



**Executive MBA 2016**

**BUSINESS CONSULTANCY PROJECT**

*A business plan for an early start-up:  
The case of “ARGO seed fertilizing”*

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Student Name: Christos Kadoglou

SID: 1101160008

Supervisor: Prof. Vangelis Souitaris

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## **ARGO – seed fertilizing**

### **Executive Summary:**

ARGO is a newly founded start-up that provides an innovative seed enhancement technology. A specially designed fertilizing agent is used to treat seeds. The treatment increases germination of plants as cotton, wheat, sunflowers, rice and more. At first stage, ARGO will launch this treatment for cotton seed. Real test has been implemented the last two years proving that with this treatment a farmer can achieve 15% increase in production capacity. The farmer follows exact the same practices and the treatment shall be applied to farmer's own seeds. The cost of treatment is just a fraction of the profit from production increase, making offering very attractive.

The business model for the first three years is to focus only in cotton and to serve customers directly. End-users can bring their seeds in our premises or upon quantity request treatment will occur at their premises by our personnel. An action plan is already created for establishing a treatment facility if demand exceeds expectation. For future growth it is expected that strategic partnership with seed distributors/manufacturers will allow the treatment of higher quantities. This will give access to a broad clientele and will allow us to use existing distribution channels.

The potential for ARGO is enormous. In Greece more than 2,3 millions stremmata (1000m<sup>2</sup>) are used for cotton and it is expected that in three years time ARGO will achieve to treat seeds for 50.000 stremmata which is only 2.1% of the market. At that point the business will turn profitable. The annual repetition of treatment is a key advantage for this business and it allows to expand further the activities. After successful launching of our service in cotton segment, ARGO's intention is to broaden the offering portfolio to other varieties as sunflowers, wheat and rice.

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## **1 Introduction**

ARGO is a start-up which the author is trying to develop as business. The product is called “ARGO –seed fertilizer”. This product came as collateral activity of four engineers on nano-sized coatings for different applications. The idea is to treat a plant with a special fertilizer agent at the seed stage. The result is a stronger and more productive plant. There is a process invented that ensures the contents of this agent to penetrate the seed shell and the whole process is very efficient.

Entering the market with such a new offering is the next step. This business plan is created after investigation of several options in all activities. Decisions taken during this consultancy project are presented here. It is expected this document to guide the founders to establish this business in terms of organization, operation -prior and after-market launching.

## **2 Methodology**

. The offering is unique and innovative so there is no previous experience. This makes collection of data rather difficult. Therefore, this plan is focused on qualitative data rather than quantitative to be used for decision making and planning.

### **2.1 Primary Data**

Empirical data were gathered in the form of interviews with potential end-users. The end-users were selected as trusted sources to collect actual data concerning agricultural practices and costs. To these people our offering was presented and their participation in future testing was investigated. There was a list of questions during this interview in the form of open questions. This list can be found in Appendix A. The answers were used internally to understand how the farmers are practicing, what their decision process is and what their needs are. The interviews were informative for

ARGO team and not for creating data for further statistical analysis. The collected data were primarily used to:

- To define fields of applications based on costs and other technical specifications
- Initiate an investigation to apply our treatments to other plants beyond the existing range
- Collect valuable information for applying our technology in the field
- Realize the perception of end-users for our application
- Evaluate current activities

All these helped us to formulate this business plan for bring our offering in the market.

## **2.2 Lab data and fieldwork**

An important databank was built from laboratory experiments towards building a range of offerings to different varieties of seeds. Furthermore, two real cases were implemented in terms of annual farming activities. Results are used as case studies towards the promotion of our offering.

## **2.3 Secondary data**

The author used material from courses he attended as part of Executive MBA program. A lot of web resources and literature has been used to analyze and interpret the data collected with previous methods.

## **3 Literature review**

*The Holy Grail of agriculture:* Increasing production per square meter of land is a quest for humanity since the beginning of history. From the past when people were cultivating with no mechanical means since now that extraordinary machinery is used,



the purpose is to produce more. Nowadays, science and technology have changed rapidly the way that farmers are working by using tools, advanced machines, special seeds or techniques.

Farmers were observing which plants were growing in a better way, and really quickly they understood that the seeds could be mixed to create stronger and more productive plantation. The last two centuries this is performed in a much more systematic way by scientists and companies, which are trying constantly to evolve plantation in terms of creating plants that can produce more. The last two decades under the threat that the planet cannot feed so many humans, more and more countries are allowing the use of GMO (Genetically modified organism) seeds, which is a very profitable business for the seed companies. However a rising concern is created about the impact that these modified seeds can have on humans and environment. Professional farming is based on use of Hybrid seeds and not GMOs because these are banned in EU. Globally though competition is using GMOs, so, it becomes a necessity for farmers to find alternatives for strengthening the seeds used. On the contrary, a fast growing concern from consumers about the quality of food has increased the demand for higher quality products with no use of chemicals as in the bio and organic.

The World Bank and the United Nations have made a "black" forecast: They estimate that there will not be enough food for the world's population in 2050 when it has risen from the seven billion today to 9.6 billion. Some researchers, in fact, identify the origin of this deficiency in 2030 (well understood, just 13 years from now). The reasons; severe weather phenomena such as droughts and floods, financial difficulties and political upheavals in underdeveloped countries. Considering the above, the World Bank notes in its study that, in order to avoid shortcomings by 2050, the world community must produce at least 50% more food than it produces today. How feasible is this? Can bio products cover such high demand? The agricultural sector is in transition with a "compass" two main features: the results of technological progress in reducing production costs and improving the quality of agricultural products. At the same time, the new farming developments as "agribusiness" and "precision farming" are used to describe this new framework and shows the path towards a much more sophisticated farming where on one hand quality of products should remain high as in

bio category and production capacity should be strong to compete towards non bio [1]. This change of status is where our offering fits in the market.

### *3.1.1 Cotton Market*

Within EU, cotton is mainly produced in Spain and Greece. European Commission is protecting against Asian and African cotton by providing financial support to the European crop. There are several measures that help farmers to anticipate the increased cost. It should be mentioned that cotton is a very sensitive plant and its cultivation is very complicated. Unfortunately, there is extensive use of fertilizers and other chemicals which leads to higher production but with increased cost. Lately, more people realize that quality is far more important and there is a momentum towards better quality cotton and also for cultivating organic cotton.

The cultivation starts in March and ends in November. For the season 2016-2017, in Greece, 45.000 farmers have used 2.343.000 Decares (Decare is a tenth of hectare equals to 1000m<sup>2</sup>). They have produced 677.000.000kg of cotton and the average sale price at the field is 0.44 € per kilo. A Decare (so called stremma in Greek) is producing from 250kg up to 550kg of cotton. The seeds are in form of processed pellet which contains among other anti-parasites and probiotics. The market of seed consists from the following players: Two global players are dominating the market: Bayer and DuPont. Then, there are a series of Greek companies that they offer their seeds as: Hellapharm, K&NE, S.ANDRIOTIS S.A., ALFA, ELANKO HELLAS, SPYROU. It is not provided any info from the greek companies if the seeds are greek originated. Some companies claim that they provide Greek varieties of cotton, but this is not investigated further.

## 4 Opportunity

### 4.1 Our offering: Seed fertilizer

The offering is a special fertilizing treatment for seeds. It consists from a formula which is the fertilizing agent and this shall be applied in the seeds with specific way in order to be successful. This treatment improves germination of the plant thus a stronger plant is growing. Having better germination among other benefits it produces more corps and the plant become more resistant to weather conditions as heavy rain and wind. The seeds are treated under specific humidity together with a special mix of organic material, micro-nutritions and more. The formula and its development is the “gold” of this business. The process is designed to assure these materials will penetrate the seed’s shell and they will react with seed’s core. There, a nutrition process starts which helps the plantation to grow faster and stronger. The treatment is different per variety of plant and it has been optimized for several different species as wheat, cotton, rice and more.

Real tests have been performed. In these tests, our treatment is used in real conditions and the results are impressive. Wheat has increased productivity up to 30% and cotton up to 15%. All tests have been implemented in real conditions by volunteers (farmers) and fields were cultivated with treated seeds near regular seed to be used as control. The results were evaluated by comparison and it is safely assumed that all other conditions are the same.

### 4.2 Analyzing the market

In order to scan the business environment, we have conducted a PEST analysis and we prepared the Porter’s Five Forces chart. Pest analysis provides a description of macro-environmental factors: Political/Legal, Economic, Social and Technological. It is necessary to consider them when designing the business plan. Additionally Porter Five Forces chart offers a very good overview for the intensity of competition.

#### 4.2.1 PEST analysis

**Political/Legal factors:** Legislation is very strict to anything around the human food chain and this offering is a treatment in the seeds of plants. EU legislation has foreseen the use of fertilizing agents for the seeds (EC 2003/2003). However Greece keeps the old-fashioned way to categorize fertilizers according to consistency in specific material. So, until the EU regulation is fully adopted by Greece, there will be always a concern how to comply although our offering does not contain any hazardous substance.

The last few years, there is a tough negotiation between countries and organizations for applying free trade rules as TIPP and CETA. The whole process is kept secret from public and one key issue is the permission of use for GMOs. EU-people and states have dropped in the past such proposals, but these new trade rules they will probably play the Trojan horse for such products. If GMOs are adopted the agriculture in Europe will change forever and it is unpredictable how this will influence our offering. Farmers will have the ability to use GMOs to increase productivity instead of methods like ours.

**Economical factors:** Farmers are struggling by the drop of prices for their products at the main market. However, consumers do not see this price reduction due to the middle men in the process. Furthermore, production cost has been increased minimizing the profit margin. Thus, the profitability of our offering is very attractive in the current economic condition

On the other hand there is a growing concern about the quality of food and how it is produced. The sales of so-called bio/organic products are booming and people are looking for fruits and vegetables produced with the use of less or no poisonous chemicals. However, such farming has the disadvantage of higher pricing due to less production capability. Nevertheless, farmers and other professionals in the field, they see that bio-products is an emerging market since customers are willing to pay this premium. So, to speak this is the case with organic cotton which recently is highly price since demand exceeds supply.

Large scale farming and logistics are also a game changing factors. Consolidation in all stages of production causes a significant cost reduction. Farmers choose to participate in groups or union to achieve better prices for their supplies and for seeds of course.

Furthermore, new logistic channels are using conservation techniques and they are capable to transport fruits and vegetables all around the globe at a very competitive price. So, there is no surprise to see in European market garlics from China and lemons from South America. Thus, agribusiness is facing the benefits and threats of global trade.

**Social/Cultural factors:**

There is a consumer's momentum towards to bio-products and against the use of hazardous substances during production. This has created new habits to consumers and the agribusiness sector is following this trend. New SMEs and unions of farmers are providing premium products or new forms of traditional ones. The last decade a lot of young people became farmers and they are eager to embrace new technologies and to provide new offerings. So, agribusiness have become a very dynamic industry and gathers increasing attention from society.

**Technological factors:** Internet has revolutionized the agribusiness. Sharing of information and direct contact between consumers and producers made agriculture a very active field where new trends and developments appear every day. Traditional players of this field as the multibillion chemical companies that produce fertilizers, seeds and other agro-supplies are spending billions to bring in new products. These companies have succeeded to be important part of the production. For example, for cotton only seeds processed in form of pellet are allowed to use and this is a threat for ARGO if seed companies will allow the use of our treatment in their seeds.

*4.2.2 Porter's Five Forces*

Porter's Five Forces Model of competitive analysis is a model used to identify the intensity of competition (Porter, 1985). The seed fertilizing is a very innovative product and there is no evidence that competitors are providing directly this service.

a. *Rivalry among competing firms:* There are very few similar products in the market and they are called seed boosters. Usually, these are sold by chemical industries that provide fertilizing agents. The reputation of such products is not strong and customers are very skeptical. However, these companies are strong and very aggressive in marketing their portfolio. The market of seeds and other agro supplies is dominated by big global players as Monsanto, Bayern, BASF, DOW and more. They have a tremendous amount of resources and capabilities on all aspects from R&D, to promotion. They compete each other in all levels. They are focused on bringing new products in the market since this will them a competitive advantage towards the others.

b. *Potential entry of New Competitors:* This technology is not new. A lot of publications describe how this mechanism is working. Seed enhancement is already a process fully commercialized. Nevertheless, unlike the others, ARGO is very successful on triggering germination inside the seed shell and this makes our company a unique player. Sooner or later, seed companies will try to produce similar agents and treatments. ARGO's advantage is that the product has been tested in real conditions so we are a step ahead from the competition and we have the time advantage to create and dominate this emerging market. However, the competitors are welcome because there is no market when a single player is present.

c. *Potential Development of substitute products:* Seed companies have succeeded to set restrictions on how seeds are produced and traded. In varieties as cotton, pelleting of seeds is obligatory. So, perhaps a substitute product will be able to give the same nutrition in the core of seed –as we do- during pelleting. At any case, global players are trying constantly to improve their seeds by means of creating Hybrids or by adding agents in the pelleting process or even by GMO. Therefore, the time advantage sooner or later will be gone.

d. *Bargaining Power of Suppliers:* The seed companies mentioned before are big chemical companies and they are also producers of raw material that it is used in our fertilizing agent. ARGO's offering is based on organic material that can be easily found so to that extend the risk for finding alternative supplier is low. However, the seeds where our offering is applicable –for example as cotton- are also provided by these

companies. So, there is a risk that a company would refuse the use of our agent in their products. This will create problem to our potential customers.

e. *Bargaining Power of Consumers*: Farmers are under strong pressure to reduce sale price although their cost is increased. Thus, they always look alternatives to reduce their cost and they have created unions that work a purchase groups. All the participants stay in-line with decisions of group.

If we succeed a group to accept our solution this will be a case study for the rest and our reputation will be rocketed. On the other hand, the farmers will negotiate pricing in terms of purchasing at lower price as group.

### **4.3 Analyzing the business environment - SWOT**

A thorough analysis took place on how internal strengths can exploit possible external opportunities or compensate external threats. A list table of SWOT analysis is given in Appendix B.

#### **4.3.1 Strengths**

This start-up is offering a unique service in a new market as the seed boosters. Unlike most of similar start-up, the R&D work has been implemented up to 80% level. Thus the company is almost ready to offer a complete product for cotton which means that soon it can have some revenues. The missing part at the moment is the certification of fertilizing agent and this can be implemented in a short period of time by members of the team. Furthermore, the team is capable to further develop the formula for other varieties.

The company consists of people which are working years together and they have a common thinking how to develop the business. It was a common decision to leave the lab and try to commercialize this research work. Role sharing and support to each other is one of the advantages of this team. Furthermore, the team has the same perception how to serve customers: to create a premium service that end-users enjoy its benefits.

The team has long discusses on the limitations of the team itself. It is understood that although the technical skills are highly developed, assistance in sales and in marketing is urgently needed. Furthermore, it is common belief that this business needs strategic allies to develop, thus the set-up must be made accordingly.

#### 4.3.2 Weaknesses

Indeed the team has recognized its abilities but still it will take some time to transform scientists to entrepreneurs. Especially, when there are no available commercial partners to assist in issues like distribution and access to the market a lot of shortcomings are expected. Furthermore the IP is not protected yet. So, the existing limited resources should be spent on registering a patent for the fertilizing agent. Thus, the seed treatment cannot be outsourced to any strategic partner until the IP is protected.

#### 4.3.3 Opportunity

The last decade, financial recession caused a lot of troubles but also created opportunities. Agriculture is an economic sector which was struck heavily but now is recovering. The crisis has changed the mix of people involved and the way they are doing business. Young people entered the sector and a momentum for premium and bio products is pushing farmers to accept new technologies. As it is mentioned in the regulation 834/2007 *“Such products shall be protected from contact with prohibited substances as well as from co-mingling with non-organic products during production and processing processes (arts. 11, 18, 19)”*. To that extend EU Commission has already recognize that fertilizers can be performed by new material and a changing in legislation is ongoing (EC No2003/2003). This is convenient for our service since a new framework for fertilizing the plants is already applied in other EU states and we can license the product there until Greece fully comply.

Extensive use of internet and social media offers sharing of knowledge and experience which is valuable in agriculture. Farmers used to observe and discuss locally the activities of other farmers in their neighborhood. Now, they have the



opportunity to get informed and find solution from others all around the globe. This can help our offering by “spread the word” promotion.

#### **4.3.4 Threats**

The seed business has changed since the 80s when EU forced farmers to use specific seeds for unifying the production. Since then, hybrids dominated the market and a lot of people are afraid that soon GMOs will enter the market. The use of GMOs is aiming to increase productivity. In such occasion, the plants will be already boosted and our agent could not make a difference that justifies its cost. This is a possible indirect competition and it is something to consider especially for cotton. Cotton farming incorporates already extensive use of chemicals during the year since cotton is a crop not used in human food chain. So, the possibility to use of GMO seeds in the future is a dreadful but real option for the people and for our business as well.

Globalization of agro-economy is also a high risk factor for the future. EU is now protecting its farmers by setting barriers to import products from countries outside EU where labor and land cost are much lower. However, there is always risk that this policy will change especially for products outside the food chain. Then, the EU market would be flooded by cotton from Asia and Africa, and this will crash our local producers. Perhaps, we could see this as a chance to develop our business globally but this is something out of the scope of this business plan.

## **4.4 The business model discussion**

As already discussed this project has valuable offering as product and as service. Successful entrance of a product depends on factors that are beyond the product itself, as positioning in the market, branding and making the offering to cover customer needs. Finding the appropriate distribution channels is a decision that affects the entrance in the market.

In our start-up, resources are limited so performing an extensive market research cannot be funded. Additionally, marketing a bigger portfolio that includes several types

of plants requires extensive knowledge and resources that are not available in the current situation. This strongly affects the business model to follow.

Limited resources and small production capacity lead us to follow a direct sales strategy and instead of market research to follow a “pilot” strategy. The idea is to make some more real tests and to start with the approach of “spread the word” with minimum amount of advertising cost. This means interpersonal promotion and direct sales. The first consumers will be monitored closely by intensively asking them for their feedback. This feedback can be in the form of satisfaction surveys, review forms or to demonstrate their case motivated by a reward program. This action will allow us to create a pool of real cases that will be used to increase market awareness of this technology and specifically of our product. Furthermore, it will highlight customers’ needs. The team has no experience in agriculture, so it will take some time to understand how to serve our customer in an optimum way and then this would be promoted.

Competition in seed boosters is already in the market but people are very skeptical about them. Their cost is significant. Most of the available products claim to be very effective and then fail to meet farmers’ expectations. This is a threat since the market is suspicious about this technology and we must overcome this. By direct sales and creation of a feedback program, we aim to transform the farmers to active end-users that share their experience with our product. The next step will be to organize a community of users which will “spread the word out” for our products through reviews and social media.

The direct sales is the only strategy that will enable us to experiment on consumers’ needs without risking the whole project. Furthermore, creating small-scale sales successfully will bring income for developing a production capacity and it will be the green light for accessing the market with other offerings. The experience from the first attempt will be valuable for the “**how, when and where**” to market the next product. Additionally, the direct sales model can be more profitable since middlemen are excluded. A further increase of sales sooner or later will bring the question to continue the same model or to change. Deciding at the current stage will be a constraint for the future since there are endless possibilities after a successful launching of the products. What it seems desired from the founding team is to continue product development of

existing or new products. So, a possible option is the strategic alliance with a retail player who will take over the distribution of the products

## **5 EXECUTION**

### **5.1 The promotion plan**

Agriculture is a profession that most practices are learned by experience. The success in crop depends in infinite factors. For a long time now, people were observing what influences their plantation and they were acting accordingly. Science has explained the empirical practices. Technological developments have changed a lot of them. So, agriculture has stopped being a traditional business where the farmers' activities were exactly as what their predecessors were practicing. Still though, a typical way to market something in agribusiness is through practice. This is the way to gain trust. As long as your product or service is considered trustworthy then farmers start buying it. It is commonly asked from farmers "is it working?". This is where a new idea like ours will face difficulties. Active examples should be created where potential customers would see the benefits of using our offering. This is already our first priority and we are running real field tests in several locations in order to create success stories for ARGO.

The next step is to bring ARGO in the digital marketing. A website will be created and several activities around the social media will be organized. Social media such as Facebook, Instagram, Pinterest allow potential end-users to meet with current customers that have tried our service and this fit to our policy: prove our value through real tests (Stokes, 2008).

### **5.2 Value proposition**

ARGO is offering a unique way to increase production for cotton fields initially and for more varieties of plants to come. The offering consists of a product (the

fertilizing agent) and a treatment as a process to apply this agent, therefore it is preferred to be called as a service. This service can be easily adopted by the end-users since farmers do not need to change the type or brand of seeds they use. This technology is applied in all cotton seeds. And the increase in production is universally to 15% (for cotton). This is a strong point for the future of this business. The end-user identifies easily the increase in production on his land since it is using the same seeds. Important to mention is that this offering is not against the seed companies which means that ARGO is not competing them but rather gives added value to their seeds.

For a farmer, there is a series of benefits that make our proposal strong: The cost of our treatment is a fraction of the profit gained by increasing production. The seed fertilizer gives more cotton at the same land with no special or extra activities from the farmer. Furthermore, this seed treatment reduces -to certain extent but not eliminates- the risk from extreme weather conditions. This can be easily realized as following: A treated seed grows to a stronger cotton plant, which is more resistant to weather as strong wind, heavy rain or long dry periods. There is not conclusive data because it is difficult to quantify the impact of weather storm in a field. However, this comes as feedback from the farmers who have used treated seed in real conditions. They were emphasizing in the fact that stronger and faster growth of plants had significant advantages in the cultivation as for example they were able to collect cotton earlier before autumn's raining.

The treatment does not contain any hazardous substances but only organic material. It takes place as seed enhancement and this maximizes the impact in the plant with the minimum exposure to the fertilizing agent. It becomes very efficient and only a small quantity of agent is needed, so the cost is low. All the above are very attractive for customers that are also interested to produce eco-friendly products since this treatment complies with the regulation.

Our offering is also very attractive for seed pelleting companies. The treatment can be installed in their premises so they have a large scale treatment for reduced cost and easy handling. Then, they will be able to offer treated seeds at a competitive cost. Their customers will be able to get treated seeds at the same distribution channel they get their regular seeds.

### 5.3 Consumers profile

Our potential clientele can be categorized based on size and activity. They can be served according to their characteristics:

- A. Individual producers/farmers: These are people that require limited quantity but they can be the best promoters of our activity. Usually, these people are struggling from price competition and from the increase of production cost. The average age is young and they are eager to new technologies to increase production. They take risks for applying new innovative products since they want to grow their business. They are keen to bio-products as an emerging market and they realize the necessity to offer products with added value at a premium price. For such customers, seeds of cotton can be treated in our premises. The farmers will bring their own seeds and they will pick them up after a couple of days ready to use. This kind of activity requires time investment in interpersonal relationship and it incorporates a lot of working hours in arrangements and organizing the process. However it creates a pool of people which can increase the market awareness significantly and attract the following bigger customers.
- B. Big farmers/ unions of producers: They possess bigger pieces of land and they can use greater amount of seeds. They are either middle-aged or young farmers which have inherit this business. These people are more skeptical to change. The benefits of our offering should be proven to them. This is the key for success. When they see from smaller producers that this technology is increasing the production they will be interested in. For such customers, seeds can be treated on site. This can be done upon agreement on quantity of seeds and if the appropriate facilities are available. Personnel from ARGO will treat seeds locally using appropriate machinery.
- C. For seed distributors/seed pelleting manufacturers: Cotton seeds are sold after pelleting. Thus, there are companies which make the pelleting and distribute the cotton seeds. These companies are under severe competition

and they are eager for adopting new technologies for improving their seeds. Such customers should be more like business partners for ARGO and at any chance we should not compete with them. Therefore ARGO is not intending to sell treated seeds but we will treat seeds given to us from the end-users. The reason is simple. These seed companies are well established in this business and they are backed by big multinational chemical companies. Therefore they have great amount of resources. So, to speak these companies can put ARGO easily out of business if they feel threatened. It is better to have them as customers. They have a list of clients and they can promote our technology. They are price sensitive but quantities are high. At this occasion, seeds will be treated at their premises and will be sold with a premium from them.

#### **5.4 Growth Model & Pricing**

The business will be based in direct sales to farmers and their seed suppliers. In the beginning there is a capacity of resources that treatment can be provided internally in our premises. An inventory of machinery will be created in order to provide this service remotely on site for bigger customers and/or union of farmers. The logistic cost of seed material is rather significant therefore it is important sooner or later to create partnership with seed distributors/seed pellet manufacturers so we can apply our treatment in the source of the supply chain.

The key feature of our offering is that it is repetitive business. When a farmer adopts our technology, then he continues with our service in annual base. This means an annual cost for him and constant turnover for us. Thus a special care is taken that the cost should be only small percentage of the benefits for the farmer. A target price is set for the end-users (farmers). The treatment of seeds should not increase significantly the cost of farming. It is considered for small individual farmers the cost of our treatment in their seed it should not exceed 6 euros per 1000m<sup>2</sup>. It should mentioned that the benefit from our process for the years 2016 and 2017 was on average of 25 euros per 1000m<sup>2</sup> as concluded from our real tests.

For big producers, an agreement can be made based on tonnage. For seed distributors and pelleting companies, a strategic alliance incorporates a much more complicated pricing model which will be based on quantity and quality of service as well. Furthermore, such partners should also promote our treatment so price is also connected with increase of sales.

## **5.5 Positioning vs Competition**

ARGO's offering is a technological solution towards increase of production. The most significant features of our offering are that our treatment doesn't modify the plant neither contain hazardous substances. It is focused at the seed stage of the life cycle of the plant thus it has higher efficiency comparing to other forms of treating the plant as for example spraying the leaves or spreading fertile material in the land around the plant.

ARGO offering is a premium treatment for the seeds and it creates added value for the farmers. It comes to satisfy the need for increased production without the use of extra machinery or chemicals. It is also an eco-friendly solution. This distinguishes us versus competition. Indirect competition consists from products as improved hybrids seeds or chemical agents. These are not comparable to our offering however can steal some customers from us.

Consumers have become more sensitive concerning the quality of their food and this is a game changer in the agribusiness. A lot farmers see this as an opportunity to concentrate in smaller production of better quality products. In our case the production of organic cotton is a unique opportunity for us. Organic cotton demand is increasing constantly and people are willing to pay the premium. It is a niche market and our offering can play a significant role.

## **5.6 Mission statement**

To build a mission statement we focused on the things that we provide:

Our mission at ARGO is to provide a unique and eco-friendly solution to farmers to achieve better production and increase their profit at the same piece of land.

Our solution is an innovative treatment of seeds. The farmers do exactly the same job in their land but they get stronger and more productive plants. More production means more profit for them.

Our greatest asset is that with our treatment, our fertilizing agent will enter efficiently the seed shell and it will boost plants germination. Using our fertilizer at seeds, minimizes the quantity of the agent although the impact is maximized.

In all our operations, agents and treatments are made by no-hazardous substances. Our method cause no change in the plantation except the fact that it has better germination which leads to a stronger plant.

Our goal is to bring innovation that offers to our clients a significant advantage in a tough market.

## **5.7 Vision statement**

Offer an eco-friendly solution to increase production of plants by treating the seeds. Increase plant's production in a revolutionary way.

## **5.8 Future products and services**

Seed treatment is a brand new type of service in this market so there are some different options considered based on success and future demand.

The company will start with cotton. This has the advantage that cotton is outside the human food chain – although some sub products are used as food in animal breeding- therefore the process can be easily certified and launched for use. The appropriate licensing process for other varieties as sunflower, wheat will take place in parallel to business growth in cotton industry. So, in the near future the service - that is



now provided only for cotton- it will be available for sunflower seeds, wheat, rice and more.

## **5.9 Identify threats and make strategic alliances**

The most serious threat for this business are the copycats. As already mentioned the service is actually two things: the fertilizer agent and the process. The fertilizer agent is on the process to be patented although the formula will be kept secret. However, the theory behind the chemical composition is published and sooner or later big players on the seed industry will try to create their own formula. Rising of competition is not an immediate threat since it will create a market where we have entered first. So, ARGO has a time advantage to improve the formula and the process. The process itself it is easily copied and there lies the real threat from competitors that promise similar results but they do not have such efficient agent. This will spoil the market and it will make difficult the acceptance of our service.

One way to overcome this is strategic alliances. For ARGO, seed manufacturers and distributors are NOT just customers. These are potential partners. Any co-operation with such companies is well accepted since it will give access to the end-user pool. On the other hand it minimizes the possibility to meet these companies as competitors in the future.

## **5.10 Sourcing and fulfillment**

For the fertilizing agent, two global chemical companies have been chosen as suppliers for the raw material. These two suppliers are producing chemicals for industrial applications and not agricultural products so it is unlikely that we will face competition in the future. After purchase, the materials are brought in the lab where the agent is created in concentrated form. Due to concentration factor, the capacity of the lab is considered enough to cover significant quantities for the Greek market of cotton. In the fortunate event that demand exceeds this capacity then a production facility can be established in less than 3 months. There is an action plan for creating a treating facility and a location is already available for this purpose.

### **5.11 Technology – Roadmap for Development of product**

The technology is under constant improvement. The main obstacle is that testing new versions of treatment is a very time consuming procedure. The lab test takes up to 3 months to confirm that any new version is better than the previous. However, real tests are far more difficult because they can start in March and end in November as this is the life cycle of cotton plant. There are promising new versions at the lab, but testing them is on hold. Launching the product is our first priority for the time being. It is also very important to develop similar treatment for other plants with annual crops. Argo has already promising results for wheat, rice and sunflowers and in the pipeline more will be tested.

### **5.12 Distribution**

This service can be distributed in two ways: The treatment to be done by ARGO and the treatment to be performed by seed companies. This first refers to provide this service to end-users. The fertilizing agent will not be given in terms of a “bottle” to end-users because then there is a danger to jeopardize the product if the treatment is not applied correctly. On the other hand, partnership with seed companies aims to have seed treatment externally at their facilities under the ARGO’s supervision. Then these companies will be able to distribute treated seeds with a premium.

### **5.13 Milestones to meet**

In order to succeed in this business a roadmap of small targets has been created. The time planning is rather difficult since these activities are influenced by the seasonal effect of the crops.

The following milestones are important for the continuation of this business:

- Concerning the development of the product:
  - a. Protection of IP for the cotton seed fertilizer. Patent to be registered

- b. Creation of similar seed fertilizer agent and design the process for
    - Sunflowers
    - Wheat
    - Rice
  - c. Annual testing of improved versions
- Concerning the development of the business:
- a. The progress of the business is measured by the size of land cultivated with treated seeds of cotton. So, this year it is expected to exceed the 1000 Decares (which is equal to greek term stremma =1000 m<sup>2</sup>). The next year to exceed the 10.000 Decares, then 50.000 Decares.
  - b. The establishment of treating facility is expected to be requested in 2 years.
  - c. Partnership with a seed manufacturer will give the opportunity to meet large demand

## **5.14 Key assumptions and Risks**

The success of this business is based on the repetition of the provided service on annual base. The cotton plant and the other cultivations of our interest are annual and it is assumed that the end-user will keep using our treatment for its seeds every year. The service is beneficial for the farmers so it is a reasonable expectation.

For future partnership with seed companies: it is assumed that they will integrate treated seeds in their portfolio. Then, they will dynamically promote it to end-users who will start using it and keep buying it every year.

Treating seeds with an agent has its limitation when the plant is used for bio-farming. The composition of our agent is environmentally friendly so it is assumed that it will comply with the legislation. However, this type of legislation is brand new and still

under negotiation. Therefore it would be defined in the near future if our service is complying with the bio-demands especially for plants in the food chain.

The technology used is published and our success is the way that treatment it takes place. Our fertilizer agent has been modified to have maximum impact in the seed and it is assumed that it would be possible to protect the intellectual property of the agent composition. However, to protect the IP of the treatment as a process it is a much more complicated where confidential content should be published and this enhance a risk for giving valuable information to competitors.

## **6 TEAM & COMPANY**

### **6.1 Team**

The founders' team consists of four engineers. Three of them have significant experience in the field of special chemical compositions and they are behind the development of the agent composition. The fourth has long experience in developing projects and it will take over the business development. The founding team has early realized that R&D activities are completely different path from developing and bringing a new product in the market. So, each one of the founders is responsible for specific activities. Since this Business Plan will be published in IHU repository, the founders will be named A, B, C and D due to confidentiality concerns. More information can be given at request.

### **6.2 Organization**

At the start-up phase, the organization consists from only four people so all of them have more than one role. Main functions have been assigned to the founders although interaction is absolutely necessary between the members.

CEO, CFO & Business Development: Founder A is overlooking the business operation and he is responsible for creating the business function that will lead for

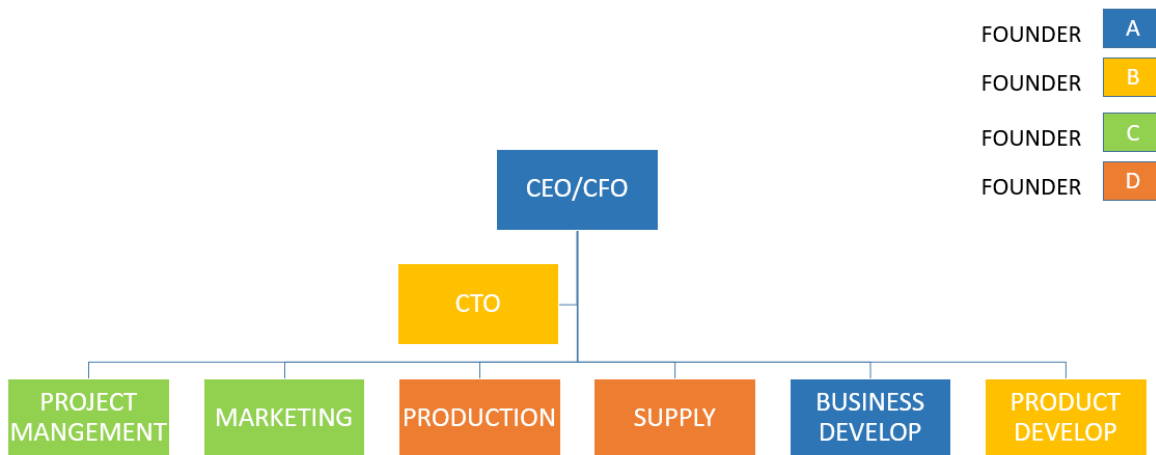
Sales. The CEO is also responsible for the Accounting (which is outsourced) and all financial reporting and activities.

CTO & product developer: Founder B is responsible for the lab activities in order to run the facility and he is also directing R&D activities. He is responsible for developing treatment to other varieties of plantation with internal tests.

Project Manager and Marketing: Founder C is responsible for performing real tests with end-user and all the activities around them. Furthermore, he overlooks the promotion especially for making partnership agreements. His responsibility is to identify the specification and criteria for future partnership with seed manufacturers.

Production and Supply Manager: Founder D is responsible for the treatment of the seeds for existing and future customers. He is also responsible for the creation of treating facilities. He is also responsible for the supply chain of raw material to the end product.

Organization Chart is given below:



**Figure 1: Current structure of start-up ARGO**

As can be seen flat line structure has been chosen since the founding team is a working group long time now and all members are used to contribute at their maximum ability.

One key priority is to create a sales force by hiring sales people. Achieving sales will bring in valuable income and also information from the market. The salesmen will be under the supervision of the project manager and they will be actively involved in the real testing. One key function of the sales people is to monitor the results that end-user succeed with the treated seeds. This will be a valuable feedback for the organization.

Next step would be to hire marketing people. The founder team has limited experience on this field so, it is necessary to bring on board people capable to create and run marketing campaigns and more.

The purpose is to have all teams within the company directly related to the development team. This interaction is necessary to keep everyone up-to-date with the internal and external environment of the company.

## **6.3 Company's overview**

### *6.3.1 Intellectual property*

All intellectual property will be registered under the firm's ownership. It will be the intangible asset of the company and non-disclosure agreement will be signed from the founders. A confidentiality agreement will be requested from all hired people.

### *6.3.2 Legal structure*

All possible legal entities were examined, it has been concluded that the most appropriate legal form is IKE (Private Company). The Private Company has significant advantages, such as:

- Capital requirement of €1
- Founders can be employed by the company thus have reduced pension contribution (EFKA)
- Easily such company is transformed from a manufacturer of material to sales office
- Flexible to create schemes with bonds or shares to attract future investors
- Easy to merge, acquire or dissolve

### *6.3.3 Location & Facilities*

The business will have customers and partners in Greece. In the fortunate event that demand come from abroad, the founding team has already discussed the possibility to move the business in a more tax friendly country. Anyhow, since the operation for the next two –three years will be only in Greece, the legal establishment will be here. An issue to address is when Greece will follow the EU legislation. The last decade Greece has adopted legislation as it was requested from European Commission but it was never active. This among other reasons has created the unstable business environment in Greece. If this is the case then the company will be forced to move its legal establishment.

The company will start operating in a space with combined possibilities to be office and lab. The space is already found and a preliminary agreement for renting it is available. Furthermore a warehouse is already available for rent (property of one from founders) to become the future production facility.

### *6.3.4 Taxation*

Business tax in Greece is high. Currently, there is a 29% tax on profits plus a 15% tax on dividends paid.

### *6.3.5 Funding*

Greece is not a friendly business environment for a start-up and other enterprises. Operating in Greece can prevent funding from venture capitals or angel investors. However, unlike the current trend of software start-ups, this company is providing a service together with a chemical material designed by the founders and soon patented. This give an advantage to ARGO to attract funds from Greek banks and EU programs which promote Greek entrepreneurship. Furthermore, by setting the customer at the center of our marketing strategy and let the end-users to promote the service through real case it is a kind of experiential marketing approach (Schmitt,1999). This, it might be time consuming but it will create an attractive profile to potential investors.

## 7 FINANCIAL PLAN

### 7.1 Forecast and Assumptions

The future in business is unpredictable. Therefore all data below are projections of expected business growth. There is an attempt to be conservative about the development of the business for the first three years. So the following assumptions has been made in order to complete the expected inflows and outflows for the next three year:

#### 7.1.1 Funding and expenses:

- National Development programs to be used. Seek of funding from EU/Greece development program [ESPA] can contribute on purchasing machinery, employ people, cover marketing cost and operation expenses as renting. However, there is uncertainty if such program will be implemented, so it does not appear in the business plan.
- For the first two years the founding team does not require any salary.
- The estimated start-up investment in company's assets and start-up expenses is estimated on 40.000€ (Appendix E, Table 1). The company will not purchase high value assets such as buildings.
- For the needs of the business a used cargo car will be purchased
- The company will rent a space capable for mixed use (office and lab) and it will create the legal establishment there. This office of 150m<sup>2</sup> is covering the initial requirements of the company.
- Equity capital provided by the founders of up to 80.000€ in cahs to cover establishment plus operation expenses for the first two years.

#### 7.1.2 Turnover projection

This can be found in Appendix E, Table 2 and it is concluded by the following assumptions:



- The first year, it is expected that 1000 Decares of cotton (decare =1000m<sup>2</sup> so called stremma in greek) will be served for our customers. The use of concentrated agent is almost 50 liters and the treatment will be performed locally in the office. An average charge of 6 euros will be applied (excl VAT)
- The second year, it is expected that 10.000 Decares of cotton will be treated, with an average of 5 euros per Decare. Treatment will be performed locally in the office.
- The third year, it is expected that 50.000 Decares will be treated and the average price will be 4.5 euros. For such quantity, extra machinery will be purchased and a warehouse facility will be used.
- It is not expected for the first three years to have any strategic partnership with any seed company. Therefore the sales projection will stop at three year. The quantity of 50.000 Decares makes this business viable.

The cost of goods sold (Appendix E, Table 3): consists of the expenses for creating the fertilizing agent plus the cost to provide treatment as service. So, there are expenses that are depended to the quantity of treated seeds, and expenses that are fixed. The treatment of seeds is a seasonal activity that occurs during winter. So, Labor cost is measured in a sense of working hours plus the appropriate insurance for temporary workers with hourly compensation. Similarly, the use of Vehicle for the first year is covered by a used cargo car, but when quantities are higher, then a temporary leasing of small truck will be necessary.

Administrative expenses (Appendix E, Table 4): The founders will not get any salary for the first two years. The revenue cannot cover the salary expense and this is indirect contribution of founders to the company. However, the social security cost for them, it will be covered from equity. A request for loan from bank will be implemented but it is unlike to be accepted since ARGO is a new entity with no financial record. Therefore, it is not expected to hire people for this period of time, since revenue is still small.

Overhead expenses (Appendix E, Table 5): A first important step for growth is to protect the IP of this business. It is estimated that a total expense of 20.000€ will be

required to register and patent the agent and the treatment for cotton. This amount would be spent in the first two years.

Depreciation (Appendix E, Table 6): is calculated based in the legislation of Greek tax office. There is an uncertain factor of 10% since the cost of acquired assets is only a projection.

## 7.2 Projected Income Statement

Income Statement	2018	2019	2020
Revenue	6,000.00 €	50,000.00 €	225,000.00 €
<b>Cost of goods sold</b>	<b>8,030.00 €</b>	<b>25,850.00 €</b>	<b>74,800.00 €</b>
gross margin	-2,030.00 €	24,150.00 €	150,200.00 €
gross margin (%)	-33.83%	48.30%	66.76%
Administrative Expenses	13,750.00 €	12,650.00 €	56,650.00 €
Overhead Expenses	35,420.00 €	23,980.00 €	23,760.00 €
<b>Operating Expenses</b>	<b>49,170.00 €</b>	<b>36,630.00 €</b>	<b>80,410.00 €</b>
EBITDA	-51,200.00	-12,480.00	69,790.00
Depreciation	6,325.00 €	6,325.00 €	3,575.00 €
EARNINGS BEFORE TAX	-57,525.00	-18,805.00	66,215.00
NET TAX	0.00	0	19,202.35
NET INCOME	-57,525.00	-18,805.00	47,012.65

### 7.3 Projected Balance Sheet

Balance Sheet (end of year)	2018	2019	2020
<b>Current Assets</b>			
Cash	0.00 €	0.00 €	47,012.00 €
Accounts receivable	0.00 €	0.00 €	4,000.00 €
Inventories	1,475.00 €	1,455.00 €	1,876.80 €
<b>Total Current Assets</b>	<b>1,475.00 €</b>	<b>1,455.00 €</b>	<b>52,888.80 €</b>
<b>Fixed Assets</b>			
Equipment	25,000.00 €	18,675.00 €	15,100.00 €
Accumulated depreciation	-6,325.00 €	-6,325.00 €	-3,575.00 €
<b>Total Fixed Assets</b>	<b>18,675.00 €</b>	<b>12,350.00 €</b>	<b>11,525.00 €</b>
Intangibles (goodwill, patents)	15,000.00 €	59,579.00 €	59,543.00 €
<b>TOTAL ASSETS</b>	<b>35,150.00 €</b>	<b>73,384.00 €</b>	<b>123,956.80 €</b>
<b>Liabilities and Owners' Equity</b>			
<b>Current Liabilities</b>			
Accounts payable	9,675.00 €	18,805.00 €	0.00 €
Income Tax Payable	0.00 €	0.00 €	19,202.35 €
Accrued expenses payable	0.00 €	367.00 €	0.00 €
<b>Total Current Liabilities</b>	<b>9,675.00 €</b>	<b>19,172.00 €</b>	<b>19,202.35 €</b>
<b>Long-term Liabilities</b>			
Business loans, Bank mortgages			
<b>Total Long-term Liabilities</b>			
<b>Owners' Equity</b>			
Invested capital	80,000.00 €	80,000.00 €	59,176.00 €
Earnings	-59,543.00 €	-20,824.00 €	45,578.45 €
<b>Total Owners' Equity</b>	<b>20,457.00 €</b>	<b>59,176.00 €</b>	<b>104,754.45 €</b>
<b>TOTAL LIABILITIES and EQUITY</b>	<b>30,132.00 €</b>	<b>78,348.00 €</b>	<b>123,956.80 €</b>

## 7.4 Projected Cash Flow

CASH FLOW	2018	2019	2020
<b>Inflow</b>			
Investment Received	80,000.00 €		
<b>Net Cash Inflow from Operations</b>			
Change in Receivable Account	6,000.00 €	50,000.00 €	225,000.00 €
Total Funds In	86,000.00 €	50,000.00 €	225,000.00 €
<b>Outflow</b>			
Assets Purchased and other expenses	32,150.00 €	0.00 €	0.00 €
<b>Net Cash Outflow from Operations</b>			
Cost of goods Sold	8,030.00 €	25,850.00 €	74,800.00 €
Sales, general, and administration expensed	49,170.00 €	36,630.00 €	80,410.00 €
Taxes payable	0.00 €	0.00 €	19,202.35 €
Total Funds Out	89,350.00 €	62,480.00 €	174,412.35 €
<b>NET CHANGE IN CASH POSITION</b>			
(Total Funds In – Total Funds Out)	-3,350.00 €	-12,480.00 €	50,587.65 €

## 8 Exit Strategy

The four founders hold equal amount of equity. Any of them have the option to withdraw upon his request. In case that one of the founders is willing to liquidate his participation and resign from the company then the rest have the option to purchase first his equity. The resigning member should give a 30 day notice of intention. This notice should provide the purchase price and the payment method and schedule.

When more investors will be involved at the case that all founders want to resign this business, then the company owners should announce this in the market place. The value of the firm would be calculated based on the market value. The employees have the first right to purchase the company so this will be announced internally. If not any

transfer of ownership is succeeded then a seek for investor will take place. The investor will be offered to take over the business.

Finally, another possible way to exit the business is the acquisition of ARGO from another company. This could be decided by founders based on the proposed terms. It does not mean that founders will resign since they play active role in the operations. This would be a personal choice and it will be agreed in advance before any merging activity.

## **9 Concluding Remarks**

ARGO is offering a seed fertilizer which is very unique in the market. The seeds are processed under a special treatment with the fertilizing agent. The starting point is the market of cotton seeds. Real test has shown an increase in end-product of 15% by comparing in the same field crop from treated and no-treated seeds. The economic benefit for the farmer is significant since the cost of treatment is a fraction of the profit from the extra production. A very important point is that the end-user can still use his preferred brand of seeds. This also protect the ARGO business by competing the seed companies and make it easier to penetrate the market.

The successful growth of the business is based in direct sales for the next three years. Real show cases has been already implemented and results will be demonstrated to new customers. It is expected that the increase in production will be very attractive for new customers and the market pool will increase rapidly. A conservative expectation is that in the first year 1000 Decares (stremmata equals to 1000m<sup>2</sup>) will be using treated seeds, next year this will increase to 10.000 Decares and the third year this will go up to 50.000 Decares. This is a very conservative projection comparing to 2.343.000 Decares of cotton cultivated in 2017 in total (2.1% of the market). This quantity in the third year will turn the business profitable.

From that point, a strategic partnership with a seed distributor/manufacturer will assist to increase the market share. Such company will be capable to do the treatment

in their facilities and sell treated seeds with a premium. At any case, ARGO is not intending to sell the fertilizer agent as “liquid in a bottle”. This has high risk for our reputation since people do not follow the manual. This and any other option for development could be investigated in the future. A business plan should be and remain an active document which guides operation but it is also changing dynamically following the business development.

## 10 References

Tasos Zachos (2017), FortuneGreece.com: Business stories by: “Forget about agriculture the way it was”, internet source: <http://www.fortunegreece.com/article/xechaste-tin-agrotiki-paragogi-opos-tin-xerate/>

Porter, M.E. (1985) *Competitive advantage: creating and sustaining superior performance*. New York: Free Press.

Stokes, R. (2008). *Digital Marketing Strategy*. E-Marketing, 5th edition, pp.17-36.

Schmitt, B. (1999). Experiential Marketing. *Journal of Marketing Management.*,15, pp. 53-67

AGRENDA, issue 592, special publication for cotton 18-19/03/2017. Source: <http://www.agronews.gr/files/1/Agrenda/vamvaki-Agrenda%20592.pdf>

Morgera, E. Bullón Caro, C. Marín Durán, G.(2012): *Organic agriculture and the law*, LEGISLATIVE STUDY 107, FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

Greek Government (1985), Law 1565/85 [Greek Language – Concerning Fertilizing material], Government Gazette of the Greek Republic, Vol. A, FEK164/26.09.1985, pp. 2515-2529.

Greek Government (2002), Ministry Decision Law 291180/11034 [Greek Language: Permission new types of fertilizing material], Government Gazette of the Greek Republic, Vol. B, FEK1274/30.09.2002, pp. 17151-17156.

Greek Government (2004), Ministry Decision Law 257921 [Greek Language Modiciation of Ministry Decision Law 291180/11034], Government Gazette of the Greek Republic, Vol. B, FEK955/25.06.2004, pp. 12201-12203.

Official Journal of the European Union (2003), REGULATION (EC) No 2003/2003 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 13 October 2003 relating to fertilisers.

Hal Shelton (2014), *The Secrets to Writing a Successful Business Plan*, Summit Valley Press

Baron Robert, Shane Scott, “Entrepreneurship – a process prospective, -2<sup>nd</sup> Edition”, South-Western Cengage Learning. [2008]

Grand View Research, Inc, “Superhydrophobic Coating Market Analysis By Raw Material (Carbon Nanotubes, Silica Nanoparticles, Graphene), By Property (Anti-Microbial, Anti-Icing/Wetting, Anti-Corrosion), By End-Use (Electricals & Electronics, Transportation & Allied Logistics, Medical, Optical, Construction, Textiles & Leather) And Segment Forecasts To 2024”, source:  
[http://www.grandviewresearch.com/industry-analysis/superhydrophobic-coating-market?utm\\_source=Linkedin&utm\\_medium=Social&utm\\_campaign=JRahul21Mar&utm\\_content=RD](http://www.grandviewresearch.com/industry-analysis/superhydrophobic-coating-market?utm_source=Linkedin&utm_medium=Social&utm_campaign=JRahul21Mar&utm_content=RD). [September 2016]

## 11 APPENDIX A: Questions to end users.

Seven farmers were interviewed. These people were known to founders and they are on an average 40 years old. The interviews had duration of more than one hour and they have the form of relaxed discussion. The questions were open questions and the goal was to use feedback for designing future actions. It was necessary for the founders to have deeper understanding of how farmers are in their business operation.

Concerning their business activities for cotton:

- How much field do you use for cotton?
- When do you start and when do you finish (tiem period)?
- What activities do you in the meantime?
- What are you doing yourself and what is outsourced?
- What kind of machinery do you use in every activity?
- What is the average production capability?
- What is the maximum and minimum you remember as achievement in production?
- What is the average cost?
- How this cost is divided (seeds, chemicals, fertilizing or what else)?
- When do you have to pay this money?
- What are the main risks during the life cycle of the cotton plant?
- How do you get informed about the cultivation?
- Do you participate in unions, groups, forums or social media about the cotton cultivation?
- Do you follow any course about it?
- Are you interested in new technologies for cotton and agriculture in general?  
What is the latest development that you have heard or you have applied?



- What is the average use on seeds per 1000m<sup>2</sup> ?
- What kind of seed do you choose? And Why?
- Who is your supplier?
- Where do you sell your production? At what price?
- Have you ever heard for treating the seeds? Do you know any such case or product?
- What are the differences you have experienced by using different seeds in the past?
- What would be the benefits if you succeed better germination in the plant?
- Are you interested in trying a new product?
- Would you trust someone that promises 15% increase in production?
- What is your capabilities to create separate crops in the same field? For example is it feasible to use different seeds and monitor the growth and production? Have you done this in the past? Are you interested in such case?
- Have you heard about organic cotton? Have you consider to do it? What do you think are the problems for such cultivation? How long does it take?
- How can someone increase the quality of his cotton production?

## 12 APPENDIX B: SWOT

From SWOT analysis, the following were concluded:

	STRENGTHS
S1	A unique offering that increase productivity in an innovative way by treating the seeds and not the plant
S2	Solution came out from scientific publications. The breakthrough is the way the material is applied.
S3	Eco-friendly solution it can be used for bio-farming
S4	The R&D work is almost implemented, an final product can be launched very soon
S5	Unique expertise on engineering the formula
S6	Real test performed already and evaluated. This was a time consuming process and it is great advantage against future competition
S7	Stronger plantation means resistant to natural causes
S8	Avery attractive solution for a seed company -if adopted- to step-up against its competition
S9	Strong team bondage after so many years of working together
S10	Common belief to commercialize the research work
S11	Realistic approach for what the company can do. Partnership is strategic allies is requested
S12	Realistic approach for what the founders can do. Hire sales and marketing people

	WEAKNESS
W1	Small team consists mainly by scientists who should be transformed at one noight to entrepreneurs
W2	Lack of existing partners
W3	No distribution channel
W4	no marketing experience
W5	Funding not available yet
W6	Limited suppliers of raw material
W7	The IP is not protected yet
W8	Seed treatment cannot be outsourced in current stage

	OPPORTUNITY
O1	Crisis pushed a lot of new people to become farmers and they are keen to change to innovative practices
O2	Plants remain in bio-category which is an fast growing market
O3	The process can be used from seed manufacturers to individuals with small gardens
O4	growing public concern about quality of food
O5	Social media and internet give access directly to end-users so we can avoid the "middle-men"
O6	New customer categories: individual gardens for self-production
O7	EU regulation changed in 2016 towards such solutions (as seed fertilizers)
O8	There is a momentum for embracing new technologies in the agriculture world
O9	Possibility for change of legislation in Europe around traded seeds. Biodiversity is highly ranked in the agenda
O10	Global concern against multinational corps in the field of seeds and nutrition
O11	Countries and people resist on GMO's and in syndicates like CETA, TTIP etc
O12	Use of internet allows "higher spread of word"

	THREATS
T1	Legislation about the food chain is very sensitive in every new material involved
T2	Competition is not present but a lot of scientists are occupied in the field
T3	This is a brand new market but farmers are typically old-fashioned people. There is always resistance to change
T4	Multibillion business promotes hybrids and GMOs
T5	Potential competitors are key chem industries with unlimited resources
T6	Farmers are confident to use new products only after demonstration -time consuming

### 13 APPENDIX C: Cotton real show case

A cultivation took place in the area of Giannitsa. The result was a 15% increase in production. During growth of plantation, the treated seed gave stronger plants. The following pictures are from this test



Image 1: Treated seeds start faster

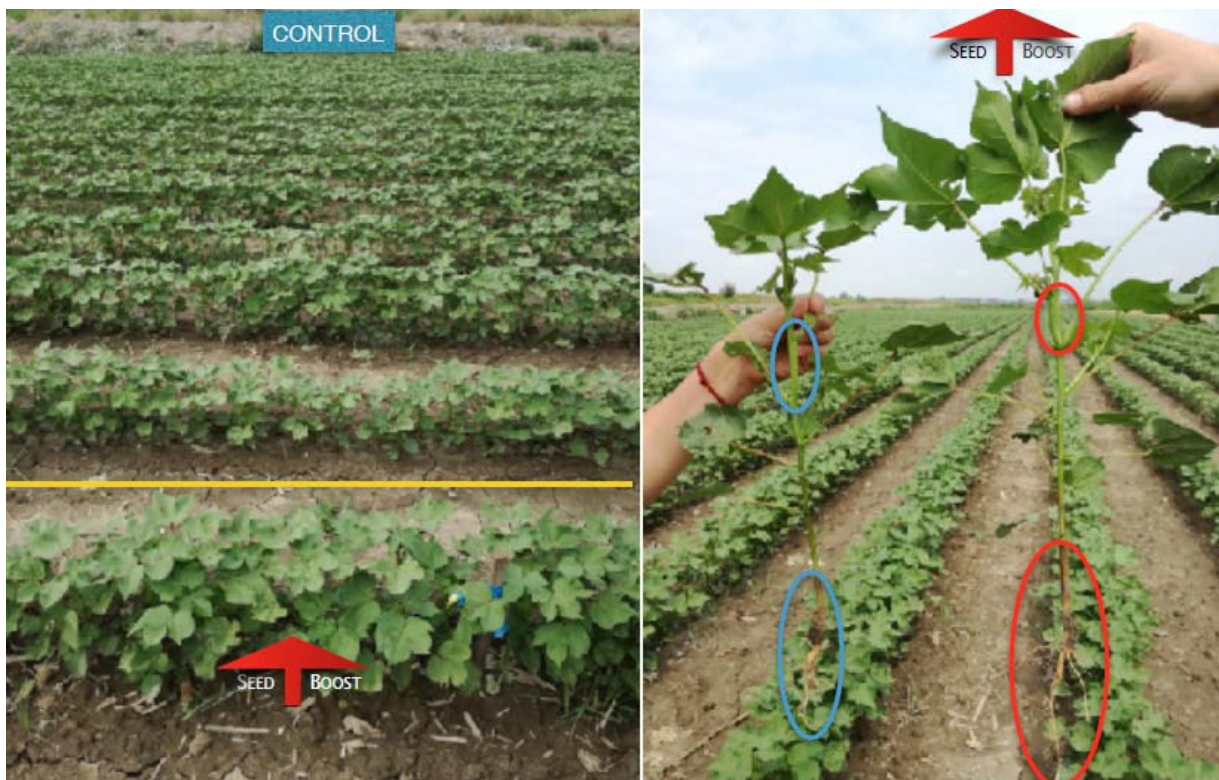


Image 2: Stronger plants



Image 3: Treated seeds offer and increase in production of almost 15%

## 14 APPENDIX D: Wheat lab test

Below are shown, our lab results in wheat for small scale cultivation. If we succeed this process can be a break-through in agro-economy since wheat is a commodity.



Εικόνα 4: Treated Wheat has improved germination and increased fertility

## 15 APPENDIX E: Financial Data

Table 1: Start-up costs

ITEM	DESCRIPTION	Total Cost (€)	VAT Rate (%)	Total Cost (€)
RAW MATERIAL	Material used to create the agent	1,500.00	24	1,860.00
Lab equipment	Equipment for measurement, mixing, conservating the agent etc.	8,000.00	24	9,920.00
Office equipment	Office consumables and more	1,000.00	24	1,240.00
Vehicle	A small used cargo car	6,000.00	24	7,440.00
Promotion	website, leaflets, business cards	1,000.00	24	1,240.00
Production equipment	Equipment to apply treatment on seeds	2,000.00	24	2,480.00
Office Furniture	desks, chairs, lighting etc	2,500.00	24	3,100.00
PCs & Peripherals	Laptops, projector, printer, software	5,000.00	24	6,200.00
Uncertainties	All kind of purchases and other costs	2,000.00	24	2,480.00
Rent	Existing lab location should be rented to the company	550.00	0	550.00
Guarantee Deposit for rent		1,100.00	0	1,100.00
Accounting	Expenses for creating company & accountant	1,500.00	24	1,860.00
<b>TOTAL</b>		<b>32,150.00</b>		<b>39,470.00</b>

Calculations are forecast therefore discrepancies may occur due to rounding. All prices are indicative. It is considered that the starting setup will consists from: Four offices, meeting room, laboratory space and a general store and operation space. The total will be 150m<sup>2</sup>.

Table 2: Forecast revenue

YEAR	Land (1000m <sup>2</sup> )	Price(€)/per unit	Total (€)
2018	1000	6.00	6000
2019	10000	5.00	50000
2020	50000	4.50	225000

As unit of Land is considered a Decare (1000m<sup>2</sup>)

Table 3: Pro forma cost of goods sold

DESCRIPTION	2018	2019	2020
Labor cost	4,000.00 €	10,000.00 €	20,000.00 €
Use of Vehicles	1,000.00 €	2,000.00 €	5,000.00 €
Logistic costs	500.00 €	1,500.00 €	3,000.00 €
Material and production	1,800.00 €	10,000.00 €	40,000.00 €
Uncertain costs (10%)	730.00 €	2,350.00 €	6,800.00 €
<b>TOTAL</b>	<b>8,030.00 €</b>	<b>25,850.00 €</b>	<b>74,800.00 €</b>

Treatment of seed is seasonal and takes place from December to February. Labor cost is based on working hours during the treated. Vehicle cost is for 2018 equals to the preserving a small cargo car which is acquired at the beginning of the start-up. For years 2019 and 2020 it is considered that one or two trucks will be rented upon demand. Material cost and production incorporates the expense to purchase raw material for the fertilizing agent plus the cost to produce it. Uncertain cost includes all the expenses regarding the production line as packaging, special tools, other consumables etc.

Table 4: Pro forma administrative expenses

DESCRIPTION	2018	2019	2020
Founders' salary	0.00 €	0.00 €	40,000.00 €
Founders; Social security	9,000.00 €	9,000.00 €	9,000.00 €
Accountant (outsourcing)	1,500.00 €	1,500.00 €	1,500.00 €
Legal advisor	2,000.00 €	1,000.00 €	1,000.00 €
Uncertain allowances (10%)	1,375.00 €	1,265.00 €	5,665.00 €
<b>TOTAL</b>	<b>13,750.00 €</b>	<b>12,650.00 €</b>	<b>56,650.00 €</b>



Table 5: Pro forma overhead expenses

DESCRIPTION	2018	2019	2020
Patent cost	15,000.00 €	5,000.00 €	0.00 €
Marketing expenses	1,000.00 €	2,000.00 €	2,000.00 €
Customer relationship expenses	500.00 €	2,500.00 €	5,000.00 €
Travel	1,000.00 €	2,000.00 €	3,000.00 €
Rent	6,600.00 €	6,600.00 €	6,600.00 €
Office supplies	500.00 €	1,000.00 €	1,500.00 €
Electricity/Heating	1,200.00 €	1,500.00 €	2,000.00 €
Telecommunication	800.00 €	1,200.00 €	1,500.00 €
Start-up cost (Registration)	1,500.00 €	0.00 €	0.00 €
Start-up cost (Non-asset)	4,100.00 €	0.00 €	0.00 €
Uncertain expenses (10%)	3,220.00 €	2,180.00 €	2,160.00 €
<b>TOTAL</b>	<b>37,438.00 €</b>	<b>25,999.00 €</b>	<b>25,780.00 €</b>

Patent cost is spread in the first two years of operation and concerns the IP of treating cotton seeds.

Table 6: Asset depreciation schedule

DESCRIPTION	RATE (%)	2018	2019	2020
Lab equipment	20%	1,600.00 €	1,600.00 €	1,600.00 €
Office equipment	10%	2,500.00 €	2,500.00 €	2,500.00 €
Vehicle	20%	1,200.00 €	1,200.00 €	1,200.00 €
PCs & Peripherals	50%	2,500.00 €	2,500.00 €	0.00 €
Production equipment	10%	2,000.00 €	2,000.00 €	2,000.00 €
Uncertain depreciation (10%)		980.00 €	980.00 €	730.00 €
<b>TOTAL</b>		<b>10,780.00 €</b>	<b>10,780.00 €</b>	<b>8,030.00 €</b>

Table 7: Income Statement (three years projection)

Income Statement	2018	2019	2020
Revenue	6,000.00 €	50,000.00 €	225,000.00 €
<b>Cost of goods sold</b>	<b>8,030.00 €</b>	<b>25,850.00 €</b>	<b>74,800.00 €</b>
gross margin	-2,030.00 €	24,150.00 €	150,200.00 €
gross margin (%)	-33.83%	48.30%	66.76%
Administrative Expenses	13,750.00 €	12,650.00 €	56,650.00 €
Overhead Expenses	35,420.00 €	23,980.00 €	23,760.00 €
<b>Operating Expenses</b>	<b>49,170.00 €</b>	<b>36,630.00 €</b>	<b>80,410.00 €</b>
EBITDA	-51,200.00	-12,480.00	69,790.00
Depreciation	6,325.00 €	6,325.00 €	3,575.00 €
EARNINGS BEFORE TAX	-57,525.00	-18,805.00	66,215.00
NET TAX	0.00	0	19,202.35
NET INCOME	-57,525.00	-18,805.00	47,012.65

Table 8: Balance Sheet

Balance Sheet (end of year)	2018	2019	2020
<b>Current Assets</b>			
Cash	0.00 €	0.00 €	47,012.00 €
Accounts receivable	0.00 €	0.00 €	4,000.00 €
Inventories	1,475.00 €	1,455.00 €	1,876.80 €
<b>Total Current Assets</b>	<b>1,475.00 €</b>	<b>1,455.00 €</b>	<b>52,888.80 €</b>
<b>Fixed Assets</b>			
Equipment	25,000.00 €	18,675.00 €	15,100.00 €
Accumulated depreciation	-6,325.00 €	-6,325.00 €	-3,575.00 €
<b>Total Fixed Assets</b>	<b>18,675.00 €</b>	<b>12,350.00 €</b>	<b>11,525.00 €</b>
Intangibles (goodwill, patents)	15,000.00 €	59,579.00 €	59,543.00 €
<b>TOTAL ASSETS</b>	<b>35,150.00 €</b>	<b>73,384.00 €</b>	<b>123,956.80 €</b>
<b>Liabilities and Owners' Equity</b>			
<b>Current Liabilities</b>			
Accounts payable	9,675.00 €	18,805.00 €	0.00 €
Income Tax Payable	0.00 €	0.00 €	19,202.35 €
Accrued expenses payable	0.00 €	367.00 €	0.00 €
<b>Total Current Liabilities</b>	<b>9,675.00 €</b>	<b>19,172.00 €</b>	<b>19,202.35 €</b>
<b>Long-term Liabilities</b>			
Business loans, Bank mortgages			
<b>Total Long-term Liabilities</b>			
<b>Owners' Equity</b>			
Invested capital	80,000.00 €	80,000.00 €	59,176.00 €
Earnings	-59,543.00 €	-20,824.00 €	45,578.45 €
<b>Total Owners' Equity</b>	<b>20,457.00 €</b>	<b>59,176.00 €</b>	<b>104,754.45 €</b>
<b>TOTAL LIABILITIES and EQUITY</b>	<b>30,132.00 €</b>	<b>78,348.00 €</b>	<b>123,956.80 €</b>

Table 9: Cash flow statement at the end of the year

CASH FLOW	2018	2019	2020
<b>Inflow</b>			
Investment Received	80,000.00 €		
<b>Net Cash Inflow from Operations</b>			
Change in Receivable Account	6,000.00 €	50,000.00 €	225,000.00 €
Total Funds In	86,000.00 €	50,000.00 €	225,000.00 €
<b>Outflow</b>			
Assets Purchased and other expenses	32,150.00 €	0.00 €	0.00 €
<b>Net Cash Outflow from Operations</b>			
Cost of goods Sold	8,030.00 €	25,850.00 €	74,800.00 €
Sales, general, and administration expensed	49,170.00 €	36,630.00 €	80,410.00 €
Taxes payable	0.00 €	0.00 €	19,202.35 €
Total Funds Out	89,350.00 €	62,480.00 €	174,412.35 €
<b>NET CHANGE IN CASH POSITION</b>			
(Total Funds In – Total Funds Out)	-3,350.00 €	-12,480.00 €	50,587.65 €