

AN OVERVIEW ON IMPACTS OF AGRICULTURE – HORTICULTURE SUB SECTOR IN AFGHANISTAN’S ECONOMY

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ABSTRACT

This article present a case study of Afghanistan’s climate for agriculture along with abundant water resources. Agriculture and farming in Afghanistan is still traditional and need modernization and mechanization. The farmers are still using animal power like; oxen, donkey, horse, and buffalo for ploughing, land preparation, and cultivation, especially in remote areas and some poor & small land-holders even use shovel & simple tools. Only small number of farmers, especially rich farmers they have tractors, thrashers & other small & simple farming machineries, while the majority farmers of Afghanistan are still using the old farming system and they produce small quantity of agriculture products mainly wheat, corn, rice & some vegetable , which could be sufficient for their family consumption only for 3-6 months, while for the rest of the time they used to buy flour & other required food commodities from local markets or from neighbouring farmers.

Keywords: Afghanistan, Agriculture, farmer, agriculture products, marketing, management, Economic.

INTRODUCTION

Agriculture is the backbone of Afghanistan’s national economy and it is the source of livelihood for the 80 percent of the population (directly or indirectly). Agriculture is the main source of income in Afghanistan. In addition, it provides raw material for industries and food for rural population. In spite of the fact that only 12 percent of Afghanistan’s total land area is arable and less than 6 percent is currently cultivated, more than 80 percent of Afghanistan’s population is involved in farming, herding or both. Agriculture is considered as an effective tool for sustainable growth and poverty reduction in the country. Afghanistan has a suitable climate for agriculture along with abundant water resources. Of the total land area of Afghanistan, 9,610 hectares is arable land and 30,000 hectare permanent pasture and rangeland (12 % arable land & 46% permanent pasture and rangeland) which is

considered potentially suitable and highly profitable for farming and raising livestock. The climate is typical of an arid or semiarid steppe, with cold winters and dry summers. The mountain regions of the northeast are subarctic with dry and cold winters. In the mountains bordering Pakistan, a divergent fringe effect of the monsoon, generally coming from the southeast, brings tropical air masses that determine the climate between July and September. At times, these air masses advance into central and southern Afghanistan, bringing increased humidity and some rain. Afghanistan's major agriculture products consist of cereals and grains (wheat, maize, oat, rice, beans & peas), vegetables (potatoes, onions etc), fruits (apples, grapes, berries, pomegranate, apricot and almond), industrial crops (cotton, sugar beet, sugar cane) oilseeds (sesame, sunflower, cotton seed), medical herbs (saffron, Licorice, Fleawort and etc), livestock and poultry products, dairy products and so on. In addition, Afghanistan is the third largest producer of cashmere in the world. The National Horticulture and Livestock Program (NHLP) is a program of the Ministry of Agriculture, Irrigation, and Livestock (MAIL) of the Islamic Republic of Afghanistan. The program is scheduled to run for 6 years in the first instance, from January 2013 to December 2020. The NHLP is a successor and up-scaling program to the Horticulture and Livestock Project (HLP), which was implemented in MAIL from January 2007 to December 2012 with financing from the World Bank and the Afghanistan Reconstruction Trust Fund (ARTF). The National Horticulture and Livestock (NHLP) project will contribute to the overarching goal of increased productivity and overall production of horticultural products and improved animal production and health. The technical strategy for achieving this objective is based on the delivery of extension and investment support through strengthened systems. The project has three components: (1) Horticultural Production, (2) Animal Production and Health, and (3) Implementation Management and Technical Assistance Support. These activities will be implemented in 100 focus districts spread over time as conditions warrant in up to 22 target provinces. It is to highlight that the results presented in this article are aggregated and combined results; these results are not disaggregated by control, intervention/treatment and regions in the main body of the report due to the overwhelming volume of the results which will be unnecessarily boring for the readers. Mean operational landholding size in the study area was about 8.24 Jeribs (including 8.5 Jeribs of in-compound land) of which nearly 5.65 Jeribs were irrigated cultivable and 2.35 Jeribs were rain-fed parcels. In the study area, major proportion of operational landholdings was consisted of owned land, agricultural lands owned by both the males and female members of the households.

About cultivation patterns of this land, field crops were grown at 7.7 Jeribs and remaining was allocated to horticultural crops, forests, forage and fodder trees. The combined total gross household income of all the earning members aged 15 years and above is Afs 184,555 on average from various sources that included orchard and livestock production, salaries, trading and labour, rent, manufacturing, remittance and other sources. The highest earning source was orchard production (Afs 80,390) followed by livestock production (Afs 26,384) and salaries (Afs 19,813). Refer to table 3.5 for further details. In terms of landholding size, the average landholding in surveyed area was estimated at 8.24 Jeribs as family owned, 0.63 Jeribs as jointly-family managed land and 0.14 Jeribs were taken from others for cultivation purposes; out of 8.24 Jeribs, only 0.24 Jeribs were not cultivable. From the remaining land, 5.65 Jeribs were irrigated and 2.34 Jeribs were rain-fed lands.

METHODS AND MATERIALS

In the surveyed provinces, fifteen different fruit types were produced, and the five most planted fruits were grapes, apples, apricot, peach and mulberry. In nuts category, five different nuts type were found to be produced in different regions. These were almond, dry apricot, pistachio, walnut and Jalgoza. Among these, 3 most planted fruits (i.e. almond, walnut and pistachio). In case of cereals, all the sample farmers were growing one or more cereal crops. Barley, corn, rice, wheat are cereals most produced cereals. Among these, wheat was found planted at nearly 56% farms followed by corn (21%), barley (14%) and rice (9%) farms. It seems that wheat is the staple cereal of Afghanistan. Turning to pulses, overall, nearly 20% farmers reported cultivation of pulses at their farms. Faba bean, Ghamo, Kalola, Lentil, Mung, Red bean, and White Bean are most grown pulses. Among these, red beans and lentil were most grown pulses. Considering oilseeds, the cultivation of crops under this group was least reported by the sample farmers. Regarding cash crops, overall, the cultivation of cash crops was reported at nearly 70 percent of sampled farmer households. Ten cash crops like sugarcane, cotton, poppy, melon, water melon, potato, onion, cucumber and garlic were grown on sampled farms. Among these, potato and water melon are relatively more commonly grown. Among the fruits, grape was the largest produced fruit in the study area, (2849 kg) per farm; from which 332 kg used at home, and 2517 kg sold. Followed by sweet orange (2365 kg), used at home 163 kg, and sold 2202 kg. Apple (1842 kg), used at home 262 kg, sold 1580 kg. Pomegranate (734 kg), used at home 119 kg, sold 615 kg. Apricot (662 kg), used at home 130 kg, sold 532 kg. Fig (635 kg), used at home 129 kg, sold 505 kg.

Peach (566 kg), used at home 111 kg, and sold 455 kg. It is worth mentioning, that these figures are on average per farm for those households that reported producing these fruits. Among the nuts, almonds were the largest produced nuts in the study area, (2808 kg) per farm; 92 kg used at home, 2716 kg sold. Followed by Pistachio produced (2206 kg), used at home 38 kg, sold 2166 kg. Walnut (1200 kg) used at home 80 kg and sold 1120 kg. Figures are reported on average by farms that reported producing certain nuts. In terms of fertilizers application, an average of 166 kg of urea, 143 kg of DAP and 143 kg of potassium sulfate were respectively used per orchard production farm in the study area. The average price for urea was reported at Afs 32, DAP Afs 48 and for potassium sulfate it was Afs 26. It was found during the survey that a number of farms have used purchased water for orchard irrigation. The source of purchased water was tub wells, the largest for mulberry orchards, followed by grapes, apple, plum, peach, apricot and st. oranges. On the lower side, the least quantities of tub well water were purchased for fruits like pear, pomegranate, quince and st. cherry. Interestingly, it was found in the study that most of the farmers hired labours in addition to themselves working on their farms. The labours were hired in orchard production management, fruit harvesting and fruit packaging. On average, a total of Afs 37,411 were paid to hired labour, Afs 20,669 for orchard production management, followed by Afs 8,315 for fruit harvesting and Afs 8,426 for fruit packaging. Considering the fruits marketing schedule, most of the fruits come in the market during June and July. Apricot, cherry, mulberry, plum and peach are June fruits and last no later than October. Apple and grapes come in market during July and last till December. Fig also starts selling during July but stays in the market till October. About the production and marketing of cereals, the largest quantities of crops produced were rice followed by wheat, barley and corn. In terms of quantities marketed, the largest quantities of wheat were sold followed by rice, barley and corn. In total revenue terms, the largest earnings were made from rice followed by wheat, barley and corn. About the production and marketing of pulses, the largest quantities of crops produced were of white beans (907 kg) followed by lentil (719 kg), faba bean (573 kg), red beans (284 kg) and mung (234 kg). In terms of quantities marketed, the largest quantities sold were of mung followed by lentil, white bean, faba bean and red bean. In terms of revenue generation, the largest earnings were made from red beans followed by mung, white bean, faba bean and lentil. About the production and marketing of cash crops, the largest quantities of crops produced were water melon followed by melon, cucumber, poppy, sugarcane, onion, cotton, potato and garlic. In total revenue terms, the largest earnings were made from poppy

followed by melons, cotton, water melon, sugarcane, onion, potato, cucumber and garlic. Considering the presence of different livestock types in the study area, the largest number of animal heads was reported for sheep followed by goats, chicken, turkey, ducks, camel, oxen, bulls, cows, heifers, young bulls, female calf, donkeys, horses and male calf. Average number of livestock owned by breed per reporting households was largest for sheep (24) heads, followed by goats (14), Chicken (12), Turkey (7), Duck (7), Camel (4), Oxen (1), Bull (1) and Cow (1). It is worth mentioning, that these figures are averages for only those households that have reported having these livestock. Looking into the availability of livestock and poultry species, almost all types were found on sample farms. Livestock management operations were carried out both the family males and females and very small amount of labor has been hired for these management operations. Wide variations in the wage rate of the labor for different livestock management operations and across regions have been noticed. Regarding production problems associated with livestock production, more than 44% households reported some animal mortality on their farms during past one year period --- relatively high incidence in western and low in central region. The partial benefit-cost analysis of livestock farming was 5:1 with wide variations across regions. In terms of milk production and marketing, in 2,192 households reported, average daily milk production per household was 10.42 liters, and in 1203 households who reported selling milk with a daily average of 11.54 liters, annual average income per household was estimated at Afs 113,821. When the respondents were asked, whether any of their animal died during the last 12 months or not, unfortunately; 44.3% of the respondents have cited that at least one of their animal died during the last 12 months. It reveals the fact, that there is a lot to be done in terms of vaccinations as well as improving situation for access to animal clinics, especially in remote and rural areas of the country.

RESULTS AND DISCUSSION

In the study provinces, the cultivable land is used mainly for cultivating cereals, cash and horticultural crops; whereas very little proportion of land is allocated for crop groups like pulses, oilseeds and fodders. About cropping patterns, cash crops, cereals, pulses, oilseeds, fruits and nut fruits found cultivated in the study areas. In horticulture sector, the major horticultural crops grown were grapes, oranges, peaches, figs and apple. The important nut fruits are Jalgoza, pistachio, walnut and almond. In cereals, wheat and rice are relatively more grown. The mean yield of fruits grown was generally low (though not compared with any standard

region) along with wide productivity gaps across regions. A small proportion of the produced fruits were self-consumed in the sample households and remaining is sold at the farm and elsewhere. Wide variations in prices (minimum versus maximum) were observed for the crops and livestock commodities. Majority of the farmers showed their concerns about difficulties in procuring various agricultural inputs (seed, fertilizer, pesticides, etc.) like distantly located markets, timely availability and quality for these inputs. Lack of availability of quality seed of improved varieties is also a major constraint in the area. The output marketing side problems include distantly located agricultural markets, non-availability of necessary facilities in the output markets, non-availability of cold storage facilities for perishable items, low prices obtained for the produced and no market price information system. Agriculture (crop + livestock) is the prime source of income for both male and female members of the households. The other sources included earnings as farm laborer, remittances, trade and manufacturing. Agricultural activities promoted by communities include kitchen gardening, raising nurseries, vegetable farming, orchard farming, and fruits/vegetables preservation & processing, agri-enterprises development and agricultural marketing linkages. Through cluster approach development activities promoted in sample villages were: joint large projects, water and sanitation, irrigation, micro hydro-powers, road infrastructure, bridges, agriculture, skill development, conflict resolution, literacy and general development. Sample village communities also demanded development activities in the areas like: food distribution, skill development, agriculture, vocational training. The farmers' suggested solution to above problems include policy/administrative/ development measures for timely availability of quality inputs, increasing number of bank branches in rural areas, building new canals, digging new wells, construction of new roads and improvement of poor roads, technologies for improving irrigation efficiencies, establishing new agricultural markets, provision of cold stores and establishment of agricultural market price information system. Agriculture and farming in Afghanistan is still traditional and need modernization and mechanization. The farmers are still using animal power like; oxen, donkey, horse, and buffalo for ploughing, land preparation, and cultivation, especially in remote areas and some poor & small land-holders even use shovel & simple tools. Only small number of farmers, especially rich farmers they have tractors, thrashers & other small & simple farming machineries, while the majority farmers of Afghanistan are still using the old farming system and they produce small quantity of agriculture products mainly wheat, corn, rice & some vegetable , which could be sufficient for their family

consumption only for 3-6 months, while for the rest of the time they used to buy flour & other required food commodities from local markets or from neighbouring farmers. In order to solve this problem the farmers need to do best agricultural practices; Standard land levelling, selection and plantation the certified and adoptable crop varieties.

CONCLUSION

In agriculture sector, the following essential actions need to be done by the government and donors:

Research Farms and units: Establishment of standard research farms and units in provincial level would be the most important intervention in agriculture development of the country. It would be very essential to maintain the purity and quality through various stages of seed production i.e. Breeder, foundation, registered and certified seed. Furthermore development of improved crop varieties in different zones of Afghanistan is vital for sustained increase in agriculture production and productivity.

Chemical Fertilizer: The important thing for increasing the crop production is application of chemical fertilizers. Mostly, the agricultural soils in Afghanistan needs NPK fertilizer. Unfortunately, it is difficult to find high quality and standard fertilizers in the markets which needs the government's prompt attention to control it. It is also recommended to support Kod Barq Factory located in west of Mazar e Sharif for production of UREA fertilizer. Recently, a modern and equipped lab was established in Balkh province named YASMIN LAB that can help the sector for chemical testings in standard manner. Introduction of modern machinery to agriculture sector: Today's agriculture routinely uses sophisticated technologies such as modern machineries, temperature and moisture **sensors**, aerial images, and **GPS** technology. These advanced devices and **precision agriculture** and systems allow businesses to be more profitable, efficient, safer, and more environmentally friendly

Loans and credits to the farmers: It would be a great support for farmers to link them with microfinance banks for agriculture loans as they would be able to access the required farming tools and inputs.

Integrated watershed management and on-farm water management: As there is average 500mm rainfall in Afghanistan, but it is not used for agriculture irrigation effectively. The floods happen when there is heavy rainfalls which destroy

agricultural lands. As there is a great potential for establishment of water harvesting structures, following structures were recommended in Afghanistan;

Small water storage structures like check dam, water percolation tanks, small rock-fill dam, water reservoir, micro catchments and dikes.

Commercial Farming: As studied, most of the agricultural lands were divided for farmers through heritage system and it is difficult to have common products in a district (one type of products in one area as commercial), So, the government should encourage and support investors to have investment on commercial farming and agriculture to have standard products to link the international markets

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10. HLP, with a total cost of US\$ 70.7 million, is co-financed by IDA (US\$ 21.4 million) and the Afghanistan Reconstruction Trust Fund (ARTF) (US\$ 49.3 million).