2020

sustainable opportunity

STURGEON CONSERVATION FARM



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"INNOVATIVE REPRODUCTION STURGEON FARM & SUSTAINABLE HARVESTERS"

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Executive Summary of Business & Opportunity

Vision

"Our visions is to create a vibrant business in conservation of sturgeons in a global market of aquaculture, driven by innovations and value-added in a totally novel technology of reproduction sturgeon, to provide a new global standard reference in conservation a vulnerable and endangered species and to become the first option in protection to the last sturgeon, presents in the entire world."

Missions

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"Our missions is to reproduce in large quantity 4 species of sturgeon present now in the Black See and Danube River Low Part, and offer for aquaculture global market farms, larvae's and fries or juvenile sturgeon to be grow in an environmentally responsible manner with respect for the fish in order to produce ecologically and sustainable business, making our brand "®OLOOSON" first suppliers option in the world."

Objectives

"Our objectives are to obtain high value profit without destroying the natural environment, to protect a species of venerable fish located in extinction and to build a business at a big commercial scale in the most sustainable model. All of this is intended to be our "®OLOOSON" Sturgeon Factory."

Summary of Business & Opportunity

The Sturgeon Factory. An innovative clean water in novel aquaponic technology for reproduction of sturgeon species.

Why?

Nowadays sturgeons are on the last road before the total extinction of species that have managed to survive for over 250 million years. Their rarity today raises questions about how and in what way the extinction process can be stopped, and sturgeon herds manage to survive. Despite all the futile attempts to develop laws and projects meant to protect the poaching generated by human greed, it reduces the numbers of these species more and more. The stake is one with high commercial value in the black market of sturgeons. All protection programs in the lower Danube area have failed miserably, being taken over by the political-administrative mafia, which for over 30 years has infiltrated the deepest reflections of our society.

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How?

The ®OLOOSON factory will use organic and biologically pure food, as the sturgeon species that we want to farm feed exclusively with insect larvae in their natural environment. We will use such insect larvae (Tenebrio molitor) to feed the juvenile of sturgeons. The prime matter for these insects is raw cereal that they process in proportions of 90%. Water filtration is performed with zeolites filters (natural) that filter the water molecules until all that is foreign and undesirable in the water is gone. The farm has a small nitrogen footprint because it does not produce nitrogen species, transforming ammonium in to nitrate and nitrate is used in aquaponic vegetables grow. There is a lot of technology and mathematical modelling in this project. Knowledge of chemistry, biochemistry, hydraulic, thermodynamics, electronics and computers must all be applied. The law that governs the entire system is a mass balance of the systems. The larvae are fed naturally, and the environment has the high purity.



What?

We will reproduce F0 sturgeons from wild parents belonging to 4 world-famous species, namely. Acipenser ruthenus (Sterlet), Acipenser stellatus (Sevruga), Acipenser gueldenstaedtii (Oscietra) and the most famous sturgeon in the world Huso (beluga). Of these species, OLOOSON Factory has mature specimens with certified genetic purity.

The juvenile obtained has two destinations, one is the repopulation of the Danube and other European rivers from where the sturgeons have disappeared in time and the second direction is to ensure a large volume of juveniles for aquaculture farms in the world. We have a safe transport system to the destination of sturgeon seedlings anywhere in the world. We also provide the entire training and training of farmers who intend to grow these species.

Sturgeons have a much higher growth rate than other species, reaching weights of tens or hundreds of kg. They are easy to grow and offer an exceptional quality of products and by-products. Besides the fact that it is extremely tasty, sturgeon meat contains extremely many elements recommended by any dietitian. Europe has several species of sturgeons that were poached and are now raised only for caviar. We propose to change the commercial reflex from caviar in the luxury market to sturgeon meat in the mass market.





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How much?

A short summary of the investment needed and how it will be spent:

We are requesting a financing from the Blue Economy fund **€ 873,279.10**

This funding will be used for CAPEX totaling **€ 539,499.18** and for OPEX totaling **€ 333,779.92**

The company reaches Break-Even in the third quarter of the 2nd year.

In the 15 years of operation the company will achieve a net profit as follows: **€ 8,678,247**

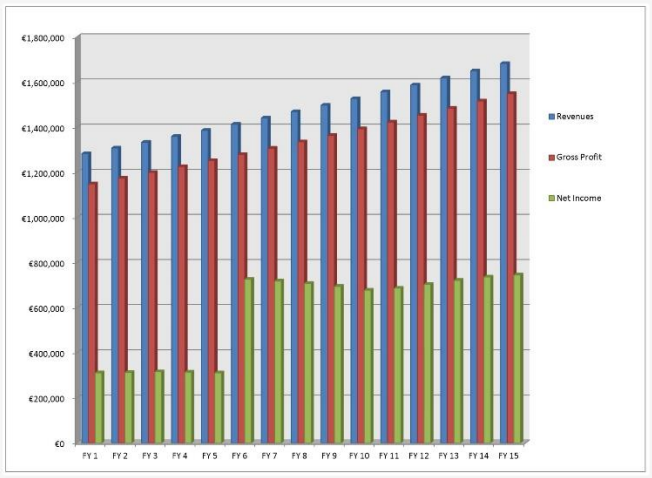
Of this profit, we will provide **80%** for endangered species conservation and protection projects through the

OLOOSON foundation or other entity : **€ 6,942,597**

When?

The requested amount is required to be allocated in the first year because its intent is to build the infrastructure of the farm, totally 0,5 hectares of land for sturgeon reproduction and other facility over 1,200 square meters needed for food growing and aquaponic farm equipment.

The business plan mentions only 15 generations of fish (whole cycles until year 15) leads to higher financial volumes.



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In this business plan we provide ample documentation, both narrative, as an exposure of motives and market analysis, as well as financial, unrolled in the first 15 years.



I wish you a pleasant and exciting read,

Daniel Tabacaru

Business info	Owner & CEO, COO
OLOOSON FACTORY SRL Bdul. Pipera 198/4, IbizaSol, Toledo, Ap. 1, 077190, Voluntari, Ilfov, RO Brand OLOOSON, Project Sturgeon 2.0 http://www.olooson.eu +40724593613	Daniel Dorin Tabacaru, Owner daniel.tabacaru@olooson.eu

Category: Aquaculture Production Fish – Sturgeon Reproductive Factory

To obtain information about the company please go to the website of the Ministry of Finance of Romania and use this ID: 31546216 in this page: http://www.mfinante.ro/agenticod.html?pagina=domenii The site is available only in Romanian but can be translated with google / translate, or other translate engines. We are available for set up of new companies along with the financier or for the establishment of new companies in offshore areas.

OLOOSON FACTORY SRL has fully understood recommendations and respect them very strictly that result from: STANDING COMMITTEE OF THE EUROPEAN CONVENTION FOR THE PROTECTION OF ANIMALS KEPT FOR FARMING PURPOSES (T-AP) RECOMMENDATION CONCERNING FARMED FISH adopted by the Standing Committee on 5 December 2005. (In accordance with Article 9, paragraph 3 of the Convention, this Recommendation entered into force on 5 June 2006).

We exercise faith as a selfless attitude to these miraculous creatures to be shown permanently.

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Therefore, the conditions of life and development are proposed farm (say it with great regret) better than in the natural environment in terms of pollution and aquatic toxicity.

Existing synthetic chemicals used in industry and agriculture, pesticides and insecticides, heavy metals and hydrocarbons present in the natural environment today is refuted by modern filtration technology consisting of molecular sieves in zeolites.

The water is filtered culture 99% of all the unwanted elements.

Regarding feeding these fish it is natural, being assured by growing larvae (Tenebrio Molitor), feeding with grains that have a factor identity of food by 99% compared to the natural environment. Sterlet (Acipenser ruthenus) feeds lifetime insect larvae and small aquatic organisms and larvae insect represents 96% of their diet all life. All sturgeon feeds in first time of life with insect larvae.

We do not use growth hormones, steroids, antibiotics or other drugs. Belts parasitological and bacterial prevention is achieved using salt and plant extracts.

Farm water from groundwater is very deep and has good thermal stability in all seasons. Also preferred are harder waters with high load of calcium carbonate and magnesium in 100% controlled environment, temperature, water quality, the day and night, light intensity and spectrum of the light.

We want to revolutionize the industry and become a major reference in the market, and we know for sure how this even now.

"OLOOSON will become the most elite and sophisticated brand in the world. It represents the future of a market in which other competitors represents the past and at the destroying till the eminent extinction of these species!" D.T.

Market & Competitor Analysis

Caviar is dead - Long live caviar! It is hard to imagine that in a delicacy store of one of the companies with one of the most "expensive" images of over 200 years working in the industry of producing caviar, such a discussion can exist today:

- Would you please tell me the types of caviar you have here?

The saleswoman, after measuring you from head to toe, shows you some empty cans of caviar which you cannot identify by a banderol and, besides the name written on the casing, there is no other information listed anywhere.

- Oscietra, Sevruga… What would you like to purchase? What amount?
- I don't know yet, but from what species of sturgeon does this caviar come from?
- That is?
- Where do they come from? Where were they grown? I mean, are they Beluga? Oscietra? In what farm were they grown?
- I don't know exactly, but they are from the Caspian Sea.
- What do you mean "Caspian Sea"? Are there farms there?
- Not farms, but directly from the Caspian Sea.
- So, it's wild caviar?
- Yes, it is wild…!
- Can you show me a box with a banderol, please?
- I cannot because they are kept inside the refrigerator out back, but if I sell you the box, you can look for yourself…
- How much is the smallest box?
- 56 pounds at 30 grams.
- And it is wild caviar…
- Yes, it is wild, I can guarantee it! It's from Iran and it is the best quality.

The small, 3 or 4 point font code written on the back of the box indicates that the caviar is harvested from the Baeri species (Siberian species), produced in France and it indeed tells us in what farm it was produced. Caviar has long been synonymous with the ultimate luxury. It has now completely changed its destiny and origin. CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora) imposed a moratorium upon the "king fish". Unless it is caviar provided from contraband, it is exclusively from sturgeon farms. In other words, even though the king is dead, the new king does not seem worthy enough to be acclaimed and receive the throne. The last convoy had shown that the caviar provided from Iran was below 2000 kg in the last 6 months of 2019. Iran being the last country that had the right to fish in the Caspian Sea regarding the repopulation with sturgeon fry conditions. In fact, because the pollution in the Caspian Sea is at such a high level, the sturgeon fry has no chance of survival, therefore the effect is null. So then, where does the caviar from luxury companies' display windows come from? The answer to such a legitimate question like this comes from the fact that the caviar is produced in farms and unfortunately, I hope not for too long, it is also sold as wild caviar. The fishing decline in the Caspian Sea began in the '90s. Pollution, industrial scale poaching and CITES' interdiction to fish any type of sturgeon, beginning in 2006, left a prosperous market of over 2000 tons of caviar without raw material. A part of this market was rapidly converted to the so-called "fake caviar", which in reality was caviar substitute, or in other words "surrogate", roe from other fish dyed with sepia and tannin extracts. The authentic caviar market, reduced in size to almost 1% in the decline years of 2005 and 2006, suffers, unfortunately, from a total lack of identity and mostly, of standards. Big companies sell caviar that has no certain origin, and even though if the origin is found, it is never promoted as it should. The truth that today caviar is no longer Russian, neither Iranian, is certain. That today, the Caspian Sea moved in the Gironde region of France, or in the Kibosh Dan of Israel, or in the Brescia province of North Italy, or China, America and even Uruguay, is a well-known truth that should be spoken by the ones who work in this domain. The reason for which this does not happened is mostly because of the general prejudice that everything wild is better, while farmed grown is lacking in quality. The famous Armen Petrossian, chairman of Petrossian Company, mentioned in a public declaration that the wild caviar price in the market is a reference to the price of farmed caviar and it should be three times cheaper than the wild caviar. Does it seem illogical, maybe, to

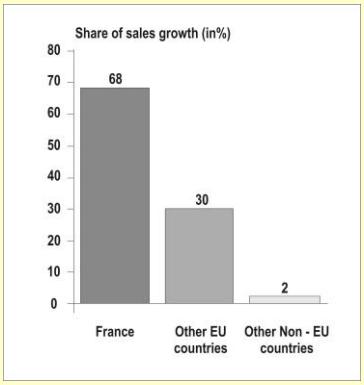
compare a Caspian Sea caviar, where the population lays at over 5000 times higher values than the admitted ones, to a farm grown caviar in France, Italy or Latvia? Things must change for the better, but until then to see a relative radiographs caviar market.

Market Analysis - Major actors

France

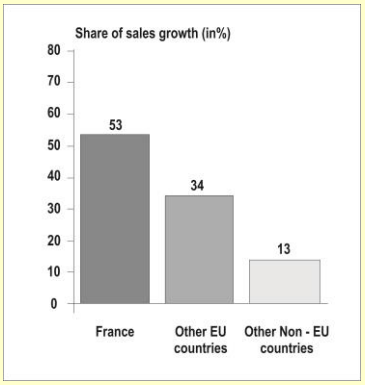
But what if things are really that way and such a comparison of origins of the caviar is possible? We must not forget that until the year of 2005, France only occasionally produced caviar and that at first it was a failure due to the taste of the caviar and the pregnant smell of mud. It may seem incredible, but the French did not know that a caviar crisis was on the way. In consequence they started growing sturgeons. The story begins in 1982 when the weak efficiency, due to temperature chances provoked by massive clearances, made fish farms in the Aquitania region and the Gironde river region to collapse. Farmers searched for a fish that would prove adaptable to a higher temperature and so they ended up growing a Siberian sturgeon, the Baeri species. At first it was grown for its meat and no one guessed the potential of these farms. The intensive growth of Baeri sturgeon, a friendly species in relationship with weather conditions, became todays' activity that assures 81% of aquaculture profit in that region.

Country of destination sales sturgeons' adults bred in France



Source: Agreste - Recesement de la pisciculture marine

Country of destination sales caviar produced in France



Source: Agreste - Recesement de la pisciculture marine

As for the local sturgeon Acipenser Sturio (European sturgeon) it has been declared endangered by French authorities in 1982 and it has since been forbidden to sell roe provided by this species. Today, the historical names such as Petrossian, Caviar House & Prunier, Caspia, Kaviaris or Volga rediscovered (the umpteenth time) caviar in France and other countries of the world, forgetting that we have to redefine their marketing approaches and promotional discourses as this without the support of perpetuating myths and legends Caspian, will sooner or later cause the disappearance of sturgeons. Armen Petrossian, former ambassador of the great wild caviar from Russia and Iran answers to charges of intentionally false identity caviar, that there is no difference between provenances: *"When we talk about caviar, there is the concept of terroir, he says. What makes the difference are the species of sturgeon, and not the location but also, a selection of caviar is vital".* – He further continued in listing cryptic arguments on maturity of caviar, sublimation, etc. Unfortunately, when it comes to quality, and I say health, to be more precise, lack of transparency and honesty can cause major damage. There are some who take pride in caviar of French origin such as Pierre Bergé who purchased the Prunier Company in 2000, and who critiques caviar imports, especially those from China, pity that his employees from the unpacking service prefer the Iranian Caviar story. Caviar industry profitability attracts new entrants such as newest Delpeyrat, until recently specialized in foie gras. Ultimately caviar is "immortal", managing to invent and reinvent perpetual repeatedly coming dramatically out of the crisis. A symbolic fact, in this sense, happened in 1902 when the extinction of sturgeon includes the entire American East Coast to the West Coast. The governor of California buys the last 20 sturgeon and releases them into the Syracuse River, symbolizing the end of sturgeon genocide in American. In the same year Dieckmann

& Hansen opened the largest caviar store ever in the lobby of the famous Waldorf Astoria hotel in New York, abundantly stocked with huge amounts of Kaluga Caviar (Huso Dauricus Georgi) from their new source of sturgeon found in the river Amur. History seems to repeat itself! A false direction was to democratize caviar. The term may seem objectionable when the cheapest caviar remains at 1,500 euro per kilogram. However, caviar "proletarian" is on every analyst's lips. The reality is that volumetric sales do not rise when they target the younger generation that have less money. House & Prunier Caviar experienced major losses in previous years when prices fell by 40%, counting on a major increase in volume. In the words of the famous American actor Groucho Marx in one of his sketches, "People do not eat caviar if it's cheap." Dura lux sed lux! What's missing from the French caviar story is the quality standards of caviar and growing of sturgeons. Taste palate, wooden or humid flavors, maturation, sublimation fit more with the Caspian movie rather than with the rigors of Codex Alimentareus or Eco Label. Today, laboratories with analysis performance of finding traces of chemical substances used in artificial foods and finding pollutants from the water that is used are available. Such as boxes costing tens or hundreds of euro should have imprinted the non-compliant pollutants identified. Europeans still love "cancerous" caviar since they are accepting 4 gram / kg borax while Americans limited this poisonous chemical to 5 mg / kg. Critics say nowadays that without borax and its bitter taste, caviar would have a too prominent taste of mud caused by the content of ammonia, nitrite and high nitrate. About the content of heavy metals ... only good... who cares since the "performance" of the Caspian caviar is unrivalled. Today, to grow sturgeon in the polluted water, where hundreds of thousands of tons of artificial fertilizers, pesticides, herbicides and growth hormones are discharged, it is as criminal as not to recognize that a dinner at Petrossian caviar garnished with Iranian Caviar, for example, is equivalent to 10 years of work in a mine for the heavy metals and pesticides ingested. This is not a joke and it should be understood that these fish live many years accumulating a lot of pollutant elements and generally they live and feed in the bottom waters which is where the benthic polluting elements are deposited over 100 years due to barbaric industrialization and demented aggression towards the environment by industrialized agriculture.

www.petrossian.fr; www.prunier.com; http://www.caviardespyrenees.fr; www.sturia.com; www.caviarkaspia.com; www.kaviari.fr ; www.caviardefrance.com ; www.caviarpassion.com

Italy

It started earlier than France in sturgeon investment firm which today has apparently secured the number one position in the world without any complex way to prove the origin of caviar it produces. It would be difficult to find any association between Caspian caviar and the sturgeon species Acipenser Italian as Transmontanus or otherwise white sturgeon raised in Italy comes from the American continent. But still ... Viadana di Calvisano, a small town between Venice and Milan in the province of Brescia is a special destiny since 1970 by setting up a company named Agroittica (www.agroittica.it). The owner of this company started with large quantities of hot water they produce at one of his mills and wanted to raise fish in ponds. He started with bass and trout then finally reached the white sturgeon. The road has not been an easy one for Giovanni Tolettini, the man who established a complex and innovative system for growing sturgeon. Using water from the springs and using heat exchangers he created a system where exceptional temperature control and water quality have led to fascinating results. Tolettini can be rightfully considered the father of modern aquaculture, as he did so when others were content to count every profit poaching Caspian Sea sturgeon. No, he did not escape the "curse" of smell and taste of mud in the early years but realized that this shows that good conditions of water quality are not ensured, and source water quality deterioration were because of administrative feeds. Today we talk of an elite caviar grain, 3 mm in diameter with an amber colour and a delicate low in salt flavour. Since 2005, in the basins near Venice, there are sturgeons from the Danube, Acipenser Huso Huso species. Of today the company passes a milestone: The release of Beluga caviar under the brand "Da Vinci". Reputed success of this company is proof that success can be reached without polishing mythical wild caviar. The first step was made in the hope that sturgeon will have a good marketing search as fish consumption. These sturgeons were imported from the United States following an agreement with the University of California Davis. Although it is believed that Italians eat anything, the white sturgeon market

demand was not so high and therefore the females that were not sold were grown up and have proved to be fertile, producing a large amount of caviar. Its quality has been the ultimate challenge and the interest in water quality and food quality suggested the direction that the company had to follow. Today, water and its purity, with food quality and hygiene are the three cardinal points of Agroittica. The process room, for example, is kept at a high-pressure environment to prevent ingress of bacteria in the preparation and curing of caviar. This increases the life of the caviar if a small amount of salt is used for preservation. The company manufactures the following types of caviar: Calvisius, Calvisius Elite, Caviar de Venise ®, Calvisius Beluga caviar, Royal Oscietra Calvisius, Calvisius Oscietra Classic. Prices start from 1900 euro to 8000 euro for Beluga. Caviar produced in Italy can be found in the most famous menu restaurants in New York such as Citarella, Zabar's and Salumeria tomatoes. This company has proven to be visionary and built it has a road worth following. Giovanni Tolettini is the perfect model of a creator and is rightly considered the father of modern sturgeon culture.
Azienda Agricola Pisani Dossi After more than 15 years of Sturgeon culture, the PISANI DOSSI fish farm started the production of Caviar. The farm earned its reputation in Italy because of high quality of the product, the specific breeding techniques and the Sturgeon species (A. baerii and A. gueldenstaedtii). The special way of rearing the fish in pure water, the meticulous selection of each female fish to be processed combined with an accurate choice and preparation of the eggs before salting guarantees a high quality, fresh and “malossol” (low content of salt) without any kind of additional preservatives or treatments product.

http://www.agroittica.it; www.pisanidossi.com

Spain

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For more than 50 years, residents of Spain's Granada province have known where to go for the finest fresh trout. They have flocked to restaurants in Riofrío, a hamlet on the main highway between Granada and Málaga, to eat trout nurtured on a fish farm. Trade is still brisk, but unaware to most visitors, less than a dozen feet away from the trout tanks, a whole new industry has been created. Without abandoning the trout, the Piscifactoría de Sierra Nevada (PSN) has invested in a big way in producing top-quality caviar under the brand names ***Per Sé and Caviar de Riofrío.*** It's been a long process. It all began in 1983 and the first caviar (a mere 20 kilos/44 lbs) was not marketed until 2000. In 2011 more than 4,500 kilos (9920.8 lbs) will be sold, and next year who knows? Demand from home and abroad has outpaced supply, but among the 70,000 sturgeon now in Riofrío's fish tanks, thousands are nearing the time when their eggs can be harvested. The Piscifactoría claims that it has more sturgeon than any other similar enterprise and that it is the only nursery of its kind in the world employing a 100% certified ecological process. At tastings attended by international experts, Riofrío caviar has come out ahead of better-known products from Eastern Europe. Although caviar can be stored for up to six months in the correct refrigerated conditions, it is at its best when consumed within six days and the Sierra Nevada company prides itself on delivering fresh caviar, and fast. "If we get an order today, the caviar can be on its way within hours to almost any destination," says Diego Pozas, the company's CEO. He stresses: "Our process here is totally ecological from start to finish and we're the only producers in the world who can make this claim". The Sierra Nevada fish farm dates back to 1956. It was founded by the Domezain family from Navarre and its initial aim was to produce trout to supplement infants' diet -those were, after all, Spain's hungry years. Business really took off, sales soared and restaurants in Riofrío flourished. In the early 1980s, however, trout sales slumped, partly due to intense competition from other fish farms. A rethink was necessary, and the decision was made to try breeding sturgeon.

In 1983, a dozen sturgeon for breeding were acquired from Italy. They were of the *Acipenser naccarii* species, native to southern Europe and at one time extremely common in the waters of the Guadalquivir River. For many years, a factory at Coria del Río in the Seville area produced caviar. But the establishment of dams and weirs blocked sturgeons' route up-river where they bred, water pollution increased and in 1963 the Coria establishment closed. The last time a sturgeon is known to have been caught in the Guadalquivir was in 1992. Riofrío offered several important advantages for the establishment of a sturgeon fishery. First, there was an

abundant supply of fresh, unpolluted water from a snow-fed aquifer beneath the Sierra de Loja mountain range. Also, there the water gushes from the rock at an ideal temperature for trout and sturgeon, between 13 and 16ºC (55 to 60ºF) all year around. Second, the physical installations already existed, as there were a series of large concrete-walled tanks previously used for trout. Many years of breeding and research were needed before there was any return. Investigation into the characteristics of the Naccarii species involved Universities in Cádiz and Granada and Russian and Italian researchers. But indeed, research was done, and the fish farm set out to breed this extremely unique fish. A toothless, shark-like creature with four feelers on the underside of its long snout, the sturgeon hatches from its egg and grows to its fully mature state at the PSN fish farm. The naccarii species does not produce caviar until it is 16 to 18 years old, twice as long as the Caspian Sea's beluga sturgeon (*Acipenser huso*). Fourteen years passed before any sturgeon flesh, already very much in demand, could be marketed and the first Riofrío caviar was harvested just in 2000. The fish, by this time weighing around 40 or 50 kilos (88 to 110 pounds), is massaged to induce sleepiness and then dispatched with a single, sharp blow to the head. About 10% of a female's body weight normally consists of eggs. These are removed, washed to get rid of the fat around them and dried. Very little mine salt is added to taste (known as the Malossol system), and the caviar is ready. It is a pearly-grey colour and has a silky, tender consistency with a scent suggesting sea breezes. Riofrío markets its product in various categories and takes pains with quality control, as David Montalbán, sales director, points out. "We want to ensure that our caviar is not mixed with inferior varieties, so we only sell it in our own clearly labelled packages." In most of the caviar produced by the company, no preservatives are used. They are best stored at between 0 and 3ºC (32 and 37.4ºF) and must be kept refrigerated to avoid deterioration. Fresh, recently extracted caviar, which should be consumed within five days, is only available on special order and is sold in 200, 500 and 1,000-gram sizes (7, 17 and 35 ounces). Also highly prized are Riofrío's sturgeon fillets, as the flesh has the same flavour as caviar. They are marketed in hot smoked form and fresh fillets are sold for 125 euro a kilo (2.2 lbs). In November 2010, the Riofrío product was put to a supreme test at a tasting in Granada attended by international experts. Competing with some of the world's most prestigious caviars, including brands from Iran, this product from the PSN fish farm took home the gold medal. In 2003, Spain's Ministry of Agriculture, Food and Fisheries named the PSN the country's best food business in its technology investment category. While the PSN now employs 30 full-time staff, plus up to 25 temporary workers and visiting researchers, it is still a family business. Research is being carried out on the possible uses of sturgeon for medicinal purposes and the Spanish company is involved in technology exchanges through its close international contacts.

http://www.caviarderiofrio.com

Israel

I mention this country as a caviar producer, and I will list some manufacturer brands. Kibbutz Dan can be found in Northern Israel, in the province of Galilee where two fish farmers named Yigal Ben-Tzvi and Avshalom Hurvitz, after a visit to Russia in 1992, decided to populate an old trout farm with sturgeons. The farm produced 3 tons of caviar in 2011 and 4 tons in 2012. The amazing thing is the price at which it sells the caviar, around 7,000 euro. The sales campaign is based on two elements: the location of Galilee and the water of Jordan that have a major symbolism to both Christian and Jewish religion. Amazing is that the Israeli government has financially helped build this farm, although, due to religious reasons, this caviar is not sold in Israel. The biggest of the world's top chefs such as Jean François Bruel, Daniel Boulud and Eric Ripert say that this is probably the best caviar in the world, the aroma and taste being very clean. The range of caviar sold consists of: Karat Caviar, Royal Osetra, Caviar Galilee. The markets for this exotic caviar are the United States, France, Germany, Switzerland, Japan, Singapore and Australia.

http://www.karatcaviar.com

CONFIDENTIAL

North America

The first producer of caviar from the American continent was Mote Marine Laboratory, a non-profit organization located in Sarasota Florida. In the year of 2005, Mote Marine Laboratory was offering to the market the first kg of caviar obtained from species Acipenser Baer (Siberian). Today, Mote is closed and no longer receives orders for caviar. Another company, named American Pearl Caviar, located in Savannah, Tennessee offers Paddlefish caviar (Poliodon Spatula, a fish that is not actually sturgeon, but having black roe, it was assimilated to the sturgeons). Note that this company does not grow the fish themselves, but it fishes in the Tennessee River and other American rivers. Sturgeon AquaFarms of Bascom Florida is a controversial company in legal and administrative bottlenecks. It was founded in 2001 by a Ukrainian immigrant named Mark Zaslavsksky who bought 120 acres of land and built the most non-innovative and rudimentary farm in the world. Using water from wells dug in the ground of the state of Florida and having to constantly cool the fish in 60 tanks of 26,000 gallons of water each, Mr. Mark came into conflict with neighbours and authorities as he came to consume more than 5 million gallons of water per day and made a further request for an additional 7 million. Hence from that moment started a whole scandal. I personally know this case because I was contacted by Terri Peterson of West Florida Water Management Representative District who asked for my opinion on filtering possibilities and the potential for contamination of the aquifer in Florida. The case became public and the situation worsened when the information, that there were 30.000 sturgeons, of which 10.000 Huso Huso weighing over 100 kg, in the Bascon farm, reached the authorities ears. It is because in the year 2000 a consortium of a group of representatives of - The National Resources Defense Council, the Wildlife Conservation Society and SeaWeb - started a campaign called "Caviar Emptor - Let the Connoisseur Beware" and in December the same year there had been published a report entitled "Roe to Ruin". This report predicted the extinction of sturgeons and especially those that belong to Huso Huso species, meaning Beluga. Based on this report, the consortium has submitted a petition to the U.S. Fish and Wildlife Service to list the Beluga in the list of threatened species under the Endangered Species Act established in 1973 (ESA). As such it is prohibited to import-export, and any other commercial operation of sturgeon belonging to the Acipenser Huso Huso species. This act banned this species being used in aquaculture within the United States of America. One such project, despite the rudimentary laws of the United States, is a unique case without resolve. Arguments that these fish are not Caspian referred to by the act have created more commotion on their origin. Finally, the statements of Mr. Mark Zaslavsksky go to Romania, a business full of mystery and many unknowns. The most unpleasant thing is actually the water consumption from the precious and unique in the world, Florida peninsula aquifer, situated in the soil, by injecting wastewater pollution in the groundwater with enormous load of ammonia nitrite, nitrate and phosphorus. This case is in the attention of the Interpol, the FBI and Romanian Police. Administrative quarantine species are: Acipenser Huso Huso - Beluga and Acipenser stellatus - Sevruga. Another company specializing in caviar L'Osage Caviar Co., a company founded in 1953 by Jim Kahrs along with his family in Osage Beach, Montana. The company produces Paddlefish caviar as follows: American Paddlefish Caviar at the price of $ 1,592 / kg. Fish Breeders of Idaho in Hagerman Indiana town offers small amounts of caviar originated from Acipenser Transmontanus, the white sturgeon. Sterling Caviar Company pioneers in sustainable systems for sturgeon growth from Elverta California. Its first production was released on the market in 1993. It is part of the Stolt Sea Farm Group and is a partner of Sierra AquaFarm. It produces the following categories of white sturgeon caviar from the Acipenser Transmontanus: Imperial Sterling Caviar, Royal Sterling Caviar and Classic Sterling Caviar. The prices have a range between $2.333 and $3.900 / kg. Tsar Nicoulai is the most modern caviar company in Wilton, California, which proves out to combine sturgeon growth with growing vegetables in an aquaponic system. With a biological filter, having a surface of 4 acres of aquaponic culture of sturgeon species Acipenser Transmontanus, it produces an average of 1000 kg of caviar per year. Besides from the discrete initiatives to build sturgeon farms that will soon launch large quantities of caviar on the market, we cannot speak of America as being a major caviar industry. Small amounts, species with not too much value and conflict situations.

www.mote.org; www.american-pearl-caviar-usa.com; www.sturgeonaquafarms.com; www.osagecaviar.com; www.fishbreeders.com; www.sterlingcaviar.com; www.tsarnicoulai.com

Canada

In 1990 the Committee for endangered species in Canada - The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) established that, by its scientific name, the White Sturgeon (Acipenser Transmontanus), the Short Nosed Sturgeon (Acipenser Brevirostrum) and the Atlantic Sturgeon (Acipenser Oxyrhynchus) are species that need to be protected. Besides the programs in which they attempt to repopulate the great waters and hydrographic basins in Canada, we also met business operators involved in the production of caviar.

Acadian Sturgeon and Caviar Inc. It is a company founded by a Romanian name Cornel Ceapă, who emigrated to Canada with his wife and where Dorina and his son Michael started this company. Cornel Ceapă is probably the best specialist in the field of sturgeon in America, if not more. Graduate of the Lower Danube Galati University, he has taken a doctorate in the field of sturgeon. Saint John River, Cornels operating area, is composed of resources in the short nose sturgeon (Acipenser Brevirostrum) and Atlantic sturgeon (Acipenser oxyrhynchus). Dedicated to research in this area, Acadian, along with Cornel Ceapă, is a household name. His farm covers 2.5 hectares of water, having a capacity of 165 tons of sturgeon meat per year and 10 tons of caviar. Acadian Sturgeon and Caviar Inc. benefit from the support by the Canadian government to promote the export of sturgeon caviar and meat, because the domestic market shows no great attractiveness to sturgeon meat.

Northern Divine Inc. It is a certified organic producer (Certified Organic) in the Fraser River basin that grows white sturgeon (Acipenser Transmontanus) for their caviar. It is difficult to understand because of their statements on the Company's website, Northern Divine Inc., we can understand two things seemingly contradictory: the water is from the Fraser river and at the same time it is 99% recycled. It is nonsense to recycle the water when you have a river with crystal clear waters available. Also, it seems that the term organic in their statements is just a consequence of the two water sources, it is a forced term. On the other hand, not using Borax is another reason to declare it organic. Finally, we find in another page that Northern Divine is actually in the process of certification and transformation to organic. Letting aside their complicated aspects with organic title, the company provides a single assortment of caviar called Certified Organic Northern Divine Caviar, at the price of $88 for 30 grams of caviar. By the sizes of the pools and by an accurate volumetric estimation, I estimate that production would be 500 kg/year.

Breviro Caviar Inc. It can be considered the only company licensed by CITES to exclusively grow nosed sturgeon (Acipenser Brevirostrum). It is a local caviar that has not found commercial venue outside the local market. It is sold exclusively through a few local distributors that supply several restaurants and chain stores. Quantities of caviar are sold at 400 kg/year. The only type is Breviro Caviar - Malossol Caviar (30g) which sells for 95 Canadian dollars through the Billy FishMarket network. The production is estimated at 2 tons/year.

www.acadian-sturgeon.com; www.northerndivine.com; www.breviro.com

China

It turns out to be, in this area as well, the source of lack of quality and standards in the domain. The first box of caviar that had written on it "A Product of China" was produced in 2006. Today, as reported by Ni Hao, founder of Lindys Foodservice Consultant, sturgeon production in China holds 20% of world production and the caviar is exported to Europe, America and Japan. How true can these claims be? It is difficult to say. The fact is that there have been many criticisms to the desperation with which Petrossian tried to convince consumers as there is no good or evil origin of caviar. Estimates are of 2 tons of Chinese caviar per year ennobled with Caspian, Iranian and Russian labels that caused the "A Product of China" to disappear. In December 2012 there was a scandal regarding the quality of the caviar served by Air France. Unhappy passengers accused that the caviar tasted musty and suggested that Air France should install spit buckets in the future, just like King Louis XV of France who, after his

first experience with caviar, spat on a rug given to him by Peter the Great of Russia and then required spit bucket to be installed at the royal tables for the ones who did not find the caviar taste friendly. But I think that no one takes the quality of preparations and menus served on the plane seriously and they do not make any reference of these. It is extremely simple to sell caviar on the plane that certainly would not otherwise have the chance to be sold because the consumer is not able to see the packaging and cannot verify the source of origin. Other airlines have introduced this style of selling caviar from China disguised as Russian caviar or by using the name of sturgeon species. Returning to China's statements by Ni Hao, it recognizes that when water quality is not good, caviar tastes like soil. He also says that these fish are usually specific to the northern hemisphere and live in temperatures between 15 to 23 degrees Celsius. But in fact, the location where the sturgeon boom occurred is in southern Yangtze, within the Zhejiang province (Thousand Island Lake) or in Hubei Province (Yichang), areas where summer temperatures sometimes reach 35 degrees Celsius. In Thousand Island Lake the summer temperature is 33 degrees Celsius, much too high for the Amur sturgeon and the Siberian. Note that these fish from the northern hemisphere (there are no sturgeons native to the Southern Hemisphere) have an active period in the summertime and at winter they rest almost completely while hibernating. How the fish take the ambient temperature in which they live as cold-blooded organisms, the entire operation of their metabolism, the endocrine system and the hormones are determined by the temperature. At high temperature the fish will develop excessively and will accumulate very large deposits of fat. Deprived of the opportunity to hibernate and to consume these fat deposits, it will become obese and suffer in terms of reproductive capacity and maturation of ovarian follicles. Generally, roe coming from fish that are deprived of sleep mature a very small percentage and their content is dominant in fat. Chinese experts have long reported large flocks of hermaphrodites without understanding that there were only females with heat stress. Last year, Gong Liang, deputy director of the fish center on Thousand Island Lake decided that from June to begin the transfer of females that produce caviar from in cages in lakes at temperatures above 30 degrees Celsius to tanks fed by underground water that has 16 degrees during the months of July to September. But as he says, this activity does not provide the opportunity to have winter hibernation, because the lake temperature is 12-18 degrees and sturgeons would need at most 4 degrees for two months minimum. The great Russian scientist Mikhail Chebanov, the number one specialist in the world in terms of sturgeon culture, declares in 2012 at a conference in Krasnodar that what is happening in China is the most serious form of biological suppression of these species of fish. In 1997 researchers at the Chinese Academy of Fishery Science imported 10 million fertilized eggs from Siberia. In the same year they launched an artificial reproduction program to restock Heilogjiang River in northern China. Wang Bin, academician and sturgeon researcher, developed a method, promoted since in China, of growing these fish. Farmers found that it was needed an amount of 3 years for a sturgeon to reach the weight of 1 kg in the northern regions, while it only took 1 year in the south. Such was generalized the concept that northern China is not a good place for growing sturgeon.

China's ambition to become a leader in the production of sturgeon, we see how and in what way it was done. It is estimated that there is a population of over 9,000 tons of sturgeon set on fattening fast-forward! But regarding caviar, China has much to learn, especially to understand that the benefits of rapid growth are destroy the caviar. What is hilarious in promoting Chinese caviar is that because of wanting to hide the location where the sturgeons were bred, connecting here to the temperature and quality of the Jingshen caviar chain stores specializing in fish and seafood, the Chinese caviar is sold in boxes marked with Cyrillic letters and in the Russian language. One of the most ambitious actors in the caviar business is Hangzhou Qiandaohu Xunlong Co., who recently opened a new farm with a declared capacity of 35 tons of caviar.

To be successful in its approach, this company has hired an Iranian sturgeon specialist. Sounds like a good thing but Iran has zero jurisdictions in intensive culture of sturgeon, especially caviar production from farms, since in 2013 it produced only 60 kg of caviar with questionable quality. Arsalan Qasem CEO at The Union of Fish and Shrimp Farming Cooperative from Iran declares that Iranian experts will help Chinese people produce 10 tons of caviar. He also said Iran was wrong in the last 12 years when it struggled to have a production rate of 300 tons of caviar from sturgeon fishing, without international sanctions, when in fact in the year 2012 it had a productive fishery of only two tons and in 2013 of only a few hundred kilograms.

He regrets not having had the vision to invest in sturgeon farms. Another operator, Hubei Tian Xia Sturgeon Co. Ltd, declares that it produces 10 tons of caviar in Hubei Province, which sells in China at the equivalent prices in USD as follows: Siberian sturgeon caviar ($584 / kilogram) Amur Sturgeon Caviar ($875 / kilogram) Hybrid Sturgeon caviar ($872 / kilogram). Such lucrative industries attract new players. Yunnan Province, located in Sturgeon Amuer southwest China's Yunnan, announced in 2013 that they sold 20 % of the participation for CNY 100 million to Dalian Zhangzidao Fishing Group Co. Besides, the import-export balance of Chinas caviar shows what the situation is like. In 2013 it exported 7 tons of caviar of which only 2 tons to America and Europe, while the remaining 5 tons were sent to Japan, Korea and Taiwan, Malaysia and Australia. What is more interesting is that it imported 1.8 tons of caviar from Europe. Luxurious restaurant Li Ya of Beijing's Jianguomen business center can serve Russian caviar from Osetra (CNY 980 / 30g) or caviar from Siberian sturgeon (CNY 650 / 30g). Western-styled restaurant Domus on Nanchizi Street serves Iranian Beluga (CNY 3000 per 30g). European style restaurants such as the French Le Pre Lenôtre or the five-star restaurant Sofitel serves only caviar imported from Europe. There are a number of restaurants where you can have domestic caviar at more than affordable prices such as: Fu Lou (Lucky House) from Long Bo Plaza where caviar is served with a pregnant oily fish taste, along with vegetables, potatoes and rice. Caviar experts are skeptical that Chinese manufacturers can achieve quality caviar worthy of an international market. For now, the Chinese market is what the product is being associated with. Caviar from China may be a big surprise within the industry, caviar being a very lucrative and selective domain and the know-how travels fast these days.

Other opinions say that they see it only for the Chinese domestic market. The experience of a caviar dealer in Austria who supplies a luxury restaurant chain in Vienna and another 5 cities is enlightening: "I just could not sell to my clients at the price of my purchase. I tried to reduce the price to diminish losses, but I could not even sell it at 25% of the purchasing price". As consumers become more informed about the origin of caviar, these Chinese exports might begin to decline, because not only does the taste matter today but the consumer informing as well. From the statements of a hotel manager from Beijing results that the Chinese middle class is growing more funds and once they have tasted domestic caviar and import caviar, they will come to prefer the imported one. For this reason, I believe that real caviar producers must see China as a market. David Barboza, correspondent of The New York Times in Shanghai, China, starting in November 2004, has a series of articles about the Chinese aquaculture and water toxicity in southern China. In 2013, Mr. Barboza received the Pulitzer Prize for International Reporting. Reading a single article may be sufficient for understanding the high false premise of the great actor China in the caviar market that will never sell a luxury product that contains huge doses of pesticides, carcinogens, heavy metals such as lead, arsenic and mercury.

For reading:

"In China, Farming Fish in Toxic Waters" www.lindys.com.cn; Hangzhou Qiandaohu Xunlong Co; Hubei Tian Xia Sturgeon Co; Dalian Zhangzidao Fishing Group Co;

Arab Emirates

Mohammed Hazam Al Dhahiri, the President of Aquatic Businesses in Emirates, best summarizes why they decided to create the largest modern farm in the world in the full desert. "Not a good business for us in terms of money made and money is not why we have made this farm which costs a lot. The millions I've invested made it possible for every inhabitant of the Emirates to eat a lot of caviar. Money is not a problem for us. The problem was the market and especially the lack of quality and safety. We have a huge tourism industry that obligates us to ensure high standards." So today we produce the best caviar in the world at home. The farm built is impressive. It is 100% indoor, it consumes 180 Giga watt/year just for cooling the water and keeping comfortable conditions for

the fish. The only species that could provide the necessary effectives was the Baeri sturgeon. It produces 18 tons of caviar per year and has the possibility of expanding to 35 tons. Today in the Emirates caviar consumption is 14 tons. Yasa Caviar seems to be the best caviar in the world, and it is not for nothing that the company has the best reference certifications such as OHSAS 18001, ISO 9001, ISO 14001, ISO 22000 and HACCP. Unfortunately, the short time since the launch of the caviar in December 2013 does not allow us to advance any opinion. The rumor that the price may be 12,000 EURO/kg suggests enough.

www.yasa-caviar.ae

Germany

Two extremes that are worth mentioning - is worthy of consideration that only in the case of mega scam company Caviar Creator, made by CEO, which since 2010 is in prison for swindling 70 million with a “Ponzi” scheme using caviar farms. It is currently pending a second trial in which more than 5,000 investors are demanding more punishment for Frank Schaefer. The common denominator is also the horrible taste of the 700 kg of caviar produced in the most "expensive farm" in Germany, if we consider the statement of the liquidator who found hundreds of boxes of horrible caviar in the companies’ storage.

At trial, Frank Schaefer said that the caviar used in the presentations of his scam campaign was black market caviar from Russia, from where his wife was born. The case is worth exploring because of investors pressure and wanting to show spectacular results has raised the temperature in the growth ponds and he fed intensively. Fish grew surprisingly, so did the investors’ confidence and entrusted tens of millions this crook. When it came to caviar, the results were zero, Frank Schaefer fled to America, then to China, damaging a large number of gullible investors from these countries. The Chinese government even received a proposal to establish great Caviar Creator China business.

www.caviar-creator.de;

Switzerland

How do you do when you dig a tunnel that connects the two sides of a mountain and you come across hot water? If you're in Switzerland and the tunnel links the most important ski slopes and you have enough money, make a sturgeon farm. Investing 40 million euro in a complex that houses 30,000 Baer sturgeons and greenhouses that host the worlds’ most exotic herbs, Swiss AG from Tropenhaus Frutigen hit the jackpot. Today it has 1.5 million visitors and sells 300 kg of their own caviar called Pure Swiss Caviar - Onna. It sells at a price of $2.700 / kg. Caviar business is just a small part of what the created complex has to offer. Annually, the number of visitors who pay 12 CHF ($14) is one and a half million.

www.tropenhaus-frutigen.ch

Latvia

Unknown in the world of caviar, it offers the surprise to launch a new trend and a new concept in the industry. Even if the concept of CORECT CAVIAR crystallized a little harder, the pioneering merit goes to those in Mottra in Riga. Slaughter of sturgeon is traditionally the only option in the vision of bloodthirsty profiteers. Only that the people from Muttra managed to surprise the entire industry stating that they do not sacrifice the fish. Even if their statements were extremely reluctant in saying exactly what they do and if they use hormones, the merit cannot be

disputed. With large investments made by a company in England, launching their product and brand "Mottra" along with the people at Austin Martin and the famous singer Elton John, they achieve a successful reference, especially on the British market. All that, while it is known that Riga is an area with excessively contaminated water. Company succeeds in refuting this fact stating that the water used is drawn from a depth of 600 meters which requires extremely high pumping costs.

www.mottra.lv

Russia

In early 2011, the Russian government ended its ban on caviar exports to Europe. The Russian government imposed this ban in 2002 in order to stop overfishing and poaching of sturgeon in the Azov and Caspian Seas. During the Soviet times, the main sources of the world's black caviar, the most coveted type of caviar, were the Azov and Caspian Seas.

Concomitant with the economic pandemonium that engulfed the post-Soviet Russia, the caviar market became dominated by poachers and illegal overfishing. From the late 1980s to 2010, the sturgeon population in the Azov and Caspian Seas decreased by about forty times.

Russia may face some challenges in its re-entrance to the caviar market. Russia faces competition from Iran, which emerged as the top exporter of black caviar to Europe during the nine-year period of Russia's export ban. The Russian law only allows 150 kilos of black caviar to be exported annually to Europe. The demand for black caviar is high, and the limited supply of Russian caviar exports may not be able to fully meet this demand, allowing competitors to stay in business. Russia's nine-year exit from the European caviar market may have allowed competing markets such as those of Iran and Israel to develop loyal relationships with consumers. However, Russian caviar's historical reputation may help it regain its market share.

Sturgeon farms have emerged in Russia as an alternative to wild sturgeon. The amount of these farms is expected to rise. As the number of these farms grows, Russia may eventually regain its world market share of black caviar exports. It takes about seven years to raise a sturgeon, and Russian's nine-year ban has provided time to raise new sturgeon. These farms may eventually make up a major source of exported Russian caviar, supplemented by some wild sturgeon-derived caviar. As caviar production shifts to farms and increasingly stringent penalties on poachers decrease illegal poaching of wild sturgeon, these wild sturgeons may be given an opportunity to repopulate and eventually allow Russia to increase its quota on wild sturgeon-derived caviar.

Political tensions may also complicate Russia's caviar comeback. The European Union has regulations regarding aquaculture products, and in past years, the Russian government has refused to sign certain trade agreements. In addition to Russia, Turkmenistan, Iran, Azerbaijan, and Kazakhstan surround the Caspian Sea, which may prevent Russia from fully capitalizing on the sturgeon in the Caspian Sea.

Russia has gotten into conflicts with former Soviet republics that have been seeking to re-establish their national identities, and a paucity of agreements among these countries may pose hurdles in the effort to repopulate the wild sturgeon population. The United States may be another potential for Russian black caviar exports, but political disagreements between these two countries may make it difficult for Russia to take full advantage of the U.S. market, allowing exporters such as Israel, which maintains friendly relations with the U.S., to take up more of the U.S. market share. I think for the moment Russia is not a competitor in any foreign market instead it can be regarded as an important secondary market.

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South Korea

When Han Sang-hun brought 200 sturgeons on a chartered plane from Russia in 1997, South Korean officials regarded the alien fish with a level of suspicion that the owner of a fishpond might reserve for an invasion of sharks. After all, the sturgeon, because of its prickly looks, is called the armored shark in Korean. When he finally extricated his fish from customs, he placed them at a riverside farm in this town 90 kilometers, or 56 miles, southeast of Seoul. For the next 12 years, Mr. Han spent $1 million (sic!) a year feeding and looking after a stock that grew to 50,000 sturgeons, all children of the original 200. But he got little in return until 2009, when the fish were old enough to yield caviar — one of the world's most expensive delicacies, selling for as much as $400 per ounce, or $14 a gram. Mr. Han, a native of a fishing village west of Seoul and an economist by training, saw an early opportunity in the new dynamics of the world's caviar industry when he visited the republic of Kalmykiya, then part of the Soviet Union and now part of Russia, in 1987. Then employed as a financial specialist at Texas Instruments, he encountered, for the first time, Beluga — the most prized sturgeon variety — and began to dream of opening the first sturgeon farm in South Korea. One of his best business decisions, he said, was to persuade his Russian contacts to sell him 200 gravid sturgeons, not fertilized eggs or fingerlings, in 1997. Mr. Han said he did not worry about a growing number of competitors around the world, because an insatiable appetite among the wealthy would keep demand for caviar far outpacing the supply. After years of participating in international gourmet food exhibitions, Mr. Han said (!) his product, marketed under the brand Almas Caviar, was finally becoming known. This year, Almas began supplying to some of the top caviar distributors in the world and laying plans to open its own stores in New York and Tokyo. It has also begun selling caviar extracts to cosmetics and pharmaceutical companies. Mr. Han planned to increase his caviar production from 3.8 tons last year to 6 tons this year.

Information is less credible because caviar producer in South Korea Almas Caviar is a Korean local company and brand and not to be confused with Almas Caviar from Caviar House & Prunier in London England's Piccadilly that sells a kilo of the expensive Almas caviar in a 24-karat gold tin.

United Kingdom

In the month of November 2013, a new company has launched the first harvest of caviar. It is Exmoor Caviar Farm in Devon, UK. The farm belongs to a couple Kenneth Benning and his wife Pat and George Noble who was the one who had the idea in 2010. Product samples were delivered to Michelin star chefs Michel Roux Junior from Le Gavroche in London and chef Mark Hix of the Hix Oyster and Fish House in Lyme Regis. In a testimonial on the company's website, Mr. Hix said: "British caviar - who would have thought it? From the South West, a fish that once bred in our rivers and has now gone is back. Farmed? Yes, and extremely sustainable." he farm has six different types of sturgeon which are Sterlet, Siberian, Beluga, Russian, Stellatus and a hybrid of Beluga and Sterlet, which all produce a different flavour. There are between 20,000 to 30,000 fish of different ages and sizes that are kept in holding tanks. Prices for the caviar are £59.99 for 30g jar, £99.99 for a 50 g jar, £249.99 for a 125 g jar and £500 for a 250 g jar. Kenneth Benning, founder of the Exmoor Caviar Company, said: "The farm has been around for 14 years and was run by George and Pat Noble selling ornamental sturgeon. "When I discovered it, I approached them, and we spoke about turning it into a caviar farm and launched the Exmoor Caviar Company. "We are the first caviar farm in the UK and one of the main reasons this hasn't been done before is because of the initial up-front cost which is very large. "We did our first official harvest around two weeks ago and that was from the Siberian sturgeon. Sturgeon fish are rarely seen in the UK, but they have been classified as 'Royal' since the 1.300 s by King Edward II. Legislation states that every sturgeon that is caught has to be offered to the reigning monarch before anything is done with it.

www.exmoor.uk

The point of view of World Sturgeon Conservation Society

Historic demand for caviar on traditional export markets (Europe, US, Japan, plus Russia, China etc.) can be assessed based on trade data from the 1980s and 1990s. The estimate accounts for an amount up to 3,000 t annually. As a consequence of the continuing high demand and good perspective for caviar markets, many investors and farmers started rearing sturgeons during the last 10 years, mainly for caviar production. Main activities have been in Russia, Iran, the European Union, China and the USA. Besides these major producers and consumers, other entities in other countries show up on the scene (also outside the natural range of sturgeons) not only contributing to the production, but having a substantial influence on the structure of the industry and the markets (examples: Uruguay, Arabic countries, Israel, and more recently Vietnam) At present, total caviar output from aquaculture can be estimated on about 220-260 t. This production is expected to increase quickly to 500-750 t in the next 10 years. If these figures are a realistic reflection of the market, the future of caviar trade will mainly be determined by demand-driven price structures, and a new evolving "mass market" will appear, while the traditional luxury and expensive market will persist. Further, the forecasted trends for the potentially large scale production of caviar and its implications for market structures must take into consideration the restrictions the industry is most likely to face into account (potential issues: animal welfare regulations, preventing caesarean section cutting, prohibiting hormone treatment of animals for human consumption in some countries, adverse environmental impact of exotic species). Other issues are uncertainties in the market place (e.g. rapid production increase and market sensitivities to overproduction with price structure effects, stress effects in production costs, drastically reduced profit margins, additional costs to promote product diversification; growing competition from alternative products) and opportunities (decreasing pressures on natural stocks; improved market image). All these issues indicate that this relatively new branch of the aquaculture industry faces similar growth pains as previous developments (e.g. salmon farming) but within a shorter time frame. Furthermore, high prices and market demands for luxury products, together with the dramatic decline of natural sturgeon stocks and the subsequent restrictions on their fishery, provided the incentive since the early nineteen-seventies to seek for alternatives products that could fill the gap in caviar supplies. Additionally, innovative product developments were initiated to not only to meet the demand for caviar but also to even create several new market sectors while hitch-hiking on the traditional image of caviar. A set of scenarios on the diversification of so-called "caviar" products which are presently offered on the markets, sometimes misleading the consumers can be summarized as follows. The various type of products can been divided into six categories: (a) true caviar; (b) substitutes for caviar (eggs from other fish species or from other animals); (c) caviar imitations (caviar-like products derived from other biological substances, imitating and/or reconstructing caviar in appearance and taste); (d) caviar simulations (using other biological substances to simulate only the taste but not necessarily the appearance); (e) derivates (products that contain true caviar as a component of their recipes); (f) products with emotional associations to caviar (these are not related to caviar at all, but incorporate the name as a marketing strategy used to evoke a luxury image and infer a high value). Presently, the eggs of more than 38 species of fish, besides sturgeons, and 3 species of other animals are used to produce substitutes; about 15 "caviar like" preparations are known on the market using as raw material fish flesh, seaweed and others mixtures of materials of various origin; five products can be considered simulations; few use caviar as a component in their production recipes; a lot of different objects are presently marketed which use the name caviar as a brand.

www.wscs.info

DRAGANESTI FARM

"INNOVATIVE REPRODUCTION STURGEON FARM & SUSTAINABLE HARVESTERS"



1. GENERAL DATA

1.1. The name of financing

1.2. The developer of the feasibility study

This feasibility study was developed by:

1. **DANIEL DORIN TABACARU,**
Bd. Pipera, no. 198/4, IbizaSol complex, Toledo block, ap. 1, Voluntari, 077190, Ilfov, Romania
Tel + 4 0724 593 613; E-mail:daniel.tabacaru@caviarfactory.ro, http://www.caviarfactory.ro

1.3. The contracting authority

OLOOSON STURGEON FACTORY SRL

1.4. Location

Stated land / project location:

Private property.

Draganesti commune, plot 18, plot A 831, Prahova county, with an area of 4,797 sqm, having no. I'm falling. 488, registered in the Land Book no. 20105 (Cf. old 328). Draganesti commune is composed of 7 villages: Baraitaru, Belciug, Cornu de Jos, Draganesti, Hatcarau, Meri and Tufani.

According to the concession contract no. xxx / xx / xx / xxxx, Innovative FARM makes the above land available for a period of 15 years.

1.5. Object of the design:

Reproductive Sturgeon Factory development in "Aquaponic" system with renewable, geothermal and photovoltaic energy footprint, without environmental pollution, with zero carbon and nitrogen emissions, with natural organic feeding of farmed fish (Acipenser ...) with larvae of " Tenebrio molitor "grown on site with organic cereals obtained on the farm, with vegetable production of salads and other edible plants for sale in an area of 0.50 ha.

Country Romania, Development Region: South – East, Prahova County, City: Draganesti

1.5.1 Climatic, geographical and geological characteristics

Draganesti locality, Prahova county is located in the SE part of the country, between Bucharest, Urziceni and Ploiesti localities, having GPS coordinates 44 ° 49'45.68 "N and 26 ° 16'37.90" E, the elevation above sea level is 77 m.

The land on which the investment will be located is located in the neighbouring urban area, about 2 km from the center of Draganesti commune. The land is flat, with maximum elevations of 77 m above sea level (near the road that borders it to the NE), elevation that descends to the NW at 76 m, with a slope not exceeding 0.5% in the North-South direction of land.

Alluvial clay chernozem materials bloom on a small area of this land, in the area close to the drainage channel that has an elevation in the minor riverbed of 74 m above sea level, a channel located on the entire western side of the land and which it

flows at a distance of only 325 m into the Draganesti pond, which in turn communicates with the Prahova river at a distance of 700 m.

According to the macro seismic zoning map, the location is located in seismic zone B, ks = 0.35 g.

The climate is temperate-continental, with an average annual temperature of 10.0 ° C, the coldest month being January (-2 ° C), and the warmest July (22 ° C).

The global solar radiation is 125 Kcal / sqm / year, and the average duration of sunlight is 2,150 hours / year.

The average annual rainfall is about 600 mm / year, the nebulosity of about 100 days / year, and the average wind speed is 2.3 m / s, dominated by winds from the northeast and east.

Every year, there is an average number of 15 days of snow / year, the snow layer lasting 50 days, and its average thickness is 15 cm.

The natural vegetation specific to the area is that of the forest-steppe, although it has been replaced almost entirely by agricultural crops and construction. Beech and sessile oak forests occupy discontinuous territories, alternating with agricultural crops, vineyards and orchards.

In the area we find rare specimens of oak, such as brumarius and pedunculate, as well as other xerophytic herbaceous plants: Artemisia austriaca, Poa bulbosa, Agropyron cristatum, Cynodon dactylon, Verbascum.

The soils in the area are mainly cambic chernozems, alluvial clay chernozems, reddish-brown podzolize soils and alluvial clay soils. In terms of agricultural yield, the area is the most fertile in Romania.

All these are favourable for cereals and corn. In the meadows that cross the plain there are large areas occupied by alluvium, alluvial soils, lakes, groundwater-wet chernozems, favourable for cereals and vegetables.

The pedological quality of the land was evaluated by:

- Analysis and conclusions bulletin

1.6. The existing situation of utilities

1.6.1. Paths

Access to the site is provided from Ploiesti - Dumbrava - Cornu - Draganesti on the county road 101 F, on the county road 100 B to Gherghita - highway DN 3 - Bucharest and to Baraitaru - Ciorani - Jilavele - Bărbulesti - Urziceni.

The road is paved and does not require repairs at the moment and the section of approximately 54 km of highway allows moving at high speed and without traffic jams to the center of Bucharest or Ploiesti. Distance from the internațional Airport Otopeny is only 45 km, half on the highway and half on the road DJ101B.
Locally, the location where the land is located has two asphalted road fronts, one to the North in length of 68.5 m at the edge of the county road 101 F and one to the East of 78 m on Marginea Street.

1.6.2. Electricity

On the edge of the site at Marginea Street on the side with the land and within its boundaries is the public low voltage electricity supply network, which allows a three-phase 380 V connection.

1.6.3. Water supply

The site does not currently have its own water supply. At the front on Marginea street in the part from the commune, there is

the drinking water supply network of Draganesti commune.

The distance of this network from the ground is 8 m.

In the area, at a distance of 1.5 km there are a series of wells that flow to the surface with a flow rate of 30 l / s with water of exceptional quality. (see Annex 2). It is intended to make a well on the ground at approximately the same depth to obtain water from the same aquifer in conditions similar to the wells mentioned above.

1.6.4. Channeling

The site does not have a sewerage network or facilities for the discharge of domestic or wastewater.

At the level of Draganesti commune, a feasibility study is elaborated for the establishment of a domestic sewerage network and a wastewater treatment plant.

The field provides for the construction of septic tanks for the filtration and bacteriological neutralization of domestic and wastewater, and when the sewerage network is completed, the connection to it will be published.

1.6.5. Natural gas, thermal energy

At the front from the county road 101 F is installed the gas pipeline that will supply the commune of Draganesti. It is not currently in operation.

It is intended to connect to this energy source to ensure a back-up solution to geothermal or photovoltaic energy.

1.7. The theme, with the substantiation of the need and opportunity of the investment

1.7.1. General considerations

Research and development activities on technologies for growing aquatic organisms in order to obtain food sources as natural as possible in interdependence with environmental factors, carried out for the purpose of practical capitalization, are progressively stimulated by the need and possibility to obtain new sources of food. energy and food, maintaining the health of the population and protecting the environment.

Research on this waiting horizon (food versus environmental protection), which was almost non-existent before 1989, is currently small and unsatisfactory, due to the lack of information in this area.

The establishment of the Center "INNOVATIVE REPRODUCTION STURGEON FARM & SUSTAINABLE HARVESTERS" Draganesti - Prahova County, aims to implement a whole set of positive results obtained in many scientific and trans disciplinary research, for a sustainable environment perpetually generating food, by building a center that will :

- Breeding unit fish species, carp, flax, avat, salamander, pike, sturgeon (5 species) and other aquatic organisms such as cray fish, or shrimp.
- Pre-breeding unit for fish and aquaculture species.
- Bio-vegetable filtration unit for filtering and neutralizing organic nutrients in the nitrogen chain with a line of business on salad production. (zero nitrogen discharge)
- Plant growth unit for food for molten Tenebrio larvae (maize cereal, wheat, rye, triticale)
- Unit of conversion of vegetable protein into animal protein by intensive growth of Tenebrio Molitor larvae.
- Automatic fish feeding unit with molten Tenebrio larvae.
- Water collection and conditioning unit for aquaculture and aquaponics units.
- Unconventional renewable energy insurance unit, solar, photovoltaic, geothermal, wind.
- Processing, storage, repair, maintenance unit
- Sales administrative unit and training space
- Laboratory unit for analyses of water quality, production of plants and aquaculture products

All the activities that will take place in the above mentioned units are subordinated to the concept of protection of the universal patrimony of the fish fauna, of the endangered species and of the vulnerabile species. In this approach we start from the scientific assessment of the current state of environmental factors, the complex, interdisciplinary knowledge of aquatic organisms in specific environmental conditions and the substantiation of a long-term strategy for reproduction and repopulation of water bodies using renewable resources.

The exploitation and sustainable capitalization of natural resources (biotechnologies, unconventional technologies for environmental protection) will be done by implementing policies for the development of economic activities in the center with the primary observance of environmental protection legislation.

Ongoing cooperation with local and central government authorities to find the most appropriate ways of sustainable management of natural resources in order to increase the quality of life and avoid environmental degradation.
Development of many and disciplinary collaboration with research institutes and educational institutions in the country and abroad, cooperation with BSEC member countries, FAO, etc. within international programs.

1.7.2. Activities prior to the Feasibility Study

The idea of studying, researching and developing new aquaculture technologies and setting up an ecological farm to protect the environment has been a permanent concern for the developer of this project in recent years with the aim of studying recirculating systems, raising vulnerable fish species or extinction, study of mechanical filtration systems, molecular filtration with zeolites, biological filtration, growth and administration as dry food substitute of molten Tenebrio larvae, use of alternative energies in farm activities, use of geothermal energy, sexual differentiation techniques, techniques for obtaining reproductive material in aquaculture, artificial insemination and hatching techniques, techniques for feeding and rearing fish fry.

Particular attention has been paid to the development of equipment specific to recirculating aquaculture farms.

Among the research areas addressed we mention the following:

- Thermal stability of an aquaculture system
- Lighting solutions in aquaculture farms
- Biological filtration - an essential component of RAS systems
- Sturgeon feeding techniques
- Adaptive hydraulic dynamics and water retention time in the biofilter
- Method and equipment for adapting the amount of UV radiation, in optimal dose, according to the pathogens in the culture water.
- Oxygen consumption in RAS systems
- Method and algorithm for correlating interdependencies in the culture medium (blocking the “domino” effect).
- Correlation algorithm between chemical and physical parameters of the aquaculture system based on the analysis of inputs and outputs from the system.
- Algorithm for quantitative and qualitative deduction of chemical parameters without continuous measurements, based on the legitimacies of the "mass balance" and input / output values.
- The method of balancing the general dynamics between the growth rate and the feeding rate of the fish without exceeding the threshold values of the toxicity of the culture medium.
- Method of stimulating the activity of fish by water currents with a certain speed, fitness study (swimming dynamics) in sturgeon populations in culture basins.
- Optimization of model and culture basin culture.
- Method and device for providing the oxygen required for biofiltration independently of oxygen in the culture basin by biofilter oxygen requirements study.
- Method and device for washing the biofilter culture medium from deposited organic matter.
- Software development for mathematical modelling, monitoring and control of important system parameters, based on

predictive algorithms and restricted dynamic measurement.

- Triple logical fuzzy development to secure system operation and exclude system errors.
- Development of remote monitoring and control application via internet.
- Method and frequency control devices of the pump motors that are in the system, optimizing energy efficiency and reducing electricity consumption.

Thus, the following books, studies and technical documentation are highlighted, works that were taken into account in the elaboration of this Feasibility Study:

- Sturgeon Breeder's Guide to the Recirculating System 266 pages
- Hygiene, Chemistry and Water Toxicity in Aquaculture Systems 180 pages
- Advocacy for Applied Research in Aquaculture 160 pages
- Pond, Pond, Fish Pond - 96 pages
- Greenhouses and Solariums differently - 92 pages
- Aquaponic Systems - A Solution for the Future - 105 pages

1.7.3. Design theme

The project aims to create the infrastructure necessary to carry out activities of growing vegetable mass with high commercial value, aquaculture products with high commercial value, without external input to the food center (being produced on the farm in a multi-trophic circular system) without energy input, using - solutions for obtaining geothermal and solar energy on the farm.

The design theme sets out the requirements for constructions (functions and activities, surfaces
Built, the necessary utilities), as well as the necessary equipment and endowments, etc.

1.7.4. Areas of scientific approaches to the Feasibility Study

- Biological sciences, aquaculture, ichthyology;
- Aquatic ecology;
- Economy; Marketing, Market Research
- Energy, Thermo Energy

1.7.5. Objectives of the Feasibility Study

The feasibility study is the documentation that includes the main characteristics and technical-economic indicators of the investment, which ensures the rational and efficient use of capital expenditures and material expenditures, to meet the requirements of the design theme.

The feasibility study for "INNOVATIVE REPRODUCTION STURGEON FARM & SUSTAINABLE HARVESTERS" Draganesti - Prahova County, establishes:

- General organization of the investment
- Utility insurance
- Technical characteristics of light aquaculture and hydroponics constructions
- Acquisition, Installation and Endowment with Farm Equipment and Apparatus.
- Durations of the investment
- Investment costs - CAPEX business plan
- Operating costs - OPEX business plan
- Economic indicators ROI, Breakeven, Ebidta, etc. - Business Plan
- Necessary opinions and agreements.

1.8. General description of the investment

1.8.1. General plan and urban conditions

The objective "INNOVATIVE REPRODUCTION STURGEON FARM & SUSTAINABLE HARVESTERS" Draganesti - Prahova County will be achieved in an area of about 4,750 square meters provided by Tabacaru Daniel and Adriana individuals.

Access to the location is on a modernized road about 6 m wide, without sidewalks for pedestrians.

The land borders to the North and West with agricultural lands, private property, and to the East and South with the access road and some houses of a micro Roma community to which a social insertion project is carried out by the transfer by the owners of this land. Of an area of 500 square meters for the construction of decent housing instead of the currently unhealthy ones.

On the west side there is a drainage channel from the irrigation system abandoned for over 30 years that we intend to drain and reduce the existing vegetation.

The shape of the land is square, slightly trapezoidal, with bases of about 68 m and 74 m and a height of about 72 m. The fourth side representing the bank of the canal has a slightly sinuous shape.

The land has a minor slope to the side with canal having a level difference of about 0.5 m from the land level and 2 m from the water level in the canal.
As the water in the canal has relative variations of the level depending on the season and the level of precipitation, on an area of about 6 m from the major riverbed no constructions were provided.

Given the specific conditions of the land and the design theme data, the organization of the land was done as follows:

- main entrance to the central area of the land provided with access control and permanent security.
- the main parking area between the access gate and the main building body comprising meeting and administrative spaces.
- network of road and pedestrian alleys, in two directions, intersected by a road, will allow access to any area of the land.

In the “meshes” thus created were placed the buildings requested by the theme, the spaces with utilities and the production lands, as follows:

1. The building comprising the meeting spaces and the administrative spaces was placed laterally, in the direction of the entrance.

2. On the land is based on an area of 1,600 square meters, a system of hall and mixt greenhouses in a "multi unit" system glued together lengthwise and without a dividing wall where the aquaponics unit will be built which is composed of the following distinct spaces:

- fish breeding area in recirculating system with an area of 210 sqm with dimensions of L = 5 mxl = 35 mxh = 3 m
- pre-growing area in recirculate system with an area of 420 sqm with dimensions of L = 5 mxl = 84 mxh = 3 m
- germination and seedling production area with an area of 700 sqm with dimensions of L = 20 mxl = 35 mxh = 3 m
- administrative area with an area of 280 sqm with dimensions of L = 7 mxl = 40 mxh = 3 m

3. A groundwater extraction and storage unit will be built on the land with an area of 50 sqm 10 x 5 m

4. The storage, conservation and processing spaces will be built in an area of 240 sqm with the dimensions of L = 40m xl = 6 mxh = 5 m.

The constructions for the buildings that house the utilities were located according to the calculations of the efficiency of the

transport between the utilities.

On the areas left free, agriculture will be practiced to obtain cereals and vegetables (corn, sunflower and peas in an area of 2300 square meters, being provided for the planting of shrubs and trees of various species.

1.8.2. Hydrotechnical arrangements

The groundwater extraction and storage unit will be built on the north side of the land. It is planned to make a well at a depth of approx. 110 m because at this depth in the perimeter of Draganesti commune there is an aquifer that has effluent properties at the surface at high flow of a water of a special quality. This type of water is obtained without operating costs, which improves the operational energy profile of the Project.

This well will also be used to extract geothermal energy to be used in greenhouses.

1.8.3. Power supply

The main electricity data of the consumer „INNOVATIVE REPRODUCTION STURGEON FARM & SUSTAINABLE HARVESTERS" Draganesti - Prahova County, are:

- Installed power; Pi = 30kW
- Absorbed power; Pa = 18Kw
- Frequency: f = 50Hz
- Usage voltage; U = 380 / 220V

For the supply of electricity to the objects within the premises, in a back-up system, it is proposed to make a connection to the public electricity network located at the boundary of the land on the street from the East.

Photovoltaic panels will be installed on the roof of the warehouses and processing spaces on the farm, the sizing of which is done according to the calculation below:

The formula for estimating the electricity generated by the photovoltaic system is:

$$E = A * r * H * PR$$

E = Energy (kWh)
A = Total area of solar panels (m2)
R = Solar panel efficiency or efficiency (%)
H = Average annual solar radiation on panels inclined at the perpendicularity of the summer solstice about 78 degrees
PR = Performance ratio, loss coefficient (between 0.5 and 0.9, default value = 0.75)

R = is the efficiency of the solar panel given by the ratio: the electric power (in kWp) of a solar panel divided by the surface of a panel.

The efficiency of a photovoltaic module of 250 Wp with an area of 1.6 m2 is 15.6%.

This nominal ratio is given for standard operating conditions (SFC): radiation = 1400 W / m2, cell temperature = 25 degrees Celsius, wind speed = 1 m / s, AM = 1.5.

The unit of nominal power of the photovoltaic panel under these conditions is called the "Watt peak" (Wp or kWp = 1000 Wp or MWp = 1000000 Wp).

H = is the average annual solar radiation on inclined panels.

PR = (Performance Ratio) is a very important value to evaluate the quality of a photovoltaic installation, because it provides

the performance of the installation independently of the orientation, inclination of the panel. Includes all losses.

Example of detailed losses that give PR value (depending on site, technology and system sizing):

- Losses in reversing systems (from 4% to 10%)
- Panel temperature losses (from 5% to 20%)
- Losses through direct current cables (from 1 to 3%)
- Losses through AC cables (1 to 3%)
- Shading losses from 0% to 40% !!! (site specific)
- Weak solar radiation losses from 3% to 7%
- Losses due to dust, snow ... (2%)
- Other losses (?)

On the roof surface of the warehouses and processing spaces on 240 sqm will be installed 150 panels of 1.6 m2, with a total virtual power per panel of 250 Wp.

Analysing according to the above algorithm the actual power obtained is 5,850 W / h energy that will be stored in buffer batteries with a capacity of 30 kW and used at night for water recirculation, water aeration and lighting and heating in the seedling unit .

1.8.4. Water supply

The water source in the area is the groundwater captured by wells drilled at great depths.
The aquifer layer is "targeted" and effluent to the surface with a flow rate higher than 10 l / s.
As the water effluent capacity from the groundwater is practically unknown, two water supply variants are proposed:

- variant 1: by natural effluent (artesian)
- variant 2: by pumping, with submersible pump, a hydrophore type station and with water storage in 40 m3 containers.

In both variants, prospecting drillings and hydro-geological studies must be carried out in order to establish accurately the quality of the raw water captured and the capable flows of the wells.

These data are necessary to establish the treatment scheme, the pressure flow characteristics of the well pumps as well as the number of wells to be drilled.

The maximum daily consumption flow and the fire reserve recovery flow according to STAS 1343/1 and 1478 will be ensured.

A water treatment plant will be provided to ensure the aeration, filtration and disinfection of water from wells to comply with the parameters of STAS 1342.

The hydrophore station will be equipped with:

- pumping unit for consumption, which supplies the indoor water installations of the buildings, with variable speed pumps (1 active + 1 reserve)
- fire pumping unit (indoor and outdoor hydrants) that ensures the flow to fight the fire in the premises; with constant speed pumps (1 active + 1 reserve)

1.8.5. Channeling

The wastewater to be collected and discharged from the premises is:

- domestic wastewater from toilets
- wastewater from the aquaponic growth system.

As there are currently no sewerage networks and treatment plants in the vicinity of the land, it is proposed to collect wastewater from the premises, treat it in a mechano-biological treatment plant and discharge the treated water to the irrigation canal on the west side of the land. .

The quality indicators of the discharged treated water will be within the values provided in STAS 4706 for quality category I watercourses.

Due to the configuration of the land, the wastewater from the enclosure will be collected in an underground retention basin from where it will be discharged by pumping to the treatment plant.

The raw wastewater will be mechanically treated in a filtration plant that will retain solid particles; the filtered wastewater will be collected in a receiving basin from where, through a spillway, it will pass into the biological treatment stage in which the aeration, activation and stabilization of the recovered sludge is performed.

A small platform for drying the stabilized sludge from the treatment plant was provided, which will be used as organic fertilizer on the agricultural lot left on the land.

1.8.6. Heat supply

The proposed solution for the thermal energy supply of the objective is the realization of an own thermal power plant with operation based on heat pumps and on the storage by means of the hot air during the day of the thermal energy in tanks made in the ground.

The heat transfer agent being the air in the greenhouse. As a form of back-up, you use LPG heating (involves renting a tank) until the installation of the public methane gas network.
The thermal power plant will produce thermal agent for:
- Water heating in recirculating system
- Ventilation - air conditioning
- Hot water for consumption.

The installed thermal power of the boiler will be 80kW, estimated based on the calculated heat demand for heating, ventilation, air conditioning and domestic hot water preparation.

The thermal power plant will be located inside the main investment objective of the aquaponic greenhouses.

- automation of the operation of the thermal power plant, by controlling the sequential operation of the heat pumps and automatic adjustment of the parameters of the supplied thermal agent.
- providing a combined solution for the preparation of hot water for consumption with solar energy mainly and with additional heat source, depending on the temperature of the hot water prepared solar.

2 domestic hot water preparation modules were provided: the module with solar energy preparations composed of: 4 solar panels, heat pump circulation pump, plate heat exchanger and hot water storage tank and the module with preparation in classic solution with thermal agent produced by heat pumps composed of plate heat exchanger, circulation pump and storage tank; the 2 storage tanks being interconnected.

- variable speed circulation pumps.
- mini additive water softening station.
- expansion system.

2. TECHNICAL DATA OF THE INVESTMENT

2.1. Analysis and selection of optimal alternatives and description of solutions

2.1.1. Analysis and selection of optimal alternatives

The analysis and selection of optimal alternatives considered three evaluated alternatives with a combined set of technical, economic, organizational, environmental and risk criteria.

The three alternatives analysed are:

• Minimum variant - the achievement of a minimum number of objects within the investment that would facilitate the moderate achievement of the investment purpose, namely:

- aquaponic system
- providing utilities of the site (water, sewer, heat and electricity).

• Medium variant - the realization of the following objects within the investment that would facilitate the good achievement of the investment goals, namely:

- aquaponic system
- providing utilities of the site (water, sewer, heat and electricity).
- administrative and processing space, storage;

• Proposed variant - the solution proposed in the Feasibility Study

For the comparative analysis of the 3 alternatives, the following set of criteria was established:

2.2. Technical Criteria

Genteral

- The complexity of the activities that will be carried out

Specific

- Ability to perform and interpret geological, geophysical and geothermal determinations

Economic criteria

- Estimated investment costs
- Expected attracted revenues
- Infrastructure access costs
- Maintenance costs
- Job creation (execution phase / operation phase)

Organizational criteria

- Integration in European farm research platforms
- Ability to attract partners (internal, external)
- Organization of scientific events, postgraduate courses, etc.
- Cooperation with local authorities; supporting regional development
- Attractiveness for beneficiaries (private environment)
- Maintenance and repairs

Environmental criteria

- Sustainable use of resources
- Conservation of the aquatic natural ecosystem
- Energy consumption
- Waste management

- Water and soil pollution
- Atmospheric pollution

Risk criteria

- accidents
- Dangerous substances
- Danger of flooding
- Abnormal operation

2.3. Working hypotheses and evaluation of optimal alternatives selected based on multi-criteria analysis

The working hypotheses considered for the evaluation of the variants are the following:

- the investment will be made in accordance with the legislation in the field, respecting the opinions of all the bodies nominated by the Urbanism Certificate;
- the investment can be made in stages depending on the means and resources available;
- the investment will meet all the requirements regarding its location in the built-up area.
- within the farm, no research / activities will be carried out that violate or contravene the legislation in force and affect the local community;
- the planned arrangements of the buildings that ensure all the utilities and the endowment with necessary installations, requested by the beneficiary and suppliers regarding the microclimate and the protection of the environment;
- the technological equipment of the investment (basins, pumps, treatment plant, etc.) as well as other equipment will comply with all European standards in the field, including environmental protection and safety of persons and those required by the "CE" marking of compliance;
- the management capacity and the complexity of the mode of operation are designed to be at European level in terms of infrastructure and equipment.

2.4. Methodology for performing multicriteria analysis

In order for competing products or proposals to be properly analysed, the importance of these attributes must be determined. A mandatory attribute is, of course, cost; but this attribute may not be the most important.

Performing an attribute analysis involves identifying those attributes that correspond to requirements considered vital or very important for the final result of the proposal.

Once the most important attributes have been determined, they may be weighted or assigned a value indicating the relative importance of one attribute in relation to the others.

Applying these principles to the concrete object of this study, we started by defining, delimiting and selecting the main categories of aspects relevant to the project (attributes and weight of their importance), both in its execution phase and in the subsequent one, of the operation.

Some of these criteria are found in several attributes (analysis categories), others are specific to one (attribute analysis criteria) will also receive a certain weight score, so that the sum of the scores of the elements corresponding to an attribute is equal to 1.

In the case of criteria that appear as defining for the analysis of several attributes, their weight may differ from one attribute to another. Finally, the real influence is given by the combination of the weight of that criterion in the project, in combination with the weight of that attribute in the project.

All the identified attributes are evaluated by awarding grades (from 1 to 10) on each criterion, and the scores are collected.

After awarding these grades, the score for each attribute is multiplied by its corresponding weight. Then, the weighted scores given to all the analysed attributes are added for each candidate product, obtaining the merit figure or quality index (FOM from Figure of Merit).

Normally, the alternative with the highest quality index should be chosen.

Problems that may arise in a multi-criteria analysis based on attributes:

- for each attribute there can be many constitutive elements (criteria);
- attributes must be weighted in relation to their relative importance;
- qualitative ranking systems (type: unsatisfactory, average, good, excellent) are much more difficult to analyse, although they can be more easily used to evaluate the elements;
- there can rarely be a full consensus on the weighting and ranking of attributes.

Therefore, to some extent, the results of such an analysis are arbitrary.

However, this analysis can prove to be a valuable exercise, as it can help the decision-maker to identify, evaluate and prioritize in a much more objective way those attributes of the system that he considers to be the most important.

2.4.1. Interpretation of results

According to the multi-criteria analysis, the variant with the highest score is the proposed variant, which has a weighted score.

This justifies the realization of the project in the version for which the Feasibility Study was developed. However, there is a relatively small difference between the average and maximum variants.

The reason for such a small difference is that although the benefits of the objective, both economically and environmentally and socially, are considerably higher in the proposed project, there are some risks related to ancillary economic activities that must be taken into account, in conjunction with increasing the values invested in the project.

2.5. General structural conditions

- The seismic calculation area in which the location of the building is located is characterized by the acceleration of the land for design ag = 0.35g and the corner period Tc = 0.7 sec. All constructions conform to the ductility class.
- The loads and the grouping of actions for calculations are established in accordance with STAS 10101 / 0A-77 "Actions in constructions.
- Classification and grouping of actions for civil and industrial constructions ", STAS 10101 / 1-78" Actions in constructions.
- Technical weights and permanent loads "and STAS 10101 / 2A1-87" Actions in constructions. Technological loads in operation for industrial and agro-zootechnical civil constructions ".
- The loads given by the snow are considered according to the "Design Code for the evaluation of the snow action" indicative CR 1 - 1 - 3 -2005. The site is located in the area corresponding to the ground load characteristic of 2.5 kPa.
- The wind loads are considered according to the "Wind Action Design Code", indicative NP-082-04. The site is located in the area corresponding to the basic dynamic pressure stabilized at a height of 10 m above the ground gv = 0.50 kPa and a wind speed averaged over one minute of 35 m / s.
- The composition of the resistance structure and its sizing is done respecting the provisions of: „Seismic design code - part I - Design provisions for buildings P100-1 / 2006; Standard STAS 10108 / 0-78 - "Calculation of steel elements".

3. DURATION OF THE INVESTMENT AND MAIN STAGES

3.1. The realization of the investment requires the following main steps

- Elaboration of the Feasibility Study
- Elaboration of the Technical Project and of the Documentations
- Elaboration of Execution Details
- Obtaining the Building Permit
- Site organization
- Execution of works - Stage I
- Execution of works-Stage II
- Preparation of the Construction Book

In the first stage of execution it includes works for:

- Fencing and Gate Access
- Power supply
- Water supply and sewerage
- The Aquaponic system
- Administrative Pavilion

The second stage of execution includes works for:

- Installation of Photovoltaic Panels and Solar Panels for Domestic Water
- Geothermal Power Plant and Heat Pumps
- Alleys, Green Spaces, Outdoor Lighting
- Hydro construction

4. MAJOR COMPONENTS OF THE INVESTMENT

4.1. Investment components

The investment „INNOVATIVE REPRODUCTION STURGEON FARM & SUSTAINABLE HARVESTERS" Draganesti - Prahova County consists of the following objects:

Object 1 - Fencing
Object 2 - Aquaponic System
Object 3 - Greenhouses
Object 4 - Administrative space
Object 5 - Renewable energy sources
Object 6 - Roads and alleys on the premises
Object 7 - Green spaces and plantations
Object 8 - Exterior lighting
Object 9 - Thermal power plant
Object 10 - Water household
Object 11 - Domestic wastewater pumping station, pit
Object 12 - Water supply networks + well
Object 13 - Sewerage networks
Object 14 - Rainwater drainage networks
Object 15 - Thermal networks
Object 16 - Electrical networks
Object 17 - Access road
Object 18 - Wastewater treatment plant

4.2. Estimates by object

The general estimate is based on the estimates per object. The estimates by object, for the investment objects, are included in

the volume “Financial documentation - business plan”.

The estimates for the object are based on the investment expenses broken down by types of works;
The values were obtained based on pre-measurements or cost indices obtained from other investment works performed by the developer.

The value breakdown of the investment for the 2 years of realization of the investment for variant 1 is the following:

- Year 1: 87%
- Year 2: 13%

Technical assistance and supervision

Given the nature and scale of this infrastructure development and equipment procurement project, equipment manufacturers and suppliers of high value goods and works usually offer supervision of installation and commissioning, as well as equipment warranty included in the purchase price. The offers already taken into account by the initiator and on the basis of which the value of the acquisition for this project was estimated are of this nature.

For works or equipment of lesser value, the technical assistance required in the installation may be supplemented by its own technical staff who have the necessary qualification to carry out such activities under the guidance of the supplier.

Advertisement

The communication plan is carried out in the following directions:

• Development of the project web page - The page will be developed in Romanian and English and will be developed by a company with experience in this activity. The page will be updated regularly in terms of content and presentation.
• We have a database with all existing aquaculture units in all European countries, contact with all individuals and legal entities affiliated to the veterinary record system at European level and we will send each entity in Europe an offer of brood and the necessary support for growing these species .
• Promoting the center through a catalogue of plant products and brochures presenting specialized information on the practical applications of the new infrastructure.
• Promoting the center by participating in offline and online events, fairs and exhibitions. Emphasis will be placed on participation in agri-food promotion events. In order to promote plant and fish products, methods such as direct discussions with potential beneficiaries, the use of printed and digital catalogues, multi-media presentations, information materials, etc. will be used.
• It should be noted that the actual promotion of plant products, as they have a short production cycle will be done through an online application of qualitative (variety) and quantitative (quantity, kg or pieces) reservation such that the beneficiary customer controls the flow of production based on its anticipated needs. In general, these customers are producers and traders of salads and other products that include vegetable products.

5. ECONOMIC-FINANCIAL ANALYSIS

5.1. Methodology

The purpose of the analysis is to highlight the financial and economic efficiency of the project, over a period of 15 years, by calculating economic and financial efficiency indicators. Based on this analysis, the necessary information will be obtained in order to make an investment decision.

The economic criterion used in the analysis of the project for financing is the Discounted Net Income (NAV). The following calculation relation was used to apply this criterion:

$$VNA = \sum_{t=1}^{D} \frac{V_t - (I_t + C_t)}{(1+a)^t}$$

Where:

Vt = annual income obtained from the investment, [euro / year];
It = annual investment value, [euro / year];
Ct = annual operating, maintenance, salary expenses [euro / year];
A - discount rate.

The NAV represents in a synthetic form the intrinsic efficiency of the analysed investment, for a considered study period and a chosen discount rate.
Another typical indicator for analysing the performance of an investment is the Internal Rate of Return (IRR), defined as the interest rate for which the NAV becomes zero.

$$\sum_{t=1}^{D} \frac{V_t - (I_t + C_t)}{(1+RIR)^t} = 0$$

In other words, the IRR is the maximum amount that the benefit of financing for the implementation of the investment can have, without causing losses to the project, compared to an alternative use of capital.

Considering the fact that for the project "INNOVATIVE REPRODUCTION STURGEON FARM & SUSTAINABLE HARVESTERS" Draganesti locality, Prahova County, the contracting of a loan was not considered, the financing being made entirely from own and private sources for the calculation of this indicator is not relevant. Additionally, it can be added that RIR can be calculated exclusively for projects with a NAV> 0 during the analysis period.

The method of analysis applied for the financial evaluation of the project consisted in:

1. Determining all cost elements;
2. Determining all the elements that produce income;
3. Calculation of indicators corresponding to the premises taken into account in the financial and economic analysis.

The method of analysis applied for the economic valuation was the same as that used for the financial valuation, with the difference that social costs and benefits were included which were not taken into account by the financial analysis.

Capital investment

The Feasibility Study of the project "INNOVATIVE REPRODUCTION STURGEON FARM & SUSTAINABLE HARVESTERS" Draganesti locality, Prahova County, was elaborated in a minimalist way and will be developed by an authorized service provider, architect, builder, etc.

The acquisition of services (design and technical assistance), equipment and installations and the realization of all the works necessary for the realization of the investment will be done entirely by accessing private funds.

Contracting strategy

The contracting process of the equipment, works and services related to the project will be carried out in accordance with the provisions of the public procurement legislation in force.

The contracting strategy is a key mechanism in risk sharing.

The risks assumed by the project promoter are usually formalized through contracts with the beneficiaries.

In most cases, the risks related to materials and equipment can be transferred to their suppliers, through the guarantees they offer. Some risks can be removed by concluding insurance contracts.

The insurance company assumes part of the risks in exchange for a price (insurance premium).

If the risk occurs under the conditions specified in the insurance contract, the insurer will reimburse the insured party or all losses incurred due to the risk.

If the risk does not occur, the insurer retains the insurance premium.

Other risks can be covered by signing a single contract with a general contractor who will be responsible for all contracts with suppliers of goods or works and in parallel, signing another contract with a project implementation supervisor.

In this way, all procedures are simplified, the project promoter having a single partner who will assume all the risks related to delays, the quality of execution and so on and the monitoring of how he complies with his duties is done by a specialized consulting firm.

The disadvantage of this solution is that it involves much higher costs for the project budget.

Therefore, a mixed solution is recommended, with as few contracts as possible, followed by the Project Management Unit, organized by members with specific skills and temporary individual involvement, for the periods when their activity is necessary.

The values of the necessary acquisitions in the phase of preparation and implementation of the investment, are presented in the General Estimate elaborated for the two technical variants considered and are included in:

Chapter 3 - Expenditure on technical assistance;

Chapter 4 - Expenditures for basic investment;

Chapter 3 - Other expenses.

The procurement procedures are similar to those specified in GEO no. 34/2006 on the award of public procurement contracts, public works concession contracts and service concession contracts and their application aims to promote competition between economic operators, to guarantee equal treatment and non-discrimination of economic operators, to ensure the transparency and integrity of the public procurement process and ensure the efficient use of public funds.

The procedures applicable to public procurement, established by the above normative act are the following:

A) the open tender, respectively the procedure in which any interested economic operator has the right to submit a tender;

B) the restricted tender, respectively the procedure to which any economic operator has the right to submit its application, following that only the selected candidates will have the right to submit a tender;

C) the competitive dialogue, respectively the procedure to which any economic operator has the right to apply and through which the contracting authority conducts a dialogue with the admitted candidates, in order to identify one or more solutions able to meet its needs, following that, on the basis of the identified solution / solutions, the selected candidates to elaborate the final offer; the competitive dialogue procedure may be applied if the following conditions are met cumulatively:

- The contract in question is considered to be of particular complexity;
- The application of the open or restricted tender procedure would not allow the award of the public procurement contract in

question.

D) the negotiation, respectively the procedure through which the contracting authority carries out consultations with the selected candidates and negotiates the contractual clauses, including the price, with one or more of them; the application of the negotiated procedure is possible only after the cancellation of the initial open tender, restricted tender or competitive dialogue procedure and only if the initial requirements set out in the award documentation are not substantially changed.

E) the request for tenders, respectively the simplified procedure by which the contracting authority requests tenders from several economic operators, applicable if the estimated value, without VAT, of the public procurement contract is lower than the RON equivalent of the following thresholds:

- for the supply and service contract: 40,000 euros
- for the works contract: 250,000 euros.

Given that most of the investment costs foreseen in the project exceed the maximum values for the organization of the tender procedure, it is recommended to organize open tenders.

The duration of the procurement process is determined by the stages specified in the law and depends on the value of the contract, the type of contract and the publication in which the ads appear.

Project outline analysis

The evaluation of the financial performances of the project was made considering the activities carried out within the project.

5.2. Staging the analysis

The economic efficiency analysis of the proposed project was divided into 2 stages:

1. Investment implementation period (years 0 - 2) and
2. The period of operation (operation) of the investment (years 2 - 15).

Implementation period

In the first year of the implementation period, the detailed design of the objectives will be carried out and the procurement procedure for the services, execution works and goods (equipment) related to the Center will be prepared.

Between years 1-2, the contracted works will be put into operation and the facilities of the center will be put into use.

During the implementation, the activity of the Center is partially carried out, with minimal costs, according to the hypotheses presented in chapter 5.8. - Expenses related to the implementation of the investment.

Operating period (operation)

The period in which the performance of the investment in operation was analysed, was divided into three sub - stages, depending on the need to provide financing for the development of the main activity and other related activities.

These refer to:

- The first 2 years (years 1 - 2) - when it is necessary to ensure the full financing of the project;
- The next 13 years (years 2 - 15) - when the Center will start self-financing when it is necessary to ensure the financing of the maintenance and administration expenses of the complex under its own management;

During the operation period, all categories of expenses were considered in full and the income according to the assumptions presented in the paragraph - Income related to the investment.

5.3. Calculation hypotheses

The following economic variables were used:

1. Discount rate: a1 = 12% / year; a2 = 7% / year, used for financial analysis;
2. Discount rate: a3 = 5% / year; used for economic analysis;

The discount rate takes into account the inflation rate, the risk premium that differs depending on the risk of the activity sector, the national risk (legislative, economic, etc.), the position of the company promoting the investment project compared to the sector averages.

In general, the value of the discount rate used for the financial evaluation of the projects carried out in Romania was 12% / year. However, taking into account the economic stabilization forecasts for the next decade, a rate of 7% / year was used for comparison in the analysis.

In the case of the economic analysis, the discount rate reflects the social vision on how the costs and benefits arising as a result of the implementation of the project must be assessed in relation to the existing situation. It differs from the financial discount rate due to the fact that the capital market is fluid.

For the economic analysis of the feasibility of the project, the value of 5% was chosen for the discount rate used in the calculations, according to the usual practice in such projects.

3. Currency: euro (the exchange rate of 1 euro was considered = 4.70 RON).

5.4. Input data

For the Financial Analysis, the elements that define the performances of the project, in the form of prices and tariffs practiced at the level of year 0, together with the estimated annual expenses and revenues for the activity of the International Center in a typical year.

Presumed evolution of tariffs, prices, wages

In the analysis performed for the evaluation of the financial performances of the project, the forecasts of the evolution in the analysed period of the tariffs of the main public utility services (drinking water supply and wastewater discharge), of the prices of electricity, CLU and wood fuel as well as wages.

In order to determine how the calculation indices of prices, tariffs and wages will evolve in the long run, the following hypotheses were considered:

• For the period 2006 - 2010, the National Forecast Commission estimates a dynamic reduction of the unit labour cost in Romania (the trend is also valid for the other EU member states). Throughout this period, wage increases will be lower than the real increase in labour productivity.

• The Romanian economy before declaring a state of emergency due to the pandemic entered a practically irreversible upward trend, accentuated by the fact that the level of development from which it started was very low, the "critical mass" of the transition was reached very late, and the number of consecutive years of economic growth accumulated so far is extremely low.

• Economic forecasts indicate economic growth in the coming years, which will involve increased consumption of energy resources.

• One of the main directions of energy policy is to diversify and multiply power sources.

• From the point of view of the structure of primary energy consumption, there is a faster increase in the share of natural gas, but also of renewable sources.

• This trend, combined with geopolitical factors, will lead to an increase in the price of natural gas, which follows the fluctuations in the price of crude oil, generally with a delay of 6 months.

• Based on the above assumptions, the variation of the indices describing the evolution of tariffs, prices and salaries during the project analysis period was established.

Expenses related to the implementation of the investment

The costs involved in implementing the investment (years 0-1) include:

11. Expenses for obtaining and arranging the land;
12. Expenditures for ensuring the utilities necessary for the objective;
13. Expenditure on design and technical assistance;
14. Expenditure on basic investment;
15. Other expenses (site organization, commissions, fees, legal fees, financing costs, miscellaneous and unforeseen expenses);
16. Expenditure on commissioning.

5.5. Presumed evolution of operating costs

For the period of financial analysis of the investment, 5 main categories of expenses involved in the operation of the project were identified:

1. Expenditures on energy supply, fuels, utilities;
2. Expenses with the employed staff;
3. Communication expenses (internet, telephone, etc.);
4. Expenses related to laboratory analyses;
5. Expenses for maintenance of installations, equipment, networks, constructions.

5.6. Expenses with staff employed

During the implementation period, the commissioning of the breeding station and the aquaponic filtration system is foreseen. At this stage, additional minimum staff costs will also be required for the maintenance and administration of the center.

These costs were assessed as having a share of about 20% in year 2 and about 80% in year 3.

For the evaluation of the salary costs during the operation of the Center, two categories of employees were considered:

1. Technicians - directly involved in the activity of the Center;
2. Administrative, maintenance and security staff, necessary to ensure the proper functioning of the Center.

5.7. Communication expenses (telephone, fax, internet, TV, etc.)

The recording of communication costs will start immediately with the start of the operation of the center.

5.8. Expenses necessary to perform laboratory analyzes and maintenance of equipment

This category includes the costs related to the activity in the breeding station (60%) of fertilized brood or eggs and in the aquaponic filtration system (40%) corresponding to the purchase of consumables (substances, materials, seeds, seedlings, etc.).

Equipment maintenance costs are also included after the expiry of the warranty period.

5.9. Expenditure on maintenance of infrastructure, installations, constructions

In order to maintain the infrastructure in optimal condition and to carry out accidental interventions that may become necessary during their operation, the necessary annual amounts have been provided in the budget for the procurement of materials and services that cannot be performed by either its own staff or suppliers. of works or equipment.

5.10. Presumed evolution of revenues

The center will operate for the purpose of:

- Ensuring complex services and at a high level of performance the reproduction of the most important fish species of commercial interest and / or for the repopulation of the Danube or the Black Sea with fry of vulnerable or endangered species. Carrying out research contracts designed to ensure the conditions for sustainable development of the Danube Delta, financed from the state budget, by the European Commission or through internal and international bodies and programs;

- Organizing and hosting scientific events (seminars, courses, thematic excursions, etc.) with national and international participation;

- Carrying out commercial activities (marketing of young, fry and reproductive materials (fertilized and unfertilized eggs) as well as plant production.

The evaluation of the incomes obtained from these activities was made on the basis of the hypotheses that we present below.
B) Revenues from commercial contracts. These will be obtained through the activity of the Center having the following weights:

- 40% reproductive material (fertilized or unfertilized eggs);
- 30% biological material (fry and fry;
- 30% plant biological material.

Due to the specificity of this activity which involves a certain time interval between the time of preparation of the application for funding and the actual granting of funding, it was estimated that the revenue from projects will be obtained according to the following scenario:

• Year 2 = 50% intensity
• Year 3 = 80% intensity
• Year 4 - 15 = 100% constant intensity all years

C) Revenues from training services, technical consultancy

The commercial activities carried out within the Center will fall into two main categories:

1. Organization of courses (training).
2. Consulting services;

Online course activity

For the evaluation of the incomes from the courses activity, the following hypotheses were made:

• 320 places per course (online eLearning);
• the rate that will be charged per course will be 135 euro / place;
• the occupancy rate will be about 60%;
• the duration of operation of the Center for educational purposes will be about 250 days / year.

D. Training activity

The training will be organized either directly by the Center or by third parties who will use the facilities offered by the Center.

In addition, thematic workshops will be organized within the Center annually, with an average participation of 30 people / session.

For a number of 8 own courses organized annually, it was estimated a participation of 40 people / course and the invitation of 8 lecturers / course (Romanian and foreign).

There will also be hosted a number of 15 courses / year of professional qualification in the trades of "Workers in aquatic cultures COR 6221", with a similar participation (40 people / course).

Consulting services

A number of 500 hours / year of consultancy will be provided for future beneficiaries of European or other aquaculture funds.

E) Savings from the production of thermal energy from the ground (geothermal) and solar energy

The production of thermal energy from alternative resources will be a source of income in the sense that the higher costs that would have been incurred in providing the heat needed by the Center from conventional sources will be avoided. This economy was assessed on the basis of the average cost difference between the two production methods.

F) Financing of costs after the commissioning of the Center

In subchapter 5.5.1. Staging the analysis, the financing scheme of the Centre's activity was presented after its entry into operation. According to this scheme, in:

- The first 2 years (years 1 - 2) - it is necessary to ensure the full financing of the Center;
- For the next 13 years (years 3 - 15) it is necessary to ensure the financing of 100% of the activities of maintenance and administration of the complex from own sources provided by the revenues of the Center;

- The last 13 years of analysis (years 3 - 15), the Center will have the opportunity to self-finance.

5.11. Cost benefit analysis

5.11.1. Technical premises

In order to ensure the water flow of the Centre's systems, as well as the flow of restoring the fire reserve, two technical solutions have been proposed.

5.11.2. Financial premises

In terms of costs involved, the implementation of these technical solutions (Variant 1 and Variant 2) induces different values for:

• the value of the investment in the water household;
• electricity consumption;
• power and commissioning charge of the related electrical installations;
• technical staff employed for the maintenance and operation of the installations.

All other costs remain unchanged in both variants.

5.11.3. Economic premises

The economic analysis takes into account the externalities that lead to social costs and benefits that do not generate financial expenses or income at the time of the analysis. The factors considered in the analysis consist of:

• corrections of fees / subsidies or other transfers;
• corrections of externalities:

Reducing the unemployment rate in the area: 80% of the administrative staff will be employed locally, which means avoiding the costs with the unemployment and income allowance to the state budget from taxes of about 2,500 euro / year / person;

Conversion of market prices into accounting prices that include social costs and benefits.
The prices considered in the project do not determine an influence from a fiscal or external point of view due to the fact that in the financial analysis were considered the real prices (without subsidies) of inputs and outputs and the evolution of wages was correlated with labour productivity.

5.12. Sensitivity analysis

The evaluation of the risks and uncertainties of the project is done with the help of the sensitivity analysis, which finds the way in which the financial performances of the project are affected by the variation of some parameters that are not under the control of the promoter.

Considering the conclusions of the financial analysis, the relatively small difference between the evaluated variants and the recommendation of choice for the implementation of Variant 2, the sensitivity analysis was performed for the latter (Basic variant). It is mentioned that in the case of Variant 1, the variation of the parameters that influence the financial performances of the project, leads to similar effects.

The parameters that were chosen to identify the financial risks to which the project is vulnerable are the following:

• the price of electricity;
• the price of drinking water;
• salary expenses (with research staff);
• the occupancy rate of the hotel;
• income from commercial activities.
For each of the above parameters, a variation of ± 10% of the value in the Basic Variant was considered, considered as covering and in accordance with the evolution scenarios of prices, tariffs and wages taken into account in the cost-benefit analysis.

The results of the analysis are represented graphically both quantitatively (the influence of the variation of the parameters on the Discounted Net Income) and qualitatively (the share of the influence of the variation of the parameters on the Discounted Net Income).

6. FINANCING THE INVESTMENT

The total value of the investment will be covered during the implementation period (years 0-2) please look in Excel part !

7. THE LABOR EMPLOYED BY REALIZATION OF THE INVESTMENT

Number of jobs created in the execution phase

For the implementation period of the investment (years 0-2), the following hypotheses were made, evaluated as such within the General Estimate of the Feasibility Study:

1. Staff employed for the execution of works: 4 people.

2. Permanently employed staff for monitoring and coordinating the project: 2 people, within the "investment management unit" to be established.

8. OPINIONS AND AGREEMENTS

- Urbanism certificate application
- Urbanism certificate
- Contract for drawing up the property body file and situation plan (plot xx tarla xx)
- Utility connection request
- Medium demand
- Romanian Waters application
- ANPA request

9. STURGEON MEAL MARKET

Only a few caviar producers who harvest caviar by slaughter, process and sell sturgeon meat. Therefore, a wide range of products, such as fresh, smoked, salted or frozen sturgeon fillets, are missing from the market. There is also an uncovered niche on the market for different types of canned sturgeon pate.

The most valuable products are those that contain only fillets of skin without skin, spine, head or cartilage. Although the texture of sturgeon meat is not as spectacular as salmon fillets, exposure through the transparent section of the package can become a habit. This way we can expose an entire tab from head to tail or you can wrap sectional slices and expose them in gallantry.

Experts say that of all the sturgeon species in the world, Acipenser ruthenus (Sterlet) is the species with the best taste. The combinations of wood flavors I use when smoking sturgeon meat and even whole sturgeon, as in the case of Sterlet sturgeon, the concentration and composition of brine are the key to the success of this product. It can be sold at 100g, 250g and 500g. In rare cases, when a whole sturgeon is packed, the weight can be 500g.

Prices range from: Petrossian Smoked Sturgeon 100g to 20 USD and Acadian Sturgeon Smoked 100g to 5 USD. At Zabar's in New York, smoked sturgeon sells for $ 15 per 100g. Species differ only slightly in marketing campaigns. In general, 80% of the sturgeon on the market is of the Siberian Baeri Acipenser species.

Fresh sturgeon meat is sold in local restaurants or in general store network systems that have fish sections. Sturgeon is a perishable fish that can only be marketed under strict temperature control. Frozen sturgeon meat is used only in extreme conditions. The price per kg of sturgeon is $ 15 - € 50.

10. STURGEON SKIN (LEATHER MARKET)

In recent years, natural skin from fish becomes a more interesting item on the market. Sturgeon skin, due to bone plates in the skin, elasticity and resistance to moisture, is suitable for achieving luxury products like leather goods. If until the year 2000, sturgeon skin was an extremely rare product, which was used in the singular cases of niche artisans; today it is an elite product with increasing spreading. It is marketed in the form of samples dyed in various colors worthy of the royal products Company Sibel Founded in 1996, is a trading company specialized in the import/export of cow and sheep hides and leathers as well as precious exotic leathers. Ideally located in Auvergne, at the heart of France, and benefiting from solid experience in leather, SIBEL offers a wide range of high-quality leathers for its customers in leather goods, shoes, apparel, saddles, furniture, jewelry and accessories... Storage area covers over 2,000 m² and is entirely air conditioned, allowing us to stock leathers in optimal conditions. Business with sturgeon leather is well.

The company website SIBEL find highly suggestive text from sturgeon skin considered exotic "Sturgeon skin is to leather what its eggs are to cuisine: an exceptional product for exceptional creations". In the same page we read: "This sophisticated leather has a strong personality and a grain rich in character. Sturdy, rare and elitist, it is prized among manufacturers of watch straps or belts." To get a more accurate feel about the possibilities of the sturgeon skin, we should be viewed the sturgeon skin shade catalog of this company. The price for a m2 of Sturgeon Leather

is between 800 and 2.000 Euro.

The offered species are only Baer Acipenser, which is found in abundance in France. As an element of differentiation, the SIBEL Company has leather floors offers for yachts, private jets and homes. The idea of fish skin leather may seem a bit funky, but the material is in fact a fantastic choice for creating apparel and accessories that mimic the reptile skin look.

The production of fish skin leather is based on taking waste from the food industry and turning it into a useful and desirable material for the fashion and textile industries. Similar in strength to tough cowhide, fish skin leather can be used for anything from handbags, belts, clothing, small accessories and shoes, to furniture and interior decoration. How strange but fascinating it is to think that the fish on your dinner plate may also have given its life to become your new shoes, handbag or iPad case? Out of the caviar manufacturers, we can already identify Frutigen Tropenhause caviar in Switzerland, which sells OONA caviar in the offer and has two sturgeon leather goods. It is a handcrafted item like a key chain with the OONA logo at a price of 29 CHF ~ $33.2 for 10 cm2 of sturgeon skin.
Also, another product excels in price. It is a Business Card Case, made from 100% handmade sturgeon leather at a price of 53 CHF ~ $69.6. The highest product is a purse for money, made from 100% handmade sturgeon leather at a price of 85 CHF ~ $97. (www.oona-caviar.ch)

Sturgeon skin and the making of clothes and luxury shoes have found a "good home" handmade market. Prices are between $80 for a wallet and $4,000 for a “Hermes” model bag made from sturgeon skin.

11. STURGEON MEAL EXTRACT – STURGEON OIL

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In general, fish oil became popular in the 19th century. Being a source of vitamins, including vitamin D, which is very important for the human body, fish oil has been studied by the Inuit people of Northern Canada proving a rate of 1000 times less heart disease and circulatory, although this population is a 100% consumer of meat and fat. The main essential fatty acids in the human diet are omega-3 and omega-6 fatty acids. Foods that provide omega-3 fatty acids include fish oil and certain plant and nut oils, while omega-6 fatty acids can be found in palm, soybean, rapeseed, and sunflower oils. Omega-9 fatty acids, which are not considered essential, can be found in animal fat and olive oil. Fish oil contains two omega-3 fatty acids called docosahexaenoic acid (DHA) and eicosapentaenoic acid (EPA). Some nuts, seeds, and vegetable oils contain alpha-linolenic acid (ALA), which may be converted to DHA and EPA in the body. In the United States, percentages of DHA and EPA have been found to be lower compared to other nations with lower heart disease rates, such as Japan. High levels of omega-6 fatty acids have been linked to an increased risk of some conditions such as heart disease and depression. Omega-3 fatty acids are thought to provide a wide range of health benefits, including a lower risk of coronary heart disease and improvement in cholesterol. There have also been promising results from studies looking at omega-3 for cancer, depression, and attention-deficit hyperactivity disorder (ADHD). Due to these potential health benefits, fish oil, which is rich in omega-3 fatty acids, has become a popular supplement. There is evidence that recommended amounts of DHA and EPA, taken as fish or fish oil supplements, may lower triglycerides and reduce the risk of heart attack, abnormal heartbeat, and stroke in people who have heart disorders. DHA and EPA may also benefit people who have hardening of the arteries or high blood pressure. Similar effects have been found for ALA, but more evidence is needed to support its potential benefits. Extracted from the tissues of oily Sturgeon fish, Sturgeon Oil is endowed with super combination of omega-3 fatty acids, eicosapentaenoic acid (EPA), and docosahexaenoic acid (DHA) and precursors to eicosanoids that reduce inflammation throughout the body which make a suitable healthy diet.

The long-lasting effects of these fatty acids form an immune layer in the body preventing it from a number of

diseases:

- It helps in regulation of optimum cholesterol level in the body.
- It act as an anti- inflammatory and exerts positive effects on body composition.
- It exerts a great impact in optimizing the blood pressure rates in the body.
- Interestingly Sturgeon Oil like other fish oils help as an antidepressant and contributes to lower the suicidal tendencies of the patients suffering with depression.
- Heart diseases are a rare sight in those consuming Sturgeon fish oil on a daily basis.
- Health specialists recommend Sturgeon fish Oil to all the patients of hypertriglyceridemia, secondary cardiovascular disease and high blood pressure.
- It is a very influencing cure for certain mental imbalances such as Schizophrenia.

Sturgeons are especially rich in the beneficial oils known as omega-3 fatty acids. They provide about 1 gram of omega-3 fatty acids in about 100 grams of sturgeon meals. It sells at the price of $22 - 100 g.

As in the extraction process of caviar, 1% of the total amount of caviar harvested is lost, meaning caviar broken beans, placental tissue and immature eggs, it requires their capitalization by making extracts of caviar. It is a rare product in the market, and it is used extensively in cosmetics. Caviar extract was found to speed up the natural production of collagen up to 67% and significantly reduces the protein cross linking (fibronectin). Caviar extract is very rich in vitamins A, D, B1, B2, B6 and micro-elements Co, Cu, P, Si, Zn as well as amino acids such as glycine, lysine, histidine, arginine and asparagine. Those ingredients intensify the processes inside the skin cells and at the same time slow down the aging process by moisturizing the skin. Caviar extract firms your skin and provides the highest possible level of hydration. A light moisture-retaining film protects the skin against external effects such as UV radiation, the climate, dehydration and pollution. This protection fosters the reduction of superficial lines and wrinkles, thereby improving the skin's appearance. In researched studies caviar extract has also been shown to improve skin mitochondrial function and reduce the typical inflammatory environment around the aged skin cells. Caviar also stimulates the regeneration of the skin; it possesses antioxidant qualities and protects against harmful UV damage.

Additionally, the components of caviar are well absorbed without allergic reactions. Very rich in vitamins A, D, B1, B2, B6 and micro-elements Co, Cu, P, Si, Zn as well as amino acids like glycine, lysine, histidine, arginine, asparagine. Those ingredients intensify the processes inside the skin cells and at the same time slow down the aging process by moisturizing. Caviar Sturgeon Extracts are a source of vitamins, nucleic acids, phospholipids and proteins. They are in themselves a source of marine DNA, a key element to skin cell regeneration Vitamin C, thiamine, riboflavin, vitamin B12, folic acid and biotin are the principal hydro soluble vitamins. Vitamins A, D, E and K are liposoluble. Products with a marine DNA base are basically hydrators.

A light moisture-retaining film protects the skin against external effects such as UV radiation, the climate, dehydration and pollution. This protection fosters the reduction of superficial lines and wrinkles, thereby improving the skin's appearance. It is sold only as raw material or inside cosmetics. The sale price is 12,000 euro per kg.

12. ISINGLASS - ART RESTORERS ADHESIVE

Named "Isinglass" - Sturgeon glue, prepared from the inner membrane of the air bladder of the fish, has long been used by Art conservators as a consolidate and adhesive. It has greater tack and lower viscosity than comparable mammalian products like gelatin and rabbit-skin glue. The fresh product is generally used by dissolving an amount of 5-6 % the air bladder in water for 60 minutes at a temperature of up to 60 degrees Celsius. The fabulous properties of the adhesive are flexibility, adhesion and the great penetration in structure materials that are restored as oil painted canvas, parchment, paper, wood off. It is insensitive to heat, moisture, light, keeping its properties for

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a long time. Lately, more and more often it is used in the preparation of support for oil paintings because it provides a great grip. Having a very low viscosity it seeps into the fiber structure offering the canvas on which he paints a very stable layer of oil paint. There is no museum in the world that does not have a section for restoration of art objects. There is no such restoration section where you cannot find a small reserve of Isinglass. Currently, the most sought after is the air bladder from Acipenser ruthenus because this material compared to other air bladders from other sturgeon contains the lowest concentration of fiber and vascular tissue that do not dissolve. Another great quality is the color and transparency that are ideal amongst the other products. Also, Isinglass is used in bookbinding of books of value or in the making of mosaics from wood veneers in the luxury furniture industry, so-called "Intarsia". Another important use of the air bladder is clarified in the manufacture of beer and wine industry. Guinness and renowned French wines such as Lafite, Margaux, Mouton - Rothschild, Latour, Haut Brion, Petrus, Cheval Blanc, Inglenook Cabernet Sauvignon, Penfolds Garage and the sweet wine d' Yquem are clarified using gel filler made from sturgeon air bladder. It sells dry (dry air bladder) under the name of Isinglass or Sturgeon Glue, priced at € 45 - 50 grams.

13. SPINAL EXTRACT AND STURGEON CARTILAGE

Today, there is a supermarket industry based on active food supplements that are found in the spinal cord (single string) or sturgeon cartilage. Like its cousin the shark, sturgeon ensures high dosage of the active principles which make it suitable to fight a long list of ailments such as restoration and regeneration of worn joints. It supports "anointing" and increases strength and flexibility of joints. The glucosamine content helps protect the flexibility and it is the constructer of joints and cartilage. In their absence cartilage cannot grow, furthermore it increases elasticity and soothes inflammation.

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Compounds from sturgeon cartilage, among other benefits, protect cartilage from damage caused by free radicals. Among other benefits, sturgeon cartilage increases vitamins potency necessary in the formation of collagen. Extracts of spinal cord (single string) and sturgeon cartilage is a dietary supplement for those who want to have a life without articulated pain and anticipate problems with cartilages. Cartilage is a form of connective tissue but denser. It also contains cells (chondrocytes), fibers and a lot of proteoglycans. Chondrocytes are the cells that are responsible for the making and maintenance of the ground substance (matrix) in cartilage, and they do so under difficult conditions of lacking a direct blood supply, and under low oxygen levels. The number of chondrocytes in cartilage tissue decreases with age.

The composition of adult articular cartilage consists mostly of water (about 70-80%), along with collagen fibrils (about 10-15%), proteoglycans (about 5 to 10%), and various other proteins. Of the three most prevalent components of human cartilage (water, proteoglycans and collagen) it appears that proteoglycans are the most affected by nutritional supplements.

There are over 200 manufacturers that use cartilages and spinal cords in the production of dietary supplements. It is usually marketed in concentrations of 200-750 mg per tablet. In a box that sells for € 40, on average, we find 75 g of spinal cord (single string) extract powder and sturgeon cartilage. It is sold as a raw material for the price of € 17 - kg. The finished product sells at a price of € 400 - kg base material included.

Following the processing of sturgeon meat and leather it results in a percentage of 30% of the biological mass of the sturgeon, consisting of head, fins, cartilage, spinal cord (single-string) and viscera, such as the liver and tissues resulted from the operation of roughing and disembodying.

There will be a wider range of products offered, out of which we will exemplify three as follows:

		
Cartilage Sturgeon with Vitamins	Omega 3 EPA/DHA Sturgeon Oil	Bones + Sturgeon Complex
Description: OLOOSON Cartilage is a dietary supplement of sturgeon cartilage (Acipenser ruthenus) from 100% certified aquaculture. It contains capsules of dried and powdered cartilage. Sturgeon cartilage contains biological active substances as collagen, glucosamine and chondroitin sulphate, with potent anti-inflammatory proprieties. **Dose:** 3 to 6 capsules daily **Nutritional Information:**	**Description:** OLOOSON Omega 3 is a food supplement of sturgeon oil, extracted from the animal parts with the richest content and perfect balance between Omega 3, Omega 6 and Omega 9. Certified as 100% organic Aquaculture of sturgeon (Acipenser Ruthenus). Omega 3+ improve your cardiovascular health. **Dose:** 3 pearls daily **Nutritional Information:**	**Description:** OLOOSON Bones + is a nutritional supplement od sturgeon oil, spinal cord and cartilage of (Acipenser ruthenus) from 100% organic aquaculture and natural vitamin E. It contains capsules of sturgeon oil, spinal cord and cartilage. Sturgeon is rich in proteins of high biological value, also Omega 3, Omega 6 and Omega 9, glucosamine, chondroitin sulphate and phospho-lipids. Vitamin E has been added in order to preserve the product properly. **Dose:** 3 pearls daily **Nutritional Information:**

Average values	100 ml
Energetic value	192,95 Kcal
Proteins	10,5
Carbon hydrates	22,6
Fats	3,39

Average values	100 ml
Energetic value	897,45 Kcal
Proteins	0
Carbon hydrates	0
Fats	99,7

Average values	100 ml
Energetic value	668,15 Kcal
Proteins	23,67
Carbon hydrates	3,36
Fats	62,42

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The sale price will be $ 30 per vial containing, on average, 75 grams of active ingredient.

14. MARKETING & STRATEGY

Regulatory framework:

Sturgeons are endangered species. The production, processing and export of product and subproduct of sturgeon is regulated under CITES. Companies active on this market are registered with CITES.

Besides registration of operators the CITES regulations also set requirements concerning individual fish marking and reporting and Caviar packing container labelling. HACCP and ISO22000 certification.

The product will comply with FAO CODEX STAN 291-2010.

Our target market:

Our Business will produce and sell larvie and juvenile of sturgeon with accent on Europe, US, Japan and Russian markets.

Penetrating the Market:

In order to penetrate the market our company will rely on the demand of traditional and well established acvaculture farm and food distributors. Direct Marketing methods are used to be selected as suppliers. We will emphasise and demonstrate the unique quality of our product.

Increase of Market share:

Our production will compensate for the unsatisfied demand on the market. On medium and long term we will focus to gain market share form competitors that do not match our product quality (genetic purity, zero desease) and use questionable farming technologies (growth hormones, temperature accelerated metabolism) and have impact on the environment (nitrogen and carbon footprint).

Market share growth strategy:

Our marketing strategies will highlight the top quality of the Sturgeon and the farming environment, zeolite water filtering technologies with aim to become a market reference.

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15. P.E.S.T ANALYSES

15.1. Political International

Official documents relating to sturgeons:

CITIES (The Convention on International Trade in Endangered Species of Wild Fauna and Flora)

1. Resolution Conf. 12.7 (Rev. CoP13)
2. Decisions 13.44 - 13.47
3. Notifications:, 2004/066, 2004/027, 2004/004, 2004/003, 2003/066, 2003/056, 2002/069, 2002/068, 2002/054, 2002/048, 2002/019, 2002/008, 2002/007, 2001/087
4. Catch and export quotas
5. Review of significant trade (AC 16.7.2)
6. Register of licensed legal exporters, processing and repackaging plants for specimens of sturgeon and paddlefish species
7. Documents regarding sturgeon from the 45th Meeting of the Standing Committee
8. The Convention on Migratory Species (CMS, Bonn Convention, 1979)
9. The Convention on International Trade in Endangered Species (CITES, Washington Convention, 1973)
10. The Convention on Wetlands of International Importance especially as Water-Flow Habitat (Ramsar Convention, 1971)
11. The Convention on Biological Diversity (CBD, 1992)
12. United Nations Convention on the Law of the Sea (UNCLOS, 1982)
13. The United Nations Food and Agriculture Organization.

15.2. Political Regional

Regional conservation strategy and management regimes (as required by Resolution Conf. 12.7)

1. Regional Program of the Caspian Littoral States on Joint Management, Conservation and Sustainable Use of the Caspian Sea Bio Resources.
2. Regional Strategy for the Conservation and Sustainable Management of Sturgeon Populations of the N-W Black Sea and Lower Danube.
3. Regional Strategy on Conservation Population of Acipenser Schrencki and Huso Dauricus and Sustainable Development in Heilongjiang (Armur) River
4. Danube Sturgeon Task Force (DSTF)**,** founded in January 2012 in the frame of the EU Strategy for the Danube Region, Priority Area 6 (Biodiversity), aims to coordinate and foster the conservation of highly endangered native sturgeon species in the Danube River Basin and the Black Sea by promoting the implementation of the Program "STURGEON 2020".
5. The Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention, 1979)
6. The Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention)
7. The Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention, 1976)
8. European Community Laws and Regulations
9. Community legislation for species and habitats
10. Community regulation concerning common fisheries policy (CFP)
11. Council Resolution concerning alien and locally absent species
12. European Commission Communication on Biodiversity 2010 and beyond
13. Community regulation concerning the ecological quality of water

15.3. Political Local

1. The species is currently strictly protected in Romania (Law No. 13 /1993 for the ratification of the Bern Convention of 19 July 1979. Monitorul Oficial al Romaniei nr. 62 / 25.03.1993, Bucuresti).
2. Order no. 330/2006 on the conservation of sturgeon populations in natural waters and development of sturgeon aquaculture in Romania Ministry of Environment and Water
3. Order no. 1302 of 27 April 2012 on measures for the recovery and conservation of sturgeon populations in natural fish habitats and development of sturgeon aquaculture in Romania Issued by: MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT No.. 84 of 24 April 2012 MINISTRY OF ENVIRONMENT AND FORESTS No.. 1302 of April 27, 2012 Published in Official Gazette no. 300 of May 7, 2012
4. Order no. 400 of March 19, 2013 the Minister of environment and climate change on the timing and closures of fishing areas and protection zones of living aquatic resources in 2013
5. Order no. 209 of 12 September 2012 of the Minister of Agriculture and Rural Development for the nomination landing points and the first sale of the Biosphere Reserve "Danube Delta" for 2012
6. Order no. 40/1016 of 22 March 2012 of the Minister of Agriculture and Rural Development and the Minister of Environment and Forests on fishing prohibition in 2012
7. Order no. 116/1533 of 22 May 2012 approving measures to regulate fishing effort and fishing quotas allocated for 2012
8. Order no. 45 of March 6, 2012 of the Minister of Agriculture and Rural Development for amending the annex to the Minister of Agriculture and Rural Development no. 449 of 21 August 2008 on the technical conditions for the use of commercial fishing gear and methods admitted to commercial fishing in the sea and continental
9. ORDER NO . 159/1266/2011 approving the conditions to practice recreational fishing / sports practice recreational fishing regulation / sport and recreational fishing permits models / sports in Protected Areas
10. Order no. 44/1195 of 18 February 2011 approving the Regulations on access to living aquatic resources in the

public state to practice commercial fishing natural fish habitats in protected areas
11. ORDER NO . 29/991 of 8 March 2011 concerning the fishing prohibition in 2011
12. ORDER NO . 15 of 28 January 2011 on the conditions for practicing recreational fishing / sports practice recreational fishing regulations / sport and recreational fishing permits models / sports
13. Emergency Ordinance no . 127 of December 28, 2010 for measures for socio-economic development of the area " Danube Delta"
14. Order no. 975/172 of 22 June 2010 Norms on the practice of fishing for family consumption in the Danube Delta Biosphere Reserve
15. Order on prohibition of fishing in 2010
16. Law no. 317 of 13 October 2009 approving Government Emergency Ordinance no. 23/2008 on fisheries and aquaculture
17. Order no. 610/2009 on approval of tariffs for work and services provided by the Biosphere Reserve Danube Delta" at the request of individuals and businesses
18. Order no. 954/2009 amending and supplementing the Order of the Minister of Environment no. 610/2009 on approval of tariffs for work and services provided by the Biosphere Reserve "Danube Delta" at the request of individuals and businesses
19. Order no. 1775 of December 30, 2009 Environmental modification of Order no. 610/2009 on approval of tariffs for work and services provided by the Biosphere Reserve "Danube Delta" at the request of individuals and businesses
20. Emergency Ordinance no . 23 of 5 March 2008 on fisheries and aquaculture
21. Order no. 410 of 11 April 2008
22. Procedure for authorization to the collection, capture and / or purchase and / or marketing, territory or export of flowers mine, plant fossils and fossils of vertebrates and invertebrates, and plants and animals flora, respectively, wildlife and their import - Minister of Agriculture and Rural Development no. 449 of 21 August 2008 on the technical conditions for the use of commercial fishing gear and methods admitted to commercial fishing in the sea and continental
24. Minister of Agriculture and Rural Development no. 342 of 28 May 2008 on the minimum size of individual living aquatic resources in the public domain of the state, the species that can be caught in the aquatic environment.

16. ECONOMICAL

As the international economy slowed due to the pandemic, evidence began to emerge that demand in the global aquaculture sector had increased by 12%.

The slowdown in global economic growth has helped dispel the illusions of the food industry's invulnerability and homogeneity but has not changed the well-established pattern of goods flows from the European market to the emerging market.

Producers of aquaculture products enjoy two key advantages over other sectors in today's macroeconomic environment.

First, the products that will have the best results in a world of "currency wars" are those for which there are few substitutes.

Brand and quality awareness anchors demand in a way that is not likely to be disrupted by temporary changes in relative prices.

Second, organic aquaculture products may disproportionately benefit from the growing share of global production

in emerging and developing economies. Increasing revenue leads to brand awareness, changes in consumer tastes and a shift in spending on high quality goods.

McKinsey estimates that annual consumption in emerging markets will reach $ 30 billion by 2025. The growth in organic food sales is expected to exceed the expected cumulative increase of 150% in total consumption in these economies during this period (6.3%). per year).

It is both ironic and underestimated that the declining relative importance of aquaculture in Europe to the global economy could in fact be the main driver of growth in one of Europe's key industries.

Despite recent pessimism, Reuters analysts expect the global aquaculture industry to grow between 7% and 9% in 2021.

Merril Lynch has confirmed that the growth rate of the aquaculture market has been slowing down, but still expects Chinas share to double from 10% in 2021 to 22% by 2025.

Euromonitor believes that despite the volatile global economic outlook, the aquaculture market is set to continue to prove resilient and is likely to generate an extra high in new sales by 2021.

Its research maintains that China is on track to become the first biggest aquaculture export market in the world in the next five years.

17. SOCIAL

The segmentation of consumers of organic or organic products according to a report published by the World Trade Association shows that the consumption of clean products in Japan occupies 30% of products purchased for food. The number of Chinese who prefer organic has reached 18%, surpassing the USA and Europe where only 16% of preferences stimulate the organic and natural market.

In Romania, more than half of organic and organic consumers have experience of education, living or working abroad. They are more or less influenced by cosmopolitan trends and lifestyles.

These people are best friends with the quality of life and buy products from this category frequently. Research also shows that, in the meantime, an increase in the new middle class has become promoters of certified foodstuffs. These classes are dominated by the younger generations, who are more inclined to spend than to save.

Segmentations such as demographic, psychographic, and behavioral variables are important to help marketers learn more about consumers of clean products.

Under certain conditions there is a greater similarity in the attitudes of customers in different countries than among customers in different countries (Anderson and He, 1998). Therefore, it is important to find out the effective way to segment consumers of organic products.

Research shows that consumers are divided into two groups, "newcomers" and "established consumers", which are identified by consumers' affinity for certified products. "Newcomers" are consumers with lower affinity. They want to differentiate themselves from the table. Popular and well-known brands are extremely attractive to them.

However, "established consumers" are those with a higher affinity for these products. They are successful and experienced consumers. Selective consumption is not a show-off attitude for them, but a life attitude. However, even this group of consumers is starting to pay attention to special offers, if possible.

The influence of the social group as a mediator

A large amount of literature shows that a person's social group affects his buying behavior. Research shows that consumers tend to conform to the majority opinion of their social group members when collecting ideas (Fesetinger, 1954).

Bearden and Etzel support this idea by illustrating that people end up behaving similarly within the group to which they belong (Bearden and Etzel, 1982). Branding or purchasing decisions vary depending on the different influence of the consumer group (Witt, 1969).

Because the consumption of food, organic or organic goods could reflect the value of a person and this can attract people from the same social group to buy similar products (Cole-Guiterrez, 2006).

It can be explained that consumers attract similar people who share the same lifestyle if they have the same attitudes and motivation to buy.

Thus, when analyzing consumer behavior regarding consumption, the influence of the social group seems to be important. Moreover, it was found that visible consumption refers to the influence of the group.

Publicly consumed products can be used as a way to impress others in the reference group (Bearden and Etzel, 1982).

Thus, a visible consumption can determine the individual consumer to buy a prestigious brand in order to obtain the social prestige himself.

18. TECHNOLOGICAL

The OLOOSON Sturgeon Factory is the brand name and is strategically located in Romania, the center of the "sturgeon house" in lower Danube part, although operating globally.

It has developed a number of highly efficient and cost-effective recirculation aquaculture systems (RAS) for hatchery, brood-stock, aquatic research and on-growing operations.

Each system is customized according to the species and production level and are proven technologies in the field.

The company is constantly perfecting the overall performance of its designs and technology at its demonstration and R&D section in our website www.caviarfactory.ro.

The systems we offer is the result of many years of research, pilot project and client feedback. Our online monitoring system allows our staff to technically support clients' projects all over the world.

Engineering

Our resident team of engineers and architects can tailor projects to every requirement and support the project from start to finish on all technical and biological aspects including;

• Feasibility studies and project budgeting

• Conceptual planning using 3D CAD software

• Bill of Quantities (construction on and technology selection)

• Full RAS system design, including bio-planning

• Civil works design; including structural, electrical & HVAC

• Installation; including third-party Quality Control

• Commissioning and technical training

• Online technical and biological support

Filtration Systems

As a result of our own research and development we have developed some of the most advanced and cost-effective filtration solutions available on the market today.

Our modules filter BIO-ZEN 10 m3, is equivalent to 900 m3 standard filter competitors. Zeolite filtration is the most profitable in terms of volume price.

In addition, any hard metal or pollutant will be retained, the filter being regenerated directly in site.

Hatchery technology

Using the very latest technology the BIO-ZEN, water quality in recirculation system makes it suitable for the growth of small and sensitive fish specimens.

Studies using our 'in-house' capabilities have developed new techniques for improving hatchery production, efficiency and knowledge.

The "pilot project" also provides our staff with valuable practical knowledge of how systems perform, therefore helping to consult and advise our clients and provide continuous technical and operational support.

Grow-Out Technology

Our project in large scale recirculation systems is designed to produce unseen and unheard-of performances in terms of production, energy consumption and reduce water discharge.

Complete systems are designed with mathematical modeling techniques, considering investment protection and bio security as a priority and include integrated online monitoring systems to enable our staff to provide remote support and advice at any time.

With all the uniqueness and novelty that our technologies have in common with the natural environmental equilibrium model in which these fish live without the pollution and destruction of the environment, we produce the best quality sturgeon.

19. S.W.O.T ANALYSES

strengths

- Capabilities to produce the purest sturgeon in the world
- High quality water with zeolite filtration
- Technological expertise in an innovative pilot farm
- 14 research themes in sturgeon culture
- Exhaustive understanding sturgeon market
- A tremendous amount of profit
- Correct ethic and innovative positioning in the industry
- Location in the EU, origin point Danube Delta
- The best value for a unique quality to highest price
- Have all qualifications, accreditation and certification
- All systems process relies on modern technologies
- A firm attitude of excellence in saving sturgeon culture
- All sectors covered with exceptional human resources
- Good friendship with the environment without pollution

weaknesses

- Lack of experience in international sales and marketing and gourmet food
- Inadequate financing of the business
- Lack of reputation and massive market presence

opportunities

- Absent from the acvaculture market
- Zero competitors on our faimous species
- Growth in the last five years in the acvaculture market sales by 12% a year
- Keen interest in the market for technologies ECO and BIO
- Farm location in Romania, natural habitat of sturgeons, favourable taxes
- CITES regulations
- Consumers concerned by product traceability, origin and animal welfare
- Create positive social and environmental impact by discouraging illegal capture of Sturgeons

threats

- Politics and economies are primary sources of threats to a brand in the sturgeon industry
- Too little brand exposure and name recognition
- Tax changes
- Financial capacity on the first years
- External business risks
- Unexpected problems

20. DISTRIBUTION AND SUPPLY CHAIN

Input reproductive material:

We will capture the breeding stock from the wild, with due authorization, and start the breeding process in our own hatchery. The breeders will be released after roe and milt collection. We have solutions with alternate suppliers for reproductive material from legal aquaculture farm in Romania. Planning of the business operations kickoff should be correlated with the spawning period in the year that is Feb. – May. Breeding stock suppliers (professional fishermen) or fingerling suppliers shall be issued with purchase orders 3-4 months in advance.

Fish Feeds:

Several reputable manufacturers such as Coppens from Netherland, Aller-Aqua from Denmark, Skretting from Norway and others are available.

These companies operate research centres that formulate specific feeds for different species and their different development stages. They all focus on providing sustainable products and they trace their supply chains to ensure their raw materials come from sustainable production.

Our pilot farm operated using Coppens 25% and live-feed 75% (Tenebrio Molitor).

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Starting with the 2nd year of sturgeon growth, we developed its production facility based on the conversion of organic food grain using larvae of "Tenebrio Molitor". These insects have the ability to convert 90% of the grain into live food. This live food is 100% compatible as the internal structure and composition of the food from the wild sturgeon species. The basis for calculating the business plan was made on industrial food produced by the Coppens company. In reality, the live-food price is much lower than the Coppens food, but the quality is higher. Thus the sturgeon will have the same diet as it would in the natural environment.

Outputs:

Stuegeon juvenile
Vegetable Bio product

21. FINANCIAL RETURN & RISK

21.1. Critical Success Factors and Risks

Success factors:

- *Proprietary technology:* developed by the founders, it has a holistic approach to fish farming. There are many factors that are variable inputs and design variables in the farm. The implementation of this technology will ensure healthy fish in clean water.

- *Experience:* 12 years research in sturgeon industry field and having a pilot project farm operated during the past 6 years.

- *Location, Governance & Taxes:* Romania offers positive effects on business: low tax on income and dividends (16% flat), EU regulations and market access, cost of land and infrastructure, natural habitat for the 4 most important sturgeon species and available natural zeolite.
- *Tracking and Traceability:* Our company will be transparent and will make available to customers information about the water and product quality. The processing facility will implement HACCP and ISO22000 certification. The product will comply with FAO CODEX STAN 291-2010.

Risks:

- *Niche product and Market channels*: Lack of experience in international sales and marketing of acvaculture farm. The Sturgeon is a niche product with a specific consumer base. Traditions, origin, quality, brand name, trust, confidence, packing and customer service play an important role in the marketing, advertising, communication and delivery process. The business plan made provision of expenses to acquire the necessary know-how from consultants.
- Financing and Cash Flow: Inadequate financing of the farm implementation and the operational costs during the first year. Capital expenditures are made to build the required infrastructure to accommodate the fish quantities necessary to achieve the planned production volumes under certain density and water quality parameters. Mitigation of these risks include finding new equity investors.

22. BUSINESS MODEL & MARKET CONDITIONS

22.1. Business Model (see any attached diagrams also)

Our Value Proposition is OLOOSON Sturgeon Factory and is product of a typical farming business.

- Farming facilities setup: infrastructure and organization
- Reproduction, pre-growth and sale of Sturgeon fish
- Marketing and Sales of Strugeon Fish product

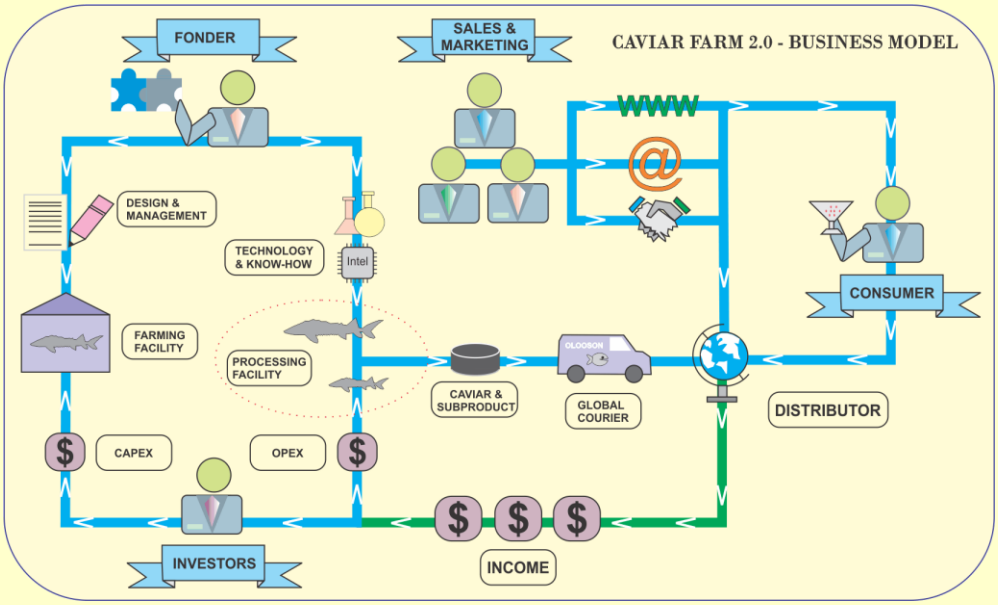
Customers and Channels:

Key suppliers:

The most important supplier are fish feed manufacturers. There are several such well-established companies. We are expecting top quality feeds and grains, predictable price levels, door-to-door delivery on time. We offer them a long term commitment, planned volumes and good payment terms.

Key assets, resources and cost centers:

The technology and know-how of the Founder framed in internal operating procedures constitute the main intangible asset of the business. The most important tangible assets are the Infrastructure and equipment to be purchased and deployed at the beginning of the project. These represent the highest pressure on the cash flow in the first year.



22.2 Model fit with market conditions

There are several factors that make this business model implementation right for current market conditions:

- The depletion of wild sturgeon along with the enforcement of CITES regulation for Caviar trade has created an unmet demand for farmed Caviar.
- The availabilty of Blue Economy, a non-reimbursable EU funds for aquaculture farm start-up financing.
- The current economic crisis lowers our infrastructure and labor costs.
- The limited access to professionals like the founder, who have mastered the interdisciplinary know-how and required technology, creates a significant barrier to entry for potential competitors.

22.3. Our own brand and technology

Technology:

While the business model is that of a traditional farming business its success is based on the use of advanced technology.

The technology involved was developed by the Founder in a pilot farm (3,5 tons of fish) over the past 6 years an has two main components:

1. The specialized know-how, required to control the farming environment and its correlation with the livestock growth and behavior, incorporate patentable algorithms.

2. The equipment: will be custom made, according to the designs and specifications developed by the Founder.

Brand:

The founder has registered a Trademark for the Caviar:



ROMÂNIA

OFICIUL DE STAT PENTRU INVENŢII ŞI MĂRCI

Certificat de înregistrare a mărcii

Nr. 118286

Acordat în temeiul Legii nr 84/1998 privind mărcile şi indicatiile geografice(republicată), pentru marca:

OLOOSON

Durata de protecţie a mărcii este de zece ani cu începere de la data de ***17.10.2011***,cu posibilitatea de reînnoire.
Marca este înregistrată pentru clasele de produse/servicii înscrise în fila din Registrul Mărcilor.
Prezentul certificat este valid numai însoţit de fila din Registrul Mărcilor corespunzătoare mărcii înregistrate.

Confirm cele de mai sus
prin semnarea şi aplicarea sigilului

DIRECTOR GENERAL

OFICIUL DE STAT PENTRU INVENŢII ŞI MĂRCI · ROMÂNIA



23. SOCIAL IMPACTS

23.1. Identify and manage unintended negative social impacts

LOCAL SOCIAL CONTEXT

The social condition of the Danube fishermen communities cannot be understood without analyzing the economic, politic and environmental issues at the same time.

Twenty years after the communism has ended as social, political and planned economic system the local economy has gone downhill.

The general expectations were that the rights taken by communists will be regained, among them the right to go fishing.

Shortly the dismantling of the fishing fleet, the fish processing facilities and repair dockyards has put a big question mark on the economic prospects of many families in the area.

The immediate solution was to practice the traditional revenue generation the primitive fishing.

THE SOCIAL PROBLEMS

- Without respect to the natural environment, in a corrupt politic and administrative environment, the local population found that illegal Sturgeon (in short supply) fishing and Caviar sale a substantial revenue source.

- The current laws prohibit the sturgeon fishing and the lack of solid reconversion programs for the former Danube fisherman leave some of them without options.

UNINTENDED NEGATIVE IMPACT

- The production of farmed Caviar by our company may generate an unintended negative social impact, within the above mentioned fisherman community, because one of their major, illegal, revenue sources may be threatened by legally produced Caviar that will be preferred by consumers.

COMPANY POLICY

- To address this issue we will prove a successful business model that maintains traditions but changes the means.

- We consider that our company has a social responsibility and thinks that publication of information of interest such as best practice guides along with media reports will create in time the right image about our activity.

SUPPLY CHAIN AUDIT

- In relation with our suppliers we will carry out yearly audits to understand the negative social impacts of their business and their plans for corrective actions.

23.2. Our ability and ambition to create positive social impacts

We distinguish several positive social impacts that our business will have.

- Our farm, located in a rural area, will generate employment in the local community. An important part of the workforce involved in the reproduction, processing and packing will be women.

- Romanian rural areas are mono industrial in our case agriculture and are small scale family operations with little or no association and vertical integration.

- More than 40% of Romanian active rural population does not have a job but only 10% of them are eligible to receive unemployment protection pay.

- Meanwhile the local township will benefit a part of the taxes collected from our business.

- The employees will be trained and receive fair pay under applicable legal framework of contracts, social and healthcare protection. It is common for rural residents to engage in informal work without any legal, health and safety protection.

- It is anticipated that the availability of farmed, legal Sturgeon and Caviar will decrease the demand of wild poaching sturgeon also the pressure on the fisherman communities to engage in poaching and the subsequent illegal activities related to the illegal Caviar traffic.

- Traditional fishermen will understand decreasing wild stock resources does not mean the end of their trade and that with little effort they can engage as fish farmers and keep delivering fish to the market as result of sustainable and environment friendly activities.

Company Policies:

- Employee training
- Non discriminatory hiring
- Employee benefits

As the company grows the amplitude of positive impacts will follow.

23.3. A story that illustrates the social impacts

I met Gabriel 3 years ago. He is from Sulina a small town in Danube Delta, the most eastern town of the European Union.

A town that can only be reached by boat. Gabriel was a local fisherman that honoured me by taking me fishing for a day.

We wake up at 5am, had a quick coffee and we navigate for more than an hour with his small boat to the place where he had his fishing nets deployed.

It was not a "good day" because his nets scrambled in vegetation and mud and the catch was only a couple of kilograms of fish with no economical value.

After return we discussed and I opened topic on sturgeons and Caviar and I was immediately asked if I want to buy some. I explained that I don't want to buy because is illegal but Gabriel explained that there is no more "legal" Caviar and the laws are made to be eluded.

Afternoon I asked for pen and paper and drafted the layout of a few pools and a recirculation aquaculture system. On the same paper I proposed him a purchase price that I was ready to pay for legal Caviar, if he builds a farm and grows sturgeons obtained from a legal hatchery.

Today the discussions with Gabriel are about the shape and size benefits of pools, about fish feeds, natural or processed, regeneration zeolites, hibernate or not the during the first year, about adaptive UV germicidal treatment of the water and about the marketing of the 800Kg of Caviar the he plans to harvest within 3 years.

A month ago I visited my friend Gabriel and noticed that the pipe size he choose in his pools were to small. We learn as we go and is good to have someone to guide you.

Now there is a group of 10 friends and neighbours of Gabriel who want to invite me during the winter to lecture them about aquaculture and Recirculation Aquaculture Systems.

They seen how fast are growing the sturgeons in Gabriel's RAS and now everyone wants to start the same way in the first couple of years before moving them into cages in the Danube. Someone said that the 10.000 mile journey starts with a step...

23.4. Measure social impacts

For direct social impacts we will track:

- Number of female employees: Number of People
- Employees Residing in low-income areas: Number of People
- Employment benefits: selection of: Health Insurance, Maternity/Paternity leave, Retirement provisions

These metrics are reported to the Regional Employment Agency

Other:

Metrics for Illegal Sturgeon fishing and Caviar trade:

Based on data about the illegal sturgeon fishing and Caviar trade activity in the Danube Delta as recorded by law enforcement agencies operating in the area.

The Founders and Managers of this business are members of the World Sturgeon Conservation Society and Danube Sturgeon task force.

Within these organizations professional analysis can be made to establish a relevant correlation between the data collected and information about the production of farmed Caviar in Romania.

So the unit of measure will be: (number of illegal cases)/ (tons of legally produced caviar) and to be calculated yearly.

A different approach is to average the price of Caviar from the black market and in a same way compare it to the evolution of legal production quantity.

If concluded that the black market price goes down in correlation with increased production of legal Caviar, one may conclude that the pressure on fishermen to engage illegal activities has decreased.

Given the limited number of cases reported by law enforcement we expect o be able to draw conclusions about the reliability of the metrics after 3-5 years of farmed Caviar production in significant quantities

24. ENVIRONMENTAL IMPACT

The key factor to minimize the unintended negative environmental impact is our choice to use a Recirculating Aquaculture System (instead of a traditional extensive flow-trough system) that rely on advanced zeolites biological and mechanical water filtration technologies to minimize the use of water and remove and process the pollutants into nontoxic residue.

The farm location selection and permitting process will emphasize on factors that minimize the probability of occurrence of negative environmental impacts such as:

Groundwater resources that are evaluated also including sharing users in the area. The total actual flow requirements and projections taken in the account will have to be lower that the worst case available water flow to avoid drain of the aquifer.

Permit shall be obtained from Water Management Authority

The farm Building Authorization process involves preparation by a certified body of an environmental impact assessment.

Its conclusions include recommendations that have to be included in the design parameters and operation plan before the Permit is issued by the Environment Agency.

During the operation of the farm is subject to periodical inspections by the Environmental Agency.

Our suppliers of grain and the quality of their product is key to the success of our business. Production of high quality feeds in sustainable manner is progressing trough R&D.

We will follow the developments on the feeds market and we will set among our criteria in our product choice:

- Traceability and transparency of grain raw materials
- Responsible and certified origin of grain raw materials

We will carry out supplier evaluation on yearly basis to confirm that they follow these principles and their action plan.
The identification of unintended potential negative environmental impacts will be done in a proactive manner during the farm location selection, layout design, permitting and during operation.

24.2. Our ability and ambition to create positive environmental impacts

Our ambition is to operate a farm with zero nitrogen and small carbon footprint, meanwhile to contribute to the preservation of the wild Sturgeons.

DIRECT POSITIVE ENVIRONMENTAL IMPACTS.

- Wastewater quality exceeds legal threshold values

- The availability of farmed, legal Caviar will decrease the demand of wild caviar also the pressure on the fisherman communities to engage in poaching will increase the chances of the wild Sturgeons to survive.

- The company will use it's know-how and infrastructure to participate in sturgeon repopulation programs of the Danube.

- The Founder has an ambition to produce 100% live feeds (mealworms) for the fish and extend this at a level that demonstrates sustainability of the business.

POTENTIAL INDIRECT POSITIVE ENVIRONMENTAL IMPACTS

- Acknowledgement by the other farmers of the efficiency and eco friendliness of the Recirculating Aquaculture Systems compared to flow-trough farming methods.

- It is expected to have more investments in such type of farms that on one hand offer control over the farming environment to obtain better yield and on the other hand will minimize fresh water use and the nitrogen footprint of the farm, by the use of zeolites.

COMPANY POLICIES

- Ensure "best in class" farming environment for the fish
- Continuous veterinary, hygiene and quality control
- Hazard analysis and identification of critical control points (HACCP)

24.3. Measure Environmental Impacts

In order to measure the environmental impact, there are standardized metrics that indicate the pollution levels of the wastewater released in the environment. The units are concentrations of pollutants measured in mg/l for:

- Nitrogen compounds NH3, NO2, NO3 : mg/l
- Phosphates: mg/l
- PH value: PH scale

And others.

There are legal threshold values set. The operational process includes continuous monitoring of these metrics. These are also reported periodically to the local Environment Agency and they will make their own measurements yearly or more often if they consider necessary.

OTHER METRICS

We will calculate the ratio between the freshwater volumes used versus the fish feed volumes. Our technology obtains very good results. We will report and compare the results in science and professional forums.

25. MANAGEMENT TEAM AND PARTNERS

25.1. CEO & COO

CEO & COO - Daniel Dorin Tăbăcaru

Organisational skills and competences:

Owner and CEO & COO at Innovative Farm with expertise in Industrial Electronics, Analytical Chemistry, Biochemistry, Mathematics, Hydrobiology, Ichthyology. Daniel has been a serial entrepreneur since the opening of Romania to the free market in 1990. Daniel worked as team leader in more than 40 local development projects in rural areas and aquaculture financed by European Union. In the start-up phase, his deep experience in project management and implementation will be pivotal in overseeing the farm infrastructure design, construction and vendor selection. He will be also responsible for operations management, cost control, organization chart, workload planning, operational procedures, ISO certification process, risk assessment and mitigation plan, as well as the Key Performance Indicators setup and monitoring.

Daniel is Founder and President of ARIAP (Romanian Asociation for Innovation in Aquaculture and Fishing), Consultant and Manager of Project on Aquaculture Research Unit on Danubius RI - Europe Project on Romanian National Institute of Research and Development in Biology Science, member of W.S.C.S. – WORLD STURGEON CONSERVATION SOCIETY; member EAS – EUROPEAN AQUACULTURE SOCIETY;

Technical skills and competences:

Design Industrial Flows Process and Automation, Computer-Aided Coordination, Expert Systems Fussy Logic, Monitoring and Control Systems, Data Transmission Systems in Real Time, SCADA systems, Design of Recirculation System and Fish Pond, Constructions for Aquaculture, Bio-filtration, Bio-filtration with Zeolites, Aquaponics System, Geothermal Heating and Cooling Systems, Artificial Fecundation, Extraction and Storage of Semen, Artificial Insemination, Anaesthesia and Harvest, Care and Environmental Protection Expert. Daniel launched another company in 1999 focused on tech research, development and services for companies in electronics, analogic and digital signal processing and transmission over IP. This company provided remote transmission services for quality water data and enviromenth in conjunction with GPS location and GPRS Network in Romania and was awarded the 1st prize for R&D in High Technology by the state by Chamber of Commerce for multiple years. The revenues from this business allowed him to finance and dedicate himself during the past 6 years to the study and interdisciplinary research of Sturgeon behavior, habitat, breeding and farming in over 14 themes of international research. As a result, Daniel invented, designed and developed an innovative and completely new farming system. Meanwhile, Daniel was VP of Regional Chamber of Commerce and Industry (1994-96), Team leader within the Romania EU Pre-Accession Programme (1996-98), beneficiary of International Visitors programme of USIA (United States Information Agency) and semifinalist in the prestigious competition of innovative projects aquaculture Fish 2.0. His research, experience, dedication and vision are key to the success of the business. He is the developer of the technology and know-how required. He is responsible to design, plan, implement and lead the farming operations.

Techniques in applied ichthyology and aquaculture system:

Sturgeon sexual identification techniques based on medical imaging and ultrasound; Light and sight of sturgeons**;** Thermal balance and budget of the aquaculture system; Physiology and functioning of sturgeon digestive system; UV (Ultraviolet) germicidal irradiation; Fundamentals of mass balance principles in the aquaculture system; Method and algorithm illustrating interdependence in the aquaculture environment; Correlation algorithm between chemical and physical parameters based on the inputs and outputs of the system; Algorithm for deduction of quantitative and quality of chemical parameters without the need of continuous measurements based on mass balance fundamentals and input/output values; Method for balancing of the general system dynamics between

growth rate; Feeding rate without exceeding allowable toxicity thresholds in the aquaculture environment; Development of triple fuzzy logic to ensure reliable system operation and error cancellation; Development of application for remote monitoring and control of the system over the internet; Energy efficiency improvement – method and device for frequency control of all pumps.

25.2. CTO

CTO - Design Farm Construction and Hydraulic Engineers

Daniel Dragomir - 32 years

Organizational skills and competences

From 2008 to present Organization Grundfos Pumps Romania SRL, Technical Director, Director of Projects. Job Description: Provide technical support for the organization Grundfos Pumps Romania, and for its customers (contractors, plumbers, etc.).

Coordination preparation for participate deals in auctions. Coordinating implementation projects pumping systems and automation. Works Coordination mechanical, electrical and SCADA pumping stations, treatment and purification.

Tahal Romania SRL, Position Design Engineer - Project Manager.
Job Description: Preparing projects for water supply systems in villages and PT + SF phase DDE. Technical assistance to the execution systems. Coordinating Collective in developing documentation and studies related to projects.

Technical skills and competences:

Specialist works hydro utilities, leadership. Expert in hydro-technical building design and hydraulic pumping systems. High experience in design changes negotiate.

Ability to monitor and ensure program/project meets specification and design communicate, in written and oral form, detailed and technical engineering information, guidelines and standards/statutes/codes/regulations to various audiences to ensure that they understand the information and the message, and to seek compliance.

Ability to deliver presentations suited to the characteristics and needs of the audience such as negotiating solutions among different parties or providing expert testimony. Strong SAP, Intelligently in hydraulic modeling.

Techniques in applied aquaculture system:

Applies mathematical, physical, hydraulics and engineering sciences to the most complex creative work as design a recirculation aquaculture system, investigation, evaluation, planning, and design of engineering/intensive aquaculture projects. Worked on the design for the pilot system on Innovative Farm company and its predecessor Interactive Business company to run in the last 4 years.

25.3. Fish Farmer Engineer

Ioan Breteanu - 42 years

Organizational skills and competences:

He has considerable experience working in extensive and intensive farms. It has a good experience in extensive and semi-intensive culture of carp and a good knowledge of sturgeon culture. He worked with all four sturgeon species in the Danube existing.

Technical skills and competences:

Has real skills in charge of: calculating food regime, which is often done by automated computer systems; monitoring the health of the fish and their treatment; planning breeding programs and increase efficiency programs to achieve maximum adherence to environmental standards and laws and understanding how to implement it in practical application; ensuring water supply is of sufficient quality to stock; being aware of the different techniques of water management, adaptation to new technologies develop and learn practical skills; paying attention to detail in order to avoid losses near expensive fish which can be a high-risk industry; the skills of handling stock such as fish, spawning, grading and harvesting; update knowledge of fish health and nutrition, keeping records of stocks.

Techniques in applied ichthyology and aquaculture system:

Worked on the pilot system on Innovative Farm company and its predecessor Interactive Business company to run in the last 4 years.

25.4. Veterinary

Andrei Mihaita - 34 years

Organizational skills and competences:

This position is mandated by law and must be filled by a certified professional. Mihaita is a licensed Veterinary Physician. He participated part-time in the research activities for our pilot farm. Meanwhile, he is Veterinary physician at another company responsible for reproduction, hatching and maintenance of aquaculture systems. During his professional and academic career he acquired experience in Sanitary surveillance and medical treatments, applied science in food processing equipment and industry, environment protection and improvement, sample collection, chemical analysis, environment protection legal framework.

Technical skills and competences:

He have a long experience 10 years in day-to-day care of livestock, gender separation, reproduction, farming environment monitoring, harvesting and product packing, sample collection and analysis monitoring. Another important role is related to sanitary and hygiene control and corrective actions. During project ramp-up he will be responsible to obtain the necessary Sanitary and Veterinary permits. During operation he will maintain the required communication and reporting with the Sanitary Veterinary Agencies.

Techniques in applied ichthyology and aquaculture system:

Works together with fish farmers and other personnel to maximize the health of the fish stock. He is able to identify disease and develop a treatment or prevention plan. Are right and are legally able to prescribe certain drug treatments or medication.

Common duty day by day is animal husbandry, fish nutrition, disease diagnosis and treatment, supervising epidemiology, microbiology, and water chemistry analyses, and all other factors implicate in assure maintaining fish health. Worked on the pilot system on Innovative Farm company and its predecessor Interactive Business company to run in the last 4 years.

25.5. Laboratory Manager

Stefan Lucian - This role will be filled in the 1th year of operation.

Organizational skills and competences:

This position is mandated by law and must be filled by a certified professional. Stefan Lucian is a licensed in Bio - Chemistry and Physics. He participated part-time in the research activities for our pilot farm. Meanwhile, he is Bio - Chemistry at another company. During his professional and academic career he acquired experience in scientific research, applied science in aquaculture industry, environment protection and improvement, sample collection, chemical analysis, environment protection legal framework.

Technical skills and competences:

He performing laboratory tests in order to produce reliable and precise data to support scientific investigations; carrying out routine tasks accurately and following strict methodologies to carry out analyses; preparing specimens and samples; constructing, maintaining and operating standard laboratory equipment, for example centrifuges, titrators, pipetting machines and pH meters; ensuring the laboratory is well-stocked and resourced; recording and sometimes interpreting results to present to senior colleagues; using computers and performing mathematical calculations for the preparation of graphs; keeping up to date with technical developments, especially those which can save time and improve reliability; conducting searches on identified topics relevant to the research; following and ensuring strict safety procedures and safety checks.

Techniques in applied ichthyology and aquaculture system:

Worked on the pilot system on Innovative Farm company and its predecessor Interactive Business company to run in the last 4 years.

25.6. Sales and Marketing Manager

Michael Storn - This role will be filled in the 2th year of operation.

Organizational skills and competences:

It has a good experience at national and international sales and marketing activities within the company "7 Star" production company specializing in jewelery and articles on luxury. Achieves marketing and sales operational objectives by contributing marketing and sales information and recommendations to strategic plans and reviews; preparing and completing action plans; implementing production, productivity, quality, and customer-service standards; resolving problems; completing audits; identifying trends; determining system improvements;

implementing change. Determines annual and gross-profit plans by forecasting and developing annual sales quotas for regions; projecting expected sales volume and profit for existing and new products; analyzing trends and results; establishing pricing strategies; recommending selling prices; monitoring costs, competition, supply, and demand. Identifies marketing opportunities by identifying consumer requirements; defining market, competitor's share, and competitor's strengths and weaknesses; forecasting projected business; establishing targeted market share. Meets marketing and sales financial objectives by forecasting requirements; preparing an annual budget; scheduling expenditures; analyzing variances; initiating corrective actions. Accomplishes marketing and sales objectives by planning, developing, implementing, and evaluating advertising, merchandising, and trade promotion programs; developing field sales action plans. Improves product marketability and profitability by researching, identifying, and capitalizing on market opportunities; improving product packaging; coordinating new product development. Sustains rapport with key accounts by making periodic visits; exploring specific needs; anticipating new opportunities. Provides information by collecting, analyzing, and summarizing data and trends. Protects organization's value by keeping information confidential. Updates job knowledge by participating in educational opportunities; reading professional publications; maintaining personal networks; participating in professional organizations. Accomplishes marketing and organization mission by completing related results as needed.

Technical skills and competences:

Holds good skills in the fields of selection, orientation, training, assigning, scheduling, coaching, counseling, and disciplining employees, communicating job expectations, planning, monitoring, evaluation, review and contributions jobs, planning and review measures compensation, implementation of policies and procedures.
Skills/Qualifications: Financial Planning and Strategy, Marketing Concepts, Positioning, People Management, Territory Management, Sales Planning, Competitive Analysis, Understanding the Customer, Product Development, Client Relationships, Creative Services

Techniques in applied ichthyology:

None

25.7. Chief Financial Officer

Mihaela Criste - Managing Partners - Conta Smart Solutions srl

Now, this activity is outsourced to a professional company - The operations of the pilot project farm are simple and generate a low number of transactions. In the future things will change and Mihaela will become an intern and develop a finacial department. These will be monitored and approved by at least two members of management team. The bookkeeping, periodical reporting, tax filing, payroll calculation will be outsourced to a professional company.

Vacant - This role will be filled in the 1th year of operation.

Organizational skills and competences:

This position is mandated by law and must be filled by a certified professional. It is necessary, a bachelor's degree at an accredited college or university or equivalent work experience. Is preferred completion of a master's degree at an accredited college or university or equivalent work experience. Must by Certified Public Accountant (CPA).
Experience: The Controller or Chief Financial Officer level. Five to seven years of financial experience and management experience with the day-to-day financial operations of an organization of at least 30 staff persons.

Assist in performing all tasks necessary to achieve the organization's mission and help execute staff succession and growth plans. Train other staff on raising awareness and knowledge of financial management matters. Work with the CEO on the strategic vision including fostering and cultivating stakeholder relationships on local, state, national levels and international as well as assisting in the development and negotiation of contracts. Participate in developing business strategy, specifically: assist the CEO and COO in identifying new funding opportunities, the drafting of prospective programmatic budgets, and determining cost effectiveness of prospective service delivery. Assess the benefits of all prospective contracts and advise the Executive Team on programmatic design and implementation matters. Ensure adequate controls are installed and that substantiating documentation is approved and available such that all purchases may pass independent and governmental audits. Provide the COO with an operating budget. Work with the COO to ensure programmatic success through cost analysis support, and compliance with all contractual and programmatic requirements. This includes: 1) interpreting legislative and programmatic rules and regulations to ensure compliance with all international, national, local and contractual guidelines, 2) ensuring that all government regulations and requirements are disseminated to appropriate personnel, and 3) monitoring compliance. Oversee the management and coordination of all fiscal reporting activities for the organization including organizational revenue/expense and balance sheet reports, reports to funding agencies, development and monitoring of organizational and contract/grant budgets. Oversee all purchasing and payroll activity for staff and participants. Develop and maintain systems of internal controls to safeguard financial assets of the organization and oversee federal awards and programs. Oversee the coordination and activities of independent auditors. Prepare of the annual financial statements is in accordance with all regulation and law in fiscal and other field. Attend Board and Staff meetings; including being the lead staff on the Audit/Finance Committee. Monitor banking activities of the organization. Ensure adequate cash flow to meet the organization's needs. Serve as one of the trustees and oversee administration and financial reporting of the organization's Savings and Retirement Plan. Investigate cost-effective benefit plans and other fringe benefits which the organization may offer employees and potential employees with the goal of attracting and retaining qualified individuals. Oversee the production of monthly reports including cash flow projections for use by Executive management, as well as the Audit/Finance Committee and Board of Directors. Assist in the design, implementation, and timely calculations of wage incentives, commissions, and salaries for the staff. Oversee Accounts Payable. Oversee business insurance plans and health care coverage analysis. Oversee the maintenance of the inventory of all fixed assets, including assets purchased with government funds (computers, etc.) assuring all are in accordance with federal regulations.

Technical skills and competences:

Knowledge of accounting law, fiscal law and other regulations and compliance requirements and appropriate Fiscal Code of Romania and international. Must have expertise in current trends, developments, and theories in organizational development, human resources, and program operations. General office software, particularly the Microsoft Office Suite and ERP software (or other similar general ledger software) and use of databases. Communicate effectively in both written and verbal form.

Techniques in applied ichthyology:

None

25.8. Team & Governance

Scientific board advisory:

Sturgeons experts: WSCS World Sturgeon Conservation Society: Paolo Bronzi – President;

Members in board of WSCS: Jörn Gessner, Thomas Friedrich, Leonardo Congiu, Mikhail Chebanov, Nikolai Mugue, Qiwei Wei, James Crossman Mohammad Pourkazemi;

Senior Scientist at Danube Delta National Institute on Radu Suciu PhD;

Organizational skills and competences for all:

Sturgeon related research projects, head of Sturgeon Research Group; Fishery and aquaculture engineer with expertise in Analytical Chemistry, Biochemistry, Mathematics, Hydrobiology, Ichthyology, Fish Pathology, Genetics, Topography, Design of fishpond, Constructions for Aquaculture, Fishing Tools.

Technical skills and competences:

Experience in managing field and laboratory research acquired by leading over 20 research projects at DDNI Tulcea. I was the Scientific Secretary of the Danube Delta Institute during 1988 – 2004. Representing Romania at CITES Conferences of Parties and Standing Committee Meetings : 2001- Paris; 2002 - Santiago de Chile; 2004 – Bangkok; 2007 – Den Haag. Alternate member for Europe of the CITES Animals Committee (since year 2007)

Techniques in applied ichthyology:

Sampling of tissues for DNA extraction, non-destructive blood sampling, sampling of stomach content, electrophoresis for screening of isozyme variability, DNA extraction and quantification, PCR, RFLP, *in vivo* and *in vitro* chromosome preparation , fishing of eggs and larvae, fishing of YOY and adult sturgeons, tagging of fish using CWT / FFT / PIT, acoustic telemetry, satellite telemetry, age determination using scales and sections through bony tissues, photography including microscopically, artificial propagation in cyprinids and sturgeons, cryopreservation of sperm of sturgeons , electro-fishing, tranquilization of fish using electro-narcosis.

CITES expertise – Head of CITES Scientific Authority for Sturgeons of Romania (since 2003)

25.9. Legal Advisors

Legal Advisors: Mr. Popescu Valentin

Organizational skills and competences:

Is a lawyer specialized in a particular field. He is employed is committed to ensure a good writing company contracts, to prevent from any legal disputes with customers, suppliers and authorities. Has many and important duties: provide advises to the staff of the company, to give legal support during company policies, disputes, employment, contracts etc. To advise read and review all the legal documents of a company and make sure they are properly made and drafted. The lawyer must have knowledge in the field of protection and protect intellectual property rights and trademarks of the company.

Technical skills and competences:

Strong analytical skill is needed. Good oral and written communication are a must. Intuition is necessary with a good decision-making capability is required. Must have a strong knowledge of the law. Discipline and punctuality are necessary. Well organized nature with a grasp for knowledge is really helpful. Time management is equally important. Various companies contact them for legal support and registrations. Either the advisor visits the company head or important individuals visit the office of the advisor regarding the issues. A legal advisor encounters client from different fields. Generally, a firm/company ties up with a particular advisor. For that time being he handles all the legal activities of the firm. Legal advisors must possess a college or university degree in law related field. Along with that, they must have a master's degree in the same subject. They should attain licensure from the bar before staring practice. Experience is must before becoming a professional legal advisor

25.10. Stakeholders

Stakeholders:

- Fonders: Without funding from the European Union this project is not possible.
- Government and European State Aquaculture Agency - indirect beneficiaries – Europe - Regional or National agencies:
- Sanitary and Veterinary Authority – Inspection and control of products, livestock health, production and storage environment. Entitled to seize products and cease operations until corrective action is performed.
- CITES – (Convention on International Trade in Endangered Species) – www.cites.org . Sturgeon are endangered species. Sturgeon and Caviar trade is regulated. 178 countries adhered to CITES. Regarding to our business the key aspects are the registration of the plant as processing /export and traceability of livestock and caviar. Fingerling purchase is traced with parents ID. After gender separation fish are implanted with unique ID tags. Labeling of Caviar containers is regulated according to CITES recommendations.
- Other government stakeholders: Occupational Health & Safety Agency, Environment Agency.

Customers:

- Acvaculture companies (registered with CITES) or consumers (end users). Establishment of long-term partnership with distribution companies is beneficial for both parties. Key operational elements such as processing volumes and logistics can be optimized based on such agreements. From financial perspective the committed sales volumes and pricing are foundations of a solid business.

Suppliers:

- Accounting and payroll service: to be selected after a competitive offer and reputation / recommendations among certified providers. The accurate bookkeeping and reporting are key factors for the investor confidence. They are required to be able to produce reports in formats according to Investors requirements (i.e. GAAP) besides the national framework.
- Packaging supplier: Specialist manufacturers. The tins internal coating has to meet food safety standards. The juvenile sturgeon life may be compromised by inadequate packaging and quick delivery.

Employees:

- Employees with technical and farming background will be trained on job. They have to observe operational procedures, schedules, hygiene. Commitment to NDA and confidentiality is required.

26. CURRENT FINANCIAL POSITION (SEE SPREADSHEETS ALSO)

26.1. Assumptions about cash flow projections

EU Funds

Non – reimbursable EU funds are possible to by available to finance establishment or expansion our project. Our project matches EU funding objectives: Protect and Conservation a Endengic species, Job creation, Farmed species diversity, High value products, New Technology, Increased productivity and Low environment impact.

If we will be eligible we will apply for non-reimbursable EU funding.

27. IMPACTS

27.1. Our value proposition & Market Impact

Our business will provide first options quality Sturgeon farmed in an innovative recirculating aquaculture system.

The product quality is ensured by a controlled farming environment that mimics natural climate pattern and natural biochemical processes.

27.2. Social, Environmental or Systems Change

The most important social and environmental impact of sturgeon farming is the decreased demand for wild stock, which is significantly depleted and heavily illegally fished. Another important impact relates to the environmental footprint of the farm. Today a significant share of farmed Sturgeon is harvested from fish grown in flow-through aquaculture systems. This farming method pollutes the environment by disposing higly concentrated toxic nitrogen compounds (ammonia, nitrites, nitrates, phosphorus). In flow-through systems the farmed fish are also exposed to contamination with pollutants and pathogens. Unlike the flow-through farms, we will establish a recirculating system farm where the water quality, and subsequently the wastewater's the bio-chemical parameters, are maintained within better-than-natural levels.

This will ensure product traceability, create more demand for our product, and eventually drive more farms to use recirculating systems.

27.3. Quality

Unquestionably, the product quality is a strong element that can position any product in the organic and bio category. The general perception is subjective when this criterion in considered, but items such as those that follow below are potential objectivity:

27.4. Lipo protein complex composition of Sturgeon meat

Undoubtedly, among the inorganic elements the most important one is water. Its proportion in sturgeon reaches very high values which may even exceed 95% of their total weight. The ones of organic nature are divided into 3 different groups: Carbohydrates, Lipids, and Proteins. Carbohydrates are compounds called ternary, because they are formed by only 3 elements: C, O, H. They are sugar - coated compounds with properties similar to sugar. Among the most important, worth to be pointed out are glucose, fructose, saccharose, cellulose and glycogen. Lipids may be part of live matter under two aspects: as constituents of the live matter itself, being then called cellular lipids, or as oleic, stearic, palmitic, etc.

Among the complex lipids or lipoids, lecithin is worth to be pointed out. Protides are the most important substances of protoplasm. They are composed of C, O, H, N and are thus called quaternary, although they may well eventually contain S, P. The Protides that are part of live matter may be simple proteins such as albumin, globulin, etc., and compound proteins such as the glycoproteins. Simple proteins can be divided by digestion giving place to the albumens and peptones and later to amino acids.

The chemical characteristic of the amino acids enables the composition of ones with the others, giving rise to the so-called polypeptides. Thus, the possibilities of the isomers of a protein molecule formed by a hundred amino acids are centillion. This explains the possibility of the specificity of proteins. That is to say, that each species, animal or plant, has its own and characteristic proteins, which has been proven through serological analyses.

Furthermore, it is even considered that there might exist individuality in the proteins.

From the nutritional point of view, the true importance of fish rests upon its protein, vitamin and fat contents. As regards fish fat, and without regard to the fact that this might be the one with higher energetic power, it exhibits several characteristics that make it particularly interesting. In the first place, a series of very important non-saturated fatty acids take part in its composition, like Clupanodonic, which is among the acids that produce the classic fish smell and specially the smell of stale fish.

Secondly, precisely as a result of these unsaturated fatty acids, fish fat not only stimulates the formation and deposit of cholesterol, but it also destroys the existing one. If we add to the aforesaid that it has a low sodium chloride content, it becomes clear why cardiac patients, whose blood pressure control (a problem of sodium chloride in the blood) and of arteriosclerosis (a cholesterol problem) is essential, show an interest for this type of fat. In the specific case of the sturgeon, we have to keep in mind that every 100 grams of fish gives room to 65 calories. The chemical composition of this fish is as follows:

For 100 grams of fish:

Proteins	11	%
Fat	3,50	%
Moisture	85	%
Vitamin A	2.400	U.l.
Vitamin D	250	U.l.
Vitamin B1	100	Micrograms
Vitamin B2	82	Micrograms
Sodium	74	Milligrams
Potassium	162	Milligrams
Calcium	9,5	Milligrams
Magnesium	11,5	Milligrams
Iron	1,2	Milligrams
Phosphorus	175	Milligrams

In addition to being delicate and tasty, caviar is a powerful tonic for its abundance in vitamins and phosphorus, its nutritional power and easy digestibility.

Compared to the other fish, fresh or salted, the caviar surpasses all of them. In relation to veal meat, it contains 16 times more fat, provides three times the number of calories and besides having a greater amount of proteins, it is richer in vitamins A, B1, B2 and D. The acidity of Caviar varies from 4.50 to 8.50 milliequivalents, according to the type.

Among its components, Caviar has a protein from the egg membrane, ichthulin, which is very rich in tyrosine (insoluble in water but soluble in alkaline solutions). It also contains albumin and nitrogenated extractive products, xanthic acid bases and amino acids.

It also contains vitamins A, B1, B2, B6, D, E, and H. It contains 17 of the most important amino acids: Isoleucine, Lysine, Methionine, Cystine, Phenylalanine, Tyrosine, Threonine, Tryptophane, Valine, Arginine, Histidine, Alanine, Aspartic Acid, Glutamic Acid, Glycine, Proline, and Serine. This complex, in its fatty part, is composed of Triglycerides, Sterols and Phospholipids, and its fatty acids are: Lauric, Myristic, Pentadecanoic, Palmitic, Palmitoleic, Hexadecadienoic, Estearic, Oleic, Linoleic, Gadoleic, Eicosapolienoic, Erucic, Docosapolienoic.

28. FINAL CONSIDERATION

This business plan represents a business parameters inventory which includes a note of high subjectivity. The information data was gathered in high percent over the internet in the course of over a 4 year and a part of this data needs updating. The financial part of the business plan is modeled upon the list prices without it being negotiated. We estimate a volumetric discount of 15-20% to the equipment, utilities and labor. The marketing side needs a specialty audit which, unfortunately, could not be found in Romania. The processing side needs adaptations between 3-5 suppliers, from which could result differences to what we provided.

As we gather new information we will actualize the business plan and we will send you a new, updated version. In the case in which there is an interest in this project or to build sturgeon farms in other countries, we are available for discussions.

In the hope that this business plan lecture has been interesting to read, we assure you of our deepest respect.

Daniel Tabacaru
CEO – OLOOSON Sturgeon Farm

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