FEED THE FUTURE
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UNCOVERING MORE THAN A DECADE OF WEAI USE IN USAID PROJECTS

Lindsey Moore, Madhu Dissanayake, Hazel Malapit, and Ara Go

Introduction

Since its launch in 2012, the Women's Empowerment in Agriculture Index (WEAI) has been widely used in USAID projects to prioritize and target activities that aim to promote women's empowerment. It has been implemented in at least 37 countries by more than 200 partners and 60 different USAID operating units, offering valuable insights into the gender dynamics of agricultural production and identifying opportunities to enhance gender equality and women's empowerment. By providing a more nuanced understanding of the challenges that women encounter in the agricultural sector, WEAI has played a crucial role in enhancing the ability of USAID programming to improve the lives of women and their families.

This report presents key findings gathered from all reported WEAI use cases in the Development Experience Clearinghouse (DEC), the largest resource for USAID-funded technical and project materials. A use case refers to a unique, real-world example in which WEAI has been applied or utilized. A use case can demonstrate how WEAI has been used in a specific context or project, providing insight into its effectiveness, limitations, and potential for future applications. Together, these findings highlight the importance of WEAI as a tool for promoting gender equality and empowering women in the agricultural sector, while also providing useful insights that can inform future policies and programs.

Methodology

DevelopMetrics is a firm that specializes in employing emerging technologies for evidence aggregation and analysis. Using machine learning technology, DevelopMetrics analyzed a massive collection of more than 250,000 documents from the DEC to build an understanding of how various stakeholders used WEAI in USAID projects and what lessons and recommendations can be synthesized from these use cases. Of the 250,000 documents analyzed, the research team identified more than 2,500 use cases of WEAI. To do so, the team trained the machine learning model to recognize patterns and specific keywords in the documents, allowing for automated and accurate identification of use cases (Moore et al. 2023). These use cases were then classified into a data architecture based on a gendered food systems framework (Njuki et al. 2021), resulting in the identification of 631 use cases that explicitly mentioned the attributes associated with those themes. This methodology enabled the research team to explore all of the documented WEAI use cases in USAID's DEC, surpassing what human researchers could accomplish unassisted (Table 1).

Trends in WEAI Use in USAID Projects

WEAI has been widely adopted both geographically (Figure 1), especially across Africa and Asia, and among a diverse range of partners (Figure 2). These partners include universities, local governments, research institutions, foundations, and multilateral organizations, as well as local and international for-profit and nonprofit organizations.

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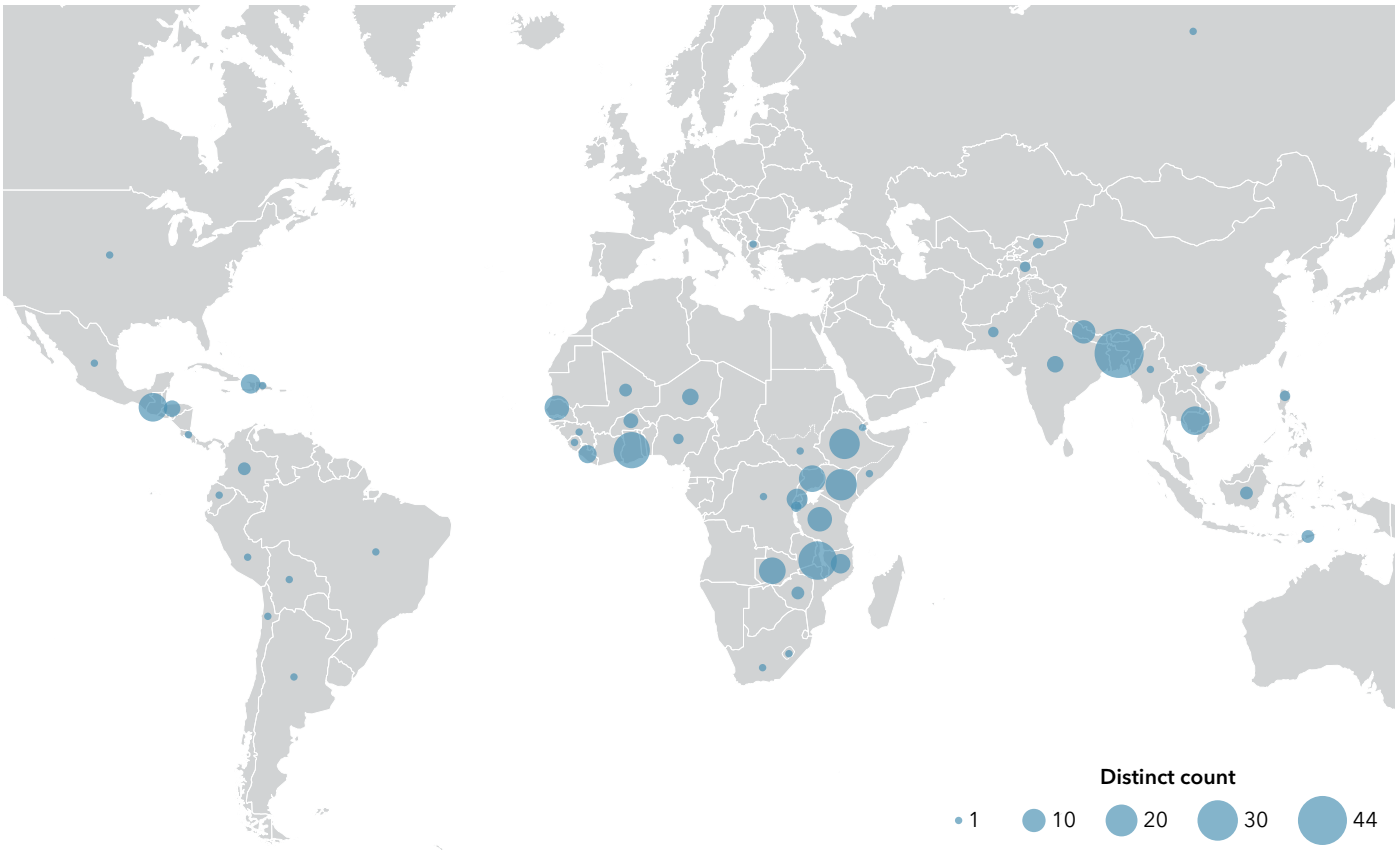
Table 1 Step-by-step process for using machine learning to identify and analyze WEAI use cases

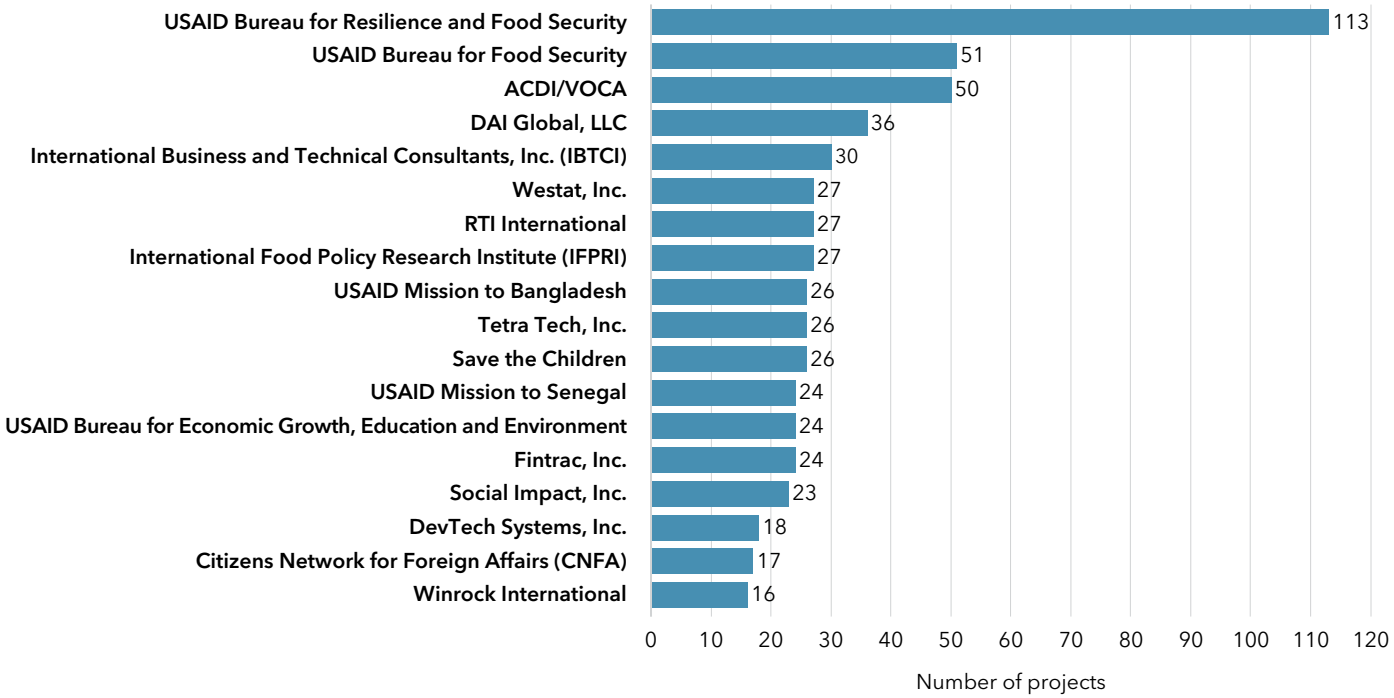
Step	Description
Step 1: Preprocess data	Clean and standardize data (n=250,000) by removing irrelevant content; convert text into a machine-readable format.
Step 2: Classify documents into WEAI vs. non-WEAI	Use machine learning algorithms to classify documents into two categories: those that contained information about WEAI (n=2,500) and those that did not. This was accomplished through a supervised learning approach utilizing a labeled dataset that was manually reviewed and labeled by human researchers.
Step 3: Extract WEAI information	Extract information about WEAI use cases (n=2,500) using natural language processing techniques to analyze the text and identify patterns and keywords that indicated the use of WEAI. The model was trained on a subset of the data that contained labeled use cases, enabling it to accurately identify similar patterns in the remaining data.
Step 4: Classify use cases	Classify use cases (n=631) according to the data architecture based on the gendered food systems framework (Njuki et al. 2021).
Step 5: Synthesize findings	Human researchers synthesize findings (n=631), including lessons learned and recommendations, from all recorded use cases.

Figure 1 WEAI use cases by country



Source: DevelopMetrics and IFPRI (2023).

Figure 2 WEAI use cases by partner



Source: DevelopMetrics and IFPRI (2023).

Note: USAID's Bureau for Food Security was integrated into the newly established Bureau for Resilience and Food Security in 2020.

About 20 percent of the documented uses of WEAI were in population-based surveys. The remaining uses of WEAI encompassed a wide range of applications, such as identifying constraints, informing strategy design, measuring and monitoring progress, and understanding gender dynamics.

Alignment of WEAI Use Cases to the Gendered Food Systems Framework

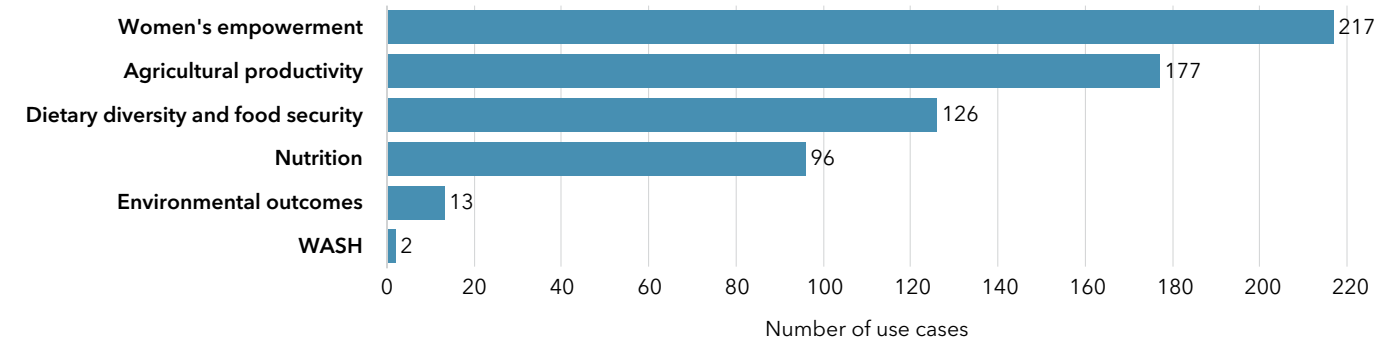
This section synthesizes results from use cases by theme (Figure 3), as defined in the data architecture based on the gendered food systems framework (Njuki et al. 2021).

Women's empowerment

Across all WEAI use cases, we observed a recurring pattern wherein women experience greater disempowerment than men, underscoring the enduring gender inequalities prevalent within the agricultural sector. Common themes included a lack of decision-making power and an unbalanced workload, as evidenced by the following use cases within the women's empowerment theme:

- Lack of inclusion in local leadership was a key constraint identified across use cases. In more than 50 projects, women were reported to be excluded from local planning processes, including identifying priorities, developing

Figure 3 WEAI use cases by theme



Source: DevelopMetrics and IFPRI (2023).

Note: WASH=Water, sanitation, and hygiene.

policies, budgeting, consulting, and adopting resolutions. For example, a review of the Feed the Future Innovation Lab for Markets, Risk, and Resilience portfolio found that women were largely excluded from participating in local leadership and decision-making processes in Nepal and Bangladesh, which resulted in a lack of attention to their needs and priorities (USAID and University of California, Davis 2020). WEAI has been useful in assisting projects to identify and address these constraints. For example, in Kenya, a midterm review that collected data using the abbreviated WEAI (A-WEAI) found that a gender-inclusive training intervention resulted in greater involvement by women in community leadership (SNV Netherlands Development Organisation 2019).

- WEAI's time-use indicator has provided meaningful insights into the gendered division of labor within households and communities, and helped identify ways to reduce women's work burden and promote a more equitable distribution of labor. For example, a 2018 survey in North Macedonia that collected WEAI data indicated that women in agriculture work more than 11 hours per day on average, with 42 percent of that time unpaid, while men work an average of 9.7 hours, mainly paid (Banyan Global 2019). In the survey, economically inactive women cited household chores as the main barrier to their labor-force participation, followed by the belief that they were unqualified. More than 10 projects also reported that women's work in rural areas often goes unrecognized, despite their significant contribution to agriculture (USAID 2014a; USAID 2015; de Brauw et al. 2018; USAID, Verulam Associates Bangladesh Limited, and Winrock International 2015; de Brauw et al. 2019; USAID 2019; ACDI/VOCA 2020; USAID 2013; USAID 2016a; Sraboni, Quisumbing, and Ahmed 2013).

Agricultural productivity

Women face specific challenges in accessing resources, finance, information, technology, and markets, which hinder their agricultural productivity. These constraints are exemplified by the following use cases of WEAI:

- Access to finance and inputs was one of the most commonly mentioned constraints. For example, the Agricultural Value Chains project in Bangladesh reported that many men expressed dissatisfaction with the idea that women could make financial decisions independently. They emphasized the importance either of making joint

Credit: Maruf Rahman/Pixabay

decisions or for some, having men make decisions for the women (de Brauw et al. 2019). These results are consistent with findings from the baseline survey that collected A-WEAI, which found women to be disempowered in decision-making related to ownership of assets, access to credit and related decision-making, and control over the use of income. The challenge of accessing financial services further hinders the ability of women to acquire inputs, which, in turn, restricts their ability to participate in agricultural production. These findings emphasize the need for targeted interventions to address specific areas where women face disempowerment related to decision-making on credit and finances.

- Access to technology was also a common challenge for women within the agricultural sector. According to findings from the Victory Against Malnutrition Plus project, WEAI results in Burkina Faso and Niger indicate that without adequate access to important technologies that can improve women's economic productivity, their empowerment will continue to be limited. Based on these findings, the project shifted its focus toward interventions that increase women's access to and adoption of new technologies (ACDI/VOCA 2020).

Dietary diversity and food security

The relationship between dietary diversity, food security, and women's empowerment are critical themes addressed in 126 WEAI use cases. Within this theme, WEAI was most frequently employed to assess the relationship between women's decision-making power and their control over their diet, as well as the diet of their children. The following examples highlight the importance of WEAI in practice:

- In Bangladesh, a baseline survey using WEAI found that 75 percent of rural women in the Feed the Future Zone of Influence were disempowered, a status which was significantly associated with poorer child, maternal, and household dietary diversity (USAID 2011). In response, the government collaborated with Feed the Future to refocus efforts and provide more opportunities for women to control productive assets and take leadership positions within their communities. Results from the interim survey conducted in 2015 revealed a significant improvement in women's empowerment compared to the 2011/2012 baseline results (USAID 2016b).
- The Resilience and Economic Growth in the Sahel project used WEAI to measure changes in women's empowerment and nutrition status in Niger. The project found a positive correlation between improvements in women's empowerment and in household dietary diversity and micronutrient intake (Some 2018).

Overall, projects reported that WEAI assisted in identifying specific areas where women's empowerment could facilitate improved individual and household dietary diversity, which can ultimately lead to better health outcomes for families and communities.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Nutrition

In 96 cases, WEAI was used to measure the relationship between women's empowerment and nutrition status. Key examples highlight the use of WEAI within the nutrition theme:

- In Bangladesh, the Agriculture, Nutrition, and Gender Linkages project used WEAI data to identify actions and investments that can leverage agricultural development for improved nutrition. The project also used these data to make recommendations on how to improve pathways to women's empowerment.
- Projects also frequently used WEAI to consider the relationship between women's empowerment and anthropometric indicators. For example, the Feed the Future Tanzania Land Tenure Assistance project utilized WEAI to measure the relationship between women's empowerment and stunting among children under five years old in Tanzania (USAID 2018).

Overall, WEAI has proven to be an effective tool in measuring the relationship between nutrition and women's empowerment, leading to a better understanding of the nutrition challenges faced by vulnerable households.

Environmental outcomes

Few documents reported how WEAI was used to measure the relationship between women's empowerment and environmental outcomes, such as the adoption of climate-smart interventions. One exception is the following case:

- The Feed the Future Ghana Agriculture and Natural Resource Management Project used WEAI to assess women's empowerment in agriculture and how it relates to their adoption of climate-smart agricultural practices, such as small-scale irrigation, soil and water conservation,

and drought-tolerant high-yielding crop varieties. The project found that women who were more empowered in agriculture were more likely to adopt climate-smart agricultural practices (Winrock 2018).

Overall, more work is needed to promote the use of WEAI in measuring women's empowerment related to environmental outcomes.

Other themes: Education, life satisfaction, and water, sanitation, and hygiene

Water, sanitation, and hygiene (WASH) is among the least-reported themes using WEAI in USAID project and activity documents. Examples of WASH use cases include:

- The WASHplus project aimed to improve WASH practices and behaviors among women and girls in Bangladesh, Madagascar, and Tanzania (National Academies of Sciences, Engineering, and Medicine 2017). In each country, WEAI was used to measure changes in women's empowerment related to WASH over the course of the project.

We did not see any use cases that examined relationships between WEAI and education, or between WEAI and life satisfaction.

Lessons and Recommendations

Across use cases, shortening the survey modules was identified as an effective strategy to reduce respondent burden, minimize selection bias, and improve response rates. For example, a baseline survey in Malawi found that A-WEAI shortened the time to implement WEAI interviews by approximately 30 percent (ICF International 2017). Although arbitrarily omitting survey questions is not recommended—as this could compromise comparability and the integrity of the index—the use of A-WEAI, which was cognitively tested and validated, was widely found to result in better quality data while reducing interview time.

The topic of women's empowerment is especially prone to sociocultural influences that can potentially introduce biases into the WEAI results. For example, one survey respondent in Zambia stated, "There is intimidation in telling the truth, because they [respondents] may think they would be judged if the woman runs the home or only the man runs the home" (Mofya-Mukuka and Kabisa 2017). Additionally, it was found that separating husbands and wives during WEAI surveys can arouse suspicion and distrust of enumerators. Some men fear that wives will reveal family issues, as reported by a survey conducted in Kenya (USAID 2014b). Similarly, in Zambia, one survey respondent reported, "It makes someone wonder why someone would want to know your household dynamics. What are their intentions? I was not comfortable with the way the question was coming out" (Mofya-Mukuka and Kabisa 2017). These concerns can be addressed by explaining the purpose of the survey and emphasizing the confidentiality of responses, as well as adapting to cultural norms and alleviating discomfort, when possible.

There is also a need for more nuanced ways of measuring certain WEAI domains, such as time use, decision-making, quality of leadership, and group participation, so that these domains can be better understood. As one respondent stated, "Wife and husband make decisions together, which makes it difficult to answer the question" (Mofya-Mukuka and Kabisa 2017). In such cases, going beyond the quantitative WEAI questionnaire to include additional focus groups and targeted interviews is recommended to investigate broader gender issues. For example, the project-level WEAI (pro-WEAI) qualitative protocols[1] can be used alongside the WEAI survey to probe these issues. Doing so can help interpret the variation in empowerment results. Ultimately, WEAI should be viewed as a complement to other forms of gender analysis and data collection, rather than a standalone solution.

Conclusion

The research findings reveal that WEAI has not only been widely utilized but has also played a crucial role in enhancing the ability of USAID programming to improve the lives of women and their families by providing a more nuanced understanding of the challenges encountered by women in the agricultural sector. The methodology employed by DevelopMetrics, utilizing machine learning technology, facilitated a deepened understanding of WEAI's reach within USAID's portfolio and of how women's empowerment relates to various themes in the gendered food systems framework. Ultimately, these findings and trends highlight the importance of WEAI as a tool for measuring gender equality and empowering women in the agricultural sector, and provide valuable insights to inform future policies and programs aimed at advancing gender equality in agriculture.

1 These research protocols are available at https://weai.ifpri.info/files/2018/04/GAAP2-Qualitative-Protocols-no-comments-.pdf

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Acknowledgments

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