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# **The Effect of Goat Husbandry and Distribution Projects as Development Projects in Income Generation and Social Development in Southern Ghore in Jordan**

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## **Author's contribution**

*The sole author designed, analyzed and interpreted and prepared the manuscript.*

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## **ABSTRACT**

This study aimed at evaluating the effect of goat husbandry and distribution as development projects in income generation and social development in southern Ghore in Jordan. South Ghore is one of the poverty pockets with distinctive characteristics. This triggers searching for suitable developmental strategies without degrading natural environmental resources in this area. The present study includes a sample of 100 surveyed households in six different villages using a questionnaire technique. The findings of the study showed that the common attitudes of the participants' answers were positive concerning the effect of the goat distribution projects on the socioeconomic sustainable development. The findings revealed that the most common obstacle is the high cost of the animal feed which consumes a large portion from livestock production output, in addition to the inappropriate veterinary services in the region and the retrieval of the number of

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young goats by the granter in the first three years of the project. This research recommends that more development projects are to be conducted on regular bases in these regions due to their significance in development.

**Keywords:** Goats; husbandry; development; distribution; projects; income; social; South Ghore; effect.

## 1. INTRODUCTION

Agriculture is the fundamental sector for integrated rural development. It is a source of income for people settling in the rural and Bedouin areas. It is a generator of activities in other economical sectors, especially agricultural works and services. It plays a main role in improving food security conditions. The Hashemite Kingdom of Jordan had been identified poverty pockets in the country and recognised by [1], and those areas where 20-30 percent of population is below the poverty line. Rural families in those areas are suffering from low and limited income resources because of the rise in the prices of all animal and plant production inputs that cause negative reflections on income generation for these families which in turn increases the unemployment and poverty ratio. Furthermore, some families lose their only livelihood resource from agricultural jobs [2].

Because of the Jordanian government commitments in achieving Millennium Development Goals (MDGs), many programs and projects that help in achieving developmental goals were adopted by the government through its institutions. Food security projects including many activities that alleviate poverty are amongst the projects that the government is working in the pockets of poverty which suffer from scarcity of their resources for providing the basic needs for their individuals [3]. Food security projects aim at alleviating the poverty and unemployment phenomena. They aim at providing food at the family level and keep the sustainability of the used natural resources. These projects are based on the creation of small productive families' projects that include many activities such as goat raising [3]. Southern Ghores District comprises fourteen populated areas in which the population of whole district according to the Directorate of Southern Ghores District till May, 2015/ Ministry of Interior was 52112 persons (Refer to Table 1). Between 2008 and 2013, a total of six villages benefited from goat raising projects funded by the Ministry of Agriculture (MOA) and Arab Organization for Agricultural Development (AOAD), where MOA in

its project distributed 3-4 goats for each selected household of mixed breed; Shami and Baladi in South Ghore. The total number of beneficiaries was 77 [4]. Whereas, AOAD worked in two villages and distributed five Dhewi goats breed for every targeted household in the district in 2012. The program benefited 30 beneficiaries [5]. The primary purpose of this study was to assess the effect of goats' husbandry as development projects in income generation and social development in South Ghore in Jordan.

It is hoped that this study will contribute in understanding the effect of goat husbandry and distribution projects on sustainable development in Southern Ghore in Jordan.

**Table 1. The statistics of population in Southern Ghores till May 2015**

Area	Number of females	Number of males	Total
Southern Ghores	26745	25967	52112

*Source: Directorate of Southern Ghores District (2015)*

## 2. STATEMENT OF THE PROBLEM

Women in Southern Ghore district are very active whether they work in the public or private sectors such as agriculture. They are prosperous in raising goats and other agricultural activities such as growing, picking agricultural products, and are involved in many training activities to join women's cooperative societies [6]. Despite that women are working hard in their houses in South Ghore District, they are not provided with fundamental needs for life such as conducting small rural projects concerned with goats' raising which affect sustained development. That is, they face difficulties in dealing with goats' husbandry and got benefitted of such development projects in income generation and social development in southern Ghore in Jordan in spite of her ability to administer and develop her family projects and be a productive woman instead of depending on National Aid Funds. This issue has not been given the attention it deserves in research in

Jordan. As a result, it is felt that there is a need for investigating this problem.

### 3. METHODOLOGY

#### 3.1 The Research Procedures

This research used quantitative & qualitative analytical descriptive design to investigate the effect of goats raising projects on sustained development in Southern Ghore in Jordan for the year 2015/ 2016. A questionnaire technique was used to collect data from the participants. The Statistical Package for Social Science software (SPSS) was used to analyze the data and results.

#### 3.2 The Research Population and Sample

The sample of the study comprises 100 participants which is about 97% of the overall population of 107 participants that benefited households in six different villages in Southern Ghore. This is because the remaining 7 participants declined to participate in the research and fill the questionnaire. The selection of the participants of the study is motivated by the fact that they are all supported households from the rural sustained developmental projects. The participants were from different villages in Southern Ghore. They are homogenous with regard to their native language (Arabic), professions and social class. (Table 2) displays the methods, procedures and sample of the study.

The population and the number of the beneficiaries, the names of their villages in the district were identified with the assistance of the Food Security and Rural Development Unit at the MOA and the National Alliance against Hunger and Malnutrition NAJMA at the Jordanian Hashemite Fund for Human Development JOHUD. The villages and beneficiaries that were visited and identified in the district included six villages: Ghore Assafi, Ghore Hadeitha, Ghore Al Mazra'a, Fifa, Al Mamora and Al Ghweibeh sponsored by AOAD and JOHUD. The beneficiaries from the Project of Fighting Poverty and Hunger which are sponsored by the Arab Organization for Agricultural Development AOAD in Fifa and Al Mamora villages were defined. This indicates that beneficiaries in all six villages were sponsored by the MOA and the AOAD sponsored beneficiaries in only two villages.

Based on the previous discussion on the research method and procedure, the next section displays the distribution of the questionnaires to the participants according to the villages. This section discusses how the quantitative and qualitative data was analyzed and collected using the questionnaire survey from the 100 surveyed families in Southern Ghore in Jordan. Descriptive statistic measures such as frequencies and percentages were used to describe the sample characteristics. Mean and Standard Deviation were used to describe the responsiveness of households to the items in the survey. In computing the analysis of the collected data, the data items entered to the SPSS software were the relationship between family economic status and a contribution of small agricultural projects "goats raising" in rural development and food security of the benefited households in the study sample. In order to determine if goats' raising affects sustainable development significantly, the analysis was interpreted using frequencies and percentages.

### 4. FINDINGS AND DISCUSSION

Having discussed the outlines of the study in terms of its purpose, statement of the problem and methodology, this section provides a detailed discussion on the findings and analysis of the collected data based on the Demographic, Economical, Health Characteristics of the Beneficiaries and Organizational Characteristics of the Projects in the Study Sample. They are discussed as follow:

1. Age group of beneficiaries: The mean age of all the beneficiaries in the study sample is 54 years with the majority of beneficiaries in age group 41-60. These ages are still active enough to ensure success and sustainability of the goats 'project. Table 3 display Frequencies and Percentages of Age Group of Beneficiaries in the Study Sample.
2. The ratio of females in the study sample was 61%. This result reflects that the woman competes strongly to benefit from projects of goats raising and her participation ratio in comparison with male is considerably high. That confirmed the aim of international and national policies to develop woman and encourage her role in rural development because she is the most vulnerable and affected by poverty. This finding agrees with the argument [7,8].

**Table 2. Methods and procedures of the study**

Types of data	Research instrument	Source of data	Number of participants	Data collection date
Qualitative & Quantitative	Questionnaire Survey	Benefited Families in 6 villages in Southern Ghore	100 Participants	Sept /Nov 2015

3. The percentages of widows and divorced women were 37%, 3% respectively, and these groups are considered the most vulnerable in the poor communities. The policies of the projects' grantor intend to support and empower those divorced and widows to look after their families and to overcome constraints due to divorce. This agrees with [7] findings about the role of rural female in successful management of their households, the study [7] was carried out in western Sudan. The findings indicated that there have been an increased number of female-headed households because of conflicts and the males' out migration from the rural areas. This situation has raised the decision making ability of women over the entire issues of households in the studied areas.
4. Age Structure of the Family: The surveyed households reported an average household size of 7.5 members, and results indicate that minors under the age 15 years comprise 17 percent of benefited households. This ensures that individuals in the active and growing stage were benefited from goats' outputs. The large households' size among poor class is consistent with [6] findings. In Table 4 Frequencies and Percentages of individual age structure in the households in the study sample

**Table 3. Frequencies and percentages of age group of beneficiaries in the study sample**

Age group	Frequency	Percentage
40 and lower	12	12.0
41-50	24	24.0
51-60	35	35.0
61 and higher	29	29.0
Total	100	100.0

*Source: Field survey*

5. Main Job of the Beneficiary: The majority of benefited women work as housewives (49.0), 2% work in different jobs, they couldn't find suitable fixed jobs, 17% do not work due to disabilities, old age or they

did not find a suitable work. The percentage of beneficiaries who work as farmers was 18%. Agriculture provided the largest source of income for beneficiaries in the study sample. Government employment was 5% and pensioners were 7%. This agrees with [6] argument about agriculture is the largest employer for people in poor classes. Table 5, shows Frequencies and Percentages of Beneficiaries Main Job.

**Table 4. Frequencies and Percentages of individual age structure in the households in the study sample**

Individual age structure	Frequency	Percentage
15 and lower	17	17.0
16-60	69	69.0
61 and higher	14	14.0
Total	100	100.0

*Source: Field Survey***Table 5. Frequencies and percentages of beneficiaries main job**

Main job of the beneficiary	Frequency	Percentage
Private sector's employees	2	2.0
Different jobs	2	2.0
Governmental employees	5	5.0
Pensioners	7	7.0
Jobless	17	17.0
Farmers	18	18.0
Housewives	49.0	49.0
Total	100	100.0

*Source: Field survey*

6. Family Economic Situation: According to the beneficiaries' opinions about their economic situation, they considered their situation mediate or good because they can buy essential and other needs for their households. Table 6 shows the Frequencies and Percentage of Family Economic Situation.

**Table 6. Frequencies and percentage of family economic situation**

Family economic situation	Frequency	Percentage
Very poor	1	1.0
Poor	36	36.0
Moderate /Medium	58	58.0
Good	5	5.0
Total	100	100.0

*Source: Field survey*

7. Kind of Housings: Most of the beneficiaries owned their houses. This can mitigate rent costs; a fixed location ensures continued monitoring for goat enterprises. Table 7 shows Frequencies and Percentage of Kind of Housings.

**Table 7. Frequencies and percentage of kind of housings**

Kind of housings	Frequency	Percentage
Householders	4	4.0
Donations	8	8.0
Owners	88	88.0
Total	100	100.0

*Source: Field survey*

8. Monthly Income: The average income for beneficiaries in the study sample reached 148.9 J.D. per month. According to collected data, the lowest income reached 30 J.D and the highest 320 J.D. Data indicates that the monthly income of 33% of the beneficiaries was 100 JD and lower, 47% of those monthly income was between 101-200 JD, while those who earned 201 and higher did not exceed 17%, 3% they did not respond about their monthly income. Table 8 shows Frequencies and Percentages of Monthly Income of the Beneficiaries.
9. Overall: Nearly 22% of surveyed households reported at least one member with disability or chronic illness. The ratio of visual problems was 4%, 2% mental problems, psychosis was 4%, kidney disease was 4% physical problems was 5% and diabetics was 7%. A greater focus should be oriented to monitor food security of people living with disabilities. This is consistent with [12] argument that vulnerable groups, such as households headed by women or people living with disabilities, need a greater focus to monitor their food security status

10. The majority of beneficiaries in the study sample (77%) benefited from MOA goats project between 2008; 2013 and 23% benefited from AOAD goats project in 2012.

**Table 8. Frequencies and percentages of monthly income of the beneficiaries**

Monthly income of the beneficiary (JD)	Frequency	Percentage
100 and lower	33	33.0
101 -200	47	47.0
2001 and higher	17	17.0
Total	97	97.0
Not respond	3	3.0
Total	100	100.0

*Source: Field Survey*

11. The Number of Years Participant Benefited from Goats Project: the results show that 28% of beneficiaries have benefited for 2-4 years, 47% have benefited for 5-7 years, and 25% have benefited for 8 years. The number of years participants benefited from the goats projects in this survey was between 2 and 8 years. This is not long period to assess the effect of some developmental rural projects but goats projects can have rapid effect on a household development.
12. The total size of the number of goats at the beginning of the project reached 413 heads with a mean ownership of 4.2 heads and a standard deviation of 2.9 heads. There is 62% of the benefited households received three goats, which is the number that was distributed from the MOA for those beneficiaries who have not previously had any goats; 26% received five goats or they owned more at the beginning of their enterprises. The AOAD gives five goats for each benefited families. But for those who previously owned goats, the granted goats contributed to the development and enlargement of their enterprises.
13. The total number of goats that were owned by the surveyed households in 2015 was 1218 heads. The Mean ownership is 13.2 heads with standard deviation 16.3. Most of surveyed households (34%) owned one to five heads of goats. They sold the male goats to pay for their needs. The fast breeding of goats contributed in the development of the projects.

**Table 9. Mean and standard deviation for the beneficiaries' answers about the contribution of projects on different households 'sustainable development dimension**

Item	Mean	Standard deviation	Universal estimation of a Likert scale
The women contribute to the project care and success	4.42	0.78	Very high
Family members assist you in the care of goats	4.32	0.96	Very high
The project contributed to additional income through selling of goats	4.50	0.76	Very high
The project contributed to additional incomes through selling of milk	2.70	1.18	Intermediate
The project contributed to additional income through selling of dung as manure	2.09	0.40	Low
The family benefits from consumption of milk and its derivatives	4.11	1.12	High
The family benefits from consumption of goats' meat	3.23	1.24	High
The beneficiary has enough and previous experience about goat raising	3.95	1.22	High
The project contributes to improve educational situation of family members	3.06	1.15	Intermediate
The veterinary services are available during governmental time	3.84	0.79	High
The veterinary services are available out of governmental time	2.15	0.73	Low
Sustainable development dimensions	3.49	0.52	High

Source: Field survey

14. In the study sample, 23% of beneficiaries returned the agreed number of female newborn goats to the supplier party. AOAD retrieve five young female goats during the first three years of the project and mostly two female' goats were retrieved to AOAD as a supplier. According to the beneficiaries opinions this policy delayed the development of the project and delayed achieving the grantor's goals.
15. The Family is Raising Other Livestock in addition to Goats: According to collected data there are 22% of households who are raising livestock other than goats. 4.5% of households raise cow in addition to goats, 4.5% raise bees, 13.6% raise pigeons, 27.4% raise sheep, and 50% raise poultry. This assumes that the rearing of small livestock encourages rural households to own large livestock such as cattle. This in turn provides the opportunity to climb the societal ladder of development through raising of other livestock. This agrees with [9] argument that the ownership of small livestock enables rural households to start raising larger livestock.
16. The Mean and Standard Deviation for the Beneficiaries' Answers about the role of projects on different sustainable development dimension: as represented in the variable of projects contribution on sustainable development was measured using Likert Scale for eleven items as shown in Table 9. According to the Likert scale, the means of responses of beneficiaries in the study sample concerning the contribution of the project on development were between (2.09-4.50), and the total mean of the all items was (3.49). This indicates that the project has had a positive effect on sustainable development.
17. The Projects Contributed in Providing Family Developmental Equipment: data indicates that the projects contributed in providing air conditioning for 2% of the families, home cooker (developed gas) for 15%, washing machine for 16%, refrigerator for 17%, repayment of curing costs for 46%, provided money to buy kitchen and food utensils for 54%, contributed in paying electricity bills for 64%, paying water bills for 68%, buying clothes, blanket and family apparelling for 79%, supplying with foodstuffs for 88%. Owning developed household machines and durable goods increases as we head from the slice of poor to the richer ones

and this is considered an indicator for rural development and this is consistent with [10] and [6] arguments.

18. The Projects Contribution in Creation of a Job for Beneficiaries or their Family Members: Data signified that the projects created opportunity for veterinary training for 26% of the beneficiaries and the projects contributed in creation of sheepherder jobs for 48% of the beneficiaries or their family members.
19. The Goats Annual Costs Average Expended by Beneficiaries on the Project: The total sum of production costs were 54,626 J.D per year, the mean of cost for each household project was 593.8 J.D and 44.8 J.D for each goat yearly. These costs included fodder, veterinary medication and costs for a sheepherder, the cost intervals according to collected data. There are 40% of beneficiaries expended 300 J.D and lower as a cost, 19% expended 301-500 J.D, 14% expended 501-700 J.D, 27% expended 700 J.D. The majority of beneficiaries (52%) said that they expended additional costs for goats care in daily wages for sheepherder or veterinary medication. This is because the unavailability of governmental veterinary services at time of need. Furthermore, the costs of veterinary medicines are very high in private sector. They also expended costs for sheepherders due to the beneficiary's aging or illness.
20. Total Revenues from Selling of Milk: The collected data about the total revenues from selling the milk showed that the households in the study sample sold the milk and its derivatives with a revenue of 5845 J.D yearly, with a mean 216.5 J.D yearly for each household with a standard deviation of 129.3 J.D, and 14.4% J.D yearly for the one goat. The frequencies and percentages of revenues interval from selling milk or its derivatives: there are 16% of the beneficiaries sold milk with a revenue of 200 J.D. and less, 9% sold with a revenue of (201-400), 2% sold with a revenue of (401-500), 73% of the beneficiaries did not sell goats milk, but they consumed it.
21. The Total Revenues from Selling the Goats: The collected data showed that the total revenues from selling the goats reached (76,530) J.D, with a mean 814.2 J.D for each household. The frequencies and percentages of revenues intervals

from selling the goats: There are 77% of the benefited households that sold goats with a revenue of 1000 J.D. and less, 13% sold of a revenue between 1001 and 2000 J.D. 2% sold of a revenue between 2001 and 3000 J.D. 2% sold with revenue more than 3000 J.D. 6% did not sell goats.

22. Financial Abundance from Consumption of Goats' Meat by Benefited Households: The collected data about financial abundance from consumption of goats' meat showed that the total value of financial abundance reached 31840 J.D with mean of 558.6 J.D and a standard deviation of 724.8 J.D yearly for one household. Data indicated that 50% of the benefited households consumed goats' meat and abounded money with a value of 1000 J.D and less, 4% abounded 1001-2000 J.D, 3% abounded 2001-4000 J.D, and 43% they did not abounded money from goats' meat consumption.

The results of the study showed that the total value of the annual costs for the goat raising projects that were expended by households was (54,626) J.D while the total value of revenues from selling animals, milk and monetary abundance from meats consumption reached (114215) J.D, this indicates the total profit was (61,539) J.D. This is consistent with [11] findings of his research that examined the role of Ethiopian goats' projects in combating the challenges facing the rural population of suboptimal food security and self-sufficiency low income generation, farmers found goats husbandry as an attractive investment as a result of the goats' ability to produce even under harsh environmental conditions that might limit productivity of sheep and cattle. In addition to argument of [12] that the agriculture intervention is important to make a greater contribution to achieve economic development and nutrition outcomes through promotion of homestead food production and ensure dietary diversity, which has had a positive effect on health and nutrition in Jordan.

23. There are 40% of beneficiaries benefited from training courses in goat husbandry. Training courses contribute to improve the culture of animal breeders. This enriches the knowledge of beneficiaries and contributes to the sustainability of livestock projects. But the interviewed beneficiaries



said that the duration of training was only for one day and covered subjects about main diseases and women role in goat projects. So the training was not sufficient and should be improved to include more subjects about goats' diseases, vaccination, nutrition and breeding.

24. The mostly used reproductive method for breeding the herd was by natural means by using outside male goats from other herds in the pasture. This may have the potential for disease transition between animals if they were not vaccinated.

## **5. CONCLUSION**

Based on the findings and discussion above, there are statistical indications about the actual role of goats raising projects on development and improving life in rural areas, such as achieving food security, addressing issues of gender imbalance and poverty alleviation in furtherance of the Millennium Development Goals (MDGs) [13]. It is clear that these projects contributed clearly to improve the economical and nutritional situations of the benefited households in the survey. When comparing the findings of the current study which showed the actual contribution of goats raising projects on development of households with previous studies, this study is consistent with [9]; and with the findings [4]. It is realized that rural development projects are very essential in income generation and social development. The findings of the study indicated that more than 77% of the participants or housewives benefited from the developmental projects. This concludes that rural development projects have positive impact in generating income for most beneficiaries especially women in Southern Ghore District. This is very clear in the women's interest in goat raising. The ownership of goats shows that poor rural people can find a source of food and financial security in a problematic environment such as the Southern Ghore District. The women and children who are generally the most vulnerable group and victims of poverty in their communities play a prominent role in the continuation of livestock projects through tending the livestock, processing of milk products and feeding their households. The empowerment of this most vulnerable group through granting of goats enterprises can alleviate poverty and improve food security at the household level and community level and decrease the number of people who take monthly monetary support expended by

governmental agencies. People in Southern Ghore especially women have the desire to raise goats because they are widely adapted to different climates and circumstances. The goats are found in all production systems and need lower feeding requirements that enable them to breed and produce even when feeding resources are not available in the harsh environment in this area.

The success of goat husbandry and distribution projects on most of the targeted households in the villages in Southern Ghore District indicates that small livestock can play a vital and basic role in fighting against hunger and poverty mainly through provision of nutrition and income. Therefore consolidation of international, governmental and non-governmental organizations is essential if the continuous benefits need to be extended to the poverty-stricken in the rest of the rural communities in this district. This study will help professionals and experts in the field of developmental studies, agriculture and social development to achieve a deep insight when conducting fund raising projects in these rural areas.

## **6. RECOMMENDATIONS**

To benefit from what has been deduced previously based on what aforementioned in the research, the study provides a group of recommendations:

- i. Continue the developmental plans toward providing a larger number of the poor in the Southern Ghore District and to include more areas to benefit from goat distribution projects because of the actual developmental role that has been achieved from livestock projects.
- ii. Design integrated projects that include donating goats and provision of home feed through planting feed crops utilizing home gray water, since the district area is very hot and it has a dry climate, especially in the summer and there is a water scarcity.
- iii. Continuous communication with beneficiaries through improved the training courses and agricultural extension in the field of goats raising, home food processing to ensure a benefit from all the products to guarantee achieving the success.
- iv. Increase the level of interest with rural women in the Southern Ghore District and documents, by use of media, the

successful and productive women of the livestock projects.

- v. Consider the beneficiaries' opinions about the factors of success and failure to avoid potential problems with future developmental plans.

## COMPETING INTERESTS

Author has declared that no competing interests exist.

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