No decision made 6	

MODULE G3: ACCESS TO PRODUCTIVE CAPITAL

.

Productive Capital		Does anyone in your household currently have any [ITEM]? Yes ..... 1 No ..... 2 >> next item	How many of [ITEM] does your household currently have?	Who would you say owns most of the [ITEM]?	Who would you say can decide whether to sell [ITEM] most of the time?	Who would you say can decide whether to give away [ITEM] most of the time?	Who would you say can decide to mortgage or rent out [ITEM] most of the time?	Who contributes most to decisions regarding a new purchase of [ITEM]?
Productive Capital		**G3.01a**	**G3.01b**	**G3.02**	**G3.03**	**G3.04**	**G3.05**	**G3.06**
A	Agricultural land (pieces/plots)							
B	Large livestock (oxen, cattle)							
C	Small livestock (goats, pigs, sheep)							
D	Chickens, Ducks, Turkeys, Pigeons							
E	Fish pond or fishing equipment							
F	Farm equipment (non-mechanized)							
G	Farm equipment (mechanized)							
H	Nonfarm business equipment							
I	House (and other structures)							
J	Large consumer durables (fridge, TV, sofa)							
K	Small consumer durables (radio, cookware)							
L	Cell phone							
M	Other land not used for agricultural purposes (pieces, residential or commercial land)							
N	Means of transportation (bicycle, motorcycle, car)							

G3.02-G3.06: Decision-making and control over productive capital

Self.....1
Partner/Spouse.....2
Self and partner/spouse jointly.....3
Other household member.....4
Self and other household member(s).....5
Partner/Spouse and other household member(s).....6
Someone (or group of people) outside the household.....7
Self and other outside people.....8
Partner/Spouse and other outside people.....9
Self, partner/spouse and other outside people.....10

Lending sources		Has anyone in your household taken any loans or borrowed cash/in-kind from [SOURCE] in the past 12 months?	Who made the decision to borrow from [SOURCE]?	Who makes the decision about what to do with the money/ item borrowed from [SOURCE]?
Lending source names		**G3.07**	**G3.08**	**G3.09**
A	Non-governmental organization (NGO)			
B	Informal lender			
C	Formal lender (bank/financial institution)			
D	Friends or relatives			
E	Group based micro-finance or lending including VSLAs / SACCOs/ merry-go-rounds			
		G3.07 Taken loans Yes, cash ..... 1 Yes, in-kind ..... 2 Yes, cash and in-kind ..... 3 No ..... 4 Don't know……5	**G3.08/G3.09: Decision-making and control over credit** Self……1 Partner/Spouse……2 Self and partner/spouse jointly……3 Other household member……4 Self and other household member(s)……5 Partner/Spouse and other household member(s)……6 Someone (or group of people) outside the household….7 Self and other outside people……8 Partner/Spouse and other outside people……9 Self, partner/spouse and other outside people……10	

MODULE G4: INDIVIDUAL LEADERSHIP AND INFLUENCE IN THE COMMUNITY

QNo.	Question	Response	Response codes
G4.01	Do you feel comfortable speaking up in public to help decide on infrastructure (like small wells, roads, water supplies) to be built in your community?		No, not at all comfortable ..... 1 Yes, but with a great deal of difficulty..... 2 Yes, but with a little difficulty ..... 3 Yes, fairly comfortable..... 4 Yes, very comfortable 5
G4.02	Do you feel comfortable speaking up in public to ensure proper payment of wages for public works or other similar programs?		
G4.03	Do you feel comfortable speaking up in public to protest the misbehavior of authorities or elected officials?		

MODULE G4 continued: GROUP MEMBERSHIP AND INFLUENCE IN THE GROUP

Group membership		Is there a [GROUP] in your community? Yes ..... 1 No ..... 2 >> next group	Are you an active member of this [GROUP]? Yes ..... 1 No 2
	Group Categories	**G4.04**	**G4.05**
A	Agricultural / livestock/ fisheries producer's group (including marketing groups)		
B	Water users' group		
C	Forest users' group		
D	Credit or microfinance group (including SACCOs/merry-go-rounds/ VSLAs)		
E	Mutual help or insurance group (including burial societies)		
F	Trade and business association		
G	Civic groups (improving community) or charitable group (helping others)		
H	Local government		
I	Religious group		
J	Other women's group (only if it does not fit into one of the other categories)		
K	Other (specify)		

MODULE G5: DECISION MAKING

ENUMERATOR: Ask G5.01 for all categories of activities before asking G5.02. Do <u>not</u> ask G5.02 if G5.01 response is 1 and respondent is male OR G5.01 response is 2 and respondent is female. *If household does not engage in that particular activity, enter 98 and proceed to next activity.*		When decisions are made regarding the following aspects of household life, who is it that normally takes the decision?	To what extent do you feel you can make your own personal decisions regarding these aspects of household life if you want(ed) to? Ask only if G5.01 is 1 and respondent is female, G5.01 is 2 and respondent is male, or G5.01 is 3-7.
		G5.01	**G5.02**
A	Getting inputs for agricultural production		
B	The types of crops to grow for agricultural production		
C	Taking crops to the market (or not)		
D	Livestock raising		
E	Your own (singular) wage or salary employment		
F	Major household expenditures (such as a large appliance for the house like refrigerator)		
G	Minor household expenditures (such as food for daily consumption or other household needs)		
		G5.01: Who makes decision Main male or husband…… ..... …… …1 Main female or wife ..... …….. ..2 Husband and wife jointly ..... …… …3	**G5.02: Extent of participation in decision making** Not at all ……1 Small extent……..2 Medium extent……..3 To a high extent……4

MODULE G5 continued: MOTIVATION FOR DECISION MAKING

ENUMERATOR: This set of questions is very important. I am going to give you some reasons why you act as you do in the aspects of household life I just mentioned. You might have several reasons for doing what you do and there is no right or wrong answer. Please tell me how true it would be to say: *[If household does not engage in that particular activity, enter 98 and proceed to next activity.]*		My actions in [ASPECT] are partly because I will get in trouble with someone if I act differently. [READ OPTIONS: **Always True, Somewhat True, Not Very True, or Never True**]	Regarding [ASPECT] I do what I do so others don't think poorly of me. [READ OPTIONS: **Always True, Somewhat True, Not Very True, or Never True**]	Regarding [ASPECT] I do what I do because I personally think it is the right thing to do. . [READ OPTIONS: **Always True, Somewhat True, Not Very True, or Never True**]
		G5.03	**G5.04**	**G5.05**
A	Getting inputs for agricultural production			
B	The types of crops to grow for agricultural production			
C	Taking crops to the market (or not)			
D	Livestock raising			
		G5.03/G5.04/G5.05: Motivation for activity Never true .....1 Not very true .....2 Somewhat true.....3 Always true .....4 Household does not engage in activity/Decision not made.....98		

MODULE G6: TIME ALLOCATION

Enumerator: ***G6.01:*** *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 to two activities can be marked for each time period*** *by drawing a line through that activity. If two activities are marked, they should be distinguished with a P for the primary activity and S for the secondary activity written next to the lines. Please administer using the protocol in the enumeration manual.*

		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 G6 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												

MODULE G6 continued: SATISFACTION WITH TIME ALLOCATION

QNo.	Question	Response	Response options/Instructions
G6.02	How satisfied are you with your available time for leisure activities like visiting neighbors, watching TV, listening to the radio, seeing movies or doing sports?		READ: Please give your opinion on a scale of 1 to 10. 1 means you are not satisfied and 10 means you are very satisfied. If you are neither satisfied or dissatisfied this would be in the middle or 5 on the scale.

Annex 2a: *Dataprep* do file

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1   ** DO FILE HAS BEEN PREPARED BY ANA VAZ AND SABINA ALKIRE AT WWW.OPHI.ORG.UK
    //
2   ** FOR THE CALCULATION OF THE WOMEN'S EMPOWERMENT IN AGRICULTURE INDEX OF
    USAID.
3   ** THERE ARE TWO FILES YOU NEED TO MAKE THE INDEX; THIS ONE (DATAPREP) AND
    WEAI.
4
5   cd "D:\Users\hmalapit\My Work\WEAI\Public Release" // IMPORTANT: Change
    directory
6   capture log close
7   clear all
8   set more off
9   log using "dataprep_dofile_nodrop.txt", text replace
10  set mem 100m
11
12  ******************************
13  ***  PREPARATION OF DATASET ***
14  ******************************
15
16  use "ind_hh_public_release.dta", clear
17
18  ***********************
19  *** Modules B and G *** Update: Modules G2 and G5
20  ***********************
21
22  qui recode b02_* b03_* (6 98=.) // code as missing: 6=decision not made,
    98=missing
23  qui recode b01* (98=.) // code as missing: 98=missing
24
25  ***b01*** // g2.01
26
27  foreach x of num 1/6 {
28      gen partact_`x'=(b01_`x'==1)
29      replace partact_`x'=. if b01_`x'==.
30      }
31  egen partact=rowtotal(partact_*), missing
32  label var partact "Number of activities in which individual participates"
33  egen partactagr=rowtotal(partact_1 partact_2 partact_3 partact_6), missing
34  label var partactagr "Number of agricultural activities in which individual
    participates"
35
36  ***b02,b03*** // g2.02, g2.03
37
38  *Adequate if respondent has at least some decisionmaking power
39  foreach x of num 1/6{
40      gen inputdec_`x'=(b02_`x'>2) if partact_`x'==1
41      replace inputdec_`x'=. if b02_`x'==. & partact_`x'==1
42      }
43
```

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```
44   label var inputdec_1 "Has some input in decisions regarding food crop farming"
45   label var inputdec_2 "Has some input in decisions regarding cash crop farming"
46   label var inputdec_3 "Has some input in decisions regarding livestock raising"
47   label var inputdec_4 "Has some input in decisions regarding non-farm activity"
48   label var inputdec_5 "Has some input in decisions regarding wage & salary
     employment"
49   label var inputdec_6 "Has some input in decisions regarding fishing"
50
51   foreach x of num 1/6{
52       gen incomedec_`x'=(b03_`x'>2) if partact_`x'==1
53       replace incomedec_`x'=. if b03_`x'==. & partact_`x'==1
54       }
55
56   label var incomedec_1 "Has some input in decisions regarding income from
     food crop farming"
57   label var incomedec_2 "Has some input in decisions regarding income from
     cash crop farming"
58   label var incomedec_3 "Has some input in decisions regarding income from
     livestock raising"
59   label var incomedec_4 "Has some input in decisions regarding income from
     non-farm activity"
60   label var incomedec_5 "Has some input in decisions regarding income from
     wage & salary employment"
61   label var incomedec_6 "Has some input in decisions regarding income from
     fishing"
62
63   ***g01,g02*** // g5.01, g5.02
64
65   qui recode g01* g02* (98=.)
66   foreach x in a b c d e f g h i j k l m{
67       gen skip_`x'=((g01_`x'==1 & a05==1) | (g01_`x'==2 & a05==2))
68       *Adequate if feel can make decisions to some extent (g02)
69       *or actually makes decision (g01)
70       gen feelmakedec_`x'=(g02_`x'>2)
71       replace feelmakedec_`x'=1 if skip_`x'==1
72       replace feelmakedec_`x'=. if skip_`x'!=1 & g02_`x'==.
73       replace feelmakedec_`x'=. if g01_`x'==. & g02_`x'==.
74       }
75   drop skip*
76
77   label var feelmakedec_a "Feels can make decisions regarding agricultural
     production"
78   label var feelmakedec_b "Feels can make decisions regarding purchasing
     inputs for agricultural production"
79   label var feelmakedec_c "Feels can make decisions regarding types of crops
     to grow"
80   label var feelmakedec_d "Feels can make decisions regarding taking crops to
     the market"
81   label var feelmakedec_e "Feels can make decisions regarding livestock raising"
```

```
 82   label var feelmakedec_f "Feels can make decisions regarding non-farm
      business activity"
 83   label var feelmakedec_g "Feels can make decisions regarding wage or salary
      employment"
 84   label var feelmakedec_h "Feels can make decisions regarding minor household
      expenditures"
 85   label var feelmakedec_i "Feels can make decisions regarding serious health
      problems"
 86   label var feelmakedec_j "Feels can make decisions regarding protection from
      violence"
 87   label var feelmakedec_k "Feels can make decisions regarding religious faith"
 88   label var feelmakedec_l "Feels can make decisions regarding daily tasks"
 89   label var feelmakedec_m "Feels can make decisions regarding family planning"
 90
 91   *AGGREGATION
 92   *INPUT IN PRODUCTIVE DECISIONS: adequate if there are AT LEAST TWO domains
      in which individual has some input in decisions,
 93   *or makes the decision, or feels he/she could make it if he/she wanted
 94   egen feelinputdecagr_sum=rowtotal(feelmakedec_a-feelmakedec_e inputdec_1
      inputdec_2 inputdec_3 inputdec_6), missing
 95   gen feelinputdecagr=(feelinputdecagr_sum>1)
 96   replace feelinputdecagr=. if feelinputdecagr_sum==.
 97   label var feelinputdecagr_sum "No. agr. domains individual has some input in
      decisions or feels can make decisions"
 98   label var feelinputdecagr "Has some input in decisions or feels can make
      decisions in AT LEAST TWO domains"
 99
100   *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
101   *expenditures; as long as the only domain in which the individual feels that
      he/she makes decisions IS NOT minor household expenditures
102   egen incomedec_sum=rowtotal(incomedec_1 incomedec_2 incomedec_3 incomedec_4
      incomedec_5 incomedec_6 feelmakedec_g feelmakedec_h /* add new category
      major hh exp */), missing
103   gen incdec_count=(incomedec_sum>0)
104   replace incdec_count=0 if incdec_count==1 & incomedec_sum==1 & feelmakedec_h
      ==1 // CHECK this exception is for minor hh exp
105   replace incdec_count=. if incomedec_sum==.
106   label var incomedec_sum "No. domains individual has some input in income
      decisions or feels can make decisions"
107   label var incdec_count "Has some input in income dec or feels can make dec
      AND not only minor hh expend"
108
109   *drop partact_* inputdec_1-incomedec_6 feelmakedec_a-feelmakedec_m
110
111   ***g03 - g05*** // g5.03 - g5.05
112
113   label define motivationind_lab 1 "Never true" 2 "Not very true" 3 "Somewhat
```

```
      true" 4 "Always true"
114
115   foreach x in a b c d e f g h i j k l m{
116       foreach v in g03 g04 g05{
117           gen or`v'_`x'=`v'_`x'
118           label values or`v'_`x' c_g03
119           recode `v'_`x' (98=.)(4=1) (3=2) (2=3) (1=4) // CHECK: If your value
      label is already correctly defined as above, no need to reverse codes
120           label values `v'_`x' motivationind_lab
121           tab or`v'_`x' `v'_`x', miss
122           drop or`v'_`x'
123           }
124           gen rai_`x'=-2*g03_`x'-g04_`x'+3*g05_`x'
125       }
126
127
128   foreach x in a b c d e f g h i j k l m{
129           gen raiabove_`x'=( rai_`x'>1)
130           replace raiabove_`x'=. if rai_`x'==.
131   }
132
133   label var raiabove_a "RAI above 1 regarding agricultural production"
134   label var raiabove_b "RAI above 1 regarding inputs for agricultural
      production"
135   label var raiabove_c "RAI above 1 regarding types of crops to grow"
136   label var raiabove_d "RAI above 1 regarding taking crops to the market"
137   label var raiabove_e "RAI above 1 regarding livestock raising"
138   label var raiabove_f "RAI above 1 regarding non-farm business activity"
139   label var raiabove_g "RAI above 1 regarding own wage or slary employment"
140   label var raiabove_h "RAI above 1 regarding minor household expenditures"
141   label var raiabove_i "RAI above 1 regarding what to do if has a health
      problem"
142   label var raiabove_j "RAI above 1 regarding protection from violence"
143   label var raiabove_k "RAI above 1 regarding how to express religious faith"
144   label var raiabove_l "RAI above 1 regarding definition about daily tasks"
145   label var raiabove_m "RAI above 1 regarding family planning"
146
147
148   *AGGREGATION
149
150   ** AUTONOMY IN PRODUCTION: adequate if RAI>1 in AT LEAST ONE domain/activity
      linked to production
151   egen raiprod_any=rowmax(raiabove_a raiabove_b raiabove_c raiabove_d
      raiabove_e)
152   replace raiprod_any=1 if raiprod_any==.&partactagr==0
153   label var raiprod_any "Has RAI above one in at least on production activity"
154
155
156   *foreach x in a b c d e f g h i j k l m{
```

```
157   *    drop rai_`x' raiabove_`x'
158   *    }
159
160
161   ****************
162   *** Module C *** Update: Module G3
163   ****************
164
165   qui recode c0* c1* (98=.)
166
167   ***c01*** // g3.01
168   foreach x in a b c d e f g h i j k l m n{
169       gen own_`x'=(c01a_`x'==1 & c01b_`x'!=0)
170       replace own_`x'=. if c01a_`x'==.
171       }
172   label var own_a "Household owns agricultural land"
173   label var own_b "Household owns large livestock"
174   label var own_c "Household owns small livestock"
175   label var own_d "Household owns chickens, ducks, turkeys, pigeons"
176   label var own_e "Household owns agricultural fish pond or fishing equipment"
177   label var own_f "Household owns farm equipment (non-mechanized)"
178   label var own_g "Household owns farm equipment (mechanized)"
179   label var own_h "Household owns non-farm business equipment"
180   label var own_i "Household owns house (or other structures)"
181   label var own_j "Household owns large consumer durables (fridge, TV)"
182   label var own_k "Household owns small consumer durables (radio, cookware)"
183   label var own_l "Household owns cell phone"
184   label var own_m "Household owns non-agricultural land"
185   label var own_n "Household owns means of transportation"
186
187
188   *Aggregation
189   *Sum types of assets hh owns
190   egen own_sum=rowtotal(own_a-own_n), missing
191   egen ownagr_sum=rowtotal(own_a-own_g), missing
192
193   label var own_sum "No. of types of assets household owns"
194   label var ownagr_sum "No. of types of agricultural assets household owns"
195
196
197   ***c02-c09*** // g3.02 - g3.06
198   foreach x in a b c d e f g h i j k l m n{
199       *Self or joint own most
200       gen selfjointown_`x'=(c02_`x'==1 | c02_`x'==3 | c02_`x'==5 ///
201       | c02_`x'==8 | c02_`x'==10) if own_`x'==1
202       replace selfjointown_`x'=. if c02_`x'==. & own_`x'==1
203
204       *Self or joint decide to sell
205       gen selfjointsell_`x'=(c04_`x'==1 | c04_`x'==3 | c04_`x'==5 ///
```

```
206       | c04_`x'==8 | c04_`x'==10) if own_`x'==1
207       replace selfjointsell_`x'=. if c04_`x'==. & own_`x'==1
208
209       *Self or joint decide to give away
210       gen selfjointgive_`x'=(c05_`x'==1 | c05_`x'==3 | c05_`x'==5 ///
211       | c05_`x'==8 | c05_`x'==10) if own_`x'==1
212       replace selfjointgive_`x'=. if c05_`x'==. & own_`x'==1
213
214       *Self or joint mortgage or rent
215       gen selfjointrent_`x'=(c06_`x'==1 | c06_`x'==3 | c06_`x'==5 ///
216       | c06_`x'==8 | c06_`x'==10) if own_`x'==1
217       replace selfjointrent_`x'=. if c06_`x'==. & own_`x'==1
218
219       *Self or joint buy
220       gen selfjointbuy_`x'=(c09_`x'==1 | c09_`x'==3 | c09_`x'==5 ///
221       | c09_`x'==8 | c09_`x'==10) if own_`x'==1
222       replace selfjointbuy_`x'=. if c09_`x'==. & own_`x'==1
223
224
225       *Rights
226       **Makes AT LEAST ONE type of decision
227       egen selfjointrightany_`x'=rowmax(selfjointsell_`x' selfjointgive_`x'
      selfjointrent_`x' selfjointbuy_`x')
228       replace selfjointrightany_`x'=. if own_`x'==.
229       }
230
231   **Labels
232   foreach x in own{
233       label var selfjoint`x'_a "Jointly `x's most of agricultural land"
234       label var selfjoint`x'_b "Jointly `x's most of large livestock"
235       label var selfjoint`x'_c "Jointly `x's most of small livestock"
236       label var selfjoint`x'_d "Jointly `x's most of chickens, turkeys, ducks"
237       label var selfjoint`x'_e "Jointly `x's most of fish pond or fishing
      equipment"
238       label var selfjoint`x'_f "Jointly `x's most of farm equipment
      (non-mechanized)"
239       label var selfjoint`x'_g "Jointly `x's most of farm equipment
      (mechanized)"
240       label var selfjoint`x'_h "Jointly `x's most of non-farm business
      equipment"
241       label var selfjoint`x'_i "Jointly `x's most of the house (or other
      structures)"
242       label var selfjoint`x'_j "Jointly `x's most of large consumer durables"
243       label var selfjoint`x'_k "Jointly `x's most of small consumer durables"
244       label var selfjoint`x'_l "Jointly `x's most of cell phone"
245       label var selfjoint`x'_m "Jointly `x's most of non-agricultural land"
246       label var selfjoint`x'_n "Jointly `x's most of means of transportation "
247   }
248   foreach x in sell give rent buy{
```

```
249         label var selfjoint`x'_a "Jointly can `x' agricultural land"
250         label var selfjoint`x'_b "Jointly can `x' large livestock"
251         label var selfjoint`x'_c "Jointly can `x' small livestock"
252         label var selfjoint`x'_d "Jointly can `x' chickens, turkeys, ducks"
253         label var selfjoint`x'_e "Jointly can `x' fish pond or fishing equipment"
254         label var selfjoint`x'_f "Jointly can `x' farm equipment (non-mechanized)"
255         label var selfjoint`x'_g "Jointly can `x' farm equipment (mechanized)"
256         label var selfjoint`x'_h "Jointly can `x' non-farm business equipment"
257         label var selfjoint`x'_i "Jointly can `x' the house (or other structures)"
258         label var selfjoint`x'_j "Jointly can `x' large consumer durables"
259         label var selfjoint`x'_k "Jointly can `x' small consumer durables"
260         label var selfjoint`x'_l "Jointly can `x' cell phone"
261         label var selfjoint`x'_m "Jointly can `x' non-agricultural land"
262         label var selfjoint`x'_n "Jointly can `x' means of transportation "
263     }
264
265     label var selfjointrightany_a "Jointly has AT LEAST ONE right over
        agricultural land"
266     label var selfjointrightany_b "Jointly has AT LEAST ONE right over large
        livestock"
267     label var selfjointrightany_c "Jointly has AT LEAST ONE right over small
        livestock"
268     label var selfjointrightany_d "Jointly has AT LEAST ONE right over chickens,
        turkeys, ducks"
269     label var selfjointrightany_e "Jointly has AT LEAST ONE right over fishing
        equipment"
270     label var selfjointrightany_f "Jointly has AT LEAST ONE right over farm
        equipment (non-mechanized)"
271     label var selfjointrightany_g "Jointly has AT LEAST ONE right over farm
        equipment (mechanized)"
272     label var selfjointrightany_h "Jointly has AT LEAST ONE right over non-farm
        business equipment"
273     label var selfjointrightany_i "Jointly has AT LEAST ONE right over house (or
        other structures)"
274     label var selfjointrightany_j "Jointly has AT LEAST ONE right over large
        consumer durables"
275     label var selfjointrightany_k "Jointly has AT LEAST ONE right over small
        consumer durables"
276     label var selfjointrightany_l "Jointly has AT LEAST ONE right over cell phone"
277     label var selfjointrightany_m "Jointly has AT LEAST ONE right over non
        agricultural land"
278     label var selfjointrightany_n "Jointly as AT LEAST ONE right over means of
        transportation"
279
280     *AGGREGATION
281     *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 others).
282         * This is the same to say: empowered if owns AT LEAST one asset and that
```

```
      asset is not a small asset.
283       * Inadequate if lives in a household that owns no assets
284   foreach x in own{
285       egen selfjoint`x'sum=rowtotal(selfjoint`x'_*), missing
286       egen j`x'count=rowmax(selfjoint`x'_*)
287       replace j`x'count=0 if j`x'count==1 & selfjoint`x'sum==1 &(selfjointown_d
      ==1|selfjointown_f==1|selfjointown_k==1)
288       replace j`x'count=0 if own_sum==0
289
290       rename j`x'count j`x'_count
291       rename selfjoint`x'sum selfjoint`x'_sum
292
293       }
294
295   *PURCHASE, SALE OR TRANSFER OF ASSETS: Adequate if selfjoint has AT LEAST
      ONE type of right
296   *over AT LEAST ONE type of asset as long as it is not chicken nor farming
      equipment non-mechanized.
297   *Inadequate if living in households with no assets
298
299   foreach x in rightany{
300       *Agricultural assets
301       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
302       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)
303       replace selfjoint`x'agrcount=0 if selfjoint`x'agrcount==1 & selfjoint`x'
      agrsum==1 & (selfjoint`x'_d==1|selfjoint`x'_f==1)
304       replace selfjoint`x'agrcount=0 if ownagr_sum==0
305
306       rename selfjoint`x'agrsum selfjoint`x'agr_sum
307       rename selfjoint`x'agrcount j`x'agr
308
309       }
310
311   label var jrightanyagr "Jointly has AT LEAST ONE right in AT LEAST ONE
      agricultural asset the hh owns"
312
313   *drop own_a- selfjointexchall_n
314
315   ***c10*** // g3.07
316   foreach x in a b c d e{
317       gen creditaccess_`x'=(c10_`x'>=1 & c10_`x'<=3)
318       replace creditaccess_`x'=. if c10_`x'==.| c10_`x'==5
319       }
320   egen creditaccess=rowtotal(creditaccess_*), missing
321   label var creditaccess "No. of credit sources that the hh uses"
322
323   ***c11,c12*** // g3.08, g3.09
```

```
324   foreach y in a b c d e{
325       *Self or joint decide to borrow
326       gen creditselfjointborrow_`y'=(c11_`y'==1 | c11_`y'==3 | c11_`y'==5 ///
327       | c11_`y'==8 | c11_`y'==10) if creditaccess_`y'==1
328       replace creditselfjointborrow_`y'=. if c11_`y'==. & creditaccess_`y'==1
329
330       *Self or joint decide how to use
331       gen creditselfjointuse_`y'=(c12_`y'==1 | c12_`y'==3 | c12_`y'==5 ///
332       | c12_`y'==8 | c12_`y'==10) if creditaccess_`y'==1
333       replace creditselfjointuse_`y'=. if c12_`y'==. & creditaccess_`y'==1
334
335       *Self or joint makes AT LEAST ONE decision regarding credit
336       egen creditselfjointanydec_`y'=rowmax(creditselfjointborrow_`y'
      creditselfjointuse_`y')
337
338       }
339
340   foreach x in borrow use {
341       label var creditselfjoint`x'_a "Jointly made decision about `x' credit
      from NGO"
342       label var creditselfjoint`x'_b " Jointly made decision about `x' credit
      from informal lender"
343       label var creditselfjoint`x'_c " Jointly made decision about `x' credit
      from formal lender"
344       label var creditselfjoint`x'_d " Jointly made decision about `x' credit
      from friends & relatives"
345       }
346
347   label var creditselfjointanydec_a "Jointly made AT LEAST ONE decision
      regarding credit from NGO"
348   label var creditselfjointanydec_b "Jointly made AT LEAST ONE decision
      regarding credit from informal lender"
349   label var creditselfjointanydec_c "Jointly made AT LEAST ONE decision
      regarding credit from formal lender"
350   label var creditselfjointanydec_d "Jointly made AT LEAST ONE decision
      regarding credit from friends & relatives"
351
352   *AGGREGATION
353   *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
354   foreach x in anydec {
355       egen creditselfjoint`x'any=rowmax(creditselfjoint`x'_*)
356       replace creditselfjoint`x'any=0 if creditaccess==0
357       rename creditselfjoint`x'any credj`x'_any
358       }
359
360   label var credjanydec_any "Jointly makes AT LEAST ONE decision regarding AT
      LEAST ONE source of credit"
361
```

```
362   foreach y in a b c d e{
363       drop creditaccess_`y' creditselfjointborrow_`y' creditselfjointuse_`y'
      creditselfjointanydec_`y'
364       }
365
366   ***************************
367   ***Dimension 4: Module E*** Update: Module G4
368   ***************************
369
370   qui recode e0* e1* (98=.)
371
372
373   ***e02 *** // g4.01 - g4.03
374   *empowered if comfortable speaking in public
375   foreach x in  a b c{
376   gen speakpublic_`x'=(e02`x'>1)
377   replace speakpublic_`x'=. if e02`x'==.
378       }
379
380   *AGGREGATION
381   *SPEAK IN PUBLIC: Adequate if comfortable speaking in public in AT LEAST ONE
      context
382   egen speakpublic_any=rowmax(speakpublic_a speakpublic_b speakpublic_c)
383
384   ***e07*** // g4.05
385   foreach x in a b c d e f g h i j k {
386       *Active group member - ***IMPORTANT!!! Pilot data uses e06_`x' for
      Guatemala & Uganda; e07_`x' for Bangladesh***
387       capture gen groupmember_`x'=(e07_`x'==1)
388       capture replace groupmember_`x'=. if e07_`x'==.
389       }
390
391   *AGGREGATION
392   *GROUP MEMBERSHIP: Adequate if individual is part of AT LEAST ONE group
393   egen groupmember_any=rowmax(groupmember_*)
394
395
396   *drop groupmember_a-groupinput_k
397
398
399   ***************
400   *** Module F *** Update: Module G6
401   ***************
402
403   ***f04*** // g6.02
404   *LEISURE TIME: Adequate if does not express any level of dissatisfaction
      with the amount of leisure time available
405   gen leisuretime=(f04b>4)
406   replace leisuretime=. if f04b==.
```

```
407
408   save "all_indicators.dta", replace
409
410   ***f01***
411
412   ** Create time poverty measure ***
413
414   // Open dataset with time use information //
415
416   use ind_f1_public_release.dta, clear
417
418   foreach x of var a06-hh_a11{
419       qui recode `x' (98 99=.)
420       }
421   foreach x in f02 f06 f07 f10 f11{
422       qui recode `x' (2=0)
423       }
424   *drop if hh_a04==1416 & country==3
425   *drop if hh_a04==1208 & country==3
426
427   *Drop holidary/non-working
428   *drop if f02==1
429
430   *Define work (w/ commuting/travelling)
431   qui gen w=(acode>=5 & acode<=16)
432   drop if w==0
433
434   *Calculate total time spent working as primary and secondary activity
435   collapse (sum) f01_1 f01_2 (mean) a06-f11 hh_a09 hh_a11, by(a01 a05 country)
436   gen work=f01_1 + (.5*f01_2)
437
438   ***Define poverty lines
439   *10 hr/day
440   qui gen z10=10*60
441   *10.5 hr/day
442   qui gen z105=10.5*60
443   *11 hr/day
444   qui gen z11=11*60
445   *75 hr/week
446   qui gen z75=(75/7)*60
447
448   foreach x of var z*{
449       qui gen H_`x'=.
450       foreach y in 1 2{
451           qui gen H_`x'_`y'=.
452           }
453       }
454
455   foreach x of var z*{
```

```
456       qui gen poor_`x'=(work>`x')
457       foreach y in 1 2 3{
458           *Headcount
459           qui sum poor_`x' if country==`y'
460           local q=r(sum)
461           qui sum work if country==`y'
462           local n=r(N)
463           qui replace H_`x'=`q'/`n' if country==`y'
464           foreach z in 1 2{
465               *Headcount
466               qui sum poor_`x' if country==`y' & a05==`z'
467               local q=r(sum)
468               qui sum work if country==`y' & a05==`z'
469               qui replace H_`x'_`z'=`q'/r(N) if country==`y'
470               }
471           }
472       }
473
474
475
476   foreach y in 1 2 3{
477       foreach x in 10 105 11 75{
478           qui sum H_z`x' if country==`y'
479           local overall=r(mean)
480           qui sum H_z`x'_1 if country==`y'
481           local men=r(mean)
482           qui sum H_z`x'_2 if country==`y'
483           local women=r(mean)
484   *       post stats3 (5) (`y') (`x') (`overall') (`men') (`women')
485           }
486       }
487
488   save "Time measure.dta", replace
489
490   // Merge time poverty measure with all indicators dataset //
491
492   use "all_indicators.dta", clear
493
494   sort a01 a05
495   merge 1:1 a01 a05 using "Time measure.dta", keepusing(poor_z10 poor_z105
      poor_z75 poor_z11)
496
497   foreach x in 10 105 75 11 {
498       gen npoor_z`x'=1-poor_z`x'
499       }
500
501   save "all_indicators.dta", replace
502
503   log close
```

Annex 2b: *Calculation* do file

Calculating-the-WEAI_HM_public-release.do - Printed on 3/8/2013 2:27:11 PM

```
1   ** DO FILE HAS BEEN PREPARED BY ANA VAZ AND SABINA ALKIRE AT WWW.OPHI.ORG.UK
    //
2   ** FOR THE CALCULATION OF THE WOMEN'S EMPOWERMENT IN AGRICULTURE INDEX OF
    USAID.
3   ** YOU NEED TWO FILES TO MAKE THE INDEX: DATAPREP AND THIS ONE (WEAI).
4
5   cd "D:\Users\hmalapit\My Work\WEAI\Public Release" // IMPORTANT: Change
    directory
6   clear all
7   set more off
8   *set maxvar 10000
9   set mem 500m
10  set more off
11  cap log close
12
13  use "all_indicators.dta", clear
14  log using WEAI_dofile_nodrop.txt, text replace
15
16
17  ************************************************
18  *******   FIVE DOMAINS EMPOWERMENT (5DE)   *******
19  ************************************************
20
21  // So far all_indicators were defined so 1 identifies adequate. //
22  // Now we transform indicators so 1 identifies inadequate. //
23
24  foreach var in  feelinputdecagr raiprod_any jown_count jrightanyagr
    credjanydec_any incdec_count groupmember_any speakpublic_any npoor_z105
    leisuretime {
25      rename `var' `var'_ndepr
26      gen `var'=1 if `var'_ndepr==0
27      replace `var'=0 if `var'_ndepr==1
28      }
29
30  *We are now starting with 0-1 variables where 1 means that the person is
    inadequate in that indicator.
31
32  gen weight=1 // Note: =1 if unweighted; otherwise, assign variable
    containing individual sampling weights
33
34  save all_depr_indicators.dta, replace
35
36  // CONSTRUCTING A LOOP FOR EACH COUNTRY. //
37
38  forvalues c=1(1)3 { //NOTE: add * at beginning of this line for
    single-country calculation
39
40  preserve //NOTE: add * at beginning of this line for single-country
    calculation
```

Page 1

```
41
42  keep if country==`c' //NOTE: add * at beginning of this line for
    single-country calculation
43
44
45
46  ********************************************************************************
47  ********  Create a local variable with all your indicators varlist_emp ******
48  ********************************************************************************
49
50  #delimit;
51  local varlist_emp feelinputdecagr raiprod_any jown_count jrightanyagr
    credjanydec_any incdec_count groupmember_any speakpublic_any npoor_z105
    leisuretime;
52
53  gen sample1=(feelinputdecagr~=. & raiprod_any~=. & jown_count~=. &
    jrightanyagr~=.& credjanydec_any~=. & incdec_count~=. & groupmember_any~=. &
    speakpublic_any~=. & npoor_z105~=. & leisuretime~=.);
54  #delimit cr
55
56  ********************************************************************************
57  **** Define the weights. Weights sum to 1 (not to the number of indicators)**
58  ********************************************************************************
59  ** Create a loop for the variables with the same weight *********************
60  ********************************************************************************
61
62  *We now create the indicators' weights.*
63
64  foreach var in feelinputdecagr raiprod_any{
65      gen w_`var'=1/10
66      }
67  foreach var in jown_count jrightanyagr credjanydec_any {
68      gen w_`var'=1/15
69      }
70  foreach var in incdec_count {
71      gen w_`var'=1/5
72      }
73  foreach var in groupmember_any speakpublic_any {
74      gen w_`var'=1/10
75      }
76  foreach var in npoor_z105 leisuretime{
77      gen w_`var'=1/10
78      }
79
80
81  ****************************************************************
82  *********     Define the weighted inadequacy g0* matrix       ****
83  ****************************************************************
84
```

```
// WE FOCUSED ON THE MEASURE OF INADEQUACIES (DISEMPOWERMENT). //

foreach var in `varlist_emp'{
    gen wg0_`var'= `var'*w_`var'
}

*******************************************************************************
********** Compute the frequency of missing values for indicator ************
*******************************************************************************

foreach var in `varlist_emp' {
gen `var'_miss=1 if `var'==.
replace `var'_miss=0 if `var'!=.
}

sum *_miss

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

egen ci=rsum(wg0_*)

label variable ci "Inadequacy Count"

egen n_missing=rowmiss(wg0_*)
label variable n_missing "Number of missing variables by individual"
gen missing=(n_missing>0)
label variable missing "Individual with missing variables"

*** Check sample drop due to missing values
tab missing
*drop if missing

*********************************************************************
***** Create the identification vector (inadequate/adequate) **********
***** and compute individual average of inadequacy    ****************
*********************************************************************

egen total_w=total(weight) if missing==0

// FIRST, WE COMPUTED THE DISEMPOWERMENT IN AGRICULTURE INDEX (DAI). //
// AFTERWARDS, WE COMPUTE THE EMPOWERMENT IN AGRICULTURE INDEX (HERE CALLED
EAI): EAI = 1 - DAI. //

*These are now percentages - this creates DAI by each percentage.
```

```
130
131   forvalues x=1(1)100 { // FOR EACH POSSIBLE CUTOFF X BETWEEN 1% AND 100% //
132   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%).
      //
133   replace ch_`x'p=. if missing==1
134   gen a_`x'p=(ci) if ch_`x'p==1 // WE COMPUTE THE INDIVIDUAL INADEQUACY OF
      THOSE WHO ARE DISEMPOWERED. //
135   replace a_`x'p=. if missing==1
136   egen DAI_`x'p= total(ci*ch_`x'p*weight/total_w) // WE COMPUTE THE
      DISEMPOWERMENT INDEX (FOR EACH POSSIBLE CUTOFF X) //
137   gen EAI_`x'p=1-DAI_`x'p // THEN, WE OBTAIN THE EMPOWERMENT INDEX. //
138   label var ch_`x'p "Condition of disempowerment  k=`x'%"
139   label var a_`x'p "Individual Average inadequacy  k=`x'"
140   label var DAI_`x'p "National Disempowerment Index k=`x'%"
141   label var EAI_`x'p "Combined Empowerment Index k=`x'%"
142
143   }
144
145   // 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. //
146
147   summarize ch_* a_* DAI_* EAI_* [aw=weight]
148
149   ********************************************************************
150   ******* Compute raw headcounts        ********************************
151   ********************************************************************
152
153   foreach var in `varlist_emp' {
154   gen `var'_raw=(`var')
155   replace `var'_raw=. if missing==1
156   }
157
158   su *_raw  [iw=weight]
159
160   ************************************************************************
      *****
161   *********** Compute Censored headcount by subgroups (gender or region etc)
      ******
162   ************************************************************************
      *****
163
164   // NOW WE DEFINE THE CUTOFF THAT WE WANT TO USE AND WE START LOOKING AT
      WOMEN AND MEN SEPARATELY //
165
166   * Please define in the first line your cutoff, the example shows k=20 is 20%
      of the variables
167   * 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)
  168   * that represents the different subgroups.
  169   * The subgroup variable must be coded in consecutive natural numbers
        starting in 1
  170
  171   pause
  172   gen nation=`c'
  173
  174   local k=20
  175   *decode a05, gen(n)
  176   *encode n, gen (gender)
  177   gen gender=a05
  178
  179   local r="gender"
  180
  181   foreach var in `varlist_emp' {
  182   gen `var'_CH_`k'p=(`var'==1 & ch_`k'==1)
  183   replace `var'_CH_`k'p=. if missing==1
  184   }
  185
  186   summarize *_CH_`k'p [iw=weight]
  187
  188   ********************************************************************************
        ***********
  189   ********************************************************************************
        ***********
  190   **** Define decomposition rule (country, sex)
  191   **** We keep the information of the weighted population before reducing the
        sample to only
  192   **** those cases with information in all the indicators considered
  193
  194   egen total_b = total(weight)
  195   label var total_b "Total Population Before Sample Drop"
  196   egen pop_shr_before = total(weight/total_b), by(`r')
  197   label var pop_shr_before "Weighted Population Share of Each `r' before
        Sample Reduction"
  198   gen temp=1 // We generate this variable for counting observations
  199   egen sample_r_before = total(temp), by(`r')
  200   label var sample_r_before "Sample Size of each `r' before Sample Reduction"
  201
  202   egen pop_shr_after = total(weight/total_w) if miss==0, by(`r')
  203   label var pop_shr_after "Weighted Population Share of Each `r' after Sample
        Reduction"
  204   egen sample_r_after = total(temp) if missing==0, by(`r')
  205   label var sample_r_after  "Sample Size of Each `r' after Sample Reduction"
  206   gen sample_lost_ratio= sample_r_after/sample_r_before
  207   label var sample_lost_ratio  "Relative size of the final sample after
        reduction in each `r'"
```

```
208
209
210
211   ********************************************************************************
      ******
212   **** Collapsing
      ********************************************************************
213   * So far, our database has individual level data, if we want to aggregate
214   * at any level, we use the command “collapse”. Collapse calculates weighted
215   * averages at the  level defined by the user (gender), if the option
      "by(gender)"
216   * is not specified, the observations are aggregated at the national level.
217   * Before collapse, save your results using the following command
218   ********************************************************************************
      *******
219
220   save individual_indices_`c'.dta, replace  // SAVES, FOR EACH COUNTRY, A
      DATASET WITH INDIVIDUAL DATA. //
221   // THIS DATASET INCLUDES INDIVIDUAL INADEQUACY COUNT, VARIABLES THAT
      IDENTIFY DISEMPOWERED FOR EACH CUTOFF AND VALUE OF DAI AND EAI FOR EACH
      CUTOFF. //
222   // PLEASE REMEMBER THAT DAI AND EAI WERE COMPUTED CONSIDERING WOMEN AND MEN
      TOGETHER. //
223
224   * You can use also the commands preserve before the command “collapse” and
      restore just after
225   * preserve
226
227   // NOW WE COMPUTE RELEVANT VARIABLES BY GENDER. //
228
229   egen pop_shr = total(weight/total_w) if miss==0, by(`r')
230
231   * collapse
232   * The following command will "collapse" our individual results according to
      the subgroup previously defined.
233   //pause
234   collapse nation ch_* a_* *_CH_`k'p *_raw w_* EAI_* *_miss missing DAI_*
      pop_shr* sample_r_* sample_lost_ratio ,by(`r')
235
236   * You have already calculated the national DAI. With the following lines you
      will calculate the
237   * DAI for every region using the formulation M0=H*A obtained after
      collapsing the dataset.
238
239   // ATTENTION: DAI AND EAI REFER TO NATIONAL FIGURES. M0 AND EA REFER TO
      GENDER FIGURES. //
240
241   forvalues x=1(1)100 {
242   gen M0_`x'p=ch_`x'p*a_`x'p
```

```
243   label var M0_`x'p "Population Subgroup DAI k=`x'%"
244   gen EA_`x'p=1-M0_`x'p
245   label var EA_`x'p "Population Subgroup EAI k=`x'%"
246   ren ch_`x'p H_`x'p
247   label var H_`x'p "Population Subgroup Multidimensional Headcount Ratio k=`x'%"
248   ren a_`x'p A_`x'p
249   label var A_`x'p "Population Subgroup Average Inadequacy k=`x'%"
250   label var DAI_`x'p "National DAI k=`x'%"
251   }
252
253   foreach var in `varlist_emp' {
254   gen `var'_cont_`k'_EAI=((`var'_CH_`k'p* w_`var')/ EA_`k'p)
255   label var `var'_cont_`k'_EAI "Decomposed Contribution of `var' to the total
      Empowerment k=`k'"
256
257   gen `var'_cont_`k'_DAI=((`var'_CH_`k'p* w_`var')/ M0_`k'p)
258   label var `var'_cont_`k'_DAI "Decomposed Contribution of `var' to the total
      Disempowerment k=`k'"
259
260   label var  `var'_CH_`k'p  "Decomposed Censored Headcount `var' k=`k'"
261   label var  `var'_raw  "Decomposed Raw Headcount `var'"
262   label var  `var'_miss  "Decomposed Missing values `var'"
263   }
264
265   label variable pop_shr "Population Share"
266   gen cont_group_`k'=M0_`k'p/DAI_`k'p*pop_shr
267   label variable cont_group_`k' "Decomposed Contribution"
268
269   gen cont_subgroup_DAI_`k'=M0_`k'p/DAI_`k'p*pop_shr_after
270   label variable cont_subgroup_DAI_`k' "Population Subgroup Contribution to DAI"
271
272   gen cont_subgroup_EAI_`k'=EA_`k'p/EAI_`k'p*pop_shr_after
273   label variable cont_subgroup_EAI_`k' "Population Subgroup Contribution to EAI"
274
275   capture decode `r', gen(level)
276   drop `r'
277
278   gen gender=_n
279   label define gender_lab 1 "Male" 2 "Female"
280   label values gender gender_lab
281
282   save results_`c'_`r', replace
283   // FOR EACH COUNTRY, SAVES A DATASET WITH THE RELEVANT EMPOWERMENT FIGURES
      FOR EACH GENDER. //
284   // THE DATASETS INCLUDE THE DISEMPOWERMENT FIGURES FOR ALL CUTOFFS BETWEEN
      1% AND 100%. WHEN EXTRACTING THE INFO WE FOCUS ON THE RELEVANT CUTOFF. //
285   // PLEASE SEE BELOW HOW TO EXTRACT RELEVANT INFORMATION FOR CUTOFF 20%. //
286
287   //collapse *_cont [iw=weight],by(`r')
```

```
288
289   restore  //NOTE: add stars for single-country calculation
290   }       //NOTE: add stars for single-country calculation
291
292   clear
293
294   *exit
295   /*
296   *** EXTRACT TABLES
297
298   // HOW TO EXTRACT RELEVANT INFO. EXAMPLE FOR COUNTRY 1 WITH CUTOFF 20% //
299
300   use "H:\OPHI\WEI\Do-files\results_1_gender.dta", clear // Example for
      country = 1 //
301
302   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. //
303   browse H_20p A_20p M0_20p EA_20p if gender==1
304
305   browse *_CH_20p if gender==2  // INDICATORS CENSORED HEADCOUNTS FOR WOMEN. //
306   browse *cont_20_DAI if gender==2  // INDICATORS CONTRIBUTION TO
      DISEMPOWERMENT FOR WOMEN. //
307   browse *_CH_20p if gender==1
308   browse *cont_20_DAI if gender==1
309
310   */
311   ******************************************
312   *******   GENDER PARITY INDEX (GPI)   *******
313   ******************************************
314
315   use "all_depr_indicators.dta", clear
316
317   ** Focus on male and female households
318
319   sort a01 a05
320   bys a01: gen i=_n
321   bys a01: egen n=max(i)
322
323   tab a06 n, miss
324   drop if n==1
325
326   ************************************************************************
327   ********  Create a local variable with all your indicators varlist_emp ******
328   ************************************************************************
329
330   #delimit;
331   local varlist_5do feelinputdecagr raiprod_any jown_count jrightanyagr
      credjanydec_any incdec_count groupmember_any speakpublic_any npoor_z105
```

```
      leisuretime;
332
333   gen sample5do=(feelinputdecagr~=. & raiprod_any~=. & jown_count~=. &
      jrightanyagr~=.& credjanydec_any~=. & incdec_count~=. & groupmember_any~=. &
      speakpublic_any~=. & npoor_z105~=. & leisuretime~=.);
334   #delimit cr
335
336   ****************************
337   **** Define the weights.  ****
338   ****************************
339
340   foreach var in feelinputdecagr raiprod_any{
341       gen w_`var'=1/10
342       }
343   foreach var in jown_count jrightanyagr credjanydec_any {
344       gen w_`var'=1/15
345       }
346   foreach var in incdec_count {
347       gen w_`var'=1/5
348       }
349   foreach var in groupmember_any speakpublic_any {
350       gen w_`var'=1/10
351       }
352   foreach var in npoor_z105 leisuretime{
353       gen w_`var'=1/10
354       }
355
356
357   ********************************************************
358   *********     Define the weigted inadequacy g0*      ****
359   ********************************************************
360
361   foreach var in `varlist_5do'{
362       gen wg0_`var'= `var'*w_`var'
363       }
364
365   ************************************************************************
      **
366   *************   Define the (weighted) inadequacy count vector "ci"
      ************
367   ************************************************************************
      **
368
369   egen ci=rsum(wg0_*)
370   replace ci = . if sample5do==0
371
372   label variable ci "Inadequacy Count without Parity"
373
374   ******************************************
```

```
375   *** Compute censored inadequacy scores  ***
376   ********************************************
377
378   bys a01: gen w_ci_id=ci if a05==2
379   bys a01: gen m_ci_id=ci if a05==1
380   bys a01: egen W_ci=max(w_ci_id)
381   bys a01: egen M_ci=max(m_ci_id)
382   drop w_ci_id m_ci_id
383
384   bys a01: gen float W_cen_ci=W_ci
385   bys a01:replace W_cen_ci=0.20 if W_cen_ci<=0.2 & W_cen_ci!=.
386   bys a01: gen M_cen_ci=M_ci
387   bys a01:replace M_cen_ci=0.20 if M_cen_ci<=0.20 & M_cen_ci!=.
388
389   ***************************************
390   *** Imputation of Guatemalan men ci  ***
391   ***************************************
392
393   *** To avoid the massive drop of observations for Guatemala, we are going to
      impute an average male ci to the men with missing ci ***
394
395   count if country==3 & a05==1 & ci==.
396   count if country==3 & a05==1 & ci==. & W_ci!=.
397
398   sum M_cen_ci if country==3 & a05==1
399   egen M_cen_ci_mean_id=mean(M_cen_ci) if country==3 & a05==1
400   sum M_cen_ci_mean_id
401   bys a01: egen M_cen_ci_mean=max(M_cen_ci_mean_id)
402
403   replace M_cen_ci=M_cen_ci_mean if M_cen_ci==. & W_cen_ci!=. & country==3
404
405   // Unfortunately, we are only able to recover 15 women observations. //
406
407
408   ****************************************************
409   *** Identify inadequate in terms of gender parity  ***
410   ****************************************************
411
412   bys a01: gen ci_above=(W_cen_ci>M_cen_ci)
413   bys a01: replace ci_above=. if W_cen_ci==.|M_cen_ci==.
414   label var ci_above "Equals 1 if individual lives in MF hh where the depr
      score of the woman is higher than the man - EI 1"
415
416   bys country: sum ci_above
417
418   ***********************************
419   *** Compute Gender Parity Index  ***
420   ***********************************
421
```

```
422   ** Full sample
423
424   gen female=(a05==2 & ci_above!=.)
425   bys country: egen women_n=total(female)
426   drop female
427
428   * Verification
429   count if a05==2 & M_cen_ci!=. & W_cen_ci!=. & country==1
430   count if a05==2 & M_cen_ci!=. & W_cen_ci!=. & country==2
431   count if a05==2 & M_cen_ci!=. & W_cen_ci!=. & country==3
432   tab country women_n, miss
433
434   ** Headcount ratio of inadequate women
435
436   gen inadequate=(ci_above==1 & a05==2)
437   bys country: egen float inadequate_n = total(inadequate)
438   gen H=inadequate_n/women_n
439
440   *Verification
441   count if M_cen_ci<W_cen_ci & a05==2 & M_cen_ci!=. & W_cen_ci!=. & country==1
442   count if M_cen_ci<W_cen_ci & a05==2 & M_cen_ci!=. & W_cen_ci!=. & country==2
443   count if M_cen_ci<W_cen_ci & a05==2 & M_cen_ci!=. & W_cen_ci!=. & country==3
444   tab country inadequate_n, miss
445
446   ** Computation of normalized gap
447
448   qui gen ci_gap=(W_cen_ci-M_cen_ci)/(1-M_cen_ci) if ci_above==1&a05==2
449   bys country: egen ci_average=mean(ci_gap)
450
451   bys country: egen float ci_gap_sum = total(ci_gap)
452   bys country: gen ci_average2=ci_gap_sum/inadequate_n
453
454   *Verification
455   bys country: sum ci_gap
456   tab country ci_average, miss
457   tab country ci_average2, miss
458   drop ci_gap_sum ci_average2
459
460   ** Computation of GPI
461
462   bys country: gen H_GPI=inadequate_n/women_n
463   bys country: gen P1=H_GPI*ci_average
464   bys country: gen GPI=1-P1
465
466   *************************
467   *** Summarize results  ***
468   *************************
469
470   bys country: sum H_GPI ci_average P1 GPI /* [aw=weight]  // remove quotes if
```

```
      using individual weights */
471   bys country: count if a05==2
472   bys country: tab women_n
473
474   *drop M_cen_ci M_cen_ci_mean_id M_cen_ci_mean ci_above women_n inadequate
      inadequate_n H ci_gap ci_average H_GPI P1 GPI
475   save results_GPI.dta, replace
476
477   log close
478
```

Annex 4: FTF Gender Integration Framework

Area	Problem/Constraint to Address	Desired Outcome	Definition of Outcome	Indicators to Track Progress toward Outcome	Is this problem or constraint relevant in your specific context? Y/N, Please explain and provide evidence.	What activity(ies) are you implementing that address this problem and how do they address it?	What activity(ies) are you planning that will address this problem and how with they address it?	Activity's Specific Contribution to Outcome	What indicators do/will you use to measure the success of the activity in terms of this outcome?
1	(Wo)men do not have equal or adequate power or input into household decision-making processes related to aspects of agricultural production, are excluded for decision-making processes, or make decisions based on external pressures.	Increased Decision-making Power in Agricultural Production	Beneficiaries engage in decisionmaking processes within the home, either solely or jointly. Beneficiaries have increased autonomy in relation to productive activity	Input in productive decisions				Does the activity promote or enable (wo)men's decisionmaking? Y/N How?	
				Autonomy in production				Does the activity promote or enable (wo)men's autonomy? Y/N	
2	(Wo)men do not have equal or adequate control over, ownership of, or access to resources related to agricultural production.	Increased Control over Productive Resources	Beneficiaries increase their ownership, access to, decisionmaking power over productive resources	Ownership of assets				Does the activity increase (wo)men's access to, power over, and use of assets? Y/N	
				Purchase, sale, or transfer of assets				Does the mechanism increase (wo)men's decision-making power over the purchase, sale, or transfer of assets? Y/N	
				Access to and decisions on credit				Does activity strive to increase (wo)men's access to and decisionmaking power over credit or loans? Y/N	
3	(Wo)men do not have equal or adequate control over the use of household income. (Wo)men are not engage satisfactorily in household decisions around how to use household income.	Increased Control over the Use of Income	Beneficiaries increase their control over the use of income and have adequate control over and are engaged in decisions about the use of household income.	Control over use of income				Does mechanism increase (wo)men's access to and control over income? Y/N, How?	

Area	Problem/Constraint to Address	Desired Outcome	Definition of Outcome	Indicators to Track Progress toward Outcome	Is this problem or constraint relevant in your specific context? Y/N, Please explain and provide evidence.	What activity(ies) are you implementing that address this problem and how do they address it?	What activity(ies) are you planning that will address this problem and how with they address it?	Activity's Specific Contribution to Outcome	What indicators do/will you use to measure the success of the activity in terms of this outcome?
4	(Wo)men do not have strong social networks, have few social and economic opportunities because they lack strong social relationships outside the household, are not connected with or through groups organizations. Wo(men) are rarely involved in positions of leadership within their communities.	Increased social capital and leadership in the community	Beneficiaries have increased social capital, improved social networks, and and increased voice/agency within their communities.	Group member				Does the activity strive to increase (wo)men's access to groups and opportunities to be a group member? Y/N, How?	
				Speaking in public				Does the activity strive to increase (wo)mens associational and leadership capabilities? Y/N, How?	
				Number of jobs created due to USG assistance (sex disaggregated)				Does the activity strive to employment opportunities for (wo)men? Y/N, How?	
				Number of orgs receiving USG assistance (women's orgs disaggregate)				Does the activity strive to support (wo)men's organizations and increase their size and longevity? Y/N, How?	
5	(Wo)men have an overly burdensome workload that hinders them from having a healthy work/leisure balance, negatively affects the well-being of their household, and keeps them from accessing other opportunities which could help advance them socially and economically.	Improved Time Use/ Decreased Time Poverty	Allocation of time to desired productive and domestic tasks, leisure activities, increasing human capital and goal setting	Workload				Does the activity strive to decrease the amount of time the (wo)men engages in work activities? Y/N, How?	
				Leisure				Does the activity strive to increase amount of time available for desired activities, leisure and personal goal setting? Y/N, How?	
6	Wo(men) have low or inadequate skill/knowledge levels in activities that are economically profitable or socially beneficial.	Increased human capital	Beneficiaries increase their technical skills and knowledge in activities that can improve their economic or social situation.	Number of individuals receiving short-term training (sex disaggregated)				Does the activity strive to increase opportunities for (wo)men to improve their knowledge and skills through short-term training? Y/N, How?	

Area	Problem/Constraint to Address	Desired Outcome	Definition of Outcome	Indicators to Track Progress toward Outcome	Is this problem or constraint relevant in your specific context? Y/N, Please explain and provide evidence.	What activity(ies) are you implementing that address this problem and how do they address it?	What activity(ies) are you planning that will address this problem and how with they address it?	Activity's Specific Contribution to Outcome	What indicators do/will you use to measure the success of the activity in terms of this outcome?
				Number of individuals receiving long-term training (sex disaggregated)				Does the activity strive to offer (wo)men opportunities to improve their skills and knowledge through degree-seeking programs or long-term training programs? Y/N, How?	
7	(Wo)men do not have adequate access to important technologies that can improve their economic productivity or wo(men) do not use or apply beneficial technologies or practices for some reason.	Increased access to and use of technologies	Beneficiaries have more and better opportunities to access technologies are are making use of them in their economic/agricultural practices.	Number of farmers applying new technologies and management practices (sex disaggregated)				Does the activity strive to increase (wo)men's access to productive technologies and application of those technologies? Y/N, How?	

Annex 5: 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[18], 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

OVERARCHING QUESTIONS
How is the project linked to the five domains of empowerment in agriculture?
How does the project affect women and men in these five domains?
How can the project contribute, long-term, to the significant involvement of women and their empowerment as leaders?

DOMAIN 1: AGRICULTURAL PRODUCTION		
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

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

	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?
Are agricultural decisions made by women, men, or jointly?	Who decides on the planting, harvesting, post harvesting, marketing and consumption of crops and water usage for agricultural or domestic consumption?	
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	What is the relative availability of trainings and expertise for

to and use of agricultural training and extension at local and regional levels?	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?	Is marketing done by women, men in the household or male or

What about products produced solely by women?	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?	