S&B LEGAL & INVESTMENT CONSULTING SERVICES

Al Bawader for Greenhouse Plastics

Business Plan & Job Assessment

Jan 2022

Acronyms

F4J	Finance for Jobs
GDP	Gross Domestic Product
UNCOMTRADE	United Nations Commercial Trade Database
PCBS	Palestinian Central Bureau of Statistics
MDLF	Municipal Development Lending Fund
PoMoNE	Palestinian Ministry of National Economy
PMoF	Palestinian Ministry of Finance
PMoA	Palestinian Ministry of Agriculture
YOY	Year over Year
OECD	Organization for Economic Co-operation and Development
PMA	Palestinian Monetary Authority
PCMA	Palestinian Capital Markets Authority
M4P	Making Markets Work for the Poor Market Systems Approach
SWOT	Strengths, Weaknesses, Opportunities, Threats
MFI	Microfinance Institution
PARC	Palestinian Agricultural Development Association
UAWC	Union of Agricultural Work Committees
APHEDA	Union Aid Abroad – Australia
ACTED	Agency for Technical Cooperation and Development
LFPR	Labor Force Participation Rate
LFE	Labor Force Eligible

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1. Business Overview

1.1. Executive Summary

Al Bawader seeks to create a shift in Palestinian agriculture through the establishment of a production facility that manufactures plastic for greenhouses. It would be the first such venture in Palestine, as local farmers are reliant on foreign imports, particularly Israeli firms, that import the plastic thus stifling the growth of the sector. In addition to this, AL Bawader is seeking to do so through creating a competitive advantage based on its ability to recycle waste and convert it into raw materials, and partnering with a German firm remotely that will oversee the production to enhance the quality and value of the products and their subsequent delivery. Typically, agriculture is between 6-9% of Palestinian GDP, equating to nearly $ 1 Billion in annual revenues generated by the sector.

Although the business in question is manufacturing oriented, there are several factors that contribute to the assessment of the feasibility of the initiative and are to serve as viable indicators with respect to product offerings, segmentation, demand, and the operational process to ensue to satisfy market needs.

Through the generous support of F4J this process can be greatly accelerated while maintaining business and market-oriented goals, without neglecting the societal aspect of the business and its operations. The proposed facility to be located in in the northern West Bank, either in Nablus (Deir Sharaf) or in the Jenin Industrial Park. The opportunity to address local market needs, aside from regional needs is one that is quite enticing and must be explored further. Additionally, the notion of establishing a manufacturing facility, that would create viable and gainful employment opportunities, both directly and indirectly, would be considered a socio-economic win, particularly when addressing the aspect of recycling the plastic produced and using byproducts for additional revenue generation.

This initiative would allow farmers in the region, especially Palestinians, to have a higher yield of agricultural production due to the benefits of greenhouse farming, which allows farmers to extend their growing season, have a wider variety of fruits and vegetables, and a controlled environment that reduces threats to crops[1]. In 2020, Palestinian agricultural production is estimated to be valued at $970 Million[2], as compared to 2010 when its estimated value was reportedly $484 Million[3]. Greenhouses account for 36%[4] total agricultural production, and therefore represent the potential for creating operational and efficient competencies in agricultural products for both domestic and foreign markets. Over the past 10 years, greenhouses have gone from covering between 15.6 – 18 Thousand Dunams (10,800 in the West Bank alone) to an estimated 14,673 Dunams as of 2020 in the West Bank.

Therefore, with growth in agricultural output, as well as the spread of greenhouses across the Palestinian Territories, greater agricultural productivity can be achieved through enhanced efficiencies and techniques using

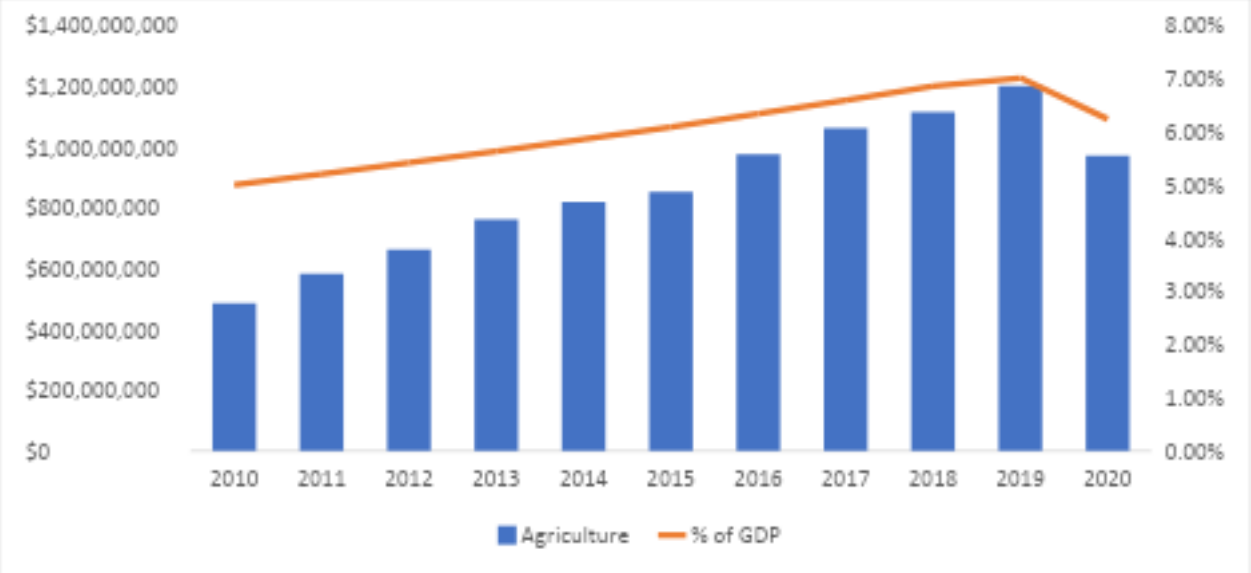
[1] https://www.hortibiz.com/newsitem/news/greenhouse-farming-101-advantages-disadvantages/
[2] PCBS: Press Report on Economic Forecasts for 2021
[3] IBID
[4] PCBS: Agricultural Statistics Survey, 2010/2011

greenhouses, among other methods of farming and irrigation. However, the focus of this study will revolve around greenhouses due to the nature of Al Bawader's operational model, product offerings, and targeted customers.

To address local market needs, Al Bawader will adopt a Customer Focus strategy, that will direct it towards being more customer centered, and more importantly, with no control over borders or direct access to suppliers, an Overall Cost Leadership strategy would be moot, and ineffective. As for Differentiation, the product would be hard pressed from the onset to create any transferrable value or distinction from competitors that have operated in the Palestinian market and markets around the globe as well.

With Customer Focus, an emphasis on greenhouse farmers specifically in the first 90-180 days of operations will allow Al Bawader to establish its brand and ability to deliver a quality and high value product that is affordable relative to alternatives and save money for Palestinian farmers while being more responsive as the sole producer of polyethene based greenhouse plastics nationally.

Figure 1: Agricultural Output 2010-2020



Source: World Bank and PCBS Compilation

The market offerings to be discussed in detail further throughout this assessment, are polythene greenhouse film, and thermal curtains for greenhouses. The process whereby these products are manufactured presents an opportunity to recycle and manage waste in a manner that would allow for an environmentally and socially responsible way to utilize the waste as a byproduct. Again, this among other issues related to the offerings and manufacturing processes will be discussed in greater detail in subsequent sections of the assessment.

The total investment needed for the project is $10 Million, so it can scale the production level to satisfy the local demand. Financial appraisal indicators has demonstrated that the overall project is feasible with an NPV of $957,486.23, with an IRR of 11.98 % and a payback period of 5.17 years. Al Bawader will contribute directly to the Palestinian eonomy by creating 60 jobs, with the potential to raise the number to 474 jobs.

1.2. Mission

Al Bawadar seeks to be a catalyst in positive and sustainable Palestinian societal and economic development through being a partner to farmers and agricultural producers through its environmentally aware and socially responsible manufacturing process providing much needed resources locally, giving Palestinians a viable alternative to Israeli and foreign products.

1.3. Objectives

- Primary Objectives
  - Capture 30% of the domestic market
  - Position as viable and more valuable alternative to Israeli and Turkish products
  - Create 60 new direct jobs
- Secondary Objectives
  - Identify Export opportunities in regional markets
  - Establish partnerships in regional markets
  - Establish partnerships with environmental agencies
  - Enhance domestic Palestinian Value Chain partners and intermediaries
- Milestones
  - Capture 10% of the domestic market within the first 90 days of launching
  - Increase market share to 30% by the end of 1st year

1.4. Market Offerings

The market offerings to be delivered by Al Bawader are as follows:

1. Polyethene Greenhouse Film
   a. Polyethylene plastic use for greenhouses is an inexpensive material used to cover greenhouse or hoop house structures. The versatility and ease of use of polyethene provides many of the same benefits as traditional greenhouse panels without the exorbitant cost involved with such materials.
2. Thermal Curtains/ Thermal Shaders
   a. A thermal curtain/thermal shader is a fabric sheet and support system that is pulled across the roof area (sometimes walls) of a greenhouse during night time hours in cold

weather to reduce heat loss. Curtains work by reducing the volume of the heated space in a greenhouse and provide an additional thermal boundary. They also work to kill bacteria and viruses for the land area being prepared for use.

3. In total, the two items work in tandem and require a total of 192 kg of plastic film for each greenhouse, with a 156 kg for the polyethene plastic and thermal curtains would comprise of 36 kg of plastic film for thermal shaders thus comprising the 192 kg of plastic film needed for each greenhouse.

1.5. Competitive Advantage

The concept of competitive advantage lends itself to the theory of having an innate ability to outperform competitors using distinctive capabilities within a company's business process. The core business process's undertaken by Al Bawader will be addressed in subsequent sections, namely the operations.

Also of note, the industry value chain will be highlighted throughout the assessment, with respect to identifying the market opportunities in terms of the demand chain or downstream aspects of the industry, while balancing the upstream aspects of the supply chain.

This analysis will help reveal the suppliers, raw materials, intermediaries, and customers within the industry, thusly reflecting Al Bawader's market position and ensuing opportunities and core competencies. The core competency to be seized upon in this situation is based on the lack of Palestinian manufacturers available to the domestic market. First, by applying the characteristics of a core competency to Al Bawader is important, and is as follows:

- There must be a significant contribution to perceived customer benefits
    - The availability of a local manufacturer that is able to apply both supply chain responsiveness and efficiencies to address market needs, as opposed to foreign providers that will force requirements onto the local market.
    - In addition, the perceived quality of manufacturing through a German firm overseeing the process online through fiberoptic connectivity.
- There is a wide variety of applications across different markets
    - The products resulting from the manufacturing process can be applied to domestic and foreign markets with respect to the German oversight and international quality standards.
- It is difficult for competitors to imitate
    - Instituting a recycling program to convert plastic waste into raw materials
        - 1st such initiative in Palestine or Israeli market
    - Sole provider within Palestine

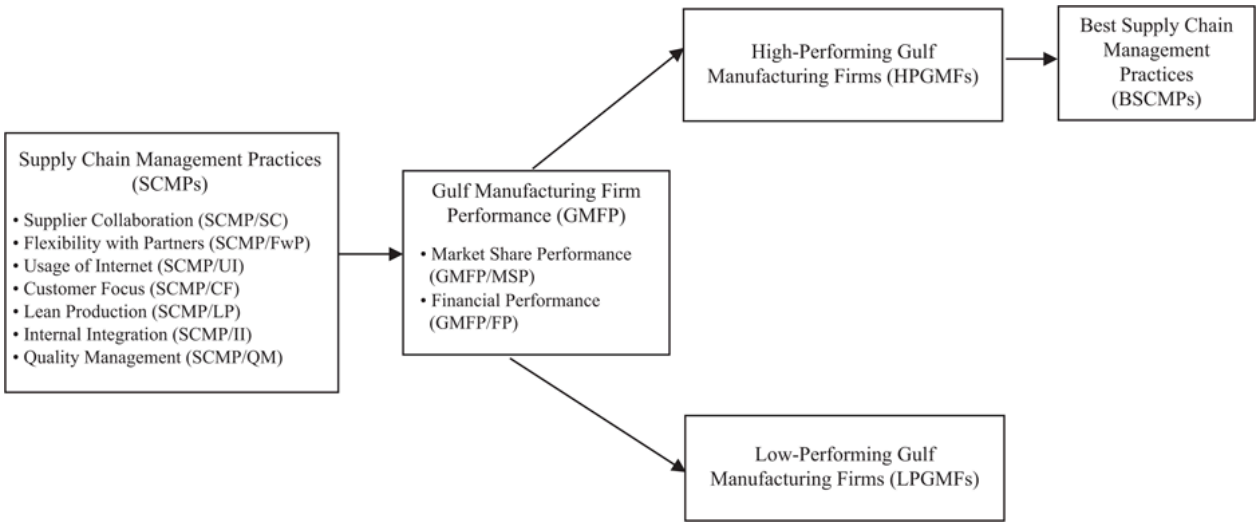
- Procurement of raw materials from Qatar and Saudi Arabia

Therefore, the perceived competitive advantage possessed by Al Bawader stems from its ability to bridge the needs and access of the local Palestinian market, and the international standards and material sources in a manner whereby operational efficiency and customer responsiveness can be achieved.

1.6. Keys to Success

To better understand the path to success for Al Bawader, it is important to understand the processes that will take place, but more importantly, the rationale behind those manufacturing processes and the role they play in a holistic overarching framework that seeks to institutionalize and not personalize the processes and practices to be undertaken. A recent study of manufacturing firms in the Gulf region of the Middle East captures this point and as such, it has been adopted to set the parameters of success factors to measure and monitor Al Bawader's progress.

Figure 2: Best Practices Framework



Source: AL-Shboul, M.A., Garza-Reyes, J.A. and Kumar, V. (2018), "Best supply chain management practices and high-performance firms: The case of Gulf manufacturing firms", International Journal of Productivity and Performance Management, Vol. 67 No. 9, pp. 1482-1509.

As seen in the framework above, the aspects of supply chain management practices form the crux of the assessment, however the points address both upstream and downstream aspects of the value chain, and therefore are deemed to be adequate in providing a basis whereby Al Bawader will be evaluated.

Table 1: Manufacturing Firm Success Factor Dimensions

Dimension	Description
Supplier Collaboration	A phenomenon that depicts strong and close relationship between a firm and its suppliers (Li *et al.*, 2006).
Flexibility with Partners	The degree to which a firm is able to adjust the time in which it can ship or receive goods (Tang and Tomlin, 2008).
Usage of Internet	The internet has served as one of the main technological developments supporting increased coordination and collaboration among supply chain partners (Cook *et al.*, 2011).
Customer Focus	Concerned with planning, implementing and evaluating successful services and relationships between providers and recipients in both upstream and downstream of supply chain management (IBID).
Lean Production	Defined as manufacturing without waste, which tries to remove out the unnecessary costs, time and other wastes from the entire supply chain (Taj, 2008; Boyle and Rathje, 2009).
Internal Integration	Defined as the extent to which separate parties work together in a cooperative manner to arrive at mutually acceptable outcomes (O'Leary-Kelly and Flores, 2002).
Quality Management	Refers to the ability of a product or service to consistently meet the customer expectations (Anuar and Yusuff, 2011; Reyes and Giachetti, 2010).

1.7. Ownership

The ownership of Al Bawader is to reside with Mr. Sameer AlJuneidi and Mr. Ahmad Aljunieidi as partners.

1.8. Legal Structure

Al Bawader will be incorporated as a private shareholding company pursuant to the Palestinian Companies Law. This requires Articles of Incorporation and Operating Agreement to be provided.

1.9. Rationale for Public Finance

There are two overriding factors for supporting this endeavor with public financing. The first, is the failure of the market to satisfy demand and the need for agricultural producers to access tools and methods that would yield greater efficiencies in crop production. This would be the case of greenhouses and the raw materials associated with them. The second, stems from the ability of Al Bawader to deal with the plastic waste in a manner which can create environmentally sustainable products and raw materials that can be put back into the Palestinian agricultural industry.

From an apolitical standpoint, the emphasis on agriculture as a means to combat unemployment and enable rural and marginalized communities to engage in economic opportunities is valid and available given the total 18 thousand dunams available for agricultural activities. The fact that the initiative serves on both a market level to satisfy existing and growing customer needs, as well as delving into an area that has been underserved from an infrastructure standpoint due to macro environmental forces, public finance can both aid the venture and align with its operations to improve implementation of policy. For example, the aspect regarding the recycling of waste serves multiple purposes for public good and the various agencies mandates such as the Environment Quality Authority, the Ministry of National Economy (MoNE), the Ministry of Finance (MoF) and its Tax Authority, as well as the Ministry of Labor (MoL) with its promoting environmentally aware employment.

Due to the high barriers to entry for a firm to enter the market, its critical to receive public financing to address a portion of the project to supplement the investment and debt being used to establish this venture as a viable and sustainable catalyst in the Palestinian economy as a job creator, partner to farmers and agricultural producers, and environmentally oriented agencies and entities, local and foreign. These barriers are summarized as follows:

Lack of infrastructure, is reflected in the low wages and compensation of Palestinians working in the sector. In 2020, agriculture made up 6.4% of employed Palestinians[5]. However, the output then acts as a demand driver for Al Bawader, and more importantly, one simply needs agriculture in terms of the value of output relative to other countries in the region. As seen below, although the share of GDP is higher than in Jordan or Israel, the lower Palestinian GDP indicates a lower level of economic productivity. In other words, lower values can indicate that the goods and services produced are more rudimentary in nature, thus leading to more limitations in goods, thus indicating less investment in fixed capital and greater use of manual or unskilled labor. In the Palestinian case, agriculture is a significant part of economic activity representing 6-7% of GDP, employs approximately 7% of employed Palestinians formally, but doesn't reflect the innovative or highly distinguishable products that can be integrated due to a lacking industrial presence that would integrate agricultural output as a supply feeder in their respective operations. Rather, the Palestinian agricultural output is consumed domestically, and exported to surrounding markets, mainly Israel.

In short, this represents a fundamental market failure that Palestinian farmers and agricultural producers can't access the necessary tools to increase their productivity to compete with regional markets.

Table 2: Relative GDP and Agricultural Output

2017	Israel	Jordan	Palestine

[5] PCBS: Palestinian Labor Force Survey 2020

Agriculture	$ 8,526,653,364	$ 1,946,221,160	$ 1,061,222,400
GDP	$ 355,277,223,507	$ 41,408,960,845	$ 16,128,000,000
% of GDP	2.40%	4.70%	6.58%

Source: CIA World Factbook Compilation, PCBS

In terms of labor market issues, the issues related to the production of polyethene plastics for greenhouses, is available but untrained. This training also involves the recycling of plastic waste into raw materials. Therefore, it is paramount that the engineers, particularly industrial, mechanical, and mechatronics engineers are properly trained in according to the needs of the production line.

2. Opportunity Analysis

2.1. Market Situation

There are several components to review with respect to the market situation. First, the direct market situation as per the polythene greenhouse films and thermal sheets being available in the Palestinian market. Second, the demand drivers must be addressed in order to have a more comprehensive view of the market, the suppliers, intermediaries, and customers of the afore mentioned products. As stated earlier, a value chain analysis of the industry will help to clarify and highlight these points.

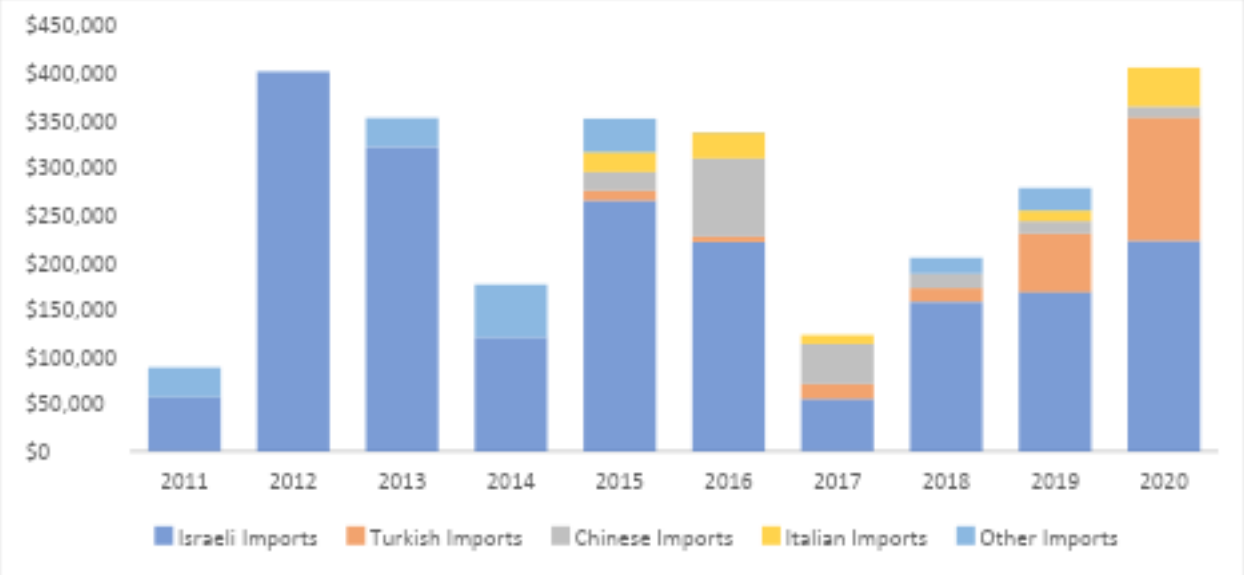
The first part is to identify if there is any domestic production of the afore mentioned market offerings, namely Polyethene Greenhouse Film, and Thermal Curtains. Although plastics manufacturing facilities do exist, this particular category doesn't currently exist locally as Israeli companies such as Ginegar and Polotiv Ltd have serviced not only their domestic market, and Palestinian market, but also have played a significant role on the global stage with holdings and ventures in Australia, India, Europe, Asia, as well as in North and Latin America. Having said that, Palestinian farmers have imported products from these firms, in addition to other countries and will be highlighted subsequently.

As with the majority of Palestinian imports, Israel is the primary trading partner. Israeli imports have averaged just north of 70%[6] annually for the period between 2011-2020 for the category of polyethene plastic sheets, commonly used for greenhouse films and thermal shaders. In recent years, Turkish imports have become increasingly available for the Palestinian market, and as of 2020, accounted for nearly one third of all imports in the category, while the Israeli share of imports was down to just under

[6] UNCOMTRADE Compilation

52%[7]. Therefore, it can be inferred that when given the opportunity, the Palestinian market will seek out alternatives to Israeli suppliers either directly or indirectly. The figures also indicate growing demand for these raw materials which can be inferred as an indicator for demand.

Figure 3: Palestinian Imports of Polyethylene Plastic Sheets Code 392062 2011-2020



Source: UNCOMTRADE and Consultant Compilation

To further corroborate the previous statement, the table below reflects the net weight in kg and the value of the imports is listed. The average cost actually trends downward which corresponds to more diversity in the trading partners for the Palestinian market. In short, demand is still trending upward, but costs are also trending downward, which would be a situation whereby a market shortage is anticipated to be present. It is therefore prudent to assume that with increased agricultural production, in aggregate terms, and the benefits of greenhouse farming create a perfect storm for market growth.

Table 4: Palestinian Imports 2011-2020 (values and units)

Year	Net Weight (kg)	Value	Cost/kg
2011	23,335	$ 88,414	$ 3.79
2012	93,829	$ 400,850	$ 4.27
2013	99,781	$ 351,717	$ 3.52
2014	55,803	$ 175,941	$ 3.15

[7] IBID

2015	114,628	$ 350,994	$ 3.06
2016	121,234	$ 336,740	$ 2.78
2017	47,265	$ 122,666	$ 2.60
2018	72,807	$ 204,210	$ 2.80
2019	104,216	$ 277,849	$ 2.67
2020	149,962	$ 404,879	$ 2.70

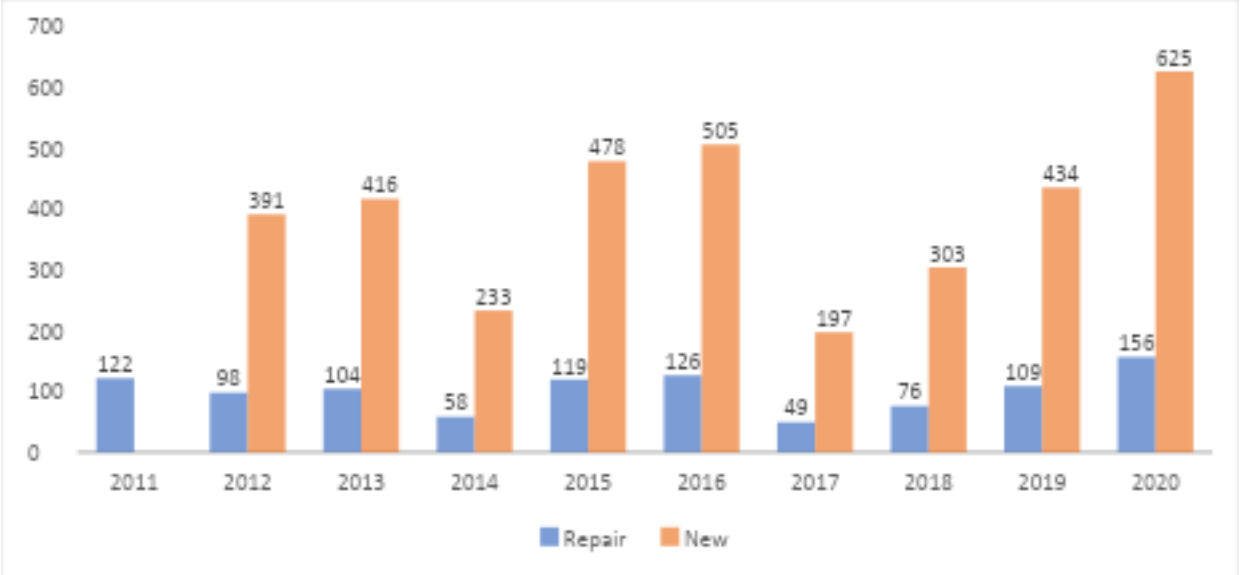
Source: UNCOMTRADE and Consultant Compilation

There are two assumptions when assessing the imports of raw materials to Palestine. First, the polyethene material used for greenhouses typically have a useful life of 5 years[8], meaning that there is a 20% renewal or refresh rate for the materials. Usually, based on the origin of the manufacturer, the useful life can be upwards of 10-20 years, however in this case, a five-year lifespan will be assumed. Second, whatever isn't being used to repair or restore greenhouses, will be used to establish a new greenhouse. Therefore, not slated for repairs, is assumed to be used towards creating or establishing a new greenhouse. According to this assumption, based on imports alone, there is an estimated 13,635 greenhouses in the West Bank as of 2020, representing growth of nearly 36% over the 10-year period.

This, coupled with the agricultural output of the same period more than doubling to nearly $970 Million annually, which actually dropped by 11% from the previous year when there were three successive years (2017-2019) that agricultural output was estimated to have exceeded $1Billion annually, reflects a greater role in the Palestinian economy, as well as more domestic and foreign demand for Palestinian goods. Greater agricultural production of this magnitude that has been sustained over a period of 10 years indicates that more sound practices have been applied, as well as more sophisticated tools and equipment.

[8] https://www.tunnelvisionhoops.com/blogbest-greenhouse-plastic-comparing-through-first-hand-experience/

Figure 4: Distribution of Imported Raw Materials



Source: UNCOMTRADE and Consultant Compilation

Greenhouses undoubtedly have contributed to the growth of agricultural production and its increasing share of Palestinian GDP estimated between 6.8% and 7%. The efficiencies of greenhouses far outpace the non-Greenhouse production as shown in the table below, in terms of aggregate Palestinian agricultural production, and more importantly, in the West Bank.

Table 5: Baseline Palestinian Agricultural Production Indicators (2011)

Region	No of Greenhouses	Total Dunams	Production (Tons)	Productive Dunams	Production/ Greenhouse	Total Non-Olive Production	Non-Olive Dunams	Non-Olive Production / Dunam
Northern West Bank	7,728	8,874	12,497	5,263	1.62	13,633	20,220	0.67
Central West Bank	816	1,095	1,678	1,359	2.06	6,447	10,680	0.60
Southern West Bank	1,510	850	37	13	0.02	8,868	35,527	0.25
West Bank	**10,054**	**10,819**	**14,212**	**6,635**	**1.41**	**28,948**	**66,427**	**0.44**
Gaza Strip	**4,579**	**4,751**	**3,461**	**2,598**	**0.76**	**19,264**	**14,089**	**1.37**

Total	**14,633**	**15,570**	**17,673**	**9,233**	**1.21**	**48,212**	**80,516**	**0.60**

Source: PCBS and Consultant Compilation

2.2. Competitive Situation

In terms of the competitive situation in the Palestinian market, there have been three main players that serve as suppliers to the local farmers using greenhouses. As mentioned before, two Israeli companies, Politiv Ltd, Ginegar are major forces in their own domestic market, the domestic Palestinian market, and globally. In addition to those two firms, a third firm, the Jordanian Daudco are deemed to be similar in nature and size, and are considered the benchmarks for how the products will be delivered to market.

Therefore, based on the research undertaken to assess the various firms according to the success factors mentioned earlier, a competitive profile matrix was designed and used to assess the ability of Al Bawader to compete and attract customers in the Palestinian market. By using this format, an assessment can be undertaken with relative objectivity and uniformity. The weight represents the importance of the success factor, and the sum total of the weight is 1.00. The individual ratings represent a four-point Likert scale approach, where 1 and 2 represent major and minor weaknesses respectively, and 3 and 4 represent minor and major strengths respectively.

Again, to revisit the success factors, each factor has been defined and cited so as to provide a clear method whereby the assessment of the four firms could be undertaken in an objective a manner as possible. It is believed that

Table 6: Competitive Profile Matrix

Industry		**Al Bawader**		**Gingear**		**Politiv Ltd**		**Daudco**	
Critical Success Factor	Weight	Rating	Score	Rating	Score	Rating	Score	Rating	Score
Supplier Collaboration	0.1	3	0.3	2	0.2	2	0.2	2	0.2
Partner Flexibility	0.1	2	0.2	3	0.3	4	0.4	2	0.2
Usage of Internet	0.1	4	0.4	3	0.3	3	0.3	1	0.1
Customer Focus	0.2	4	0.8	3	0.6	3	0.6	3	0.6
Lean Production/Product Variety	0.2	3	0.6	4	0.8	3	0.6	3	0.6
Internal Integration	0.15	3	0.45	4	0.6	2	0.3	4	0.6
Quality Management	0.15	4	0.6	4	0.6	4	0.6	3	0.45
Scores	1.00	Al Bawader	3.35	Gingear	3.40	Politiv Ltd	3.00	Daudco	2.75

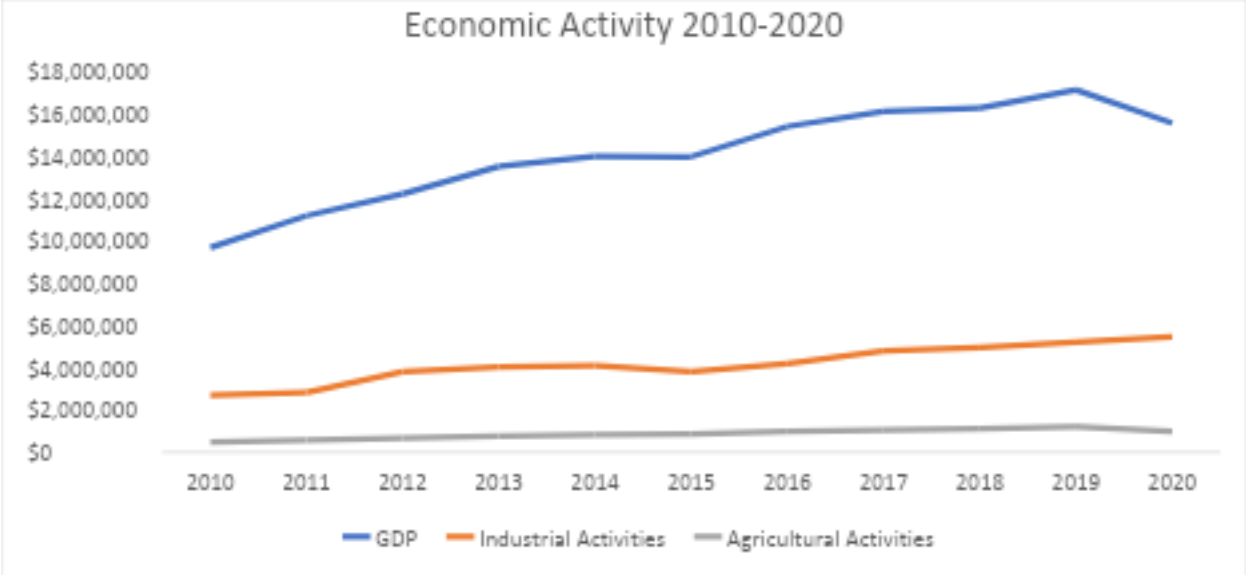
2.3. Macro Environment

Economic Overview

COVID-19 aside, the Palestinian economy has proven to sustain growth despite a slew of environmental and political factors apart that would damage an otherwise fragile economic framework. With respect to the nature of this assessment, the economic growth of industrial and agricultural activities specifically will be addressed.

Average year over year (YOY) growth for the Palestinian economy between 2010 and 2020 was 7.3%, with pre COVID-19 YOY growth averaging 10.2%. This indicates overall economic growth across most sectors,

Figure 5: Palestinian Economic Performance 2010-2020 by GDP, Industrial Activities, Agricultural Activities



Source: PCBS, World Bank, Consultant Compilation

Agricultural Sector

Agricultural output in 2020 reached $970 Million annually, which actually dropped by 11% from the previous year when there were three successive years (2017-2019) that agricultural output was estimated to have exceeded $1Billion annually, reflects a greater role in the Palestinian economy, as well as more domestic and foreign demand for Palestinian goods.

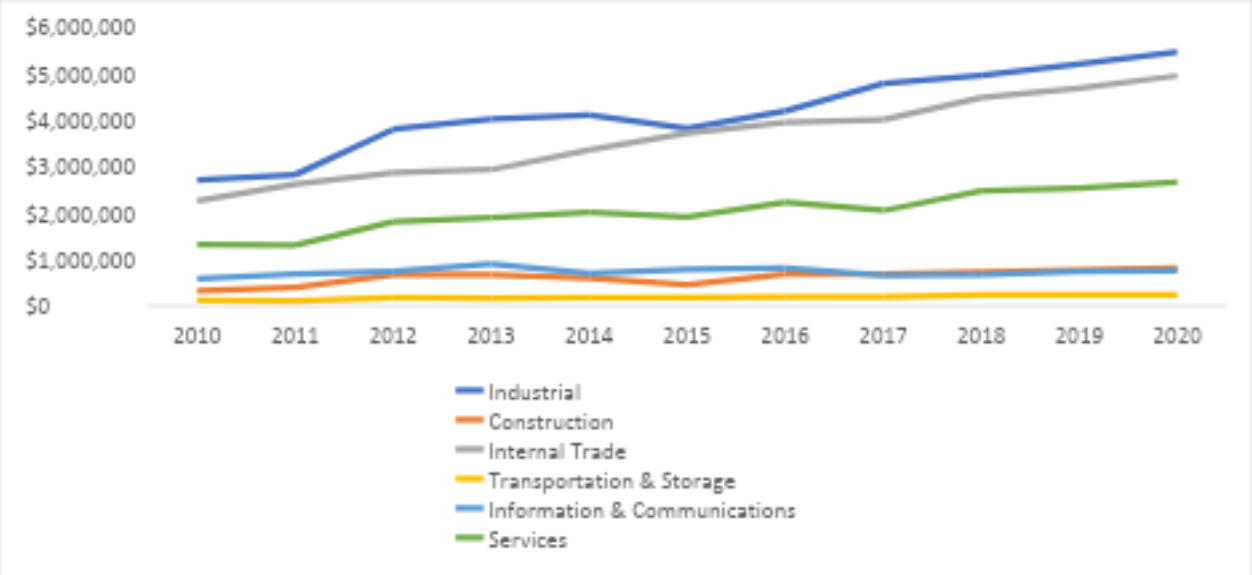
Industrial Sector

The Palestinian industrial sector accounts for approximately 30% of the economic activity with respect to the Palestinian economy. This has been steadily increasing, with an average YOY growth rate of

7.75%, and 8% pre COVID-19. Over the period between 2010-2020, the Palestinian industrial sector has generated nearly $46 Billion in economic activity and contribution to the Palestinian economy.

The uniqueness of Al Bawader's product offering, coupled with a growing industrial base creates a unique opportunity for Al Bawader to rise with the tide of industrial output, while being differentiated with its product and customer base.

Figure 7: Palestinian Economic Activity 2010-2020 by Sector



Source: PCBS, World Bank, Consultant Compilation

2.4. Socio-Economic Impact

2.4.1. Social Cohesion

> *"A cohesive society works towards the well-being of all its members, fights exclusion and marginalization, creates a sense of belonging, promotes trust, and offers its members the opportunity of upward mobility."*

Taking the cue from the OCED in the above quote, the Al Bawader is expected to be a societally responsible member of the community due to its commitment to environmental sustainability. By recruiting employees from the local and surrounding communities, which is feasible due to the number

of higher education institutions in the northern West Bank (namely An Najah University, Arab American University, Khodori Institute, and Al Quds Open University), aside from the labor that is available for working in northern Israeli areas within and outside the West Bank.

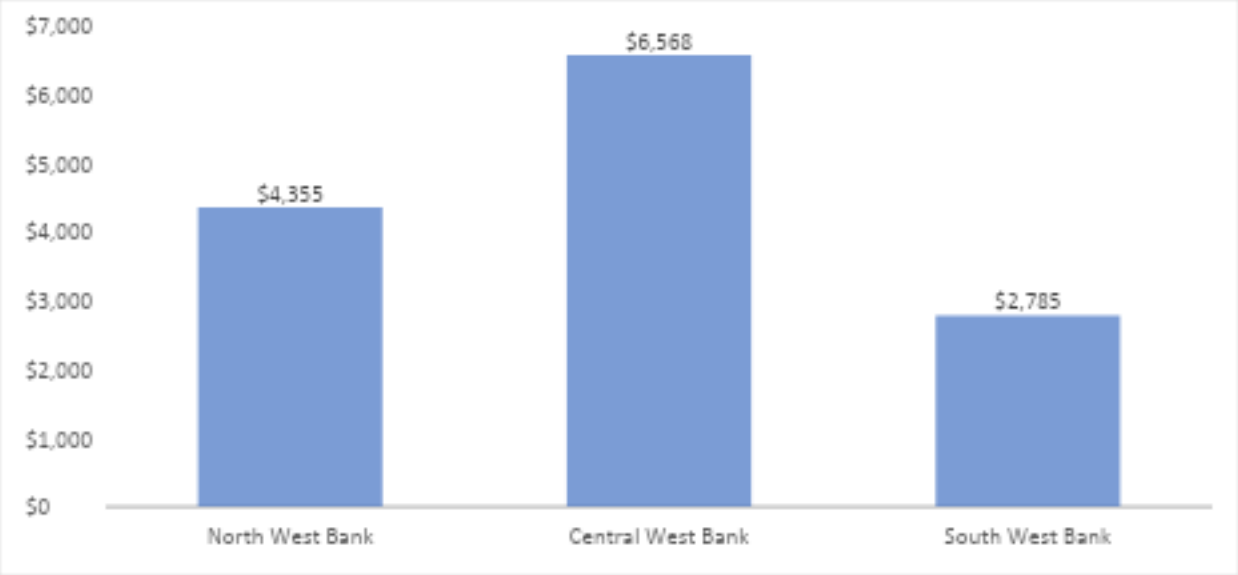
2.4.2. Economic Inclusion

With the advent of financial inclusion on the part of the Palestinian Monetary Authority (PMA) as well as the Palestinian Capital Markets Authority (PCMA) and the Palestinian Banking Association (ABB), an increasing number of Palestinians have access to financial services and products in a safe and seemingly affordable financial products and services. This lends itself to the 190 branches of foreign and local banks operating across the West Bank and Gaza Strip, along with 96 Micro Finance Institutions (MFIs) that populate the same area. Palestinian society has nearly 3.8 Million[9] deposit accounts, and about 50% of the adult population having access or being considered "banked."

In 2020, the sum total of customer deposits in the Palestinian banking sector was valued at $13.7 Billion[10]. The Northern West Bank represented just over 30[11]% of that figure at $4.35 Billion, second to the Central West Bank, in particular Ramallah, with deposits valued at nearly $6.6 Billion representing almost half of all deposits.

[9] PMA Annual Report 2020
[10] IBID
[11] IBID

Figure 8: Palestinian Bank Deposits by Region 2020



Source: PMA, Consultant Compilation

2.4.3. Jobs and Quality of Jobs

The cofounders of Al Bawader believe that 60 direct jobs can be created through a $10 Million investment. However, it is the consultant's opinion that a total of 474 job opportunities as a result of an investment of that size. If it is taken into account the size of the economy, and that figure is divided over the number of employed persons, the average economic activity per employed Palestinian is estimated to be $21,106 (based on $17 Billion in GDP divided by 812,000 employed Palestinians). If the proposed investment ($10 Million) is divided by the economic activity per employed Palestinian ($21,106), the result would be 474 potential employment opportunities created. This will be further addressed in the Job Assessment in terms of direct, indirect, and induced jobs that result from construction and network effects of the investment.

On a related note, the Palestinian economy has public administration and defense accounted for $1.5 Billion and $1.56 in contribution to the GDP in 2018 and 2019 respectively.[12] The number of public sector employees is estimated to be approximately 15%[13] of the total employed labor force or an estimated 125 thousand Palestinians based on the 812,000 employed Palestinians. In other words, 15% of employed Palestinians are housed within the public sector which accounts for 10% of Palestinian GDP.

[12] PCBS: Yearbook, 2020
[13] PCBS: Labor Force Survey, 2020

Therefore, assuming the $10 Million would be allocated within the private sector, the economic impact can be upwards of 811 total jobs created. For the interests of remaining conservative with the estimates, the 474 jobs created will be adopted.

However, if one looks at the effect of public financing on investment and job creation, it can be surmised that the addition of public finance would actually lower the share of the private investor with respect to the cost per job created as well as increase the number of jobs created. Based on the table below, a review of investment projects valuing nearly $17 Billion that mixed public and private investment was assessed. As such, it can be seen clearly that the job creation requirement for mixed versus purely private is vastly different. The overall cost per job is lower on the private or stand-alone side, at $76,402 relative to the overall projected cost of $153,758. Interestingly enough, as roughly one third of the financing was supplied by the public sector, the actual cost came down to $96,407, lowering the actual cost by over 37%, which is a result of the nearly 60% increase in jobs actually estimated to be created. In fact, the cost to the private investor is actually lower in the mixed scenario ($64,326) as opposed to the stand-alone scenario ($76,402), due to the distribution of the financial burden making it more advantageous for investors to create even more employment opportunities. Therefore, when the question is asked about public finance, the answer is a resounding yes as it will stimulate the private investment, and speed up job creation.

Table 7: Effect of Mixed (Public and Private) Financing and Investment on Job Creation

	Number of Projects	Number of Investors	Investment Spending (millions)			Job Creation Requirement	Job Creation Estimate
			Total	EB-5	Non EB5		
Regional Center[2]	134	10,644	$ 16,366	$ 5,446	$ 10,920	106,440	169,759
Stand-Alone[3]	428	428	$ 327	$ 327	$ -	4,280	4,280
Total	562	11,072	$ 16,693	$ 5,773	$ 10,920	110,720	174,039

[1] Active EB-5 project selection was based on number of I-526s approved during FY2012 and FY2013. Active EB-5 projects include projects at various stages--beginning, ongoing and completed--during this period.

[2] Regional Center data were compiled from Economic Impact Analyses submitted by Regional Centers.

[3] Stand-Alone projects were estimated using the minimum investment amount per project depending on whether the project was located in a targeted ($500,000 minimum) or non-targeted ($1 million minimum) employment area.

Source: ESA estimates based on Economic Impact Analyses submitted to USCIS and IPO investor data

2.4.4. Economic and Market Dynamics Improvement

As stated before, the current market situation consists of Palestinian farmers that use greenhouses importing all polyethene covers and thermal shaders from other countries, particularly Israel, Turkey, China, Egypt, and Jordan. Between 2016 and 2020, nearly $72 Million worth of plastics, including the polyethene for greenhouses was imported into Palestine with the afore mentioned countries accounted for nearly 90% of that amount.

Table 8: Palestinian Imports of Polyethene Greenhouse Film 2016-2020

Trade Partner	2016	2017	2018	2019	2020
Israel	$ 5,410,342	$ 7,867,712	$ 7,227,492	$ 7,623,446	$ 5,481,988
Turkey	$ 1,467,149	$ 1,974,117	$ 1,899,377	$ 3,277,780	$ 5,138,379
Egypt	$ 375,734	$ 746,130	$ 987,903	$ 1,573,655	$ 1,044,331
China	$ 1,047,525	$ 977,244	$ 1,393,858	$ 1,494,819	$ 1,699,675
Jordan	$ 490,914	$ 548,757	$ 874,674	$ 696,729	$ 636,003
Italy	$ 342,635	$ 472,324	$ 308,201	$ 452,838	$ 252,730
Other	$ 1,625,450	$ 1,853,756	$ 1,799,801	$ 1,667,457	$ 974,280
Total	$10,759,749	$14,440,040	$14,491,306	$16,786,724	$15,227,386

Source: UNCOMTRADE, Consultant Compilation

As a result, assuming capturing 10% of the market, annual revenues over the same period would be approximately $1.4 Million annually. This would undoubtedly create faster response times to meet market needs.

The Market Development Approach, also known as M4P Approach,[14] is based on addressing the underlying causes of sub-optimal performance in markets in order to create sustainable economic growth. The M4P framework consists of three main elements: The Core, Supporting Functions, and the Rules. Below, a standard M4P framework, often also called the 'M4P Doughnut' is described, followed by a framework representing the Palestinian market.

The market system map, or doughnut, is a visual depiction of the three key elements of a market: The Core, Supporting Functions, and Rules, accompanies by the market players that perform these.

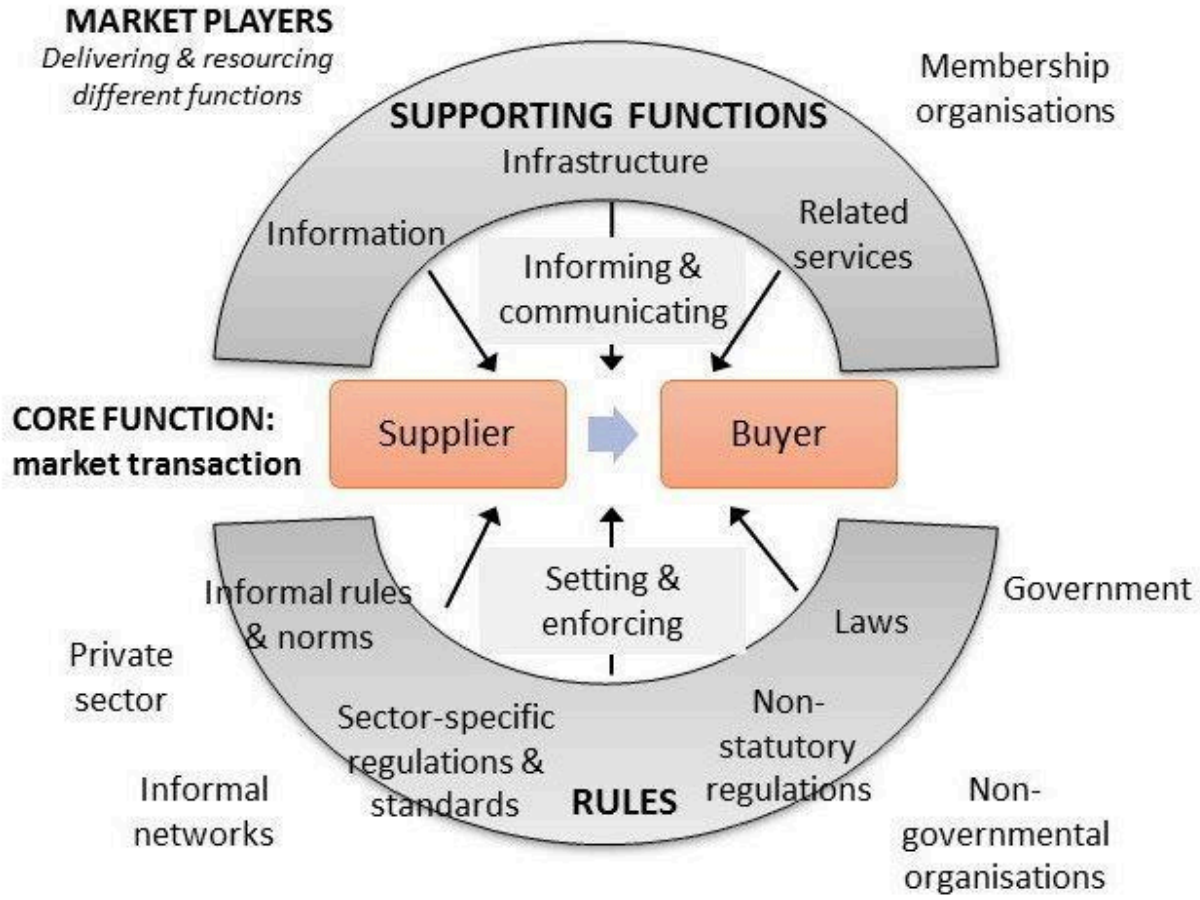
The Core, entails the exchange of good or services, along with the nature of the market and the transactions involved. Supporting Functions are supplementary goods or services that are required by the Core to operate effectively. Rules are the regulations, laws, and informal norms which govern the

[14] https://beamexchange.org/guidance/m4p-operational-guide/

market, either enabling or limiting growth. Market Players are various agents that perform the functions entailed in the Core, Supporting Functions, and Rules.

Al Bawader would be able to have more control over the core function of the supplier to buyer relationship, thus enhancing the value delivered to the domestic market, let alone the potential for supplementing regional markets as well.

Figure 9: M4P Market System Map



Socio-Economic Benefit Framework

Now the effects of the socio-economic benefits that would stem from Al Bawader's foray into Palestinian manufacturing were discussed briefly, and subsequently summarized in the following tables assessing first, the socio-economic benefits, and then the corresponding costs.

Table 9

Benefit	Description	Value	Method of Calculation
Social Cohesion	Opportunities to youth, women, and Area C residents	Only 300,485 or 47% of Palestinians over 15 years of age are employed in the northern West Bank[15]	Total population per Governorate X Over 15 Age Group = Labor Force Eligible; Labor Force Eligible Population X Labor Force Participation Rate = Active Seekers; Active Seekers X (1 – Unemployment Rate) = Employed Persons
Economic Inclusion	Access to financial services		
Jobs and Quality of Jobs	Job Creation and sustained gainful employment		
Economic and Market Dynamics Improvement / Forward and Backward Integration	Faster market responsiveness, ability to market competitor and potential market leader within 3-5 years	Imports of plastics over the last 5 years of $ 72 Million, specific greenhouse films accounting for $2.7 Million, with	Assuming that the products were produced locally, 34.56% of the cost from VAT would be taken off at cost, and then reassessed at only 16% for the domestic Palestinian market, creating a savings for Palestinians of nearly $1 Million over the same period on material costs alone.

[15] Annex with Consultant Compilation and PCBS Labor Force Survey

		cost/kg dropping but still expensive and assessing a Value Added Tax twice.	
Upstream and Down Stream Development	With the creation of anywhere between 60 direct jobs and a total of potentially 474 discussed previously, the over 400 potential jobs would be created amongst intermediaries within the industry value chain.	$8.7 Million would be pushed back into the value chain immediately over the first year of operations.	The GDP/The number of employed Palestinians ($17 Billion/800K) = the economic value of each job, equaling $21,106. That figure is then multiplied by the number of jobs outside of Al Bawader's direct employees resulting in over $8.7 Million within the first year.
Public Sector	The public sector would reap the benefits of tax revenues, aside from having private and debt equity placed in an industrial enterprise that would act as a driver of agricultural production growth.	$1.5 - $2 Million in tax revenues per year	15% tax rate multiplied by the economic activity generated from Al Bawader and value chain partners ($10 Million = 8.7 + 1.3 revenues from Al Bawader)

2.5 Socio-Economic Cost Framework

Table 10

Cost	Description	Value	Method of Calculation
Social Cohesion Economic Inclusion Jobs and Quality of Jobs	Job training programs targeted at residents and marginalized communities, to attract the 450,000 unengaged Palestinians over 15 that aren't employed in the region.	$1.24 Million	The average cost of a job created through a job training program such as YES, UNDP, etc… ranges from $2,400 - $3,300, so an average of $3,000 per job multiplied by the 414 jobs (474-60 direct Al Bawader jobs)
Economic and Market Dynamics Improvement / Forward and Backward Integration	Ministry of National Economy (MoNE), the Chambers of Commerce, Ministry of Finance (MoF), PalTrade must be ready to create the necessary mechanisms for these market forces to integrate and develop in order for the industry to take hold within the Palestinian economy and subsequently grow.	$3,000,000	A typical donor program initiative spans 3 years, with an average budget for public and semipublic agencies of $250k annually, with four bodies working jointly over a three-year period, (250X4)X3 = $3 Million
Upstream and Down Stream Development	Value Chain Intermediaries Integration into the	Included within the $4.27 Million (1.27 + 3)	

	Economic Framework		
Public Sector	The Palestinian Ministry of Local Government (MoLG), and the Municipal Development Lending Fund (MDLF) must ensure that the area where the facilities are to be located have adequate infrastructure (roads, sanitation, utilities) potentially	$500,000 - $1,000,000	Between $10-20/$m^2$ multiplied by 5 Dunams, to upgrade, reclaim, and enhance the level of infrastructure necessary for Al Bawader and value chain partners to operate.

2.5. Risk Assessment Matrix

Table 11

Risk	Description of Risk	Severity	Probability	Mitigation
Political	Goods and Materials Needed for Installation and subsequent production Area B is Problematic due to Israeli Military Control, Particularly in Northern West Bank areas of Jenin and Nablus	High	Medium	Coordination with PMoNE, MDLF, PalTrade, Palestinian Israeli Security Coordination Apparatus

Labor Mismatch	Delays in Hiring Staff or targeting Under 30 with Necessary Qualifications	High	Medium	Universities and Job Placement Program Engagements
Operational	FTTH/B is necessary for German Partner to supervise operations and procedures, inbound raw material shipments through Jordan	Medium	Medium	Cooperation with Local Municipalities and ISP, and Palestinian Border Control
Market	Israeli firms have a pronounced advantage due to the lengthy time of supplying the Palestinian market with the polyethene plastics necessary for greenhouses.	Medium	Medium-Low	Customer Outreach, Marketing and Awareness Campaigns, Customer Relationships, Value Chain Supplier and Partner Development

3. Internal Analysis

3.1. Five Forces

By applying Porter's Five Forces tool, the nature of the market can be gauged, the power can be identified, and more importantly, the question of the industry being profitable and therefore to be entered is addressed by the scoring mechanism. Simply put, if the overall score is 60 or less, than the industry is profitable and should be entered, if the overall score is more than 60, than the industry is not profitable due to any mix of the five forces.

In the case of Al Bawader, the industry is deemed to be attractive and should yield profitability as a number of factors seem to be positive signals such as its market presence being an advantage relative to foreign competition, the barriers to entry such as high capital costs as well as the ability to secure or procure the necessary processes and raw materials, and the fact that customers are hungry for a product and don't have that many immediate options available to them.

In terms of the Five Forces, the lack of domestic competition is a factor that is an opportunity for Al Bawader, represented by the low score in Industry Rivalry of 6.5, followed by New Entrants and Customer Bargaining Power respectively at 7.5 and 8.7. The lower the score, the more advantageous the force is to Al Bawader. Substitutability and Supplier Bargaining Power were relatively the least

advantageous at 12 and 10.67 respectively. An overall summation of the weighted scores yielded a result of 45.37, well below the 60-point threshold and therefore indicating the attractiveness of the industry for Al Bawader.

It is worth noting the rubric used for arriving at the weighted score, which is the importance of the force multiplied by the threat level of the respective force. A series of questions were assessed on a 0 – 1 basis for each force, which were then averaged and multiplied by 5 (with 5 representing the five forces) to result in the importance scores. The threat levels were assessed according to a rating from 1 – 5 where 1 is the lowest threat and 5 being the highest. The individual scores for each of the five forces is available in the annex for review.

Table 12

Force	Importance	Threat	Weighted Score
Industry Rivalry	2.17	3	6.50
Bargaining Power: Suppliers	2.67	4	10.67
Bargaining Power: Customers	2.90	3	8.70
New Entrants	2.50	3	7.50
Substitutability	3.00	4	12.00
		Profitable Industry	45.37

3.2. Competitive Profile Matrix

Previously a competitive profile matrix was undertaken to assess the competitiveness of Al Bawader relative to three main market players, two Israeli and one Jordanian, that currently provide the polyethene materials for greenhouses. So as not to repeat what has already been said, the competitive profile matrix has taken the key success factors which stemmed from the Five Forces Analysis.

Table 13

Industry		Al Bawader		Gingear		Politiv Ltd		Daudco	
Critical Success Factor	Weight	Rating	Score	Rating	Score	Rating	Score	Rating	Score
Supplier Collaboration	0.1	3	0.3	2	0.2	2	0.2	2	0.2
Partner Flexibility	0.1	2	0.2	3	0.3	4	0.4	2	0.2
Usage of Internet	0.1	4	0.4	3	0.3	3	0.3	1	0.1
Customer Focus	0.2	4	0.8	3	0.6	3	0.6	3	0.6
Lean Production/Product Variety	0.2	3	0.6	4	0.8	3	0.6	3	0.6
Internal Integration	0.15	3	0.45	4	0.6	2	0.3	4	0.6
Quality Management	0.15	4	0.6	4	0.6	4	0.6	3	0.45

Scores	1.00	Al Bawader	3.35	Gingear	3.40	Politiv Ltd	3.00	Daudco	2.75

3.3. SWOT

Having studied the industry to assess profitability and attractiveness, and then the success factors within it amongst key competitors, the next phase is to compile the internal and external factors in a manner whereby strategies can be formulated to seize upon opportunities or counteract market forces. They will be summarized as points, due to the fact that the subsequent strategies will be developed and described in more detail. Also, the Five Forces analysis and Competitive Profile Matrix also addressed these issues in some form or another, and as such, there is no need to regurgitate the information yet again.

Key takeaways from this exercise can be summarized as follows:

1. Aggressive Strategies
   1.1. Focused efforts on geographic presence throughout the West Bank through value chain partnerships and representative offices, particularly in underserved areas such as the Central and Southern West Bank for expansion
   1.2. Offer support for existing greenhouses and even consultations on how to manage agricultural production and maintenance more efficiently

1.3. Create relationships and partnerships with Aid Agencies (PARC, UAWC, APHEDA, ACTED etc…) to be a value-added supplier or partner for greenhouse delivery

2. Defensive Strategies
   2.1. Partnerships or working relationships with banks and MFIs to help
      2.1.1. Extension of credit policies and terms for customer acquisition
      2.1.2. Financing options for customers to purchase necessary materials
   2.2. Partnerships with local universities and trade schools for apprenticeships and job placement to address the labor mismatch

Table 14: SWOT Matrix Strategic Framework

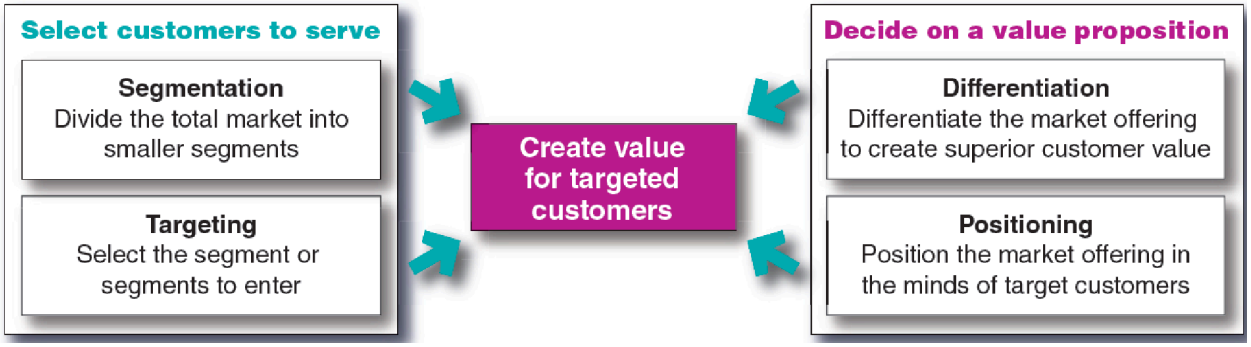
The organisation	**Stengths – S** 1. Existing brand 2. Existing customer base 3. Existing distribution	**Weaknesses – W** 1. Brand perception 2. Intermediary use 3. Technology/skills 4. Cross-channel support
Opportunities – O 1. Cross-selling 2. New markets 3. New services 4. Alliances/co-branding	**SO strategies** Leverage strengths to maximise opportunities **= Attacking strategy**	**WO strategies** Counter weaknesses through exploiting opportunities **= Build strengths for attacking strategy**
Threats – T 1. Customer choice 2. New entrants 3. New competitive products 4. Channel conflicts	**ST strategies** Leverage strengths to minimise threats **= Defensive strategy**	**WT strategies** Counter weaknesses and threats **= Build strengths for defensive strategy**

4. Marketing Strategy

To develop a customer driven market strategy, there are two main elements that must be addressed in order to enact the strategies based on the multiple levels of market analysis that has been undertaken. First, Al Bawader must select which customers to serve within its given scope of industrial and market

activities. Second, the value proposition to be offered to the customers selected must be clear and create value for the targeted customer, and Al Bawader.

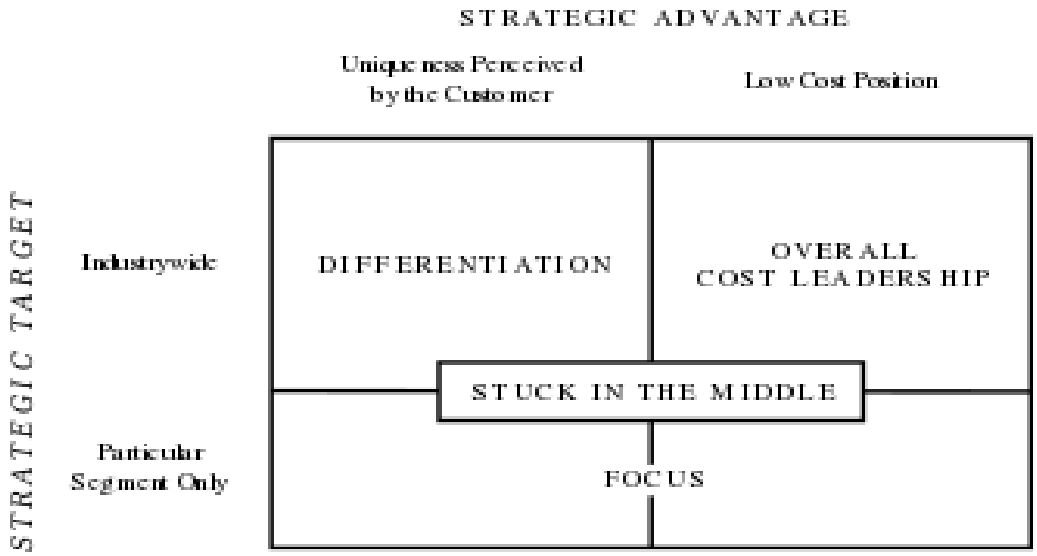
Figure 10: Strategic Marketing Framework



Upon identifying the target and value proposition, Al Bawader's question then becomes, how best to allocate its resources to pursue high value target markets. This is undertaken with a simple approach that identifies whether or not Al Bawader can control its logistics and supply chain elements (Overall Cost Leadership), or it is able to present a fundamentally innovative or unique product that competitors can't match (Differentiation), or whether or not Al Bawader is able to develop a more intimate and insightful relationship with its customer base (Customer Focus).

In the case of Al Bawader, the market presents itself in a manner that one overall strategy is sustainable and viable given the nature of the domestic Palestinian market, with its ever-evolving list of caveats and external pressures, which is Customer Focus. By fostering the relationships with local value chain partners and intermediaries, as well as farmers, Al Bawader can know its customer and service that customer in a manner whereby competitors would have to entrench themselves in the Palestinian market, which is limited and won't be attractive over the long term as competition would also come from Israeli, Jordanian, and Turkish providers. That also can be translated into a core competency and subsequent competitive advantage for Al Bawader should it reach beyond the domestic market, into external markets within the region.

Figure 11: Porter's Generic Strategies



4.1. Segmentation

In terms of segmentation, there are several approaches that take into account the geography, where there has been a well-established effort in the Northern West Bank in terms of using greenhouses for agricultural output. This region represents over 76% of the estimated units within the West Bank. In particular, key governorates are Tulkarm (23%), Jenin (22%) and Tubas (15%), representing 60% of the West Bank themselves. In the Central West Bank, only Jericho has any significant representation (6%) and Hebron represents 11%. Strategies can be developed towards increasing the number of greenhouses in the North and underserved areas, as addressed previously in the SWOT analysis.

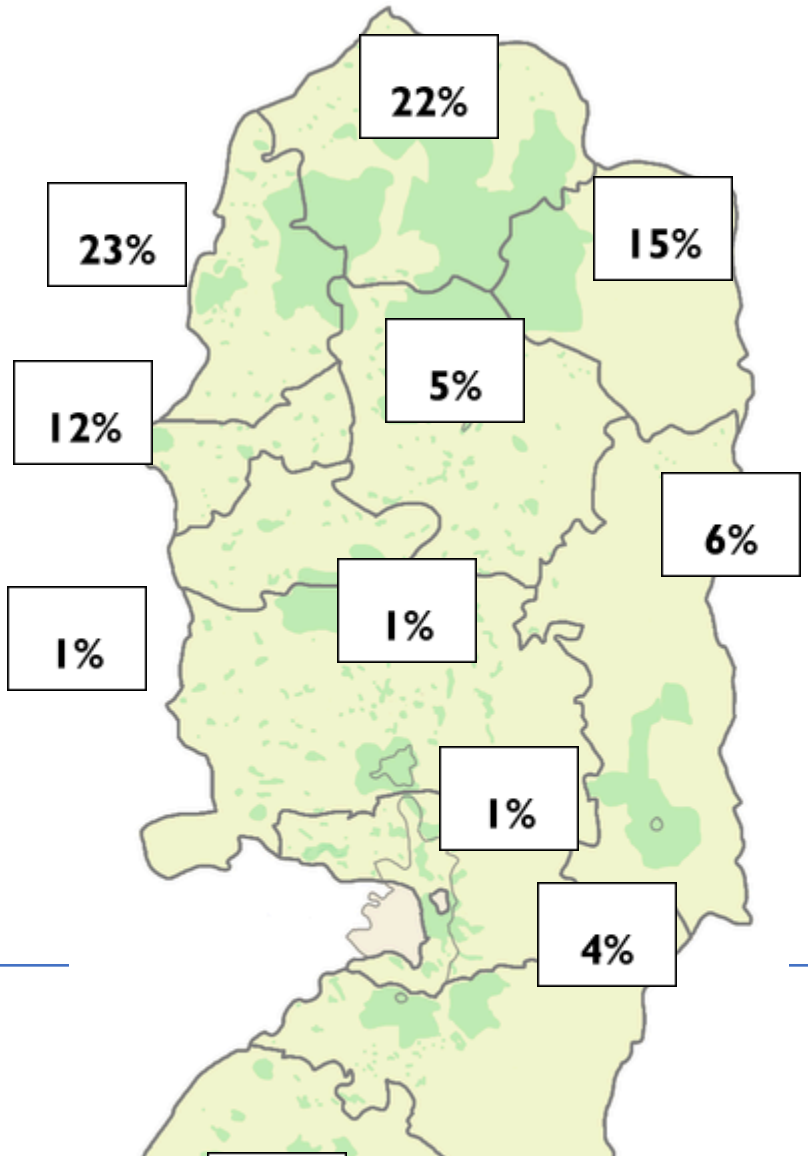
Table 15

Region	2011 **Greenhouses**	Estimated 2020 **Greenhouses**
Northern West Bank	7,728	10,481
Central West Bank	816	1,107

Southern West Bank	1,510	2,048
West Bank	**10,054**	13,635

Therefore, there are individual farmers with greenhouses, large farms with greenhouses, and home gardens with greenhouses. Also, there are French tunnels that farmers use for seasonal agricultural crops to combat the environment as well as various bugs and animals. However, in the case of the first year, it is important to establish Al Bawader as the sole source in Palestine for Palestinian greenhouse needs. This is where the Customer Focus Strategy plays a role in keeping the firm on target and helping it to avoid distractions due to its inherent need to go beyond customer satisfaction and acquire as much insight and knowledge from the customer as possible.

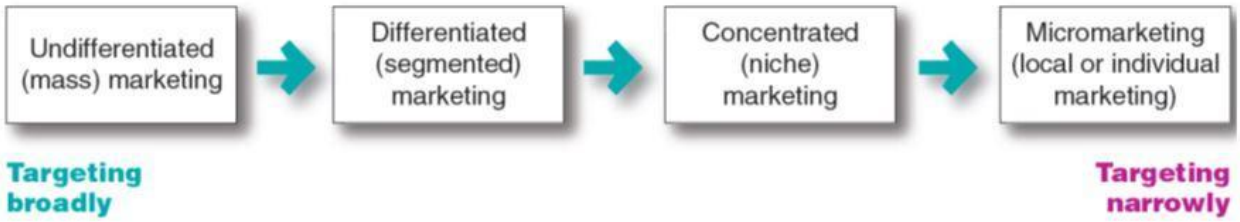
Figure : West Bank Distribution of Greenhouses



4.2. Targeting

With the emphasis firmly on greenhouses, under the overall umbrella of the Customer Focus Strategy, Al Bawader should apply a more niche – local targeting effort, understanding the unique needs of each area's situation and challenges. Therefore, a customer approach developed for the Northern West Bank, should not be applied to the Central or Southern areas. It could be similar, but there must be a profound and explicit difference in order to acquire and maintain customers.

Figure 13: Al Bawader Targeting Strategies



4.3. Positioning

As the Palestinian economy for the most part is import oriented and subsequently reliant on the flood of foreign products (in 2020 over $6 Billion worth of products and goods were imported to Palestine against exports of $1 Billion, thus creating a trade deficient of $ 5 Billion[16]) it will be difficult to brand quality and higher value for a domestically produced product. However, this can be overcome with identifying the key areas where Al Bawader can overtake the domestically distributed products, such as lead time, customer service, payment terms, and delivery.

4.4. Marketing Mix

The Marketing Mix to be applied by Al Bawader should allow for the balance between revenue generation, satisfaction of market needs and wants, while emphasizing and strengthening the brand as it will undoubtedly come into competition with other firms in the immediate region (Israeli and Jordanian), as well as extended (Egypt and Turkey). The product and price will focus on the target customers, namely the greenhouse owners and operators in the West Bank, particularly the central and southern, while the promotion (or communication) and place (or distribution) elements will focus on the positioning of Al Bawader in the market relative to competitive alternatives.

[16] Source: PCBS, Total Value of Registered Palestinian* Imports, Exports, Net Balance and Trade Transaction for 2020

Figure 14: The Marketing Mix

4.4.1. Product

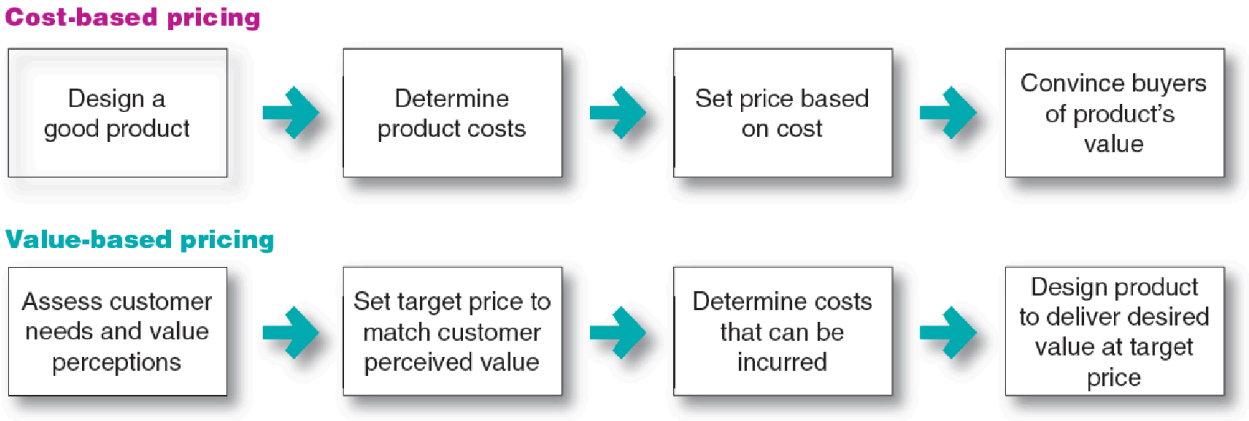
Al Bawader will focus on two key elements:

1. The **Quality** of the product stemming from the German partner and the state-of-the-art manufacturing process
    a. Quality Level
        i. Performance Quality to ensure the product performs its stated functions to at least meet customer expectations
    b. Conformance Quality
        i. Consistency in the product which is defect free while delivering a targeted level of performance
2. The **Services** that are offered in support of the product
    a. Customer Relationship Management to ensure that all relevant insights are captured subservient to the afore mentioned Customer Focus strategy adopted by Al Bawader

4.4.2. Price

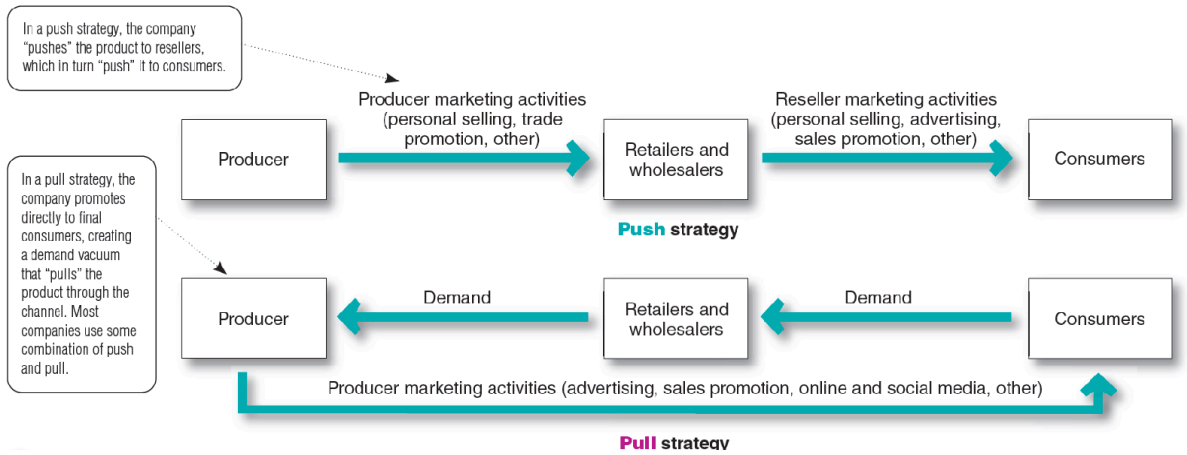
With respect to the pricing, deep discounting or lowering the price arbitrarily is not an option for Al Bawader, as it will not be able to compete with A Politiv or Gingear or even Daudco for an extended period of time with little to no margins due to inefficient pricing. Therefore, a value-based approach is to be recommended. However, even a cost-based pricing method can be utilized, but as costs aren't necessarily stable, and with no control over raw materials or inbound logistics to the production facilities, it will be difficult to maintain consistency in pricing not only with final customers such as farmers, but also with value chain partners and intermediaries as well.

Figure 15: Al Bawader Pricing Philosophies



Al Bawader can justify any price premium over time through building a strong brand and reputation, however, in the meantime, it can adopt more customer and partner friendly policies such as extending allowances to customers as performance incentives (i.e., if they purchase more over a shorter period of time, say within a year, by the end of the year an allowance would be granted in the form of a rebate or reduction on the subsequent order).

Figure 16: Push and Pull Strategies



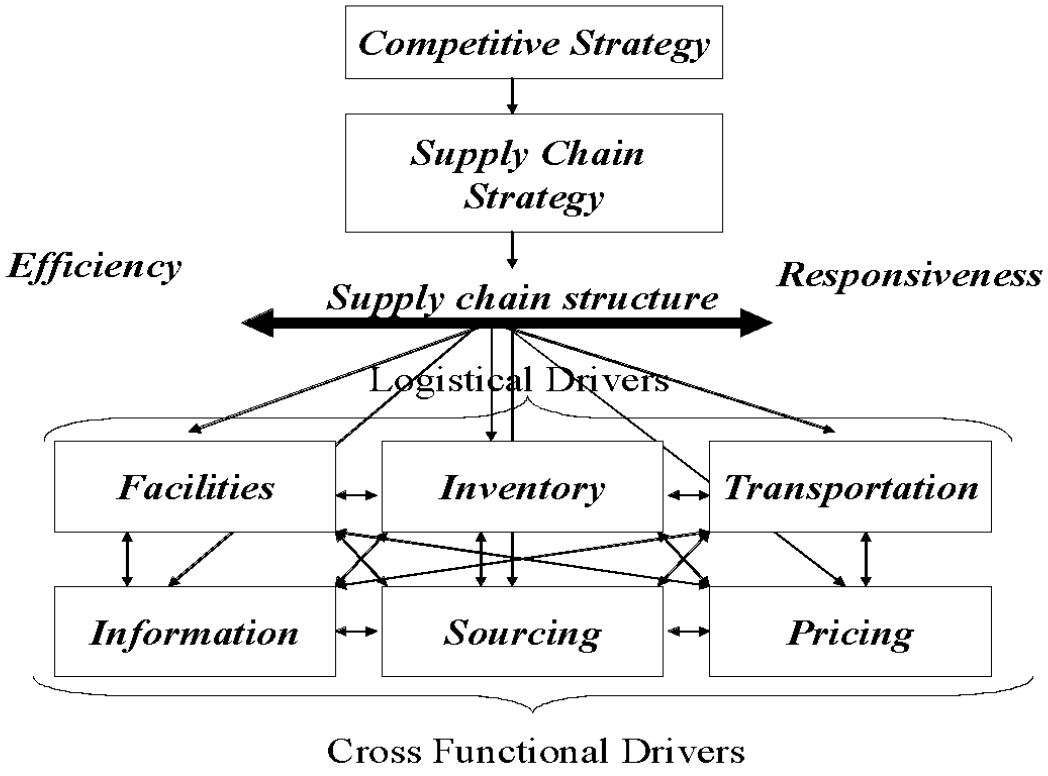
Credit terms and payment periods can be extended through partnerships with banks and MFIs to support and relieve the pressure from the farmer or customer of having to come up with the money ahead of time. This would allow for an extended level of interactions and multiple touch points as lenders and financing institutions would be essentially dealing with otherwise "unbanked" or bank averse clients. This lends itself to the targeting strategies stated earlier, of being local, for example, some areas within the West Bank would prefer to deal with Islamic banks, whereas others would prefer MFIs if the size of the loan is between $10,000 - $20,000, with some potential clients preferring standard debt financing or even public grants.

4.4.3. Distribution

With respect to the distribution, the production facilities will serve as the main launching point for finished products, however, distribution of Al Bawader's customer touch points would be viewed somewhat differently. Al Bawader's advantage being in the Palestinian market is that of responsiveness to market needs. As it would have one production facility, the onus is on the cross functional drivers of information, sourcing, and pricing, which are addressed through the partnership with the German firm, the ability to procure raw materials from Saudi Arabia and Qatar.

The other element is to set up representative offices or partnerships with other intermediaries and value chain partners across the West Bank, particularly in the Northern West Bank (Nablus, Tulkarm, Jenin), the Central West Bank (Ramallah, Jericho), and the Southern West Bank (Hebron). This will add to the responsiveness to market and customer needs, collecting feedback and insights, and establishing a presence further adding to the brand building of Al Bawader.

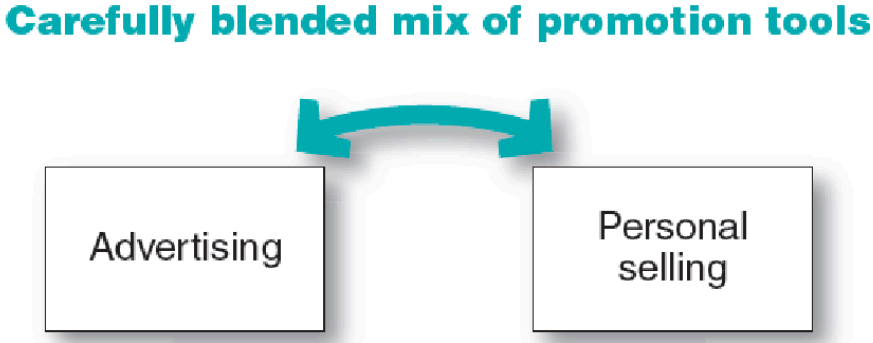
Figure 17: Supply Chain and Distribution Framework



4.4.4. Communication

The communication strategy for Al Bawader entails the following mix of promotional tools

1. Advertising through traditional channels (print media, billboards, etc…)
2. Personal selling through sales representatives to interface directly with customers and partners
3. Public relations through presence at universities and trade schools
4. Digital marketing through social media, website, and blogs to help farmers and customers better manage their agricultural production
5. Sales promotions such as allowances and rebates



5. Operations

5.1. Locations and Facilities

The Jenin Industrial Free Zone (JIFZ) JIFZ is located north of the city center, about 1.6 km west of road 60, on the boarders between the West Bank and Israel. The total area of JIFZ is 95 hectares (950 dunums), 68.6 hectares of which are used by industrial and commercial enterprises, while the remaining lands are allocated for roads, parking lots, storehouses, in addition to green spaces.

The project was launched in 1996 to create new jobs, absorb increasing numbers of the workforce in the northern West Bank governorates, reduce Palestinian dependence on Israeli labor market and attract domestic and foreign investments. JIFZ targeted all industrial activities and sectors, including agriculture, food and hi-tech.

The German government was highly interested in JIFZ, and has taken upon itself the provision of the external infrastructure in the area. In addition, the Turkish government supported the project by allocating USD 12 million for the acquisition and preparation of land for leasing. The concession of running and developing the internal infrastructure of JIFZ was granted to a Turkish company (TOBBBIS). Investments in the industrial zone, including internal and external infrastructure, is expected to reach

USD 74 million. There are also two types of leasing in the zone: industrial buildings ready for rent (hangars) and open lots providing infrastructure services.

In addition to Jenin, the viability of the facilities being in the industrial area of Deir Sharaf in Nablus area is also to be assessed. Deir Sharaf is a Palestinian village in the Nablus Governorate, located 7.8km northwest of Nablus City. It is bordered by An Naqura, Beit Iba, and Sabastiya to the East, Burqa and Ramin to the North, Beit Lid to the West, and Qusin village to the South. Deir Sharaf is located at an altitude of 320m above sea level with a mean annual rainfall of 574.5mm. The average annual temperature is 17oC whilst the average annual humidity is approximately 61%[17].

Over the past few years, Deir Sharaf industrial area has witnessed a number of infrastructure development activities including opening and paving of access roads, rehabilitation of old water networks and extending the water network to cover new built-up areas, construction of a sewage disposal network, construction of a new electricity network, and provision of solid waste collection containers.

The company owns land in area "B", 15 donums in total, and the infrastructure will be over an area of 5 donums. The land is in Deir Sharaf and is owned by Sameer Junaidi. The company with this investment intends to produce two kinds of plastic: 1- plastic for ceilings (Greenhouse covers) 2- plastic for ground (Thermal shreds) as well as the installation of a Thermal Shreds unit.

5.2. Suppliers

The following suppliers have been identified as potential supply chain partners for Al Bawader to serve as alternatives to the existing afore market providers due to their stated ability to produce and deliver the necessary raw materials in the forms needed by Al Bawader for processing. The concentration of the firms is in petroleum producing countries, and this search may be expanded upon finding terms deemed to be nonbeneficial to Al Bawader.

However, given the capacity, and the ability of Al Bawader's management team, it is believed that this is a viable list to procure the necessary raw materials for production.

[17] ARIJ

Table 15

Manufacturer	Raw Materials	City	Country
Al-Wafa Plastics	LDPE (Low Density Polyethylene), LLDPE, HDPE (High Density Polyethylene), PP (Polypropylene).	Dammam	Saudi Arabia
Awad Abdullah Alharbi Est.	LDPE (Low Density Polyethylene), HDPE (High Density Polyethylene).	Jubail	Saudi Arabia
Hattan Al Khairath Trading Est	Polyethylene (HDPE, LLDPE)	Dammam	Saudi Arabia
Middle East Plastic Industries	PS, GPPS, HIPS, PET, LDPE (Low Density Polyethylene), HDPE (High Density Polyethylene), PP (Polypropylene), Linear Low-Density Polyethylene (LLDPE).	Jeddah	Saudi Arabia
Polytopia	High Density Polyethylene (HDPE), Low-density Polyethylene (LDPE).	Dammam	Saudi Arabia
Sact International Trading Company	High-Density Polyethylene (HDPE), Low Density Polyethylene (LDPE), Linear Low-Density Polyethylene (LLDPE), Polypropylene (PP).	Riyadh	Saudi Arabia
BIEWU INTERNATIONAL TRADING WLL	HDPE, MDPE	Doha	Qatar
Doha Plastic	High Density Polyethylene (HDPE), Low-density Polyethylene (LDPE).	Doha	Qatar

The other factor aside from having options from the Saudi and Qatari markets as trade partners, is the relatively low prices from those countries, resulting from low input costs due to their status as energy providers through petroleum and gas. The export prices from these markets for the raw materials in needed for production have consistently been pushing downward over the past four years resulting in a shipped price of $1.00 per kg of raw materials.

Table 15

Year	Sum of Trade Value (US$)	Sum of Net weight (kg)	Avg $/kg

2017	$ 1,760,930	1,168,236	$ 1.51
2018	$ 2,954,009	1,865,182	$ 1.58
2019	$ 1,691,499	1,573,860	$ 1.07
2020	$ 650,242	647,280	$ 1.00
Total	$ **7,056,680**	**5,254,558**	$ 1.34

5.3. Capacity

Production Line and Equipment:	**Cost in USD**
Production Line	4,588,320
Shipping and Taxes	60,500
Reel Lifting and handling	48,400
Raw material containers and silos	60,500
Installation: Assembly and wiring	60,500
Software and electrical infrastructure	24,200
Compressor and compressed airliners	72,600
Water and air cooling system	121,000
Power Generator	60,500
Recycling Production Line (Including washing and palletizing…etc.)	330,000
Total	**5,426,520**

The operational capacity of Al Bawader is reflected in the following three phases, the first, illustrating the production of plastic sheets for greenhouses. The production capacity for Al Bawader's product line is estimated to be 900 kg/hr. This more than meets the current demand for greenhouses, but more

importantly, allows for the market to expand in the Central and Southern West Bank, as mentioned previously. Also of note, as the number of greenhouses has been increasing in the West Bank over the past 10 years, the number of greenhouses in the Gaza Strip has fallen due to the blockade and Israeli restrictions on goods such as raw materials flowing into the Gaza Strip. Al Bawader would be able to address that market as well, although the West Bank was the primary focus of this assessment.

In addition to that, again, in terms of financial resources, the overall cost of the project is estimated to be $10,000,000, with $7,000,000 being supplied through a mix of a $4,000,000 injection from the owners, and a $3,000,0000 bank loan which is in the final stages pending this assessment. Therefore, 70% of the capital needed to launch, would be assumed by Mr. Sameer and Mr. Ahmad AlJuneidi.

The technical acumen necessary to produce a high-quality product on par with Israeli and other foreign products would be supplied by the German industrial partner, Reifenhäuser Blown Film, monitoring and managing the production process through a fiber optic connection. While one can question this method, Harri, a highly successful American tech startup has employed this method using a live portal for teams around the world to interface with the New York headquarters in a continuous process. Other firms such as Freightos, and Mashvisor have managed teams in a similar fashion.

A point of order regarding the german firm, upon researching the firm, over 7,500 implementations of this type of production line have been realized, as well as having other value chain extensions in other aspects and manufacturing fields. Based on the technical offer and specifications provided, it is with relative assuredness that the operational capacity and efficienicy will be addressed in a manner whereby benchmarking standards have been adhered to. This lends further validity to the argument of a high quality and high value product being produced within the Palestinian market that would be competitive against other afore mentioned firms.

Estimates of solid waste in Palestine reach up 1.58 Million Tons annually[18], with plastic accounting for 14.6%[19] of that figure. As part of the assessment, the technical feasibility and equipment needed to manufacture the aforementioned products is necessary to substantiate the claim of the firm in its request for public finance. As such, the focus on this aspect of the section will address the process of recycling the plastic waste, a unique offering by Al Bawader relative to the Israeli and Jordanian markets, let alone the domestic Palestinian market itself.

This feature is quite important to justify the rationale for support through public finance, but more importantly, to emphasize Al Bawader's commitment to Palestinian societal development along socio-economic lines, not just from a market opportunity standpoint. However, from a market-oriented

[18] Plastic Atlas 2020/ HEINRICH-BÖLL-STIFTUNG
[19] IBID

perspective, the ability to utilize waste and generate assets in the form of raw materials for production shouldn't be lost either.

The expected process for treating the plastic waste and recycling it can be summarized as follows:

- Dimensions for film output are 40-60 mm
- Moisture content ranging from 2-5% for film for easier storage of washed materials
- Capacity for output ranges from 300-1,000 kg/h for film
- Dividing the waste materials according to the specific type
  - Low Density Polyethylene (LDPE) waste film recycling and washing
  - Polyethylene agriculture through film crushing and washing
  - Waste Polyethylene film recycling line
  - Waste film recycling and washing line

The system configuration for the process includes the following components for the line:

Number	Description
1	Belt Conveyor
2	Crusher (Water)
3	Screw Loader (Under the Crusher)
4	Low Sped Friction Water
5	Floating Washer
6	Screw Loader
7	High Speed Friction Washer
8	Centrifugal Dryer
9	Thermal Pipeline Dryer
10	Packaging System
11	Electric Cabinet

As a result, the process can be streamlined and integrated into the film production process as an input. Therefore, the recycling line will require a very specific set of employees to implement the process and continue to add value to the process along the line of socio-economic development.

5.4. Production / Implementation Plan

The following is an overall assessment of the company's Readiness for investment implementation, achieved progress and required task as follows:

1- The company has the necessary knowledge and industry acumen to address the domestic market needs.
    a. The current market is underserved and reliant solely on imports of Israeli and other foreign products. The lead times can take up to 6 months for raw materials or plastic films coming from non-Israeli suppliers. This stunts the growth and ability of the agricultural sector to utilize greenhouses to optimize agricultural production.

2- An environmental impact study, site locations and the ability to inject $4,000,000 in capital alone are noteworthy.

- Negotiations have already been in place for a $3,000,0000 loan from the Arab Bank
- A German manufacturing partner has been identified to provide monitoring of management and operations remotely through a fiberoptic connection.

3- Land has been allocated for the necessary 5 dunams in Deir Sharaf but in lieu of the Jenin Industrial Parks resources, the 5 dunams can be used as collateral for the loan.
4- Our Assessment of financial appraisal techniques (NPV, IRR, Payback Period) revealed that investing with Al Bawader will be feasible.
5- The strategies outlined previously highlight the timing and alignment Al Bawader has with the local market from private sector and donor-oriented agencies that focus on the Palestinian agricultural sector.

5.5. Procurement

The following reflects Al Bawader's procurement authority and subsequent process:

Orders	The authority to sign the order is for the administrator of the entity that created the order.
Price requests	The authority to approve and sign price orders is to the Director of the Procurement Department regardless of the financial value of the order.
Anchorage decisions	The authority to grant the award decision to the holder of the authority shall be according to the schedule of powers and the method of purchase, and to the Procurement Committee for the transactions referred to it.
Supply orders and contracts	The power to sign all supply orders and contracts for all procurement methods and ceilings is the director of the Procurement Department

Receipt certificates	The authority to approve receipt certificates for all procurement methods and ceilings is to the director of the Procurement Department, who signs them or assigns others to the credit, or adopts a recommendation assigned to receive them. Transactions made through the Procurement Committee require a prior recommendation from the commission.
Invoices and exchange requests	The authority to approve invoices and exchange requests for the director of the Procurement Department, taking into account the validity of the applicant for the need for the receipt bond and in accordance with the company's financial system
Exemptions and fines	The validity of the approval and exemption of fines is for the Director of the Procurement Department, while the procurement committee requires approval of the transactions carried out through the Committee.
Requests for change	The power to decide on change orders is up to 10% of the value of the contract or purchase order for the purchasing manager, and up to 30% for the Procurement Committee, and more than that the board of directors has the power to take what it sees fit

Procedure	Financial ceiling	Holder of authority	How to buy
It is at the request of oral prices from one supplier and an oral price offer after direct negotiation	Purchasing Manager	Up to $2, 000.	Direct purchase
Written invitation to one or more suppliers to submit their bids, from at least two suppliers in cases of supplies and works, and from at least one supplier in the case of services even if they include supplies Bids must be written. Purchase offers through an internal committee formed for this purpose	Executive Director	From $2, 000 to $100,000.	Solicitation

If no more than one supply of supplies is not possible, the only supplier is awarded after negotiating the prices with him through the internal committee and documents the results of the negotiation with a special minute and is submitted for accreditation from the purchasing manager. Requires a supply order Change orders are only 30%. Exchange under a receipt and since exchange with an invoice that complies with the provisions of the company's financial system.			
Request prices written with a tender chair through an open advertisement A written invitation may be sent to suppliers from the certified supplier database Offers are made with separate envelopes At least three offers are required, two of which are classified as artistically appropriate The anchorage and completion of the transaction are conditional on the prior approval of the Procurement Committee on the anchorage Requires a contract. Exchange under a receipt minute and an exchange note with an invoice that complies with the provisions of the company's financial system	General Manager of the company	Over $100, 000.	Public tender
They are contracted directly by negotiating prices to conclude transactions of a special	The Board of Directors or	unspecified	Buy directly

nature related to the company's vital and strategic business and in particular specific raw materials and all import transactions from abroad.	who delegates it.		

6. Management

6.1. Organizational Structure and Key Personnel

No.	Job Title	Key Responsibility	Qualifications	Full Time Jobs	Describe how the number of jobs was calculated	Youth (1
1	**General Manager**	• Duties and responsibilities include formulating policies, managing daily operations, and planning the use of materials and human resources, but are too diverse and general in nature to be classified in any one functional area of management or administration, such as personnel, purchasing, or administrative services. • Usually manage through subordinate supervisors.	• Minimum four-year bachelor's degree in business, engineering or related field • Minimum seven years of experience in management or industrial related field	• 1	• The production lines are diverse and essentially require their treatment as separate divisions for marketing and distribution related purposes.	•
2	**Production Manager**	• Plan, direct, or coordinate quality assurance programs. Formulate quality control policies and control quality of	• Minimum four-year bachelor's degree in engineering, chemistry,	• 2	• The production lines are diverse and essentially require their	•

		laboratory and production efforts.	or related field • Minimum five years of experience in supervision or industrial related field		treatment as separate divisions for marketing and distribution related purposes. • Each PM will be responsible for his product line ("Kosher" pickled products, instant noodles)	
3	**Sales Officer**	• Sell goods for wholesalers or manufacturers to businesses or groups of individuals. Work requires substantial knowledge of items sold.	• Four-year bachelor's degree in business, marketing, psychology, sociology, engineering or related field preferred, but not specifically required • Minimum three years of experience in sales, marketing, or customer oriented or related field	• 2	• The production lines are diverse and essentially require their treatment as separate divisions for marketing and distribution related purposes. • Each SO will be responsible for his product line ("Kosher" pickled products, instant noodles)	•
4	**Marketing Officer**	• Research conditions in local, regional,	• Four-year bachelor's	• 1	• Coordination of marketing	•

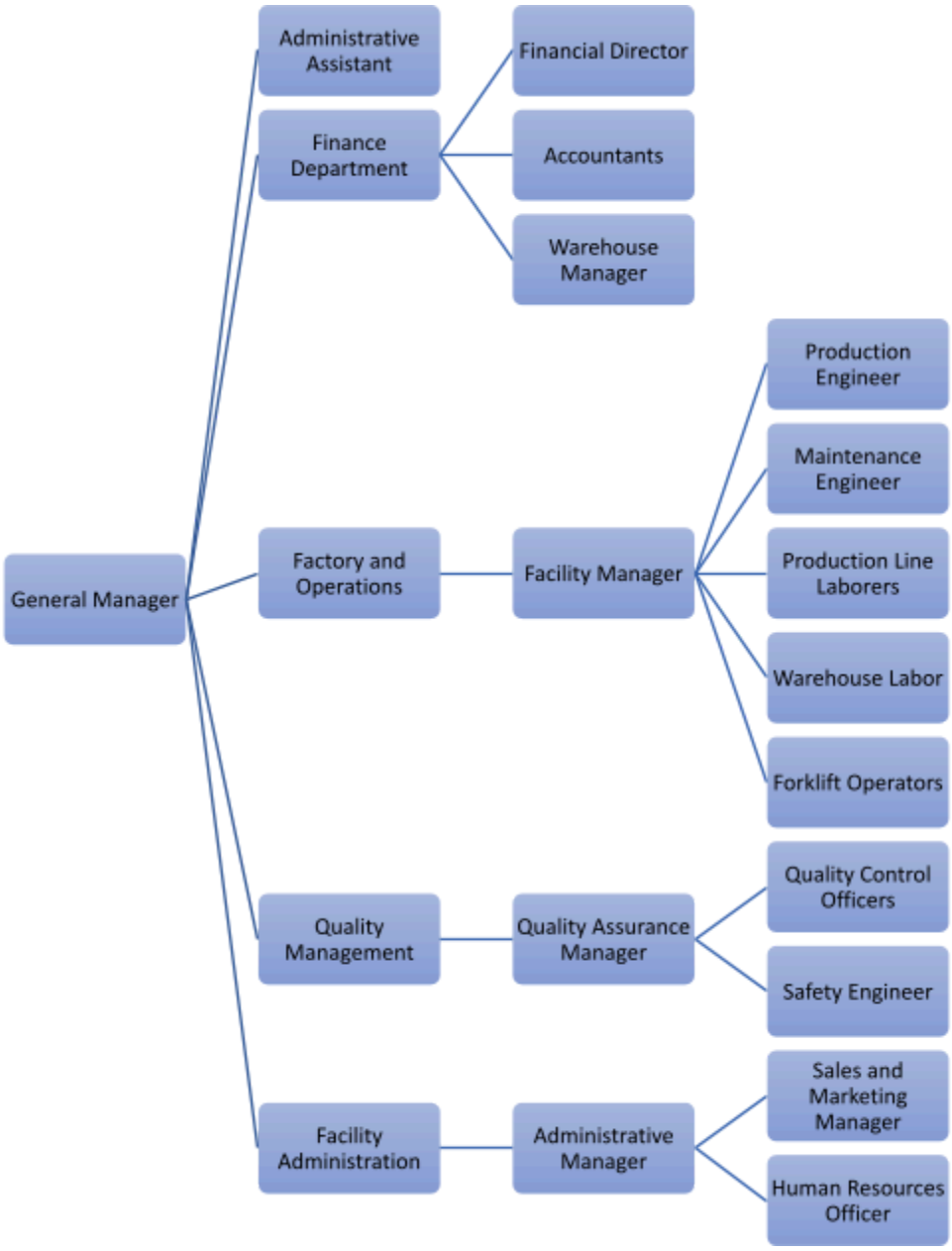
		national, or online markets. Gather information to determine potential sales of a product or service, or plan a marketing or advertising campaign. May gather information on competitors, prices, sales, and methods of marketing and distribution. May employ search marketing tactics, analyze web metrics, and develop recommendations to increase search engine ranking and visibility to target markets.	• degree in business, marketing, psychology, sociology, engineering or related field preferred, but not specifically required • Minimum three years of experience in sales, marketing, or customer oriented or related field		efforts and research will reside with SINOKROT, not specific to product lines or categories.	
5	**Quality Control**	• Conduct tests to determine quality of raw materials, bulk intermediate and finished products. May conduct stability sample tests.	• Minimum four-year bachelor's degree in engineering, chemistry, or related field • Minimum three years of experience in supervision or industrial related field.	• 3	• The production lines are diverse and essentially require their treatment as separate divisions for marketing and distribution related purposes.	•
6	**Administrative Assistant**	• Perform routine administrative functions such as	• Four-year bachelor's degree in	• 1	• Working exclusively with the	•

		drafting correspondence, scheduling appointments, organizing and maintaining paper and electronic files, or providing information to callers.	business, marketing, psychology, sociology, or related field preferred, but not specifically required		General Manager's Office and coordinating specific activities.	
7	**Accountant**	• Examine, analyze, and interpret accounting records to prepare financial statements, give advice, or audit and evaluate statements prepared by others. Install or advise on systems of recording costs or other financial and budgetary data.	• Four-year bachelor's degree in accounting, finance, economics, business, or related field required. • Minimum five years of experience in accounting or finance.	• 2	• The production lines are diverse and essentially require their treatment as separate divisions for marketing and distribution related purposes.	•
8	**Warehouse Clerk**	• Verify and maintain records on incoming and outgoing shipments involving inventory. Duties include verifying and recording incoming merchandise or material and arranging for the transportation of products. May prepare items for shipment.	• Vocational, Diploma, or Four-year bachelor's degree in field preferred. • Minimum three years of experience in logistics, storage, transportation, and order fulfillment.	• 3	• The production lines are diverse and essentially require their treatment as separate divisions for marketing and distribution related purposes.	•

9	**Maintenance Technician**	• Perform work involving the skills of two or more maintenance or craft occupations to keep machines, mechanical equipment, or the structure of a building in repair. Duties may involve pipe fitting; HVAC maintenance; insulating; welding; machining; carpentry; repairing electrical or mechanical equipment; installing, aligning, and balancing new equipment; and repairing buildings, floors, or stairs.	• Minimum vocational or four-year bachelor's degree in mechanical engineering, electrical engineering, mechatronics, industrial engineering, or related field • Minimum three years of experience in industrial workplace or setting.	• 3	• The production lines are diverse and essentially require their treatment as separate divisions for marketing and distribution related purposes.	•
10	**Purchasing Officer**	• Purchase machinery, equipment, tools, parts, supplies, or services necessary for the operation of an establishment. Purchase raw or semifinished materials for manufacturing. May negotiate contracts.	• Minimum four-year bachelor's degree in business, accounting, engineering, chemistry, or related field • Minimum three years of experience in purchasing, procurement, logistics, and supply chain.	• 2	• The production lines are diverse and essentially require their treatment as separate divisions for marketing and distribution related purposes.	•

11	**Truck Driver**	• Drive a light vehicle, such as a truck or van, with a capacity of less than 26,001 pounds Gross Vehicle Weight (GVW), primarily to pick up merchandise or packages from a distribution center and deliver. May load and unload vehicle.	• Valid Commercial Driver's License • Minimum three years of experience in commercial driving and distribution	• 4	• Geographic coverage, distribution, and supply chain needs merit at least four full time truck drivers being on staff.	•
12	**Forklift Driver**	• Drive industrial trucks and specialize in warehouse transportation. Their primary responsibilities include loading and unloading warehouse material, optimizing loads to ensure operational efficiency and identifying damages to vehicles.	• Valid Operator's License • Minimum three years of experience in warehouse transportation and distribution	• 4	• The volume and area of the facilitates, the materials and goods being transported in and out of the facilities merit at least 4 operators on staff.	•
13	**Operating Technicians**	• Design, integrate, or improve manufacturing systems or related processes. May work with commercial or industrial designers to refine product designs to increase producibility and decrease costs.	• Minimum vocational or four-year bachelor's degree in mechanical engineering, electrical engineering, mechatronics, industrial engineering, or related field • Minimum three years of	• 5	• The production lines are diverse and essentially require their treatment as separate divisions for marketing and distribution related purposes.	•

			experience in industrial workplace or setting.			
14	**Security**	• Guard, patrol, or monitor premises to prevent theft, violence, or infractions of rules. May operate x-ray and metal detector equipment	• Minimum completion of general secondary education	• 3	• Each security personnel will assume an eight hour shift, thus the need for three security guards for the facility.	•
15	**Production Line Workers**	• Help production workers by performing duties requiring less skill. Duties include supplying or holding materials or tools, and cleaning work area and equipment.	• Minimum vocational diploma, or completion of general secondary education	• 8	• The production lines are diverse and essentially require their treatment as separate divisions for marketing and distribution related purposes.	•
16	**Packing**	• Pack or package by hand a wide variety of products and materials.	• Minimum vocational diploma, or completion of general secondary education	• 64	• The production lines are diverse and essentially require their treatment as separate divisions for marketing and distribution.	•


General Manager
Administrative Assistant
Finance Department
Financial Director
Accountants
Warehouse Manager
Factory and Operations
Facility Manager
Production Engineer
Maintenance Engineer
Production Line Laborers
Warehouse Labor
Forklift Operators
Quality Management
Quality Assurance Manager
Quality Control Officers
Safety Engineer
Facility Administration
Administrative Manager
Sales and Marketing Manager
Human Resources Officer

7. Financial

Approximately, a total amount of USD 10 million will be requested to complete CAPEX needed for the project and working capital gap for the first 6-9 months. Al Bawader is planning to inject USD 2m, dedicate a land with an amount of USD 1m and obtaing a loan with an amount of USD 4m leaving a financing gap of USD 3m.

Project Investment Cost in NIS				
Capital Investments (CAPEX):	Working Capital (OPEX):		Total Investment (CAPEX + OPEX):	
USD 8.5 million	USD 1.5 million		USD 10 million	
Source of Finance (Please, specify the sources and amounts and add as many rows as it is needed)				
Source	USD Value	% Of Total Inv.	Available (Yes / No)	Notes
Equity / (Cash injection from owners/project sponsor)				
Equity / Cash injection from a new Investor(s) (if any)	3m USD	30%	Yes	1m USD out 3m USD will be in kind land dedicated by Mr. Sameer to Al Bawader comapny
Debt financing / Loans (e.g., banks, micro financial institutions (MFIs), Institutional lenders (EBRD, IFC, etc.)	4m USD	40%	--	
Grants			--	
Others (Please type) _____			--	
Total investment without grantsupport	7m USD	70%		
Grant Support requested	3m USD		--	
Total Investment	10 m USD		--	

Project Financial Indicators without grant		
NPV	**IRR**	**Pay Back Period**
USD 957,486.23	**11.89%**	**5.17 Years**

Project Investment Cost in NIS		
Project Financial Indicators with grant		
NPV	**IRR**	**Pay Back Period**
USD 4,039,237.25	**22.32%**	**4.12 Years**

Financial Structure **Total Investment USD 10 million**			
USD 2m Shareholder injection	USD 1m In kind land	USD 4m Loan	USD 3m Grant
CAPEX USD 8.5		OPEX USD 1.5	

7.1. Financial Plan Assumptions

Sales Annual Increment		5.00%
Annual increase in operating cost		10.00%
Annual increase in salaries and wages		5.00%

% Collection Rate 1st month	**A/R Collections**	0.00%
% Collection Rate 2nd month		50.00%
% Collection Rate 3rd month		50.00%
% Collection Rate 4th month		0.00%
% Collection Rate 5th month		0.00%
% Collection Rate 6th month		0.00%
% Payment Rate 1st month	**A/P Payments**	100.00%
% Payment Rate 2nd month		0.00%
% Payment Rate 3rd month		0.00%
% Payment Rate 4th month		0.00%
% Payment Rate 5th month		0.00%
% Payment Rate 6th month		0.00%

7.2. Key Indicators

7.2.1. Demand

Year	Number of Donums in Palestine	Growth Rate of Donums in West Bank	Al Bawader Market Share Growth	Demanded Number of Donums in Palestine
1	30,000.00		50%	15,000.00
2	31,800.00	6%	55%	17,490.00
3	33,708.00	6%	60%	20,225.00
4	35,730.00	6%	65%	23,225.00
5	37,874.00	6%	70%	26,512.00
6	40,147.00	6%	75%	30,110.00
7	42,556.00	6%	75%	31,917.00
8	45,109.00	6%	75%	33,832.00
9	47,815.00	6%	75%	35,862.00
10	50,684.00	6%	75%	38,013.00

7.2.2. Expected Sales:

Item	Amount needed in KG for each donum	Selling Price Per KG (USD)	Direct cost Per KG (USD)	Contribution Margin Per KG (USD)
Greenhouse cover films	182.40	3.28	2.24	1.04
Thermal shaders	48.00	3.28	2.24	1.04
Recycled plastic		0.75	0.31	0.44

Annual Sales in USD				
Year	Greenhouse cover films	Thermal shaders	Recycled plastic	Total
1.	5,655,825.00	2,126,250.00	554,040.00	**8,336,115.00**
2.	6,594,691.95	2,479,207.50	646,010.64	**9,719,910.09**
3.	7,625,937.38	2,866,893.75	747,030.60	**11,239,861.73**

4.	8,757,102.38	3,292,143.75	857,838.60	**12,907,084.73**
5.	9,996,482.16	3,758,076.00	979,247.23	**14,733,805.39**
6.	11,353,126.05	4,268,092.50	1,112,142.96	**16,733,361.51**
7.	12,034,464.44	4,524,234.75	1,178,886.31	**17,737,585.50**
8.	12,756,532.30	4,795,688.84	1,249,619.49	**18,801,840.63**
9.	13,521,924.24	5,083,430.17	1,324,596.66	**19,929,951.07**
10.	14,333,239.69	5,388,435.98	1,404,072.46	**21,125,748.13**

7.2.3. Cost of sales (Direct Cost)

Direct Cost in USD				
Year	**Greenhouse cover films**	**Thermal shaders**	**Recycled plastic**	**Total**
1.	3,861,732.67	1,451,779.20	230,850.00	**5,544,361.87**
2.	4,502,780.30	1,692,774.55	269,171.10	**6,464,725.95**
3.	5,206,902.89	1,957,482.29	311,262.75	**7,475,647.93**
4.	5,979,249.42	2,247,838.13	357,432.75	**8,584,520.30**
5.	6,825,483.77	2,565,971.34	408,019.68	**9,799,474.79**
6.	7,751,784.72	2,914,204.78	463,392.90	**11,129,382.40**
7.	8,216,994.78	3,089,095.78	491,202.63	**11,797,293.19**
8.	8,710,014.47	3,274,441.53	520,674.79	**12,505,130.79**
9.	9,232,615.33	3,470,908.02	551,915.28	**13,255,438.63**
10.	9,786,572.25	3,679,162.50	585,030.19	**14,050,764.94**

7.2.4. Operating Expenses

Expenses	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10

Stationery	6,000.00	6,600.00	7,260.00	7,986.00	8,784.60	9,663.06	10,629.37	11,692.30	12,861.53	14,147.69
Internet	12,000.00	13,200.00	14,520.00	15,972.00	17,569.20	19,326.12	21,258.73	23,384.61	25,723.07	28,295.37
Auditing	4,998.75	5,498.63	6,048.49	6,653.34	7,318.67	8,050.54	8,855.59	9,741.15	10,715.26	11,786.79
Licenses	1,998.75	2,198.63	2,418.49	2,660.34	2,926.37	3,219.01	3,540.91	3,895.00	4,284.50	4,712.95
Cleaning	2,501.25	2,751.38	3,026.51	3,329.16	3,662.08	4,028.29	4,431.12	4,874.23	5,361.65	5,897.82
Misc.	2,501.25	2,751.38	3,026.51	3,329.16	3,662.08	4,028.29	4,431.12	4,874.23	5,361.65	5,897.82
Construction Maintenance	63,500.00	69,850.00	76,835.00	84,518.50	92,970.35	102,267.39	112,494.12	123,743.54	136,117.89	149,729.68
Equipment Maintenance	176,589.60	194,248.56	213,673.42	235,040.76	258,544.83	284,399.32	312,839.25	344,123.17	378,535.49	416,389.04
Building & Equipment Insurance	58,863.00	64,749.30	71,224.23	78,346.65	86,181.32	94,799.45	104,279.40	114,707.33	126,178.07	138,795.87
Employees Insurance	10,000.00	11,000.00	12,100.00	13,310.00	14,641.00	16,105.10	17,715.61	19,487.17	21,435.89	23,579.48
Marketing	30,000.00	33,000.00	36,300.00	39,930.00	43,923.00	48,315.30	53,146.83	58,461.51	64,307.66	70,738.43
Utilities	135,000.00	148,500.00	163,350.00	179,685.00	197,653.50	217,418.85	239,160.74	263,076.81	289,384.49	318,322.94
Total	503,952.60	554,347.86	609,782.65	670,760.91	737,837.00	811,620.70	892,782.77	982,061.05	1,080,267.15	1,188,293.87

7.2.5. Salaries and Wages

Item	# of Man Power needed	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
General Manager Office											
General Manager	1	42,000.00	44,100.00	46,305.00	48,620.25	51,051.26	53,603.83	56,284.02	59,098.22	62,053.13	65,155.79
Secretary	1	7,200.00	7,560.00	7,938.00	8,334.90	8,751.65	9,189.23	9,648.69	10,131.12	10,637.68	11,169.56
Financial Department											
Financial Manager	1	24,000.00	25,200.00	26,460.00	27,783.00	29,172.15	30,630.76	32,162.30	33,770.41	35,458.93	37,231.88
Accountants	3	36,000.00	37,800.00	39,690.00	41,674.50	43,758.23	45,946.14	48,243.44	50,655.62	53,188.40	55,847.82
Store Manager	1	18,000.00	18,900.00	19,845.00	20,837.25	21,879.11	22,973.07	24,121.72	25,327.81	26,594.20	27,923.91
Administrative Management											
Administrative Manager	1	24,000.00	25,200.00	26,460.00	27,783.00	29,172.15	30,630.76	32,162.30	33,770.41	35,458.93	37,231.88
Human Resources Officer	1	24,000.00	25,200.00	26,460.00	27,783.00	29,172.15	30,630.76	32,162.30	33,770.41	35,458.93	37,231.88
Sales and Marketing Manager	1	19,200.00	20,160.00	21,168.00	22,226.40	23,337.72	24,504.61	25,729.84	27,016.33	28,367.14	29,785.50
Factory Management											
Factory Manager	1	20,400.00	21,420.00	22,491.00	23,615.55	24,796.33	26,036.14	27,337.95	28,704.85	30,140.09	31,647.10
Production Engineer	4	72,000.00	75,600.00	79,380.00	83,349.00	87,516.45	91,892.27	96,486.89	101,311.23	106,376.79	111,695.63
Maintenance Engineer	1	14,300.00	15,015.00	15,765.75	16,554.04	17,381.74	18,250.83	19,163.37	20,121.54	21,127.61	22,183.99
Main Production Line Workers	24	259,200.00	272,160.00	285,768.00	300,056.40	315,059.22	330,812.18	347,352.79	364,720.43	382,956.45	402,104.27
Recycling Production Line Workers	9	75,600.00	79,380.00	83,349.00	87,516.45	91,892.27	96,486.89	101,311.23	106,376.79	111,695.63	117,280.41
Forklifts Drivers	4	33,600.00	35,280.00	37,044.00	38,896.20	40,841.01	42,883.06	45,027.21	47,278.57	49,642.50	52,124.63
Store handling	6	50,400.00	52,920.00	55,566.00	58,344.30	61,261.52	64,324.59	67,540.82	70,917.86	74,463.75	78,186.94
Quality Management											
Quality Assurance Manager	1	18,000.00	18,900.00	19,845.00	20,837.25	21,879.11	22,973.07	24,121.72	25,327.81	26,594.20	27,923.91
Safety Engineer	1	18,000.00	18,900.00	19,845.00	20,837.25	21,879.11	22,973.07	24,121.72	25,327.81	26,594.20	27,923.91
Quality Control Officers	3	43,200.00	45,360.00	47,628.00	50,009.40	52,509.87	55,135.36	57,892.13	60,786.74	63,826.08	67,017.38

Total		**799,100.00**	**839,055.00**	**881,007.75**	**925,058.14**	**971,311.04**	**1,019,876.60**	**1,070,870.43**	**1,124,413.95**	**1,180,634.65**	**1,239,666.38**

7.2.6. Pre-operation expenditures:

Item	Amount
Licenses	20,000.00
Salaries before starting work	50,000.00
Environmental Impact study	20,000.00
Miscellaneous	20,000.00
Total	**110,000**

7.2.7. Required Capital Expenditures

Item	Quantity	Cost in ILS	Total Cost in ILS	Total Cost in USD
Construction:				
Land	6,300.00	640.00	4,032,000	1,260,000
Building construction- Barracks	1.00	2,240,000.00	2,240,000	700,000
Fire system	1.00	480,000.00	480,000	150,000
Lighting system	1.00	64,000.00	64,000	20,000
Solar System (0.5 Mega)	1.00	1,280,000.00	1,280,000	400,000
Production Line and Equipment:				
Production Line	1.00	14,682,624.00	14,682,624	4,588,320
Shipping and Taxes	1.00	193,600.00	193,600	60,500
Reel Lifting and handling	1.00	154,880.00	154,880	48,400
Raw material containers and silos	1.00	193,600.00	193,600	60,500
Installation: Assembly and wiring	1.00	193,600.00	193,600	60,500
Software and electrical infrastructure	1.00	77,440.00	77,440	24,200
Compressor and compressed airliners	1.00	232,320.00	232,320	72,600
Water and air cooling system	1.00	387,200.00	387,200	121,000
Power Generator	1.00	193,600.00	193,600	60,500
Recycling Production Line (Including washing and palletizing…etc.)	1.00	1,056,000.00	1,056,000	330,000
Furniture				
Administrative Offices	1.00	77,440.00	77,440	24,200
Computers and Accessories	1.00	96,800.00	96,800	30,250
Labs				
Inspection Lab	1.00	135,520.00	135,520	42,350
Cars and Trucks				
Forklifts	1.00	193,600.00	193,600	60,500
Cars	1.00	774,400.00	774,400	242,000
Miscellaneous Tools				
Other Miscellaneous	1.00	193,600.00	193,600	60,500

Total	**26,932,224**	**8,416,320**

7.2.8. Required working Capital

Item	Amount (USD)
Licenses	20,000.00
Salaries before starting work	50,000.00
Environmental Impact study	20,000.00
Miscellaneous	20,000.00
Raw material	1,300,000
Marketing	2,500.00
Utilities	11,250.00
Insurance expense	68,853,00
Total	1,492,603

7.2.9. Pro Forma Income Statement

Projected Income Statement	Pre-operation	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Sales		**8,336,115.00**	**9,719,910.09**	**11,239,861.73**	**12,907,084.73**	**14,733,805.39**	**16,733,361.51**	**17,737,585.50**
Cost of Sales								
Beginning Inventory		462,030.16	462,030.16	538,727.16	622,970.66	715,376.69	816,622.90	927,448.53
Cost of primary raw material		5,544,361.87	6,464,725.94	7,475,647.92	8,584,520.30	9,799,474.80	11,129,382.40	11,797,293.19
Ending Inventory		(462,030.16)	(538,727.16)	(622,970.66)	(715,376.69)	(816,622.90)	(927,448.53)	(983,107.77)
Cost of Sales	-	**5,544,361.87**	**6,388,028.94**	**7,391,404.43**	**8,492,114.27**	**9,698,228.59**	**11,018,556.76**	**11,741,633.96**
Gross Profit	-	**2,791,753.13**	**3,331,881.15**	**3,848,457.30**	**4,414,970.46**	**5,035,576.80**	**5,714,804.75**	**5,995,951.54**
Other Income								
Government Grant (CapEx)		-	-	-	-	-	-	-
Government Grant (OpEx)		-	-	-	-	-	-	-
Other Income	-	-	-	-	-	-	-	-
Salaries		799,100.00	839,055.00	881,007.75	925,058.14	971,311.04	1,019,876.60	1,070,870.43
Operating Expenses		613,952.60	554,347.86	609,782.65	670,760.91	737,837.00	811,620.70	892,782.77
Donated OpEx		-						
Income before Interest, Taxes and Depreciation	-	**1,378,700.53**	**1,938,478.29**	**2,357,666.90**	**2,819,151.41**	**3,326,428.76**	**3,883,307.45**	**4,032,298.34**
Depreciation		736,469.50	736,469.50	736,469.50	736,469.50	736,469.50	736,469.50	736,469.50
Donated Assets Depreciation		-	-	-	-	-	-	-
Income Before Interest and Tax	-	**642,231.03**	**1,202,008.79**	**1,621,197.40**	**2,082,681.91**	**2,589,959.26**	**3,146,837.95**	**3,295,828.84**
Interest		310,775.32	287,026.87	261,561.63	234,255.52	204,975.44	173,578.70	139,912.29
Income Before Tax	-	**331,455.71**	**914,981.93**	**1,359,635.77**	**1,848,426.39**	**2,384,983.82**	**2,973,259.25**	**3,155,916.55**
Taxes								
Net Income	-	**331,455.71**	**914,981.93**	**1,359,635.77**	**1,848,426.39**	**2,384,983.82**	**2,973,259.25**	**3,155,916.55**

7.2.10. Pro Forma Balance Sheet

Projected Balance Sheet	Pre-operation	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Cash & Cash Equivalent	900,662.86	708,057.58	1,757,573.05	3,201,711.08	5,080,762.15	7,438,313.19	10,321,559.06	13,533,378.74
Inventory	462,030.16	462,030.16	538,727.16	622,970.66	715,376.69	816,622.90	927,448.53	983,107.77
Prepaid Expenses	110,000.00	-	-	-	-	-	-	-
Accounts Receivables		1,042,014.38	1,214,988.76	1,404,982.72	1,613,385.59	1,841,725.67	2,091,670.19	2,217,198.19
Total Current Assets	**1,472,693.01**	**2,212,102.11**	**3,511,288.98**	**5,229,664.45**	**7,409,524.43**	**10,096,661.76**	**13,340,677.78**	**16,733,684.69**
Fixed Assets	8,416,320.00	8,416,320.00	8,416,320.00	8,416,320.00	8,416,320.00	8,416,320.00	8,416,320.00	8,416,320.00
Total Fixed Assets	**8,416,320.00**	**8,416,320.00**	**8,416,320.00**	**8,416,320.00**	**8,416,320.00**	**8,416,320.00**	**8,416,320.00**	**8,416,320.00**
Accumulated Depreciation	-	736,469.50	1,472,939.00	2,209,408.50	2,945,878.00	3,682,347.50	4,418,817.00	5,155,286.50
Net Fixed Assets	**8,416,320.00**	**7,679,850.50**	**6,943,381.00**	**6,206,911.50**	**5,470,442.00**	**4,733,972.50**	**3,997,503.00**	**3,261,033.50**
Other Assets								
Total Assets	**9,889,013.01**	**9,891,952.61**	**10,454,669.98**	**11,436,575.95**	**12,879,966.43**	**14,830,634.26**	**17,338,180.78**	**19,994,718.19**
Account Payable	-		-	-	-	-	-	-
Loan	4,588,320.00	4,259,803.89	3,907,539.33	3,529,809.54	3,124,773.62	2,690,457.63	2,224,744.90	1,725,365.76
Unearned Revenue (CapEx)	-	-	-	-	-	-	-	-
Unearned Revenue (OpEx)	-	-	-	-	-	-	-	-
Total Current Liabilities	**4,588,320.00**	**4,259,803.89**	**3,907,539.33**	**3,529,809.54**	**3,124,773.62**	**2,690,457.63**	**2,224,744.90**	**1,725,365.76**
Total Liabilities	**4,588,320.00**	**4,259,803.89**	**3,907,539.33**	**3,529,809.54**	**3,124,773.62**	**2,690,457.63**	**2,224,744.90**	**1,725,365.76**
Equity								
Capital	5,300,693.01	5,300,693.01	5,300,693.01	5,300,693.01	5,300,693.01	5,300,693.01	5,300,693.01	5,300,693.01
Retained Earnings	-	331,455.71	1,246,437.63	2,606,073.40	4,454,499.79	6,839,483.62	9,812,742.86	12,968,659.42
Total Equity	**5,300,693.01**	**5,632,148.72**	**6,547,130.65**	**7,906,766.42**	**9,755,192.81**	**12,140,176.63**	**15,113,435.88**	**18,269,352.43**

7.2.11. Pro Forma Cash flow

Projected Cashflow Statement	Pre-operation	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Net Income	-	331,455.71	914,981.93	1,359,635.77	1,848,426.39	2,384,983.82	2,973,259.25	3,155,916.55
Add: Depreciation Expense	-	736,469.50	736,469.50	736,469.50	736,469.50	736,469.50	736,469.50	736,469.50
Change in Working Capital								
Change in Inventory	462,030.16	-	76,697.01	84,243.50	92,406.03	101,246.21	110,825.63	55,659.23
Change in Prepaid Expenses	110,000.00	(110,000.00)	-	-	-	-	-	-
Change in A/R	-	1,042,014.38	172,974.39	189,993.95	208,402.88	228,340.08	249,944.51	125,528.00
Change in A/P	-	-	-	-	-	-	-	-
(Change in Unearned Revenue (CapEx	-	-	-	-	-	-	-	-
(Change in Unearned Revenue (OpEx	-	-	-	-	-	-	-	-
Cashflow from Operations Activities	**(572,030.16)**	**135,910.83**	**1,401,780.03**	**1,821,867.82**	**2,284,086.99**	**2,791,867.03**	**3,348,958.60**	**3,711,198.82**
Cashflow from Investing Activities	**(8,416,320.00)**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Change in Loan	4,588,320.00	(328,516.11)	(352,264.56)	(377,729.80)	(405,035.91)	(434,315.99)	(465,712.73)	(499,379.14)
Capital	5,300,693.01	-	-	-	-	-	-	-
Cashflow from Financing Activities	**9,889,013.01**	**(328,516.11)**	**(352,264.56)**	**(377,729.80)**	**(405,035.91)**	**(434,315.99)**	**(465,712.73)**	**(499,379.14)**
Beginning Cash Balance	-	900,662.86	708,057.58	1,757,573.05	3,201,711.08	5,080,762.15	7,438,313.19	10,321,559.06
Change in Cash	900,662.86	(192,605.28)	1,049,515.47	1,444,138.02	1,879,051.07	2,357,551.04	2,883,245.87	3,211,819.68
Ending Cash Balance	**900,662.86**	**708,057.58**	**1,757,573.05**	**3,201,711.08**	**5,080,762.15**	**7,438,313.19**	**10,321,559.06**	**13,533,378.74**

7.3. Financial results:

Currency Used		USD	Without grant	With grant
Investment Value		Total Project's Investment	**9,889,013.01**	**9,889,013.01**
Internal Rate of Return (IRR)		IRR is a method used by companies to make decisions about the viability of an investment in the long run, that is, it is one of the methods of capital budgeting. It is defined as the discount rate at which the Net Present Value outcome is zero, and it is usually interpreted by the expected profits that an investment decision generates.	**11.89%**	**22.32%**
Net Present Value (NPV) @	9.31%	Net Present Value applies to a series of cash flows occurring at different times. The present value of a cash flow depends on the interval of time between now and the cash flow. It also depends on the discount rate.	**957,486.23**	**4,039,237.25**
Payback Period	Yr	The period that the project spends until it recovers the money initially paid	**5.17**	**4.12**
Average Annual Net Profit	(Five Years)	It is the value of the expected annual net profit and it is calculated after deducting all expenses and expenditures from the total revenues, the Average Annual Net Profit rate was calculated for five years, which is the study period.	**1,852,665.63**	**2,130,303.13**
Return of Investment (ROI)		ROI is the ratio between the Average Annual Net Profit and the investment cost resulting from investing some resources. A higher return on investment means that the investment rewards positively over its cost	**34.95%**	**34.95%**
Return on Assets (ROA)		The rate of return ratio reflects the investment value of the project's fixed assets	**22.01%**	**22.01%**
OPEX		It is a measure of the financial resources needed for a company to cover its daily expenditures and is calculated by subtracting the cash outflows from the cash inflows.	**1,472,693.01**	**1,472,693.01**
Capital Investment		The value of the resources needed to invest in fixed assets	**8,416,320.00**	**8,416,320.00**

7.4. WACC Calculation:

Al Bawader Capital Structure		
Debt %		46.40%
Equity %		53.60%
Grant %		0.00%
Debt / Equity		**86.56%**
Cost of Equity		
Risk Free Rate		3.60%
Equity Risk Premium	Palestinian Authority	5.84%
Unlevered Beta (Based on comparable companies)	Farming/Agriculture	0.85
Levered Beta	Palestinian Authority	1.48
Cost of Equity		**12.22%**
Cost of Debt		
Cost of Debt		7.00%
Tax Rate		15.00%
After Tax Cost of Debt		**5.95%**
Cost of Grant (Assumption)		**0.00%**
WACC (Scenario 1)		**9.31%**

7.5. Project Disbursement Plan:

Items	Q1	Q2	Q3	Q4
CAPEX				
Cost of Equipment (all operations production Line)		1,427,316	1,903,088	1,427,316
Cost Building		350,000	350,000	-
Solar Energy Cost (0.5 Mega)			-	400,000
Fire and Lighting System			170,000	
Lab, Furniture, vechicles			459,800	
Raw material containers and silos				60,500
Software and electrical infrastructure			24,200	
Compressor and compressed airliners			72,600	
Water and air cooling system			121,000	
Power Generator			60,500	
Recycling Production Line (Including washing and palletizing…etc.)			330,000	
Other Miscellaneous Costs	-			60,500
Operation Phase				
Purchases	-	-	-	1,300,000
Salaries & Wages	-	-	-	50,000
Operating Expenses	-	-	-	122,693
Total	-	**1,777,316**	**3,491,188**	**3,421,009**

1.1.1. Gap Finance and Rational for Grant

With positive a NPV of $957,486.23 and an IRR of 11.89%, and a projected payback period in just under seven years, the project proposed by Al Bawader is, on its own merits, feasible. However, with the advent of public financing, the ability to generate employment opportunities throughout the agricultural supply chain will undoubtedly be sped up. As this is the case, for the dire consequences of the Palestinian economy, even without the COVID-19 pandemic, this could in effect boost agricultural production, as stated before, greenhouse production outpaces traditional farming methods, and create domestic and foreign market opportunities with larger customers such as food producers and exporters.

The proposed recommendation to emphasize quality of the product and the recycling of Plastic waste are aligned with the development of Palestinian society along the lines of socio-economic dimensions, as well as market oriented and driven motives. The ability to reuse waste will undoubtedly attract grants and funding from various agencies that are geared towards environmental sustainability, which will help Al Bawader with further employment and expansion. The utilization of plastic waste in a manner

whereby the inputs can be used instead of a cost or expense is unique to Palestine and reflects an innovative and forward thinking approach by Al Bawader.

Finally, the project provides opportunities for marginalized communities in the northern west bank, as well as throughout the national value chain. It is a much needed service, and there is a market locally and abroad.

Annex

Five Forces Analysis

`	Importance	Threat	Weighted Score
Industry Rivalry	2.17	3	6.50
Bargaining Power: Suppliers	2.67	4	10.67
Bargaining Power: Customers	2.90	3	8.70
New Entrants	2.50	3	7.50
Substitutability	3.00	4	12.00
		Profitable Industry	45.37

THREAT OF NEW ENTRANTS	Score
Access to distribution channels and raw materials.	0.50
Use technological adaptations.	0.70
Know How and patents.	0.50
Brand image and product / service differentiation.	0.20
Investment needs and adaptation costs.	0.40
Regulatory requirements for new entrants.	0.70
Score	2.50

BARGAINING POWER OF SUPPLIERS	Score
Degree of dependence of the supplier or in relation to the exclusivity in the supply.	0.70
Inherent costs of change of supplier.	0.70
Quantity of suppliers that meet the requirements.	0.50
Degree of flexibility in the negotiation of payment terms.	0.30

Degree of vendor prioritization for order processing in case of product shortage or inventory reduction.	0.50
Regularity of delivery times.	0.50
Score	2.67

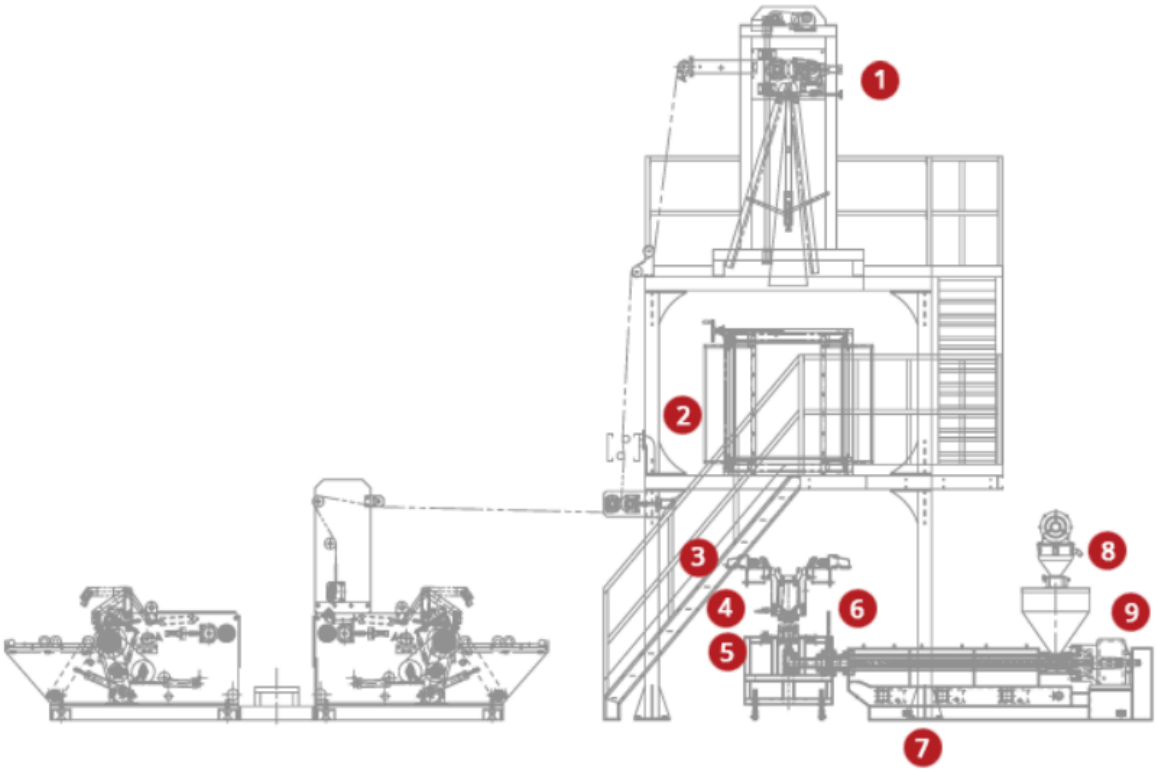
THREAT OF SUBSTITUTES	Score
Assess the risk of substitution of the product or service and estimated time frame for this.	0.50
Measure the costs of changing factors of production, development and technologies to carry out the substitution.	0.50
Perception of customers' willingness to research, evaluate and purchase substitute products.	0.70
Projection of the product or service life cycle and adaptations according to the real demand and market dynamics.	0.70
Score	3.00

BARGAINING POWER OF BUYERS	Score
Perception of product quality in relation to possible substitutes or competitors.	0.70
Price strategy in comparison to other alternatives offered by the market.	0.70
Requirements regarding flexibility of payment and delivery deadlines.	0.50
Relative costs for companies to change customers VS costs for customers to switch products.	0.50
Degree of differentiation and brand of the product perceived by the client in relation to the competitors.	0.50
Score	2.90

INDUSTRY RIVALRY	Score
Evaluate market share VS annual growth rates VS industry growth.	0.30

Comparison of fixed costs VS variables and simulation of possible changes of growth and adequacy to variation of demand.	0.30
Differentiation of product / service from competitors.	0.50
Exit barriers in relation to legal, social, strategic relations and costs.	0.50
Evaluate the quantity VS diversity VS degree of influence of competitors.	0.30
Funding power and potential of competitors for investments in innovation and efficiency.	0.70
Score	2.17

Manufacturing Process

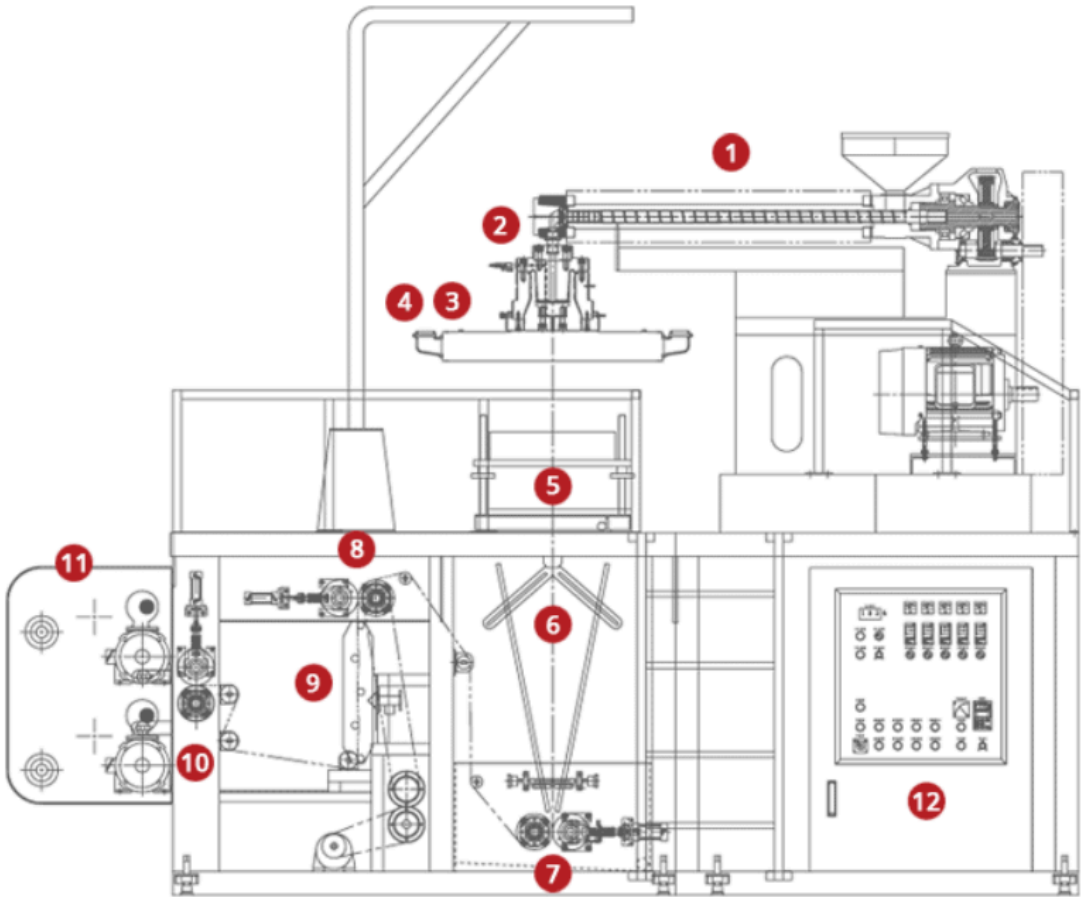


1. Take-off roller
2. Fixed collar
3. Air Ring
4. Die Head
5. Rotating Mold (Additional equipment)
6. Filter
7. Extruder
8. Auto-loader device (Additional equipment)
9. Gearbox

- **Air ring :** Aluminum alloy-made high performance cooling system, steady wind flow, single and double air ring with precisely-built die head in order to produce large amounts and good quality plastic film.
- **Filter :** Filter through impurities without leaking. Easy to change filter screen.
- **Extruder :** Lower metal frame, built with iron casting gear box that is made of alloy steel with heat treatment and precise grinding. Solid, flexible, energy-saving, special spiral design with increased production capacity.
- **Additional equipment is available :** automatic suction feeder, air compressor, knurling wheel, anti static equipment, rotating mold, connected printer.

The second, involves processing the blown film as below:

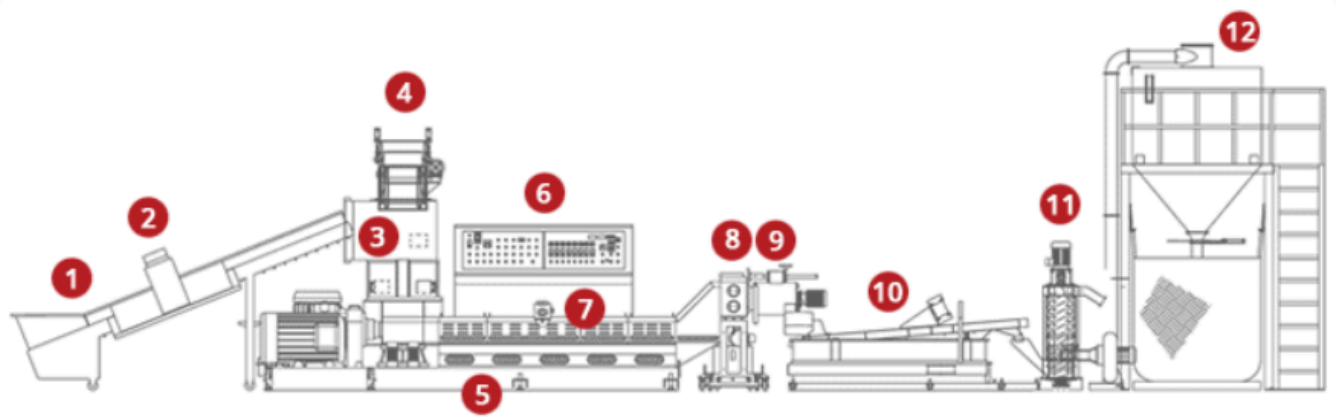
PP Blown Film Line Processing



1. Extruder
2. Die Head
3. Rotary Die Device
4. Air Ring
5. Water Ring
6. Cooling System
7. 1st Take Up Unit
8. 2st Take Up Unit
9. Dry System
10. 3rd Take Up Unit
11. Winder
12. Control Panel

With the third illustrating the recycling aspect of the project:

Plastic Bag Recycling Processing



1. Automatic conveyor belt
2. Metal detector : as soon as the metal is detected, the conveyor belt would stop automatically. (Optional)
3. Plastic crusher
4. Plastic waste feeding device : it is suitable for rolls of plastic waste. Feeding can be done manually or automatically. (Optional)
5. Extruder
6. Control panel of plastic film recycling equipment
7. Air vent : to remove the moist and oil after melting process. Additional air vent is allowed.
8. No disruption screen changer
9. Pellet cutting device : it is to adjust the size of plastic pellets.
10. Shaking and selecting : by vibration, fluid is removed and perfect size pellets are selected.
11. Plastic waste dehydrator : it is to remove the moist from pellets.
12. Plastic pellet collector