

UNIVERSITY OF FLORIDA

Final Report

Gender Analysis of Jordan WLI Benchmark Site



**In collaboration with
International Center for Agricultural Research in the Dry Areas (ICARDA),
Water and Livelihoods Initiative Project (WLI),
National Center for Agricultural Research and Extension (NCARE),
And University of Florida (UF)**

**Amman, Jordan
August 2012**

Acknowledgements

This report is prepared by the University of Florida's graduate student team, Chesney McObmber, Nargiza Ludgate, Kristen Augustine, Claudia Youakim, and Jeremy Lambeth, in collaboration with Jordan's NCARE socio-economic team, Ala'a Al Awaydeh, Omama Hadidi, Tayseer Abo Ammash, Omar Abdulhadi, Lana Abo Nowar, and Malek Abu Romanm under the guidance and supervision of Dr. Samia Akroush. NCARE staff was invaluable in arranging and facilitating the focus group discussions and assisting with Arabic-English translations. We also want to thank Dr. Malika Martini (ICARDA) for training on how to use Problem Tree tool in the community focus group setting, and for being our research mentor. Dr. Martini also worked with Dr. Akroush in developing the initial gender questionnaire and the research questions which we used in our gender research. We are very thankful to Dr. Sandra Russo (University of Florida) for providing with the opportunity to conduct field research in the Middle East and for her support in completing our gender research. We also thank Dr. Constance Shehan (University of Florida) for discussing how to understand the cultural power relations within households. We also want to thank Fulbright fellow, Sam Ribnick, for being our guide and Arabic interpreter in Amman and during our focus group discussions. We are very grateful for ICARDA's support and hospitality, and particularly we thank Drs. Nasri Haddad and Theib Oweis, Ms. Bezaiet Dessalegn and the ICARDA team in Jordan. We also thank Engineer Hanaa Chehabeddine from Lebanese Agricultural Research Institute who participated in the gender training and field work. We acknowledge Dr. Scott Christiansen and USAID for financial support and interest in gender research. Finally, we'd like to thank the WLI benchmark site communities of Muharib and Majidyya, including women from the Ngera Cooperative, for their participation in our gender research and providing their input in collecting sex-disaggregated data in Jordan.

Cover Photo Credits:

Kristen Augustine - Focus group meeting with Majidyya women, Majidyya Community, Jordan, May 2012

Disclaimer

The views expressed in this report do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

Table of Contents

Executive Summary.....	4
Introduction	5
What is Gender Analysis?	5
Institutions.....	5
<i>Water and Livelihood Initiative (WLI)</i>	5
<i>International Center for Agricultural Research in the Dry Areas (ICARDA)</i>	6
<i>National Center for Agricultural Research and Extension (NCARE)</i>	6
<i>University of Florida (UF)</i>	6
The Origins of the Research	7
Gender Planning Meeting and Workshop Held at NCARE	7
Gender Analysis Study at WLI Benchmark Site	8
Statement of Purpose.....	8
Fieldwork Sites: Jordan’s WLI Benchmark Site: Majidyya and Muharib Communities	8
<i>Majidyya</i>	9
<i>Muharib</i>	9
<i>Ngera</i>	9
Methodology.....	9
Focus Group.....	10
<i>Problem Tree</i>	10
<i>Daily Activity Calendar</i>	10
<i>Women Empowerment in Agriculture Index</i>	11
Analysis of the Results	11
Focus Group Characterization.....	12
Crop Production Systems	12
<i>From men’s perspectives</i>	13
<i>From women’s perspectives</i>	13
Livestock Production.....	14
Social Capital Aspects.....	15
<i>Leadership opportunities for women</i>	15
<i>Daily activity calendar of men</i>	16
<i>Daily activity calendar of women</i>	16
Socioeconomic Aspects.....	17
<i>Sources of income for men</i>	17
<i>Sources of income for women</i>	17
<i>How do households perceive expenses?</i>	18
<i>Shift in women’s lives over time</i>	18
Water Resources Management.....	19
<i>Water issues raised by men</i>	19
<i>Water issues raised by women</i>	20
Effects of Climate Change and Adaptation	21
<i>Issues raised by men</i>	21
<i>Issues raised by women</i>	21
Analyses Recap: Do Women Perceive Water Problems Differently than Men?.....	22
WLI Intervention Points in Jordan.....	23
Lessons Learned from Working with Communities	23
Cultural Challenges	24
Setting for Focus Groups.....	24

Timing and Transportation	24
Participant Selection.....	25
Focus Group Facilitation and the Discussion Guide	25
Children.....	26
Collaborating with Non-native Speakers.....	26
Playing it Forward to Other WLI Sites	27
Annex 1: WLI Gender Planning Meeting at NCARE.....	28
Annex 2: Focus Group with Men in Majidyya Community	30
Annex 3: Focus Group with Women in Majidyya Community	35
Annex 4: Focus Group with Women in the Ngera Cooperative	40
Annex 5: Focus Group with Men in Muwaqer	45
Annex 6: Focus Group with Women in Muwaqer.....	52

Executive Summary

This report presents findings and recommendations obtained from the gender analysis conducted in Jordan for the USAID-funded Water and Livelihoods Initiative (WLI) project, during May-August 2012. This analysis was the product of a collaborative effort between the International Center for Agricultural Research in the Dry Areas (ICARDA), the National Center for Agricultural Research and Extension (NCARE) and the University of Florida (UF).

A review of the WLI countries' socioeconomic activities conducted by UF students last spring revealed the continuing need for capacity building in gender analysis at the national level. In response to this finding, a gender planning workshop was held in Jordan last May. Of the many goals for the workshop, equipping socioeconomic researchers with foundational gender analysis tools was a primary objective. The skills developed in this training were then used to pilot a qualitative gender analysis study at the WLI benchmark site in Jordan.

The focus group discussions were conducted in three communities: two of which represented the WLI benchmark site community (Muharib and Majidyya), and the third community (the Ngera Cooperative) was selected to pilot test selected research tools. The discussions were held with both men and women on the roles and contributions of women in agricultural production, livestock management, water resources management, and in the rural household. The questions were based on the domains of the Women's Empowerment in Agriculture Index to measure women's roles in the decision-making process, access to and control over household and production resources, control over income, leadership capability, and time management.

The findings from the discussions are presented in the Analysis of the Results section of this report. The analysis shows that men view themselves as sole decision-makers in agricultural production and within the household, while women's roles are left invisible. Women are important in the household's water resource use and management, and possess knowledge on how to conserve water and adapt their households to climate change effects. We also have identified several points of intervention for WLI Jordan team: 1) designing and providing a series of training programs for women, and 2) facilitating the benchmark community development through peer-to-peer support at the community level.

We also included a list of lessons learned from the interactions with the communities and the use of the tools selected for conducting qualitative research. This section also outlines some of the best practices which resulted from the challenges faced in each phase of the process, from planning to report writing. Careful consideration has been given to creating methods of disseminating the lessons learned in Jordan to the other country sites. To attain this objective, two toolkits will be provided to the other WLI countries with detailed information on both gender analysis and technical research and reporting of data.

We anticipate that through research, extension, improved monitoring, and new institutional linkages WLI and NCARE will be able to more effectively ensure agricultural sustainability. It is important to view water resource management as a social activity, in which individual efforts at the household level contribute to the greater good of the community.

Introduction

This report presents findings and recommendations obtained from the gender analysis conducted in Jordan for the USAID-funded Water and Livelihoods Initiative (WLI) project, during May-August 2012. The groundwork for the analysis is based on the University of Florida students' gender assessment of the WLI participating countries¹. The outcome of this initial desk review identified several gender gaps, including lack of sex-disaggregated data from benchmark sites that would be useful for research purposes and a need for capacity building at the institutional and community level. That report produced several recommendations, many of which were then implemented during a five week gender training and fieldwork at the Jordan WLI benchmark site. The following document provides details of the methodology and results of this gender analysis training and pilot study of the WLI project in Jordan.

What is Gender Analysis?

Gender analysis is a socio-economic research tool used to illuminate the links between existing gender relations and development concerns in a particular society. Frequently unaddressed in development interventions, men and women have different access and control over resources, carry out different social roles, face different constraints and receive different benefits. A close analysis of these gendered roles and responsibilities can reveal differences that are critical to understanding cultural norms but also are important for designing appropriate research and development interventions. This type of social research is essential for planning sustainable livelihood strategies, identifying barriers to participation in development activities, and understanding how intervention assistance is distributed. Both qualitative and quantitative gender disaggregated research can help to raise awareness of gender issues during project implementation, monitoring and evaluation, and can also serve to inform policy makers. The overarching objective of the WLI gender analysis is to make women's roles in agricultural production visible and to encourage their broader participation in both, production and water management.

Institutions

This study was the product of a collaborative effort between the International Center for Agricultural Research in the Dry Areas (ICARDA), the National Center for Agricultural Research and Extension (NCARE) and the University of Florida. Below is a description of the participating institutions.

Water and Livelihood Initiative (WLI)

The WLI is a United States Agency for International Development (USAID) funded project implemented through local research centers in cooperation with the international institution, ICARDA, national agricultural research centers, regional universities and select US universities. Conceived at a planning meeting in 2008, the initiative has expanded to include eight countries (Egypt, Iraq, Jordan, Lebanon, Palestine, Syria, Tunisia² and Yemen). These benchmark sites were carefully selected to represent each of the three agro-ecological systems in the region (irrigated, rainfed, and rangeland) and to pilot specific water and land management techniques that optimize productivity. The objective of the WLI is to improve the livelihoods of rural

¹ University of Florida students of Gender and Development Class (WST6935)

² Tunisia was added to the consortium of WLI countries in 2012 but does not yet have a WLI team in place.

households and communities in areas that are affected by deterioration and scarcity of water, food insecurity and acute health issues. The strategy to meet this objective includes accessing, improving and expanding; local knowledge of existing data, social capital and networks, established links between research and extension institutions, and proven technologies and methodologies employed in the region.

International Center for Agricultural Research in the Dry Areas (ICARDA)

Since the WLI's inception, ICARDA has facilitated the activities of the initiative and focused on the enhancement and coordination of agricultural research, the exchange and dissemination of technology, and the promotion of intra- and inter-country linkages. With regional programs and coordinators, ICARDA maintains multidisciplinary teams of national policy-makers, scientists, extension workers and farmers. The center's scientific expertise, knowledge, and ability to work with local institutions are crucial to expediting WLI's relationship building. Currently operating in six of the original WLI countries, the organization is well connected to a network of international research organizations, donors and universities.

The benefits of ICARDA are recognized in the coordination of multiple agro-ecosystem workshops that enable the exchange of information from a range of WLI country participants. A link for local universities, research institutes, and their US counterparts, ICARDA provides technical and backstopping support across the region. In addition, with a newly appointed WLI Coordinator, Ms. Caroline King, the Center continues to promote the integration of gender into agricultural development activities. As the WLI's cornerstone, ICARDA was an indispensable component to the success of the 2012 Gender Workshop and gender analysis activities in Jordan.

National Center for Agricultural Research and Extension (NCARE)

Located in Amman, NCARE is Jordan's primary research institution for addressing sustainable natural and agricultural resource management. Under the umbrella of the Ministry of Agriculture, NCARE works closely with local communities to introduce methods and technologies that improve the livelihood of rural households. A pioneer in rehabilitation practices for the middle Badia, the center focuses on traditional income generating activities for rural farmers and leads the region in evaluation of fodder shrubs that increase forage for small ruminants.

In 2008, NCARE published a comprehensive baseline socioeconomic analysis of the benchmark site. Through the effort of NCARE's socioeconomic department headed by, Dr. Samia Akroush, NCARE continues to respond to the need for detailed quantitative and qualitative data for agricultural research. Dr. Akroush has a socioeconomic team comprised of a diverse group of researchers in order to pilot the latest gender analysis tools [described below]. Coupled with skills to conduct gender analysis and training, the team represents a crucial regional research and extension resource with which other WLI country socioeconomic teams can collaborate.

University of Florida (UF)

The University of Florida is a Research I institution and one of 17 land grant universities that belong to the Association of American Universities. UF has a long history of established programs in international education, research, and service. Currently, UF works on all continents, with a significant presence in Africa, Asia, Latin America, and the Middle East and

has a strong reputation for its culture of interdisciplinary research across colleges. Recognized as a pioneer in gender and agricultural development, UF's role in the WLI project is unique in providing technical assistance in gender research. Under the leadership of Dr. Sandra Russo, and resulting from the recommendations of the desk review of the WLI countries, UF sent 5 students from UF to conduct gender field research in Jordan in collaboration with NCARE and ICARDA.

The Origins of the Research

A desk review of the WLI countries' socioeconomic activities (as represented by reports on the WLI website) conducted at the University of Florida during the spring of 2012 revealed the continuing need for capacity building in gender analysis at the national level³. In response to this finding, Drs. Sandra Russo (UF), Malika Martini (ICARDA) and Samia Akroush (NCARE) arranged for a gender planning meeting to be held in Jordan. Of the many goals for this workshop, equipping socioeconomic researchers with foundational gender analysis tools was a primary objective. The skills developed in this training were used to pilot a qualitative gender analysis study at the WLI benchmark site in Jordan.

Working side by side the NCARE staff, the University of Florida research team gained crucial knowledge about conducting gender analysis in Jordan which may have implications and use in other WLI countries of the Middle East and North Africa (MENA) region. As a result, the toolkits were prepared for dissemination through the WLI website for participating countries to utilize. These materials will support the capacity building of other national socioeconomic teams to conduct similar gender research in their respective WLI countries.

Gender Planning Meeting and Workshop Held at NCARE

The gender planning meeting, held in May 2012, was designed to bring together the WLI country socioeconomic teams and increase their exposure to gender analysis tools. Held at NCARE headquarters, the location and timing was thought to be optimal; however, only one representative outside of Jordan (from the Lebanese Agricultural Research Institute) was able to attend. The peer-to-peer interaction between the University of Florida team and NCARE staff laid a solid foundation for cooperation over the team's five-week assignment.

The five-day workshop began with an overview of the importance of gender analysis followed by WLI's goals. The NCARE staff presented the socioeconomic results for the Badia. In preparation for fieldwork, the NCARE and UF team conducted a group exercise to highlight the value of a prepared introductory statement deemed necessary to use when facilitating focus groups in community settings. This statement highlighted the purpose of the researcher's presence in the area, a brief overview of the focus group's purpose, and expectations.

The second and third days of the workshop were dedicated to focus group facilitation techniques; the five domains of the Women's Empowerment in Agriculture Index (WEAI), and identifying

³ This document was prepared by the University of Florida's Gender and Development student group: Muna Abbas, Kristen Augustine, Trent Blair, Stephanie Borios, Renee Bullock, Asma Gharib, Molly Green, Nathalia Ochoa, Elihu Isele, Jeremy Lambeth, Nargiza Ludgate, Chesney McOmer, Greyson Nyamoga, Amy Panikowski, and Taylor Spangler

gendered assets, roles and relationships within the household. In addition, the attendees tested a number of tools and methods, including:

- Role Playing
- “Fishbowl” Observation
- Daily Activity Calendar
- Problem Tree
- Preference Analysis
- Power in Marriages and Households

During the training week, the participants traveled to the village of Majidyya to conduct two focus groups. Using the *problem tree* tool as a format for discussion and analysis, the focus groups were the first attempts to collect qualitative sex disaggregated data at this WLI benchmark site.

The workshop provided a unique opportunity for UF researchers and their NCARE counterparts to exchange ideas, work together, and bridge the gender analysis gap. Lack of participation from other WLI partner countries was unfortunate. The current political climate in the region may impact future workshop attendance for an extended period. Understanding the need for flexibility, the toolkits from the workshop are being developed that will serve as an interim method of capacity building and are meant to be shared with all WLI partners. (For a detailed report on the workshop see [Annex 1](#)).

Gender Analysis Study at WLI Benchmark Site

Statement of Purpose

The goal of the gender analysis, conducted at the WLI benchmark site, is to collect sex-disaggregated data in order to compliment the statistical baseline data published by NCARE in 2008⁴. We anticipated that the fieldwork would reveal that women’s experiences with agriculture and water management differ from men’s experiences. Because of these variations, gendered perceptions of water scarcity and its proposed solutions may differ. Using gender analysis tools, such as the WEAI, and qualitative methods such as focus groups, the team seeks to identify development interventions needed by both men and women in the region, as well as to assess how gender roles affect various project outcomes at the Jordan WLI benchmark site.

Fieldwork Sites: Jordan’s WLI Benchmark Site: Majidyya and Muharib Communities

Located in the Badia, the Jordan WLI Benchmark site receives an average annual rainfall of less than 200mm and specializes in crop [barley and wheat] and livestock production. The area is constrained by lack of arable land, water shortage and extreme soil erosion. For the focus group study, two communities within the benchmark site were selected: Majidyya and Muharib. The residents of these communities frequently participate in research and development projects. The

⁴ Akroush, Samia; Kamil Shideed; Abdel Gani Abdel Latif. 2008. “Baseline Information and Livelihood Characterization of the Badia Water Benchmark Site in Jordan”. Community Based optimization of the management of scarce water resources in agriculture in West Asia and North Africa, Report No.6. ICARDA, Aleppo, Syria: iv+60pp.

region was previously part of ICARDA's Water Benchmark Project⁵ where socio-economic data was collected from every household in the area.

Majidyya

Majidyya is a rural village 70km south of Jordan's capital city of Amman. With 40 households and a population of approximately 250, the community's rangeland agro-ecosystem has been the focus of multiple interventions for over a decade. The Majidyya community members traditionally used their land for grazing. However, continuous overgrazing degraded the natural rangeland vegetation. In response, some residents switched to barley cultivation. Barley is a government-subsidized crop, which typically yields little to no grain as a result of water scarcity; in poor growth years, the barley is used as fodder for livestock.

NCARE's current biophysical research in Majidyya consists of redesigning barley fields to optimize the use of rainfall as well as improve barley cultivation. In the past, water harvesting, mechanized transplanting, and drought-resistant varieties of fodder were also introduced to the community.

Muharib

Muharib shares many of the geographic characteristics of Majidyya and they both have suffered from similar water shortage issues and degradation of arable land. Unable to support an agricultural livelihood, many families have relocated from Muharib to Muwaqer where private and public services are more readily available. Muwaqer is where the focus groups for this community were held. About 30 households are located in Muharib community.

Ngera

The Ngera Cooperative for Social and Charitable Causes in the Badia was established more than 15 years ago by a group of women and currently consists of 75 female members. Neighboring Muwaqer, Ngera is located 50 km outside of Amman. The cooperative raises funds to provide services to both women and men in the community, including a kindergarten, dairy processing facility, and a computer center. The cooperative also provides women with training programs on food processing, math and English classes, computer/IT and other vocational skill building. Ngera was selected to pilot the qualitative questionnaire before visiting the community of Muharib.

Methodology

The team employed qualitative methodology with the purpose of providing more detailed sex disaggregated data. This data was acquired through the use of focus groups and other participatory methods such as the *problem tree* and *daily activity calendar*, which were introduced during the gender workshop. In total, there were five focus groups conducted, two of which were facilitated through the use of the *problem tree* tool. The other three were structured through the WEAI questionnaire (described below). With the help of these tools the team was able to facilitate in-depth discussions with the participants.

⁵ CWANA stands for Central and West Asia and North Africa

Focus Group

Using focus groups, the WLI team collected qualitative data about women's lives in the benchmark site. This tool was selected for its ability to quickly collect information regarding group's behaviors, perceptions, and beliefs, about a specific topic or topics. To gather perspectives from a particular sub-set of the population, participants are asked to participate in a group session that ideally ranges from 7-11 members. Questions are pre-selected and phrased in such a way as to promote open dialogue about the topic so researchers are able to gather content of the group's attitudes, tensions, and significance of the topic at hand.

Problem Tree

The research team used the *problem tree* exercise as a means of collecting qualitative information from the focus group discussion in Majidyya. The *problem tree* is constructed by focus group participants through the facilitation of a researcher. First, the participants identify problems within the community and then prioritize them. The top priority problem then becomes the focus of the discussion. Next, the focus group identifies the causes of the problem through participatory and collaborative discussion. These causes are arranged in a way that visually represents the "roots" of the problem. Organized into first-level and second-level causes, the group then draws connections between the causes and prioritizes the strength of each in relation to the problem.

The second component of this exercise is to identify the effects of the problem on the community. These effects are written on cards and placed above the causes and the main problem which symbolize the "branches" of the *problem tree*. Again, the community organizes and ranks the effects into first-level and second-level sequence. It is important for the community and researchers to recognize that the causes and effects listed maybe linked and in fact, cyclical. Finally, the *problem tree* is completed when the community identifies solutions to the causes and effects.

This strategy is an effective tool for use in focus groups because participants are able to immediately see the results of a brainstorming activity in an organized way. The process also facilitates full community engagement in analyzing the roots of their problem, the associated effects, and developing their own solutions to address the problem. Allowing for the collection of qualitative data, this structure is highly visual and facilitates directed discussion pertaining to the identified community problem.

Daily Activity Calendar

The daily activity calendar is used as a tool to capture how people in the community spend a typical day. The facilitator can use two methods of attaining this information. The first method is by providing a chart which lists the hours of the day. The community then fills in the various activities usually performed in the appropriate time slots. Conversely, the researcher can list various activities (i.e., cooking, cleaning, etc.) and the participants indicate the time that these activities are usually done. The second method is by simply asking the different community members what they do on a typical day from the time they wake up until the time they go to sleep at night. The facilitator can then encourage more detailed explanations of the daily activities, including the hours that tasks are done and the length of time each activity takes. For

the purposes of this study, the research team chose to use the latter strategy as it was less structured and provided a better opportunity to gather more detailed and qualitative data.

Women Empowerment in Agriculture Index

The team decided to use the WEAI which is USAID's new index tool for monitoring gender gaps. The index consists of five domains of empowerment including women's role in production, control over income and resources, leadership opportunities, and available time for leisure. The WLI team selected the following domains for focus group discussions:

- Production: Participation of women in the production decision-making process and autonomy of making production management decisions
- Resources: Access to information, training and extension services (i.e. types of training conducted/offered)
- Income: Access and control over household income and expenditures
- Leadership: Opportunities available in the cooperative (i.e. benefits from membership, empowerment activities for women)
- Time: Availability of time for leisure. This domain was also supplemented by gathering information on women's daily activity calendar (to construct women's typical day).

The WLI team inquired about women's access to water resources (potable and agricultural) and decision-making; perceptions about climate change and its associated behavioral changes were also addressed. The questions included sources of water, water quality and responsibilities within households, changes to water use patterns during droughts and associated patterns about how decisions/priorities are made.

Analysis of the Results

The following section presents an analysis of the data gathered during the community focus group discussions in the selected communities: Majidyya, Muwaqer and Ngera. The focus group format applied was used to collect information from both men and women on the roles and contributions of women in agricultural production, livestock management, water resources management, and in the rural household. The questions were based on the domains of the WEAI to measure women's empowerment through 1) inclusion/authority in the decision-making process, 2) access to and control over household and production resources, 3) control over income, 4) leadership capability, and 5) time management. These domains guided the structure of the focus group discussion, as each was integrated into the following topics:

- Crop production systems (women's role in the decision-making process, access and control over agricultural production inputs such as land, equipment, credit or extension services, and the division of labor)
- Livestock production (women's role in the decision-making process, access to and control over livestock production inputs or extension services, marketing of livestock products, as well as the division of labor)
- Social Capital (leadership opportunities, social network, access to and participation in cooperatives or associations, and daily activity calendars)
- Socioeconomic aspects (access to and control over income, household size, education and status in the household and community)

- Water resources management (quality, supply and management at the household and on-farm [crop and livestock] levels)
- Effects of climate change

Focus Group Characterization

Majidyya: There were two focus groups conducted in this community: one with a men's group (consisting of twelve adults and six children) and another with a women's group (18 women and 23 children). The discussions in both groups were guided through the application of a *problem tree* method which revealed water scarcity as the most pressing problem in the community, and was identified by both men and women's groups. This method also helped identify the roots of the problem, the effects perceived by the community members, and solicited solutions to address the water scarcity problems. Both men and women in the focus groups appeared to be more involved in livestock production than the other focus groups. Among other issues raised, women emphasized the lack of market access, transportation and education; while the men included issues pertained to livestock production, including the declining number of sheep owners, the number of sheep in the herds, low productivity of seed material, and the high cost of land management. A more detailed report on both focus groups is presented in [Annex 2](#) & [Annex 3](#).

Ngera: There was only one focus group conducted in this community. The participants (15 women) mainly represented women-members of the Ngera Cooperative (12) and three women invited from Muharib community. Ngera community was selected to pilot test the WEAI qualitative questionnaire that was developed in collaboration with NCARE, ICARDA and the University of Florida researchers. The piloting of the discussion sessions helped identify a set of questions that would aid researchers in obtaining in-depth information on gender roles from the benchmark site communities. Women from Ngera were not representative of the benchmark site women, although their responses, opinions and perceptions helped construct a clear view of the livelihood of rural women in Badia. The three women from Muharib are from the benchmark site and are livestock farmers. A more detailed report about this focus group is presented in [Annex 4](#).

Muharib benchmark site/Muwaqer District: The community participants were also separated into a men's group (comprised of 8 adults and 3 children) and a women's group (12 women and 5 children). Both groups addressed the same core set of questions, which were based on the five domains of the WEAI. The rationale behind this strategy was to obtain information from both men and women and, through comparison, construct an understanding of how men and women perceive women's role in the household decision-making process with regards to assets, production resources, and income. In addition, the research team inquired about water resources and its management within the community, men's and women's daily activity calendars, and division of labor within the household. The three Muharib women who participated in the Ngera focus group were not present at this meeting. A more detailed report on both focus groups is presented in [Annex 5](#) & [Annex 6](#).

Crop Production Systems

The research team developed a series of questions with the aim to discern which members of the family held the responsibility for making decisions about different agricultural tasks within the household. It also helped reveal the gender relations within the home and the level of empowerment women have in different aspects of their lives.

From men's perspectives

The results of the discussion in Muwaqer (with Muharib community members) revealed that men were the sole decision-makers within the household. This role held true across a variety of activities; men made all decisions about purchasing land or agricultural inputs, selling livestock or agricultural produce, as well as planting and cultivating crops. There were also several instances when sons were involved in the decision-making process (e.g., help with the purchase of agricultural inputs). Men acknowledged that the women in their households assisted them in the field when additional hands were needed. The research team did not explore in depth the reasons why women did not participate in the decision-making process.

From women's perspectives

The group found that the focus group discussions were, in some ways, limited by the experiences of the participants. For example, in the women's group, not all of the women represented households that were actively involved in the agricultural sector. Additionally, those who were present explained that the women were no longer involved in the farms as a result of their families' re-location from Muharib area (where the farms are) to Muwaqer, which is 20-30 km away. Women acknowledged that the re-location resulted in women losing their participatory roles in agricultural production. In addition, many families switched from solely farming to other employment opportunities (e.g., many men were employed in the army or police). There was a single woman in the Muwaqer focus group who acknowledged that she rents land in Muwaqer and is solely responsible for its management. Further inquiry revealed that this woman was a widow and that could be an explanation for her decision-making role, since she was the head of the household.

The opposite was true for home garden production. Women were vocal about their role in home gardening. Women made all the major decisions with regard to what to grow in their gardens, when to irrigate and how to process the crop. The men agreed with the fact that women decide how to run their home gardens. The produce from the home gardens was not intended for the market, but solely produced for household consumption.

Another interesting fact that emerged was the generational shift away from agriculture resulted in a distancing of the younger generation of women from farming livelihoods. Younger women acknowledged that they were not interested in agriculture because it was too labor intensive. Women also noted that their children had no interest in learning about agriculture from their mothers and would not help them work in the home gardens.

The Muwaqer focus group discussion with men revealed that loans were available to farmers, though it was not popular among them or their households. The majority of the men seemed to oppose loans due to their religious and cultural norms and restrictions. Under Shariah Law, a person cannot be engaged in banking due to the interest charged on the loans. However, further research conducted by the team revealed that Jordanian banks operate within the parameters of the Law and offer loans that are interest free. Among the men's group there was only one participant who received a loan (50,000 JD) from the Housing Bank to purchase a tree farm and maintain its operation.

Further probing of loan access for women revealed that there were women in the Muwaqer community who obtained loans to start a shop in the village. Another woman acknowledged that she acquired a loan to purchase land.

Lastly, the research team explored the gender-based division of labor for various agricultural activities through the perspective of the men's group. Once again, agricultural crop production was entirely men's responsibility. The male members of the households were involved in planting, crop cultivation and the marketing of agricultural produce. Men also indicated that they sourced hired labor to help with the crop production. This topic was not explored with the women's group and therefore analysis lacks the women's perspective.

Our analysis of women's role in crop production, as discussed with both men and women, demonstrate that men perceive themselves as the sole decision-makers in the household and do not recognize women's contribution to the process. Although women have access to production inputs (e.g., land, equipment, credit, and extension services) they do not have control (i.e., decision-making power) over them. Both women and men perceive men as the sole [formal] income providers and this may enforce their decision-making authority within the household.

Livestock Production

Most households in the benchmark site owned small (e.g., sheep or goats). The size of the livestock herds varied and the research team did not explore in depth how many livestock were kept in the households and how many were kept in the farms. One farmer noted that he owns 100 sheep and goats. Families in Muwaqer were actively involved in livestock operations unlike Majidyia community.

As was the case with crop production, men were solely responsible for livestock operations particularly if it was a farm operation. Their primary responsibilities included feeding and veterinary care of the animals. Most often, their sons helped with the shearing of sheep and caring for newborns animals. The two areas where women participated were milking and dairy processing. Further inquiries revealed that men hired foreign laborers to take care of the livestock, particularly to clean livestock stables and take livestock out for grazing. In contrast, some women from Muwaqer stated that men did not help them with cleaning the livestock stables and this responsibility solely lies with women in addition to feeding, watering, milking and dairy processing. The research team did not explore if women's participation was more pronounced within the household livestock operation or at the farm level. Therefore, it was difficult to determine women's role in livestock operation. However, the general feeling was that women were more actively involved within their household livestock operation. Both men and women stated that men were responsible for selling surplus dairy products in the market.

Unlike Muwaqer, the situation with dairy operation and marketing was different in the Ngera Cooperative. Our initial visit to Ngera demonstrated that men were more visibly involved with formal dairy processing (i.e., buying/accepting milk, boiling and selling dairy products) in Ngera, with women working in the back rooms (i.e. forming cheese blocks). As in other places, Ngera men were involved with marketing. They sold produce to individuals in the store within the cooperative building and in bulk to third parties.

Our discussions with the community revealed contradictions between men and women's responses over their responsibilities in livestock production (e.g., who is cleaning stables). Further research is necessary to clarify the difference between household level livestock operation and farm level. This in turn will help explain contradictions as experienced in this discussion and understand women's roles in livestock production.

Social Capital Aspects

Our research showed that the existing social networks among women and between generations are strong and the main venue for information exchange among women. Women in most focus groups seemed to know each other well with the exception of women in Majidyya. Most communities are built around their tribe and thus represent close kinship ties. Women seemed to have access to modern information technologies, including cell phones and internet. They also cited the local Agricultural Department as being a readily available source of information. The research group did not explore the types of information women sought from the Department and if extension services were readily available and accessible by women. Most women regularly watched television, especially soap operas. Women received health care related information primarily from their female family members.

When the discussion shifted to possible future training and capacity building for the women, they expressed that they would like to learn about food processing, such as pickling, as well as how to grow spices and medicinal herbs. Women were interested in filling in their time and therefore considered training as a useful and time-fulfilling activity. There was significant discussion regarding their lack of transportation which may affect their attendance. To address this, they requested that training programs are provided within their community, or that transportation is available for them. One option that the research team considered was to use the Ngera Cooperative as a training center which had a readily available dairy unit where women could be trained in dairy processing and a computer center to enhance women's computer skills. In addition, WLI with NCARE can take advantage of peer-to-peer support available in Ngera with regard to empowering women.

Leadership opportunities for women

This section is mainly built upon findings from the Ngera discussion. Ngera participants were mostly the members of the cooperative and therefore these women had unique opportunities for leadership and teamwork that the research team considered important to analyze.

Women in Ngera were actively engaged in the cooperative activities and eager to share their experiences. The Ngera meetings created a space for these women to come together and discuss their needs and find solutions, as well as develop community activities to productively engage their families. Women explained that they were left to deal with the domestic responsibilities in the absence of their husbands, who were working away from home. Several women indicated that they joined the cooperative because they had more free time. Women unanimously agreed that their interest in cooperative was motivated by a sense of solidarity and helping their community. In addition, women seemed to be attracted by the cooperative's ability to help women build their self-confidence and voice their concerns about their community. In addition,

the low cooperative membership fees (6JD/annually) were attractive and encouraged participation.

NCARE's previous research in Majidyya revealed that a social organization was available for women; a cooperative called Al-Rahmanya Association for Social Development was established in January of 2011. The cooperative consists of 60 farmers, 30 of which are women. Further discussion revealed that there is also another newly established cooperative for men and women called Al Masardah. Despite having access to social organizations, the women in Majidyya did not appear to know each other well. Furthermore, they said they rarely had the opportunity to meet in a community setting (e.g., meetings) due to the far distance between their homes.

The strengths of Ngera cooperative are not based on factors characteristic to producer co-ops where the main purpose is to obtain a stronger bargaining power in the market, but on a sense of community and reciprocity. The cooperative members work together to raise donations and additionally support each other with cooperative business ventures such as a dairy unit. This is an interesting aspect to consider when creating and strengthening cooperatives in this region. Ngera provides social benefits to the community, which motivates and empowers women.

Daily activity calendar of men

Men start their day early in the morning followed by morning prayers (5am). The prayer is then followed by breakfast which takes place usually between 6 and 7 am. Men's daily routine varied due to their occupation, age and social status. Those employed in the government sector would proceed with their occupational responsibilities for the day. The others involved in crop or livestock production, assumed their daily activities. Some men stated that they worked in their home gardens. Men also had sufficient time to socialize and drink tea with other men in the community. Following the afternoon prayer, the family usually came together for lunch, which was often the largest meal of the day. The children returned from school around this time as well. Later in the evening, the men said they usually watched the news on television and visited with other men in the community. Most people went to bed after midnight.

Daily activity calendar of women

The day for most women started as early as 5 AM to pray, followed by household chores (breakfast preparation, cleaning). Women indicated that their childcare duties were one of the main time-consuming activities. Women seemed to have adequate leisure time for rest and recreation. Other women stated that they had home gardens to look after where they grow grapes, olives, jasmine and roses. Overall, it appeared that women spent at least 10 hours a day on household chores and still had leisure time to rest (e.g., watch TV). Most likely, they were often multi-tasking (e.g., cooking, child care, and television).

The daily routine of women from households that own livestock was different. Most women started their day at the same time, but their household chores were supplemented by livestock activities (milking, grazing, feeding, watering, processing milk). However, even these women found time to watch television or to socialize with their family members and friends.

As it can be seen, there are strong similarities between men and women's daily activities, though the routine varies with the size of the family, age, occupation, and marital status.

The daily activity calendars for men and women revealed that there are periods in the morning and the afternoon which can be used for trainings by NCARE and WLI. Should the field day be organized for farmers at the benchmark site to demonstrate modern agricultural technologies, NCARE and WLI should ensure that women are included along with men. Through these calendars, we also noticed that there is a strong social connection in some communities (except among Majidyya women) which could be used to share information. This network can be an important asset and entry point for development projects, as trainings and meetings can be more easily organized and facilitated in the future.

Socioeconomic Aspects

The insight about income generating activities collected from both men and women can provide a thorough understanding of socio-economic conditions within the household. This can also illuminate the distribution of income within the household from a gendered perspective.

Sources of income for men

The majority of household's income was generated by men. The main source was employment outside of agriculture. Most men participating in the focus groups were retired from government service (i.e., army and police), or were still employed by government. There were several men who indicated that they continue to generate income from farming; particularly one farmer operates a tree farm in Azraq, and another runs a livestock operation with 100 sheep and goats. Despite this diversity of occupations represented in the focus groups (there was also a town mayor and a teacher), it was apparent that men were usually the sole providers of formal income for the family.

Sources of income for women

Most women in the focus groups were housewives and therefore did not work outside of their homes. Women indicated that cultural and religious norms in the society disallowed their work as wage laborers.

According to the Muwaqer men, women did not generate income for their households. Muwaqer women were not employed outside their homes primarily because they lacked education, and therefore had limited employment opportunities. Those women who were educated had only one employment choice, which was working as school teachers.

The situation with women's employment was different in Ngera. Women in this community, especially those active with the cooperative, appeared to be well-educated for the most part. Some mentioned having university degrees and several work or had worked outside the home in the private sector, for government services, or as entrepreneurs. For example, one woman was running a hair salon, another woman an embroidery business, while the chairperson of the Ngera Cooperative was a woman.

Several men had explained that women worked in the home gardens, milked livestock, and processed milk for dairy products. However, the products from these activities were solely for household consumption and therefore were not considered as income generating activities. It was

apparent that men did not consider women's input as a supplement to household's overall prosperity and failed to give economic value to women's contribution.

How do households perceive expenses?

After discussing the ways in which households generated income, it became apparent that it is necessary to understand how income was spent within households. The purpose of this question was to reveal who decided how income was spent and whether there was a gendered difference in how expenditures were valued. With regard to the WEAI and the WLI project, understanding household choices over expenditures could reveal important information about the empowerment of women and their ability to control certain assets; this could expose areas in which development projects could intervene and work to improve livelihoods.

Men seemed to emphasize the importance of spending household income on children's education and therefore, they regarded it as an important expenditure. The second important expenditure was the costs associated with large family celebrations (e.g., weddings). It was apparent that men only considered those expenses which were exceptional and high cost. Men seemed not to put much emphasis on daily household expenditures, such as food, clothing or transportation costs.

The discussions with women regarding expenditures in the household were not undertaken and therefore a comparison is not available. Engaging women in further dialogue may reveal that women put different emphasis on daily household expenditures (e.g., food, health or clothing). Further research might probe this type of questions a bit more, capturing who pays for household expenses, and who decides and prioritizes expenses. Additionally, while it may seem trivial to explain the costs of everyday expenses (food, water, transportation, clothing, or healthcare), but these items also reveal important information about women's empowerment within the household and livelihoods in general. In other contexts, women are responsible for all of these expenses; we do not know if that is true in these communities. Having this information would help with understanding gendered economic decision-making.

Shift in women's lives over time

There were discussions between the research team and the Muwaqer women about the ways women's lives changed in the community over time. The participants reported that women were getting married between twenty and twenty-five years of age now, much later than previously when they were married between fourteen and seventeen years of age. Also, both men and women gave preference to boys in terms of the sex of the baby. Women acknowledged that their husbands want more children; some of the women are second wives in their marriages and have a high number of children (more than five).

New opportunities are becoming available for women. They described how some women are now attending universities; older women noted that their children are now more likely to attend university. Regarding women's rights to land through inheritance, women noted a shift wherein the younger generation is more aware of their right to preserve their land title; earlier generations of women were less educated and therefore easily coerced into forfeiting their rights to their male relatives.

Water Resources Management

Both the men and women's groups in Majidyya indicated water as the primary concern for the benchmark site communities. Dilapidated artisan well infrastructure combined with the broad-scale impacts of urbanization and climate change (e.g., reduced rainfall), have increased pressure on limited water resources for household needs, and for agricultural and livestock production.

The water supply and management in the communities is primarily managed by the municipal authorities. Water is supplied through a central pipeline once a week which runs into a tank installed on the roof of the house. The average family (comprised of 8 people) consumes 7-8 m³ of water in two weeks which is used primarily for cooking, cleaning, personal hygiene, and laundry. The families purchase additional tanks of water (6 m³) from water delivery truck, which costs 20 JD per tank. This water is used to water livestock and home gardens. Households also purchase filtered water for drinking.

Farmers mostly rely on rainfall to meet their crop water needs. The changes in rain patterns forced many families to switch from wheat to barley cultivation, which is planted primarily as a forage crop. Some farms have access to artesian wells though the farmers described them as poorly maintained and polluted. Some farmers indicated that they used water delivered by trucks to supplement their crop water needs when the rainfall was inadequate.

Water issues raised by men

Most issues raised by men regarding water supply, quality and management were related to water scarcity in the region. According to the men, the water scarcity had greatly impacted communities in nearly all aspects of life from economic productivity to domestic needs. The changing weather patterns have resulted in a decrease in rainfall, which had severely reduced the amount of crop and livestock production. This had a drastic effect on agricultural production as a primary source of livelihoods, resulting in a shift towards other livelihood strategies (i.e., many men switched to employment in the army or police away from traditional farming). Men also pointed out complex water infrastructure issues. Poor maintenance of artesian wells had caused the pollution of local water sources and made the community reliant upon limited and expensive sources of water, which were transported far distances to household tanks. Men also stated that the limited range of the city piping network left their households without access to reliable and adequate water supplies. Finally, men appeared to be concerned with the quality of water and associated health conditions in the family.

The men explained that the water shortage had increased expenses for their households. One major expense was the transportation of water delivered by trucks. This rate was especially high because there is only one water supplier in the area who dictates the price. Households had also experienced the financial burden resulting from high livestock feed costs. Men explained that the livestock feed was often imported from other countries by the government and then sold at a higher price to farmers; the complaints about high feed costs continued despite the fact that the government subsidized livestock farmers and sells barley forage to farmers at a lower than market price. The price hikes were the main reason why families were unable to maintain large herds of livestock.

The principal solutions proposed by men focused on infrastructure issues such as building new and repairing existing wells, so that they would no longer be dependent upon potable water sources. For example, the men in Majidyya community were resolute about building a dam which they believed would bring water back to the region and provide the crucial resource to re-establish successful crop and livestock production. While this strategy has been used in the south of the country, this does not mean that it would work in the Majidyya community. This is important information to consider because it demonstrates that these men may not be aware of the technical science behind dam construction and that dams are not suitable (and can even be environmentally detrimental) for every location. The participants also discussed the possibilities of improving their connection to the city water pipeline network.

Water issues raised by women

In many cases, the issues raised by women mirrored those of men. Women appeared to be aware of the link between climate change and the water shortage, which is drastically changing their agricultural livelihoods. Women were concerned that this agricultural water scarcity is exacerbated by poor maintenance and incomplete construction of artesian wells.

Women's main concern was centered around the effects of the water shortage on their households. The most prominent issue was the high cost of potable water (delivered by trucks or filtered water). The distances between homes made transportation of water expensive, requiring families to use their limited water resource more conservatively. This expense was financially burdensome to the families particularly the larger families (more than 10 people) which require larger amounts of water. Women noted that the water delivered by municipal pipeline and trucks was not safe to drink. Women in Muwaqer were also concerned about the health of their children, noting that they suffered from illnesses such as diarrhea, nausea, skin sores and other illnesses attributed to water quality.

In agreement with the men's group, the women stated that the reduction in rainfall made it difficult for families to maintain large crop production areas. The women also noted that the water scarcity reduced the productivity of their home gardens, and as a result they purchase a lot of vegetables and fruit from the market. Additionally, caring for livestock had also become very expensive because they need to purchase both the livestock feed and the water for animals. Cutting the animals' forage and water ration resulted in reduced milk output from their livestock.

Women use household greywater (from washing dishes or laundry) to irrigate their home gardens. The greywater is often untreated, and thus contains chemicals which can be harmful to garden plants and the family. The women in Majidyya appeared to be unaware of the dangers of using greywater to irrigate their home gardens, and further training on this issue could be beneficial to the households. Interestingly, the men's focus group discussion revealed that men were unaware that their wives re-used household greywater.

Unlike the men in Majidyya, women offered solutions which could be implemented immediately by households without assistance from NCARE or WLI. One example was the construction of contour ridges (as a water harvesting technique) in their fields. Other solutions proposed by women include infrastructure developments such as building new wells and installing

desalinization stations. Additionally, women offered that government should subsidize water delivery, thus requiring households only to pay for the cost of water itself.

Finally, it became clear that women in the households were the decision-makers responsible for household water supply and management; however, men provided money to purchase water. The women appeared to be the most knowledgeable individuals in the household in terms of households' water needs. Women also acted as overseers for water conservation in the households. One woman instructs her family to conserve water by turning off the tap when a constant flow isn't necessary, such as when they are brushing their teeth.

Effects of Climate Change and Adaptation

As it is described in above sections, climate change has transformed the livelihoods of the rural households. The transformation has impacted the members of households in different ways because of their gendered agricultural experiences and responsibilities.

Issues raised by men

Men explained that crop production from home gardens had decreased resulting in poor nutrition for their children. The region had become greatly dependent on the market for food products; the men from the community commented that the food from the markets was more expensive and not as nutritious (particularly dairy products) as the food they used to produce on their own farms and gardens. Furthermore, household hygiene was given a lower priority during times of extreme water scarcity, as essential tasks (i.e., cooking and livestock watering) took primary importance over other uses (i.e., cleaning, laundry or personal hygiene). Despite this recent shift away from agricultural production, the men stated that they would like to return to farming if more water was available.

Issues raised by women

Women responded with familiarity to the topic of drought and defined it as being a period where there is little to no rain combined with high temperatures. They also stated that the farming suffered because livestock and crops did not receive adequate amounts of water for production, which affected their rural livelihoods. According to the women, when Muharib had good rainfalls and was an agricultural community, the farmers cultivated wheat and barley, as well as grazed animals. Now, barley is used only for straw and grazed by livestock. As a result livestock produces inadequate amounts of milk for dairy processing and they have to purchase additional dairy products for their own consumption. Another interesting fact raised by women was that, although the families could not produce enough dairy for their own consumption, the amount of food households consume was not affected by water scarcity.

The discussion with women regarding climate change and its associated water shortage revealed that women re-used greywater from their laundry to irrigate their home gardens without prior treatment to reduce the chemicals from the detergent. Further discussion showed that water scarcity affected women's behavior and encouraged the use of adaptive techniques (e.g., women reduced the number of laundry loads per week or the number of household cleanings per week, and scheduled their laundry or household cleaning around a day when water was delivered through a municipal pipeline). Further discussion showed that women were aware of different

ways to save and manage water resources more effectively and they instructed their family members to be careful with water use.

Analyses Recap: Do Women Perceive Water Problems Differently than Men?

Both men and women identified water scarcity as being a problem for their communities and livelihoods. There were some commonalities in perspectives especially in relation to the causes and effects of water scarcity. However, further qualitative research showed that their perceptions regarding water issue differed due to their responsibilities in the household. Women and men have different experiences with water use; therefore they identify different problems and solutions as they pertain to their own needs. Women focused more on domestic concerns such as family health, greywater use, and the cost of filtered and potable water. Water scarcity made women more conscious of conserving water and prioritizing its use. As a result, uses such as cooking and watering garden crops took priority over other uses, like household cleaning or personal hygiene. Although men acknowledged health as a water-related problem, they placed more emphasis on crop and livestock water needs. Men seemed more concerned about effects of climate change on the cultivated area and the number of livestock. Women, on the other hand were concerned about water quality.

Other differences between men and women were apparent in how each sex approached solutions related to infrastructure rehabilitation. While both groups indicated their wish to be connected to the city water-pipe network, women particularly emphasized that the connection should ensure a continuous supply of water to the house. Women's choice signified that the connection would make it easier for women to access and use water for domestic purposes.

While both men and women advocated for well maintenance, men seemed to place a higher emphasis on it. Men also placed higher priority on redesigning fields (e.g., building ridge contours) or building dams to reclaim abandoned land and maximize crop production and the number of livestock. Women saw solutions through skill-building training programs to improve the quality of water (e.g., greywater treatment). Women also requested trainings on processing medicinal herbs and spices and goat husbandry in order to generate income for their households. Men, in contrast, did not request trainings but instead continued to maintain focus on someone else (i.e., government) providing technological development and infrastructure construction. This may be due, in part, to the fact that men may already have access to various trainings through NCARE, while the women may not. Nonetheless, there seemed to be a clear distinction between the sexes in the end purpose for the solutions offered: men's solutions addressed agricultural needs, and women's addressed domestic needs.

Finally, there seemed to be a difference in knowledge between men and women in regard to filtered drinking water. It is striking that men in Majidyya did not know that women purchased filtered drinking water. The disparity in knowledge was also evident through discussions about greywater use. Once again, men did not know that greywater was used in their households. In addition, while they acknowledged that training about greywater would be useful, they did not prioritize it as a critical solution to their water scarcity problems.

This perspective of climate change effects is valuable for researchers to monitor the changes in the women's behavior and adaptation. Changes in climate, poorly understood hydrology, fragile

environment, erosion, and poorly maintained water infrastructure all challenge water resource sustainability. Furthermore, climate change threatens to amplify the impact of all of these micro level problems, and may require local adjustments to changed conditions. These issues are not constrained to the WLI project, and addressing them will require not only further research, but strong collaboration among relevant institutions and the stakeholders.

WLI Intervention Points in Jordan

The focus group discussions with community members and the analysis of the results helped identify several points of intervention for NCARE and WLI to undertake in their work with benchmark community.

- *Training programs for women*
Our field research revealed a strong interest among the women at the benchmark site for training programs - particularly in growing herbs and treating greywater in the household. These are two areas that NCARE and WLI have the capacity to work with the benchmark communities. Other training programs requested by the communities are the technical programs on agricultural practices (improving the contour ridges in the field), water management techniques (e.g., water harvesting, water saving) and goat husbandry. These programs can be designed and delivered by NCARE.
- *Community development*
The peer-to-peer support at the community level is essential to WLI success. Our analysis shows that women in Majidyya and Muharib are not well connected unlike the close kinship among Ngera women. The social networks developed within the Ngera cooperative extend beyond the village to women who are lawyers, in government positions, or entrepreneurs through training and awareness building workshops offered by the cooperative. This type of support raised Ngera women's self-confidence, resulting in their increased empowerment within their community. The findings from this research demonstrate that women can become empowered through meeting and learning in a supportive environment with other women. In many ways, the Ngera Cooperative could serve as a model for encouraging women's participation in the WLI benchmark site. NCARE is currently sourcing funds through the United States Embassy's MEPI⁶ program, which would help offer various training programs and further strengthen new and existing networks between local cooperatives.

We anticipate that through research, extension, improved monitoring and new institutional linkages WLI and NCARE will be able to more effectively ensure agricultural sustainability. It is important to view water resource supply as a social activity, in which individual efforts at the household level contribute to the greater good of the community.

Lessons Learned from Working with Communities

From the team's experiences in Jordan, there were a number of insights gained from the interactions with the communities and the use of the tools selected for conducting qualitative research. The section below briefly outlines some of the best practices and lessons learned from the challenges faced in each phase of the process, from planning to documentation.

⁶ The Middle East Partnership Initiative, <http://mepi.state.gov/>

Cultural Challenges

One of the first field activities, the women's *problem tree* exercise in Majidyya, revealed the necessity of properly understanding the cultural and gender dynamics of a community prior to arrival. When the research team arrived in Majidyya the group was prepared to divide into two pre-determined teams, one that would join the men's group, and the other for the women's group. One male member of the team that was slated to work with the women's group was quickly asked to leave because it was not appropriate for a man to be in the presence of women without their husbands in this community. He was immediately escorted out of the meeting hall and walked to the men's group location. While this did not interfere with the focus group discussion, we were informed that it would have been impossible for the women to stay in the meeting if the male researcher had stayed. For this reason it is suggested that other WLI country teams take the approach of assigning male researchers and facilitators to work only with male community members, leaving women's groups to be facilitated by female team members. Even in communities that are less conservative, there may still be women from more conservative households who may choose to leave, taking her experiences and insight with her. It is noteworthy that in each community visited, it was not acceptable for male researchers to participate in the women's focus group; however, it was not a problem for female researchers to be present in men's focus group.

Setting for Focus Groups

While four of the five focus group discussions were held in suitable locations, the team faced a significant challenge due to the space selected for the Majidyya Women's *problem tree* exercise. A newly constructed space was designed for community meetings, though the women had never had the opportunity to see inside the structure before the day of the exercise. The building was a very large concrete structure that created a large open space that was filled with plastic chairs for the participants and research team. The entire group fit in one corner of the enclosure leaving the remaining space, roughly five times as large as the space being utilized, empty. This empty space created a major challenge by creating echoes and prohibiting those in attendance from being able to hear the discussion. It was impossible for on-site translation to the non-Arabic speakers and similarly created a significant obstacle for note-taking.

As noted above, the other four locations selected were much more conducive for focus groups. As such, it is recommended that similar activities carried out by WLI teams in the future ensure that an appropriate space is selected in advance of the meeting. The ideal setting is one that is large enough for both the research team and participants to feel comfortable and engage in the dialogue. Ample seating should be provided and the room should be a comfortable temperature in order to not be a distraction to those present. Lastly, it is best if the setting is in a quiet location with minimal distractions from outside.

Timing and Transportation

Other logistical issues, such as timing and transportation, are also necessary to carefully consider in advance. When scheduling a meeting in a community, researchers should consider what time of day is most appropriate for the target group. For example, a women's focus group should consider their children's school schedules because the women may be busy with childcare duties. While there may still be women available for the meeting, it may only be young unmarried

women who have no children, older women whose children are grown, or women who can afford to hire help with their children. This could lead to receiving information that is skewed toward one or two perspectives while allowing a target group's needs and input to be lost.

During the focus group discussions, female participants noted that transportation is often a significant barrier to their participation in various activities. It is therefore important to recognize that not all community members will live near the meeting place, or have access to transportation to the site. There may not be a vehicle available for family use in poor communities; gender norms may also disallow women's driving. If this is the case, female participants would be forced to either forego attending or would otherwise have to walk long distances with their children.

Participant Selection

The selection of participants should be representative of the target population, which is critical for qualitative data collection. The WLI team in Jordan was fortunate to have community members at the various sites handle the selection of participants. Unfortunately, the majority of the focus groups were not engaged in agricultural production, which is the primary focus of the research. While there was valuable and interesting information collected, it was not as rewarding as it could have been if the participants were invited based on their households' involvement in agriculture. Targeting a subset of the population that is engaged in agriculture can be done in a number of ways: posting an announcement in the local Agricultural Department office, in a cooperative, community service centers, or personally inviting farmers that are selling their produce at local markets. There was the issue, as well, as not having a truly representative sample of community members at the meetings. Again, ensuring equitable selection of participants would be important for the integrity of the research results.

Focus Group Facilitation and the Discussion Guide

Developing peer-to-peer training on gender analysis is critical for WLI capacity building strategy. The NCARE staff is prepared to continue conducting qualitative gender research to collect sex disaggregated data in agricultural research. In addition, ICARDA and WLI could involve NCARE's socio-economic team to help develop other WLI country socio-economic teams by providing them training and capacity building, and peer-to-peer support.

It is important that the research team facilitating and analyzing focus group discussions fully understands the rationale behind each question that has been prepared. Facilitators should have the proper training that allows them to hold open conversations with the focus group. This includes the ability to center the dialogue on the main point, to probe participants' responses in depth and for clarification, and to speak comfortably and openly about the subject matter. Without the proper training, facilitators may read the focus group guide as a list of questions, which would limit participants from speaking more candidly or at length about a topic. In understanding the logic behind each question, the facilitator is able to probe the responses with deeper questions and in so doing capture qualitative information critical to conducting a thorough gender analysis. While these skills can be developed through training, they can also be expanded by watching other, more experienced, facilitators.

Gaining a thorough understanding of the reasoning behind the questions is best achieved by having the entire team collaborating on the discussion guide in preparation for the meeting (see Toolkit). Without a strong understanding of the questions, the data analysis will be weak as there may be an inability to derive the full importance and implications of the group discussions. When research is intended to measure the impacts of past activities, or to plan future interventions and program strategies, this analysis is critical. This collaboration will allow the entire team to add their individual input to the design of the survey instrument.

Also, when conducting focus group discussions, research teams should be aware of the time length of focus group discussions. The team should inform the group of how long they are expecting the discussion to take at the start of the meeting. During the preparation of the discussion guide, questions and topics should be prioritized so that the team is prepared to quickly add or drop questions depending on how long the discussion is taking.

Children

Gender analysis cannot be done without engaging women therefore, it is critical to plan meetings around their lives and obligations. Researchers should expect that children will be present, especially when conducting meetings with women, and ought to prepare activities for them in advance. In Jordan, there were more children than women present during the *problem tree* exercise in Majidyya and they, despite being well-behaved, were a significant distraction for researchers and participants alike. Keeping children occupied can be done in a number of ways. If the research team has a strong relationship with the community, it might be possible to ask if there is anyone willing to look after the children while the mothers are in the meeting. If this isn't possible, then the research team may arrange a small play area nearby (if the location allows it) with activities such as coloring books, toys, and crafts to keep the children engaged.

Collaborating with Non-native Speakers

The Jordan WLI research team was comprised of Arabic speakers employed by NCARE and English-speakers from the University of Florida, including one student who spoke both languages. This collaboration was enriching and rewarding but it also presented a number of challenges with language, both in the field and during post-research activities.

If non-native speakers are attending community and focus group discussions for more than observational purposes, it is necessary to have a plan for providing translations so that these team members can participate in the focus group. The team attempted two methods for carrying this out. The first method was to transcribe notes in English during the focus group for non-Arabic-speakers; however, this process was time consuming and difficult for the translator to focus on the conversation while also taking notes. Another method was to have the translator to quietly summarize the conversation during the group meeting. When non-native speakers are present, it is important to consider translation methods that consider space, noise, and focus group size. Translators should relay only what is being said so that participants do not feel as though they are being misquoted or judged. Additionally, at the beginning of the meeting, the participants should be informed of the intent to translate the conversation to non-native speakers.

Translation issues came into play again during the report writing phase of the project as the research team collaborated on documenting the *problem tree* exercises and focus group

meetings. The team learned that the best method was to share the translations of the Arabic notes, which the English speakers would then draft into a report. At this point the paper would be given back to the Arabic-speaking team for review before revising the final draft.

Playing it Forward to Other WLI Sites

A core feature of the WLI approach is to exchange information and best practices throughout the network of participating WLI country teams. Careful consideration has been given to creating methods of disseminating the lessons learned in Jordan to the other country sites. To attain this objective, two toolkits will be provided to the other WLI countries with detailed information on both gender analysis and technical research and reporting of data. The toolkits will contain information on how, and why, to use specific tools to meet research needs as well as PowerPoint presentations and additional literature.

The first of these toolkits, “Gender Planning Toolkit”, evolved out of the NCARE Gender Analysis Workshop that took place in May 2012. This toolkit details the instruments and tools that the participants were trained on such as the *problem tree*, the *fishbowl* exercise, and *daily activity calendars* as well as the rationale for their selection. The toolkit provides information on how to approach communities when collecting qualitative research through community meetings and focus groups. The toolkit contains all of the PowerPoint presentations used during the gender research planning. Additionally, it describes cultural and methodological challenges that the research team faced when employing these instruments in the field.

The second toolkit, “Utilizing Online Resources Toolkit” is aimed at assisting WLI teams in finding relevant research publications and sharing their own findings with each other. This will include instructions on how to access resources such as Google Scholar, the University of Florida’s agricultural extension website and digital resources where individuals can find specific course lessons and lectures of researchers sharing their methods and results. Further information will be provided with instructions on how to compress pictures and files for easier transfer via the Internet – a skill that will be especially useful for country teams that are constrained with bandwidth restrictions. Lastly, the toolkit will conclude with instructions on how to create research posters that may enable WLI teams to promote their project activities, methods and results.

Lastly, the field questionnaire has been finalized to assist WLI socio-economic teams collect sex-disaggregated data in the field during their socioeconomic baseline assessments and subsequent monitoring. The questionnaire consists of several sections, including the general information collected prior to conducting focus group discussions with community members, as well as sections dedicated to focus group discussions that will aid researches in obtaining participants’ opinions, attitudes and perceptions toward agricultural production and WEAI domains.

It is our intention that these toolkits help project researchers and stakeholders facilitate the sharing of information across all WLI team sites.

Annex 1: WLI Gender Planning Meeting at NCARE

WLI Gender Planning Meeting - Location: NCARE Headquarters, Amman, Jordan Sunday, 27 May 2012

The NCARE Director General, Dr. Fawzi Al Sheyab, commenced the three-day WLI Gender Planning meeting/training. The participants represented local, regional and international collaboration that the WLI hopes to expand throughout the WLI countries. In preparation for field research to be conducted over the next several weeks, staff from the NCARE socioeconomic team hosted a group (consisting of faculty and students) from the University of Florida, as well as regional representatives from ICARDA and LARI.

Ms. Bezaiet Dessalegn began the session with an overview of WLI project goals, objectives and progress to date. Dr. Sandra Russo provided an overview of gender analysis and gender gaps. Dr. Samia Akroush shared NCARE's research conducted at the household level in Jordan. Later, NCARE's environmental and water researcher, Ms. Abeer Balawneh, presented a greywater management project being implemented in rural areas in Jordan. The day concluded with a review of the introductory statement for the community meetings.

Monday, 28 May 2012

Dr. Russo began with a presentation on assets and income. This developed into a broader discussion over whether intangible assets (i.e., fertility) empower women. The morning concluded with questions of how asset indicators play a role in understanding the status and position of women in households. Dr. Russo then introduced USAID's new Women's Empowerment in Agriculture Index (WEAI) and Gender Parity Index. Used as a platform for the focus group questionnaire, the WEAI survey is being evaluated by NCARE for use in the future.



Later, Dr. Constance Shehan gave a talk on power relations within marriage and households. Her presentation encouraged methodological questions and inquiries of cultural conditions in both Jordan and Middle East households. Dr. Russo continued the discussion by reflecting on the differences between interview techniques and focus group techniques. The training concluded with the introduction of a "fishbowl" exercise. Wherein, NCARE participants role-played as a rural focus group while observers noted strengths and challenges of the technique.

Tuesday, 29 May 2012

Dr. Russo briefly discussed tools used in the field to collect data. While emphasizing pros and cons, participants provided examples of these tools including mapping, Rapid Rural Assessment (RRA), seasonal & daily calendars, etc. Dr. Malika Martini continued with a presentation on the Problem Tree / Solutions Tree tool and Preference Analysis using scoring, ranking and weighting. Split into groups, attendees piloted the tool using the topics of water quality and water shortage in rural areas. The NCARE team described the causes and effects of these topics and Dr. Akroush followed with a presentation on the population, annual water and rangeland management statistics of the Badia. Finally, the teams completed the Problem Tree exercise by listing and reconciling local and program solutions. The workshop completed with role assignments for the community visit.

Wednesday, 30 May 2012 - Majidyya Community Meetings

For separate report on the visit please see Annexes [2](#) & [3](#).

Thursday, 31 May 2012

The final workshop began with observations from the community meetings. Participants shared the reflection of their observations and experiences conducting problem tree analysis and focus groups. Dr. Russo conducted a brainstorming session about constructing a gender specific daily activity



calendar. This tool will be tested in the next round of focus groups with the community. She also facilitated a planning session designating teams for the following week's focus group sessions and prioritized the list of questions for each domain of WEAI. Ms. Dessalegn provided a brief outline of her expectations for a report to be submitted to WLI. In addition, the student team presented a synopsis of the gender gap analysis of the WLI countries prepared at the University of Florida.

List of Participants:

NCARE	University of Florida	Additional Participants
Dr. Samia Akroush samia_akroush@yahoo.com	Dr. Sandra Russo russo@ufic.ufl.edu	Dr. Malika Martini (ICARDA) m.martini@cgiar.org
Mr. Ala'a Al Awaydeh agriengalaa@yahoo.com	Dr. Constance Shehan cshehan@ufl.edu	Ms. Bezaiet Dessalegn (ICARDA) B.Dessalegn@cgiar.org
Ms. Omama Hadidi Omamahfm71@yahoo.com	Ms. Chesney McOmber cmcomber@ufl.edu	Mr. Sam Ribnick (Fulbright) sam.ribnick@gmail.com
Mr. Tayseer Abo Ammash a_tayseer2000@yahoo.com	Ms. Claudia Youakim cyouaki1@ufl.edu	Ms. Hanaa Chehabeddine (LARI) chehabeddine.h@gmail.com
Mr. Omar Abdulhadi oabdulhadi@hotmail.com	Ms. Kristen Augustine kaugustine@ufl.edu	
Ms. Lana Abo Nowar lanaabunowar@yahoo.com	Mr. Jeremy Lambeth jlambeth@ufl.edu	
Mr. Malek Abu Roman malek_aburomman@yahoo.com		

Presentations:

Brief Introduction to WLI	Ms. Bezaiet Dessalegn
Information about Power in Marriages and Households	Dr. Constance Shehan
WLI Problem Tree, Ranking & Scoring	Dr. Malika Martini
Characteristics of the Badia Seasonal Calendar Training	Dr. Samia Akroush
Gender Assets Gaps WEAI for WLI Focus Group Discussions Focus Groups: Details & Differences	Dr. Sandra Russo

Annex 2: Focus Group with Men in Majidyya Community

Application of Problem Tree Method with Men's Focus Group in Majidyya Community Majidyya May 30, 2012

Introduction

The National Center for Agricultural Research and Extension (NCARE) in collaboration with the International Center for Agricultural Research in the Dry Areas (ICARDA), and the University of Florida held a gender planning meeting with the purpose of incorporating gender analysis into the Water and Livelihoods Initiative (WLI) project. A review of WLI benchmark sites last spring revealed a pressing need for the inclusion of gender analysis in all WLI projects. Thus, a gender planning meeting was scheduled to address this need. The gender planning and training meeting was held on May 27th-31st at the NCARE office in Amman, Jordan. The gender analysis strategies presented during this meeting were implemented in focus groups and serve as pilot studies for other WLI countries. The first local community meeting on May 30th was held to identify agricultural problems occurring in the Badia. The purpose of this community meeting was also to learn about the constraints on agricultural production due to water scarcity.

The community meeting was carried out in the Majidyya area, which lies within the Muwaqer district, approximately 70 km from the city of Amman. The community participants were separated into one women's group and one men's group. Facilitated by Drs. Malika Martini and Samia Akroush, the women's research team comprised of seven members. The research team in the men's group totaled eight members facilitated by Mr. Tayseer Abo Ammash. There were a total of 18 men who participated in the meeting.

Initial Observations

Upon the arrival to the Majidyya community, the team was invited into the main seating area of a resident's home. Approximately 16'x20', the area encompassed half of the available space and accommodated the attendees as well as the research team. However, the room's seating arrangement obstructed access to wall surfaces. Thus, the research team was later required to use flip charts in order to build and display the *problem tree* exercise. The researchers were provided chairs and a table to accommodate their supplies. In the center of the room was a table for refreshments.

Mr. Abo Ammash initiated the conversation with the community by providing them with the purpose and goals of the research team and individually introduced each research team member. Each participant then introduced himself. The participants in this community meeting (consisting of twelve adults and six young men) explained that they were related and appeared to know each other.

For approximately an hour, the general situation and projects of the region were discussed. According to the male participants, 15 years ago a Canadian Project provided wells for water harvesting in the Majidyya area. Deemed a success, the effort increased available water to many members of the community. In order to establish the wells, members of the community were given the financial means to build the wells. After completion, each participating member of the project was provided 700JD. These wells are now used for livestock and some for small agricultural production. Most of these wells need maintenance since the water is not drinkable.

Also, the members criticized a two-year Atriplex (saltbush) cultivation effort because they no longer have enough livestock for grazing. Some members voiced their discontent with American interventions and poor quality seed subsidies. Furthermore, they emphasized the unequal distribution of benefits, as well as, lack of community participation in regional NCARE experiments. In fact, the participants consistently asked what the research team was going to provide. Requests were made for each household to receive goats and new wells. These grievances were respectfully acknowledged by the research team. The research team explained to them that NCARE is a research institute and clarified the confusion between the NCARE mandate and the Ministry of Agriculture mandate; this confusion was particularly in regards to a project where the ministry targets poor people and provides them with goats (Hakourah project). The team then proceeded with the *problem tree* activity.

Methodology

The research team used the *problem tree* tool as a means of collecting qualitative information from the focus group discussion. The *problem tree* is constructed by community members (focus group participants) through the facilitation of a researcher. First the participants identify problems within the community. These problems are then prioritized in order of importance to the community. The top priority problem is then written onto a card and placed on a wall. The next step requires that the focus group identify the causes of the problem through participatory and collaborative discussion. These causes are written on cards and arranged on the wall below the problem card, signifying the roots of the problem. The group must then draw connections between the causes and prioritize the strength of each in relation to the problem; this demonstrates first-level and second-level causes. The purpose of the second half of the focus group conversation is to identify the effects of this problem on the community. These effects are written on cards and placed above the causes and the 'problem card', symbolizing the branches of the *problem tree*. Again, the community must organize their ideas by ranking the effects into first-level and second-level effects. It is important for the community and the researcher to recognize that the causes and effects listed maybe linked and in fact, self-reinforcing. Finally, the *problem tree* activity closes with the community identifying possible solutions to the various causes and effects. These solutions are written on cards and placed on top of the associated causes and effects (see completed *problem tree* diagram below).

This strategy is an effective tool for use in focus groups because participants are able to immediately see the results of their brainstorming activity in an organized way. It also facilitates a full community engagement in the process. As a result, participants analyze the roots of their problems, the associated effects, and develop their own solutions in addressing these problems. For the researcher, this visual display facilitates a directed discussion pertaining to the identified community problem allowing for collection of qualitative data.

Problem Tree Application at Majidyya Community

In order to use this tool, it was necessary for the team to understand the primary problems men experience within the community. Therefore, Mr. Abo Ammash asked about the problems that the community faced within the region. He received an extensive list of problems that the entire community suffers from. The participants' main concerns were limited availability of water (drinking water and water used for other causes), declining number of sheep owners (younger generations now move to urban centers and are no longer interested in farming and herding), declining number of sheep in herds (in fact some of farmers no longer keep sheep at all), low productivity of American seeds that they buy from the Ministry of Agriculture and the high cost of improving and maintaining the land (emphasizing the production of seed and issues with land reclamation). The participants then prioritized the various problems discussed and identified the problem of water shortage as the primary issue within their community. The problem of water scarcity was written on a card and placed in the center of a piece of flip chart paper. The community participants and the research team were then able to begin constructing the *problem tree*.

Causes of water shortage

According to the problem tree tool, it was necessary for the community to list various causes of this primary water problem. These causes listed below were written onto cards and placed underneath the 'problem' card on the *problem tree* paper.

- Lack of rainfall
- Climate change
- Contamination of wells due to high levels of sediments and sand in the wells
- Poor quality of water delivered to tanks
- Poor maintenance of artesian wells

Some of these causes are due to environmental conditions and are therefore difficult to change. The participants agreed that a decrease in rainfall has been the main cause of water scarcity within the region. When asked how the community knew that the level of rainfall had decreased, the participants explained that they measure the growth of barley and production of olive trees. This explanation of rainfall led to a deeper discussion of climate change within the region. The farmers noticed that the weather patterns have been changing within the Badia; they noted that in the past substantial rainfall occurred during the appropriate times for germination, but now rainfall has become unreliable providing small amounts of water during the rainy season and in some cases rain does not arrive on time. Every four years the group perceives good and fruitful harvests; however, for the last ten years they experienced a drastic change in temperature, weather or drought. The lack of rainfall impacts both agricultural and drinking water

sources because ground-level water harvesting wells are used for livestock, while roof capture systems are for household consumption. Thus, when there is a decrease in rainfall, both sectors suffer.

Another problem raised by the community was the contamination of wells within the Badia. They explained that while there are many wells in the area, sediments from soil erosion and sand have decreased their capacity and made them unusable. Some of the men also suggested that salinity levels are contaminating the wells. In addition, the agricultural wells are susceptible to the defecation of livestock. The primary reason that these wells have not been maintained is due to the high cost. Labor is very expensive and it is also difficult to bring workers from outside the region because of the high transportation costs and the cost of renting the drilling equipment. Ultimately, the community must rely on the cisterns in order to have enough water for the household. Every 2 weeks, the families of the community each purchase 6m³ of tank water for 20 JD. This source is 15km away and the quality is perceived to be unacceptable because it is not filtered. It was explained that the delivery truck and household containers have considerable amounts of rust, which may further impair the water quality.

Effects of water shortage

After identifying the causes of the problem, the community then began to list the effects of the water problem in their community. The effects listed below were written onto cards and placed on the page above the 'problem' card on the *problem tree*.

- Decline in the health of the community
- Decrease in cultivated area and livestock numbers
- Reduction in water consumption for all aspects of life
- High cost of transporting water
- High cost of feed

The effects of the water problem have impacted the community substantially. Residents now consume less water, food, dairy products, and domestic crops which lead to poorer health. Central to this problem is the fact that water scarcity has caused a decrease in home garden cultivation and has caused families to abandon and sell part of their flocks owned (some families had to sell all the flocks they own because they could not provide the livestock with enough quantities of feed). This has caused them to become reliant on the market for such products. Households used to grow tomatoes, medicinal and herbal plants (e.g., sage, oregano, mint) as well as dairy products. The participants stated that the food they used to grow in their own homes was of much better quality than that which they currently buy in the market. One of the group members referenced the slim features of his child's arm as a sign of declining conditions which could not satisfy the nutritional needs (particularly in regards to dairy needs) of the household. Also, the strength of the young men was brought into question compared to the strength of men in the past. As the conversation continued, it became clear that the men of this community would like to be able to produce their own home garden and dairy products again; however the water shortage has made this impossible at the present time. Furthermore, household cleanliness has decreased as water usage is prioritized for essential living needs (i.e., cooking). As a result, households use less water for cleaning, washing, laundry, planting, and livestock.

The community perceives that water scarcity has driven the costs of water very high. Because of the poor conditions of the artesian wells, the community relies on water that is transported by trucks and put into cisterns located on the roofs of their homes. The community believes that the transportation costs of this water are very high due to the fact that there is only one private business in the area responsible for transporting and filling the tanks; therefore, because there is no competition and the entire community depends on this water source, this water company is able to set the price at a high rate. They went on to say that the quality of this water is very bad and is unsuitable for drinking, thus requiring the community to purchase filtered drinking water as well.

As buying tanks of water as well as filtered water for drinking becomes a larger percentage of household's expenses, water is allocated to basic consumption and no longer used for agriculture. The lack of rainfall has reduced the area suitable for natural pastures and arable crop production. Changes in weather patterns, compounded by previous practices of overgrazing, have made once fertile land unproductive. There is now a large risk associated with investing in the cultivation of land. Those who do continue to cultivate the land have switched crops from primarily wheat to barley, which does better in the drier climate. Without rain there are significant losses in productivity, which has discouraged the men from planting fodder for livestock. As a result, the natural grazing area is greatly decreased; farmers cannot sustain their flocks of sheep without purchasing imported feed (often imported by the government from other countries) at high prices with increasing transportation costs. As a result, growing domestic

crops or raising sheep has now become a secondary livelihood rather than the main source of income for the household. This occupational shift is evidenced by the fact that many young men are migrating to urban centers like Amman or joining the army to provide additional income to their family.

Solutions regarding what the community needs from the researcher

After a shared lunch, the research team explored the water scarcity issue further by listening to the men's views for solving this problem and the assistance they seek from NCARE and the government. These solutions are listed below:

Solutions

- Traditional Solutions
 - Herbal remedies to cure waterborne illness
 - Sharing of water with neighbors in need
- Construct new and repair old wells
- Connect water to houses (connect to the piped network)
- Reuse greywater from homes
- Construct dam

The facilitator began the discussion with a question about traditional solutions to water shortage in the region, asking what the community has done in the past to solve some of these water shortage problems which had been listed in the *problem tree* activity. With regards to the health concerns over poor quality drinking water, the community responded that they usually use an herbal remedy which tends to cure waterborne illness. Some households boil the drinking water with qaysom (*Artemisia arborescens*) which they believe cleans the water. Others explained that, in the past, the severe effects of water shortage were minimized as the people shared water with those in need.

Then the community began to discuss solutions which could be implemented for future response to water scarcity. These solutions vary in cost and feasibility as some require substantial support by government or development agencies. Many of these requests were for an improvement in infrastructure regarding water management. The participants requested new pear-shaped wells in order to collect water. They also requested assistance in the repairing of old wells that need maintenance. It was suggested that those households that are currently collecting water from rooftops might share what they had learned from that experience with others. Others expressed the need for the government to connect them to the pipe-network. Given that some men buy tanks at a high cost and then pay for the transportation of this water (about 15km) of poor quality, they want the Jordan Water Company, Miyahuna, to install pipes which connect their houses to the city water network. Although it is a source of good quality drinking water, this proposal has been rejected by the government due to high costs and the far distances between residents of the community.

When asked by the facilitator about water recycling practices, the men stated that they were not aware of the use of untreated greywater by women. After Dr. Yasser Mohawesh introduced the reuse of treated greywater from the home, this idea was welcomed by the men for future consideration. This is one area where NCARE can provide training and assistance, and is thus an area for future work with this community.

One of the primary solutions introduced by the community was the construction of a dam to collect water. Once the dam was built, it is believed that the people in the Majidyya region would be able work in agriculture and sheep breeding again. The participants explained the area is believed to be a good place for dam construction because it is situated at the intersection of many valleys; when the rain does come, it travels down through the valleys and collects in one area. The community is aware of another dam constructed in the southern region of the country. This is important information because it seems to imply that these men are not aware of the technical science behind dam construction and that dams are not suitable (and it can even be environmentally detrimental) to be built in every location.

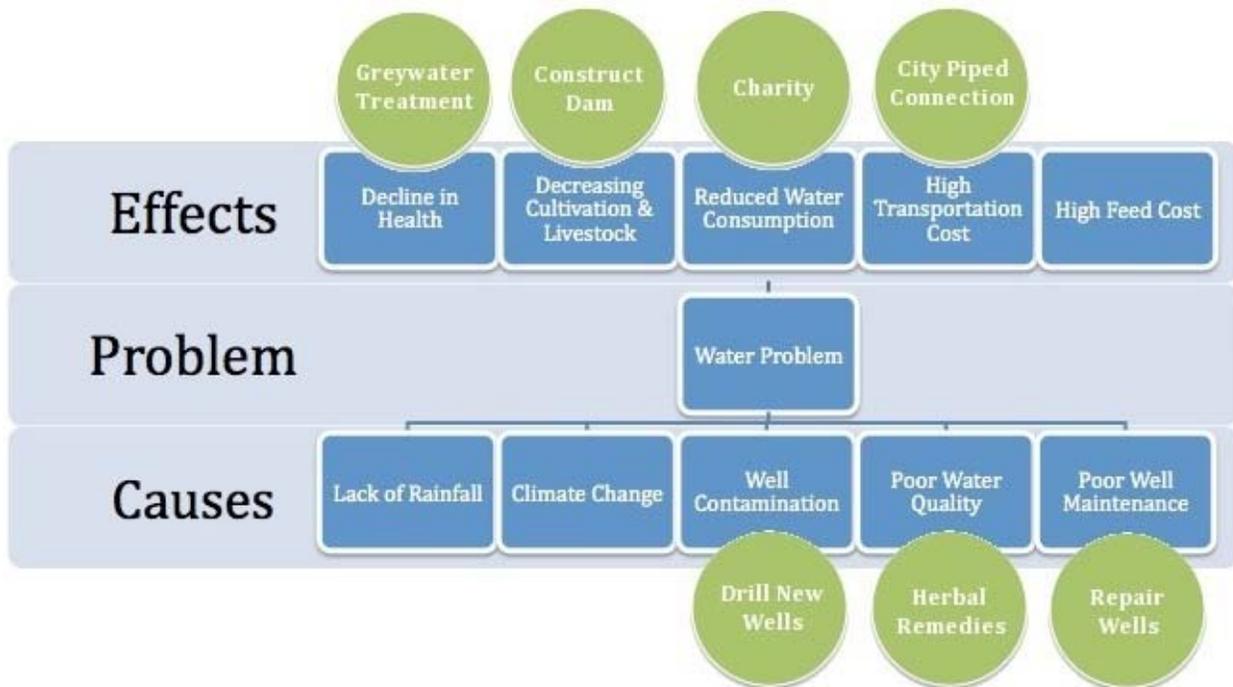
Conclusion

The community is well aware of the impact to their livelihoods that water scarcity creates. Poor health, reduced productivity of arable lands, and declining incomes are clearly emphasized. Their traditional sheep/goat grazing practices have all but disappeared and meeting fundamental water needs for survival has taken precedence over

other activities. Meanwhile, members of the community continue to demand attention from the government for assistance. They have been informed of agricultural and household water harvesting practices by creating strips, ridges, and contours to improve the land. However, the men stress that these activities bear a high cost for their establishment and maintenance.

Some of the larger scale solutions recommended by participants require resources that surpass the capacity of NCARE. At this time, it is unlikely that Miyahuna will comply with connecting the community to the city water supply. Yet, without an urban boundary, the rapid expansion of Amman could reach the community within a decade. The participants also identified several solutions in which the researchers from NCARE and ICARDA would be able to assist. However, establishing new wells may not be an option given the community’s consumption levels. Also, it may be prudent to investigate other local medicinal practices such as the boiling of the Artemisia species. Overall, the participants of this meeting expressed a desire to learn additional skills for solving water shortage problems. Most notably, there is some interest for greywater training in the community. Therefore, NCARE and ICARDA can fulfill a vital role in conducting research and training to address community problems.

Problem Tree constructed by Majidyya men in the focus group



Annex 3: Focus Group with Women in Majidyya Community

Application of Problem Tree Method with Women's Focus Group in Majidyya May 30, 2012

Introduction

The National Center for Agricultural Research and Extension (NCARE) in collaboration with the International Center for Agricultural Research in the Dry Areas (ICARDA), and the University of Florida held a gender planning meeting with the purpose of incorporating gender analysis into the Water and Livelihoods Initiative (WLI) project. A review of WLI benchmark sites last spring revealed a pressing need for the inclusion of gender analysis in all WLI projects, and thus the pressing need for a gender planning meeting became evident. It was decided that the gender planning and training meeting would be held at the NCARE office in Amman, Jordan. The gender analysis strategies developed during this meeting would then be piloted in focus groups, which would serve as a model for other WLI countries. This training was done in preparation for a local community meeting held on 30 May, 2012 in order to identify agricultural problems occurring in the Badia. WLI's purpose of this community meeting is to also identify constraints to agricultural production in the Badia due to water scarcity.

The community meeting was carried out in the Majidyya area, which lies within the Muwaqer district, its 70 km from Amman. We separated the community participants into one men's group, and one women's group. The research team in the men's group comprised of eight members, of which Engineer Hanna Chehabeddine from Lebanon and Engineer Tayseer Abo Ammash were facilitators. Likewise, the research team in the women's group included a total of seven members, which Drs. Malika Martini and Samia Akroush facilitated. There were a total of 18 women who participated in the focus group; 23 children were also present.

Initial Observations

Upon the arrival to the Majidyya community, the team was invited into the meeting hall with a fairly wide open space with chairs arranged in a circle. Drs. Martini and Akroush initiated the conversation with the community by outlining the purpose and the objectives of the research team and individually introduced the research team to the women. Each participant then introduced themselves to the community and to the research team. Initial observations revealed that some of the women participants were involved in agricultural production, primarily livestock. NCARE's previous research in Majidyya revealed that a social organization was available for the community women; a cooperative called Al-Rahmanya Association for Social Development was established in January of 2011. The cooperative consists of 60 farmers, 30 of which are women. Further discussion revealed that there is also a newly established cooperative for both women and men in Majidyya called Al Masardah. This cooperative is meant to serve as a charitable organization which provides support for people in the community. It was also observed that roughly 90% of the women participating in the meeting had cell phones. Despite having access to communication technology (i.e., cell phones) and social organizations, the women of this community did not appear to know each other well. Furthermore, they said they rarely had the opportunity to meet in a community meeting setting due to the far distance between their homes.

Methodology

The research team used the *problem tree* tool as a means of collecting qualitative information from the focus group discussion. The *problem tree* is constructed by the community members (focus group participants) with the help of the facilitator. First the participants identify problems within the community. These problems are then prioritized in order of importance to the community. The top priority problem then is written onto a card and placed on a wall. The next step requires that the focus group identify the causes of the problem through participatory and collaborative discussion. These causes are written on cards and arranged on the wall below the problem card, signifying the roots of the problem. The group must then draw connections between the causes and prioritize the strength of each in relation to the problem; this demonstrates first-level and second-level causes. The purpose of the second half of the focus group conversation is to identify the effects of this problem on the community. Again, the community must organize their ideas by ranking the effects into first-level and second-level effects. These effects are written on cards and placed above the causes and the 'problem card', symbolizing the branches of the *problem tree*. It is important for the community and the facilitator to recognize that the causes and effects listed maybe linked and in fact, self-

reinforcing. Finally, the *problem tree* activity closes with the community identifying possible solutions to the various causes and effects. These solutions are written on cards and placed on top of the causes.

This strategy is an effective tool for use in focus groups because participants are able to immediately see the results of their brainstorming activity in an organized way. It also facilitates a full community engagement in the process. As a result, participants analyze the roots of their problems, the associated effects, and develop their own solutions in addressing these problems. For the researcher, this visual display facilitates a directed discussion pertaining to the identified community problem allowing the collection of qualitative data.

Problem Tree Application at Majidyya Community

In order to use this tool, it was necessary for the team to understand the primary problems women experience within the community. Dr. Akroush began the *problem tree* activity by asking the women to mention the problems within their community in general. Their main concerns were water scarcity, market access, and transportation. They also expressed concerns about education, noting that there was only one primary school and no secondary school in the area. The participants then prioritized these various problems and identified water shortage as the primary problem within their community. The primary issue of water shortage was written on a card and placed on the wall. The community participants and the research team were then able to begin the construction of the *problem tree*.

Causes of water shortage

According to the *problem tree* tool, the community then listed various causes of water shortage. These causes listed below were written onto cards and placed underneath the ‘problem’ card on the *problem tree* wall.

- Lack of water resources
- Lack of rain
- Lack of wells in the area
- Artesian wells need maintenance
- High cost of water transportation
- The far distance to water resources
- Lack of government water management services to the community (e.g., incomplete Water Authority infrastructure projects)

Some of these causes are due to environmental conditions in the area and are therefore difficult to change; one example of this is scarce rainfall. In other situations, these causes of water shortage have been brought about by shortcomings of governmental institutions. The lack of official water management services, including incomplete infrastructure which inhibits water conservation and usage, have added to the natural causes of water shortage. The community explained that while the houses have taps to receive water, they are not connected to the city water-supply network. Furthermore, the government is not willing to extend the water pipe line to the Majidyya community because it is a scarcely populated area and the houses are located at a great distance from each other. The households in this region are ultimately reliant on water delivery trucks, which can be very expensive (this is explained further in the effects section below). The community also expressed concern about incomplete infrastructure projects within their village. For example, the Water Authority began digging artesian wells in the region but did not have the financial resources to complete them. Additionally, the government did not complete the construction of a desalinization plant in the village which costs a total of 700,000 JD. The community also revealed that the wells which have already been completed in the community have not been maintained. Other problems pertaining to water shortage are related to the high cost of water transportation. At times it was not economically viable to transport water to remote households, thus hampering the affordability and access to water.

Effects of water shortage

After identifying the causes of the problem, the community then began to list the effects of water shortage in their community. The effects listed below were written onto cards and placed on the wall above the ‘problem’ card on the *problem tree* wall.

- The household’s water costs are high, as the family is required to purchase at least one tank of water (6 m³) per week at a cost of 20 JD per tank
- Water tanks on the roof of the home are the only source of water filled by water delivery trucks
- High cost of filtered drinking water
- High cost of water used for livestock

- Decrease in milk production from livestock due to water scarcity
- Reduction in crop cultivation
- Water scarcity decreases the production of vegetables and fruits (e.g. tomatoes) from home gardens. As a result, the household buys more produce from the market at a higher cost.
- Women prioritize and control water use in the household, which leads to a decrease in personal hygiene but does not affect the general health of the children
- Using greywater for irrigation in the home garden that contains harmful chemicals if not treated
- Water pollution and disease can sometimes cause skin irritation, allergies, diarrhea and other digestive problems

The most pronounced effect was the high cost of water for the household. This is exacerbated by the large number of people living in a household (average household consists of eight people). The household on average uses 7-8 m³ of water per two weeks to cook, clean, wash, do laundry, and shower. Therefore, the weekly water needs of the home often exceed the single tank of water purchased each week. In addition, all households must purchase enough filtered drinking water for the family. The high cost of water is also felt in agricultural production; the community explained that water for livestock was also a high expense for the family. When they are not able to purchase enough water for the livestock, they produce low quantities of milk. In addition, the lack of rainfall has reduced the amount of crops grown. Ultimately, the family is not able to grow their own fruits and vegetables (e.g., tomatoes) any longer and instead must purchase them from the market; this causes a greater financial burden to the household. With this shortage of water, women are using greywater to irrigate their home gardens. This greywater is often untreated, and thus contains chemicals which can be harmful to the plants and the family that consumes them. The women in this community appear to be unaware of the dangers of using greywater to irrigate their home gardens, and further training on this issue could be beneficial to the community. Furthermore, the unclean water can cause and exacerbate illnesses including diarrhea, allergies, and skin irritation. In times of water scarcity, the women described how they are forced to conserve and prioritize their limited water resources. As a result uses such as cooking and watering of crops take priority over other uses, like cleaning; personal hygiene and household cleanliness is reduced.

Solutions to the problem: input from the community

After identifying the causes and effects of water shortage within their community, the participants began to discuss solutions for how to solve this problem from their own point of view. At the beginning, the women began to share solutions they had used in the past during periods of severe water shortage. They then began to discuss solutions they could begin on their own, and also solutions which would require assistance from organizations and institutions like NCARE. The following list of solutions for water shortage were written onto cards and placed above both the causes and the effects which can serve as intervention points.

Solutions

- Establishment of an artesian well in the village
- Installation of water-harvesting systems (outside the home) to collect water during the rainy season
- Improving water-harvesting techniques (contours) in the field to facilitate agricultural productivity (to conserve and optimize water use in the field)
- Additional training programs on how to conserve water, agricultural production techniques, and increase household income
 - Agricultural Skills
 - Training course on processing and use of medicinal plants
 - Training course on processing thyme (zatar) and sage for household consumption
 - Training on improved goat husbandry and programs to acquire goats
 - Greywater treatment training
- Installation of a desalinization station and equipment
- Government to subsidize the delivery costs of the water so that families pay only for the water itself

Some of these solutions can be implemented without much assistance from NCARE, as the women in these communities have the ability to begin them on their own. One example is that the household can undertake the construction of contours in their own fields with technical assistance from NCARE. Other solutions which were discussed by the community require more support than NCARE is able to provide at this time. These larger projects

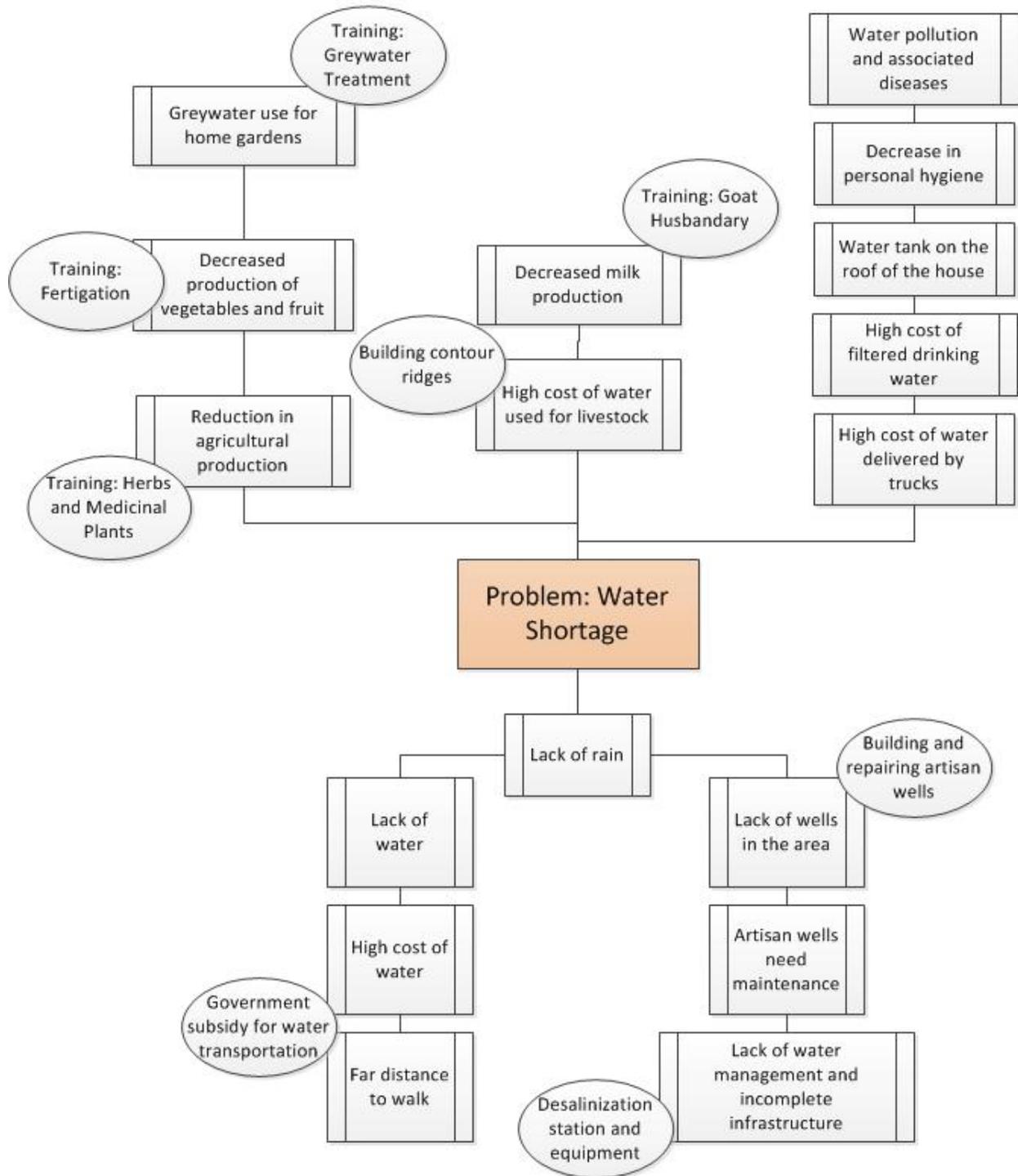
include infrastructure improvements and development such as building new wells and desalinization stations. Additionally, requests for government subsidies for water delivery should be directed to government officials at the Water Authority.

The community has also identified many ways in which NCARE can provide assistance to solve water shortage problems in the Badia. The most prevalent request was for training on agricultural techniques which can be designed by NCARE. The agricultural development training should teach the community how to more effectively conserve water and to process herbs and medicinal plants for household consumption and marketing. Another advantage of the *problem tree* tool is that it helps to identify other training needs which would be beneficial to the community, such as how to recycle greywater for household use. Finally, the women in this community also requested training on goat husbandry. NCARE is in the process of sourcing funds through the United States Embassy's MEPI program to provide support for the training.

Conclusion

These concerns and solutions expressed by the women in the Majidyya community require attention to infrastructure development and training programs on water issues. The solutions identified by the Majidyya women will provide opportunities to increase income and water conservation, thus improving the household's health and livelihoods. Several viable solutions were developed by this community over the course of the focus group thus demonstrating that the "*problem tree* analysis" is a useful tool for participatory problem solving. The women are presently able to begin implementing some of these solutions on their own. Other solutions require resources which surpass the capacity of NCARE. The community also identified several solutions in which the researchers from NCARE and ICARDA would be able to assist. The participants of this meeting identified several training programs which will develop skills critical for solving water shortage problems within the community. NCARE and ICARDA through the WLI project can fulfill a vital role in conducting research and training to address community problems.

Majidiyya Community Meeting Problem Tree: Women



Annex 4: Focus Group with Women in the Ngera Cooperative

Application of WEAI Domains in Focus Group Discussion with Ngera Women Cooperative for Social and Charitable Causes

**Ngera Cooperative Office
June 6, 2012**

Introduction

The National Center for Agricultural Research and Extension (NCARE), in collaboration with the International Center for Agricultural Research in the Dry Areas (ICARDA), and the University of Florida (hereinafter the WLI team) held a women's focus group in the Ngera Cooperative on June 6th, 2012. The purpose of the focus group was to pilot test selected domains of the Women's Empowerment in Agriculture Index (WEAI). The questions were designed to aid researchers in understanding women's access to information and extension services, leadership potential and opportunities, access to water resources and management decision-making. In addition, the questions sought to obtain a women's daily activity calendar and perceptions about climate change.

Ngera Cooperative

The Ngera Cooperative for Social and Charitable Causes in the Badia was established more than 15 years ago by a group of women who saw successful development in other communities and wanted the same for their community. The cooperative raised funds to establish a kindergarten, a dairy operation, and a computer center. The cooperative serves both women and men (men are involved in the dairy operation) of the community. For women, the cooperative provides training programs on food processing, math and English, computer/IT and other vocational skills. It also raises women's awareness about public health, women's rights and their role in the peace process. Currently, the cooperative consists of 75 female members; Ms. Samia Jbour is the chairwoman. The members are responsible for fundraising and various community projects. Ms. Jbour shared her plan to complete the expansion of the building (adding a second floor) to create a space for community gatherings such as weddings and funerals.

After a tour of Ngera's facilities, the WLI team was settled in a room with 15 women. Most of the women were from the Ngera cooperative while three women were from Muharib Village (WLI benchmark site community), located 20 km from Ngera. The focus group began with greetings and an introduction, led by Dr. Samia Akroush (NCARE), who facilitated the discussion. NCARE's staff took notes (in Arabic) and translated the dialogue to the University of Florida students. The women in the focus group represented different age groups from their early 20s through their 60s. However, the majority were women between thirty and forty five years old. Overall, the women appeared comfortable speaking in the focus group environment. Ms. Samia Jbour and her sister were the most vocal in the group, but they didn't dominate the conversation and encouraged other women to contribute.

Methodology

The WLI team used a focus group discussion (FGD) format, which is a qualitative research method. In general, FGDs are conducted with a group of people (approximately 6-15 persons) guided by a facilitator to share their perceptions, beliefs, opinions and attitudes about a specific topic(s). A discussion guide is prepared beforehand and questions are asked in an interactive process in which all participants are encouraged to share their opinions. FGDs often include probing questions (i.e., questions that help verify information or encourage a more in-depth discussion of the topic) or clarifying questions (i.e., questions that helps clear up confusion). The FGDs format offer several advantages. They help explore problems in greater depth and gather perspectives of particular groups (e.g., women or men, young or old). The FGDs are also cost- and time-effective compared to individual interviews.

To facilitate the open discussion, the questions can be written on a flipchart (prepared prior to FGD meeting) which is posted on the wall. This is done for several purposes: 1) to maintain a transparent discussion about questions and the focus of the conversation, and 2) to help the facilitator with the flow and direction of the conversation. The success of the FGDs depends on the facilitator's skill to engage participants; therefore it is important to train facilitators. Focus group discussions usually run from 1 to 2 hours in duration. The facilitator is usually assisted by one or several note-takers whose sole responsibility is to record the discussion. At the beginning of the discussion,

the facilitator introduces the research team, the goals and objectives of the focus group and the format that will be followed. At the end of the session, the facilitator asks if the group has additional questions and, if there are no questions, simply thanks the group for their participation.

WEAI domains

The Women's Empowerment in Agriculture Index (WEAI) is USAID's new index tool for monitoring gender gaps. The index consists of five domains of empowerment including women's role in production, control over income and resources, leadership opportunities, and available time for leisure.

The WLI team selected the following domains for the Ngera focus group discussion:

- Resources: Access to information, training and extension services (i.e., types of training conducted/offered)
- Leadership: Opportunities available in the cooperative (i.e., benefits from membership, activities for women, etc.)
- Time: Availability of time for leisure. This domain was also supplemented by gathering information on women's daily activity calendar (to construct women's typical day).

The WLI team also inquired about women's access and decision making ability regarding water resources (potable and agricultural) and management, perceptions about climate change, and associated behavioral changes. The questions included sources of water, water quality and responsibilities within households, changes to water use patterns during droughts and associated patterns about how decisions/priorities are made.

Women's Access to Information, Technology, and Extension

The initial observation of the focus group revealed that women were well connected with each other (with the exception of three women from Muharib Village who seemed to know Ms. Jbour only). Further discussion showed that most of the women were the members of the Jbour family clan and related to each other. The women were well informed about the cooperative and community activities. The strength of their relationship was evident through the sense of responsibility and support that they showed toward each other. For example, women pointed out that if their friends missed meetings or lectures those who attend conveyed messages to them. This social responsibility and support are important factors for WLI to build upon. The project can capitalize on this support network to transfer knowledge/information to women not only in that community, but other communities as well.

To the question about access to technology, women replied that they have computers and internet at home. Most women also had their own cell phones. Further discussion revealed that women like watching TV and they spend a considerable amount of time watching soap operas. In this particular community, it was obvious that technology is easily accessible to women and they are able to take advantage of it. Such observations and questions can aid researchers in determining which technologies are most effective and can be used to transfer knowledge to rural communities, particularly women.

When asked about access to training programs, three women replied that they participated in a training program before. The training was dedicated to food processing (i.e., how to pickle vegetables), which was provided by a female extension agent from the Ministry of Agriculture. According to the women, the Ministry also brought an educational program for school children about growing thyme and oregano in a greenhouse. The program was run separately for boys and girls in their respective gender-segregated schools.

Further discussion revealed that the main obstacle for women to participate in training programs were their childcare and domestic duties that occupy a lot of women's time. This is an important issue to consider for NCARE and ICARDA if the intent is to increase the participation of women in the training programs. At least in this community, the issue with training programs is not the lack of access; rather, it is the lack of women's time to attend the training and poor scheduling that prevents their participation.

Training Needs

Several women expressed their interest in a training program on spraying trees for pest control. The other potential topics for NCARE and ICARDA to consider are:

- Greywater treatment in the household (see below discussion regarding water supply and management)
- Water treatment techniques (particularly for piped water)

- Water saving techniques (for water use in the household including the adjustments to the water valve to regulate water flow)
- Processing herbal and medicinal plants (i.e., growing, drying, labeling and marketing)

Women also expressed interest in topics that are outside of WLI's agricultural and water management focus; however, they are related to developing income generating activities and opportunities. These topics included making flower arrangements, knitting, embroidery or handicrafts, to name a few. These training programs could be considered by WLI as part of their efforts to develop alternative rural livelihoods. Thus, equipping women with other technical and vocational skills and resources so they can generate income for their households may strengthen their status, authority and decision-making power in the household.

Women's Leadership Opportunities

The focus group discussion with Ngera female members demonstrated that Ngera women have unique opportunities for leadership and teamwork.

To the question, "Are women interested in participating in a cooperative?" the majority replied 'yes'. According to the participants, the Ngera meetings created a space for women to come together and discuss their needs and find solutions, as well as to develop community activities to productively engage themselves and their families. Women explained that they were left to deal with the needs of the family (e.g., re-fill the emptied water tank) while their husbands served in the army or worked outside of the community. Also, women said that the public services infrastructure was not easily accessible compared to Amman (e.g., water to the households is supplied through municipal pipeline and is supplied once a week on scheduled days). Thus, if the family uses all the water or the supply is not adequate, women are left to procure additional water (usually delivered by truck). Several women also indicated that they joined the cooperative because they had more free time (e.g., Ms. Jbour's sister became more involved after retirement from the Post Office). Women unanimously agreed that their interest in cooperative is motivated by a sense of solidarity and helping their community.

Regarding the benefits of participating in the cooperative, women said that they were attracted because the cooperative helped them build self-confidence, provided the opportunity to voice their concerns about the community, and helped address the needs of handicapped children from the community. In addition, the low cooperative membership fees (6JD/annually) are attractive and encourage participation.

It appears that the strengths of this cooperative are not based on factors characteristic to producer coops where the main purpose is to obtain a stronger bargaining power in the market. This cooperative seems to operate on donations raised from various foundations (e.g., Development Fund of Badia). However, the cooperative leaders developed other ways to generate income to sustain the cooperative, i.e., establishing a dairy unit, kindergarten, and computer room. This is an interesting aspect to consider when creating cooperatives in this region. In the case of Ngera, it is the social benefits to the community that motivate women to participate, as well as the opportunity and space for women to socialize outside the home. Ultimately, Ngera empowers the women in this community.

Women's time and daily activity calendar

The majority of the women in the focus group are housewives and do not work outside of their homes. A few women indicated that they work or run a small business from their homes. One woman spends six hours a day making embroidery, which is an additional income to the family. Another woman operates a women's hair salon in the Ngera community.

There appeared to be strong similarities amongst women's daily activities, though the routine certainly varied due to the size of the family, age, occupation, and marital status. The day for most women started as early as 5 AM to pray, followed by household chores (childcare, cooking, cleaning). Women indicated that childcare duties are one of the main time-consuming activities. Unlike other communities, women here seem to have adequate leisure time for rest and recreation (such as watching television). In addition, some women make time to exercise (e.g., walking) in the afternoons. Other women stated that they also have home gardens to look after where they grow grapes, olives, jasmine and roses. Overall, it appeared that women in this community spend at least 10 hours a day on household chores and have leisure time to rest (e.g., watch TV).

The three women from Muharib in attendance had a different routine compared to the Ngera women. They started the day at the same time, but their household chores were supplemented by livestock activities (milking goats, grazing, feeding, watering, processing milk, etc.) However, it was obvious from the women's discussion that even Muharib women find time to watch television or spend time chatting with their family members and friends.

Water Supply and Management

As the conversation shifted to water supply and management in the region, one woman stated that it was "a painful problem".

The focus group discussion demonstrated that women in the households are decision-makers responsible for household water supply and management. This could be due to women being at home at the time of water delivery and knowing the household needs for water. The municipality provides the Ngera community with water through a central pipeline once a week. Each household has a tank on the roof of the house. Women turn on the valve to fill up the tank. Women also said that sometimes when they are unable to fill the tank entirely (water supply runs out before their tank is full), they buy additional water from a water delivery truck. This water is primarily used for cleaning, laundry, cooking, livestock and garden irrigation.

Although women in the households are the decision-makers for securing and using water in the household, men provide money to purchase water. To the question if women interact with the water truck driver, women replied 'yes', which could be due to the fact that the driver is the member of their extended family (i.e., relative). Women said that there are designated individuals in the community that supply the community with water.

Further discussions with the women revealed that no one in the community drinks water from the tank. Households use filtered (purchased) water and the women decide when and how much to buy. To the question of why households don't use tank/tap water for drinking, the women replied that it is not clean. According to the women, employees from the Ministry of Health tested the water from the pipes and informed them that the water doesn't meet water drinking standards (water smells of chlorine and when tap is initially open the water runs rusty but then it clears). These responses indicated that women understand water quality and were concerned with water-borne diseases.

The situation with the water supply, quality and management, as well as household dynamics (between husband and wife regarding the water supply and management) require further research. It is unclear how much water each household receives, if water is measured by meters, and the patterns of water supply, etc. Another question to ask especially from working women is how much money the husband and wife contribute for the purchase of water.

Effects of Climate Change: Water scarcity

The discussion with women regarding climate change and associated water shortages revealed that women re-use greywater from laundry to irrigate their home gardens without prior treatment to reduce the chemicals from the detergent.

Further discussion showed that water scarcity affected women's behavior and encouraged the use of adaptive techniques (e.g., women reduced the number of laundry loads per week or the number of cleanings from two to one a day/week). In addition, women seemed to apply other water saving techniques. The women said they opened the water valve only half way in order to prevent spilling. The discussion showed that women are aware of different ways to save and manage water resources more effectively.

Women also were well aware of drought conditions. They described it as little to no rain and that the air temperature had increased. This also prompted women to change their behavior (i.e., women indicated that they use more air-conditioning in their homes). The climate change situation also affected households' activities. One woman said that, "Ten years ago the climate was different, there was more rain, which allowed us to grow crops [barley] and we kept a larger number of livestock. With the drought, it is impossible to grow crops and thus we reduced the number of livestock". This perspective of climate change effects is valuable for researchers to monitor the changes in the women's behavior and adaptation. It was clear from the conversation that as water became scarce and expensive, the cost of the livestock fodder has increased and livestock production is no longer economically viable.

Additional Information

Women in the cooperative appear to be well-educated for the most part. Some mentioned having university degrees and several work or has worked outside the home in the private sector, for government or as entrepreneurs. To the question about women's preference in terms of the sex of the baby, they unanimously replied that they and their husbands prefer boys. Women said that their husbands want to have many children; many of the women were second wives in their marriages. Another question was about the number of children they have. One woman who was 41 years old and a second wife replied that she had 4 boys and 4 girls. Another woman also a second wife (32 years old) had 4 girls and 2 boys. This is contrary to most data that women with more education tend to have fewer children.

Conclusion

At this focus group discussion we found that this cooperative was very important to the women as it serves as a space for them to socialize and become empowered through community activities. Women in Ngera were receptive to training programs or awareness building activities, especially if the topics addressed women's interests and the needs of their community. Women seem to have sufficient time for rest/recreation. This is an important factor to consider when designing and offering training programs though the timing should fit women's schedule. Women also appeared to be very well educated and informed about their community issues. They utilized ICT technologies (cell phones, TVs, computers) with apparent ease. Women also seemed to know how to ask, who to ask, and what to ask for (e.g., from the municipality). Finally, we concluded that this community can serve as a model for other newly formed women's cooperatives in the area in terms of engaging and empowering women. Due to the proximity of Ngera to the Muharib village, Ms. Jbour and her management team can help the WLI's project to involve women in additional community and benchmark activities.

Annex 5: Focus Group with Men in Muwaqer

Application of WEAI Domains with Men's Focus Group in Muharib Community Muwaqer District June 17, 2012

Introduction

On June 17, 2012, with support from the International Center for Agricultural Research in the Dry Areas (ICARDA) and in collaboration with the University of Florida (UF), the National Center for Agricultural Research and Extension (NCARE) conducted focus group discussions with men and women from Muharib community. As residents of a Water and Livelihoods Initiative (WLI) benchmark site, these participants revealed important gendered socio-economic information critical to the success of the WLI project in Jordan. Using the Women's Empowerment in Agriculture Index (WEAI) as a platform, the research team selected a number of questions from the five domains of empowerment for each focus group. The WEAI was used in both the men's and women's focus groups in order to conduct a comprehensive and comparative gender analysis for the Muharib community. These questions chosen specifically addressed agricultural production, income, division of labor within agricultural production and livestock management, leadership and the daily activities of participants. Assisted by Mr. Ala'a Al Awaydeh and Mr. Omar Abdulhadi, the men's focus group discussion was facilitated by Mr. Tayseer Abo Ammash (NCARE staff). Also in attendance were a Fulbright Fellow, Mr. Sam Ribnick, and a student from the University of Florida, Mr. Jeremy Lambeth. Invited and hosted by a member of the community, the men met in the seating area of Mr. Muhammad Muharib's outdoor enclosure. With eight participants of varying ages, the focus group commenced at approximately 10:30am and concluded at 1pm.

Methodology

The WLI team decided to collect qualitative data about the livelihoods of the Muharib community through the use of a focus group discussion (FGD). This tool was selected for its ability to quickly, and with minimal cost, garner information regarding a group's perceptions, beliefs, opinions, attitudes and behaviors about a specific topic or topics. To gather perspectives from a particular sub-set of the population, participants are selected to be part of a group that ideally ranges from 7-11 members. Questions are pre-selected and phrased in such a way as to promote open dialogue about the topic among participants. While other members of the research team take notes and observations, a facilitator leads and engages the focus group. Without interjecting his/her personal opinions, the facilitator carefully guides the discussion and keeps the dialogue on topic.

WEAI Domains

Guiding the FGD questionnaire is the Women's Empowerment in Agriculture Index (WEAI), USAID's new index tool for monitoring gender gaps. The index consists of five domains of empowerment including women's role in production, control over income and resources, leadership opportunities, and available time for leisure.

When conducting gender analysis, it is essential that researchers are able to use this tool to attain information not only about the livelihoods and conditions of women but also that of men. While engaging women with the WEAI questionnaire is an important component of gender analysis, it is also critical to account for men's daily activities and control over assets and income. Through this more holistic approach to gender analysis, researchers will be able to more accurately assess the gender gaps within communities. In order to provide a sufficient analysis of the results of the women's focus groups, it is crucial that the men are included as well.

With this holistic gender analysis goal in mind, the team implemented this FGD questionnaire with a group of men from Muwaqer community. The purpose of this focus group was to address three of the five domains from the WEAI in order to develop a comparison between men and women's participation in agricultural production.

The WLI team selected the following domains for the Muwaqer community focus group discussion:

- Resources: Ownership, access to, and decision-making power over productive resources
- Income: Sole or joint control over income and expenditures within the household
- Time: Availability of time for leisure. This domain was also supplemented by gathering information regarding the men's daily activity calendar (to construct a typical day for the men in the community) and an agricultural activity calendar (to determine the division of labor in agricultural tasks).

The questions primarily focused on gendered power dynamics within the household, emphasizing decision-making roles with particular regard to assets, resources, and income. This discussion led to further questions about water shortage within the community and agricultural challenges for the families, as the men of this community have sought other forms of employment outside of farming. The information collected from this focus group of men can then be used as a comparison with the women's focus group so that a complete gender analysis can be conducted.

Initial observations

The research team arrived in Muwaqer community and was welcomed into a tent which served as a meeting place for the men of the community. The men explained that many households in this community have these tents located behind their homes which serve as a comfortable space for men to meet and talk. When all eight of the focus group participants arrived, the FGD was initiated. The participants ranged in age from 40-65 years old. There were also three male children present, the eldest was approximately eighteen years old and the two younger children were under eight years old. The participants represented diverse levels of income, professions, and perspectives. The community men and the researchers began the meeting with introductions and a discussion about the history of the community. Through this initial conversation, the research team learned the people in Muwaqer were originally from Muharib, where the WLI benchmark site is located. They are all Bedouin people and come from the Bani Sakher tribe and seem to know each other well. Upon further inquiry, it was revealed that the extreme water shortage in that region of the Badia had made it difficult to maintain an agricultural livelihood; ultimately these families were forced to move closer to Amman where public services are more readily available. These families continue to own the uncultivated land in Muharib, while concurrently making their homes in Muwaqer. With assistance from the WLI project, some families in Muwaqer are beginning to cultivate on the Muharib land again (i.e., barley and rangeland shrubs using water harvesting techniques).

This initial discussion also revealed concerns from the participants about water and employment issues within the community. The participants expressed frustration with development projects by both government and international development organizations which promised services but ultimately amounted to little benefit for the community (in some cases the development projects were initiated but never completed; in other cases production projects like a yogurt factory promised employment for the village, but funding was not maintained and the employment never materialized). After much discussion over these concerns the focus group facilitator, Mr. Tayseer Abo Ammash, explained the goals and expectations of NCARE and the work that it does with rural communities in Jordan. When this introduction and explanation were completed, the focus group discussion was ready to begin. The discussion was organized according to the three selected WEAI domains.

Resources: Decision-making

Mr. Abo Ammash initiated the first series of questions which would cover issues regarding participation in agricultural activities. The purpose of this series of questions was to discern which members of the family hold the responsibility for making decisions about different agricultural tasks. Understanding who makes the major decisions in the household can help researchers to understand more deeply the gender relations within the home. Furthermore, it can help to reveal the level of empowerment women have in different aspects of their lives through the perspective of their husbands.

The research team produced a flip chart which displayed a table of agricultural activities and a space to indicate which member of the household had the decision-making responsibility for each particular activity (e.g., men, women, both men and women, children). During this activity the flip charts were not filled in by the facilitators but the results were recorded (see charts below). Mr. Abo Ammash used this chart to guide the discussion with the participants. The results from this discussion revealed that men are the exclusive decision-makers within the household. This role held true across a variety of different activities; men made all decisions about the purchasing of land or tools, marketing of livestock and agricultural products, and planting of crops. In most cases, the male head of household made the decision, however in some cases (such as the decision to purchase inputs) sons are also involved in the decision-making process. It is important to note that the majority of these men were no longer farmers, so they were speaking about the community in general when answering these questions.

Income: Control of Income and Assets

The second section of this focus group meeting was focused on control over income. When collected from both men and women, this information about income generating activities can provide a thorough understanding of socio-

economic conditions within the household. The purpose of this question was to understand the various issues regarding income generation and distribution within the household from the perspective of the men.

Sources of Income for Men

The discussion began by the more general question of how the men generate income. This broad question led to a detailed discussion of each person's livelihood strategies. Most of the men in the community were employed by the government or the military. One participant was the town mayor, another man was a teacher, and others were retired but formerly employed as army or police officers. There were only two farmers present in the group (one of which had a tree farm in Azraq; the other had 100 sheep and goats). The town mayor also has an apartment in Amman which he rents out to foreigners as a source of additional income. Finally, some participants relied on social security as a source of income. Despite this diversity of occupations represented in the focus group meeting, it became evident that men were the sole providers of formal income for the family.

Sources of Income for Women

Then the participants were asked whether women in their households also generated an income; unanimously, they responded in the negative. Although one farmer's household keeps 100 sheep, he reported that women do not process the dairy products to be sold in the markets, but instead keep them for household consumption. The participants explained that women in this community have very low levels of education and therefore do not have many opportunities for work. Those women who are educated have only one option of employment through the government, which is teaching. It appears none of the women here are contributing to the household income.

This is not to say, however, that women are not active in agricultural production within the community. In fact, the men explained that women work in the garden. Aside from the owner of 100 sheep, it appears that households have livestock (of unknown quantities) and that women are heavily involved with the livestock. The products from these activities, however, are solely for household consumption. Therefore, the women have the knowledge and skills necessary for production of vegetables and dairy products; they are just not using it to generate income. This is perhaps an area where the WLI and the Muwaqer community can work together to build upon these skills in order to develop and organize an income generating network for women.

Expenses

After discussing the ways in which households generate income, it was then necessary to understand how this income is spent. The purpose of these questions was to reveal who decides how income should be spent and what expenditures are most valued. With regards to the WEAI and the WLI project, understanding household choices over expenditures can reveal important information about the empowerment of women and their ability to control certain assets; this can expose areas in which development projects can intervene and work to improve livelihoods.

One participant explained that he sends his children to private school and that this is a high expense. The men contributed by agreeing that education costs were very high, especially for private schools and universities. The second expense reported was for social occasions such as weddings, particularly the weddings of their children. The community seemed to only consider those expenses which were exceptional costs, and did not account for specific daily expenses such as food and transportation.

Further research might probe this question a bit more, capturing who pays for these expenses. Additionally, it may seem trivial to explain the costs of everyday expenses (food, water, transportation, clothing, medical expenses), but these items also reveal important information about women's empowerment within the household and livelihoods in general. It would also reveal important information about gendered economic decision-making.

Loans and Savings

Finally, the community was asked about their access to loans and their ability to accumulate savings. Only one of the participants had received a loan, which he obtained from the Housing Bank for 50,000 JD. He used this loan to purchase and sustain his tree farm. The other participants explained that it was not common for people in their community to take out loans because it was against their religious and cultural norms. Under Shariah Law, a person cannot charge interest on loans, and so it is uncommon for people to engage in this practice.

The majority of the participants explained that they were unable to accumulate significant savings. Only one participant had managed to save 15,000JD which he said he was saving as security in the event that he experienced

financial hardships in the future. He said he worked as a customs officer for twenty years and was able to save over the course of his career.

Further research might explore the reasons why households find it difficult to accumulate savings. This is an important issue as development projects like the WLI seek to improve livelihoods of agricultural workers.

Time Allocation

The third section of the FGD served to identify the time burdens and the gendered division of labor within the household. The research team employed a tool called the daily activity calendar in order to collect this information.

Daily Activity Calendar

The research team provided flip chart paper containing a table which outlined a daily. The conversation began by asking the participants what they typically did from the time they woke up in the morning until they went to bed. The group generally responded that they woke up at 5 am for the dawn prayer. This prayer is followed by breakfast which takes place usually between 6 and 7am. During the mid-morning hours, most of the participants work in the backyard garden. The mayor of the community, however, said he uses this time to go to the different government offices (i.e., electricity authority, water authority, land authority, road authority, and banks). He visits these offices in order to make appeals for services on behalf of the men in his community. He usually goes to a different government office each day. There is variation among the participants over what they do between 10am and 2pm. Some people go and check on their farms in Muharib area. Other participants said they work in their home gardens, planting and weeding when necessary. Finally, some use this time to socialize and drink tea with other men in the community. Following the afternoon prayer, the family comes together for lunch, which is often the largest meal of the day. The children return from school around this time as well (the participants explained that the children usually walk home from school, however if the children attend a private school further away, the father will collect the children). After this large meal, most people will take a nap. Later in the evening, the men said they usually watch the news on television, visit with other men in the community. The teacher said he helps his children with homework. Most people go to bed after midnight.

This daily activity calendar revealed that there are periods in the morning and the afternoon which could be used as training periods by NCARE and WLI. As many go to their Muharib farms in the morning hours, this would be a good time for training to take place at the benchmark site in Muharib. Through this calendar, the team also noticed that there is a strong social connection within this community, where men meet daily to socialize. This network can be an important asset and entry point for development projects, as trainings and meetings might be more easily organized and facilitated in the future.

Division of Labor

The last objective of the research team was to determine the gendered division of labor by using a table that listed various agricultural activities. There was only one participant who was a farmer, and so the responses to the questions are almost exclusively his. Agricultural crop production is entirely the responsibility of the men in this community. Men do the planting and the marketing of agricultural products. Men are also responsible for the feeding and veterinary care of the animals. Sons sometimes help with the shearing of sheep and in the care of newborn livestock. The one area where women do participate is in the milking of livestock and in the processing of milk products. The farmer explained that he hires foreign laborers to take care of the livestock with responsibilities including: cleaning the stable and taking the livestock out to graze.

Conclusions

The focus group with men from the Muwaqer community provided an important research component for the WLI project. Because the WLI project goal is to improve livelihoods of all participants at the benchmark sites, it is thus important to collect and acknowledge information from both men and women. This particular focus group allowed the research team to analyze the socio-economic situation for households through the perspective of men. The team learned from this discussion group that the men from this community come from diverse occupational and economic backgrounds and that most rely on government employment to support their households. There are few people in the community relying on agriculture as a primary source of income. However, most of the men continue to own land in Muharib and some have recently begun to cultivate it again with the help of the WLI project. The daily activity calendar revealed that men continue to go to Muharib in order to check on their land. It appears that this might be an opportunity to arrange trainings at the benchmark site for those who are beginning to farm on that land.

Decision Making Over Productive Resources: Agricultural Activities

Agricultural Activities:	M	W	Mw	Wm	S	D
Who decides to buy or rent land?	X					
Who decides over what crops to produce?	X					
Who decides where and when to plant which crops?	X				X	
Who decides on use of inputs: whether to use fertilizers, pesticides/fungicides/herbicides, irrigation, etc.; whether and where to purchase?	X				X	
Who decides on purchase of tools and equipment?	X					
Who decides on how much and where to market the produce/crop and at what price willing to sell?	X					
Who decides on what to do with the revenue generated from animal sales	X					
Who decides on irrigation and which crops to be irrigated	X					
<i>Note: M=Men; W=Women; Mw= Primarily men, with some help from women; Wm= Primarily women, with some help from men; S=Son; D=Daughter</i>						

Men's Daily Activity Calendar

Time	Activity
Dawn: 5:00-7:00 am	Wake up Prayer Breakfast
Morning: 7:00-10:00 am	Work in the back garden (retired men) Go to work in wage labor (one person) Run errands to administrative offices as needed (Primarily done by community leader- not daily)
Mid-Day: 10:00 am- 2:00 pm	Check on farms in Muharib (only one person) Work in the home garden Work in wage labor (one person) Socializing, drinking tea with other men Prayer
Afternoon: 2:00-5:00 pm	Lunch Children return home from school (some fathers go to pick up their children) Nap Prayer
Evening: (5:00-8 pm)	Dinner Prayer Watch the news Some help children with homework (two people)
Late-night: (9:00 pm- 12:00 am)	Prayer Socializing, drinking tea with other men Go to bed

Division of Labor for Agricultural Activities (Livestock)

Livestock Activities: Sheep and Goats	M	W	Mw	Wm	S	D	Other
Marketing	X						
Feeding (hand feeding)	X						
Feeding (grazing)							Hire Foreign Laborers
Cleaning stable							Hire Foreign Laborers
Veterinary care/services	X						
Selling produce	X						
Processing: milk, cheese		X				X	
Processing: shearing					X		
Milking		X				X	
Taking care of newborn					X		
<i>Note: M=Men; W=Women; Mw= Primarily men, with some help from women; Wm= Primarily women, with some help from men; S=Son; D=Daughter</i>							

Annex 6: Focus Group with Women in Muwaqer

Application of WEAI Domains with Women's Focus Group in Muharib Community Muwaqer District June 17, 2012

Introduction

On June 17, 2012, the National Center for Agricultural Research and Extension (NCARE), in collaboration with the University of Florida, with support from the International Center for Agricultural Research in Dry Areas (ICARDA) conducted two focus group discussions, one with men, and one with women from the Muharib community in Jordan. The women's focus group, which this report details, was guided by preselected discussion questions chosen from domains identified in the Women's Empowerment in Agriculture Index (WEAI). These questions specifically related to household water management, supply and quality; women's access to various technologies and information sources; their decision-making authority regarding family-owned lands; and lastly, daily activities and the roles they play in agricultural and livestock production. Participants were invited by a member of the community who had previously spoken with Dr. Akroush. This man, Mr. Muhammad Muharib, also generously allowed his home to be used for the meeting which took less than two hours and involved roughly one dozen women of varying ages.

Methodology

The WLI team decided to collect qualitative data about women's lives in the Muharib community through the use of a focus group. The focus group was held in the re-settled community, Muwaqer. This tool was selected for its ability to quickly, and with minimal cost, garner information regarding a group's perceptions, beliefs, opinions, attitudes and behaviors about a specific topic or topics. To gather perspectives from a particular sub-set of the population, participants are selected to be part of a group that ideally ranges from 7-11 members. Questions are pre-selected and a discussion guide developed so as to promote open dialogue about the topics between participants. The focus group is guided by a facilitator that engages the group while other members of the research team take down notes and observations. The discussion is carefully guided by the facilitator who keeps the dialogue on topic without offering any personal opinion of his or her own.

WEAI Domains

The WEAI is a new tool developed by USAID to measure women's empowerment, agency and inclusion in the agricultural sector in order to identify solutions to the challenges and constraints that hinder women's equality and engagement. In addition to highlighting the links between women's empowerment, food security and agricultural growth, the WEAI also measures the role and level of inclusion of women in agriculture. This is done by examining women's empowerment through five domains: (1) inclusion/authority in decision-making regarding agricultural production, (2) the level of access to, and control over, productive resources, (3) control over how income is used, (4) leadership in the community and (5) how women use their time in regards to work and leisure.

Prior to the field visit the WLI team selected the following domains and sub-topics for discussion in a focus group setting:

- Resources:
 - Access and control over agricultural production inputs such as land, equipment, and crop selection
 - The responsibilities and issues surrounding water supply, quality and management
 - Women's roles in livestock and agricultural production
 - Women's access to extension services
- Time:
 - Women's daily activities
- Gender and climate change:
 - Perceptions of climate and ecosystem changes
 - Adaptations to these perceived changes

The entire focus group session took less than an hour and a half which left enough time to include prepared questions from the Leadership domain. These questions explored women's comfort in speaking in public as well as their membership in economic or social groups within their communities.

Initial Observations

The research team arrived in Muwaqer District and was divided into two groups, with the male researchers going to an outdoor enclosure with the male participants, and the female researchers going into the home of one of participants with the women. The focus group discussion was facilitated by Dr. Samia Akroush who was assisted by Ms. Lana Abo Nowar and Ms. Omama Hadidi of NCARE as well as Kristen Augustine, Nargiza Ludgate, Chesney McOmbler and Claudia Youakim of the University of Florida. There were roughly twelve women in attendance, three of which were unmarried younger women; also a small number of children were present. The three women from Muharib who participated in the Ngera focus group did not attend. All the women were neighbors and knew each other. Flip charts with the main topics to be discussed were affixed to the wall to help clarify our purpose to the group as well as guide the discussion. These topics included a daily activities calendar, questions regarding resources, and the division of labor in livestock and crop production. Translations to English speakers were provided, which gave these members of the research staff an opportunity to ask questions and gain an understanding of the dialogue throughout the session.

Dr. Akroush began the discussion by explaining that the purpose of our visit was to learn about agriculture and water and their roles in livestock and agricultural production, as well as what has changed with their crops over times. She began the discussion with introductions. Initial discussion revealed that two of the twelve women present could not read or write but six reported that they are literate and one woman present completed secondary education. It was reported that the average family size in the community ranges from eight to ten family members.

Gender and Climate Change

We quickly learned that the families living in Muwaqer had moved into the area from Muharib (WLI benchmark site), 25 kilometers away. They explained that they moved 20-30 years ago due to difficulties in earning an income from agricultural production, though there were two women present who continue to live in Muharib. According to the women present, climate change affected the area by drastically increasing temperatures and exacerbating the problem of water scarcity through a reduction in rainfall leading to drought conditions. They responded with familiarity to the topic of drought and defined it as being a period where there is little to no rain combined with the high temperatures. The women described the families living in the Badia, and especially those who live in tent-homes, as being most negatively affected by the drought. They added that agricultural production suffers because livestock and crops do not receive adequate amounts of water for production which affects agricultural livelihoods. When Muharib enjoyed a good amount of rainfall and was an agricultural community, the farmers cultivated the lands for grazing and the production of wheat and barley. Now, barley is used only for straw and usually is grazed by livestock. A small number of women described that they currently care for 2-3 head of livestock, with some help from their husbands and children with grazing. Men do not help with cleaning the livestock stalls. They went on to note that livestock produce inadequate amounts of milk for dairy processing and they have to purchase additional dairy products for their own consumption. Livestock was also for household consumption only and was not being produced for sale. Other than the inability to meet their household's dairy needs the amount of food they have is not affected by water shortage.

The women explained that, while most of their families sold their lands in Muharib, roughly fifteen households retained ownership but that there is very little agricultural activity there outside of the presence of some olive trees and Atriplex for animal grazing. The men will make trips out to Muharib to check on their lands and will bring their sons with them, but the wives and daughters do not go with them. They also noted that land values have fluctuated over the years. Women reported that they used to have an active role in agriculture and worked alongside their husbands in crop production prior to re-settling in Muwaqer. Due to the shift away from agricultural production women have lost this participative role and the younger generations of women have no experience, or interest, in agriculture citing that it is too labor intensive. They also noted that their children have no interest in learning about agriculture from their mothers and won't help them in the home gardens. The lands in Muwaqer where they have settled are not used for growing income-generating crops because the property surrounding the houses is too small in size to sustain more than a home garden.

Water Supply and Management

Regarding the water supply in Muwaqer, we learned from the women that they receive water from the municipality once a week but not in a sufficient quantity. This water is delivered to the homes via pipes where it is collected in cisterns on the roofs of the houses. The households in the area used to have access to wells but they required maintenance and have fallen into disrepair. Another method of dealing with the frequent water shortages is the purchase of potable water delivered by tanker trucks. The women appeared to be the most knowledgeable individuals in the household in terms of current water supply and one reported that she frequently instructs her family to conserve water by turning off the tap when a constant flow isn't necessary, such as when they are brushing their teeth.

Water scarcity was again cited as a primary reason that there is no capacity for agriculture in the area. One woman shared that she has four olive trees, but that they are not very productive. The participants also described the poor quality of the water they receive noting both a bad taste and a rusty color. To address this, they have started to filter the water before drinking it. They use water from the tap for both their home gardens and to water their livestock. They have also changed the way that they clean their homes shifting from using water to dry-dusting and wiping. They wait until the day that they are scheduled to receive water from the municipality to do their laundry. While many of the women now use washing machines, some still do the laundry by hand, explaining that they use the leftover greywater to irrigate their trees. Ornamental plants and flowers are not considered a high enough priority to warrant water use and so have since withered and died.

Women's Leadership Opportunities and Access to Information, Technology, and Extension

The women present were engaged in discussion regarding their access to various types of information and knowledge. The existing social network among women and between generations is strong and the main venue for information exchange. Women seem to have access to the internet and they reported they are able to receive information when they need it. They also cited the local Agricultural Department as being another readily available source of information, especially since it is located very close to them. Women in the focus group also regularly watch television. When asked specifically about where they receive information related to the health care of their children, the women began to discuss the general health of their children noting that they suffer from illnesses such as diarrhea, nausea, skin sores and "high concentrations of sodium in their urine". To address these problems, women would attempt to heal the child, often with help and advice from female family members. If the illness appeared severe, they would take the child to the hospital. They then discussed receiving information from a doctor that explained that their children's illnesses were due to the water being unclean.

When the discussion was shifted to possible future training and capacity building for the women, they expressed that they would like to learn food processing, such as pickling, as well as how to plant and care for spices and medicinal herbs. There was significant discussion regarding their lack of transportation and the constraint that this problem would have on their attendance. To address this, they requested that training either be provided in the village, or that transportation be provided for them. One option that was mentioned was to use the Ngera Cooperative which has a dairy unit where the women could be trained. The women articulated their desire to receive training and their willingness to travel for the training sessions (although there are cultural constraints which present obstacles to transportation).

The women stated that they would each want training in different areas but that would appreciate anything that would help fill their time. When asked about they spend their days, they explained that they usually wake up around 7am, though the heat is a factor in how late they will sleep. The main activities they discussed for their days were the caring for animals, napping, and watching Turkish soap operas. They would like to be part of income generating activities but it was noted in the discussion that their husbands would not allow them to work as wage laborers. On the topic of the needs of women and the community, the participants expressed that they would like to have a Daycare for their children especially for employed women (although it is unclear whether there are any employed women in this community). Some of the older women noted that they could benefit from receiving goats to increase the number of livestock they own.

Resources: Decision-making

This topic was approached to clarify women's decision-making roles in terms of household water management and land sales. The purpose of this series of questions was to discern which members of the family hold the responsibility for making decisions to better understand the gender relations within the home. This type of

information may also serve to reveal the level of empowerment that women have in different aspects of their lives. Regarding the purchase of additional water for the home, the women reported that they have a better understanding of the water needs for the home and that they handle the task of ordering more water. Regarding the sale of lands, the women reported that the selling and renting of land is entirely in the hands of men who very seldom include their wives in the decision-making process. One woman in the group, a widow, said that she rents land in Muwaqer and is solely responsible for the management of her land and crops.

Shifts in Women's Lives over Time

There was discussion between the research team and the women participating in the focus group about the ways women's lives in the community have changed over time. The participants reported that women are getting married between twenty and twenty-five years old now, much later than previously when they were married between fourteen and seventeen years of age. They described how some women are now attending university and that their children are more likely to attend university. Regarding women's rights to lands through inheritance, they noted a shift that is occurring wherein the younger generation is more aware of their rights to retain their land whereas earlier generations of women were less informed and therefore easily coerced into forfeiting their land rights to their brothers. One woman in the focus group even described obtaining a loan to start her own shop, while another woman acquired credit to purchase land.

Conclusion

The opportunity to speak with women in the Muwaqer community provided valuable information regarding women's roles in water management, their access to various technologies and information sources as well as their decision-making authority regarding family-owned lands and the roles they play in agricultural and livestock activities. From this focus group it was revealed that women have agricultural knowledge and skills, both from prior experience living in Muharib as well as from managing their home gardens in Muwaqer. Currently, they do not see agriculture as an economic opportunity. It was also learned that cultural norms regarding women's roles in the household would preclude them from working as wage laborers. With this in mind, handicraft production and the sale of medicinal herbs and spices might be appropriate livelihood strategies for these women.

Despite their reluctance regarding agriculture, it is clear that the women are eager to participate in training activities that would allow them to fill their time in productive ways. In order for these training sessions to be successful, the training topics should be useful, the training should be located where women can participate, and that transportation might need to be provided. Furthermore, while the daily calendar revealed that women have quite a bit of spare time, the scheduling of capacity building events should take into consideration women's other obligations, such as child care and meal preparation.