The value chain analysis for poultry hatcheries in Wasit province- Iraq for the year 2018

Ali Awad Jabber Saad Jaafer Ibrahim
College of Agriculture, University of Baghdad, Baghdad province, Iraq.
alialrashid2011@yahoo.com

ABSTRACT

The research aims to study and analyze the items of costs and revenues accrued in poultry hatcheries and calculating profits and value-added and their percentage, in addition to calculating some economic indicators. A descriptive and quantitative analysis method was used to analyze the data collected through the questionnaire form. The results of the study showed that the variable costs for poultry hatcheries constitute (95%) of the total costs, where the cost of purchasing eggs for hatching amounted to (96%) of them. The study recommended encouraging projects that supplying hatching eggs by establishing and expanding projects for mothers of hatching eggs in order to reduce the costs of purchasing of hatching eggs and not rely on imported eggs.

Keywords: poultry hatcheries, costs, revenues, hatching eggs, value-added.

*Research paper from MSc thesis for the first author

تحليل سلسلة القيمة لمفاقس الدواجن في محافظة واسط – العراق لعام 2018

علي عواد جبر سعد جعفر إبراهيم
كلية الزراعة, جامعة بغداد, محافظة بغداد, العراق.
alialrashid2011@yahoo.com

الملخص

يهدف البحث الى دراسة وتحليل بنود التكاليف والإيرادات المتحققة في مفاقس الدواجن وإحتساب الأرباح والقيمة المضافة ونسبتهما ، فضلاً عن إحتساب بعض المؤشرات الإقتصادية ، تم إستخدام أسلوبي التحليل الوصفي والكمي لتحليل البيانات التي تم تجميعها من خلال إستمارة الإستبانة ، أوضحت نتائج الدراسة أن التكاليف المتغيرة لمفاقس الدواجن تشكل (95 %) من التكاليف الكلية ، إذ تشكل كلفة شراء بيض التفقيس (96 %) منها . وأوصت الدراسة بتشجيع المشاريع التي تجهز بيض التفقيس ذاتياً من خلال إنشاء مشاريع أمهات بيض التفقيس والتوسع فيها من أجل خفض تكاليف شراء بيض التفقيس وعدم الإعتماد على البيض المستورد .

كلمات مفتاحية : مفاقس الدواجن ، تكاليف وايرادات ، بيض التفقيس ، القيمة المضافة .

1. INTRODUCTION

Iraq is considered one of the countries that consume poultry meat, where the average annual per capita share of poultry meat is (7.5 kg/person). The average of capita share for the Arab individual is (14.8 kg/person) for the year 2016 [AOAD, STAT, 1]. While the average annual capita share of poultry meat in developed countries was much higher levels than that, as in the United States of America (49.4 kg/person) for the year 2016 [FAO, STAT, 2]. Due to the high level of income for Iraqi individual in recent years and increasing demand for white meat more than red meat for health reasons, therefore there is a large gap between domestic production of chicken meat and consumption, it is usually compensated by import. The poultry industry is considered important in the field of food security, providing protein and increasing purchasing power by generating job opportunities and improving economic growth using export capabilities. Poultry hatcheries are considered an important link in securing production requirements for the poultry industry, and there is a need to focus on developing this industry. The development of the poultry industry depends on the integration of the value

chain starting from poultry hatcheries, so the research focused on analyzing the most important components of the value-chain for poultry hatcheries by calculating costs, profits and value added, and diagnosing the most important problems, constraints, and challenges to its work. According to [Kaplinsky, R. and Morris, m., 3], the value chain analysis is useful for formulating policies that assist in the effective allocation of resources within the local economy. One of the important problems that hinder the work of poultry hatcheries is the heavy dependence on imported hatching eggs, which in turn increases their costs at the expense of profit and the value added achieved by hatcheries, and the reason for this is due to the lack of grandparents and mothers' projects that produce hatching eggs, where their number amounted to (10 projects) on the level of Iraq, the number of poultry hatcheries amounted to (67 hatchers), the number of eggs set (187730981eggs), the resulting chicks (144948466 chicks) (Department of Livestock, Annual Report 2017). where the costs of purchasing hatching eggs constitute (96%) of the operating costs of poultry hatching projects. Among the studies that deal with poultry hatcheries is the study of [Shamsuzzaman, and Jahan, 4] for the value chain of poultry hatcheries in Bangladesh, in a comparative study between small and medium projects. The study aims to explore the value chain and challenges facing integration by small and medium-sized projects versus large poultry hatcheries. The study found that large poultry hatcheries have excelled on the small and medium-sized companies due to using modern technologies, methods and processes, appropriate marketing activities, effective customer services, large economies of scale, technological development, and stronger infrastructure management and support. The study recommended that the government should take all necessary steps to set and implement quarantine procedures, provide financial support for the implementation of the hatchery conservation policy, especially the operators of small and medium-sized companies, organizing an advanced training program, seminars, courses, and workshops on return the Production engineering and adoption of modern technology.

Research Methodology

Research problem: Poultry hatcheries projects suffer from the increase in production costs, which is reflected negatively on the margin of achieved profit, this requires using all modern and advanced means to reduce production costs, and from these methods using the value chain to reduce this situation.

The importance of the research

The research acquires its importance through using it a descriptive and quantitative analysis methodology whose goal is to follow the value chain in poultry hatcheries, which is the first and fundamental link in poultry meat production, and to identify the most important problems and obstacles that hinder the work of these hatcheries, and provides a clear view about the available opportunities that can It benefits stakeholders as well as official bodies and decision-makers.

The objective of the research

Studying and analyzing the items of costs and accrued revenues, calculating profits and value-added and their percentage, identifying the most important obstacles and determinants and their impact on profits and value-added.

The research hypothesis

The value chain of poultry hatcheries does not enjoy the efficient use for the potentials and resources available in the country and employed them to achieve value-added and profitable profits, and the lack of a clear and supportive agricultural policy for this product sector in the right way.

The research sample

ISSN 2072-3875

The research dealt with poultry hatcheries in Wasit province, where the number of hatcheries existing in the province was (21 hatcheries), only 12 hatcheries are working and the sample formed 58% of the study population, representing 7 hatchers from 12 working hatchers distributed throughout the province.

Analysis method

The study follows a quantitative analysis method, which represents calculating the different production costs, achieved revenues, and value-added, and a descriptive analysis that cares about the problems and obstacles that hinder the work of hatcheries in the province and creating the necessary solutions and recommendations for it.

Theoretical aspect

Definition of Value Chain

The value chain is defined as the complete set of activities required to bring a product or service from its early stages, across different production stages (which involves the combination of physical transformation and inputs from various product services) and delivering a product to the end consumer [Hellin and Meijer, 5]. As for Day, [6] defined it as (the skills and resources required to conduct each of the institution's activities to deliver goods or provide services through marketing outlets). Ansari, [7] defined it as the interaction of multiple parties, the provider, the enterprise divisions and distributor, and all of these parties add value in several stages of value chain operations. From the above, it can be said that the value chain is an analysis, method or method that requires studying all the internal and external activities of the organization and arranging them according to an organizational structure and selecting efficient human resources capable of optimal utilization for resources in a way that helps in achieving the best return for the institution.

Value-added

The value-added represents the wealth created for the economic unit from its own efforts and the efforts of its employees [Karpik and Belkaoui, 8]. The value-added can be measured at the enterprise level, by the difference between sales revenue, the cost of external purchases and services (the cost of direct production inputs) [Kim, and Frederik, 9]. Al-Assauy, [10] also defined the value-added of a specific project as the value of production generated by the enterprise during a specific time period, and it is one of the criteria that measures the amount of the added benefit from the project or its contribution to achieving adding to the farm income.

Gross value added

Al-Dahary, [11] defined the total value-added as the value created from the added value as a result of using production requirements in the process of its original value. It is defined as the value that is added to the value of intermediate goods as a result of the production process and it is equal to the value of total production minus the value of production requirements [Abd Al- Kareem and Kadawy, 12], and this is one of the most important criteria used in the evaluation of projects.

Gross Profit

It is defined as the value of total sales minus direct costs (production input costs, labor costs) that are spent directly on the product [Al-Exander, 13].

Investment costs

These are the costs needed to set up and equip the project until it is ready to start operating and include the costs of purchasing fixed assets, working capital (stock of crude materials, stock of raw materials, spare parts, maintenance materials, etc.).

Average fixed and variable costs: [McFaiden J. et al., [14]

Average fixed costs:

 ISSN 2072-3875

It is the costs that do not change with the change in the volume of production, and the producer bearing them whether it was produced or not and includes (government fees, rents paid for buildings and land, consumption and extinction costs, and permanent work costs). Average fixed costs can be calculated by dividing the total fixed costs on the number of production units.

Average variable costs:

It is the costs that change with the change of production units, that is, they increase with the increase in the volume of production and decrease with its decrease and the costs include (purchase of hatching eggs, fuel, and oils, maintenance fees, water and electricity, sterilization of hatch). The average variable costs can be found by dividing the total variable costs on the number of production units.

SWOT analysis for Value Chain Analysis:

The SWOT analysis is considered a supportive analysis for the value chain analysis and it is summarized for Strengths, Weaknesses, Opportunities, and Threats (Strengths, Weaknesses, Opportunities, Threats) [Hamenoo, 15].

Poultry hatchery:

The hatchery consists of three main sections, which are incubators, hatcheries, and the counting and sorting hall. Hatching eggs lay in incubators for a period of 18 days with a temperature between (37-38 ºC) and relative humidity between (50-60%). After this period, the eggs are transported From incubators to hatcheries, either by the manual method (placing the special hatching dish over the incubator dish and turning them by one mechanical process over the other to transfer the eggs to the hatching dish) which is the common method, or by the mechanical method (the air aspiration method) and this method is little used because instability of the electric current and the eggs will be damaged in case of power outages that cause the eggs to fall and become damaged, and the eggs remain in the hatcheries for three days at a lower temperature than in the incubators and with a higher humidity level of 65%. The temperature and humidity in incubators and hatcheries are controlled automatically by the thermostatic control device and it has nothing to do with the operations of transporting eggs from incubators to hatcheries. then hatching is conducted, the chicks are transferred to the counting and sorting hall, and then they are marketed to the breeding fields. The staying period for chicks in this hall does not exceed (24) hours as a maximum, where the chicks will need to be fed after which not available in hatcheries, so it is necessary to market them during this period. Table (1) shows the numbers of approved and working poultry hatcheries according to their distribution in the province and their relative importance. where the investment costs are represented in (building hatchery, incubators, hatcheries, and its accessories, and equipment and machinery) as shown in Table (2).

Table 1: The approved and working poultry hatcheries in Wasit province for the year 2018.

Agricultural department	Approved poultry hatcheries	Relative importance	Working poultry hatcheries	Relative importance
Kut	4	19	2	17
Al-Sawira	4	19	1	8
Taj Aldin	4	19	1	8
Al-Aziziyah	5	24	5	42
Al-Hay	3	14	3	25
Al-Ahrar	1	5	0	0
Total	**21**	**100**	**12**	**100**

REFERENCES: Agricultural Directorate in Wasit province, Department of Livestock Services, Poultry Division.

ISSN 2072-3875

Structure of costs and annual revenues for poultry hatcheries

The average costs of building hatchery in the study sample amounted to (218.6 million dinars), with relative importance (35.7%) from the total investment costs for the sample, the average costs of incubators, hatcheries and its accessories for the sample amounted to (295.7 million dinars) and their relative importance (48.4%) from the total investment costs for the sample. The average costs for equipment and machinery amounted to (97.2 million dinars), and their relative importance (15.9%) from the total investment costs for the sample. This means that the highest relative importance was for the average costs of incubators and hatcheries, and these costs can be reduced by undertaking the manufacturing of incubators and hatcheries locally due to the availability of capabilities and human and natural resources as well as the availability of scientific capabilities in the country on the one hand, and on the other hand not to bear the costs of transportation, freight and customs fees which in turn leads to higher costs for these incubators and hatcheries, and as a result, it will reduce the costs of the producers of poultry chicks in favor of the profits accruing for their work as shown in Table (2).

The second part of the costs for poultry hatcheries represents the fixed costs which include (extinctions, Salaries, interest on capital, and land lease allowance). The highest average fixed costs were represented in extinction, which amounted to (50.2 million dinars) and relative importance (36.5%) from the total fixed costs for the sample, and The average interest costs on capital and permanent work and the land lease allowance amounted to (48.9, 37.9, 0.4 million dinars), respectively, with relative importance of (35.6%, 27.6%, 0.3%) for each of them respectively, where the extinction costs of hatcheries and incubators are an important part of the costs of extinctions, and when the costs of hatcheries and incubators are reduced, the costs of their extinction will decrease, and this also leads to a decrease in the costs of producers in favor of their profits as shown in Table (3).

The variable costs represented in (fuel and oils, maintenance fees, water and electricity, workers' feeding, hatching sterilization, and purchasing of hatching eggs). It is worth noting that working in poultry hatcheries in Wasit province and at the level of the study sample is permanent work, there is no leased work. Therefore, It was not mentioned in the variable costs, and the highest average of the variable costs for purchasing of hatching eggs was (2504.9 million dinars) and a relative importance of (96%) from the total averages of the variable costs items, and the average costs of (fuel and oils, maintenance fees, water and electricity, and feeding Workers, hatching sterilization) which amounted to (44.5, 16.2, 30.3, 4.6, 8.8 million dinars), respectively, with relative importance of (1.7%, 0.6%, 1.2%, 0.2%, 0.3%) for each of them, respectively. Changing costs of producers can be reduced, especially the costs of buying eggs for hatching, through laying mothers eggs for hatching eggs and encouraging local production of hatching eggs, Due to the dependence of most of the poultry hatcheries in their production on imported hatching eggs whose costs are high in addition to the costs of transporting and shipping it and the customs fees imposed on it, and reducing these costs is in favor of the profits of the producers and the added value as shown in Table (4).

 ISSN 2072-3875

Table 2: Analysis of the investment costs for the poultry hatchery sample in Wasit province for the year 2018.

Hatchery	Cost of building hatchery (million dinars)	Relative Importance (%)	The costs of incubators and hatcheries (million dinars)	Relative Importance (%)	Costs of Equipment and machinery (million dinars)	Relative Importance (%)	Total	Relative Importance (%)
1	120	24.3	312	63.2	61.5	12.5	493.5	100
2	155	40.9	168	44.3	56	14.8	379	100
3	210	78.5	30	11.2	27.6	10.3	267.6	100
4	250	44.5	180	32	132	23.5	562	100
5	120	13.9	672	77.7	73	8.4	865	100
6	600	54.9	288	26.4	204	18.7	1092	100
7	75	12.1	420	67.6	126	20.3	621	100
Total	**1530**		**2070**		**680.1**		**4280.1**	
Average	**218.6**	**35.7**	**295.7**	**48.4**	**97.2**	**15.9**	**611.4**	**100**

References: it prepared by the researcher based on the data of the questionnaire.

Table 3: Analysis of the fixed costs for the poultry hatchery sample in Wasit province for the year 2018.

Hatchery	Cost of extinctions (million dinars)	Relative Importance (%)	Salaries	Relative Importance (%)	Interest on capital (million dinars)	Relative Importance (%)	Land lease allowance	Relative Importance (%)	Total	Relative Importance (%)
1	43.3	28.9	66.6	44.5	39.5	26.3	0.4	0.3	149.8	100
2	30.1	34.3	27.0	30.7	30.3	34.5	0.4	0.5	87.8	100
3	16.3	28.6	18.6	32.7	21.4	37.6	0.6	1.1	56.9	100
4	43.7	41.7	15.6	14.9	45.0	43.0	0.4	0.4	104.7	100
5	80.5	39.4	54.0	26.5	69.2	33.9	0.4	0.2	204.1	100
6	79.2	42.6	19.2	10.3	87.4	46.9	0.4	0.2	186.2	100
7	58.4	33.9	64.2	37.2	49.7	28.8	0.2	0.1	172.5	100
Total	**351.5**		**265.2**		**342.4**		**2.8**		**961.9**	
Average	**50.2**	**36.5**	**37.9**	**27.6**	**48.9**	**35.6**	**0.4**	**0.3**	**137.4**	**100**

References: it prepared by the researcher based on the data of the questionnaire.

ISSN 2072-3875

Table 3: Analysis of the Variable costs for the sample of poultry hatcheries in Wasit province for 2018 (million dinars).

Hatcheries Details	1	2	3	4	5	6	7	Average of the sample	Relative Importance (%)
Fuel & Oils	1.7	44.5	67.1	52.8	30	54	49.2	22.2	36
Maintenance Fees	0.6	16.2	5.5	19.5	10.6	50.4	8	11.7	7.5
Water & Electricity	1.2	30.3	43.5	33	42	22.2	18	11.4	42
Feeding workers	0.2	4.6	6	0	6.6	5.4	3	9	2.3
Sterilization of the hatchery	0.3	8.8	6	12	4.8	12	12	9	6
Purchasing hatching eggs	96	2504.9	2496	3065	3755	2208	1855	1563	2592
Total	**100**	**2609.3**	**2624.1**	**3182.3**	**3849**	**2352**	**1945.2**	**1626.3**	**2685.8**

Reference: it prepared by the researcher based on the data of the questionnaire.

As for the total costs, they include the fixed costs and variable costs mentioned above. The average variable costs of the hatchery sample amounted to (2609.3 million dinars), with relative importance amounted to (95%), and the average fixed costs for the total sample amounted to (137.4 million dinars), and with the relative importance of (5%) as shown in Table (5).

Table 5: Analysis of the total costs for the sample of poultry hatcheries in Wasit province for the year 2018 (million dinars).

Total Costs	Average cost for sample	Relative Importance (%)
Fixed costs	137.4	5.0
Variable costs	2609.3	95.0
Total	**2746.7**	100

Reference: it prepared by the researcher based on the data from Tables (3, 4).

Table (6) Shows the average costs for hatcheries (the study sample), where the average cost of producing one chick amounted to the highest level in the fourth hatchery and equals about (508 dinars). The lowest average cost of production in the third hatchery amounted to (336.5 dinars). The highest selling price for one chick amounted to (750 dinars). The lowest selling price amounted to (600 dinars) at the time of data collection. As for the realized profit of one chick for the lowest level amounted to (92.3 dinars), and the highest level of profit achieved for one chick amounted to (392.5 dinars). This is an important indicator where this level of profit was achieved in the fifth hatchery and the reason is due to that the hatching eggs in this hatchery are self-supplied which in turn indicates to the low cost of hatching eggs, which equals about (265 dinars per egg), While the average cost of buying one egg for the rest of the hatchers was (342 dinars per egg), where the difference between the two costs amounted to (77 dinars), which is due to its own production, in addition to that it does not bear the costs of transporting, storing or delaying the specified date for the date of incidence, which the higher limit for it amounted to (15 days). where this usually

ISSN 2072-3875

occurs delay for hatcheries, which buy eggs hatching from outside the hatchery, due to submission to road Obstacles, checkpoints, and routine. It should be noted here that the percentage of failed hatching eggs from imported eggs amounted to (20-25%) from the total egg, while in domestic eggs amounted to (15%), this is a major loss for producers, and the average selling price of chicks for the hatchery sample amounted to (643 dinars), and the average profit per on chick for the same sample amounted to (195.5 dinars).

Table 6: Analysis of the costs and profits of the annual poultry hatchery sample in Wasit province for the year 2018.

Hatchery	Number of produced chicks (million chicks)	Average fixed costs	Average variable Costs	Average Total Costs	The sale price of one chick	The Profit price of one chick
		Iraqi dinars				
1	5.76	26.00	466.28	492.3	600	107.7
2	3.965	22.14	410.11	432.3	750	317.8
3	5.95	9.56	326.91	336.5	600	263.5
4	4.838	21.64	486.05	507.7	600	92.3
5	11.336	18.00	339.53	357.5	750	392.5
6	6.718	27.71	473.74	501.5	600	98.6
7	5.547	31.09	473.08	504.2	600	95.8
Total	**44.114**	**156.14**	**2975.70**	**3131.8**	**4500**	**1368.2**
Average	**6.302**	**22.31**	**425.10**	**447.4**	**642.9**	**195.5**

Reference: it prepared by the researcher based on the data of the questionnaire.

Important economic standards for poultry hatcheries:

The total annual hatchery production (study sample) amounted to (44.11 million chicks), the average production of hatcheries (study sample) amounted to (6.3 million chicks) annually. The net annual revenue achieved from hatching work in the study sample ranges between (446) million dinars as a minimum, and (4449 million dinars) as a maximum, and the average for the total sample amounted to (1362.4 million dinars).

where: Net return = total revenue - total costs.

As for the total value added was the lowest level (552) million dinars, the highest level (4653) million dinars, and the average added value for the total sample was (1499.8) million dinars.

where: the average gross value added = average total revenue - average variable costs (study sample)

4109.1 - 2609.3 = 1499.8 million dinars.

The net value added for the average sample amounted to (1449.6 million dinars),

where: net value-added = total value-added - extinctions

1499.8 - 50.2 = 1449.6 million dinars.

The value-added for the chick at its lowest level (the study sample) amounted to (114 dinars), the highest level for it amounted to (410 dinars), while the average value added per one chick at the level of the sample was (218 dinars).

where: The value-added per chick = total value-added/ number of produced chicks.

When calculating the annual return of one dinar invested in hatcheries (the study sample), it is clear that the highest level of the return of one

 ISSN 2072-3875

dinar's investment amounted to (2.1 dinars), the lowest level of return of one dinar's investment amounted to (1.2) dinars, and the average annual return of investment for one dinar in the sample amounted to (1.5 dinars), where the annual return on investment of one dinar = total revenue / total costs. This is considered an indication that the work of poultry hatcheries is feasible, where it exceeds the return on the investment of one dinar in banks, which achieves an annual return of (0.08) dinars, and this is an encouraging factor for investors and workers in this field as shown in Table (7).

Table 7: Net yield and the value-added for the sample of poultry hatcheries in Wasit province for the year 2018 (million dinars).

Hatchery	**Number of produced chicks (million chicks)**	**Total Revenue**	**Total Cost**	**Variable Cost**	**Net Revenue**	**Total Value added**	**Value-added per chick**	**Revenue of one** dinar
1	5.760	3456	2836	2686	620	770	134	1.2
2	3.965	2974	1714	1626	1260	1348	340	1.7
3	5.950	3570	2002	1945	1568	1625	273	1.8
4	4.838	2903	2457	2352	446	552	114	1.2
5	11.336	8502	4053	3849	4449	4653	410	2.1
6	6.718	4031	3369	3183	662	849	126	1.2
7	5.547	3328	2796	2624	532	704	127	1.2
Total	**44.114**	**28763**	**19227**	**18264**	**9536**	**10499**	**1524**	**10.4**
Average	**6.302**	**4109.1**	**2746.7**	**2609.2**	**1362.4**	**1499.9**	**217.8**	**1.5**

Reference: it prepared by the researcher based on the data of the questionnaire.

From the above, it is clear that the fifth hatchery has a competitive advantage at the local level, where it was produced at low total costs relative to the rest of the hatcheries of the study sample, which amounted to (357.5 dinars/chick), which is lower than the average total costs of the sample by about (90 dinars/chick), it achieved Profit is considered the highest on the level of hatcheries for the study sample, which amounted to (392.5 dinars/chick). It was higher than the average profit of hatching sample by about (197 dinars/chick), The reason for this is that he produced self-hatching eggs, and this ensures that the hatching eggs are suitable for laying since they are known to mothers and did not exceed the approved period to ensure hatching, as well as the non-passage of hatching eggs in the stages of storage, transportation and delay, which affects its suitability for hatching, and the increase of hatching rate than it is In imported eggs, as well as producing good quality chicks and selling at the right price, as well as the presence of differences in the realized profit due to other factors related to management in addition to the low price of hatching eggs. Poultry hatchers problems and challenges:

1- The most important problem in the work of poultry hatcheries is the lack of continuous and stable electricity, and therefore generators are resorted to, which is a burden on hatcheries owners and an increase in costs.

2- Most poultry hatcheries for the study sample depend on their work on imported hatching eggs which purchased with high prices relative to local hatching eggs, where there are only two integrated projects in the province that produce self-hatching eggs. The imported hatching eggs are exposed to several problems on the way to poultry hatcheries, including the delay in its arrival at the specified time that

 ISSN 2072-3875

guarantees the success of the hatching, which is (15) days from its production date until its laying date, due to the methods, checkpoints, and routine used in these checkpoints. This leads to a decrease in the percentage of hatching and damaging a portion of eggs until it reaches hatcheries, where the proportion of eggs that fail in hatching is estimated to be 20 - 25% from the total laying eggs. This percentage is considered high and affects in two directions, the first is the loss related to the value of purchasing eggs, The second is a loss in production and increasing costs. where the costs spent on this percentage from the failed eggs in the hatch and lead to increasing costs at the expense of the producers 'profits, and because these eggs are imported from abroad, which means that large amounts of hard currency go outside the country without interest, and with a simple account, The total annual cost of laying eggs at the level of the study sample amounted to (17534 million dinars), which equates to approximately (14612 million dollars). Therefore, the total costs of eggs that fail in hatching amount to (3653 million dollars). This is a major loss at the level of poultry hatcheries in Iraq, as well as at the level of the country's economy.

3- Lack of encouragement and support for hatchery owners by the concerned authorities in order to develop their hatcheries and to conduct self-hatching eggs by establishing of hatching mothers breeding projects which ensure that they obtain good quality hatching eggs at low cost and integration their projects.

4- The lack of a regulator for the production and selling the produced chicks working to organize and ensure the sale of the produced chicks according to supply and demand, where these chicks cannot be delayed in hatching by more than (24 hours) as a maximum because after this time they need feed and water, which the incubator does not provide for them. Most hatcheries that do not sell by cash, chicks do not suffer from delaying the chicks selling time. As for the rest of the hatcheries that sell by cash, they suffer in some groups from delaying the chicks selling time, which forces them to reduce prices and suffering the loss which they prefer compared to lose the whole groups if it exceeds (24) hours.

5- Most poultry hatcheries buy fuel from the black market with high prices relative to the official price, due to insufficient fuel quotas allocated to these projects in order to continue their work as an essential and important link in the poultry production process.

6- There are problems related to the origin, including the lack of fertility of eggs and the age of the herd of mothers.

7- The failure of the relevant authorities to provide guidance and training courses for employees in hatcheries, which leads to raising their efficiency in work and increasing experience.

8- Failure to set general policy for the country to coordinate between the producer, the country's need, and the work of hatcheries.

CONCLUSIONS

1- The high production costs of poultry hatchery projects, which are reflected negatively on the profit margin achieved, which requires reducing these costs using modern and advanced methods, including the use of value chain analysis to reduce this situation.

2- The lack of interest of the responsible authorities in supporting projects for hatching eggs production, where most poultry hatcheries of the study sample depend in their work on imported hatching eggs which are purchased at high prices relative to local hatching eggs, where the average number of laid eggs at the level of the study sample amounted to (7773360 eggs) annually. The difference in the costs of buying hatching eggs between the importer and the local (77 dinars/egg), when buying eggs from local projects, the costs of buying eggs will decrease by an amount of about (599 million dinars), with a decreasing percentage (24%). This decrease is in favor of the profit and value-added for the producers.

 ISSN 2072-3875

3- The costs of fuel and oils are important in second place after the costs of purchasing hatching eggs from the variable costs. where poultry hatcheries are supported through the provision of electrical energy, and the costs of fuel and oils spent on generators decrease by half, then the variable costs at the level of the study sample will decrease by (0.9%), so it decreases from (2609 million dinars) to (2587 million dinars), which is in favor of profit and value-added for the producers as well.

4- The problems of roads, checkpoints, and the used routine in these checkpoints lead to exposure of imported hatching eggs to several problems on the way to poultry hatching.

5- The establishment of hatching mothers breeding projects ensures obtaining hatching eggs of good quality, at low cost and integrating poultry hatching projects.

6- Lack of associations or organizations concerned with marketing, organizing sales and purchases, and working to stabilize the market and prices.

RECOMMENDATIONS

1- Supporting and encouraging the establishment of hatching mothers projects by granting them operational loans, which in turn achieves a decrease in the costs of purchasing hatching eggs with a percentage of (24%).

2- Supporting poultry hatcheries by providing them with electrical energy on an ongoing basis and excluding them from the programmed parts of the electrical current, which in turn saves poultry hatchery owners large amounts spent on fuel and oils that belong to generators and it is in favor of profit and surplus value for their projects.

3- Setting a general policy for the country through which coordination is made between the local product and the country's need and supporting the local product by limiting imports.

4- The establishment of associations or organizations in which hatcheries owners work to organize the production of chicks and ensure their marketing to breeding fields in a timely manner and it has the ability to bargain in prices and market stability.

5- Allocating sufficient fuel shares and stakes for poultry hatcheries owners at the present time and selling them at the official price, where buying it on the black market at high prices increases operating costs and reduces product profits.

REFERENCES

1. **Arab Organization for Agricultural Development**, Arab Agricultural Statistics, Yearbook – Vol 37, 2017.

2. **Food and Agriculture Organization of the United Nations**, Statistics, 2018.

3. **Kaplinsky, R. and Morris, M**., 2001, A Handbook for Value Chain Research, Prepared for the International Development Research Centre (IDRC) by the School of Development Studies, University of Kwazulu- Natal, p: 4-6.

4. **Shamsuzzaman, Md. and Jahan, S.M**.,2017, Value Chain of Poultry Hatcheries in Bangladesh. International Journal of Managing Value and Supply Chains (IJMVSC) Vol. 8, No.3/4.

5. **Jon Hellin** and Madelon Meijer, 2006, Guidelines for value chain analysis, www.Fao.Org / guide – Value Chain .,p: 4.

6. **Day S**. 1990, Market Driven Strategy, Irwin, Inc., U.S.A., P: 153.

7. **Ansari L.** 1997, Target Costing the frontier in Strategic Cost Management, Irwin, Inc., U.S.A., P: 82.

8. **Karpik, P. and Belkaoui, A.,**1990, The Relative Relationship Systematic Risk and Value-added Variable. Journal of International Financial Management and Accounting, 7 (3): 259-275.

9. **Kim, J. and Frederick, D.S.,**1996**,** The Information content of Productivity Measurers: An International comparison. Journal of International Financial Management and Accounting, 167- 190.

 ISSN 2072-3875

10. **Al- Assauy, K.J. 2005,** Economic studies and enterprise evaluation analysis practice and theory, second edition, Dar Al- Mnahj for distribution and publ, Amman, Jordan.pp.350.

11. **Al- Dahary, A.M.,** 1991**,** Enterprise evaluation and economics studies, Dar Al-Hekma for printing and publ, Baghdad, pp.668.

12. **Abd Al- Kareem, A. and Kadawy, T.M.** 1991**,** Enterprise evaluation, a study in analysis economist and performance efficient, second addition, Dar Al- Kotob for printing and publ, Mosul press. pp.404.

13. **Al- Exander,** 2012, Value chain analysis the fishery in LAK Liambezi. Department of fisheries and Aquatic science faculty of Agriculture and Natural Resources, University of Namibia, in partial fulfillment of the requirement for the award of the Honors degree of science in fisheries and Aquatic Science of the University of Namibia, p.50.

14. **McFaiden J. et al,** 2012, Value chain analysis for Egyptian fish farms, Project Report 48,
World Fish Center.

15. **Hamenoo, E.** 2011. The Role of the market in the Development of Aquaculture in Gana, Master's degree thesis in International fisheries management, University of Troms, Norwegian College of fisheries Science, p: 6-7.

 ISSN 2072-3875