



الهيئة العامة للإحصاء
General Authority for Statistics

Bulletin of
Specialized Agricultural Projects Survey
(Fish Farms)

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Introduction:

Council of Ministers Resolution No. 211 dated 13/1/1437 Hijri granted the General Authority for Statistics (GASTAT) the authority to conduct surveys on economic, social, residential, and agricultural issues in the Kingdom and to regularly publish its findings. Based on this prerogative, GASTAT established programs and census operations that seek to provide a large statistical database that covers all areas, including agricultural statistics.

Therefore, the Specialized Agricultural Projects Survey 2019 is considered the second survey concerning agricultural activities issued by GASTAT as part of a series of agricultural surveys implemented in parallel. GASTAT had completed its first agricultural survey in 2018 and it is aware of the importance of agricultural activities and their impact on food security.

The survey will provide basic data on specialized agricultural projects, such as: number of fish farms and ponds as well as their areas. Also, it will provide data on the production and the distribution of the specialized agricultural projects related to fish farms.

GASTAT would like to thank all those who contributed to these efforts, from government partners to data providers of agricultural holdings. Their collaboration has greatly contributed to the publication of this bulletin.

For the purpose of improving the contents of this bulletin and developing future bulletins, GASTAT hopes to receive your comments and suggestions by email on agriculture@stats.gov.sa.

General Authority for Statistics





Data sources for the Specialized Agricultural Projects:

The Specialized Agricultural Projects Bulletin depends for its data on a field survey conducted by GASTAT in 2019. The survey falls under the category of "agricultural statistics" and collects data through a representative sample of holding visits spread out across all administrative regions in the Kingdom of Saudi Arabia including (fish farms), as well as an electronic form containing multiple questions. Estimates and indicators regarding specialized agricultural projects in the Kingdom are consequently obtained.

Objectives:

- 1- Supporting decision makers, policy makers, researchers, and parties interested in statistics thanks to comprehensive and updated statistics on agricultural holdings in the Kingdom.
- 2- Obtaining data on the production of the specialized agricultural projects related to fish farms.
 - 1) Providing updated statistics on:
 - Number of fish and prawns in fish farms based on type and size.
 - Amount of production and amount of sold production of fish farms.
 - Amount of agricultural supplies to be used for fish farms production





Terms and concepts:

1) Holding:

A holding is an economic unit of agricultural production, both plant and animal based, with a single source of management. It includes all the animals in the holding and all the lands used fully or partially for agricultural production regardless of ownership, legal description, or area. The holding may be run by one person alone or by a household that includes two people, two households, or more. The holding's management has a legal personality similar to a company, cooperative, government agency, or other. The holding's land may consist of one part or several parts that fall under the same name provided that all parts of the holding share common production resources such as laborers, machines, and agricultural equipment and that the joint resources are clear and express so that all parts can be considered one economic unit.

2) Type of Holding: Specialized (regulated):

This type of holding includes preapproved holdings (projects) that have acquired a license from the concerned authorities after submitting technical and economic studies. These holdings may be specialized in plant based production, animal based production, poultry farming, or fish farming. They may also be projects that primarily adopt modern and non-traditional techniques for agricultural production and that specialize in open field or greenhouse cultivation, dairy farming, fattening farms for calves, sheep, or poultry, or fish farming.





3) Fish Farms:

Farms (projects) specializing in producing fish, which contain small ponds or lakes to farm fish inside the holding. The water used can be either fresh or salt water, and the purpose of farming can either be breeding or producing fish.

4) Sold Production:

Production supplied to the market by the farmer and sold for a price, which forms a part of the total production after deducting self-consumed, lost and damaged produce, including crops and plant and animal products. Endowments and produce gifted to someone other than the holder's family falls within this category.

5) Agricultural Production Requirements (Intermediate Consumption):

The commodities that the holding or specialized project has actually consumed in the year of conducting the agricultural survey in the process of agricultural production, whether these requirements were bought in the same year or taken from supplies stored in previous years.



Indicators:

The Bulletin includes many results and indicators regarding the Specialized Projects Survey (Fish Farms), mainly:

Key Indicators

1. Number of fish farms and number and size of ponds per administrative region in the Kingdom, 2018.
2. Number and size of ponds per fishing method on fish farms per administrative region in the Kingdom, 2018.
3. Total fish production and sales on fish farms per administrative region in the Kingdom, 2018.
4. Quantity of commodity production requirements used on fish farms per administrative region in the Kingdom, 2018.

Coverage:

1) Spatial Coverage:

The Specialized Agricultural Projects Survey covers data related to specialized agricultural projects in all 13 administrative regions of the Kingdom of Saudi Arabia, which are: Riyadh, Makkah, Medina, Al-Qaseem, Eastern Region, Asir, Tabuk, Hail, Northern Borders, Jazan, Najran, Al-Bahah, and Al -Jouf. All specialized fish farm projects are visited in each region.

2) Temporal Coverage:

The Specialized Agricultural Projects Survey data pertaining to project production and production requirements for specialized agricultural projects is dated back to 2017 (1/1/2018 till 31/12/2018, falling on 14/4/1440 till 24/4/1440 AH).

Statistical classification used:

Terms and concepts are derived from the FAO World Programme for the Census of Agriculture 2020.

Data collection tools:

Field Data Collection Forms: The survey form was drafted and designed by agricultural survey experts at GASTAT. International recommendations, standards, and definitions were considered during the design of these forms, which were presented to agricultural statistics experts and specialists. They were also presented to concerned entities for insight and comments. The questions were redrafted based on a specific scientific approach aimed at unifying the structure of questions asked by researchers.



Form of Specialized Agricultural Projects (fish farms)		
The form was divided into nine thematic sections to improve the efficiency of complying with technical standards during the fieldwork stage.		
Agricultural workers during 2018	Profile data	Geographic and distinctive data
Commodity production requirements during 2018	Production and its distribution during 2018	Methods of fish breeding
Holding status	Land use data	Other agricultural activities
Please visit GASTAT official website to read and download the full form		

After the survey form was approved, it was transformed into an electronic form that could be handled through the advanced data collection system using tablet devices. The system includes the following:

- 1- Presentation of the field researcher's work location (survey sample)
- 2- Access to the sample (agricultural holding) using the device's map
- 3- High-quality data collection using data and transfer accuracy checks (to automatically identify entry errors and illogical entries at the moment of data collection)
- 4- Communication between supervising sections by sending and receiving comments to and from the field researcher

Data collection method:

The method of comprehensive inventory was used. All specialized agricultural project holdings in the agricultural statistics (2014/2015), as well as new projects developed after the statistics had been conducted, were visited. Lists of all new projects in each administrative region were obtained through contacting and coordinating with agricultural directorates in MEWA. (764) holdings across the Kingdom were visited in the following manner:

Administrative Region	Number of Holdings	Administrative Region	Number of Holdings	Administrative Region	Number of Holdings
Riyadh	240	Asir	100	Najran	15
Makkah	139	Tabuk	25	Al-Bahah	4
Medina	25	Hail	12	Al-Jouf	9
Al-Qaseem	63	Northern Borders	4		
Eastern Region	108	Jazan	20		





1. Candidates for the positions of field researchers to visit holdings for data collection were selected based on several objective and scientific standards related to the nature of the work.
2. All candidates (GASTAT employees and the employees of some government entities) were trained through special training programs.
3. Direct contact with specialized agricultural projects was adopted as a method to fill the survey form and collect data. The field researchers visited the specialized agricultural projects listed in the survey sample and accessed them through coordinates on the tablets, guiding maps, and the holding's profile. They were equipped with official documents proving their identity within the statistics project and the aim of the visit. They also provided an overview of the survey and its objectives, and filled-in the forms through verbal discussions with the agricultural holders. In the cases where no holder was available, the data was collected from any member of the holding with knowledge of its affairs.
4. All field researchers used tablet devices to collect the data in the survey form according to a timeline set based on the specialized agricultural projects and their characteristics.
5. Field researchers at work locations across the Kingdom used the "sync" feature on the tablets to download and transfer the collected data on specialized agricultural projects directly to a linked database at GASTAT headquarters where the data was stored appropriately to be reviewed and consulted at a later stage.
6. Electronic accuracy checks were conducted to guarantee that the data entered in the specialized agricultural projects survey form was coherent, accurate, and logical (electronic formula that identify contradictions). The formula were designed using a logical link between answers on the form and their variations to help field researchers directly identify any errors when collecting data from agricultural holders through the form. The programmed formulae don't allow any mistakes to go through when an answer contradicts with another piece of information or answer in the form.
7. The authenticity of the collected data was checked by the field researcher, his inspector, and the survey supervisor for the control region. All work locations were monitored and reviewed by the Data Quality Room at the GASTAT headquarters. The Room also controlled and reviewed all field work performances as the data was being collected, from day one until the last working day.



Results preparation and review:

After the collected data was reviewed, results were analyzed and extracted and outputs were uploaded to and stored in the database. Final reviews were then conducted by agricultural statistics specialists using modern techniques and software designed for review and accuracy checks.

Data publishing:

First: Preparing the results set for publishing:

At this stage, GASTAT uploaded the data results to the agricultural holdings surveys database. It then prepared publication tables and graphics for data and indicators, and added description and methodology information as seen in this Bulletin. These were prepared in both Arabic and English.

Second: Preparing media content and announcing the Bulletin:

At the start of the Gregorian year, GASTAT announced the dates for issuing the Bulletin through its official website. At this stage, it prepared the media content related to the announcement to be sent to all media outlets and published on its own social media accounts. The announcement is made on the date of publication and the Bulletin is initially published on the official website in various forms compatible with Excel. This guarantees its circulation and access to all clients and parties interested in agricultural statistics. The Bulletin is included in the website's statistics library.

Third: Communicating with clients and sending them the Bulletin:

GASTAT gives great importance to communicating with clients who use its data. Therefore, upon publication of the Specialized Agricultural Projects Survey Bulletin, GASTAT communicates with clients to provide them with the Bulletin. It also receives questions and enquiries from clients regarding the Bulletin and its results through various communication channels, also used to request data. Enquiries are received through:

- GASTAT website: www.stats.gov.sa
- GASTAT email: info@stats.gov.sa



- The client support email: cs@stats.gov.sa
- By visiting the GASTAT headquarters in Riyadh or one of its branches in the Kingdom
- Official letters
- By phone: (920020081).

Implemented Quality Procedures:

Agricultural statistics go through several technical procedures to guarantee the quality of the collected data. These procedures include:

- 1- Evaluating previous surveys conducted by GASTAT to identify weaknesses and strengths and to improve data collection.
- 2- Training and testing researchers to guarantee that they are able to obtain data correctly in line with the survey's objectives.
- 3- Testing the electronic methods used to collect the data to guarantee that the data is safe and protected at all stages of the survey process.
- 4- Reducing the burden put on respondents by using the appropriate statistical methods.
- 5- Committing to the timely publishing of results based on previously set deadlines.

Several other measures are implemented by the Data Quality Room at GASTAT during the field data collection process:



Data Quality Room:

The Data Quality Room works in parallel to field operations and is equipped with electronic monitoring methods and screens. Its controllers and quality experts check the accuracy of the collected data and identify errors and extreme values during the field data collection process. They do so by immediately reviewing the information filled by the researcher. Their work guarantees that researchers comply with survey guidelines, and checks that the data is authentic, logical, and reliable. They also review some important survey indicators to check data accuracy. The Room has several responsibilities, including:

- Reviewing collected data and sending comments to field teams of all levels through an automatic system linked to the tablet devices used by researchers, who then receive the comments systematically at the work locations.
- Contacting agricultural holders by phone and asking them some of the questions on the form to check that the researchers collected the data correctly and complied with instructions during their visits. These calls also seek to obtain any missing data and to thank the holders for their collaboration.
- Answering field enquiries from field researchers and from agricultural holders.
- Checking the accuracy of the location where the form was filled by matching the location's coordinates to those registered in the sample file.



Benefits and beneficiaries:

All government sectors whose work is linked to agricultural activities in the Kingdom of Saudi Arabia benefit from Bulletin. The Ministry of Environment, Water and Agriculture, the Agricultural Development Fund, and the Saudi Grains Organization are considered to be the main beneficiaries followed by international and regional organizations, and researchers and planners interested in agricultural statistics. Agricultural holdings data and indicators are considered key statistical products for informing decision-making in this field.

More details on the Bulletin of the Specialized Agricultural Projects Survey can be found on GASTAT website:



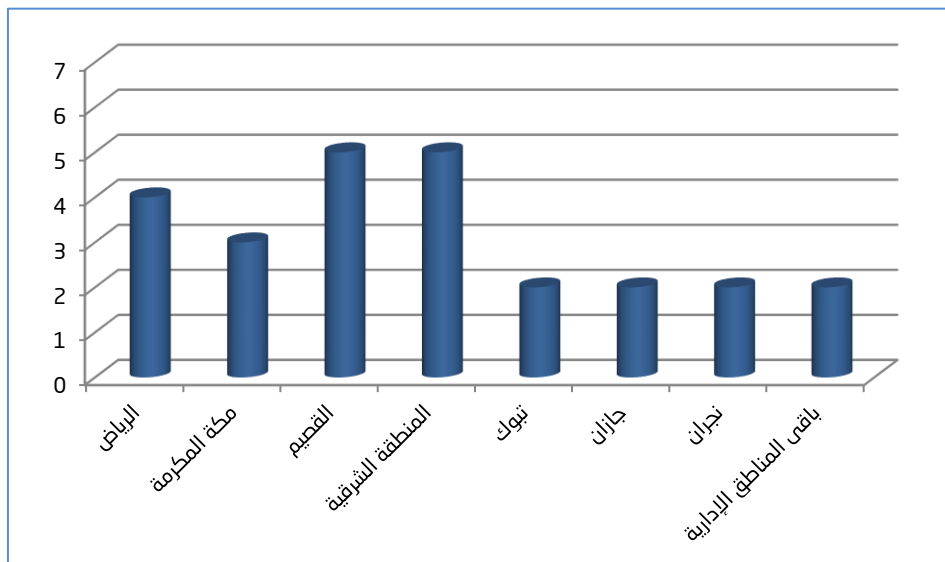
Report on key indicators:

1- Number of fish farms:

The total number of fish farms at the level of the administrative regions in the Kingdom in 2018 reached (25) farms. Eastern Region and AL Qassim are the first among the administrative regions in terms of the number of fish farms which reached to (5) farms for each region. They form (20%) of the total number of fish farms in the Kingdom, followed by Riyadh where the number of fish farms reached to (4) farms with a percentage of (16%). Makkah is the third in terms of number of fish farms where it includes (3) farms.

Figure (1)

Number of fish farms by administrative regions in the Kingdom for 2018

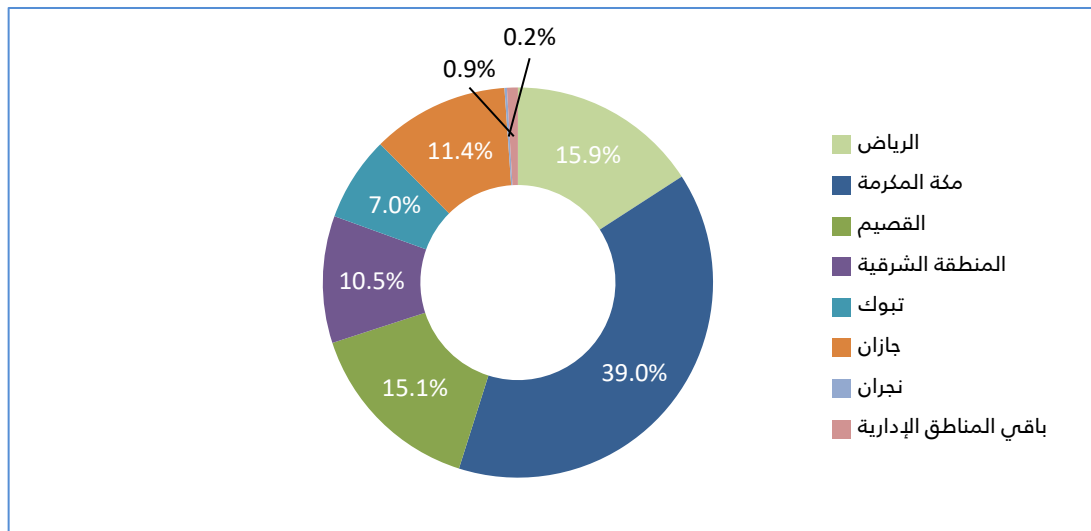




2- Number and size of fish farms:

The results showed that the number of fish farms ponds at the level of administrative regions in the Kingdom in 2018 hit (2.906) ponds. Makkah is the first in terms of number of fishponds among other administrative regions where it reached (1.134) ponds (39%) out of total number of fish pond in the Kingdom, followed by Riyadh region where the number of fish ponds was (461) ponds (16%) out of the total number of fish ponds in the Kingdom.

Figure (2)
percentage distribution of fish ponds by administrative regions in the Kingdom for 2018



In terms of size of fish farm ponds at the level of administrative regions in the Kingdom in 2018, the results showed that the total size of ponds exceeded (9) million cubic meters, and Jazan region was the first among the administrative regions in the Kingdom, where the size of ponds exceeded (7) million cubic meter

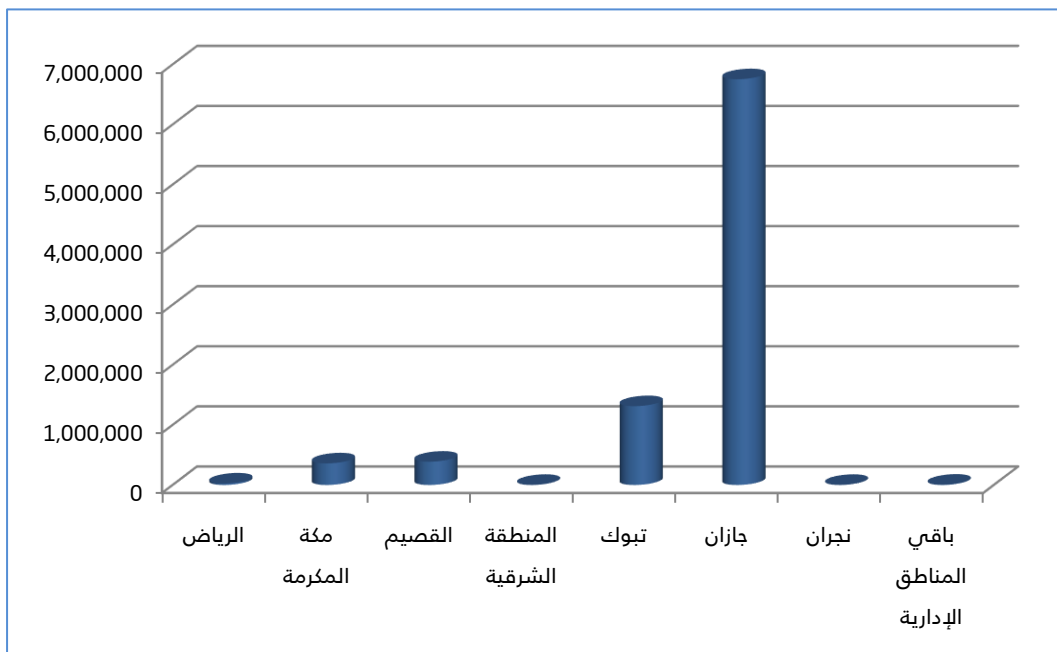




with (76%). The size of ponds in Tabuk exceeded (1) million cubic meters and constituted around (15%) of the total size of fish farm ponds in the Kingdom.

Figure (3)

Size of fishponds (cubic meter) by administrative regions in the Kingdom for 2018



3- Methods of fish breeding by type of fish pond:

Results showed that fish farms are using four types of ponds for fish breeding, which are:

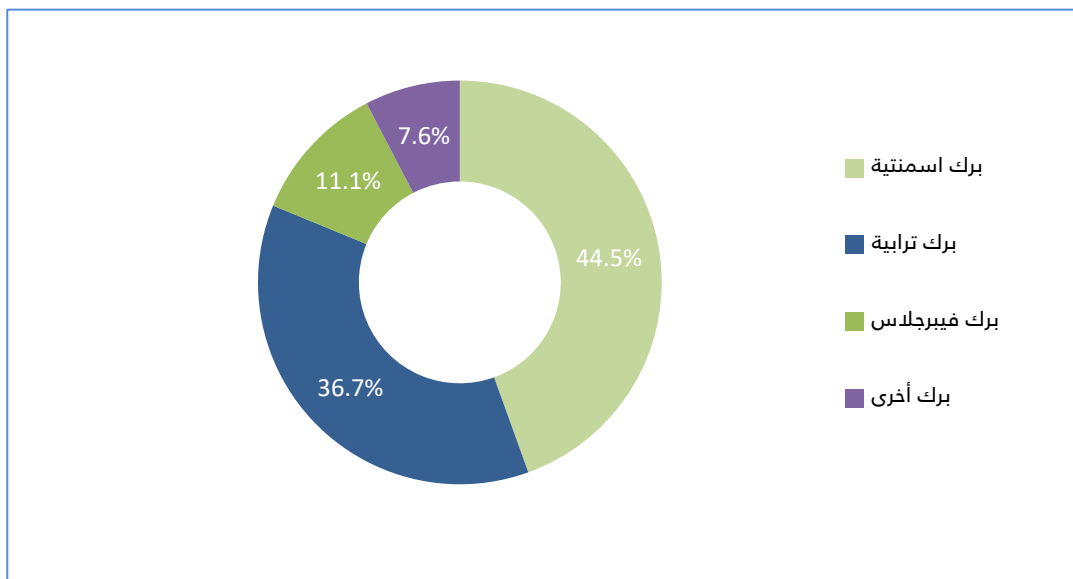
- 1) Concrete ponds
- 2) Soil ponds
- 3) Fiberglass ponds
- 4) Other ponds



According to the results of the survey, cement ponds recorded the largest number of total ponds of fish farms, where it reached (1.293) ponds (44%) of the total number of ponds in the Kingdom. While soil ponds came in second place in terms of the number of ponds with (1.067) ponds (37%) of the total number of ponds in the Kingdom.

Figure (4)

Percentage distribution of fishponds by type at the Kingdom's level for 201



4- Total Fish Production by Type and Quantity Sold:

The survey was conducted on a number of different types of fish, such as:

- 1) Indigo tilapia
- 2) Marine tilapia
- 3) Subaiti





4) Grouper

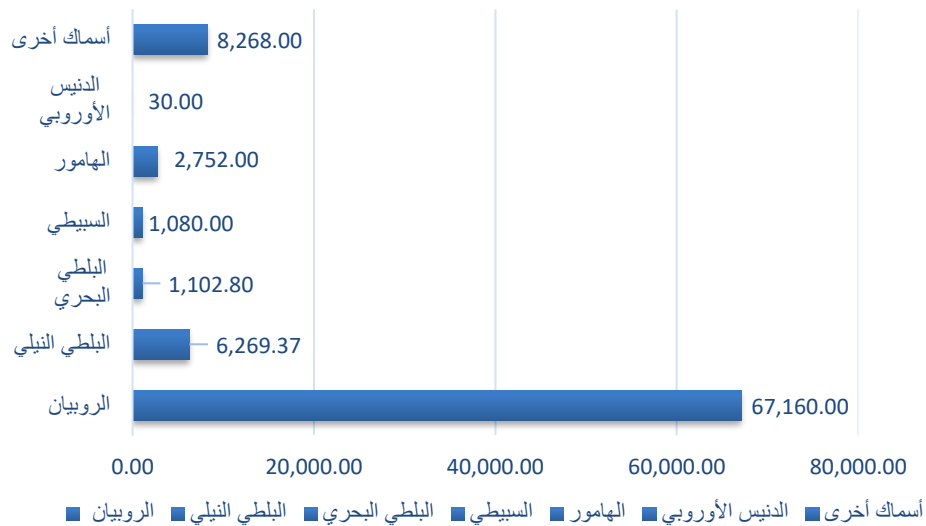
5) European seabream

6) Prawns

The total fish production in fish farms exceeded (86) thousand tons. Prawns production reached to (77%) by (67) thousand tons followed by Indigo tilapia with (6.269) tons, European seabream (2.752) tons, while marine tilapia registered (1.102) tons.

Figure (5)

Percentage distribution of the quantity of fish production by type at the Kingdom's level for 2018





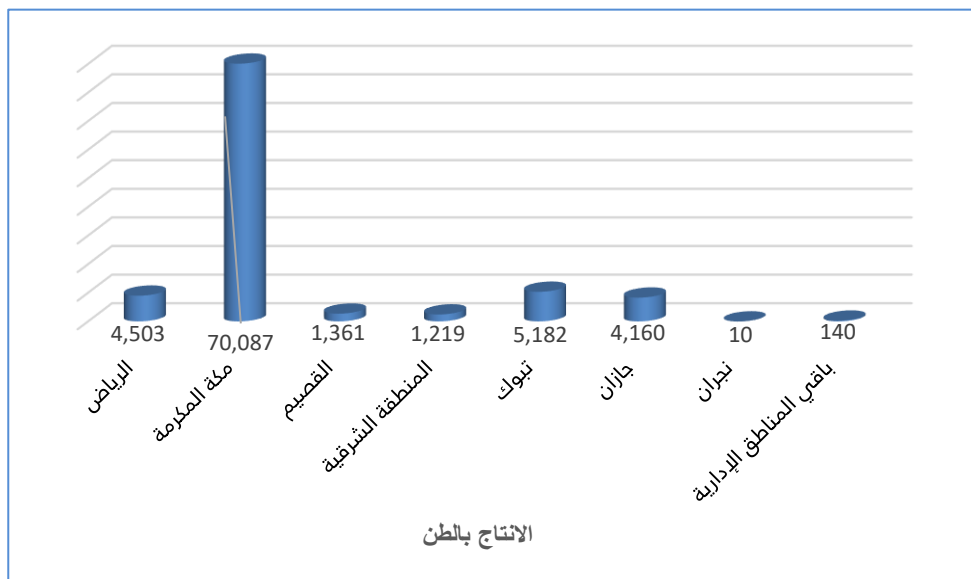
The total quantity of sold fish in fish farms in the Kingdom exceeded (84) thousand tons, with (97%) of the total fish production in the Kingdom. Prawns came as the highest percentage of the total sold production with (80%).

5- Total fish production at the administrative regions level:

Results of the survey indicated that Makkah region has the highest percentage for fish production (81%) with a quantity of production exceeding (70) thousand tons, followed by Tabuk region with production exceeding (5) thousand tons with (6%) Riyadh and Jazan were the third with (5%) of total fish production.

Figure (6)

Total fish production in tons at the Kingdom's level for 2018



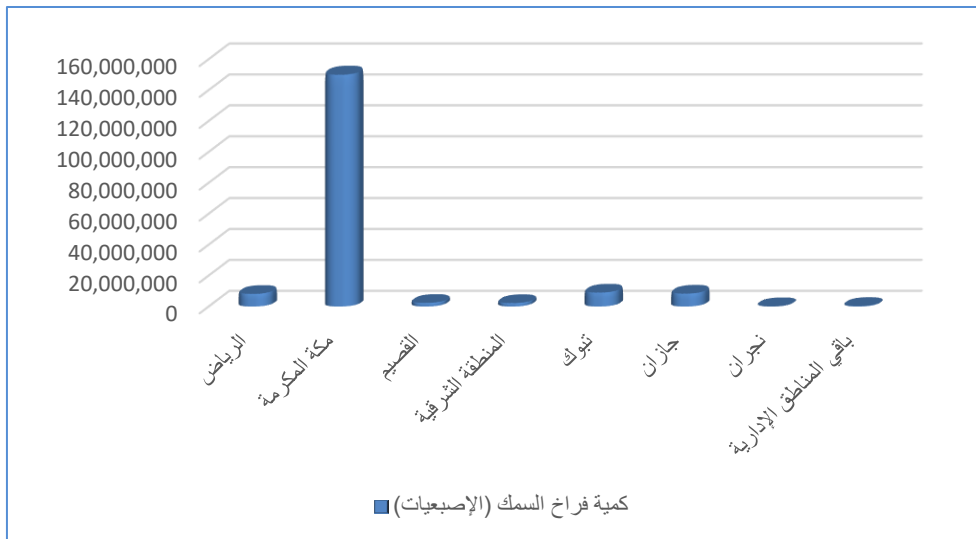


6- Quantity of juvenile fish used in fish production at administrative level:

Total number of juvenile fish used in fish production in fish farms exceeded (180) million juveniles. Makkah was the highest in using (juveniles) with a quantity that reached (150) million (83%) out of total number of used juveniles in fish farms in the Kingdom.

Figure (7)

Quantity of juvenile fish used in production of fish farms at the Kingdom's administrative level for 2018





Publishing Tables:



number and size of fish farms and ponds at the Kingdom's administrative regions level for 2018

Table (1)

Size of ponds (cubic meter)	Number of ponds	Number of farms	Administrative regions
54,569	461	4	Riyadh
402,748	1,134	3	Makkah
383,024	439	5	AL-Qassim
5,942	306	5	Eastern Region
1,430,300	204	2	Tabuk
7,400,000	330	2	Jazan
1,795	6	2	Najran
6,015	26	2	Other administrative regions
9,684,393	2,906	25	Total

number and size of fish ponds by method of fish breeding in fish farms at the Kingdom's administrative regions level for 2018

Table (2)

Methods of fish breeding								Administrative regions
Other ponds		Fiberglass ponds		Soil ponds		Concrete ponds		
Size (cubic meter)	Number	Size (cubic meter)	Number	Size (cubic meter)	Number	Size (cubic meter)	Number	
0	0	0	0	2,125	7	52,444	454	Riyadh
0	0	3,000	200	110,748	665	289,000	269	Makkah
0	0	905	62	373,352	37	8,767	340	AL-Qassim
1,924	40	2,900	40	400	20	718	206	Eastern Region
1,430,000	182	300	22	0	0	0	0	Tabuk
0	0	0	0	7,400,000	330	0	0	Jazan
0	0	0	0	0	0	1,795	6	Najran
0	0	0	0	2,320	8	3,695	18	Other administrative regions
1,431,924	222	7,105	324	7,888,945	1,067	356,419	1,293	Total

total amount of fish production and sold fish by type at the Kingdom's administrative regions level for 2018

Table (3)

Sold quantity (tons)	Amount of production (tons)	Fish type
66,906.00	67,160.00	Prawns
6,197.76	6,269.37	Indigo tilapia
1,098.00	1,102.80	European seabream
1,076.00	1,080.00	Marine tilapia
2,749.00	2,752.00	Silver Sea-bream
28.80	30.00	Grouper
6,059.90	8,268.00	Other fish
84,115.46	86,662.17	Total

total amount of fish production and sold fish at the Kingdom's administrative regions level for 2018

Table (4)

Sold quantity (tons)	Amount of production (tons)	Administrative regions
4,468.00	4,503.00	Riyadh
67,633.80	70,087.00	Makkah
1,330.40	1,361.00	AL-Qassim
1,208.00	1,219.00	Eastern Region
5,171.00	5,182.00	Tabuk
4,156.00	4,160.00	Jazan
9.86	10.37	Najran
138.40	139.80	Other administrative regions
84,115.46	86,662.17	Total

total amount of fish production and sold fish for (Indigo tilapia) at the Kingdom's administrative regions level for 2018

Table (5)

Sold quantity (tons)	Amount of production (tons)	Administrative regions
4,468.00	4,503.00	Riyadh
55.00	57.00	Makkah
1,270.40	1,298.00	AL-Qassim
313.00	319.00	Eastern Region
81.50	82.00	Najran
9.86	10.37	Other administrative region
6,197.76	6,269.37	Total

total amount of fish production and sold fish for (prawns) in Makkah and Jazan for 2018

Table (6)

Sold quantity (tons)	Amount of production (tons)	Administrative regions
62,750.00	63,000.00	Makkah
4,156.00	4,160.00	Jazan
66,906.00	67,160.00	Total

Results indicate that prawns are available only in Makkah and Jazan

total amount of fish production and sold fish for (European seabream) in Tabuk and the Eastern Region for 2018

Table (7)

Sold quantity (tons)	Amount of production (tons)	Administrative Regions
669.00	670.00	Eastern Region
2,080.00	2,082.00	Tabuk
2,749.00	2,752.00	Total

Results indicate that European seabreams are available in Eastern Region and Tabuk

total amount of fish production and sold fish for (Marine tilapia) in tabuk, Hail, and the Eastern Region for 2018

Table (8)

Sold quantity (tons)	Amount of production (tons)	Administrative Regions
28.00	30.00	Eastern Region
1,018.00	1,020.00	Tabuk
52.00	52.80	Hail
1,098.00	1,102.80	Total

Results indicate that (Marine tilapia) are available in Eastern Region, Hail, and Tabuk

total amount of fish production and sold fish for (Subaiti) in Tabuk for 2018

Table (9)

Sold quantity (tons)	Amount of production (tons)	Administrative Regions
1,076.0	1,080.0	Tabuk
1,076.0	1,080.0	Total

Results indicate that Subaiti are available in Tabuk

quantity of juvenile fish used in production of fish farms at the Kingdom's administrative level for 2018

Table (10)

juvenile fish	Administrative Regions
Quantity (number)	
8,167,000	Riyadh
150,163,000	Makkah
2,354,500	AL-Qassim
2,236,000	Eastern Region
9,009,000	Tabuk
8,336,000	Jazan
18,870	Najran
269,600	Other administrative regions
180,553,970	Total

