

Anaqeed Al-Khair Case Study: Badia Region of Jordan

**Raed Al- Tabini, PhD, Rangeland Management
Jordan Badia Research & Development Centre, Deputy President**

Phone: +962 6 5335283

Fax : + 962 6 5355680

P.O. Box 902

Jubiaha, Amman

Jordan

Email: altabini@yahoo.com

William D. Gorman

Department of Agricultural Economics and Agricultural Business

New Mexico State University

James D. Libbin

Department of Agricultural Economics and Agricultural Business

New Mexico State University

Abstract

Anaqeed Al-Khair project is an agricultural development project in the northeastern Badia of Jordan, focusing on a cluster of 14 villages with a population of 7,800 people. The project is funded by the Ministry of Planning and implemented by the Badia Research and Development Center (BRDC) and Jordan River Foundation (JRF). The project seeks to generate diversified and sustainable income flows for the cooperative members and the community at large within the low rainfall environmental constraints (150-200 mm/year) that characterize the project zone.

The Anaqeed Al-Khair project has several components; Sheep selection and management, Honey production, Sun dried tomatoes, Forage production, Improved sheep wool and goat hair processing. The main obstacles faced by the cooperative are lack of experience in identifying desirable markets, insufficient attention to value-addition, lack of a well thought out business plan. In response to the mentioned problems BRDC has led the cooperative in overcoming their difficulties through, assistance in finding buyers who offer better terms, establishment of market information systems, facilitate the identification of value-adding technologies and products, analyze ways to reduce costs of production and marketing, and offer guidelines and methods for establishment of improved business plans

Experiences to date suggest that an expansion of activities using the same community-driven methodology is possible, with great potential for replication in other areas of the Badia. The cooperative has decided to concentrate on sheep, honey and sun dried tomato because of their positive income generation, with potential for improvements in marketing. The next step is to undertake a more formal economic analysis of the results so that a statistically valid assessment can monitor economic feasibility over the coming years.

Introduction

The Anaqeed Al-Khair project location is in Jordan's northeastern Badia, the country's arid and semi-arid zone. The Badia, which makes up approximately 80% of Jordan (Al-Tabini, 2002) and is occupied by Bedouin, may be divided into two major areas based on rainfall and vegetation cover. These are the steppe and the desert. The steppe (home to Anaqeed Al-Khair) has potential for providing animal feed, as it receives average annual rainfall between 100mm and 200mm, and provides good vegetation for animal grazing. The desert, on the other hand, receives less than 100mm of rain annually and has limited grazing resources. The Badia experiences huge seasonal temperature fluctuations. In winter, the minimum mean temperatures may drop to 2°-9° degrees C and snowfall and sub-zero temperatures may occur. The summer maximum mean temperature is around 35°-38° C. Low humidity causes high levels of evaporation. Rainfall between December and March, with great differences in the intensity of showers and storms. Generally described as spatial and temporal, maximum annual precipitation ranges from 250mm in the northwest to 50mm in the south (Allison et al, 1998).

The Anaqeed Al-Khair project is an agricultural development project funded by Jordan's Ministry of Planning and is implemented by the Badia Research and Development Center (BRDC) and Jordan river Foundation (JRF). The project's goal is to improve the local community's socioeconomic status. A cooperative was established to ensure that the local community actively participates in the project and that benefits flow directly to them. The cooperative was established late in 2002 with 16 member households. Membership has increased to 92 households (Hawamdeh, 2004).

Targeted villages cluster

The Anaqeed Al-Khair project targeted 14 villages for development. These villages were assimilated into one cluster, called the Northern Badia Villages cluster, and then grouped into four sub-clusters according to geographical distribution. The Northern Badia Villages cluster's population is 7,800 individuals in 1,259 households.

The cluster's population is youthful, with 55% of the population below age 21. The gender ratio is 49% female to 51% male. The work force is considered to be between the ages of 15 and 65, with 80% employed in the public sector, showing a high dependency on governmental support. In contrast, the private sector provides only 11% of work opportunities in the Badia, reflecting low levels of investment in the area. The unemployment rate is calculated to be 40% and is attributed to the lack of job opportunities and vocational training. The total monthly income of 189 Jordanian Dinar (JD) reflects a high poverty rate when compared to 337 JD in all rural areas and 401 JD throughout Jordan. The livestock industry is a key income source for Northern Badia Villages, and livestock number approximately 38,735 head (BRDC, 2002).

Table 1: Northern Badia Cluster villages

Number	Village	Families	Populations	Sheep	Goats
1	Khishaa	154	1081	469	128
2	UmAlQoutain	386	2389	1308	1010
3	AlMazola	19	129	686	30
4	AlMkaiftah	286	1966	22888	391
5	Manshiatkino	19	121	113	73
6	Rawdat amir	120	533	3145	459
7	Meiassa	30	196	2358	413
8	Al-Thalaj	19	69	871	74
9	UmHussien	23	173	4580	2221
10	Kasim	78	433	4139	574
11	Al-Refiat	104	604	2704	1101
12	Ghadiernaqa	6	17	*	*
13	Arainba	10	69	*	*
14	Rifaiatshamalia	27	112	*	*
Total		1259	7829	32261	6474

BRDC, 2002

The Bedouin families of the Northern Badia villages cluster share a perspective on their way of life and cultural identity with the rest of the Bedouin in Jordan. They closely identify themselves with the Badia's environment, the camel as their traditional means of transportation, the *beit sha'ar* (tent) as their dwelling and, individually, as the sons of the Badia (Hawamdeh, 2004). The identification is not only important as an expression of self-identity; it is also extended to express the individuality of their traditional lifestyle as nomads, even though that lifestyle is shifting to a semi-nomadic and, even, fully settled pastoral way of life (Millington et al, 1999).

Project goal

Improve the socioeconomic status of the local community.

Project objectives

1. Generate diversified and sustainable income flows for the cooperative members and the community.
2. Improve local sheep breeds.
3. Encourage organic farming activities.
4. Encourage the local processing.

Project management

After several community meetings, participants chose a cooperative for the management structure of the project. This approach provides flexibility and assurance that the local community actively participates in the project and that benefits flow directly to them. The cooperative was established late in 2002 with 16 member households. At the current time, membership is 92 households. The Anaqeed Al-Khair Cooperative bases planning and development decisions on members' perspectives and knowledge. Thus, the local community is empowered to explore possible areas of community development, discuss scenarios of future aspirations, and define the direction and shape of social transformation, making that transformation more likely to be sustained (Al-Tabini & Hawamdeh, 2004).

The nature of collaboration between the local community and Anaqeed Al-Khair project implementers reflects concern for the impact that development initiatives have on reshaping the sociocultural, economic and environmental future of the Bedouin community. The collaboration helps to mitigate the negative perceptions and attitudes that community members may have toward development efforts because not only does the Cooperative management structure generate income, it also provides an avenue for community members to share information and responsibilities. Furthermore, collaboration between the community and the project team reflects the willingness of the government's official vision to incorporate multiple participants in the development design process and to support new forms of organizational structures (i.e. local cooperatives, NGOs and research centers) in its new policies for sustainable development programs. It also reflects the capability of these organizations to employ effective development designers and implementers who can learn more and adapt effectively through the collaboration process. Finally, collaboration reflects the capacity and competence of each partner, particularly local community members, to play a role in engaging, initiating and adapting local ideas into the design process (Hawamdeh, 2004).

Market research for Anaqeed Al-Khair project

Specific economics indicators for the Jordanian market are difficult to find due to complex political and economic concerns. When it comes to agricultural products, the task becomes increasingly difficult due to varying policies among institutions. Moreover, there is little governmental consistency and accuracy in the reporting of imports, exports and other economic indicators (Al-Oun, 1998).

Therefore, all of the projects that the BRDC has proposed for the larger Anaqeed Al-Khair project are based on the assumption that each individual project is relevant to the Badia community by being related to the existing livestock and agriculture industries. The main aim for each project is to improve the efficiency of regional farming practices. To expand sales, the BRDC will target both national and international markets. Discussion already has taken place among various organizations to create a private company to market Badia products. To better explain the current market, we will discuss each project individually. The Anaqeed Al-Khair project has several components: sheep selection and management; honey production; sun-dried tomatoes; forage production; and improved sheep wool and goat hair processing.

Sheep selection and management

Since 2004, the Cooperative has adopted improved sheep feeding, a veterinary regime, selection and culling, and synchronization of ewe pregnancies to result in higher flock lambing and weaning percentages and greater twinning. This project was based on selecting the best sheep in the Badia region. Best sheep were defined as those with high milk productivity and breeding abilities. Indicators in the Badia, based on BRDC research, illustrate that good management with typical sheep is a profitable project. The 150 sheep purchased in May 2004 had increased to 250 by November 2005.

Comparable pricing of products

The average price of milk sales to cheese producers is 0.33 JD per kilo with this milk being of poor quality and not pasteurized correctly. The 150 sheep purchased in 2004 can be expected to produce 21,600 kilo of milk during a 180-day period (based on average production figures), for an income of 7,128 JD. The offspring are sold at an average price of 50 JD per lamb. This figure indicates that the total income generated will be 22,500 JD assuming that 50 lambs are produced the first 18 months.

However, such figures are based on what are considered to be typical sheep. It is expected that the offspring of the sheep from the project's improved breeding stock will fetch higher prices in comparison. Also, implementing best management practices, such as green fodder and maintenance of good health, will further improve sheep quality over that of competitors' flocks. Under scientific management, the offspring will be heavier than other sheep. This will enable the Anaqeed farm to earn more money per animal unit sold.

Due to severe droughts and stop feeds subsidy at 1996 and the consequential high cost of feed, the number of sheep in Jordan collapsed by 50% during the last few years. This indicator illustrates that there is a potential gap in the market for both milk and lambs.

One of the criteria for selective breeding for flock improvement will be a higher level of milk production per sheep. There is a possibility that the Anaqeed Al-Khair project will add value to the raw product by processing products such as Sammneh or Jameed, to further improve profits. Value-added processing will be possible if high, health standards for the flocks are maintained.

Source of available comparable products

The Jordanian market for sheep includes locally and internationally produced animals. However, local Awassi sheep maintain strong prices over imported sheep from Australia, New Zealand and Sudan. This demand for local Awassi sheep is due to consumer tastes in Jordan and the Gulf States. Bedouin farmers around the Arabian Badia traditionally maintain Awassi sheep. However, they are facing tremendous problems, such as poor flock management and overgrazing.

Inputs

Changes in government policies and other regional impacts have adversely affected sheep production costs. Most Jordanian sheep producers have become dependent on imported barley and wheat bran. These feeds are quite expensive as a result of withdrawal of government subsidies. Also adding to the increase in price are local feed shortages caused by regional drought. Medicine for animals has become more costly as the Ministry of Agriculture privatized the formerly subsidized services. Sheep-herding labor also is quite expensive. Most Jordanian farmers rely on foreign labor at an average salary per worker of 120-150 JD per month. Many large flock owners have given up milking due to the extensive labor requirements and the great distance from labor markets.

Reliance on barley and wheat bran will not be an issue for the cluster-village farm as it is proposed that green fodder and mixed feed be used in lieu of the costly feed. Mixed feed will cost roughly 14,850 JD for all 250 sheep for an 18-month period. Medicine and vaccinations will be 660 JD for the same number of sheep and time period. Labor, being highly accessible in an area where unemployment is around 50%, will be cheaper in comparison to other regions. All inputs for this project will cost 38,000 JD. Most inputs will be bought locally or in neighboring cities.

Potential Buyers

The farm will target its yearling sales to local farmers in the Badia. The other option is to sell the yearlings on the local market in regional major cities. Milk produced will be sold at the farm gate for families, cheese-makers and the Tal Rimah dairy factory. In order to escape using a middle-man, milk will be sold at the farm gate.

The main concept behind this project is to introduce and maintain high quality, healthy local Awassi sheep. Also, through the creation of the farm and its use of best management practices, a model will exist for other farmers to learn new farming techniques. Most of these assumptions are based on the experience of the Badia Research and Development Centre. In dealing with demonstration flocks, farmers working with the BRDC secured excellent prices and earned 90 JD per lamb (sold at age four months in the year 2000, whereas ordinary farmers sold lambs at prices of 55-60 JD).

Honey production

Since 2003, honey, produced from bees foraging on local desert plants, has been available for sale to the community or marketed in Amman. The next steps are to expand production and develop a more sophisticated marketing strategy, including a “Badia Honey” brand name.

Similar products in Jordan are currently produced by the BRDC at a cost of 15 JD for 1 kilo. Hence, there is currently an existing trademark for the honey, “As-Safawi Honey.” In general, honey brings 10 JD per kilo. However, the quality of the Badia honey is superior due to the medicinal plant that the bees pollinate.

Source of available comparable products

Comparable products available from national and international markets generally are sold at 10 JD per kilo. Despite the higher price, the refined quality of Badia honey is met with demand by elite customers in Jordan. Jordanians have tended to label Iraqi and Afghani honey as “local” honey due to low confidence in their own honey. Badia honey is overcoming this lack of confidence and building a reputation for excellence.

Inputs

Beehives will be bought from the local market at a cost of 200 JD with all the related equipment. Supervision and training will be maintained in the Anaheed Farm. Labor cost will be paid to families at 10% of net income.

Potential Buyers

Sale of the honey will be direct to customers at the farm gate with the price of 15 JD per kilo. The same marketing methods used by BRDC will be applied, relying on public relations/communications with the various institutions affiliated with the BRDC and Anaheed farm. International markets will be approached once the private marketing company is established. The tourist sector in Jordan is becoming a large source of income due to its rapid expansion in comparison to tourism in surrounding countries. The cluster village concept will exploit this growing enthusiasm and sell Badia honey alongside the handicrafts that will be displayed at Badia tourist sites.

Sun-dried tomatoes

In the past year and a half, the cooperative has promoted organic production of a tomato variety with greater dry-matter content. A greater profit from dried tomatoes has convinced two local farmers to adopt production. The next steps include certification of organic production, better packaging and possible implementation of a brand name.

Comparable pricing of products and source of available comparable products

Currently in Jordan there is little, if any, market for sun-dried tomatoes. However, in Europe and the United States, such products are considered a delicacy and are sold at the price of 5.31 JD for a 32-ounce jar. In contrast, a jar of sun-dried tomatoes from Jordan will be sold at the price of 2 JD.

Inputs

Tomatoes in Jordan are grown in such excess that the excess production is used for animal feed. Moreover, other raw materials needed such as salt and oil are found in abundance throughout the Jordanian market.

Potential buyers

The main potential market will be the tourist market, elite supermarkets and hotels. Another market to be explored will be overseas markets. The marketing overseas will be through indirect and direct sales with the help of the private company that will be created in conjunction with the BRDC and Anaqeed Al-Khair project.

Forage production

In 2003 the Cooperative attempted to produce alfalfa but was not successful due to inadequate amounts of water for irrigation. The Cooperative then tried barley, but felt this too was an unsustainable practice.

Improved sheep wool and goat hair processing

The Cooperative tried to spin the wool locally instead of selling raw material to Turkey and, in turn, buying spun wool and goat hair. The hand spinning by local women proved to be too time consuming. The next steps include importation of a semi-mechanical spinning machine from Australia to improve efficiency and decrease labor costs.

Wool manufacturing

Comparable pricing of products

This project will be based on producing high quality woolen handicrafts, with a focus on natural colors. The current market for wool products within Jordan is quite limited in that few manufacturers exist throughout the Jordanian Badia. However, in the products which are created, the wool is provided by the buyer and the charge for labor, alone, is 6 JD.

Source of available comparable products

A limited number of wool products are produced in Jordan, with production sites scattered throughout the country. The Jordanian market for woolen handicrafts depends on the international market. Currently traditional products on the market do not use natural coloring. The use of natural coloring will set apart the Anaqeed Al-Khair project from its competitors.

Inputs

Since 1999, the price of local Awassi sheep wool dropped from 2.5 JD to 0.9 JD per fleece. Much of the wool was sold to the neighboring market in Turkey. Most inputs, as a result, will come from the same Bedouin farmers who sell into Turkey (Oakley & Al-Tabini, 1996). The project will pay 1 JD per fleece, and fleeces will be dropped off at the farm gate on a

routine basis to be established by the management. The equipment needed for cleaning and other manufacturing steps will be bought from the local market. Labor cost will be covered through a system of sharing with the weavers and spinners.

Potential buyers

The main markets for the final products are through direct and indirect sales through the help of the BRDC and the private marketing company that will be created in conjunction with the BRDC and the project. There exists some possibility of selling final goods on the international market, due to unique patterns and natural colors. Also, the competitive pricing will make the goods more attractive to potential buyers. There is a need to create a promotional program for the fine products that will be produced.

Goat hair processing: *Beit sha'ar* production (Bedouin tent)

Comparable pricing of products

Other than one semi-factory in Mafraq, there is no competition in the creation of *beit sha'ar* in Jordan. The cost of a complete medium-sized *beit sha'ar* is about 1187 JD.

Source of available comparable products

Despite the lack of competition in Jordan, a high level of competition exists in Syria. Syria supplies the Jordanian market with parts of *beit sha'ar*, generally used in private homes. The existing factory in Mafraq tends to export its products to the Gulf countries, Israel and sometimes to the United States.

Inputs

Since 1999, the price of the goat hair has remained constant at a price of 0.60 JD per kilo. Most inputs, as a result, will come from farmers in the area. The equipment needed for cleaning and other manufacturing steps will be bought locally or from Syria. The main cost for manufacture of *beit sha'ar* is labor, estimated at 650 JD.

Potential buyers

Since such few tents will be produced, marketing this product will rely on the already created BRDC networks and public relations/communications among the project participants. The main marketing will be through direct sales, with the help of the BRDC and the private company that will be created in conjunction with the BRDC and project. The demand for *beit sha'ar* is growing. With growing historical/cultural awareness among Jordanians, the *beit sha'ar* is becoming a fashionable asset to own. In addition, the increase in tourism in Jordan is increasing demand for *beit sha'ar*.

Results

The honey project earned about 7500 US\$ in gross revenue over two seasons and the cooperative feels that this can be doubled through more attention to value-added practices such as packaging and branding. The sheep project earned about 15000 US\$ in gross revenue since inception and it is expected that the flock will continue to improve over the next few years.

The wool/goat hair production activity has weaknesses because it is not widely known that better quality, locally spun materials are available for sale. It is unlikely that this activity will be continued unless costs can be reduced (by importation of the semi-mechanical spinning machine from Australia) and diversified uses can be generated for the wool and goat hair as handicrafts or non-traditional products.

Working together with the BRDC, the cooperative has demonstrated that successfully implemented ideas are often attractive to cooperative members and the surrounding communities and that the activities are subsequently adopted after the cooperative demonstrates success over a trial and error period. These models for transfer of technology are vitally important to the sustenance of Bedouins living in fragile rangeland ecosystems.

The main obstacles faced by the cooperative in marketing their products can be summarized as follows:

1. Lack of experience in identifying desirable markets.
2. Insufficient attention to value-addition.
3. The need to decrease transport costs through more efficient scheduling of larger allotments to larger markets.
4. Lack of a well-thought-out business plan based on analysis of input costs and sale prices, advance contracts and new markets.

In response to the above problems, BRDC has led the cooperative in overcoming their difficulties through the following efforts:

1. Assistance in finding buyers who offer better terms.
2. Establishment of market information systems that will open up more market channels.
3. Help in identifying value-adding technologies and products.
4. Research of methods for increasing production, which will generate greater income.
5. Analysis of ways to reduce costs of production and marketing that will lead to options that can be tested by the cooperative.
6. Provision of guidelines on sanitary and phyto-sanitary procedures, grades and standards to meet international trade requirements and generate consumer confidence.
7. Provision of guidelines and methods for establishment of improved business plans.

Conclusions

1. Experience has shown that the larger community is monitoring the project activities and then adopting the ideas by watching the experiences of the cooperative.
2. The cooperative members and the community can purchase higher quality lambs from the cooperative as breeding stock. The next steps include greater focus on diversification of lamb and goat dairy products in a newly constructed dairy processing facility.
3. Experiences to date suggest that an expansion of activities using the same community-driven methodology is possible, with great potential for replication in other areas of the Badia. The cooperative has decided to concentrate on sheep, honey and sun dried tomatoes because of their positive income generation and potential for improvements in marketing.
4. The next step is to undertake a more formal economic analysis of the results so that a statistically valid assessment can monitor economic feasibility over the coming years.

References

1. Al- Tabini, R. J. and Hawmdeh, I (2005) Local community participation at Anaqeed Al Khair Project: *In proceeding of international conference on Promoting Community-driven Conservation and Sustainable Use of Dry land Agro biodiversity*. ICARDA, Aleppo, Syria, 18-21 April 2005.
2. Hawamdeh, I. (2004) Local community participation in livelihoods improvement and sustainability: Anaqeed Al-Khair Project case study. *MA thesis, York University, Canada*.
3. BRDC, (2002) Socio-economic survey for Um Al- Qotain and Mkaifteh areas. Northern Badia report.
4. Al- Tabini, R. J. (2002) An evaluation of the potential of *Atriplex nummularia* for sheep production in the arid Jordanian rangelands: the effects of defoliation management. *PhD thesis, University of Newcastle Upon Tyne, UK*.
5. Millington, A.; al-Hussein, S.; Dutton, R. (1999) 'Population dynamics, socioeconomic change and land colonization in northern Jordan , with special reference to the Badia Research and Development Project area. ' *Applied Geography* , Vol. 19, No.4, pp. 363-384.
6. Allison, R.J.; Higgitt ,D.L.; Kirk ,A.J .; Warburton ,J .; Al-Homoud , A.S .; Sunna ,B.F .; White ,K.,(1998) , Geology geomorphology , hydrology , ground water , and physical resources ., *In Dutton R. W .; Clarke ,J.I.; Battikhi, A., (1998) Arid land resources and their management : Jordan ,s desert margin*. London , kegan paul international ,Vol, 1,pp.21-46 .
7. Al-Oun. S.S. (1998) Livestock marketing in the Jordanian Badia. *PhD thesis, Durham University, UK*.
8. Oakley, R. and Al Tabini, R. (1996). The nature and significance of livestock trading in the north-east Badia of Jordan, *CORD/BRDP project report: 28*.