



**Fact sheet titled:
Fish Farming in Palestine**

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Introduction

Fish farming is one of the solutions available to many countries to reduce the shortage of fish stocks and meet the population's needs for fish and it is one of the solutions that Palestine has adopted to combat the Israeli blockade. Furthermore, the obstacles imposed by the Israeli army on fishermen in terms of space, equipment, and fishing capabilities, which are prohibited from entering the Gaza Strip, as the occupation considers them to be dual-use tools.

In this paper, we will shed light on the challenges facing the fish farming sector in Palestine as an opportunity to provide quantities of fish in the Palestinian markets, and as a catalyst for reducing youth unemployment.

First: Fish farming in the West Bank & the Gaza Strip

Fish farming in Palestine is considered one of the new industrial and agricultural sectors. It also faces many challenges and difficulties, the most important of which are the procedures of the Israeli occupation authorities, the lack of water, and the high cost of fishery production due to Israeli restrictions

1) The West Bank lacks coasts that enable residents and fishermen to practice the fishing profession, and this is what made the fish markets in the West Bank poor in fish. Therefore, the West Bank depends on fish that are imported from the Gaza Strip and from abroad, and because of the restrictions imposed by the Israeli occupation on the West Bank and Gaza Strip, the West Bank resorted to fish farming.

The idea of fish farming in the West Bank began to emerge in 1996, when the first fish farm was established in the city of Jericho, and the farm was closed in 2002 due to circumstances, and the second Palestinian Intifada, in 2011; The fish hatchery was established in the Palestinian Jordan Valley, specifically in the city of Jericho. To be a nucleus for the production of fish fingerlings and hatchery, and to produce new fast-growing and high-quality fish strains, to be one of the most important fish farming projects in the Palestinian territories.

The hatchery contains a group of Concrete ponds¹ which are:

- 6 ponds 8x3 in length and 1 meter deep.
- 6 ponds 4x2 in length and 1 m deep.

¹Wafa Agency, Fish farming in the West Bank, available <https://bit.ly/3U47pyP>

Then the fish farming project appeared for the second time in the West Bank in 2011, where a farm was established in the city of Jericho, which worked on hatching and fish farming. This farm is also one of the most important fish farms in Palestine, as this farm consists of 12 ponds of different sizes.

The idea of fish farming in the West Bank began to spread in 2012, as 6 ponds were established in Jericho, 8 in Tulkarm, 2 in Tubas, 5 in Jenin, and 4 in Qalqilya².

These ponds supplied the Palestinian market with quantities of fresh fish, including red and silver tilapia, which are raised in fresh ponds; And sea bream, which is raised in saltwater ponds.

The Brazilian project is considered one of the most important fish farming projects in the West Bank, which aims to establish a number of ponds that will provide fish in the West Bank markets, as the volume of financing for this project alone reached approximately 785,000 USD³.

Despite the Israeli occupation imposed on the West Bank, it succeeded in producing fish from farms that were established on land, most of which are concentrated in the Jordan Valley and in the north of the West Bank. For 2016 from 30 to 40 tons as a maximum⁴, which is the rate of fish production in the West Bank from several projects and individual attempts to fish farming concentrated in the valley and the north of the West Bank because there are springs that cover the water needs of the project and the weather is suitable.

The Palestinian per capita consumption rate in the West Bank does not exceed 2 to 2.5 kg, at a time when the global per capita consumption rate is 13 kilos of fish⁵. Fish production in Palestine is considered modest when compared to the production of Jordan, which amounted to about 1040 tons, including 540 tons from fish farming projects, according to statistics from 2008-2010 on fish farming in the Gaza Strip⁶.

The Gaza Strip is still looking for practical solutions to confront the restrictions of the occupation on Palestinian fishermen. Therefore, some businessmen tended to establish what is known as fish farms, which are large ponds on land in which fish are raised to fill the deficit in the fish market in the Gaza Strip.

²Wafa Fish Farming Agency in the West Bank, Previous reference

³Wafa Agency. Fish farming in the West Bank, Previous reference

⁴Hasnaa Al-Rantisi. Fish farming in Palestine is limited production and high cost. Palestine Economy. May 26, 2016

⁵A report entitled: Fish farming in Palestine.. limited production and high costs, Palestine Economy Portal, Ramallah 2016, available <https://bit.ly/3zmkSsx>

⁶A report entitled: Fish farming in Palestine.. limited production and high costs, Palestine Economy Portal, Ramallah 2016, available <https://bit.ly/3zmkSsx>

There are three in Gaza, according to the Director General of Fisheries⁷, Walid Thabit.

Fish farms in the Gaza Strip aim to provide fish in the market in the Gaza Strip, where fish production from fish farms in the Gaza Strip in 2020 reached approximately 560 tons, while the amount of fish caught reached approximately 4700 tons, and 5,000 tons were imported from abroad⁸.

Fish production from fish farms outside the Mediterranean increased from 10 tons in 2010 to 600 tons in 2021, as most of the fish that are produced from farms are bream, which is popular and desirable to people. The fish farms in the Gaza Strip specialized in breeding only two types of fish, and they are “bond” and “bream”. This is because these two types of fish are easy to cultivate in farms and easy to reproduce in the environment available in fish farms in the Gaza Strip. Also, these two types of fish are not permanently available in the fish market, and therefore they are currently farmed. According to Walid Thabet, fish farming covers a percentage of 20% of the citizens' needs.

Fish farming in the Gaza Strip is a job opportunity for many fishermen who are no longer able to fish in the sea due to the difficult conditions in the Gaza Strip and because of the Israeli restrictions and blockade. The repeated and deliberate occupation of fishermen's boats by barges by Gazans working in fish farms was an opportunity and a lifeline for many fishermen.

Working in fish farms is considered one of the modern professions, and this is the newness of fish farms in the Gaza Strip. Walid Thabet, General Director of Fish Wealth, explained that the number of fishermen increased by 300, and he indicated that this increase is a result of jobs in fish farms, whereby approximately 300 fishermen work in fish farms and fish farming, while the number of fishermen has become 3800 fishermen⁹.

⁷ Nour Abu Aisha. Gaza is facing the naval blockade with fish farming. Anatolia Agency. Updated from 2012

⁸ Abdul Hakim Abu Riash. Fish farming in the Gaza Strip projects to bridge the deficit and export. The New Arab. 21.3.2021

⁹ Rami Rummaneh. The Gaza Strip catches 4,662 tons of fish in 2020. Palestine Online. 11.2.2021

Comparison between the West Bank and Gaza Strip in fish farming, designed by the researcher.

Secondly Challenges of fish farming in Palestine

	West Bank	Gaza strip
Number of ponds and fish farms	6 farms	3 farms
Number of employees	No information available	300 workers
Output	30 - 40 tons annually	600 tons in 2021

Fish farming in Palestine faces several challenges, including the high prices of feed, the difficulty of obtaining fish (fingerlings) for breeding, and the difficulties of obtaining funding for these projects, as well as the high costs of establishing farms and operating. Regarding the obstacles facing fish farming in Qalqilya, he summarizes them with links to the intense competition for water between the occupation and the Palestinian people, which takes several forms, the most important of which is the prevention of drilling wells, the lack of free access to water sources, and the challenges facing fish farmers in competing with importers¹⁰.

Fish farming in the Gaza Strip is a solution that investors have turned to to combat the restrictions imposed by the occupation on fishermen, such as restrictions on the materials that are brought into the sector and the narrowing of fishing areas. From here, the idea of fish farming appeared to bridge the gap caused by the occupation in the fish markets, as the director stated the General Authority for Fish Wealth in the Gaza Strip reported that investment in fish farming has reached nearly 4 million dollars¹¹.

The Israeli occupation also poses obstacles to the development of the fish farming sector in the West Bank, as the first experience of fish farming

¹⁰Al-Fatta, Mahmoud, a review of the book "Challenges of Agricultural Development in Palestine", Palestinian Research Center, Ramallah <http://bit.ly/3lYh11J>

¹¹Ramy Pomegranate. The occupation reduces fish marketing to the West Bank by 10 tons per week. Palestine Online. 11.1.2023

in the West Bank was in the Jericho governorate. Where the first cultivation project was established in 1996, and due to the conditions of the Intifada, road closures, bombing, and deliberate destruction; This project closed in the year 2002. Then followed by individual and collective attempts by some companies in the private sector, and they did not succeed as required.

Fish farming projects in Palestine have been exposed to many difficulties and challenges, including the restrictions imposed by the Israeli occupation authorities on fishing, which prompted farmers to fish farming as an alternative to fishing, in order to provide the minimum needs of the desired fish protein for Gazans. The occupation authorities prevent fishermen from reaching deep seas, which affects the fishing sector, in addition to the long hours of power outages, which raises the cost of electricity consumption, which amounts to about two hundred thousand shekels per month (about seventy thousand US dollars¹².)

Among the challenges facing the fish farming sector is "there is no surface water in the sector for fish farming, as a result of the occupation forces constructing dams on the water path, and therefore groundwater is completely relied upon. "Which is exploited in agricultural activities, as the use of this water improved after the withdrawal of the occupation from Gaza¹³.

He considered that the southeastern regions of the Gaza Strip have highly saline groundwater and can only be used in limited types of agriculture and can be mainly used in fish farming projects. Occupation is the nucleus of the new generation of fish that are now used for hatching and producing fish in farms.

Third Side Effects of fish farms in the Gaza Strip:

There are positive effects for fish farms, as they represent a solution to the acute shortage in fish markets in the Strip, and provide job opportunities for many fishermen who have been exhausted by the occupation and the restrictions imposed by the Israeli occupation on the fishing area and the materials that are entered into the fishing sector.

Fish farms negatively affect the marine environment if you do not comply with the standards, as the fresh fishery located between the city of Khan Yunis and the city of Rafah was a major cause of pollution of the beach water in the vicinity of the fishery area, and this is according to tests conducted by the Water Authority in May 2022. It was clear through these tests that the concentration of pollutants is high and was also found that there are fecal streptococcus balls

¹²Fish farming... Gaza farmers defeat the Israeli blockade, Al Jazeera Net, Doha 2019, available <http://bit.ly/40zY1V0>

¹³Agriculture Article: "Fish Farming" The Best Investment Project in Palestine, Ma'an Agency, Bethlehem 2008, available <http://bit.ly/3Kr28yh>

and organic waste. The representative of the Water and Environmental Quality Authority indicated that there is no other source of pollution of sea water in the vicinity of Fish Fresh, and it was found that the pollution resulting from the fish extends to approximately 600 meters in the vicinity of the fish.

Pumping the wastes of fish farming and fish ponds directly into the sea may lead to the destruction of the marine environment, and this is due to the accumulation of antibiotics used in the preventive treatment of fish in marine fish, and the pesticides that are used in fish farms may lead to poisoning of the marine environment¹⁴.

Conclusion:

This paper showed information about fish farming in the Gaza Strip, which is considered a solution to the occupation policies that depend on restrictions on the Gaza Strip, especially on the marine environment and on fishermen. The paper also showed the number of fish farms in the Gaza Strip. The West Bank and fish production in these farms. The paper also mentioned the most important side effects caused by fish farms in the event that they do not comply with the standards, such as treating fish farm waste before pumping it into the sea.

The paper recommends increasing investment in fish farming to reduce fish imports and combat the Israeli blockade imposed on the Gaza Strip which negatively affects the marine environment and reduces fish numbers in the sea.

¹⁴ A study prepared by Ray Consult and the International Institute for Applied and Health Research, with the participation of a youth team. Part of a youth-led research study project to monitor the most important environmental risks in the West Bank and Gaza Strip. Management of Ma'an Development Center. 2022