



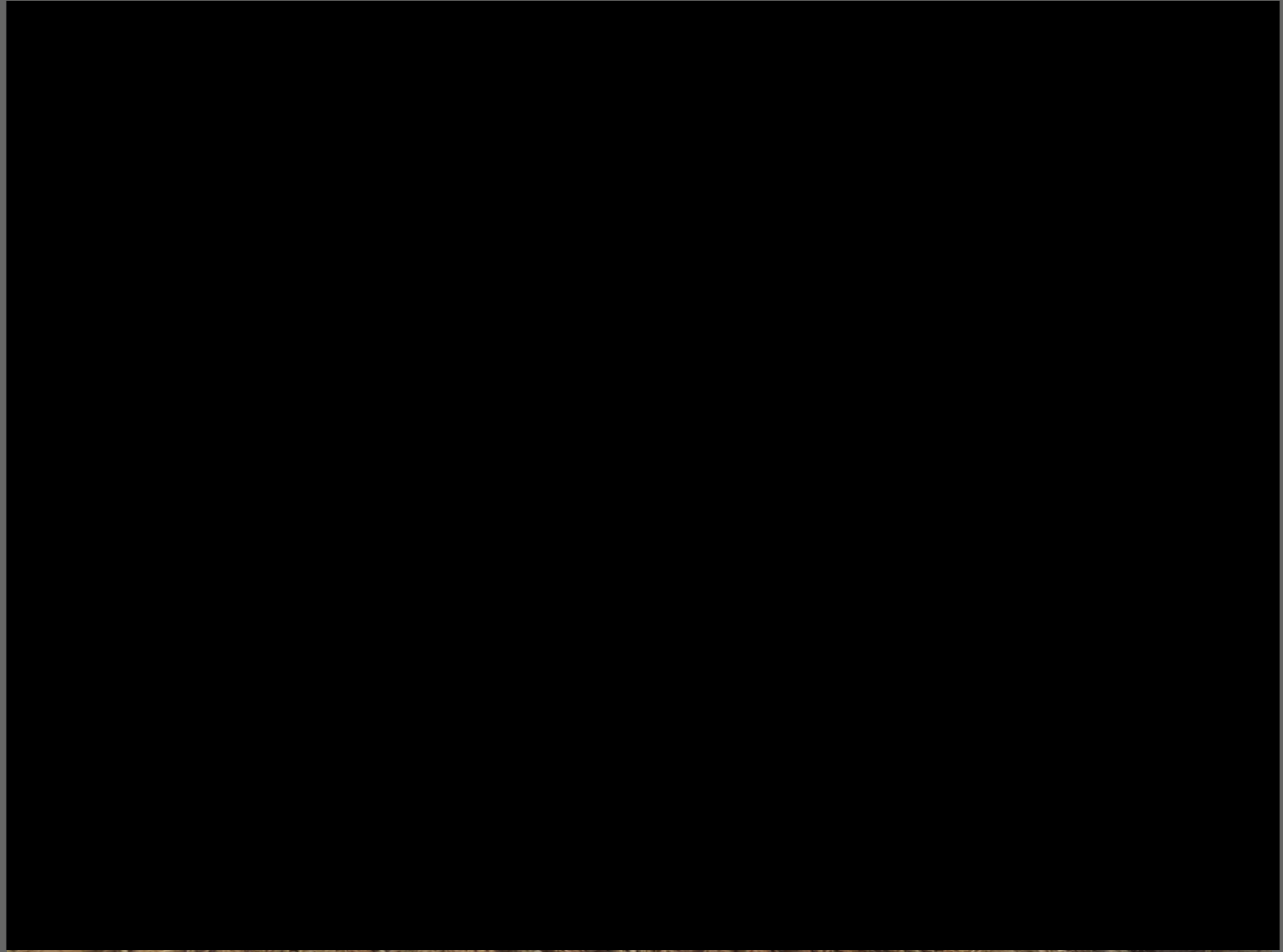
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Grain Research and Innovation (GRAIN)

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FY2018 Quarter 01 (October 1 – December 31, 2017)

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Grain Research and Innovation (GRAIN)

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List of Acronyms

AAIP	Afghanistan Agricultural Inputs Project
ARIA	Agricultural Research Institute of Afghanistan
BHEARD	Borlaug Higher Education for Agricultural Research and Development
CGIAR	Consultative Group for International Agricultural Research
CLA	Collaborate Learn and Adapt
CIMMYT	International Maize and Wheat Improvement Center
DAIL	Directorate of Agriculture, Irrigation, and Livestock
GIRoA	Government of the Islamic Republic of Afghanistan
GRAIN	Grain Research and Innovation
ICARDA	International Center for Agricultural Research in the Dry Areas
MAIL	Ministry of Agriculture, Irrigation and Livestock
ME&L	Monitoring Evaluation and Learning
MS	Master of Science
MSU	Michigan State University
PhD	Doctor of Philosophy
RADP	Regional Agricultural Development Program
■	■
SWIM	Strengthening Watershed and Irrigation Management
USAID	United States Agency for International Development
WSDP	Wheat Sector Development Program

1. Executive Summary

1.1 Program Description

The Grain Research and Innovation (GRAIN) project was conceived in response to Government of the Islamic Republic of Afghanistan's need to build the wheat research capacity of the Ministry and Directorates of Agriculture, Irrigation and Livestock (MAIL/DAILs) and the Agricultural Research Institute of Afghanistan (ARIA). The USAID-funded project is being implemented by Michigan State University's (MSU) Global Center for Food Systems Innovation (GCFSI). The principal objective of GRAIN is to enhance the capacity of Afghanistan's Ministry of Agriculture, Irrigation, and Livestock to conduct wheat-related research and to identify technologies and practices that promise the greatest benefits to wheat sector stakeholders in Afghanistan. The specific objectives of GRAIN are to:

- 1) Improve the institutional and human capacity of MAIL/ARIA to conduct wheat research, and to analyze and communicate the findings, in collaboration with key stakeholders;
- 2) Improve the institutional and human capacity of MAIL/ARIA to convert research results into recommended best practices for wheat producers in different agro-ecological zones;
- 3) Strengthen the capacity of the public and private sectors to identify and address key constraints facing the wheat value chain, in the context of national wheat sector development policy, and;
- 4) Build the capacity of women to conduct, analyze, and communicate results from wheat research.

Building on planning and processes developed in collaboration with MAIL and ARIA/DAIL last quarter, saw recruitment during this reporting period of the four regional managers who will lead GRAIN's provincial offices in Balkh, Herat, Nangahar, and at ARIA's Kabul headquarters. They will oversee program implementation activities and continue to strengthen stakeholder communications through information briefings and updates, while seeking feedback that informs future planning and activity enhancements. The Gender and Social Inclusion Advisor joined GRAIN's Kabul team, and she will ensure programmatic wheat research and extension activities are gender responsive.

Regular interaction and consultation with Universities of Herat, Nangarhar, Balkh and Kabul faculty members continued to promote awareness of key program activities that include the small grants program, short and long-term training opportunities, convening a national research conference, and planning future wheat trails. Partnership with the International Center for Agricultural Research in the Dry Areas (ICARDA) facilitated skills training sessions for ARIA and university technical staff during December, while agreement with [REDACTED] confirms monitoring and evaluation program support, and commencement of scoping requirements to develop a central research and analysis database repository at MAIL.

1.2 Summary of Key Accomplishments

A feature this quarter was the MAIL announcement calling for applications for GRAIN's Doctoral and Master's Degree Scholarships Program. This will enable qualified postgraduate Afghan women and men to undertake training at international universities recognized as wheat producers, and offering strong research facilities. The activity is primarily designed to directly strengthen MAIL capacity to increase best practice and wheat research technical knowledge.

In accordance with GRAIN's scheduled winter wheat trials, and drawing from the Altai Needs Assessment, 14 wheat breeding trials were initiated by GRAIN in collaboration with ICARDA, and an additional 15 agronomy trials at ARIA and university research sites in Baghlan, Herat, Balkh, Nangarhar, Kandahar and Kabul provinces. Coinciding with this, were three days of combined theory and practical training for AIRA and university technical staff in Kabul, where training ranged from experimental design and field-plot techniques, to the safe use of pesticides.

GRAIN met with Faculty of Agriculture administrators from University of Kabul, University of Herat, University of Nangarhar and University of Balkh, to profile the small grants program and provide early orientation in relation to the application process. With a call for concept papers due in FY18 Q3, GRAIN continues to highlight the benefits this will provide, in terms of broadening the overall wheat research scientific knowledge base in Afghanistan.

████████████████████ was contracted to commence development of a data management system that will be utilized to collect, analyze and store information on wheat production trials, and associated agronomical experiments. The database will enable MAIL and other government institutions to generate solutions for Afghanistan's wheat/agricultural sector, and has the potential to meet the needs of a wide range of beneficiaries.

GRAIN reviewed a proposal provided by MSU professor Dr. Perry Ng, for the establishment of a Wheat Quality Laboratory at ARIA's Kabul headquarters that would significantly advance scientific capabilities to test wheat and flour samples in Afghanistan. GRAIN commenced dialogue with Afghanistan Agricultural Inputs Project (AAIP), and MAIL, to discuss feasible options to accommodate the level of financial outlay required for this facility.

Recruitment of GRAIN's Gender and Social Inclusion Advisor prior to MAIL's public the long-term training program announcement in December, provided strategic planning input to promote the study opportunity to female postgraduate students. Training scholarships awareness activities in this quarter included engaging in focus groups with women students at the Universities of Herat, Nangarhar, Balkh and Kabul, to identify distinctive needs for women who would consider participating in GRAIN training programs.

In addition to the Gender and Social Inclusion Advisor, the Deputy Chief of Party and Communications and Outreach Director joined the GRAIN team this quarter and both will be based at GRAIN's Kabul headquarters, as well as the Northern Region Manager, who will be located in Mazar-i-Sherif. Additionally, the Project Manager joined the MSU-based team during the quarter.

1.3 Summary of Major Lessons Learned (Further discussed in Section 3.2)

- Several in-depth discussions with Universities revealed limited institutional capacity to manage research grants. GRAIN, through the small grants program, will help build capacity for not only technical implementation of research grants, but also administrative and financial management. This capacity is important, as Universities will likely seek sustained funding from MAIL after the GRAIN Project ends. Universities with demonstrated capacity to manage grants may also qualify to formally implement collaborative research and other grant programs funded by other donors.
- Initial focus group discussions indicate that women are less likely to express career aspirations in the areas of lab and/or field research in the wheat sector. Reasons for this sentiment that were cited by young women included: lack of family support for daughters/wives working in the agricultural sector, limited field experience exposing women to career opportunities in agricultural research, and the perception of limited job opportunities in the field. Additionally, the MS and PhD scholarship program was discussed and concerns about English language skills as well as ability to travel to another country without an escort were cited as concerns.
- Currently wheat research conducted on ARIA farms is disconnected from other key stakeholders in the wheat sector. The analysis and development of findings often happens outside of Afghanistan limiting capacity-building opportunities for ARIA staff. Additionally, there is limited oversight of data collection and entry resulting in some degree of skepticism in the existing data. GRAIN is in the process of obtaining existing wheat data from ARIA for an objective assessment.
- Discussions with farmers, private sector, universities and other stakeholders at the provincial level revealed the need for strengthened collaboration between these wheat sector stakeholders and ARIA researchers to ensure research is needs based.

2. Key Program Activities Accomplished (In Accordance with Annual Work Plan)

Specific Objective 1: Improve the institutional and human capacity of MAIL/ARIA to conduct wheat research and to analyze and communicate the findings, in collaboration with key stakeholders.

1.A Human Capacity — Technical Research

1.A.1 Long-term Degree Training

Development of the Doctoral and Master's Degree Scholarships Program progressed significantly during the first quarter through close collaboration with MAIL/ARIA representatives while drawing lessons from previous degree training programs at MAIL and MSU's Borlaug Higher Education for Agricultural Research and Development (BHEARD). This initiative is designed as a major effort to bolster the number of scientists within the country's agriculture and wheat research institutions, and directly strengthen MAIL capacity to increase best practice and technical knowledge to address constraints facing the wheat value chain. Following extensive consultation meetings with MAIL/ARIA and university faculties, GRAIN identified and finalized application requirements and evaluation criteria for recruitment of highly qualified candidates in areas of academic research and study that will support MAIL priorities as tied to the national

Wheat Sector Development Plan (WSDP). The GRAIN Needs Assessment supplied by Altai Consulting in the previous quarter and involving a range of focus group interviews and informational sessions at the Kabul and provincial levels (including Herat, Balkh and Nangarhar), established a baseline of the current staffing at key ARIA research centers, including education emphasis area and level for research and support staff. This needs assessment highlighted challenges and opportunities within Afghanistan's wheat sector, and the importance of building human capacity through support for long-term degree granting programs.

An integral component of the scholarships program is encouraging female university students, university faculty, and other potentially qualified women to consider careers in agricultural research, and apply for the scholarship program. GRAIN anticipates awarding 8 PhD scholarships over the life of the project. All PhD candidates will be selected to undertake training by FY18 Q4 to allow sufficient time to complete studies and research by FY22. GRAIN anticipates awarding at least 23 Master's degree scholarships over the life of the project, with approximately 10 students selected this program year. The number of scholarships awarded during the second cohort which is planned for FY19, will be determined later this year in the fourth quarter, and will be based upon funding remaining after the degree and research plans for the first cohort, and consequently the variable costs, are finalized. Additionally, GRAIN will assess the need for bridging programs between the two planned Master's degree cohorts by evaluating applications from the first cohort specifically to identify gender and regional disparities. GRAIN will evaluate if there is need for bridging courses, particularly for female candidates not selected in the first intake that may benefit through skills coaching and apply for the second cohort.

Successful scholarship applicants will undertake training abroad in countries recognized as wheat producers, and at universities offering strong research facilities. Shortlisted and under review are India's Agricultural Research Institute, Punjab Agricultural University and, Hariyana Agricultural University, along with Kenya's Egerton University and the University of Nairobi. The University of Pretoria in South Africa is also a possibility. Planning is in progress to arrange site inspections and commencement of discussions for the placement of GRAIN students in academic programs at the abovementioned universities in India and Kenya. This delegation will be comprised of MAIL and MSU representatives, and is scheduled to happen early next quarter, whereupon final deliberations will determine the most appropriate host universities.

A public announcement of the scholarship program by MAIL was first released on December 27, when it was posted to MAIL's website, and circulated through internal communications channels to DAIL and ARIA regional offices. GRAIN then implemented message dissemination that includes the ACBAR scholarships website section, 17 selected civil society organizations (CSO) (reaching women's and student youth groups), PROMOTE's Musharikat network (reaching 800+ recipients), and through a personal email from the Afghanistan National Agricultural Sciences and Technology University (ANASTU) [REDACTED] to 49 academic and university representatives across Afghanistan. Broader program introductory activity briefings conducted by GRAIN leadership with Herat, Nangarhar and Balkh ARIA offices and universities representatives prior to the official scholarships announcement, also involved awareness discussion about the forthcoming scholarship opportunity. (Refer Annex 01: *Scholarships Announcement* and Annex 02: *Announcement Dissemination List*)

The closing date for scholarship applications is February 1, 2018, with assessments of submissions overseen by an independent selection panel comprising MSU and MAIL representatives. A clear and transparent selection process will involve conducting individual candidate interviews, examining academic qualifications, appraising relevant wheat sector interest/knowledge and research experience, and as required, coordinating English language tests that gauge the ability to undertake study at English speaking universities. While preference will be attributed to MAIL/ARIA/DAIL employees who meet academic requirements and demonstrate commitment to agricultural or wheat research, the study opportunity will be circulated to other institutions, such as universities, which also provide valuable research contributions.

Critical to the success of the Doctoral and Master's Degree Scholarships Program is that returning graduates are offered employment at their former MAIL posts in order to contribute to continued wheat research efforts. GRAIN has commenced dialogue with MAIL and university representatives (which will expand to other institutions as determined by final applicant selections), to ensure formal agreement is in place prior to awarding scholarships.

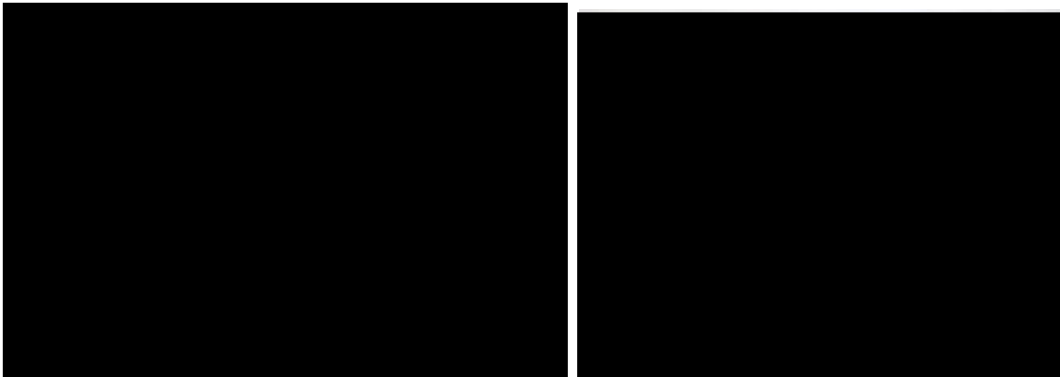
1.A.2 Short-term Technical Training

In accordance with activities identified in the Altai Needs Assessment, and through its partnership with ICARDA, GRAIN implemented three days of hands-on training events for ARIA and University researchers that coincided with implementation of the broader winter wheat field trials conducted this quarter in Baghlan, Herat, Balkh, Nangarhar, Kandahar and Kabul provinces. Initial plans included Bamyan province as a location for winter wheat field trials, however, the colder weather resulted in relocating those trials to ARIA's research farm in Kabul.

Winter Wheat Research Trials training sessions were held in Kabul on 23-25 December at ARIA's Agriculture Research Farm in Badam Bagh, and attended by ARIA and/or university representatives from all seven provinces.

Date	Training	Attendees		
		Female	Male	Total
12/23/17	Protocol Development, Experimental Designs, Field-Plot Techniques and Data Set, Collection Formats and Reporting	7	33	40
12/24/17 12/25/17	Safe Use of Pesticides and Introduction to National and International Laws	6	29	35

Note: The Safe Use Pesticide training was meant to provide a general overview of basic principles to encourage safe use for the start of the trials while GRAIN works to finalize the complete Safer Use Pesticide and Environmental Training curriculum that will be sent to USAID for review next quarter and used throughout the project. These trainings provided opportunities for Kabul-based and provincial ARIA and university representatives to improve their awareness on the aforementioned topics, and facilitated open forums to discuss related issues and share insights and experiences. (Refer Annex 03: *Winter Wheat Research Trails Trainees Information*)



Above: Theoretical and practical sessions on the safe use of pesticides were conducted over two days.

1.A.3 Small Grants Program

As Universities in Afghanistan do not receive government research funding from GIRoA for agricultural research, and in an effort to expand research capacity and links between universities and MAIL/ARIA/DAIL, GRAIN planning is underway to launch a Call for Concept Papers for its Small Grants Program in April. Grants will range from USD 5,000 - 24,999 and they are designed to address important sector constraints, while building upon the overall national wheat research program. Through the small grants program, GRAIN is encouraging increased collaboration and cooperation between universities and MAIL/ARIA/DAIL by engaging students in joint research exercises, including the involvement of female students and faculty members.

This quarter the GRAIN team met with agricultural faculty and administrators from University of Kabul, University of Herat, University of Nangarhar and University of Balkh, to profile the program and provide early orientation. Discussions between GRAIN and MAIL officials regarding program design revealed MAIL and Ministry of Higher Education currently share a research collaboration MOU. MAIL and GRAIN anticipate implementing the Small Grants Program under this existing agreement. There was emphasis upon the rigor with which applications will be considered before grants are awarded, the need for universities to demonstrate preparedness for managing the grant funding, and encouraging faculty members to begin brainstorming research hypotheses that support MAIL priorities and that offer the greatest potential for collaborative research with ARIA. The small grants program manual detailing procedures and application requirements is drafted and will be finalized in the second quarter.

Following the April call for Concept Papers, shortlisted applicants will attend a series of GRAIN coordinated workshops to receive coaching in areas such as proposal writing, research design, project management and budgeting. Upon receipt of formal proposals, it is anticipated that first grant allocations will be awarded from FY19 Q1.

1.B Human Capacity — Research Management

1.B.1 Short-term Research Management Training

Technical training: With completion of hiring of GRAIN provincial office teams scheduled for the end of the second quarter, training will occur at each of the key ARIA office locations (Balkh, Herat, Kabul and Nangarhar). This training will ensure GRAIN staff are fully versed in appropriate research methodology in experimental design, plot layout, management of treatments, personnel management, workload planning and distribution, records management, professional data collection, data entry, data management and reporting.

Short-term professional development training: Over the course of the first quarter, the GRAIN team met with members of the Agricultural Faculty at the Universities of Kabul, Nangarhar, Balkh and Herat. There were requests to consider establishing study tours that could build the practical experience of the faculty, relative to teaching and research responsibilities. GRAIN is evaluating the feasibility of study tours, and the team will continue to discuss this activity with relevant stakeholders. Additionally, these meetings contributed input on specific short-term in-service training on subjects that could strengthen faculty members' knowledge and skills in teaching Afghanistan's future researchers. Topics recommended included research methods, research design, statistics and grants management.

1.B.2 Training on the use of a Data Management System

████████████████████ was contracted by GRAIN during this quarter, to commence development of a data management system to store information on wheat production trials and associated agronomical experiments. Training is anticipated to commence in coordination with the launch of the pilot database system in FY18 Q3 (See section 3.1).

This is linked to and dependent on progressing Activity 2.C.1 *Provision of Hardware and Software to Support Design, Implementation and Analysis of Wheat Production Trials and Preparation of Recommended Production Practices*.

1.C Institutional Capacity — Organizational

1.C.1 Short-term Training on Use of Laboratory Equipment

Refer Activity 1.D.1 *Laboratory Equipment and Facilities Development*.

1.C.2 Research Data Management System Development

Refer Activity 2.C.1 *Provision of Hardware and Software to Support Design, Implementation and Analysis of Wheat Production Trials and Preparation of Recommended Production Practices*.

1.D Institutional Capacity — Physical

1.D.1 Laboratory Equipment and Facilities Development

GRAIN reviewed a proposal by MSU's Dr. Perry Ng to establish a national wheat quality testing facility in Afghanistan. The document included facility specifications, staffing and training requirements, and equipment needed for this type of facility.

At this point, the proposed budget projection is beyond that allocated in the GRAIN project. However, GRAIN subsequently met with Afghanistan Agricultural Inputs Project (AAIP), and

MAIL, to discuss feasible options to accommodate the level of financial outlay as detailed in the proposal. A copy of the proposal was shared with the group and discussions for joint development of the Wheat Quality Laboratory and training will continue through FY18 Q2 and Q3. Wheat quality assessment will entail well-trained, technically and academically qualified Afghan scientists, together with high standards of equipment and facilities. Both GRAIN short-term and long-term training programs will include research and technical topics supporting wheat quality assessment capacity. (Refer Annex 04: *Draft Lab Design and Equipment List*)

1.D.2 Improvement of ARIA Research Facilities

GRAIN met with ARIA's Director of Agriculture Adaptive Research Directorate, [REDACTED] and MAIL [REDACTED] this quarter, to discuss the improvement of facilities at ARIA's Kabul headquarters, located at Badam Bagh. Dialogue focused specifically on the Wheat Quality Laboratory included in the work plan (as referred in Activity 1.D.1 *Laboratory Equipment and Facilities Development*), and the proposed data management system that will be developed by [REDACTED], and integrated into data collection procedures across ARIA's centers, specifically agronomic researcher units conducting variety and agronomic trials on wheat. GRAIN and MAIL will collaboratively conduct training for the ongoing utilization of the database, which when operational would receive, analyze, and store research information supplied from various agricultural regions around Afghanistan. ARIA and GRAIN conducted site inspections for the proposed laboratory, and visited the ARIA Horticultural Data Analysis Center, to assess staff qualifications and capabilities, and examined current analytical and data storage procedures.

Joint ARIA/GRAIN assessments were that current processes are scientifically sound, and there is already a core of potential research scientists interested in GRAIN's long-term masters and doctoral training, which include female candidates. The enhanced research capacity is vital to fully leverage opportunities this central database will generate, in terms of boosting the quality and quantity of wheat research. Meetings to discuss joint funding initiatives such as a grain quality lab and expansion of ARIA's data management system have commenced between AAIP, MAIL and GRAIN. Together with USAID consultation, the aim is to establish a formal co-funding agreement, within the current AAIP/GRAIN mandates.

Specific Objective 2: Improve the institutional and human capacity of MAIL/ARIA to convert research results into recommended best practices for wheat producers in different agro-ecological zones.

2.A Human Capacity — Technical and Research Management

2.A.1 Short-term Training on Design, Implementation, and Analysis of Wheat Production Trials

Four regional managers were recruited and hired in this quarter. The role of the Regional Managers in Balkh, Herat, Kabul, and Nangahar is to oversee GRAIN program implementation in the provinces. The DAIL Directors in each province have already committed space for GRAIN staff to be embedded alongside ARIA researchers. The Northern Region Manager who will be based in Mazar-i-Sharif began employment this quarter while the others will join the team in early January FY18. As part of GRAIN orientation training in January, regional managers will receive refresher training in the design, implementation and analysis of wheat production trials.

All will have a common understanding and approach to the delivery of training content to colleagues and trainees in provincial areas, and possess a thorough understanding of program

objectives and the development of training materials and curricula to deliver short-term courses. All GRAIN provincial offices will be occupied by end of January FY18.

2.A.2 Short-Term Training on Translation of Research Results into Recommendations of Best Production Practices

The GRAIN Communication and Outreach team will develop mechanisms for effective communication of research outputs resulting from GRAIN activities. In consultation with MAIL/ARIA communications teams and input from [REDACTED], GRAIN will work closely with the Directorate General for Extension to produce materials and messages that can be utilized to inform and train extension agents to communicate effectively with farmers. As results become available from the initial variety trials through FY18 Q2 and Q3, the communications team will work alongside provincial teams and wheat specialists to design appropriate materials to commence training MAIL Extension Directorate teams. Realizing that results from GRAIN-supported research will not be available until late in this project year, GRAIN has already begun discussions with ARIA, ICARDA, and CIMMYT to collect data from past research. GRAIN technical teams will assess the reliability of the data next quarter before coordinating with RSI and ARIA to incorporate this past data into the new ARIA Data Management system and/or analyzing the data to assist ARIA in developing best management practice recommendations.

2.A.3 Scientific Research Conference

During this quarter, GRAIN met with administrators and members of the Faculties of Agriculture at the University of Herat, Balkh, Kabul and Nangarhar, to discuss support for a National Scientific Research Conference where faculty researchers present research outcomes and theories, and participate in learning from other field experts. The conference would be structured as a forum that strengthens relationships and understanding among and between MAIL and other public institutions, as well as wheat sector representatives, and discusses new concepts and theories, obstacles, and pathways to increasing productive and cooperative interactions. It would be a leadership opportunity for MAIL/ARIA to present up to date best practices to a national audience, and future planning and policy development affecting the sector. This activity links closely to 2.A.2 as GRAIN plans to incorporate sessions designed for an extension audience as a platform for researchers to share results that can inform research-based extension programming, and outreach to farmers and the private sector.

The conference initiative is a continuation of earlier discussions with MAIL and universities aligned with the GRAIN project, with mutual agreement to continue dialogue. While there remains considerable logistical and organizational planning to be done, FY19 Q1 was proposed as an achievable period to convene the first conference, allowing 2-3 months after harvest data is collected from this year's varietal and agronomic trials.

2.B Institutional Capacity — Organizational

2.B.1 Creation of Locally Adapted Procedures for Implementation of Wheat Production Trials

A critical component of research conducted at the provincial wheat trial sites will be gaining an understanding of local practices utilized in the production of wheat, as well as monitoring ongoing varietal trials aimed at identifying lines suited for each agro-ecological zone. This insight aims to ensure there is compatibility of innovations resulting from research outputs being adopted and adapted by local producers.

Working with ICARDA, a key GRAIN partner, protocols were developed this quarter that detail the methodology for and implementation of the variety and agronomic trials that are being established in six provinces. These protocols are intended to standardize trial design, implementation, data collection, and analysis for each tested variable so that although the same trials are conducted in different sites across the country, ICARDA and ARIA researchers adhere to standard research protocols. GRAIN collaborated with ICARDA to facilitate training for research collaborators from ARIA and Universities to explain the rationale for the trial design and to review implementation details. (Refer Annex 05: *Winter Wheat Trial Protocols Dec2017*)

2.C Institutional Capacity — Physical

2.C.1 Provision of Hardware and Software to Support Design, Implementation and Analysis of Wheat Production Trials and Preparation of Recommended Production Practices.

Discussions with [REDACTED] over this quarter resulted in agreement for the organization to work with GRAIN and MAIL/ARIA in the development of a central data management system that can be utilized to collect, analyze and store information on wheat production trials and associated agronomic experiments. Outputs from this activity will address current fragmentation and gaps that confront MAIL/ARIA, to accurately record agronomic statistics supplied from district, provincial and national levels, which are now predominantly maintained as hard copy. The establishment of a versatile database that provides historical and evidence-based planning tools as a common resource, and enables government institutions to generate solutions for Afghanistan's wheat/agricultural sector, has the potential to meet the needs of a wide range of beneficiaries. Pivotal to this outcome is selection of appropriate hardware and administering skills training that guarantees overall operational proficiency. Qualitative evaluations and early design of the proposed database will commence next quarter, with [REDACTED] anticipating implementation of a pilot system in FY18 Q3.

2.D Implementation of Wheat Variety Trails and Best Practice Demonstrations

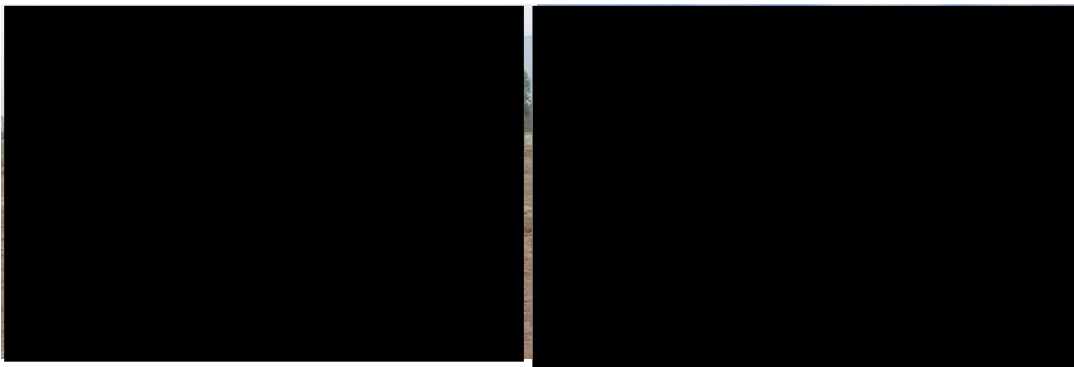
2.D.1 Implementation of Wheat Variety Trials

In accordance with GRAIN activity planning this quarter, ICARDA proceeded with 12 out of 14 scheduled wheat breeding trials at ARIA research farms and universities at Baghlan, Balkh, Herat, Kabul, Nangarhar and Kandahar. Two trials remain in progress at Herat and Nangarhar. While two trials were planned for Bamyán, these were successfully relocated to Kabul because the colder environment in Bamyán limited the ability to establish trials later in the season. Trials in Bamyán will be considered in subsequent seasons. The table below details the 14 wheat breeding trials, types of testing, location and status.

	Breeding Trial Type	Research Station	Province	Status
1	Dry Land	[REDACTED]	Baghlan	Laid out and cultivated
2	Supplemental Irrigation	[REDACTED]	Baghlan	Laid out and cultivated
3	Dry Land	[REDACTED]	Balkh	Laid out and cultivated

4	Supplemental Irrigation		Balkh	Laid out and cultivated
5	Dry Land		Herat	In progress (Waiting for rain)
6	Supplemental Irrigation		Herat	Laid out and cultivated
7	Rust Resistance		Herat	Laid out and cultivated
8	Dry Land		Kabul	Laid out and cultivated
9	Supplemental Irrigation		Kabul	Laid out and cultivated
10	Rust Resistance		Kabul	Laid out and cultivated
11	Heat Tolerance		Kandahar	Laid out and cultivated
12	Heat Tolerance		Nangarhar	Laid out and cultivated
13	Rust Resistance		Nangarhar	Laid out and cultivated
14	Supplemental Irrigation		Nangarhar	In progress

Wheat trials evaluate yield characteristics of different varieties across multiple agro-ecological zones, and evaluate adaptability in relation to drought tolerance, rust resistance, heat tolerance and need for supplemental irrigation.



Above: Site preparation for wheat trials at Nangarhar (left) and Herat (right) province.



Above: Site preparation for wheat trial at Kandahar (left) and Balkh (right) province.

2.D.2 Implementation of Best Practices Demonstrations on DAIL Research Farms

Over the course of the project, GRAIN will expand the number of wheat trials that also serve as best agronomic practice demonstrations at the ARIA agricultural research stations. By conclusion of this quarter, of the 15 planned experimental agronomy trials planted at ARIA research farms and participating universities in Herat, Balkh, Nangarhar, Kandahar and Kabul, 11 had been laid out and cultivated, and two remain in progress pending adequate precipitation for planting. Unfortunately, the date of sowing trials that were originally proposed could not be implemented this season because the planting was slightly delayed. This variable will be considered as GRAIN plans with ARIA for future trials, beginning in Spring FY18. The table below details the 15 agronomy trials, types of testing, location and status.

	Agronomy Trial Type	Research Station	Province	Status
1	Seed Rate and Mechanization		Balkh	In progress
2	Supplementary Irrigation		Balkh	Laid out and cultivated

3	Date of Sowing		Herat	Postponed
4	Supplementary Irrigation		Herat	In progress
5	Fertilization		Herat	Laid out and cultivated
6	Conservation Agriculture		Kabul	Laid out and cultivated
7	Date of Sowing		Kabul	Postponed
8	Seed Rate and Mechanization		Kabul	Laid out and cultivated
9	Supplementary Irrigation		Kabul	Laid out and cultivated
10	Fertilization		Kandahar	Laid out and cultivated
11	Supplementary Irrigation		Kandahar	Laid out and cultivated
12	Conservation Agriculture		Nangarhar	Laid out and cultivated
13	Fertilization		Nangarhar	Laid out and cultivated
14	Seed Rate and Mechanization		Nangarhar	Laid out and cultivated
15	Supplementary Irrigation		Nangarhar	Laid out and cultivated

Specific Objective 3: Strengthen the capacity of the public and private sectors to identify and address key constraints facing the wheat value chain, in the context of national wheat sector development policy.

3.A Support MAIL in Convening Meetings of Wheat Team or Value Chain Stakeholders

On November 7, a meeting between Wheat Sector Development Program (WSDP) representatives and the MSU/Kabul-based GRAIN provided updates on common program activities. Present were [REDACTED] (MAIL), [REDACTED] (MAIL), [REDACTED] (MAIL),

[REDACTED] (ARIA), [REDACTED] (AAIP), and [REDACTED] (AAIP). The group discussed the types of trials most in demand by the wheat sector, and the need to identify better methods for ARIA to communicate the scale and diversity of trials being implemented. Further discussion centered on the need for information packages for wheat farmers in each agro-ecological zone.

It was consensus to continue regular meetings and monitor the numerous trials ARIA is conducting, to ensure GRAIN does not replicate activities. There was agreement to focus upon short and long-term training of ARIA personnel, development of a data management system, and supported assistance with data analysis, interpretation, and publication. The group also discussed the emphasis on further researching the quality of Afghan wheat, and the proposal submitted by MSU scientist [REDACTED] for establishment of a wheat quality laboratory at ARIA in Kabul.

3.B Assist the Wheat Team to Revise WSDP in Response to Changing Circumstances

The meeting between GRAIN and WSDP members did not specifically address revision of WSDP, but it did begin discussion that will lay the foundation for possible changes in the WSDP role and composition to better meet the needs of development of wheat sector development in Afghanistan. For example, developing a data management system and creating stronger ties with the Directorate of Extension will be critical driving forces to a broader membership of the WSDP.

3.C Assist the Wheat Team in Conducting Coordination Meetings with Development Partner Representatives

See 3.A

Specific Objective 4: Build the Capacity of Women to Conduct, Analyze and Communicate Results from Wheat Research.

4.A Support MAIL and ARIA in Creating Roles for Women as Researchers and Technicians

Recruitment measures for the long-term training program began during the first quarter, in preparation for a public announcement in January by MAIL. Activities included engaging in focus groups conducted with women students at the Universities of Herat, Nangarhar, Balkh and Kabul, to identify distinctive needs for women who would consider participating in GRAIN training programs. Potential applicants were advised that preference would be afforded to female students intending to apply for either the masters or doctoral scholarships. Direct discussions ensued with women currently employed at MAIL/ARIA/DAIL who possess a commitment to agronomy research, and commitment to ensure greater participation of women in the development of Afghanistan's wheat sector.

Efforts increased in late December when GRAIN's Gender and Social Inclusion Advisor joined the team and led additional focus group discussions to identify qualified female candidates within and outside MAIL. She will continue these efforts in January, and will advise on distribution of information about scholarship opportunities through student, civic activist, and professional women's civil society organizations, and will conduct follow-up focus groups at universities.

4.B With ARIA, Conduct Research to Map Gender and Family Roles Along the Wheat Value Chain, While Being Responsive to Regional Differences

This will be a collaborative effort led by GRAIN's Gender and Social Inclusion Advisor. It will involve consultation with ARIA and provincial university partners in the design and implementation of an evaluation tool that examines gender and family roles in the wheat value chain, and better understands the role of women across the wheat sector. This activity commences next quarter.

During meetings throughout this quarter with the Universities of Kabul, Herat, Nangarhar and Balkh, GRAIN team members have emphasized the importance of gender in research content to ensure women's roles are an integral component of wheat sector research. GRAIN is also encouraging women seeking to qualify to conduct wheat research, to participate in either short-term or long-term GRAIN programs that could provide credentials and/or experience needed, to make a significant contribution to Afghanistan's wheat sector development. This activity will progress under the guidance of the Gender and Social Inclusion Advisor who commenced on the project in December.

3. Project Management

3.1 Monitoring, Evaluation and Learning

During Quarter 1 GRAIN finalized a sub-agreement with Rahman Safi International Consulting [REDACTED] to provide Monitoring, Evaluation and Learning (MEL) support to the GRAIN project. This sub-award has two primary functions. The first is to lead the design and implementation of all aspects of the Monitoring, Evaluation and Learning plan. [REDACTED] staff will be embedded in the GRAIN project in Kabul (MEL Director, and Specialist) and at all provincial locations (4 MEL Officers). [REDACTED] staff will work with technical staff to develop MEL tools, collect data, monitor activities, conduct learning activities, report data and findings to Kabul, and prepare submissions for Afghan info.

The second function of this award is to develop a data management system for use at ARIA. This system will allow ARIA staff to capture, store and analyze wheat research data. Currently ARIA has no such system for research data, which limits the amount of analysis and recommendations that can be gleaned from their work. The sub-award includes development of the system, hands-on training and troubleshooting support. In an effort to ensure sustainability, [REDACTED] staff will work alongside ARIA staff throughout the project to capture and submit ARIA's wheat research data in the system. This provides an opportunity for continual on-the-job learning and can lead to greater sustainability and a smoother transition of responsibility for the Data Management System for ARIA. As part of their sub-award, [REDACTED] is developing a transition and sustainability plan for the ARIA database. This plan will be completed in the next quarter.

GRAIN will use one database to capture both ARIA's wheat research data as well as project reporting data. Appropriate user access will be developed so any data that is strictly related to the GRAIN project can be firewalled from unauthorized access. Using one database improves cost effectiveness by reducing duplication (two separate systems recording the same data) and helps ensure data consistency. For example, many factors go into an indicator such as percent increase in yield (date of sowing, weather conditions, pest/disease condition, experimental treatment etc.). By using the same data management system, [REDACTED] and GRAIN will also be able

to mentor and coach ARIA staff to utilize the captured data to generate higher quality products from the data and support them in developing research materials and extension products.

Additionally, the GRAIN team continued to work with [REDACTED] over the quarter to revise the MEL plan for submission to USAID. The plan was submitted on November 17, 2017, and comments were received on December 4, 2017. As GRAIN began to address the comments, it was clear further discussions were needed between GRAIN and USAID to clarify the projects MEL objectives. At the time of writing, GRAIN and USAID have held additional meetings to clarify the project's MEL plan and indicators. Submission and approval of this plan is anticipated in Quarter two, and GRAIN will include an indicator table in future quarterly reporting that demonstrates progress toward indicator targets.

3.2 Learning and Adaptation

When using a Collaborate Learn Adapt approach, the initial years of the project will be characterized by testing different hypotheses, evaluating and adapting activities, developing results chains, outcome maps etc. Eventually, the learning process matures as the project has identified the most promising strategies and activities, and jettisoned those that are determined to be less effective. In Quarter one, the following conclusions based on stakeholder and partner discussions were identified as important lessons learned. The following list corresponds to the learning summary in section 1.3.

- **Limited Technical and Administrative Capacity to Manage Grants at Universities-** In the short term, GRAIN will likely offer small, in-kind grants where GRAIN directly procures goods and services needed for university faculty members to carry out their research grants. Over the long term, through the small grants program technical and administrative management capacity will be built through a series of training courses. Pre-award assessments and organizational capacity assessments (if needed) will be carried out after training programs to identify if sufficient capacity is built for grants to universities. A goal of GRAIN is to build university capacity to support National-level wheat research priorities. GRAIN strives for a sustainable result where universities can seek future funding from MAIL or other projects after GRAIN ends. Universities with demonstrated capacity to manage grants may also qualify to implement collaborative research and other grant programs funded by other donors.
- **Women's perceived lack of interest in wheat research-** GRAIN will take a dual track approach to this issue. First, activities such as a mentoring program where existing Afghan women researchers are paired with younger women will be initiated. Through this program and others (i.e. internships), GRAIN hopes to broaden the understanding of possibilities in research. The second track approach will be to investigate other options for the female candidates for MS and PhD degree programs. A new MS degree program has been established at Kabul University, and this may be an opportunity for women whose English skills would not qualify them for an overseas training program and/or would more easily allow an escort to accompany them during their studies. Another option that GRAIN is considering is development of bridging courses for women who are interested in pursuing advanced degrees. After the first cohort of MS students is selected, shortcomings in applications can be identified and strengthened through training. This could include English language preparation, statistics refreshers, etc. Both of these options can be initiated with the second cohort of MS students.

- **Strengthening ARIA Data Analysis-** GRAIN will work with [REDACTED] to develop a system that allows for in-country data analysis and preparation of research findings. Currently, some of this analysis is carried out in other countries or by non-ARIA, researchers and then final products are returned to ARIA. GRAIN intends to help ARIA further develop capacity to conduct more of the analyses and present findings in country. GRAIN and [REDACTED] will use a hands-on training approach throughout the project using Afghanistan's wheat research data to improve the skills of researchers as well as the quality of research. These findings will better inform Afghan wheat sector stakeholders.
- **Needs-Based Wheat Research-** Discussions at the provincial level seem to indicate there is limited consultation with the private sector, universities, farmers and other wheat sector stakeholders. This is critical to ensure ARIA researchers are meeting the needs of the communities in which they work. GRAIN intends to develop provincial working groups to strengthen relationships between these groups and ensure research being conducted is based on the needs of stakeholders in the community.

3.3 Communication and Outreach

The Communications and Outreach Director joined the project in mid-December and commenced planning and developing a series of strategic documents that will be delivered during the next quarter, including the Strategic Communications Plan, Branding and Marking Plan, various reporting templates to be utilized by staff, organizing GRAIN's image library and preparing the FY18 Q1 USAID report.

In coordination of the December 27 public announcement by MAIL of the Doctoral and Master's Degree Scholarships Program, GRAIN initiated follow-on distribution of the training opportunity among CSOs and women's groups, and continued liaising with MAIL/ARIA/DAIL and universities to promote awareness, and assist with any associated clarifications and queries.

3.4 Partner and Stakeholder Collaboration

Government

- Met with Minister of Agriculture Nasir Ahmad Durani on November 8, where GRAIN provided a progress update that included discussion about developing the quality database system, program alignment with the WSDP, and the planned doctoral and masters scholarships applications announcement. The minister expressed support for the inclusion of universities in GRAIN's activity collaborations, its close consultation with MAIL scientists, and strongly endorsed GRAIN's merit-based, transparent selection process that will be applied to awarding scholarships.
- Collaboration continued with MAIL/ARIA offices in Kabul, providing briefings on GRAIN implementation planning and the small grants program preparation.
- There was close coordination leading up to the December 27 announcement by GRAIN for the Doctoral and Master's training program, including discussion of best message dissemination options, and obtaining official approval directly from the Minister's office.
- Discussion with provincial DAIL directors relating to office space for GRAIN provincial teams resulted in confirmation that such requirements would be accommodated.
- Implemented winter wheat research and agronomy trials at ARIA research farms in Baglan, Balkh, Herat, Nangarhar, Kandahar and Kabul, through ICARDA.
- Implemented training to ARIA technical staff from Baghlan, Balkh, Bamyán, Herat, Nangarhar, Kandahar and Kabul, covering experimental design, field-plot techniques, data set collection formats and reporting, safe use of pesticides and international and national laws relating to the use of pesticides.

University

- Implemented winter wheat research and agronomy trials at Baglan, Nangarhar, Kandahar and Herat universities, through ICARDA.
- Implemented training to university technical staff from Kabul, Nangarhar, Herat and Bamyan, covering experimental design, field-plot techniques, data set collection formats and reporting, safe use of pesticides and international and national laws relating to the use of pesticides. (Refer to activity 1.A.2 Short-term Technical Training for details.)
- Conducted briefings on GRAIN implementation planning, small grants program preparation and Doctoral and Master's training program awareness.
- Facilitated a focus group with 13 female students at University of Herat to gather information to infuse into future activities.

Other Development Partners

- Liaised with PROMOTE's Women in the Economy (WIE) and Musharikat in preparation for dissemination of Doctoral and Master's training program awareness to their networks.
- Liaised with Afghanistan Civil Engagement Program (ACEP) to identify more appropriate CSO and women's networks to disseminate Doctoral and Master's training awareness.
- Met with AAIP in December 4, to discuss the proposed Quality Laboratory proposal.
- At a meeting with Strengthening Watershed and Irrigation Management (SWIM) on November 9, GRAIN learned more about its activities, with mutual agreement to examine opportunities where GRAIN can provide research and extension information through SWIM to beneficiary farmers.

3.4 Security

While the security outlook remains unstable in many parts of the country, with increased incidents reported in eastern, northern and Kabul provinces, to date no program activities have been directly affected. GRAIN's risk management team, Premier International Risk Management (Premier), constantly monitors atmospherics in the capital and around the country, circulating regular updates to staff throughout the day. GRAIN teams maintain a low profile, and receive ongoing security and awareness training from Premier.

End