

Gender and the Agricultural Innovation System in Rural Afghanistan: Barriers and Bridges



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About APPRO

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Photograph

Shelled almonds, *aftobi*, *kishmishi*, unshelled soft shell almonds, and saffron tea. Anastasiya Hozyainova.

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Glossary

AAIDO	Afghanistan Almond Industry Development Organization
ADP	Alternative Development Program
ACCI	Afghanistan Chamber of Commerce and Industries
<i>Aftabi</i>	Sun dried grape
ALP	Alternative Livelihood Program
ANNGO	Afghan National Nursery Growers' Organization
APA	Afghan Pride Association
APPRO	Afghanistan Public Policy Research Organization
ASAP	Afghanistan Sustainable Agriculture Program
AVIPA	Afghanistan Vouchers for Increased Production in Agriculture
CHAMP	Commercial Horticulture and Agricultural Marketing Program
CSO	Central Statistical Office (Afghanistan)
DACAAR	Danish Committee for Aid to Afghan Refugees
DfID	Department for International Development
EPA	Export Promotion Agency of Afghanistan
FAO	Food and Agriculture Organization of the United Nations
GDA	Global Development Alliance
HLP	Horticulture and Livestock Program
ICARDA	International Center for Agricultural Research in Dry Areas
IDEA-NEW	Incentives Driving Economic Alternatives for the North, East and West
IDRC	International Development Research Centre
<i>Kishmish</i>	Shade dried grape
<i>Kishmishkhane</i>	Grape Drying House
<i>Kishmishpaki</i>	Raisin Cleaning Operation
MAIL	Ministry of Agriculture, Irrigation, and Livestock
MEDA	Mennonite Economic Development Associates
MFI	Microfinance Institution
MISFA	Microfinance Investment Support Facility for Afghanistan
PHDP	Perennial Horticulture Development Program
PRT	Provincial Reconstruction Team
RALF	Research for Alternative Livelihood Fund
RAMP	Rebuilding Agricultural Markets Program
UNIFEM	United Nations Development Fund for Women

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Executive Summary

Afghanistan has comparative and competitive strengths in the agriculture sector, particularly in the horticulture and livestock sub-sectors, in which women are known to participate largely in the primary stages of production and processing. Orchard fruits such as grapes/raisins and almonds have significant potential for growth in export, while saffron, a relatively new main crop, has great value and the potential to compete with poppy cultivation. Until the late 1970s Afghanistan supplied 20% of the raisins on the global market, held a dominant position in pistachio and dried fruit production, and produced livestock and wool products for the regional markets. The intermittent periods of conflict since the late 1970s combined with periodic droughts have resulted in loss of agriculturally productive land and weakened productive capacity due to flight of capital, displacement of farming communities, neglect of irrigation channels, diminished technical and market support and, ultimately, loss of market share.

The Government, supported by a host of international donors, has committed to measurable improvements in women's economic opportunities and access to and control over productive assets and income. However, there is insufficient precise and reliable knowledge about gender relations in agricultural production and the potential for women to assume a more central role. The reconstruction of the agriculture sector in Afghanistan requires identifying system resiliencies and establishing "what works" despite the insurmountable barriers confronted by the sector over the years while actively pursuing innovative alternatives to expand the scope of current activities and increase gender equity and productivity.

The paper has two broad goals. First, to establish the extent to which women contribute to social and economic value-adding activities in the agriculture sector based on current incentives, linkages, habits, practices, routines, technologies, and policies. Second, to identify the pathways through which intervention in the current arrangements is likely to have the desired impact of mainstreaming women in agricultural innovation while increasing economic output.

A large portion of raisins, almond, and saffron produced in Afghanistan is likely to continue to be poorly processed or shipped in bulk to other countries for further processing and packaging. In part this is due to a general lack of access to sufficient and adequate storage facilities, and production, processing, and transportation infrastructure. The impact of inadequate infrastructure is compounded by other factors such as lack of direct access to global markets, inadequate regulatory framework, poorly functioning ministries and cross-ministerial bodies, and a lack of rule of law and security. The most effective way to minimize the impact from these factors and to ensure cash flow is to export produce and products as quickly and as conveniently possible. This often results in selling insufficiently or inadequately processed produce and unfinished products to intermediary countries for further processing and value-adding activities, the rewards for which go to other countries.

For many Afghan producers selling of under-processed produce is the most convenient way of capitalizing on their labor and investment without having to worry about the finish and quality of the final product. This is understandable since instituting internationally recognized quality and hygiene standards is a function of having the standards in place, and most importantly, having the standards recognized by the end user in other countries. Such recognition takes time, requiring patience, persistence, and longer-term perspectives, which tend not to be features of entrepreneurs operating in conflict situations or international donor programs focused on "exit strategies" in short order.

Given this situation, it is realistic to expect that the production sophistication necessary for becoming contenders in the global markets will remain a distant prospect for the overwhelming majority of Afghan producers and exporters. This said, relatively straightforward interventions such as training on separating the different varieties of almond for grading and use, i.e., sweet versus bitter almonds, grading different types of raisin, and introduction of mechanized drying for saffron can be intensified to generate some value-adding activities in the three value chains examined for this research. A broader intervention possibility is for the Government of Afghanistan to play a more central role in industrial development by, for example, buying bulk fresh produce from the growers and then adding value through government run facilities. This approach is also likely to lead to standardization of quality.

Afghan women's role in rural agricultural production needs to be differentiated from other rural value chains studies from around the world. Comparisons of Afghan women in rural production to that of women in Africa, for example, while useful for guiding the general approach to gender mainstreaming, have to be nuanced and contextualized to fit the Afghan conditions, particularly in relation to religious / traditional and renewed sensitivities about women's role in social, economic, and political activities. Such sensitivity does not mean capitulation to the current inequitable conditions for women. Rather, it should lead to concluding that changing cultural norms about women's place in socio-economic activity has to be accompanied with other programmatic measures in awareness raising, education, and regulatory reform. As such, all interventions aimed at removing barriers to increased participation by women in society must have provisions on improving skills training including literacy, empowerment through participation in women's production groups, and mobility by women and among women within and between value chains.

Afghan women play various roles in weeding, watering, harvesting, cleaning, drying, and grading activities within the grape/raisin, almond, and saffron value chains. Their presence and prominence diminishes and almost disappears as one moves up these value chains, however. Women's work in the three value chains, particularly at the low end, is mostly unpaid while they are paid lower than men for comparable jobs further up the value chains. At the lower end of these value chains the women's involvement is versatile and flexible, allowing for economically optimal though socially inequitable female labor input which has been pointed to as a key reason for economic productivity in value chains around the world.

Gender inequity in these value chains is a function of land ownership arrangements, initial capital, division of labor within the household, traditions, cultural and religious norms, level of education, and biased and unhealthy market practices by some actors. The combined impact of these factors, manifested as behavioral, cognitive, and constitutive institutions, places women at a significant disadvantage against men, even when women are able to overcome some of the other main barriers such as access to capital or gaining their husbands' approval to work. This situation speaks to the prevalence of the widely held beliefs that govern gender relations throughout Afghanistan with some local structures relating to the place of women in society being stickier than others.

The traditional view of women as mainly homemakers is more visible in the rural parts of the country as compared to urban areas in which some women can work outside of home and supplement the income generated by the male household members. Traditionally men are in control of the accumulated wealth of the family and act as the household's main decision maker. While female household income earners may gain more of a voice in household decision-making, the balance of power over the use of household assets remains with men and is legitimated and strengthened by the religious inheritance laws which entitle a woman to half of what a man receives. The possibilities for women to gain a higher degree of independence based on accumulated wealth are thus limited

due to this very constitutive structure that defines how societies function. Over time, this has resulted in men's possession of most of the land in the family. A number of women from the saffron producing associations in Herat spoke of these factors at length and in terms of their disadvantaged position to profit more from growing saffron.

The dominant values rooted in social, cultural, and religious beliefs also deter women from reaching the markets. Women's unwillingness, fear, or prohibition to freely explore the markets limit their capacity to effectively employ the limited resources they have at their disposal to make a fair profit from their contributions in the three value chains. Even in cases where women have organized themselves as associations, as in the case of saffron, the main decisions are made by the few male members who are husbands to some of the women in the groups. Women have little knowledge of the national and international markets for the products they help grow and process. The vast majority of the women have to go through the male members of their families to sell their produce, buy, or receive input materials. The barriers to women's full participation in economic / entrepreneurial activity are compounded by unchecked prejudices of male-dominated market oligopolies.

In the absence of a whole host of pre-requisites such as a widely recognized regulatory framework, functioning ministries and cross-ministerial committees, and rule of law and security it is unrealistic to expect that chain governance and gender issues could be addressed formally and through regulatory channels. Financial independence for women (through access to affordable loans, for example) and consensual contracting mechanisms between women producers and the larger producers mediated by intermediaries such as DACAAR may be useful intermediate measures to address some of the most pressing inequities in production.

Apart from home-based handicraft production including carpet weaving and needle working, agricultural value chain employment is the only viable area for rural Afghan women to work outside their unpaid domestic responsibilities. As such, gender mainstreaming interventions will need to continue creating spaces for women to assume more central, productive, and remunerated roles in the more viable value chains such as grape/raisin, almond, and saffron. More extensive use could be made of female extension workers to facilitate women's access to new processing methods, higher level of production hygiene, and post-harvest handling techniques in packaging and marketing. The limited supply of agricultural loans (especially loans with an extended grace period to account for the long lags in grape, almond, and saffron production) and social barriers (including limits on interaction and mobility of women) can be addressed to some degree through increased presence of female lending officers at Microfinance Institutions (MFIs). The formation of women producer associations should also be intensified as the means through which to deliver extension services to women and create opportunities for them to undertake collective activities such as setting up collection points with low-tech primary storage facilities to enable off-season trade.

The mainstreaming wished for women in agriculture by the international donors needs be contextualized in analyses of women's other responsibilities and burdens such as child-bearing/care work, household work, and community work such as caring for the elderly. Also, gender mainstreaming interventions should be based on the understanding that the social norms that create barriers to women's participation in economic activity vary from one part of Afghanistan to another depending on the degree of traditionalism present. For example, while women's involvement in the fields may not be acceptable in the South, it is common for women to be involved in crop harvesting in some areas of the North. Similarly, women from Herat are relatively more empowered to participate in entrepreneurial activity than women in the southern and southeastern parts of the country.

Future policy development and interventions to regenerate and strengthen agricultural production in Afghanistan will need to be guided by the learning from what has been accomplished to date, the intervention failures, and the creation and/or identification of new problems and challenges. This research has shown that the challenge of gender mainstreaming in agriculture in Afghanistan is not simply to create spaces and opportunities for women to participate in value-adding activities. Attention needs to be paid to chain governance dynamics, based on a full understanding of gender relations and the interrelations between the various actors in the value chains being targeted for intervention. As the saffron case illustrates, even when women have come through the hurdles of working relatively independently of the men in their families, they are confronted with dismissal and being sidestepped by male traders.

A key finding from this research is that identifying alternative crops such as saffron and strengthening existing crops such as grapes and almonds (and pomegranates) is only the beginning of the process of change. Once change is initiated it will require all manner of other interventions to protect the growers of the new and strengthened crops against threats arising from resistance based on tradition, e.g., the place of women in society, deteriorating security conditions, e.g., the threat by anti-government elements against saffron farmers, and an oversupplied international market for Afghan produce and products, e.g., a drop in the price of saffron in the global market. Rebuilding the agriculture sector in Afghanistan is best viewed as a multi-level project requiring interventions from within the country accompanied by a host of other interventions (and concessions) from the outside so as to create a protected space in the global market for Afghan producers to establish themselves and thrive.

1. Introduction

In Afghanistan the percentage of women involved in agricultural production is estimated at 65% of the agricultural workforce. Women carry out the bulk of such value-adding activities as domestic chores while the trading and marketing of finished agricultural products are carried out almost exclusively by men who are also the main financial beneficiaries of the process. Two key factors contributing to these inequitable arrangements are gender bias based on deeply ingrained cultural norms and the highly informal agricultural economy.

Afghanistan has comparative and competitive strengths in the agriculture sector, particularly in the horticulture and livestock sub-sectors, in which women are known to participate largely in the primary stages of production and processing. Orchard fruits such as grapes/raisins and almonds have significant potential for growth in export, while saffron, a relatively new main crop, has great value and the potential to compete with poppy cultivation. Until the late 1970s Afghanistan supplied 20% of the raisins on the global market, held a dominant position in pistachio and dried fruit production, and produced livestock and wool products for the regional markets. The intermittent periods of conflict since the late 1970s combined with periodic droughts have resulted in loss of agriculturally productive land and weakened productive capacity due to flight of capital, displacement of farming communities, neglect of irrigation channels, diminished technical and market support and, ultimately, loss of market share.

The Government, supported by a host of international donors, has committed to measurable improvements in women's economic opportunities and access to and control over productive assets and income. However, there is insufficient precise and reliable knowledge about gender relations in agricultural production and the potential for women to assume a more central role. The reconstruction of the agriculture sector in Afghanistan requires identifying system resiliencies and establishing what works despite the insurmountable barriers confronted by the sector over the years while actively pursuing innovative alternatives to expand the scope of current activities and increase gender equity and productivity.

Mainstreaming women in agricultural production requires a systemic understanding of the organization(s) of production and needs to be based on local geography, gender relations, and other local factors. Introduced forms of economic organization to increase gender balance and agricultural production in Afghanistan will need to be cognizant of, and resonate with, centuries-old structures of economic organization including the allocation of gender roles. At the same time, gender mainstreaming interventions must challenge some of the existing social and economic institutions in order to pursue progressive economic and social change.

This study was undertaken to identify constraints and explore opportunities for women to participate and improve their position in various stages of agricultural production. This synthesis report is based on background papers on grape/raisin, almond, and saffron value chains.¹ The review of the existing literature on agricultural value chains, value chain analysis, and gender in/and agricultural

1 See the following papers available on www.appro.org.af:

Saeed Parto and Rozbih Mihran. 2010. Understanding Gender in Agricultural Production: An Annotated Bibliography for the Case of Afghanistan. (APPRO: Kabul)

Saeed Parto and Rozbih Mihran, 2010. Understanding Gender in Agricultural Production: A Review of the Literature and a Conceptual Framework. (APPRO: Kabul)

Saeed Parto and Rozbih Mihran. 2010. Value Chain Governance and Gender: Saffron Production in Afghanistan. (APPRO: Kabul); and

Joost Gorter and Saeed Parto. 2011. Afghan Women in the Raisin and Almond Value Chains: Literature Review. (APPRO: Kabul).

development was used to develop an analytical framework to examine gender in/and value chain dynamics. The data on grape/raisin and almond value chains were drawn from existing reports and previous research while the data on the saffron value chain were collected through an extensive literature review, field visits, focus group discussions, and interviews with key informants in a wide number of settings nationally and internationally.

Using a case study approach, the research collected and analyzed data from primary and secondary sources to describe the actors and the factors that shape the *agricultural innovation system* in the three value chains. A key goal in this research was to establish the extent to which women contribute to social and economic value-adding activities in the three value chains and identify the pathways through which intervention in the current arrangements is likely to have the desired impact of mainstreaming women in agricultural activity while increasing economic output.

2. Research Problem and Approach

Women are responsible for producing 70%-80% of food crops in South Asia.² They raise chickens and collect eggs, water and weed crops, clean and dry fruits and vegetables, and process and package agricultural produce or products. There is far less involvement of women in marketing and trading of the goods they help produce, however. In Afghanistan the percentage of women involved in agricultural production is estimated at 30% of the agricultural workforce.³ Women carry out the bulk of such value-adding activities as domestic chores while the trading and marketing of finished agricultural products are carried out almost exclusively by men who are also the main financial beneficiaries of the process. Two key factors contributing to these inequitable arrangements are gender bias based on deeply ingrained cultural norms and the highly informal agricultural economy.

Since agriculture accounts for approximately 32% of Afghanistan's licit gross domestic product, systemic intervention to increase productivity through changes in the organization of production – including the introduction of new technologies – is necessary for creating more viable livelihood alternatives, particularly for women who are most vulnerable in poorer rural communities. However, there is insufficient precise and reliable knowledge about gender relations in agricultural production and the potential for women to assume a more central role. The key question guiding this research was: *How can the systemic barriers to gender mainstreaming in agricultural production be accounted for, overcome, or neutralized through increased productivity in agricultural production?*

This research utilizes the notion of innovation consistent with Schumpeter's broad definition to include the introduction of a new good, introduction of a new method of production, opening of a new market, conquest of a new source of supply of raw materials or part-manufactured goods, and implementation of a new form of organization.⁴ Schumpeter does not make reference to gender in his definition, though arguably he might have done had he focused on innovation in agricultural production in a development context. If the emphasis in innovation is on value addition and wealth generation in a given context, then innovation needs to be defined based on local geography, gender relations, and other local factors, which manifest themselves as institutions, or structuring phenomena.⁵

2 Samson, 2006. Gender and Science, Technology, and Innovation. Draft discussion paper available through IDRC (Ottawa).

3 World Bank (2007): World Development Report 2008 (Washington D.C.: World Bank).

UNIFEM (2008): Afghanistan Fact Sheet 2008, available at: <http://afghanistan.unifem.org/media/pubs/08/factsheet.html>

4 Schumpeter, J. (1934). *The Theory of Economic Development*. (Cambridge: Harvard University Press; New York: Oxford University Press [1961]), first published in German in 1912.

5 Blake, M. and S. Hanson (2005). Rethinking innovation: Context and gender. *Environment and Planning A* 37: 681-701.

For this research, *institutions* are thus defined as structuring phenomena manifest at different levels of inter-relation, territorial scales of governance, and in different spheres of human activity.⁶ Further, institutions are viewed as a wide spectrum of structures ranging from social and traditional to societal and formal, which collectively give character to the mode of governance of a community of actors.⁷ The approach for this research is consistent with what has been suggested for innovation system research in a development context.⁸ The added contribution of this research is the application of the innovation systems frame of analysis to Afghanistan as a mainly agrarian economy struggling to emerge from three decades of war and destruction.

The three value chains were mapped and documented as focal components of the national system of agricultural innovation in Afghanistan. The mapping was also used to examine two sets of constraints, and to suggest remedial action through policy and donor-aided programs to address them. The first set, organizational constraints, was seen as influencing gender balance in the process of introducing basic import substitution measures through technology transfer, extension, and other measures such as rural microfinance. The second set, institutional constraints, was viewed as influencing macro-measures aimed at reducing the quantitative and qualitative gender gaps in agriculture-based production.

The work on the first set of constraints was carried out through an examination of the policy process for reviving agricultural production in Afghanistan since 2002, the impact of these policies based on the information available from secondary sources, and the assessment of the impact on women based on interviews with key informants from the sector. Analysis was carried out to reveal path dependency, the pace of change, and the evolution of the activities, roles, and relationships within the innovation system as observed through the three value chains. The work on the second set of constraints consisted of taking an inventory of formal and informal institutions that structure the agriculture sector including the allocation of gender roles. The inventoried institutions were then assessed for significance based on the typology of institutions outlined in the Figure 1 to determine entry points for policy intervention to effect institutional change.⁹

The next section outlines the goal and the objectives for this study. Section 4 provides more specific details on the methodology employed and the relevance of the innovation systems approach as a means to investigate the potential for technological advance and innovation in agricultural production in Afghanistan. Particular attention is paid to gender relations. Section 5 provides the key findings from this research while Section 6 concludes with a series of recommendations for policy and future research.

6 Parto, S. (2005). Economic Activity and Institutions: Taking Stock. *Journal of Economic Issues*, 39 (1): 21-52.

7 See, for example, Schotter, A. (1981): *The Economic Theory of Social Institutions* (New York: Cambridge University Press); Williamson, O. E. (1985): *The Economic Institutions of Capitalism* (New York: Free Press); North, D.C. (1990): *Institutions, Institutional Change and Economic Performance* (New York: Cambridge University Press); and Nelson, R.R. and B.N. Sampat (2001): Making Sense of Institutions as a Factor Shaping Economic Performance, *Journal of Economic Behavior and Organization*, 44: 31-54.

8 See, for example, OECD (1997): *National Innovation Systems* (Paris: OECD Publications); Mytelka, L. and K. Smith (2002): Policy Learning and Innovation Theory: An Interactive and Co-Evolving Process, *Research Policy*, 31: 1467-1479; and Hall, A.J., N.G. Clark, R.V. Sulaiman, and S. Taylor (2002): Institutional learning through technical projects: Horticultural technology R&D systems in India, *The International Journal of Technology Management and Sustainable Development*, 1(1): 25-39.

9 See Parto (2005), above, and Parto, S. (2008). Innovation and Economic Activity: Understanding the Role of Clusters in Industrializing Economies. *Journal of Economic Issues*, 42(4): 1005-1035.

3. Goal and Objectives

The goal for this research has two main components. First, to establish the extent to which women contribute to social and economic value-adding activities in the agriculture sector based on current incentives, linkages, habits, practices, routines, technologies, and policies. Second, to identify the pathways through which intervention in the current arrangements is likely to have the desired impact of mainstreaming women in agricultural innovation while increasing economic output. Using a case study approach, data from primary and secondary sources were analyzed to provide, as accurately as possible, an assessment of the roles of the actors and the factors that constitute the agricultural innovation system in the three value chains. The research was aimed at addressing the following objectives:

Objective 1: Map and document the agricultural innovation system in the three value chains of grape/raisin, almond, and saffron.

Objective 2: Examine gender dynamics in the three value chains to identify the impediments to greater involvement of women in the full strata of production stages from the farm to the market.

Objective 3: Identify opportunities for systemic intervention to facilitate increased productivity and gender balance in the three value chains.

Objective 4: Compile further research and policy options aimed at gender mainstreaming in agricultural production.

4. Methodology

The mapping and the analysis of the available and gathered data focused on value-adding, agriculture-based activities and decision-making processes that involved, or offered a potential to involve women while meeting economic objectives. Further, this research investigated the impediments to, and the potential for, developing gender mainstreaming strategies based on current arrangements in the three value chains.

The *innovation system approach* draws attention to the learning, change, adaptability, and resilience of a system of production. The framework emphasizes the importance of the institutional context and how, collectively, institutions govern the actions of the actors in a given (delineated) system of production. Put differently, the innovation system approach views the emergence of change and novelty as a product of how actors inter-relate in their institutional context. Viewed in this light, institutions have relative permanency and longevity and are manifest as a continuous spectrum consisting of formal, tangible entities (e.g., banks, government agencies, courts) at one end and less formal / traditional, intangible phenomena (e.g., customs, norms, and values) at the other. The full spectrum may be depicted as in Figure 1.

The *constitutive*, *regulative*, and *associative* institutions were identified through a review of secondary data and analysis of interviews with key informants. Preliminary information on the *cognitive* and *behavioral* institutions was collected through interviews and focus group discussions.

The application of the innovation system framework in conjunction with the typology in Figure 1 was based on the following two key assumptions. First, as circumstances change and as actors learn, roles evolve, new institutions (both formal and informal) can emerge while older institutions can undergo transformation. Second, the relative importance of actors is time- and context-specific and can change as a result of changes exogenous to the actors' immediate operating environments.

Behavioral	Cognitive	Associative	Regulative	Constitutive
Institutions as standardized (recognizable) social habits – manifest in deeply ingrained behavior of individuals and groups as reflections of social norms	Institutions as mental models and constructs or definitions, based on values and embedded in culture – aspired to by individuals and groups	Institutions as mechanisms facilitating prescribed or privileged interaction among different private and public interests – manifest in activities of groups of individuals	Institutions as prescriptions and proscriptions – manifest as the immediate boundaries of action by individuals and groups	Institutions setting the bounds of social relations – manifest as the ultimate boundaries of action by individuals and groups
<div style="display: flex; justify-content: space-between; align-items: center;"> Traditional / Informal; Social Formal; Societal </div>				

In data gathering, particular attention was paid to the institutions through which the agricultural production system has been traditionally governed. Equally, inventory was taken of the structural changes that have been initiated to revive the agriculture sector since 2001. Much of the data utilized for this part of the study was from secondary sources and the product of earlier and ongoing research. This information was supplemented (in the case of the saffron value chain) with additional interviews with key informants and focus group meetings with farmers to qualitatively explore the dynamics of traditional institutions and the changes, if any, due to the structural changes introduced since 2001.

5. The Value Chains

5.1 Grape/Raisin Value Chain

10 Altaï Consulting (2004). Market Sector Assessment in Horticulture - Identification of Business Opportunities, available at: <http://altaiconsulting.com/horticulture-reports.html>.

While 20-30% of the total crop production is historically domestically consumed, large volumes are exported in fresh or dried form.¹¹ Grapes earn Afghanistan around \$15 million in official exports, representing around 40% of all fresh fruit export earnings, and raisins are Afghanistan's single most important export, earning around \$100 million, equivalent to around 40% of dried fruit and nut exports.¹² These figures are likely to understate exports considerably, as trade with Afghanistan's regional partners goes largely unrecorded. Due to lack of a cold chain, fresh grapes are rarely exported beyond Pakistan, India and Iran. Raisins, however, are much less perishable and have the potential to be more widely exported. In 1973 Afghanistan was the world's third largest exporter of raisins behind Turkey and Greece, even exporting 770 metric tons to the demanding UK market.¹³

Afghanistan's position as a fresh grape exporter is currently weak, representing just 0.1% of the world volumes. Raisin exports remain strong though production quality requirements in the developed world have exceeded Afghan capabilities. Currently the majority of Afghan raisins are exported to Russia (35%), Pakistan (34%) and India (21%). For a country so often at the bottom of indicator lists it is surprising to see that Afghanistan as the world's seventh largest exporter of raisins, responsible for 3.4% of the world's traded volume.¹⁴ The raisin value chain is recognized as a very attractive development opportunity, with interventions offering high-income potential in the short term.¹⁵

5.1.1 Women and Grape/Raisin Value Chain

The raisin value chain has one fundamental activity that involves women, that of sorting of raisins to remove bad raisins or debris. This may be accompanied by other tasks such as packaging the raisins. Sorting occurs either in the *kishmishkhane* (grape drying house), at home, at the bazaar, or the *kishmishpaki* (raisin cleaning operation). This work is given to women by the male actors in the supply chain as it involves minimal lifting and minimal interaction with other (male) supply chain actors. Tasks involving moving heavy volumes of grapes or boxes of raisins are undertaken by men. The value of the work is below men's salary threshold, and thus is left to women to perform. The *kishmishpakis* charge around \$25 to clean a metric ton of raisins, which allows them to pay the female staff no more than around \$80 to \$140 per month.¹⁶ In the *kishmishkhane*, at home or the bazaar the female laborers are likely relatives of the farmer or wholesaler, in which case they work for little or no money.

The place of women in the grape/raisin value chain is subject to a number of factors. First, women do not generally get involved in the harvesting or hauling of grapes and raisins. As such they are physically separated from decision making on sale of the product and decision making on marketing. Second, women are isolated from the supply chain actors around them. Decisions on deals with buyers are always made by men, partly because of real/perceived illiteracy or innumeracy of the women. This results in very low visibility of the women in the value chain and lack of access by women to information on the dynamics of the supply chain and the various available extension services at different stages of production including inputs, processing, and transportation. Third, unlike other fruit exports, the bulk raisin export industry has come to rely on a particular and expensive processing equipment. Women are less likely to have the money to purchase expensive equipment and thus are further prevented from breaking into the trading stage of the value chain.

11 Ghafor, A. (1974). *Prospects for the Development of Grape Production and Marketing in Afghanistan*. (Kabul: USAID).

12 Central Statistical Office (2009), available at: <http://www.cso.gov.af/index.html> and UN Comtrade (2009), available at: <http://comtrade.un.org/db/>.

13 Ghafor, A. (1974).

14 UN Comtrade (2009).

15 Maani, R. (2003). *Prioritizing Export Opportunities for Horticulture in Afghanistan* (Davis: University of California).

16 Altai Consulting (2004).

Most of the focus in the Afghan grape and raisin value chain has been on the horticultural activities in the grape portion of the value chain.¹⁷ There have been interventions aimed at improvement in *aftabi* and *kishmish* drying processes, industrial cleaning, and high-value market linking, though very few have had a stated gender focus.

5.2 Almond Value Chain

Almonds are native to Afghanistan, and come in many varieties of generally high quality. They have been commercially exported for decades and are one of Afghanistan's main sources of agricultural revenue. The major production locations are in Parwan, Balkh, Kunduz, and Samangan provinces of the North and Kandahar and Uruzgan provinces in the South.

According to interviews with officials from the Ministry of Rural Rehabilitation and Development (MRRD) Afghanistan produced an estimated 15,000 metric tons of almonds in 2008/09. It is likely that this figure understates almond production in the South due to the lack of representation of and access to farmers. Almond production was estimated at 42,000 metric tons in 2008, a steep rise compared to 2006, for a cultivated area of 12,000 hectares.¹⁸ This makes Afghanistan the 11th largest producer in the world, with a yield per hectare greater than California. It is more likely that the yield is much lower, but the cultivated area much greater. A survey by the University of California at Davis estimated the cultivated area for almonds in Afghanistan at over 34,000 hectares in Kandahar and the North alone. Other research in Uruzgan province found that production there was likely to be over 20,000 metric tons. Extrapolating this number along the lines of the survey in 2003 by FAO would lead to a national annual production of 70,000 metric tons at the very least.

Global production of almonds is estimated at 1.7 million tons, but much of it is consumed locally. The United States is by far the largest exporter in the world with more than 80% of the world's market. The 56,000 metric tons estimate would make Afghanistan the second largest almond exporter and well ahead of Australia as another major exporter. India is the largest importer of in-shell almonds, while shelled almonds are more equally purchased around the world with Western Europe (Germany, Spain, France, Italy) representing about 70% of the global imports.¹⁹ Together, India and Pakistan import about 50% of Afghanistan's total almond exports.²⁰ Exports to India are partly channeled through Pakistan, however, and according to Afghan traders a significant part of in-shell almonds is exported to India after being shelled in Pakistan.

5.2.1 Women in Almond Value Chain

Women are involved extensively in the early stages of the almond value chain. They water and weed the orchards, harvest, clean and dry, and pack the almonds in large sacks in the orchards. After that stage female involvement is effectively limited to being hired as manual laborers by large traders to shell almonds by hand. There are a few women-owned and operated dried-fruits-and-nuts trading companies, mainly in and around Kabul. These companies hire female sales agents and village

17 These activities are dominated by USAID-funded programs, e.g., IDEA-NEW, AVIPA, CHAMP, ASAP (successor to RAMP), ADP and ALP. The World Bank's HLP and the EU's PAL also make significant contributions. Activities are often focused on introducing trellising, vineyard management (e.g., fertilizer application, gibberellic acid application, pest management), harvesting and post-harvest procedural improvements, market linking and even secondary industries such as grape juice production. The Afghan Women's Business Council supports the ASAP project by grading, sorting and packing fruits (including grapes) at the Badam Bagh Pack House.

18 See FAO (2004). *Afghanistan: Survey of the Horticulture Sector – 2003* (Rome: FAO).

19 UN Comtrade (2009).

20 Central Statistical Office (2009).

traders to purchase almonds directly from female producers. Some of these female traders are even involved at the wholesale, processing, and export stage of the value chain. Overall female participation in trading remains very small, however, even as the number of female village traders and sales agents is increasing. Men in the almond value chain, just as in the raisin chain, act as the link between the household and market, purchasing inputs, selling almonds to middlemen/village-level traders, or traveling to the local market to sell. Women's roles in the almond value chain are limited by more or less the same constraints as in the grape/raisin value chain. The key constraint is the restrictive social norms that limit women's access to services, information, transportation, and financing.

The Afghan almond sector has been researched and assisted thoroughly through interventions from the European Union-funded Perennial Horticulture Development Program (PHDP), for example, to classify and experiment with almond varieties through the establishment of a national collection system, particularly in Kunduz and Mazar-e Sharif, and a network of horticultural research and training farms throughout the country. Other research interventions have been initiated by Roots of Peace and MAIL.

The main focus for interventions in the sector has been to improve the capacity of the nurseries. There are a number of nursery programs through MAIL and in collaborations between MAIL and international donors such as the World Bank, FAO, and USAID. Other areas of intervention include attempts to improve processing and packaging, identifying commercial side products such as almond oil extracted from bitter almonds, and marketing.

5.3 Saffron Value Chain

Apart from its culinary and cosmetics uses saffron has potentially beneficial medical uses as anodyne, antispasmodic, aphrodisiac, diaphoretic, emmenagogue, expectorant, and sedative.²¹ The plant has been used as a folk remedy against scarlet fever, smallpox, colds, insomnia, asthma, tumors, and cancer and its coloring effect has been found in cave artwork from pre-historic communities dating back 50,000 years. Until relatively recently saffron was widely used as a dye in fabrics and wool for carpet weaving. As a spice saffron has been traded for about 5,000 years.²² Today saffron is the most expensive spice and has been compared to gold and opium for its value by weight.

Saffron growing is highly profitable and ecologically suited to the arid growing conditions prevalent in western and northwestern Afghanistan. Saffron is dried stigmas of *crocus sativus*, a type of crocus. The plant does not compete against other crops for irrigation and labor (despite being particularly labor-intensive) as the harvesting time, around 2-3 weeks in October each year, occurs after most other crops have been harvested. The ecology of numerous parts of Afghanistan, particularly in flatter and more arid areas with some access to water such as Herat, are suitable for planting saffron. During the harvesting the flowers are hand picked and carried off to have their stigmas removed and dried to produce saffron.

The plant requires minimal fertilization. Throughout its growing process it needs two irrigations, a great advantage in a geographic area suffering from a general scarcity of water particularly for the many smallholding farmers. In addition, growing saffron does not carry with it the burden of sin,

21 Abdulaev (2002). Cancer chemopreventive and tumoricidal properties of saffron (*Crocus sativus* L.). *Exp Biology and Medicine*, 227(1): 20-25.

22 International Center for Agricultural Research in Dry Areas (ICARDA) (2007). Caravan (24), June 2007, available at: http://www.icarda.org/Publications/Caravan/Caravan24/Focus_4.htm

often associated with growing poppies and marijuana, by most interpreters of Islamic teachings. Producing a kilogram of dried saffron requires 150,000 to 170,000 flowers and around 400 hours of labor. According to the farmers in Herat, a *jerib* of land (one fifth of a hectare or 2,000 square meters) yields opium worth \$400-600, while the same land area can produce 1-3 Kilograms of saffron worth \$2,000-3,000 per Kilogram. Annual global saffron production is around 300 tons, of which Iran is estimated to produce between 90%-94%. High quality packaged saffron retails for as much as \$11,000 per kilogram or higher in Western markets while recent years have witnessed a surge in the demand.²³ One US-based trader estimates the demand in the United States alone at 20 tons per year at minimum.²⁴

Saffron production has increased significantly over the past few years in Afghanistan. There are no reliable official records of Afghanistan's total saffron exports at Afghanistan's Central Statistics Office, the Export Promotion Agency of Afghanistan, or Afghanistan Investment Support Agency.²⁵ The Directorate of MAIL in Herat estimates the production of saffron for 2009 at over 900 kilograms. Limited quantities of saffron have also been produced in Maidan Wardak, Logar, Kunduz and a number of other provinces, largely as an experimental crop. Herat and the other western provinces remain the main saffron growing regions of Afghanistan.

Globally, Germany, Italy, the United States, Switzerland, UK, and France are the largest saffron importing countries. The major producers of saffron in the world are Iran, Spain, India, Greece, Azerbaijan, Morocco, and Italy.²⁶ A senior official of the Directorate of MAIL in Herat estimated the area of land under saffron cultivation at around 212 hectares, involving over 1,000 farmers and with the potential to produce between 50 to 70 tons of saffron. Experts, government officials, and saffron traders all claim that Afghan saffron is of the highest quality with a potential to make significant inroads into the international market. According to the Danish Committee for Aid to Afghan Refugees (DACAAR), a 2007 project survey in Herat province showed that over 80% of farmers grow at least small quantities of saffron every year for household use. The survey also reported that about 1,100 farmers in Afghanistan grew saffron.²⁷

According to the main traders in Herat and officials from MAIL and NGO officials interviewed for this study, Afghan processed saffron is exported at a price of around \$5,500 to countries such as Iran, India, United Arab Emirates, Pakistan, United States, and Europe. Exports of Afghan saffron to the American and European markets takes place through transit locations such as Iran or Dubai, which usually brand the product as originating from those countries.

5.3.1 Women in Saffron Value Chain

A large amount of the work to produce saffron, up to 80% according to estimates provided by key informants interviewed for this study, is done by women who help in land preparation and planting, harvesting the flowers, extracting the saffron from the flowers, batching, drying, and sometimes packing. Recognizing this, numerous donor-funded projects are designed to create an enabling

23 See DACAAR (2007). Wholesale and retail Saffron price estimates vary between US\$1,100 and US\$11,000

24 Email exchange with a saffron trader based in San Francisco on January 16, 2010.

25 Major saffron traders shy away from reporting the volumes of their trade and prefer to conduct business transactions informally and without much publicity via "saffron carriers" who transport the finished product in bulk for sale in international markets.

26 Spice Trade, available at: <http://www.spice-trade.com/saffron.htm>.

27 DACAAR (2007).

environment for women to receive adequate compensation for their labor. As of 2007, DACAAR claims to have trained over 250 women in improved production and processing methods. Also, DACAAR has held a series of women's meetings and field days, and established community-level, women-only facilities for drying saffron.²⁸

Much work has been done in recent years to establish saffron as stable crop in Afghanistan. The Saffron Programme by the International Center for Agricultural Research in the Dry Areas (ICARDA) has been funded by the United Kingdom's Department for International Development (DfID) and is run jointly with MAIL, the Research for Alternative Livelihood Fund (RALF) Programme by DACAAR, Washington State University, and Catholic Relief Services. The Programme has engaged the Ministry of Counter Narcotics, FAO, other NGOs, and donor agencies in providing direct assistance to the farmers and organizing workshops and other forums.

In the course of this study, two women's producer associations from Herat who had been assisted by DACAAR were interviewed on a number of occasions about saffron production in general and barriers to women's attempts to move up the value chain in particular. The *Association of Women Saffron Producers of Pashtun Zarghoon*, founded in 2005, has 121 registered female members and one male member. The Association has received financial assistance from the World Bank and saffron bulbs, dryers, and an electric generator from DACAAR. DACAAR also provides guidance and training in saffron production. All female heads of the Pashtun Zarghoon Association are illiterate except for two who have some reading and writing skills acquired at the mosque. The second association, *Association of Women Saffron Producers of Ghoryan*, was founded in 2007 and has 72 permanent members, 25 temporary members, and non-member female associates. The Ghoryan Association has received bulbs, dryers, office supply and furniture, packaging fund, and training from the Italian Provincial Reconstruction Team (PRT), ICARDA, USAID/ASMED, the World Bank, and Sanayee Development Organization (SDO).

The relative success of the two women's associations are to a large extent attributable to the work of DACAAR which has provided the bulbs and training, and conducted research in cultivation methods, processing, and marketing of saffron. It has also facilitated the founding of four grower associations (including the two associations described above), the establishment of links between the associations and international buyers, national conferences on saffron in Afghanistan, and the creation of the first quality control laboratory for saffron in Herat, now run by the provincial department of MAIL. A conference in 2006 resulted in the creation of the National Saffron Coordination and Support Committee, led by MAIL, to coordinate the work of different ministries and research institutions on issues such as production methods, quality standards, import and export regulation, and marketing. DACAAR's work on the sector since 1998 has been the only consistent effort to mainstream saffron production and women's role as a key part of that process.

In a similar vein, ICARDA/DACAAR provides a comprehensive list of problems and constraints confronted by the nascent sector (Box 1).²⁹ This manual for saffron production goes beyond its primary intent of being a "how-to" guide by speaking authoritatively and based on many years of experience to a number of issues relevant to the sector including the suitability of the crop to the ecological conditions in Afghanistan, international product standards, marketing strategies, priorities for the development of the sector, input costs and revenues from saffron production, and relatively current (2007) prices. A major omission in this valuable resource book is a discussion of the governance of the saffron chain, the inequities of which are likely to frustrate initiatives by women to move up the value chain and by the government and donor agencies to strengthen the sector in a gender-equitable manner.

28 ICARDA / DACAAR (2008). "Saffron Manual for Afghanistan". Available at: www.icarda.org/Ralfweb/PDFs/SaffronManualForAfghanistan.pdf

29 ICARDA/DACAAR (2008).

Box 1: Summary of key problems and constraints for saffron farmers in Afghanistan

<p>Marketing of Afghan product</p> <ul style="list-style-type: none"> - Afghan saffron is unrecognized and unbranded in the market; most goes through Iranian channels. However, there is strong interest amongst international buyers (particularly Holland, USA, Australia and Italy) to procure Afghan saffron, provided a guarantee of quality can be assured. - Lack of quality assurances for international buyers (no ISO compliance) - Lack of knowledge of market dynamics, pricing structures and marketing approaches (strong need for detailed study) - Lack of skills in marketing - Lack of competition amongst Afghan exporters <p>Lack of production capacity</p> <ul style="list-style-type: none"> - Producers need to be organized in local, provincial and national associations to improve their access to technical support - Lack of regulation on corm imports. Farmers have no training to identify good quality leaving them vulnerable to purchasing bad quality corms. Without this basic training, growing saffron becomes high risk investment as farmers may lose their initial investment. - High prices and low availability of corm. The increasing interest in corm has led to an artificial increase in corm prices. Current investments needed are around USD \$5,000 per hectare which is prohibitively expensive for many farmers. 'Corm banks' and subsidized corm schemes should be used to improve this situation. - Lack of government support. Some organizations are importing corm from Iran rather than purchasing from Afghan farmers at higher prices - Because of the strong demand for corm, some farmers are now making short term gains by producing corm rather than producing saffron. This is impacting the horizontal expansion of the industry, which, if left unregulated, may lead to reductions in overall production if farmers remain untrained on corm quality. - Farmers that are 'given' corm by some organizations may not be trained sufficiently in its cultivation, particularly in bed preparation (raised beds), row spacing, timely irrigation or adequate fertilization. - More training is needed for farmers in the area of post-harvest management. This is a key issue, as most processing and drying is conducted at a village level. <p>Inequitable Chain Governance</p> <ul style="list-style-type: none"> - The main traders tend to consciously undermine initiatives by women's associations and smaller producers to move up the value chain by creating conditions for unfair competition. 	<p>Lack of industry standards</p> <ul style="list-style-type: none"> - Farmers are not aware of the international standards for quality and hygiene required for selling produce directly to international customers. - A grading system based on quality needs to be established - Unless quality standards are addressed quickly the private sector is unlikely to move into Afghan production and establish itself. <p>Lack of local storage or packaging capacity</p> <ul style="list-style-type: none"> - Lack of packaging equipment for organizing consignments to international markets. It has been proven that prices fluctuate according to the season – for instance, prices are highest just prior to harvest (up to USD\$ 8,000 per kilogram). Without adequate packaging to store saffron or package it in small attractive packages, local exporters cannot add maximum value to the final product or take advantage of price speculation. - Key problems cited are the expense of industrial packaging machines, capable of producing the necessary packages needed for the western markets. Partnerships may need to be developed with donors and the private sector to establish a packaging factory. Current production levels are likely to be too small for localized investment. <p>Coordination between all industry stakeholders</p> <ul style="list-style-type: none"> - More coordination is needed between all value chain actors in the saffron industry. Current market outlooks show that foreign companies are beginning private sector operations within Herat, and that China is now moving into saffron production. It is clear that the Afghan industry will unlikely be able to compete in this environment unless it organizes itself in a relatively short timeframe. First we should establish a provincial and national level Saffron Promotional Centre and organize the industry into more associations. Secondly, Afghanistan should coordinate regular meetings between interested stakeholder groups and finally, coordination should be established between provincial and National level coordination committees. <p>Shortage of women extension specialists</p> <ul style="list-style-type: none"> - Promoting saffron is a practical way to empower women in a conservative society, building on their skills and traditional roles, to increase incomes and encourage self-reliance. There are insufficient female extension workers to work with women.
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Source: Adapted from ICARDA / DACAAR (2008)

6. Key Findings

6.1 Evaluation of Grape/Raisin Value Chain

Considering the importance of the raisin value chain to Afghanistan, interventions to develop and strengthen this sector appear to have been seconded to interventions in the more glamorous horticultural value chains. This is unfortunate. Although the value chain is very inefficient, the bulk export of medium-quality *aftabi* raisins to Russia is Afghanistan's biggest (legitimate) industry, and employer of large number of women. Interventions in the bulk *aftabi* raisin market and the specialty *kishmish* raisin markets could substantially improve Afghanistan's position in the global market. No interventions to date have a strong women's component by design, except perhaps two small but significant interventions by MercyCorps' Global Development Alliance (GDA) and MEDA's Afghan Pride Association (APA).

GDA operates in Kandahar and Parwan provinces to support grape, raisin, and pomegranate value chains. It has distributed locally woven mats to farmers in Parwan for drying grapes. The production of the mats, which last for three seasons, has proven to have a commercial potential with strong female involvement.³⁰ APA is a fruit and nut processing centre operated by 200 women. The center caters to high-end hotels and owns two retail shops. Produce is purchased directly from female producers, although they sometimes source additional produce from the wholesale market. APA is also setting up local collection and drying centers, equipped with solar dryers to produce raisins without any dust or dirt.³¹

GDA's mat-weaving scheme is an exciting auxiliary support project in the grape / raisin value chain and could be expanded in conjunction with other raisin projects. The specialty market is a very small and competitive market, requiring substantial and sustained program support to link women's groups with hotels or overseas buyers. Some women employed in the specialty market (like the women through APA), are likely to experience higher degrees of empowerment and decision-making responsibility than employees in the bulk raisin processing market. However, to build on the gains made so far in mainstreaming women in the grape / raisin value chain, much more needs to be done to improve the competitiveness, market linkages, and the size of the markets for both grapes and raisins through sustained and innovative interventions such as GDA and APA.

Support in processing in the grape / raisin value chain could be provided through renovating closed *kishmishpakis* or identifying *kishmishpakis* with entrepreneurial managers and providing them with mentors to improve quality. Financial support could be offered for new equipment, particularly hot water washing systems and scanners for detecting metal in the raisins, together with employee skills training and upgrading to work towards phytosanitary and HACCP certificates.³² Efforts should be made to work with the Afghanistan Chamber of Commerce and Industries (ACCI) and the Export Promotion Agency of Afghanistan (EPA) to certify production and identify new markets. Improvements in *kishmishpaki* operations are likely to lead to creating higher value and higher volume markets with more opportunities to employ women. Innovative interventions such as providing mats for grape drying will facilitate cleaner production methods while creating a demand for the mats woven by women and using local material. The drying mats could also be used in almond production.

30 New York Times (2010).

31 MEDA (2011). *Our Work*, Available at: <http://www.meda.org/web/our-work/current-programs-and-work>.

32 Many European importers require "Hazards Analysis and Critical Control Points" (HACCP) certificate from their suppliers.

6.2 Evaluation Almond Value Chain

The almond sector has been the focus of concerted efforts by the international donors to improve the quality and quantity of production, including a large number of interventions on a very large scale. The bulk of these interventions can be characterized as classic agricultural extension programming with a focus on inputs distribution and supply-driven chains without taking proper account of market demand. The dominant model for agricultural extension work in horticulture – demonstration orchards – has proven to be very slow in spreading new techniques and cultures. Much of this is the result of the focus on dispersing large amounts of cash in relatively short timeframes and the inability of programs to truly root themselves in the recipient farmer communities. The result is that while production has indeed expanded significantly, quality has remained largely unchanged. That it can be done differently, however, is proven by the recent redesign of World Bank's Horticulture and Livestock Program (HLP), which was implemented through changing the implementers and resulting in significant increases not only in productivity but also in the price difference of HLP assisted crops over market prices.³³

There remain a number of significant challenges for the almond value chain, however. Bitter almonds are still being mixed with sweet ones while the differences between almond varieties remain unclear and inferior varieties continue to be widely cultivated. Afghan farmers remain highly conservative while traders seem unwilling to challenge farmers to change their ways. Afghanistan thus remains unable to contend in the high-premium export markets. Packaging, an important aspect in marketing processed agricultural products, remains a major challenge for all Afghan producers including almond producers. However, without improving the quality of the almonds, no amount of sophisticated packaging is going to overcome low quality. Indeed, there is not much point in investing in packaging and high-grade cleaning and shelling equipment if the quality of the supplied almond is not consistent and cannot be guaranteed. In addition, interventions to mechanize almond processing appear to have been inadequately implemented. To illustrate, the three shelling machines in Kabul, Mazar-e Sharif, and Kandahar imported under RAMP did not work because they were unsuitable for Afghan almond varieties. The sorting / grading machines that were imported, however, are being used extensively.

The almond sector still stands out as one of the high-potential sectors of Afghanistan. PHDP has proven rather successful in building up a sustainable, high-quality nursery structure and is making progress according to plan where the introduction of true-to-type almond varieties into this structure is concerned. If organizations like Afghan National Nursery Growers' Organization (ANNGO) and Afghanistan Almond Industry Development Organization (AAIDO) really do take hold in the Afghan almond sector and continue to expand, more modern practices will have a higher likelihood of becoming institutionalized. Several large traders have been able to expand their operations while capturing higher premiums, particularly those affiliated to AAIDO. Still, without a far greater push towards reliable quality, efforts to establish linkages to foreign markets will likely be frustrated.

Women-oriented activities are scarce in the almond value chain and exist only at the small scale. The APA sold no more than 350 kilograms of almonds sourced from women in 2009. HLP has had some success with women's involvement in the more liberal northern provinces of Afghanistan. It has been able to mobilize 382 women and men in producer groups, of which 40% are female. Through Root of Peace, HLP provides horticultural extension services to these groups with over a hundred extension

33 World Bank (2011). *Afghanistan: Horticulture and Livestock Productivity Project*, available at: <http://www.worldbank.org.af/external/default/main?pagePK=64027221&piPK=64027220&theSitePK=305985&menuPK=306022&Projectid=P098256>.

34 World Bank (2011).

workers, of which over 15% are female. Deploying the latter is proving difficult, however, because older women tend to have no education while young women have no freedom of movement.³⁴

6.3 Evaluation of Saffron Value Chain

Women's role in the saffron value chain weakens further up the value chain and as the work performed requires more investment capital, business relations, and culturally sanctioned freedom to move and maneuver in a market environment. This starts at the stage when the saffron is to be packaged and/or branded and is ready to be marketed and sold. All three major saffron businesses in Herat belong to and are operated by men. This is the stage where the balance of power in chain governance shifts toward the men who own large saffron trading enterprises. Women are consciously barred by the powerful saffron oligopoly from entering the market and competing fairly.

Aside from being absent at higher stages of the saffron value chain, women also get paid less than men for the same work. For instance, the owner and CEO of one of the saffron companies in Herat reported to have paid women 20% less than the men for processing saffron flowers in 2008 despite the fact that women generally did a better job than men. The greatest case of inequity can be observed in the ratio of work performed versus the income accrued to men and women from the value-adding activities. While the general consensus among those interviewed was that women do most of the difficult work throughout the value chain, the unstated fact was that they shared significantly less of the value generated through their hard work.

Saffron production has a proven potential to create more, and relatively lucrative, jobs for women at home and away from home even when they do not own land. Those who own farmland can generate handsome profits from growing saffron. Saffron production requires fewer labor hours than most crops and hence provides an opportunity for women to become involved in other income generating activities such as weaving carpets and tailoring.

7. Agricultural Innovation, Gender, and Institutions

This section provides a summary of interventions and innovations for each of the three value chains.

7.1 Grape/Raisin

Most of the focus in the Afghan grape and raisin value chain interventions has been on the horticultural activities in the grape portion of the value chain. The relatively fewer intervention programs relating to raisin production include *aftabi* drying, *kishmish* drying, industrial cleaning, and high-value market linking. Very few of these interventions in grape and raisin production have had a stated gender focus. Several NGOs have worked to improve the *aftabi* drying process with the interventions typically aiming to increase hygiene in production by drying fresh grapes on paper sheets or woven mats, for example, instead of on uncovered ground. The MercyCorps' *Global Development Alliance* (GDA) project, which operates in Kandahar and Parwan provinces, supports grape, raisin and pomegranate value chains, has distributed locally woven mats to farmers in Parwan for grape drying. The production of the mats, which can be used for three seasons, offers an intervention potential for job creation and income generating opportunities for women.

35 IRIN (2003). *Women's raisin factory provides jobs in conservative south*, available at: <http://irinnews.org/PrintReport.aspx?ReportID=21385>

In 2003 the Central Asian Development Group rehabilitated a raisin cleaning operation in Kandahar and managed to export around 450 metric tons of raisins to the European markets.³⁵ GDA has also invested in similar projects in Bagram near Kabul, making improvements to the floors, overall factory cleanliness, lighting, and adding more effective washing operations. The products from this plant meet the hygiene standards for exports to the United Kingdom. The Tabasom factory in Kabul has installed similar operations in partnership with a Danish company though doubts have been raised about how effectively these operations are being utilized.³⁶ USAID's Alternative Development Program has persistently tried to export fresh and dried fruits through the Kandahar Fresh and Dried Fruits Associations and managed to export small quantities of raisins to India.³⁷

MercyCorps' GDA programme appears to have been the most successful raisin market-linking program and has managed to link up the Parwan farmers with the female mat producers and organize them into co-operatives. The co-operatives get their raisins cleaned at the Bagram factory with support from GDA. 40 metric tons per year of the finished product is sold to a British food manufacturer, Fullwell Mills, for further packaging and distribution in the British market. There is an ongoing drive to get the co-operatives certified by FLO-CERT (Fairtrade). Also, the MEDA Trust has been supporting the Afghan Pride Association, a fruit and nut processing center which caters to high-end hotels in Kabul and owns two retail shops.³⁸

7.2 Almond

The almond sector has been researched thoroughly. The EU-funded Perennial Horticulture Development Program (PHDP) has been working on classifying and experimenting with different varieties of almond through the establishment of a national collection system centered on Kunduz and Mazar and a network of horticultural research and training farms throughout the country. The University of California at Davis, contracted mostly through Roots of Peace, has a comprehensive series of publications on best practices in almond production in Afghanistan. Roots of Peace has just published a comprehensive catalogue of almond varieties in Afghanistan while MAIL has research and demonstration farms around Afghanistan.

The focus in all these initiatives has been improving the quality of nurseries. While the majority of this work is carried out through the classic supply-driven approach and based on subsidized input distribution, efforts are being made to establish private nurseries to operate on a demand-driven basis. The MAIL/PHDP project, ANNGO, for example, is a network of private nurseries collaborating on spreading the true-to-type almond varieties among Afghan orchards. The World Bank's HLP, also integrated into MAIL, is organizing its nursery efforts in a similar manner. AAIDO is working on the integration of nurseries into its almond production/marketing structure, seeking out nurseries to spread their approach to production aimed at increasing quality without true-to-type ambitions.

The core objective for most USAID supported programs, e.g. IDEA-NEW, AVIPA, CHAMP, ASAP, and RAMP has been to establish basic production systems. In many of these initiatives Roots of Peace is the implementer of the horticulture component. HLP is establishing orchards on a large scale, mostly in the Northern Provinces. In addition to PHDP, the European Union funds the Project for Alternative Livelihoods (PAL), the only program of its type in East Afghanistan. PAL includes a horticulture improvement component with an innovative focus on beekeeping associations to work alongside orchard producers. The French Embassy is also very active in this field, setting up beekeeping projects that include training, facilitation, and association establishment. All of these programs have an integrated capacity building component through training on demonstration farms. Radio

36 NOWACO (2009). *Joint Venture*. October 2009, available at: http://www.nowaco.com/nyheder/article/joint-venture.html?tx_ttnews%5BbackPid%5D=6&cHash=2a3151e37d

37 Roots of Peace (2007). *Perennial Crop Support Program – Kandahar: Final Report* (Kandahar: Roots of Peace).

38 MEDA (2011).

broadcasts supported by FAO and USAID in different parts of the country have created a forum for engagement between farmers and experts to solve production related problems and to share new ideas.

Some attempts have been made to mechanize the almond shelling process but without much success. Packaging interventions have also been on a similarly small scale. In contrast, Arghand, a women owned and operated organization created through a collaborative venture between international and Afghan women and based in Kandahar, is successfully marketing almond oil and various types of almond oil based soaps and body oils in North America.

AAIDO is arguably the most interesting example of a successful, fully integrated approach to almond production, focused on linked, consecutive and incremental improvements from farming to retail. At the nursery level it operates through a central committee of six selected ANNGO representatives charged with communicating nursery best practices, along with training facilitation. At the farm level it runs a central committee of eight selected farmer association representatives. The core of ANNGO is a group of four representatives from business associations whose mandate is to obtain better quality almonds from the farmers and market these at higher premiums with a focus on exports. The organization includes two associations of women producers from Daykundi and Balkh provinces.

AAIDO has had notable success with reaching out to farmers in the North through various extension activities including information leaflets, working with traders to obtain separated almonds, and reducing bitter almond content by 50%. AAIDO is setting up facilities to collect bitter almonds (for almond oil extraction) from around the country and market them centrally, building on their experience with separating bitter almonds at the farm level. Currently, AAIDO sells bitter almonds to nurseries to grow rootstock. Many organizations are working on market linkages through trade fairs and delegations, most notably through Accelerated Sustainable Agriculture Program (ASAP).

7.3 Saffron

Saffron production has increased significantly over the past few years in Afghanistan. There are no reliable official records of Afghanistan's total saffron exports at Afghanistan's Central Statistics Office, the Export Promotion Agency of Afghanistan, or Afghanistan Investment Support Agency.³⁹ The Directorate of MAIL in Herat estimates the production of saffron for 2009 at over 900 kilograms. Limited quantities of saffron have also been produced in Maidan Wardak, Logar, Kunduz and a number of other provinces, largely as an experimental crop. Herat and the other western provinces remain the main saffron growing regions of Afghanistan. The area of land under saffron cultivation is estimated by MAIL at around 212 hectares, involving over 1,000 farmers and with the potential to produce between 50 to 70 tons of saffron. Experts, government officials, and saffron traders all claim that Afghan saffron is of the highest quality with a potential to make significant inroads into the international market.

Bulbs, smuggled or domestically produced, are distributed by NGOs, the Italian Provincial Reconstruction Team (PRT), and the Directorate of Agriculture in Herat to farmers in limited amounts at no cost in some cases. In other cases the bulb are given to the farmers on the condition that the farmers return the same amount of bulbs to the distributor after extracting some of the multiplied excess bulbs from the ground in four to seven years after the first planting. The returned bulbs are then redistributed to new farmers based on farmers' requests, amount of bulbs available, suitability of the land and environment, and in consultation with village elders and heads of saffron producer

³⁹ Major saffron traders shy away from reporting the volumes of their trade and prefer to conduct business transactions informally and without much publicity via "saffron carriers" who transport the finished product in bulk for sale in international markets.

associations, if in existence. Farmers can receive around 200 kilograms of bulbs for 100 hectares of land or in smaller quantities for less land. Pesticides or herbicides are not typically used in saffron farming.

Trading saffron bulbs has been primarily a men's job in Afghanistan. Women are involved in bulb trade but only as buyers or receivers. Representatives from the Association of Women Saffron Producers of Ghoryan and the Association of Women Saffron Producers of Pashtun Zarghoon, both in Herat and interviewed for this study, said that they have received limited quantities of saffron bulbs from NGOs under the abovementioned conditions. The associations distribute the bulbs among their members for planting on their individual farms. A large amount of the work to produce saffron is done by women who help in land preparation and planting, harvesting the flowers, extracting the saffron from the flowers, batching, drying, and sometimes packaging. Recognizing this, numerous donor-funded projects are designed to create an enabling environment for women to receive adequate compensation for their labor. As of 2007, DACAAR claims to have trained over 250 women in improved production and processing methods. Also, DACAAR has held a series of women's meetings and field days, and established community-level, women-only facilities for drying saffron.⁴⁰

Much work has been done in recent years to establish saffron as a stable crop in Afghanistan. The Saffron Program by ICARDA is run jointly with MAIL, the Research for Alternative Livelihood Fund (RALF) Programme by DACAAR, Washington State University, and Catholic Relief Services. The Program has also engaged the Ministry of Counternarcotics, FAO, other NGOs, and donor agencies in providing direct assistance to the farmers and organizing workshops and other forums.

8. Conclusions and Recommendations

A large portion of raisins, almond, and saffron produced in Afghanistan is likely to continue to be poorly processed or shipped in bulk to other countries for further processing and packaging. In part this is due to a general lack of access to sufficient and adequate storage facilities and production, processing, and transportation infrastructure. The impact of inadequate infrastructure is compounded by other factors such as lack of direct access to global markets, inadequate regulatory framework, poorly functioning ministries and cross-ministerial bodies, and a lack of rule of law and security. The most effective way to minimize the impact from these factors and to ensure cash flow is to export produce and products as quickly and as conveniently possible. This often results in selling insufficiently or inadequately processed produce and unfinished products to intermediary countries for further processing and value-adding activities, the rewards for which go to other countries.⁴¹

For many Afghan producers selling under-processed goods is the most convenient way of capitalizing on their labor and investment without having to worry about the finish and quality of the final product. This is understandable since instituting internationally recognized quality and hygiene standards is a function of having the standards in place and, most importantly, having the standards recognized by the end user in other countries. Such recognition takes time, however, requiring patience, persistence, and longer-term perspectives, which tend not to be features of entrepreneurs operating in conflict situations or international donor programs focused on "exit strategies" in short order. Given this situation, it is realistic to expect that the production sophistication necessary for becoming contenders in the global markets will remain a distant prospect for the overwhelming majority of Afghan producers and exporters. This said, relatively straightforward interventions such as training on separating the different varieties of almond for grading and use, i.e., sweet versus

⁴⁰ ICARDA/DACAAR (2008).

⁴¹ This phenomenon is also observable in carpet making where vast quantities of carpet are shipped, uncut and unwashed, to adjacent countries for further processing and selling at higher prices and as products not originating from Afghanistan.

bitter almonds, grading different types of raisin, and introduction of mechanized drying for saffron can be intensified to generate some value-adding activities in the three value chains examined for this research.

A broader intervention possibility is for the Government of Afghanistan to play a more central role in industrial development by, for example, buying bulk fresh produce from the growers and then adding value through government-run facilities. While this approach may run counter to the current dominant paradigm regarding the role of private sector in the reconstruction of Afghanistan, it is arguably the most effective approach toward instituting the much needed standardization of quality.

Afghan women's role in rural agricultural production needs to be differentiated from other rural value chain studies from around the world. Comparisons of Afghan women in rural production to that of women in Africa, for example, while useful for guiding the general approach to gender mainstreaming, have to be nuanced and contextualized to fit the Afghan conditions, particularly in relation to religious / traditional and renewed sensitivities about women's role in social, economic, and political activities. Such sensitivity does not mean capitulation to the current inequitable conditions for women. Rather, it should lead to concluding that changing cultural norms about women's place in socio-economic activity has to be accompanied with other programmatic measures in awareness raising, education, and regulatory reform. As such, all interventions aimed at removing barriers to increased participation by women in society must have provisions on improving skills training including literacy, empowerment through participation in women's production groups, and mobility by women and among women within and between value chains.

Afghan women play various roles in weeding, watering, harvesting, cleaning, drying, and grading activities within the grape/raisin, almond, and saffron value chains. Their presence and prominence diminishes and almost disappears as one moves up these value chains, however. Women's work in the three value chains, particularly at the low end, is mostly unpaid and, when they do move up the value chain, they are paid lower than men for comparable jobs. At the lower end of these value chains the women's involvement is versatile and flexible, allowing for economically optimal though socially inequitable female labor input which has been pointed to as a key reason for economic productivity in value chains around the world.⁴³

In all three value chains, with some exceptions particularly in the saffron case, all activities and decisions in relation to trading and marketing are carried out exclusively by men. Where women have attempted to contend for roles and spaces higher up on these value chains, counter attempts have been made by the male traders to actively exclude the women. The position of Afghan women in the three value chains broadly reflects women's situation across other rural production arrangements and is commensurate with the persistently disadvantaged position of Afghans in general, ranked 155 on a list of 169 countries on the Gender Inequality Index by UNDP.⁴⁴

Gender inequity in these value chains is a function of land ownership arrangements, initial capital, division of labor within the household, traditions, cultural and religious norms, level of education, and biased and unhealthy market practices by some actors. The combined impact of these factors, manifested as behavioral, cognitive, and constitutive institutions (Figure 1), places women at a significant disadvantage against men, even when women are able to overcome some of the other main barriers such as access to capital or gaining their husbands' approval to work. This situation speaks to the prevalence of the widely held beliefs that govern gender relations throughout Afghanistan with some local structures relating to the place of women in society being stickier than others.

The traditional view of women as mainly homemakers is more visible in the rural parts of the country as compared to urban areas in which some women can work outside of home and supplement the income generated by the male household members. Traditionally men are in control of the accumulated wealth of the family and act as the household's main decision maker. While female household income earners may gain more of a voice in household decision making, the balance of power over the use of household assets remains with men and is legitimated and strengthened by the religious inheritance laws which entitle a woman to half of what a man receives. The possibilities for women to gain a higher degree of independence based on accumulated wealth are thus limited due to this very constitutive structure (Figure 1). Over time, this has resulted in men's possession of most of the land in the family. A number of women from the saffron producing associations in Herat spoke of these factors at length and in terms of their disadvantaged position to profit more from growing saffron.

The dominant cognitive institutions rooted in social, cultural, and religious beliefs also deter women from reaching the markets. Women's unwillingness, fear, or prohibition to freely explore the markets limits their capacity to effectively employ the limited resources they have at their disposal to make a fair profit from their contributions in the three value chains. Even in cases where women have organized themselves as associations, as in the case of saffron, the main decisions are made by the few male members who are husbands to some of the women in the groups. Women have little knowledge of the national and international markets for the products they help grow and process. The vast majority of the women have to go through the male members of their families to sell their produce, buy, or receive input materials. The barriers to women's full participation in economic / entrepreneurial activity is compounded by unchecked prejudices of male-dominated market oligopolies (Box 1) which regulate the market unfavorably for women.⁴⁵

In the absence of a whole host of pre-requisites such as a widely recognized regulatory framework, functioning ministries and cross-ministerial committees, and rule of law and security, it is unrealistic to expect that chain governance and gender issues could be addressed formally and through regulatory channels. Financial independence for women (through access to affordable loans, for example) and consensual contracting mechanisms between women producers and the larger producers mediated by intermediaries such as DACAAR may be useful intermediate measures to address some of the most pressing inequities in production.

That the work by DACAAR and other organizations can facilitate the emergence of the two women's associations in Ghoryan and Pashtun Zarghoon is testament to the importance of the role of *associative institutions* (Figure 1) as key ingredients for challenging and ultimately overcoming the governance inequities of the saffron and other value chains. Gender inequities cannot, however, be eliminated through the creation of women's associations alone. Systemic change in chain governance requires continued support, nurturing and even protection of these associations, regulatory reform, and (dis)incentives aimed at creating an enabling environment conducive to the emergence of a level playing field for all actors in the value chains, regardless of gender.

Apart from home-based handicraft production including carpet weaving and needle working, agricultural value chain employment is the only viable area for rural Afghan women to work outside their unpaid domestic responsibilities. As such, gender mainstreaming interventions will need to continue creating spaces for women to assume more central, productive, and remunerated roles in the more viable value chains such as grape/raisin, almond, and saffron. More extensive use could be made of female extension workers to facilitate women's access to new processing methods, higher level of production hygiene, and post-harvest handling techniques in packaging and marketing. The limited supply of agricultural loans (especially loans with an extended grace period to account for the

long lags in grape, almond, and saffron production) and social barriers (including limits on interaction and mobility of women) can be addressed to some degree through increased presence of female lending officers at Microfinance Institutions (MFIs). The formation of women producer associations should also be intensified as the means through which to deliver extension services to women and create opportunities for them to undertake collective activities such as setting up collection points with low-tech primary storage facilities to enable off-season trade.

To varying degrees, the following factors have a bearing on whether and how women could become more involved in value adding activities in rural agricultural production:

Land Ownership and Access to Credit: In Afghanistan women do not generally own land or property but they can inherit land as widows or daughters under the Afghan Civil Code of 1978. Few women actually inherit that land, however, either because they do not know the law and their rights and/or the fact that local practices overrule the legal provisions.⁴⁶ The lack of land ownership relegates Afghan women to supporting roles in the value chains and weakens their access to services such as extension and credit, and hence their bargaining power in the family and community.⁴⁷ While MFIs have been encouraging women's borrower associations and saving groups for smaller loans, more generally obtaining loans in Afghanistan requires the applicant to possess two titled pieces of land as collateral, thus presenting serious problems for women without land titles.⁴⁸

Mobility: Access for rural women to spaces and resources outside their immediate home environment is generally very difficult or not allowed by the men in the family. Travel by women outside of the village is in many areas inconceivable and socially frowned upon, particularly if unaccompanied by a male member of the family. Apart from some exceptions in urban areas and as exemplified in the case of saffron, women in general do not drive and proximity seating on what little public transport exists in rural areas is not encouraged. Due to this general social immobility, women's participation in value-adding activities is confined to home and limited to activities lower on the value chain such as drying and sorting, rather than purchasing or selling. These conditions constitute a formidable barrier to entrepreneurship by women in agricultural value chains.

Information: The two types of information relevant to value chains are production information and market information. Production information includes crop growing and produce processing techniques while market information pertains mainly to pricing, demand assessment, and niche creation. Production information is disseminated mainly by extension service workers from MAIL and a wide range of national and international NGOs and delivered almost exclusively by men. Market information is most likely first obtained by men who have the most exposure to other traders and market conditions on pricing and demand for certain (types of) goods. Afghan women rarely conduct business deals in markets not designated for women. High levels of illiteracy by women and men are in all cases serious impediments in access to markets and market information.⁴⁹

The mainstreaming wished for women in agriculture by the international donors needs be contextualized in analyses of women's other responsibilities and burdens such as child-bearing/care work, household work, and community work such as caring for the elderly. Also, gender mainstreaming interventions should be based on the understanding that the social norms that create barriers to women's participation in economic activity are different in different parts of Afghanistan depending on the degree of traditionalism present. For example, while women's involvement in the fields may not be acceptable in the South, it is common for women to be involved in crop harvesting in some areas of the North. Similarly, women from Herat are relatively more empowered to participate in entrepreneurial activity than women in the southern and southeastern parts of the country.

Future policy development and interventions to regenerate and strengthen agricultural production in Afghanistan will need to be guided by the learning from what has been accomplished to date, the intervention failures, and the creation and/or identification of new problems and challenges. This research has shown that the challenge of gender mainstreaming in agriculture in Afghanistan is not simply to create spaces and opportunities for women to participate in value-adding activities. Attention needs to be paid to chain governance dynamics, based on a full understanding of gender relations and the interrelations between the various actors in the value chains being targeted for intervention. As the saffron case illustrates, even when women have come through the hurdles of working relatively independently of the men in their families, they are confronted with dismissal and being sidestepped by male traders.

A key aspect of conflict must bear recognition in efforts to revive the agriculture sector in Afghanistan. In late 2010 and early 2011, there have been reports of saffron farmers being reprimanded by anti-government forces about growing saffron as a replacement crop for opium poppies.⁵⁰ Clearly, this is an unanticipated and unwelcome outcome of the attempts to institute saffron as a cash crop and in place of poppies. This situation creates a serious dilemma for Government and donor programs to initiate alternative livelihoods. The question for the further research and policy is how to first anticipate such problems and, second, how to address them when they arise.

Also relating to saffron, and probably because saffron growers have shown a tendency to sell their product unfinished and in bulk to other countries, the price for fully processed and packaged saffron in the international market has dropped significantly in 2011 as compared to previous years. It is possible that substantial increases in the supply, partially by Afghan producers, may have in fact contributed to this drop in price. While this situation presents a problem for Afghan growers, it also creates an opportunity to turn the attention of the farmers to the importance of value-adding activities in gaining the highest return and remaining competitive.

In the same way that countries that produce the bulk of opium for the medicinal world market would not want to see a glut in the market of licit opium originating from Afghanistan, we can safely assume the major producers of saffron currently supplying the global market would be concerned with a surge in saffron production originating from Afghanistan and causing a drop in price. This leads to one broad but key conclusion about alternative rural livelihood strategies aimed at increasing value-adding activities to generate and increase trade in Afghanistan: identifying alternative crops such as saffron and strengthening existing crops such as grapes and almonds (and pomegranates) is only the beginning of the process of change. Once change is initiated it will require all manner of other interventions to protect the growers of the new and strengthened crops against threats arising from resistance based on tradition, e.g., the place of women in society, deteriorating security conditions, e.g., the threat by anti-government elements against saffron farmers, and an over supplied international market for Afghan produce and products.

This leads to one final systemic conclusion: Rebuilding the agriculture sector in Afghanistan is best viewed as a multi-level project requiring interventions from within the country accompanied by a host of other interventions (and concessions) from the outside, to create a protected space in the global market for Afghan producers to establish themselves and thrive.

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