

Afghanistan Agriculture Extension Project (AAEP)
Nangarhar Province Baseline Needs Assessment
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Authored by

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Overview

During program start-up David Granatstein an Extension Specialist in sustainable agriculture travelled to Nangarhar province to assist with a needs assessment designed to inform the Nangarhar provincial team about both farmer needs and extension worker needs. This needs assessment was used and cited in successive years to help guide program directions and as extension capacity was built, extension and the Nangarhar DAIL began to play a role in leading collection of local grower's needs through working groups. Dr. Oumarou Badini led the program's Nangarhar Province team and lived continuously in Afghanistan for five years and oversaw continuous adaptation of the project to local needs. Zargai Mukhliss served as Nangarhar province's Monitoring and Evaluation office on the project and worked closely with Noor Ali Noor, an extension officer and member of the faculty at Nangarhar Agriculture University. Both Zargai and Noor Ali Noor led continuous data collection efforts meant to demonstrate project success to donors and also to ground the project in Nangarhar's unique agricultural and social context.

The summary and needs assessment report was written with program use in mind and has been left unaltered for the uses of this textbook to present a real-world example of a needs assessment designed and used by project teams.

Summary

1. 28 Extension personnel interviewed, one from each district, several from Extension Department at Directorate of Agriculture, Irrigation, and Livestock office, Jalalabad
2. 40% of staff have 5 years or less experience, 25% have 20 years or more experience
3. Heard examples of active and successful extension projects; cannot confirm how prevalent these are; planning and reporting process is still unclear
4. As reported, awareness of Extension in districts ranged from 30% to over 90% of farmers, average of 64%. This contrasts with a study by Noor that found less than 20% knowledge of extension. Distribution programs (e.g. seed) have expanded farmer awareness.
5. Crop diversity in the province is high, while wheat and paddy rice are still the most important crops. Use of crop rotation could be explored for system improvements. Status of soil-borne diseases of wheat needs to be established. Potential to demonstrate this problem through simple soil pasteurization demonstrations.
6. Use of fertilizer is widespread, cost may influence rates used.
7. Use of improved seeds is mixed, depends on cost. Opportunity for more coordinated variety trials, participatory breeding, seed quality evaluation, new crops.
8. Mechanization is limited beyond tractor plowing and threshing machine. No grain drills or row crop planters typically used. No mechanical or other non-herbicidal weed control used. Significant opportunities for improvement for grain and vegetables.

9. Use of legumes and other soil-improving crops is limited but exists. Potential to expand their use, e.g. undersow wheat with red clover, legume living mulch in vegetables. Use of Rhizobium inoculum could not be verified.
10. Women play a major role in agriculture in the province. Only one district had extension training for women.
11. Examples were provided of Extension programs that increased yields 2-3 times. The extent of such programs is unknown.
12. Priority knowledge or technology changes that farmers could adopt and would lead to significant improvements in production:
 - More equipment and mechanization, seeding machines
 - Improved seeds, improved seed quality, seed production
 - Post-harvest processing for vegetables, cold storage
 - Planting in rows
 - Mechanical weeders
 - Development of improved production systems, Farmer Field School approach
 - Livestock and dairy processing
13. Main constraints to improved production faced by farmers
 - Lack of capital
 - Poor quality seed
 - Water shortage
 - Lack of equipment
 - Weeds
 - Crop storage
14. Future training topics
 - Crop production systems (vegetables, wheat, and maize the most requested, as well as sugarcane, cotton, mung bean, saffron, and rice)
 - Pest and disease control and IPM
 - Animal husbandry
 - Seed quality and production
 - Other topics: soil fertility, irrigation technology and management, orchards, legumes, dairy processing, marketing, strawberries, aquaculture, and deforestation
15. Constraints for extension personnel in doing their work
 - Lack of transport
 - Lack of facilities (office, training hall) and resources (educational materials, field equipment)
 - Lack of coordination with NGO projects
 - Security
16. Initial recommendations for training and demonstration
 - Seed – variety testing, seed quality evaluation
 - Mechanization – seeders for wheat, maize, beans; mechanical weed control
 - Crop rotation – soil borne disease status, legumes, beneficial crop sequences
 - Crop production system – start with wheat-based system
 - Extension methods training - demonstrations, on-farm testing, participatory breeding, Farmer Field School, program planning and evaluation
 - Improved internal coordination and sharing of information – demonstration projects, Non Governmental Organization projects, trial results, frequently asked questions, expertise database

Full Report

1. Introduction

Nangarhar Province is on the eastern edge of Afghanistan, bordering Pakistan. It is one of the warmer climates in the country and can produce a wide range of crops, including wheat (the dominant crop), maize, rice, a wide range of fresh vegetables, some cotton, and some tree crops. Agricultural extension is the responsibility of the provincial Directorate of Agriculture, Irrigation, and Livestock (DAIL), which has its offices based in Jalalabad, the provincial capital. A baseline needs assessment for the Afghanistan Agriculture Extension Project (AAEP) was conducted in April 2012. Twenty-eight Extension workers, primarily Extension managers from each District, came to DAIL for interviews with the AAEP team. Interviews were semi-structured using a prepared list of questions but allowing for further exploration of specific topics as appropriate. Interviews lasted from 1 to 1.5 hr. Some interviews were done individually, while others were done with 2 or 3 Extension workers at the same time due to time constraints. From these interviews, baseline information was gathered on key crops in the districts, use of various practices (e.g. fertilizer), primary farmer constraints, examples of Extension programs, priority topics for training and demonstrations, extension methods, and resources available to Extension personnel.

2. Extension Personnel, Resources, and Procedures

Eng. M. Hussin Safi is the director of DAIL in Nangarhar province, and Haji Mahsal Khan serves under him as director of Extension. The province is divided into 21 districts according to MAIL, but the provincial government has 22, with the extra being Spin Ghar, which is included in Sherzad under the MAIL scheme. Each district has an Extension Manager as well as one or more Extension agents. Facilities in the districts tend to be limited; only 7 districts have an Extension building or dedicated office, with 3 more districts with buildings under construction. Extension personnel in other districts are housed in general district offices or in animal clinic buildings. Electricity via solar panels is available to only 2 district offices outside of Jalalabad, one of which has a computer. Sixteen districts are reported to have motorbikes for transport, but many of these are old and unreliable, and fuel is often not available. District extension offices generally have no supporting information resources such as production manuals, pest identification handbooks, or extension bulletins.

In Nangarhar Province, there are approximately 73 Extension personnel in DAIL, with 65 located in districts outside Jalalabad. Two-thirds of the Extension managers have BS degrees, about 30% have completed their 12th high school, and several have attended 2-year vocational agriculture type training. The Extension managers have an average of 15 years of experience on the job. Overall experience of Extension personnel in the province is depicted in Figure 1. The distribution is bi-modal, with about 40% of the workers with 5 years or less experience and about 25% with more than 20 years. Most of the newer workers are graduates of Nangarhar Agricultural University in Jalalabad. All those interviewed came from a farming background and most were still involved in farming on their own or their families' land. Several hosted demonstrations on their own farms.

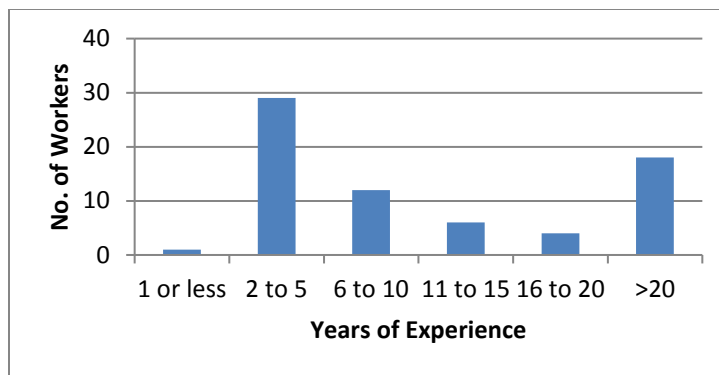


Figure 1. Experience of Extension workers in Nangarhar Province.

Extension workers have written job descriptions provided by the Human Resources Dept. of the Ministry of Agriculture, Irrigation, and Livestock (MAIL) in Kabul. The two main job types are Extension Manager and Extension Agent. Extension workers do engage in a planning process. Many of them described how they meet with farmers in different villages, convene meetings with representatives from villages, or meet with village elders to discuss farmer needs and to develop plans for extension activities. There is a reporting process in place, where activities in the district are reported to the Extension Dept. at DAIL on a weekly and monthly basis. This information is summarized, sent to the DAIL planning and policy department, and ultimately sent to MAIL in Kabul. It was not evident whether any of the information in the reports is systematically distributed back to other Extension workers so they can learn from one another and improve their networking and communication in the province.

The cell phone is the primary means of communication. All the Extension workers had cell phones. A village will generally have a least 2 or 3 contact numbers that Extension can use to communicate with it. Many farmers also have their own cell phones. Communication is also done via personal visits to villages and farms as transport allows, and during farmer meetings at demonstration plots and extension offices. There is very little or no written communication in terms of extension fact sheets or bulletins, or newsletters due to limited literacy among farmers.

The main extension methods being used include field demonstration plots, training sessions, and distribution of inputs (improved seed, fertilizer). Demonstration plots are widely used and were reported as successful in many cases. One Extension worker invites 20-30 farmers to a farm (often a demonstration site) and delivers direct training. Farmers will contact Extension occasionally if they have a specific problem, e.g. a plant disease. If the farm is close, the plant protection person or Extension worker will visit the farm. If distant, the farmer will be asked to bring a sample to the Extension office. If a more detailed diagnosis is needed, the Extension worker will take the sample to DAIL if the farmer will pay his transport cost. There is probably an opportunity to provide some simple field equipment such as cameras, refractometers, pH meters, grain test weight measures, and grain moisture meters, for example, to Extension workers so they can begin to document and quantify more aspects of their field demonstration work. Very little measurement is currently done. Several people reported using posters as part of their training, and one mentioned video-taping all aspects of a trial over the season for use in future training.

The Extension managers estimated the percent of farmers in their district that knew about Extension. This averaged 64% and ranged from 30% to over 90%. This estimate is considerably higher than that from a direct survey of farmers, where fewer than 20% said they were aware of Extension (N.A. Noor, personal com.) An Extension Dept. person estimated awareness at 20-40%. Input distribution programs were particularly important in introducing farmers to Extension. In some districts, awareness of extension was obviously higher among those closer to the extension office than those far away.

3. Primary crops

Wheat and paddy rice are the most important crops in the province. Most fields are planted to wheat during the winter. It is the staple of the diet, with small farmers providing perhaps 60% of their wheat needs from their farm with the balance being purchased. Both white and red wheat are grown. Common white varieties include PBW, Lalmi 2, Lalmi 3, and Moqawim. Common red varieties are Mazar 99 and Ghorri. Maize and rice are widely planted summer crops after wheat. It was not clear what type of maize was most common; apparently maize for animal feed, flour, and vegetable (sweet corn) are all produced. Local varieties are commonly used. Paddy rice was frequently mentioned in areas with adequate summer water supplies. Cotton was grown in a few of the districts, as was barley and sugarcane. Some legumes are grown, including mung bean, bean, berseem (Egyptian) clover, and alfalfa. Soybean is being tested. The province is a significant producer of fresh vegetables, including summer (tomato, potato, eggplant, okra, pepper, onion, squash, sweet potato, green bean) and winter (cauliflower, spinach, cabbage, carrot, turnip, radish, leek, zucchini) crops. DAIL has a complete list of the crops grown along with their typical planting and harvest dates. Cold storage and processing options are non-existent, thus there are often problems finding markets for these crops during peak harvest periods. Many kinds of tree crops grow in the province, including citrus, pomegranate, apple, apricot, guava, palm, almond and walnut, but production does not appear to be large scale. There is one commercial olive planting in Behsood district and a local olive oil and whole olives are marketed. Wild harvest of pine nuts was economically important in Dehbala district, and Bati Koot district is a producer of watermelon and melon. Saffron has been introduced as a new specialty crop. Coriander and saffron are also grown.

A clear picture of the extent and nature of crop rotation was not gleaned from the interviews. The Extension workers were aware of the value of crop rotation, as were some of their farmers. One Extension worker thought that no more than 10-20% of farmers in the province practiced regular crop rotation, while another estimated 50-60% of farmers in his district used a conscious crop rotation. Larger farmers have more opportunities for rotation than small farms that need a specific area of wheat to provide for household needs. Summer water constraints often limited rotation. But it appears that most fields grow wheat every winter, with the potential for this to build up root disease problems. More information is needed on whether root diseases have been examined, and if a problem exists, what kinds of cropping sequences might be useful to reduce them. This could be a topic for the model farm and demonstration plots if significant improvements are likely. One approach could be using soil pasteurization to demonstrate the "fumigation effect" in pots, and possibly solarization with clear plastic to demonstrate it at a larger scale. The area of forage legumes is limited, as it is used for on-farm feed production. But farmers will often move this plot around to provide rotation benefits to

different parts of fields. One Extension worker did a training last year on the benefits of legumes in rotation. Another mentioned that farmers report improvements in the crop following mung bean, clover or alfalfa. If more livestock production is developed, such as proposed dairy production and processing, this could create more demand for forage legumes that would diversify the rotation and provide income. Soybean is being tested as a new crop and would likely replace paddy rice in the rotation, according to one Extension worker. Possible demonstration ideas include undersowing wheat with a legume (e.g. red clover), legume living mulches, direct seeding into legume covers (e.g. tomato into vetch). Extension workers were not aware of the need to inoculate legume seed for N fixation and did not know whether seed was pre-inoculated.

4. Livestock

Livestock production was considered to be important in most districts. They are a primary source of dairy products for their family, as well as some meat. The majority of meat is imported from Pakistan. Oxen were more prevalent on farms 20 years ago to provide animal traction, but many were lost during the drought of the early 2000s and have not been replaced. More remote areas with smaller fields and more difficult terrain still had oxen for field work, as tractors were generally not a practical alternative. Typical livestock included milk cows, sheep, goats, and chickens. Kooz Kunar district has commercial dairy production with 15% of farms involved and actually exports cheese to Pakistan and Dubai. Small scale dairy production to make yogurt and other products for the local market was also mentioned. A dairy processing plant is to be built by FAO. Aquaculture is being explored in certain areas that are chronically flooded. A demonstration project for commercial poultry is nearing completion that would be scalable to the village level. Significant portions of the meat consumed are imported. Currently, most feed is imported from Pakistan.

5. Farm Management and Inputs

The majority of arable land in the province is irrigated. Water shortages were cited in many districts as a major constraint, particularly for summer crops. Virtually all the irrigation appeared to come from surface water in river valleys from snowmelt and springs. Koot district has about 1000 ha irrigated from wells in addition to surface water irrigated land. Flood irrigation appears to be used exclusively in the fields; no Extension worker reported more modern irrigation technology on farms such as sprinklers or drip irrigation, although several recognized its potential value in water short areas. Development of water storage was cited as a priority need in several areas. Water conserving technology could help address water shortages, but would require capital investments and filtration systems that may not be currently feasible. A number of districts had between 100 and 1000 ha of rainfed cropland; Ghosta district had 4000 ha primarily in wheat production. One person reported 3000 ha of irrigated land as the official number, but based on his own survey, found only 1200 ha being actively farmed. In recent years, MAIL has instituted a new irrigation authority and it has reportedly improved reliability of water supply.

Extension workers had ready estimates of the number of tractors and threshers in their district. Most tractors were privately owned, but the owners would regularly do custom work for other

farmers. In some districts, tractor use was estimated to be quite low, at 2-5% of the farmers. Poor, more remote, and more rugged terrain districts had less tractor use than districts with more intensive and larger farms in the major valleys. The estimated cost to plow 1 jerab (0.2 ha) was 500 Afg and could be done in about 1 hour. Tractors and threshers were moved among districts as the harvest timing differed, and thus equipment needs were more able to be met. In one district, a donor had provided tractors, but they were too large and too expensive to operate for the size of the fields there. Apparently no grain drills are used to seed wheat; it is broadcast. This has been true for maize, but some recent demonstrations have used row planting. A row planting demonstration in rice was also reported, with increased yields. Finding a small scale grain drill for demonstrations should be considered.

Farmers are aware of the benefits of improved seed varieties, particularly for wheat. They are less interested in hybrid seeds since they would not be able to save them and replant in the future. Various donors have provided seed over the years. Extension workers said in a few cases a variety inappropriate to the area was provided. Farmers will use improved seed if it is donated or if the price is low enough. If not, they will purchase local seed which can be of variable quality, especially for germination. There is an opportunity to train Extension workers in germination testing so they can train farmers or provide this service in their area to prevent crop failure due to low germination rates. Apparently, the ADT has done one such training, and some Extension workers have done training for farmers. The Afghan National Seed Organization is part of MAIL and is working to improve the seed industry. Saida Jan of Nangarhar University is the director of ANSOR. Foundation seed is being delivered to farmers in the province who increase it, deliver it back to the seed company which cleans and stores it, and sells it as certified seed. The FAO has a seed laboratory in Jalalabad, and MAIL has one in Kabul. There is currently no quarantine system and there are concerns that seeds are being imported that may contain new diseases. Several companies in Jalalabad do provide improved seeds. Apparently, some treat wheat seed with Vitavax for disease control. Lodging resistance (wind can be a problem), disease resistance, and high yields were identified as important traits along with drought resistance, a long seed head, many tillers, white color, and good baking properties for naan. Extension workers have done varieties trials in their districts. It was not clear whether the results were communicated to DAIL and made available to others in the province. On-farm storage of seed for the next season can be a problem for maintaining acceptable quality.

Adoption of fertilizer use is very high throughout the province. Estimated use rates ranged from 50-100%, with use in 14 districts estimated above 90%. Farmers are well aware of the yield response to fertilizer and use it when possible. Urea and DAP were the two products that were used and readily available. Recommended rates (crop not specified) were 50 kg urea/jerab and 25 kg DAP/jerab. With increased prices in recent years, some farmers have reduced their rates while others have found ways to finance the purchase as the return on investment is still positive. In a few poorer districts, some growers, probably no more than 5-10%, have foregone fertilizer purchase and are trying to rely more on local organic nutrient sources. The potential for legumes and other cover crops to contribute to soil fertility is largely untapped, if they can be incorporated into the rotation without sacrificing critical crops and using too much water. Extension workers have had some training on fertilizer use and timing, green manures, and

compost. There have been reports of poor fertilizer quality which some attribute to deliberate adulterating in the exporting countries.

In most districts, the primary weed control is hand pulling. Often weeds are let to grow large enough that they can be pulled and fed to livestock. Whether alternative control practices (e.g. shallow cultivation) would be acceptable if they eliminated this forage source is not known. In some districts with larger production, herbicide use was more widespread, particularly on cereal crops. Kamma district had the most herbicide use, with an estimated 80% of farmers using herbicide primarily on cereal crops. In other districts, estimates were for 70% of farms relying on hand weeding and 30% using herbicides, with some districts reporting no herbicide use. 2,4-D has been the primary broadleaf herbicide, but it may be losing its effectiveness. A common grass herbicide was Graminam. Several Extension workers reported that herbicides were specifically not used on the vegetable crops, while one said that herbicides were only used on onions. Without visiting some fields in the districts, it is not possible to assess how big a problem weeds are and how much yield benefit might be gained from improved control. Reducing the labor for weeding could be promising, particularly with something like maize planted in rows and then cultivated with a hand-push weeder. Such a weeder from Japan was being used in a rice demonstration where plants were in a defined pattern, and it took 1 person 2 hr to weed 1 jerab, much less labor than with the standard method.

Extension workers were asked about the role of land tenure as a potential barrier to adoption of improved management. The degree of ownership versus tenant farming varied by district. Where tenancy was high, the Extension workers did indicate that it was a barrier.

Most districts had various farmer associations (ranging from 1 to 12) and cooperatives (ranging from 1 to 20). We did not get a deep understanding of what these groups did, but they provided a channel for extension program delivery. Some cooperatives were developed primarily to garner donor aid and were not very active without it. One coop was arranging for seed and farmer credit. Associations for irrigation, bee keeping, seed production, orchards, and geographic areas were mentioned. There are now saffron demonstration plots in 14 districts and formation of a saffron association is being explored.

Women play an important role in agriculture in all the districts. The percent of women involved in agriculture ranged from 50 to 70%. Women generally had full responsibility for livestock care, helped with some field work (weeding, harvest), and took care of the home garden. Only one district (Kuz Kunar) reported an extension program for women, training 80 women on pickle production and 125 women on small vegetable production, with a female extension worker as part of the team. A UNHCR project worked through Extension to provide chickens to households.

6. Examples of Successful Extension Work

The Extension staff provided examples of how programs in their districts were helping farmers improve production, income, and livelihood. Field demonstrations and associated training were considered the most effective methods. Fertilization and new varieties were cited as the most widely adopted practices that were providing clear benefits to the farmers. Specific results included:

- A cauliflower demonstration compared an improved system (better variety and management) with the standard and measured a 3-fold increase in yield.
- A mung bean demonstration compared an improved system (better seed, row planting, weed control) with the grower standard and measured a 3-fold increase in yield.
- Improved wheat varieties increased yields from 500 kg/gerib to 900 kg.
- A rice demonstration using better seed, improving irrigation, and proper fertilization increased yield 3-fold.
- A wheat farmer increased his wheat yields from 350 kg/gerib to 800kg/gerib through improved practices.

(500 kg/gerib = 2500 kg/ha = 37 bushels/ac)

It is not possible to estimate the extent and frequency of these types of successful programs, whether these are rare or common.

We then asked “Are there one or two knowledge or technology changes that you believe farmers could adopt that would lead to significant improvements in their production?” Responses in order of most often mentioned were:

- More equipment and mechanization, seeding machines
- Improved seeds, improved seed quality, seed production
- Post-harvest processing for vegetables, cold storage
- Planting in rows
- Mechanical weeders
- Development of improved production systems, Farmer Field School approach
- Livestock and dairy processing

7. Farmer Constraints

We asked the Extension workers to give us their best assessment of the main constraints to improved production that farmers in their districts were facing. They were asked to rank in order the top 5 constraints from a list of 10 constraints we provided. They also added several constraints not on the list, including cost and quality of fertilizer. The top three constraints were lack of capital, poor quality seed, and shortage of irrigation water which was a priority in fewer districts but a very high priority there. Lack of equipment and weeds were the next priority constraints. Crop storage was cited by fewer districts, but again where important was a top priority.

Table 1. Extension worker ratings of the top constraints that farmers face. Frequency is number of districts choosing that constraint. For average score, 1=highest priority.

<u>Constraint</u>	<u>Frequency</u>	<u>Avg. Score</u>	<u>Rank</u>
Lack of capital	18	2.22	1
Poor quality seed	16	2.75	2
Shortage of irrigation water	11	2.00	3
Lack of equipment	14	3.43	4
Weeds	13	3.85	5

<u>Constraint</u>	<u>Frequency</u>	<u>Avg. Score</u>	<u>Rank</u>
Crop Storage	7	2.14	
Insect pests	9	4.78	
Diseases	5	3.50	
Soil fertility	3	2.67	

8. Future Training and Support

The Extension workers were asked whether there were specific topics for which they would like to increase their knowledge or skills. The top topic was crop production systems, with vegetables, wheat, and maize the most requested, as well as sugarcane, cotton, mung bean, saffron, and rice. Pest and disease control and IPM was the second most common response, followed by animal husbandry, and seed quality and production. Other topics were soil fertility, irrigation technology and management, orchards, legumes, dairy processing, marketing, strawberries, aquaculture, and deforestation. They were also asked about what demonstrations they thought would be most useful to their farmers in the future. These included variety trials (wheat, maize, vegetables, watermelon); crop production systems similar to Farmer Field School approach or Best Management Practice packages; row planting of maize and other crops; weed control; seed germination testing; tomato pest and disease management; greenhouse production; preparing vegetables for market (sorting, grading, cold storage); market planning for fresh vegetables (to avoid peak harvest gluts); and no till planting into cover crops. They also identified which districts they thought had adequate security for AAEP to work with on-farm demonstrations or FFS: Kama, Behsood, Surkhud, Rodaat, Bati Koot, Muhmmandara, and Kuz Kunar. Further validation of these districts is needed.

Extension workers also described the main constraints they saw for them being effective in doing their job. Lack of transport was almost universally cited. Lack of facilities (office, training hall) and resources (educational materials, field equipment) was the next most common constraint, followed by the need for more Extension personnel in the districts. Other constraints were lack of coordination with NGO projects, security (5 districts), and low salary. Only one person cited inability to update own knowledge as a major constraint.

9. Synthesis and Initial Recommendations

The AAEP is designed as a capacity-building effort to work within DAIL where extension staff will be here for many years, compared to short-term intervention by donors. The initial focus of the AAEP in Nangarhar is on conservation farming systems, with an emphasis on grain crops. The high priority placed on seed issues by extension and farmers – variety testing and seed quality – fits well with this focus. Training and demonstration on variety evaluation, participatory breeding, and seed quality evaluation should be considered. Demonstrations of mechanical planters that could enable use of other technology such as mechanical weeding should be planned. This may entail purchase of equipment not readily available in the area, but if its value is demonstrated, local companies are ready to arrange import and sale, and local fabrication is possible as well. The Extension workers emphasized help with crop production systems, and crop rotation is a key component that should be further explored. The implication of a wheat crop every winter on most fields needs to be understood, and further studies and

demonstrations can proceed from this in terms of crop sequences that might break disease cycles and boost yields. Simple demonstration of the “fumigation effect” by heat pasteurizing soil could help evaluate the extent of soil-borne disease in wheat. Legume crops can diversify rotations and help provide low cost nitrogen, addressing concerns about the high cost of fertilizer. Perennial legumes also help disrupt weed populations.

Many topics related to vegetable production also were ranked high; AAEP can initially contribute to improved weed control and the role of vegetables in overall crop rotation. Other project partners may need to become more involved than initially anticipated given the importance of Nangarhar as a vegetable producing region. Nangarhar Province is sometimes called a “natural greenhouse” for the range of vegetables it can produce.

There are opportunities for training about on-farm demonstration methods and the Farmer Field School approach. AAEP support could also help begin to catalogue the numerous projects in the province, their findings, and the contact persons so that a knowledge base accessible to all Extension workers could be built. Given the lack of computer access in the districts, a cell phone based system should be explored.

DAIL should explore ways to better coordinate Extension efforts. The staff collectively have a lot of experience and knowledge and are continually testing new ideas and practices. But there is not an obvious way that this “knowledge base” is being organized, catalogued, and made accessible to extension workers. This could be done through improved reporting, development of a simple database, and creating mechanisms for staff to access it (e.g. cell phone, meetings, newsletter). Coordination of demonstrations and on-farm trials could amplify learning if certain common treatment entries (e.g. varieties) and procedures were used by the participating districts. Direct interaction with farmers having questions could be facilitated by having a team of experts available at prescribed times on predetermined topics, relevant to issues at that point in the growing season, where farmers could call in on a cell phone at no charge, ask their question, and have the reply via cell or radio. A round table discussion could be used to provide the greatest breadth of input.

SWOT Analysis Nangarhar Public Extension 2012

Strengths

Work force has good training, many experienced people, all have farm background and continued connection with farm

Afghan farmers are willing to try new ideas and adopt them readily if they work

Good agricultural base, diverse crops, emerging ag support sector

Nangarhar University as a potential long-term partner for training; facilities, faculty, demonstration farm, library, student internships

Weaknesses

Lack of access to new ideas and knowledge for extension staff

Lack of material support for extension staff – transport, facilities, information resources, field equipment

Weak monitoring and evaluation system for MAIL/DAIL; accountability system is not clear; how much are people actually doing their job?

Lack of internal coordination of activities, information flow

Lack of coordination between Extension and NGOs

Opportunities

Donor resources are available for training and demonstration projects

Many appropriate technology ideas are not being used

Potential for significant improvement exists with simple interventions

Can build indigenous capacity through better use and sharing of existing information and knowledge within Extension and DAIL

Threats

Security to do their work, for partners to come

Donor dependence

Lack of motivation for service versus personal gain

Drought, water shortage

Use this SWOT analysis to develop a project strategy. How can the weaknesses be addressed from the strengths and opportunities in order to reduce the threats?