

Influence of economic profitability in the production and commercialization of trout (*Oncorhynchus mikiss*) in the district of Congalla

Summary

The research was carried out in the Congalla district between April and September 2018 and focused on analyzing the production and economic profitability of trout (*Oncorhynchus mykiss*) farming by the local market. The production areas, profitability, supply, demand and forms of consumption were determined; in local and regional market; As a primary source of information, it was obtained through interviews with trout producers, traders and consumers in (Congalla-Angaraes) in the main markets of each province, likewise; Secondary information was collected, such as historical production of the last 10 years, quantity of production, and yield per well. It was concluded that the main trout producing areas in the Congalla district for the year 2018 were “improved valley” fish farms, with 48,000 trout produced, the other fish farms produce less and therefore the largest suppliers of trout in the Congalla district is the “Valle mejorada” fish farm (2017 - 2018). The total amount of trout and its commercialization produced at the Congalla district level from 2007 to 2018, were also determined from the Angaraes Agrarian Agency (AGA) and from the surveys carried out during 2018. Its production was around 126,000 kg trout. Another reality that could be verified is that trout breeding is currently being developed; but the technical assistance of professionals has not achieved major advances in recent years. The other fish farms produce less and therefore the largest suppliers of trout in the Congalla district is the “Valle mejorada” fish farm (2017 - 2018). The total amount of trout and its commercialization produced at the Congalla district level from 2007 to 2018, were also determined from the Angaraes Agrarian Agency (AGA) and from the surveys carried out during 2018. Its production was around 126,000 kg trout. Another reality that could be verified is that trout breeding is currently being developed; but the technical assistance of professionals has not achieved major advances in recent years. They were also determined from the Angaraes Agrarian Agency (AGA) and from the surveys carried out during the year 2018. Its production was around 126,000 kg of trout. Another reality that could be verified is that trout breeding is currently being developed; but the technical assistance of professionals has not achieved major advances in recent years. They were also determined from the Angaraes Agrarian Agency (AGA) and from the surveys carried out during the year 2018. Its production was around 126,000 kg of trout. Another reality that could be verified is that trout breeding is currently being developed; but the technical assistance of professionals has not achieved major advances in recent years.

Keywords: analysis, profitability, economy, production, marketing

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Introduction

Within the problem of the district of Congalla - Huancavelica, the economic profitability in the production and commercialization of trout in the years 2017 - 2018 is explained by the high costs of balanced food, affecting the economic income of the producers, being very important to analyze their economic profitability and commercialization for the planned productive economic development of this aquaculture productive activity. Likewise, it is marketed locally in different presentations of stews such as: fried trout, grilled trout, grilled trout, trout roll, trout pork rinds and trout sweat. Peru is the exporter of trout to China and the US, the overexploitation of fisheries and the increase in the consumption of products of aquatic origin, have caused aquaculture to become an alternative to expand and contribute

to the food supply, creating permanent sources of employment, stimulating regional development and generating money.

While the problem that must be solved to socially help the district under study is: How does economic profitability influence the production and marketing of trout 2017-2018? To develop an adequate structure of social assistance, Morales¹ has been cited, who states; “That the nutrition favors children and the elderly, since it contains 15.7 grams of proteins of high biological value.” That children have a healthy diet and that they have a good academic performance due to the omega 3 content is very good for the elderly, in the same way also for pregnant mothers, in terms of production, Minagri², carried out the investigation, “Raising of fingerlings for the purpose of export and commercialization of trout (*oncorhynchus mykiss*), at

the international level” indicates that, in Mexico “production and commercialization of trout” are an essential part of the economic and social work of the country. Ministry of Fisheries,³ carried out the investigation, “Intensive care of materials for the production of trout (*oncorhynchus mykiss*) at an international level, indicates that, in Uruguay, the maintenance of cages. Materials such as brushes, sandpaper, paint and varnish are required to clean the cages, change the mesh every 15 days very important for a planned development of aquaculture activity. The structure of this research is based on a local, regional, national, international level, for example López,⁴ carried out the research, “In analysis of the production and profitability of trout (*Oncorhynchus mykiss*) at the international level”, Trout is a fish that belongs to the salmonid family, whose world production during 2010 reached 1.3 million MT, in the varieties of rainbow trout (34%), Atlantic salmon (53%), silver salmon (7%) and other species (6%). The main world exporters of trout are Chile, Norway, Denmark, Peru, Spain, Italy, France and Sweden. The research methodology was based on the descriptive method (whose procedures allowed us to obtain information about the real fact and current situation of things) and analytical (analysis is the observation and examination of a particular fact). This method allowed us to know more about the object of study, with which it can be explained, make analogies, understand its behavior and establish new theories. The research design itself is the guide that the researcher follows to achieve the expected results. The results. The main areas that produce trout were identified in each populated center and community of the district of Congalla, province of Angaraes, Huancavelica region, with the community of Maray Valle mejorada 48 as the main producer. 200Zainbow trout in the same way we have the Huanupampa fish farms producing 32.000 rainbow trouts in the same way we have the Ccenuacancha fish farms with a production of 30.000 rainbow trouts we also have fish farms in Bella Flor de la Familia gala in the community of San miguel with a production of 16,000 rainbow trout; therefore, the community of Maray is the first supplier of trout, improved valley fish farms with a larger-scale production at the level of the district of Congalla. Having their markets the neighboring districts such as: Secclla, Julcamarca, Huancahuanca, Ccallanmarca and at the same time they sell it to the markets of Ayacucho, Angaraes. 10rainbow trout We also have Bella Flor fish farms from the Gala family in the community of San Miguel with a production of 16.000 rainbow trout, therefore the Maray community is the first trout supplier Improved Valley fish farms with a larger scale production at the level of the district of Congalla. Having their markets the neighboring districts such as: Secclla, Julcamarca, Huancahuanca, Ccallanmarca and at the same time they sell it to the markets of Ayacucho, Angaraes. 1500ainbow trout We also have Bella Flor fish farms from the Gala family in the community of San Miguel with a production of 16.000 rainbow trout, therefore the Maray community is the first trout supplier Improved Valley fish farms with a larger scale production at the level of the district of Congalla. Having their markets the neighboring districts such as: Secclla, Julcamarca, Huancahuanca, Ccallanmarca and at the same time they sell it to the markets of Ayacucho, Angaraes. The aim of this research work was to identify the main determinants that influence the economic profitability of trout farming in the district of Congalla - Huancavelica, period 2017 - 2018. Likewise, to identify the potential markets for the commercialization and productive risks of according to production costs in the Congalla district. In the Congalla District.

Materials and methods

Place of execution

In order to influence the economic profitability of the production

and commercialization of trout, the district of Congalla, Valle Mejorada, of the province of Lircay, Huancavelica region, was taken as the study area, because this district is entering production aquaculture, as part of the national aquaculture production system. Which is at an altitude that varies from 3,500 to 3,600 meters above sea level, (height of Lircayccasa). At a south latitude of 12° 57' 03''; west longitude of 74° 29' 02''. Being the average annual temperature of 12 ° C. With an average annual relative humidity of 65%, average annual rainfall of 700 to 760 mm. Limiting to the north with the district of Caja; by the south with the district of Secclla; to the west with the district of Julcamarca; and by the west with the district of Huancahuanca.

Kind of investigation

The present research work was of an explanatory Descriptive Type. Oriented to carry out the analysis of the economic profitability in the production and commercialization of trout (*Oncorhynchus mykiss*) in the district of Congalla. Describing the information focused on the measurement of concepts and variables. Where the data collection was individually and jointly in order to determine the economic profitability of trout production. In the correlational aspect, the purpose was to measure the degree of relationship and the way in which the variables interact with each other.

The research methodology was based on the descriptive method (whose procedures allowed us to obtain information on the real fact and current situation of things) of analysis of the economic profitability in the production and commercialization of trout (the analysis is the observation and examination of a special event). This method allowed us to know more about the object of study, with which it can be explained, make analogies, about the cost of production, marketing to the markets.

Research design

In this case, a non-experimental descriptive observational field research design of a linear study was followed, understanding field research as the systematic analysis of problems with the purpose of describing them, explaining their causes and effects, understanding their nature and factors, or predicting their outcome. The data of interest were collected directly from reality, without deliberate manipulation of the variables; that is to say, the data were observed as they occurred in the natural context, and then analyzed.

Population, sample and sampling

Population

Knowing that the population is the total set of elements, individuals or objects that have one or several characteristics in common; the population of the present work was the 6 trout producers in the respective identified fish farms.

Sample

To select the sample, the characteristics of the population were clearly defined; the sample is a subset of the population with the same characteristics under study. Being the sample for the present study the trout producers of the town of Congalla, to which the profitability analysis will be carried out.

Sampling

The type of sampling selected was based on the knowledge and judgment of the researcher (probabilistic), that is, all trout producers (6 producers) had the same probability of being chosen, based on the characteristics of the population.

Results and discussion

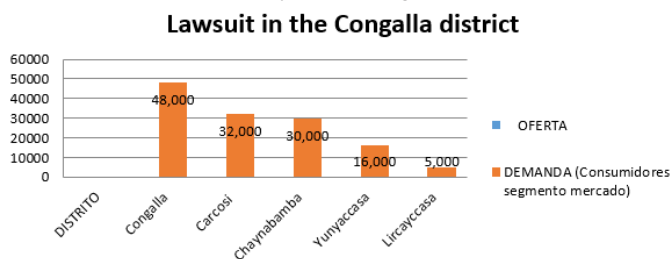
Fountain: Analysis survey of the economic profitability of trout in the district of Congalla 2018

$$\text{Profitability} = (\text{Profit} / \text{Investment}) \times 100$$

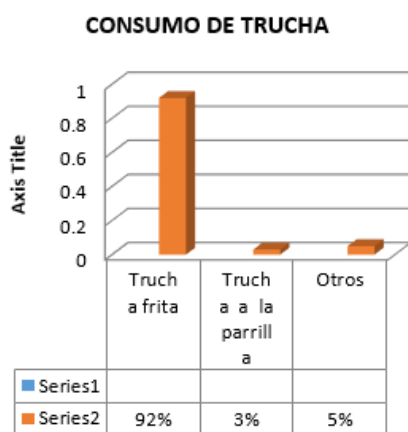
$$A=398,400R= (398.400)/(166,700) \times 100=238,992.20$$

Graphic 1: Regional production of trout by years.

Source: Result on the time dedicated to trout production 2018. Interpretation in the Table 1 Analysis of the economic profitability and commercialization of trout in the district of Congalla. Graphic 2 Regional production of trout by years. The main areas that produce trout were identified in each populated center and community of the district of Congalla, province of Angaraes, Huancavelica region, having as the main producer the community of Maray Valle, improved 48,000 rainbow trout, in the same way, the Huanupampa fish farm producing 32,000 rainbow trout in the same way we have the Ccenuacancha fish farm with a production of 30,000 rainbow trout we also have the Bella Flor fish farm of the Gala family in the community of San Miguel with a production of 16,000 rainbow trout per Therefore, the community of Maray is the first Trout Producer, an improved valley fish farm with a larger-scale production at the level of the Congalla district. Having their markets the neighboring districts like. Secclla, Julcamarca, Huancahuanca, Ccallanmarca, at the same time sell to the markets of Ayacucho, Angaraes.



Graphic 1 Trout supply and demand in the Congalla district.



Graphic 2 Forms of trout consumption in the district of Congalla.

Cost effectiveness

The profitability of trout in the Congalla district is increasing every year, the variety that is most profitable is rainbow trout (*Oncorhynchus mikiss*) as observed in the Table 1.

Table 2 shows that the rainbow species of the improved valley community has a greater demand in the district of Congalla towards the markets of Lircay, Ayacucho.

Fountain: Own elaboration (2018)

In graph ???, it can be seen that the demand for trout is greater than the supply of trout in the district, this indicates that there is an unsatisfied demand for trout because the population requires that there should be more trout production, because it does not supply for local market fairs call. Like Secclla, Julcamarca, Huancahuanca, Lircay.

In Graph 1 it can be seen that trout is consumed almost entirely fried trout, except for the district of Congalla where they consume grilled and smoked trout.⁵⁻²²

Conclusion

- 1) The Cenuacancha fish farm occupies the first place in terms of its economic profitability in the production and commercialization of trout with 33%. Similarly, the Valle fish farm, improved with the San Miguel fish farm, the San Miguel fish farm, ranks second with 20%. Huanupampa occupies the last place with 14% in terms of its economic profitability.
- 2) According to Table 2, it is shown that the total amount of trout produced was 126,000 trout at the Congalla district level from 2007 to 2018, with the surveys carried out, the profitability was calculated and it is concluded with the certainty that, if it is profitable to raise rainbow trout, during 2018 we also found the need to promote trout consumption to combat malnutrition.
- 3) The trout production of each fish farm in the district of Congalla was determined, which was the "Valle mejorada" fish farm occupying the first place with a production of 48,000 trout, in the second place is the community of Huanupampa with a production of 32,000 trout and in Third place is the community of Ccenuacancha with a production of 30,000 trout and fourth place is the community of San Miguel with a production of 16,000 trout. Having in total with an offer of 126,000 trout at the level of the district of Congalla.
- 4) In the district of Congalla there is an unsatisfied commercialization of trout, since only approximately 60% of the population consumes in the district of Congalla, Table 3 shows that the supply in the district of Congalla is 4 trout for 12 soles producing 126,000 rainbow trout, this is every 8 months and the demand is 70% of the entire Congallina population plus the neighboring districts and provinces of the department of Huancavelica and Ayacucho with an average of 130,000 consumers in social commitments.
- 5) The form of trout consumption is the traditional fried trout and grilled trout, lacking industrialization and the interest of the institutions linked to the industrialization of the trout as of the social programs that do not include within their products, LEONEL S. Percy (2015) carried out a "Pre-feasibility study for the raising and commercialization of trout in San Marcos Cajamarca. In the San Marcos area there is trout breeding with great food and nutritional value as a usable source for the economic and social development of the town.
- 6) At the level of the Congalla district, there is profitability, so there are consumers of trout diversity in the local Angaraes market, because trout production is not satisfactory due to the minimum production in the fish farms of the Congalla district.
- 7) It was identified that the trout present omegas, therefore it is profitable for the producer, but due to the high rainfall in the months of February-March there is low production and profitability.

Table 1 Influence of economic profitability and commercialization of trout in the district of Congalla

Trout production	Amount	Cost effectiveness	Sale	Cost per kilogram	Total cost S/.
Mejorada Valley	48.000	Profitable	4 medium trout for S/. 12.00 nuevos soles (a fried trout for S/. 6.00 nuevos soles)	Kilos S/. 12.00 nuevos soles	144.000.00
Huanupampa	32.000	Profitable	4 medium trout for S/. 12.00 nuevos soles (a fried trout for S/. 6.00 nuevos soles)	Kilos S/. 12.00 nuevos soles	96.000.00
Ccenuacancha	30.000	Profitable	3 large trout for S/. 12.00 nuevos soles	Kilos S/. 10.00 nuevos soles	120.000.00
San Miguel	16.000	Profitable	5 trout for S/. 12.00 medium nuevos soles	Kilos S/. 12.00 nuevos soles	38.400.00
TOTAL	126.000	Profitable	Offer	Quantity per kilo	398.400.00

Table 2 Profitability of trout in the Congalla district according to the species

Fish farms	Common trout	Rainbow trout	Brown, Fario or brown trout	Coastal trout	Downtown trout	Total
Improved valley	-----	90.00%	20.70%	.....	40.00%	100%
Huanupampa	80.05%	16.09%	.....	37.50%	100%
Ccenuacancha	50.07%	14.30%	.....	33.00%	100%
San Miguel	40.08%	12.25%	.....	30.00%	100%

Source: Own elaboration (2017).

Table 3 Forms of trout consumption in the district of Congalla

District	Fried trout	Grilled trout	Sweaty and crinks	Other
Congalla	10%	10%	0.00%	10%
Carcosi	5%	5.00%	0.00%	0.00%
Chaynabamba	5%	5.00%	0.00%	0.00%
Yunyaccasa	5%	0.00%	0.00%	0.00%
Lircayccasa	4%	0.00%	0.00%	0.00%

Fountain: Own elaboration (2018).

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None.

Conflicts of interest

Author declares there is no conflict of interest in publishing the article.

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