

Overview On The Situation Of The Fishing And Aquaculture Sector In Algeria During The Coronavirus Pandemic

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Abstract

The spread of the Covid-19 virus not only has health consequences: it also has a strong impact on many economic activities, including the fishing and aquaculture sector. This paper is an overview on the situation of the fishing and aquaculture sector in Algeria during the coronavirus pandemic. The World's Health Organization declared 1572 coronavirus cases, 205 deaths cases and 237 recovered cases in Algeria. The main consequences are related to the supply of fry, food and hormones, difficulty in the sale of fish, lack of human resources, and difficulty in movement.

Keywords: COVID-19 , fisheries ; aquaculture, Algeria

1. INTRODUCTION

Coronavirus (COV) is a single strand RNA virus with a diameter of 80-120nm. It is divided into four types: α -coronavirus (α -COV), β -coronavirus (β -COV), δ -coronavirus (δ -COV) and γ - coronavirus (γ -COV) [1]. The genome sequence homology of SARS-CoV-2 and SARS is about 79%, the 2019-nCoV is closer to the SARS-like bat CoVs (MG772933) than the SARS-CoV [2]

Bats have been identified as natural reservoirs and vectors of a variety of coronaviruses, which have spread across species to infect humans and a wide range of animals, including avians, rodents, and chiropters [3]-[4]

While the origin of COVID-19 is still being investigated, COVID-19 has features typical of the Coronaviridae family and was classified in the beta-coronavirus 2b lineage. COVID-19 can be transmitted between humans. Interventions, including intensive contact tracing followed by quarantine and isolation, can effectively reduce the spread of COVID-19, with the effect of travel restrictions.[5] Wear- ing masks, washing hands In addition, disinfecting surfaces helps to reduce the risk of infection. Human coronaviruses can be efficiently inactivated within 1 min using surface disinfection procedures with 62-71% ethanol, 0.5% hydrogen peroxide or 0.1% sodium. [6] The coronavirus (Covid-19) has a wide-reaching effect on e-commerce, technology, business travel, and the economy. It has already claimed

the lives of numerous people and continues to do so. In addition to this, every country follows the lockdown procedures as a means of preventing measures.[7] The current outbreak of COVID-19 is estimated to cost \$1 trillion to world's economy during year 2020. This impact, according to analysts, is even worse than the Great Financial Crisis of 2007-2008 [8,9,10]. Countries are slashing interest rates and rethinking their budgets, and it's possible that this trend will continue have to cut donations to different programs run by United Nations [9]. our objective is Overview on the situation of the fishing and aquaculture sector in Algeria during the coronavirus pandemic.

2. OVERVIEW OF THE FISHING AND AQUACULTURE SECTOR BEFORE THE COVID19 PANDEMIC PANDEMIC

Algerian aquaculture is currently experiencing a boom in production. Since the creation of the Ministry of Fisheries and Fisheries Resources in 2000, several development plans and programs have been drawn up, allowing the launch of several private aquaculture projects in different sectors of activity. [11]

An ambitious program aimed at increasing fishery production in Algeria to bring it to more than 274,000 tonnes by 2025, has been initiated since 2000 by the sector of Fisheries and Fishery Resources. This program, entitled "Orientation Plan for the Development of Fisheries and Aquaculture Activities", aims to enhance fishery resources, both maritime and continental, so as to reach, by this deadline, a production of around 221,000 tonnes of sea fishing and 53,000 tonnes from various aquaculture projects. [12]

National fishery production reached 108,300 tonnes in 2017 compared to 102,140 tonnes in 2016, but exports have decreased in terms of quantity, APS learned from the National Statistics Office (ONS).[13]

This improvement in overall production of around 6% is explained by an increase in the pelagic fish fishery to 77,776 tonnes in 2017 compared to 75,289 tonnes in 2016 (increase of 3.3%), followed by demersal fish with 6,792 tonnes against 6,644 tonnes (+ 2.2%), crustaceans with 2,326 tonnes against 2,126 tonnes (+ 9.4%), and pleasure and aquaculture production with 20,139 tonnes against 16,603 tonnes (+21 , 3%).

The National Statistics Office reports an improvement in fishery production which in 2018 reached 120,354 tonnes compared to 108,300 tonnes in 2017.

This improvement in overall production is explained by an increase in the pelagic fish fishery to 92, 392 tonnes in 2018 compared to 77,776 tonnes in 2017 (increase of 18.8%), followed by mollusk fish with a production of 1593 tonnes against 1267 tonnes (+ 25.7%) ", reports the APS to the ONS in its balance sheet on the sector's results in 2018. The production of pelagic fish, living species below 200 meters deep like tuna and mackerel, represented nearly 77% of overall national production, notes this balance sheet. However, a drop in production affected other species during this reference period, notably demerseau fish, species living above the bottom such as sea bream, hake, whiting, cod, and whose fishing level has reached 6,177 tonnes against 6,792 tonnes, marking a drop of 9.1%. The crustacean fishery also fell by almost 6%, from 2326 tonnes in 2017 to 2192 tonnes in 2018.

In 2019, production increased to 110,840 tonnes (+20%), with 75 aquaculture projects, wherever in 2015 it was just 15 aquaculture projects. The fishing sector has validated some 400 project studies among the 670 submitted.[12]

At the end of 2019, aquaculture production was estimated at 10,000 tonnes of, or 8% of overall fish production. By 2025, aquaculture production should reach 38,000 tonnes per year, or 22% of global fish production.

The main aquaculture activities are: Marine fish farming in floating cages for wolves and sea bream, carried out by private operators and the reproduction of these two species is done at the level of the only marine farm under the supervision of cnrdpa(National Center for Research and Development in Fisheries and Aquaculture).

Shellfish farming practiced by private operators producing a few tens of tonnes of Mediterranean mussels and hollow oysters.

Continental fish farming, mainly: Chinese carp, zander, mullet, bleak, black bass, wolffish and sea bream, shrimp, tilapia and catfish.

Farmers carry out fish farming that is incorporated into agriculture on their farms. Aquaponics and microalgae culture.

Continental fishing carried out by private concessionaires at the level of dams and hill reservoirs, for species such as common carp, Chinese carp, pike perch, black bass and barbel.

structure of the fishing and aquaculture sector

The sector currently has a National Center for Research and Development in Fisheries and Aquaculture, which has four research divisions (aquaculture division - aquatic ecosystem division - fisheries division and processing division (province Tipaza).

it also has 21 fishing directions and fishery resources and 21 Fishing and Aquaculture Chambers, 1 national agency for the development of fishing and aquaculture (province ELTaref) and 1 National Laboratory for the Control of Fishery & Aquaculture Products, salubrity of environments (LNCPPASM).

The National Higher Institute of Fisheries and Aquaculture (INSPA), Two (02) Fisheries and Aquaculture Technology Institutes; Five (05) Fishing and Aquaculture Technology Training Establishments.



Fig. 1 location of different fishing directions and fishery resources

University and institutions in aquaculture and fishing research

This discipline is also taught at the level of universities and high school, according to a system of studies called the License, Master and Doctorate (LMD) system: the University of science and technology Houari Boumediene (province Algiers), University of Annaba,

Timeline Of The Pandemic

On 1 March, Algeria confirmed two new cases of SARS-CoV-2, a woman (53 years) and her daughter (24 years), the health ministry said.

On 3 March, Algeria reported another two new cases of SARS-CoV-2, which the total number of confirmed cases to five. The two new examples involve a father and daughter from the same family who lived in France.

Table 1 represents the classification of the different wilayas in chronological order.

Tableau 01: timeline of the pandemic in differents provinces
 The data were collected by statements from the ministry of health, the media and a site of covid-19 coronavirus pandemic [19]

timeline	province
01-mars-20	Blida
13-mars-20	Algiers
21-mars-20	Oran
17-mars-20	Bejaia
19-mars-20	Setif
12-mars-20	Tizi Ouzou
23-mars-20	Tlemcen
22-mars-20	Tipaza
16-mars-20	Bordj Bou Arreridj
24-mars-20	Ain Defla
18-mars-20	Medea
22-mars-20	Chlef
25-mars-20	Mostaganem
23-mars-20	Constantine
12-mars-20	Skikda
18-mars-20	Boumerdes
22-mars-20	Jijel
18-mars-20	El Oued
05-mars-20	Mascara
25-mars-20	Batna
26-mars-20	Djelfa
23-mars-20	Sidi Bel Abbas
16-mars-20	Bouira
17-mars-20	Annaba
25-mars-20	Oum El Bouaghi
23-mars-20	Relizane
25-mars-20	Biskra
23-mars-20	Ain Temouchent
12-mars-20	Souk Ahras
19-mars-20	Tissemsilt
03-avr-20	Bechar
03-avr-20	Tebessa
26-mars-20	Guelma

15-mars-20	Adrar
20-mars-20	Khenchela
26-mars-20	El Taref
30-mars-20	M'sila
30-mars-20	Ouargla
24-mars-20	Laghouat
26-mars-20	Ghardaia
31-mars-20	Illizi
02-avr-20	Tiaret
04-avr-20	Mila
06-avr-20	El Bayadh
06-avr-20	Naama

Blida is the area most affected by covid19, followed by algiers, these two wilayas are close to each other,(Figure03)

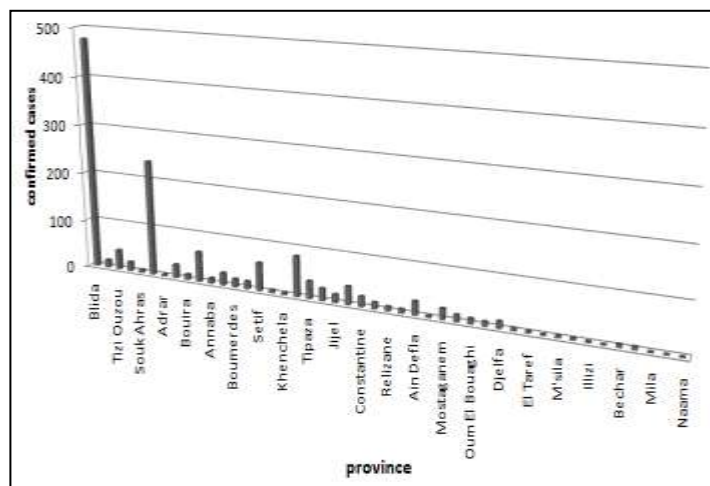


Fig. 03 global active case in each wilaya

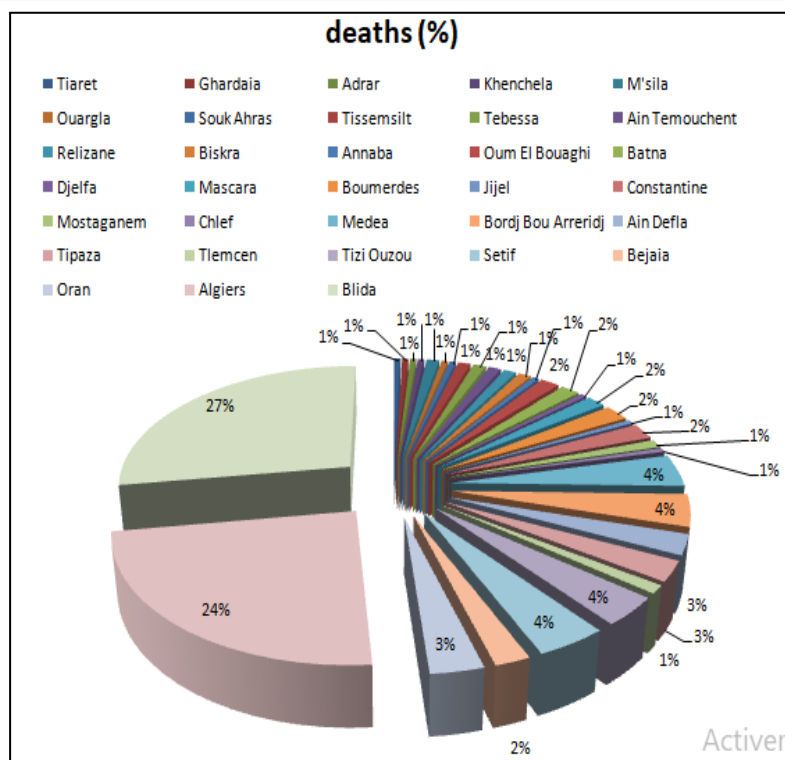


Fig.04 Global deaths (%) case in each wilaya

For this, President of Algeria has taken a decision to close educational establishments from Thursday March 12, 2020 until a new order, as a preventive measure against the spread of the coronavirus (Covid-19), the Ministry of National Education announces that the spring vacations, scheduled for March 19, will be brought forward by one week, that is, Thursday March 12, 2020, at the level of all schools and educational establishments in the three teaching cycles, as well as universities and vocational training establishments it also imposed confinement in the wilaya of blida, the most affected by covid19 in the same day.

on 17 march 2020, the president has widened the confinement for Algiers and the other provinces of country, with the confinement of 50% of the personnel of the different sectors to ensure the minimum of the activities, with the priority for the mothers, and those who live far away, and who use the transport public. The mosques have also been closed, the public transport stopped completely, the closing of party halls, public places, shopping centers, restaurants and suspension of flights and maritime transport. Suspension of sports and scientific activities and all events at national and international level.

the ministry of fishing and halieutic products joined the decision of minister, and took in its turn a whole of the decisions: the release of the moms, the workers who live far away, the stop of the missions and displacements to the scale national and international for training, seminars and meetings, for people who live close to the workplace, the presence is mandatory of a service representative (working in alternative), schools and training institutes of fishing and aquaculture have been carried over. assembly at the workplace is prohibited. the artificial reproduction campaigns already scheduled, were carried out with consideration of the means of hygiene and ensuring them with a little staff.

an artificial reproduction campaign of zander already scheduled by the National Center for Research and Development in Fisheries and Aquaculture, were carried out with consideration of the means of hygiene and ensuring them with a little staff.

in the field of research, the researchers communicate with each other by telework, the projects of end study stages (license, master, doctorate) have been suspended the private sector has been more critically affected by this pandemic.

The main aquaculture farms in algeria specialize in the magnification of wolves and sea bream, with the importation of fry. Therefore a major problem will arise for the supply of fry and food..

Other freshwater fish farms (tilapia, catfish and Chinese carp) will face problems related to the supply of hormone, and fish food. unfortunately in Algeria, there is no factory manufacturing fish food, for these two types of fish farming in the sea and in the freshwater, another problem will arise, it is overloading, storage and especially the difficulty in the sale of product, since restaurants, hotels and fish markets are closed. So we will expect financial problems, reduced production, disease and mortality. Sellers of ornamental fish will also have this problem of selling fish

Fishermen are also affected by this pandemic, because of containment, they cannot go out to fish, also the markets are closed, therefore a major problem of marketing of fish.

Finally, this pandemic has drawbacks on the socioeconomic sector: unemployment, low yields, shortage of fish at dam levels, not to mention the fish consumption rate which will drop (the main source of fish will be canned and frozen fish).

According to Abdelkader Djeflat the coronavirus pandemic has taken almost everyone, short , nations and governments, economic operators and citizens and often in a rush, several decisions have been made More bricolage at the top of the States in the face of the emergency, first and foremost to reduce the harm to the population, then to the economy. This pandemic comes at a time when the nations of the world were mobilized in the direction of achieving the Sustainable Development Goals (SDGs) whose 2030.[20]

The fact is unavoidable that the effect of novel coronavirus will have a significant effect on the country, economy, and society. The growing threat of new coronaviruses is a public health emergency that is wreaking havoc on the global economy. It has also cut off the company's supply chain. The production and the manufacturers are expected to be hampered more [7].

3.CONCLUSION

Algeria must seriously thinking self-satisfaction, for the supply of fry and fish food, by the installation of a food manufacturing plant, and hatcheries to ensure the fry. Algeria must also think of developing the transformation of fishery and aquaculture products to avoid this kind of constraints during pandemics, in order to assure fish to consumers.

On the other hand, one of the indirect effects that we consider positive of this pandemic is the global shutdown of pollutants which constitute a permanent threat to our planet: factories (stopped or inactive), almost all air transport, road transport and car traffic. which will influence the reduction of pollution of the sea and the preservation of fish stocks which were affected of overfishing.

4. REFERENCES

- [1] JF. Chan, KK. To, H. Tse, DY . Jin, KY . Yuen, “ Interspecies transmission and emergence of novel viruses: lessons from bats and birds”. Trends Microbiol, pp.544-55, 2013.
- [2] A .Wu, Y .Peng, B.Huang, X. Ding, X.Wang, P. Niu, “Genome Composition and Divergence of the Novel Coronavirus (2019-nCoV) Originating in China”, Cell host µbe. 2020.
- [3] N . Zhang , L.Wang , X. Deng , R.Liang , M. Su , C.He , “Recent advances in the detection of respiratory virus infection in humans”, Journal Med Virol,pp. 92-408. 2020.
- [4] JS .Mackenzie , M.Jeggo, “Reservoirs and vectors of emerging viruses”, Curr Opin Virol .pp.170–9 .2013
- [5] P.Zhai , Y. Ding , X. Wu , J.Long , Y. Zhong , Y.Li, “The epidemiology, diagnosis and treatment of COVID-19”, International Journal of Antimicrobial Agents. pp 11-13.2020
- [6] G.Kampf , D.Todt , S. Pfaender , E.Steinmann “ Persistence of coronaviruses on inanimate surfaces and its inactivation with biocidal agents”, J Hosp Infect ,pp.104:246, 2020.

- [7] M.W. Hasanat, A. Hoque, F.A. Shikha, M. Anwar, A.B. Abdul Hamid, H. Hon “ The Impact of Coronavirus (Covid-19) on E-Business in Malaysia”, Asian Journal of Multidisciplinary Studies Vol. 3, No. 1pp 2-7.2020
- [8]. M.Kabir, M.S. Afzal, A. Khan, H. Ahmed, “COVID-19 economic cost; impact on forcibly displaced people”, Travel Medicine and Infectious Disease. pp 3-8.2020.
- [9]. Corona: A Visual Guide to the Economic Impact [<https://www.bbc.com/news/business-51706225>] accessed on april 08, 2020
- [10]. Financial Times: Real-Time Data Show Virus Hit to Global Economy [<https://www.ft.com/content/d184fa0a-6904-11ea-800d-da70cff6e4d3>] Accessed on april 08,2020
- [11] F. ALLIOUCHE, “study of the functioning of lake ecosystems with a view to their modeling”, doctoral theses,USTHB.2019
- [12] Ministry of Fisheries and Fisheries Resources. <http://madrp.gov.dz/dgpa/>
- [13] national office of statistics algeria, “report . The main indicators of the fishing sector (2010-2019).
- [14] World Health Organization (WHO). Coronavirus disease 2019 (COVID-19). Situation report ,Geneva, Switzerland: WHO; 2020. *Data as reported by 10AM CET 08 april2020*
- [15] CC. Lai, YH . Liu, CY. Wang, YH. Wang, SC .Hsueh, MY .Yen. “Asymptomatic carrier state, acute respiratory disease, and pneumonia due to severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2): facts and myths”, J Micro- biol Immunol Infect.2020.
- [16] DS .Hui, E . Azhar, TA. Madani, F .Ntoumi, R .Kock, O.Dar, “The continuing 2019-nCoV epidemic threat of novel coronaviruses to global health—The latest 2019 novel coronavirus outbreak in Wuhan, China”, International Journal of Infectious Diseases. pp91:264–6.2020.
- [17] MA. Shereen, S.Khan , A.Kazmi, N. Bashir, R. Siddique, “COVID-19 infection: Origin, transmission, and characteristics of human Coronaviruses”. Journal of Advanced Research . pp08.2020
- [18] Ministry of Health, Population and Hospital Reform. <http://www.sante.gov.dz/>
- [19]https://www.worldometers.info/coronavirus/?fbclid=IwAR2yS2YiZckrmqt6B1zKM6zXzjnrkm1TomEtOkO7o6s5_XMhoJvRzqoAM9A
<http://www.ons.dz/>
- [20]A.Djeflat, “The Coronavirus and the importance of being inserted in the knowledge economy” Maghreb Emergent, pp 2-6.2020.