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Layer Farms in The West Bank

Legehennenhaltung in der West Bank

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1 Introduction

Despite the large amounts of funds needed to establish laying hen farms, many such farms have been recently established. One reason behind this phenomena is the availability of different types of loans and subsidies from loans and development groups stationed in the West Bank. Such organizations offer loans and subsidies especially for the poultry sector.

In the last three years the number of laying hens increased vigorously (Table 1). The number of frams also increased tremendously, it increased from (23) farms in 1983 to (466) in 1991 (Statistical Abstract of Israel). The development of the number of farms varies in the districts of the West Bank. The number was found

Tab. 1: Development of Layers Production in the West Bank

Year	Hen No. (1000)	No. of farms
1983	87.4	2.3
1984	87.9	31
1985	86.6	30
1986	180.9	54
1987	217.2	61
1988	250.9	88
1989	370.4	148
1990	417.6	302
1991	741.3	466

Source: Veterinary Department Records - Nablus - West Bank

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larger in the southern side of the West Bank (Ramallah and Hebron) than it is in the north (Nablus, Tulkarm and Jenin).

2 Methodology

The sources of information needed for this paper were obtained from the limited available literature and veterinary departments files as well as data collected from field and personal communications.

3 Evaluation of Local Layers Farms

Due to the large capital invested in the poultry sector, layer farms increased in number especially in the Hebron and Ramallah districts where (65%) of projects are located. This can be explained by the fact that many farmers in these two districts own the experience and capital, besides the availability of most the facilities needed for layers. Needless to mention the availability of concentrate feeds and chicks from Israeli markets.

4 The Economic Value of Layers Farms

Egg production has a big impact on total agricultural value. In 1990, it contributed (37%) of total poultry value, (9%) of animal production and (4%) of the total agriculture value (JAFARI, unpublished data). These values were noted to increase gradually in the last decade especially in the last two years (Table 2).

Tab. 2: Value of Egg Production as Percent of Poultry, Animal and Total Agriculture Values

Year	% of Poultry	% of Animal Prod.	% of Total Agric.
1983	11.5	3.5	1
1984	13.5	3.5	1
1985	13.0	3.0	1
1986	13.0	4.0	1
1987	14.0	4.1	2
1988	18.0	5.3	2
1989	24.0	8.1	4.4
1990	37.0	9.0	4.4

Source: JAFARI, M. Poultry Products, unpublished data

Costs of Egg Production

Layers farms production costs can be classified into feed and chick cost. It is found that the cost of feed makes up to (70%) of the total running costs. While chicks cost makes up (18%) of total annual running costs of layer farms, when chicks are bought directly from the Israeli hatcheries. The percentages of running costs varies according to the source of chicks. This study shows that (36%) of total layers raised last year in the West Bank were bought directly from Israeli hatcheries. In 1991, most of the layers raised (64%) were bought from the local black market, where the investments on these layers makes up (23%) of the total running costs (JAFARI, unpublished data).

Production costs have changed widely in the last decade especially costs of concentrate feed and chicks (Table 3).

Tab. 3: The Development of Production Costs in the West Bank [Million Dollars]

Year	Total Feed Cost	Total Chick Cost	Total Running Cost	Total Costs
1983	1.98	.52	2.91	3.53
1984	1.5	.66	2.51	4.03
1985	1.93	.89	3.22	3.9
1986	2.91	1.72	5.38	6.52
1987	3.26	1.95	6.06	7.3
1988	4.62	2.26	8.0	8.4
1989	7.8	3.15	12.0	15.4
1990	8.96	3.55	3.38	16.2

* Values shown are the total annual expenditure on feed and chicks.

Source: ABO OMAR, J., Poultry Production in the West Bank, Rural Research Center, 1987. JAFARI, M., Poultry Products, unpublished data.

Egg Production

As a result of large number of layers farms and good quality layers raised, large numbers of eggs are produced. The egg production has increased from (20) million eggs in 1983 to about (135) million eggs in 1991 (Table 4) (Statistical Abstract of Israel).

Egg Consumption

The local consumption of eggs per capita increased from 75 eggs/year in 1986 to about 90 eggs in 1990 (Table 5). In late 1970's and 80's due to shortage of eggs

Tab. 4: Development of Egg Production in the West Bank

Year	Eggs (millions)
1983	20.1
1984	20.5
1985	19.8
1986	42.8
1987	50.0
1988	57.0
1989	85.0
1990	88.3
1991	135.0

Source: ABO OMAR, J., Poultry Production in the West Bank, Rural Research Center, 1987. JAFARI, M., Poultry Products, unpublished data.

Tab. 5: Development of Egg Consumption in the West Bank and Eggs Imported from Israeli Markets

Year	Total Consumption (Million eggs)	Imported (Million eggs)	% of Imported to consumed
1983	33.6	11.7	34
1984	54.0	16.5	33
1985	57.0	18.9	33
1986	60.0	9.9	16.5
1987	60.0	—[a]	—
1988	60.0	-9.0[b]	15
1989	75.0	-16.9[b]	22
1990	82.5	-27.3	33

a No eggs
b The negative values indicate the surplus amounts of eggs

Source: JAFARI, M., Poultry Products, unpublished data

(20%) was imported from Israeli markets, but in 1988, the beginning of the local Intifada, when large number of new farms started in the West Bank, no more eggs were imported from Israel. Recently, the surplus of eggs produced locally is exported to both markets in Israel and Gaza Strip (JAFARI, unpublished data).

In (1992) the West Bank markets received a great number of eggs from Israeli origin as it is very difficult to manage the infiltration of several Israeli products to

the local market. This situation can explain the huge decline of the egg price at local markets. This study that the decline is about 30% compared to 1991 prices.

Income from Layer Farms

The part of income coming from egg production increased in the last decade to about 29% of total poultry income in 1990, compared to 12% in 1983 (Table 6) (ABO OMAR, 1987; JAFARI, unpublished data).

Tab. 6: Income from Eggs and % of Total Poultry Income

Year	Income (Million dollars)	% of poultry income
1983	1.9	12
1984	1.29	14
1985	2.5	13
1986	1.14	12
1987	8.5	13
1988	10.5	19
1989	14.1	22
1990	20.0	29

Source: JAFARI, M., Poultry Products, unpublished data

Profitability of Layers Farms

A detailed feasibility study is given here in order to show the profit of a layer farm of suitable size that most of local farmers have.

5 Feasibility of the New Layer Farms

Farm costs

This include the running and fixed costs.

1. Fixed costs
   This includes the cost of land, establishments costs, construction, cages and other fixed costs. The fixed costs for the proposed farm is estimated to be 11,360 U.S. dollars (Table 7).

2. Running costs
   Which includes the investments in birds, feed labor, electricity, water, medicine, and other costs. For this farm the running are estimated to be 33,667 U.S. dollars (Table 8).

Tab. 7: The Investment Costs for 1000 Birds Layers Farm

Item	Cost/unit ($)	Total cost ($)	Remarks
Land (Rent)		300	
Housing	50	6000	120 m^2
Cages	3	1500	500 cages
Store	80	1600	20 m^2
Office	80	960	12 m^2
Other expenses		1000	
Total fixed costs		11360 $	

Notes:
a. Land used is usually not owned by farmer and is rented in reasonable cost per year.
b. Bird housing is made of bricks, metal pipes and metal or asbestes roofs.
c. In many cases office and storage areas for feed and eggs produced is available in most of the local farms.

Tab. 8: The Running Costs for a 1000 Birds Layer Farm

Item	Cost/unit ($)	Total cost ($)	Remarks
Birds	10	10000	1000 birds
Feed	300/ton	18000	60 tons/18 mo.
Labor	150/month	2700	18 months
Medications		300	
Electricity & water		400	
Egg trays		500	
Total		31900	
Depreciation		867	
Interest		900	
Grand Total		33667	

Notes:
a. Birds are of cross - 10 breed which is the best breed raised in the West Bank and Gaza Strip.
b. The bird average feed consumption is 110 g/day.

Income

The production period for the layer farm is 18 months. Locally, the production rate of chickens is 340 egg per 18 months. A mortality rate of 10% is considered for farm in the West Bank and Gaza Strip.

Since the size of the farm is 1000 hens, then the number of producing hens is 900. The total number of eggs produced is:

900 x 340 = 306,000 egg/period, which is 10,200 trays (each tray contains (30 eggs).

The income from egg production is equal to 10,200 x 3.8 $ = 38,760 $, as the price of the tray is 3.8 $. Another part of income which may be included in the selling price of the old hens at the end of the production period. The price of each old hen is 1.0 $, then 900 $ should be added to the income.

Then the total income from the farm is:

38,760 + 900 = 39,660 $.

Gross margin = Income - Running costs.

= 39,660 - 33,667 = 5,993 $.

Then the gross margin percent is about 10%.

We conclude from this gross margin that the profitability of layers farm is low compared to other investments. This can be explained by the high costs of feed and birds or most of production inputs.

Compared to this, profitabilities of such farm in 1988, 1989 and 1990 are to 3 folds higher, as cost of inputs was low compared to 1992 prices.

6 Proposed Plan to Improve Layers Farms

It is estimated that the number of eggs consumed last year is (85) million eggs. This amount is expected to increase widely in the near future. This is an important reason to enhance the efforts to improve the poultry production sector.

The objective of this plan is to improve the sector of egg production and related industries such as feed factories, hatcheries and farm equipment industries. Other objectives are to provide the needed facilities for layers projects to increase productivity to meet the increasing demands for eggs.

One of the most important goals in the proposed plan is to establish a modern hatchery. The purpose of such hatchery is to:

1. Produce good quality chicks at suitable prices for local farmers.

2. Provide the increasing number of demanded chicks for the local projects. This number is expected to reach one million chicks in the next five years (SHQUIR, 1991).

3. Save lots of investments expended for chicks form black market which were estimated here to be about 5% of the total running costs. However, in order for hatchery to solve the problem of chicks demand another project should be considered at the same time. This project is raising mother hens to supply the needed eggs for the hatchery.

A study showed that for the next five years 1 million laying chicks and 25 million broiler chicks are needed (SHQUIR, 1991). The estimated cost for hatchery is about (3.2) million dollars (SHQUIR, 1991), where the running costs make about (37%) of the total costs.

7 Problems of Layer Projects in the West Bank

1. High cost of investments which can be seen in high levels of running costs which keep layers projects less improved, and less profitable.
2. High cost of concentrate feed as local farmers depend on imported raw materials.
3. Low quality of chicks raised locally, where most of the breeds raised are cross breeds.
4. The difficulty of importing chicks at the time needed as this process undergoes the Israeli authorities.
5. Lack of veterinary services in the West Bank.
6. Lack of good management practices in most of the local layers projects.

8 Recommendations

1. New layers projects should prove to be feasible before starting business.
2. Adoption of intensive practices to utilize local raw materials in preparing layer feed.
3. Chose the most productive breeds which can adapt local conditions.
4. Establish a modern hatchery to provide the required number of chicks for local farmers.
5. Enhance the veterinary activities and services through an increase number of vets and vet clinics.

6. The loans provided by loan organizations should be directed towards profitable projects after full feasibility studies for the funded projects.

Summary

There was an important increase of the number of laying hen farms in the West Bank. In the last decade, the number of laying hens has become seven times as much, and consequently, egg production sector increased its contribution in total animal production sector. Specifically, in 1982, egg production contributed (9.5%) of total poultry production (2.4%) of the total animal production and (1%) of total agriculture value. Whereas, in 1990 these percentages expanded to respectively, (37%), (9%) and (4%).

In the last four years several factors started to affect farms of laying hens.

This study gives a systematic investigation of the process achieved through our product enlargement, obstacles faced this progress and then puts a future plan to improve these projects together with recommendations which may help overcome difficulties related to local egg production.

Zusammenfassung

Die Legehennenhaltung in der West Bank ist stark angestiegen, so nahm die Anzahl der Legehennen in der letzten Dekade um das 7-fache zu, und so stieg auch der Anteil der Eierproduktion in dem Sektor der tierischen Erzeugung an.

In 1982 betrug die Eierproduktion 9,5% der Geflügelproduktion, 2,4% der gesamten tierischen Produktion und 1% der gesamten landwirtschaftlichen Wertschöpfung. Im Jahr 1990 lagen die Prozentanteile bei 37%, 9% und 4%, rund das vierfache von 1982.

In den letzten vier Jahren erschwerten einige Faktoren die Legehennenhaltung. Diese Studie gibt einen systematischen Überblick über den Fortschritt der Ausdehnung der Haltung, die Hindernisse und die zukünftige Planung zusammen mit Empfehlungen, die zur Behebung der Schwierigkeiten dienen können, die bei der lokalen Eierzeugung aufgetreten sind.

References

1. ABO OMAR, J., 1987: Poultry Production in the West Bank. Rural Research Center. An-Najah National University.
2. JAFARI, M., unpublished data: Poultry Products in the West Bank.
3. SHQUIR, A., 1991: Development Projects for local livestocks.

4. Statistical Abstract of Israel.

5. Veterinary Department Records - Nablus West Bank.

Errata

Im Artikel "Ökonomische Analyse agroforstwirtschaftlicher Produktionssysteme" von H.-J. Glauner, S. 17 bis S. 32, 95 Jhg., April 1994 wurde irrtümlicherweise unter Nr. 15 sowie in den darauf bezogenen Quellenhinweisen in der Abbildung 2, den Tabellen 2, 3 und 4 ein falscher Verfasser benannt. Es muß heißen:

15. ZOLL, Chr., 1992: Ökonomische Analyse über die Umwandlung des temporären Agroforstwirtschaftlichen Shambasystems . . . Montanregion Londiani/Kenia, Diplomarbeit, Universität Kassel - Witzenhausen.

Die Daten in der Tab. 3 und 4 sind darüber hinaus in Anlehnung an die Berechnung von Herrn ZOLL abgeleitet.