IOSR Journal of Business and Management (IOSR-JBM)
e-ISSN: 2278-487X, p-ISSN: 2319-7668. Volume 18, Issue 2 .Ver. I (Feb. 2016), PP 149-153
www.iosrjournals.org

Feasibility Study On Greenhouse Investment Project In Sulaimanyah

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Abstract:*This study refer to feasibility study about investment project in agriculture sector especially on greenhouse ,the capacity of the project are (1000) greenhouses divided on two kind of vegetables (tomato, cucumber) during five years constantly due to they are daily demand, this project located in Sulaimanyah (Halabja areas) in Kurdistan region –Iraq, the target of the study supporting the local product in sulaimanyha and contributed to reach self –sufficiency and avoid import, the results referred to planted tomato in 500 greenhouses produced 4500 tons yearly, it means increased local products %5.3 in Kurdistan and % 36.5 in Sulaimanyah. But the results referred to planted cucumber in 500 greenhouses produced 4000 tons yearly it means increased local products %6.3 in Kurdistan and % 26.4 in Sulaimanyah.*
Keywords*: Feasibility study, increasing local product, Reduce wasteful of money, decreases the import.*

I. Introduction

The agriculture sector in Kurdistan Region has been considerable change in recent years, therefore has the potential to play a prominent role in supporting growth of local economy, Despite the fact that agriculture sector comprises only %10 of Kurdistan's economy, In 2003 approximately %35 of the population in Kurdistan Region relied on agriculture, however on 2012 that percentage has dropped to %9 .according to figures provided by Kurdistan Region Statistics Office (KRSO), only %7.1 of the Region's active workforce is employed in the agriculture sector, Sulaimanyah (%8.4) has highest rates of agriculture employment followed by Duhok (%7.6) and Erbil (%5.3).In addition agriculture employment is lowest for both Men (%6.8) and women (%8.9).

The increasing of population in the world led to increasing daily demand caused by less use all agriculture's land available in the world can't provide the daily requirements especially food due to decreasing of food production led to increasing hunger in the world and there are many types of vegetables can't provide during the year constantly in order to each type of plant (Crops, Fruits, vegetables) have especial environment, to covering the shortage of all kinds of plant (vegetables) and providing in other season based on it, The idea of growing plants in environmentally controlled areas has existed since Roman times, The Roman emperor Tiberius ate a cucumber vegetable daily, The Roman gardeners used artificial methods (similar to the greenhouse system) of growing it and provide for his table daily since the year. In the 13th century greenhouses were built in Italy to house the exotic plants that explorers brought back from the tropics, they were originally called giardini botanici (botanical gardens).The first greenhouse was founded in England in 1684 and then followed by other countries like France in 1753 and Russia in 1763 and then to other countries.

On 2003 the Iraq and Kurdistan faced new condition that included evolution, growth and prosperity accompanied that development all the different fields in life especially agriculture's field which has faced radical changes, On 2006 the Ministry of Agriculture in the Kurdistan region decided to work in greenhouse where it was working to providing the requirements and facilitate for success this idea, it was "difficult" at the began because the deteriorating infrastructure and despite all the attempts that led to rise the agriculture's sector but there are still wide spaces or gaps in this area which impacted on income ,as a result of KRG support and promoting greenhouses project to reach the self-sufficiency in vegetables.

II. Problem Study

The study refer to non-exist of large investment project about greenhouse to produce tomato and cucumber in Kurdistan region, in spite of increasing daily demand on two vegetables in another side MOAWR (Ministry of Agriculture and Water resource) in KRG put goals to increasing production of tomato and cucumber in its strategic plan, which requires studies to determine feasibility and profitability of the project statement and encourage investors to invest their capitals into this field.

III. Importance of the Study

The importance of the study comes during the feasibility study to producing tomato and cucumber and it account invest and strategic project due to is important commodities food daily and is considered a popular food widespread.

1 – Try to reduce import from outside the country.

2 – Support the local production.
3 – Opportunity to creating competition between local production and import production.
4 – Reach to self – sufficiency.

IV. Definition

1.'Feasibility Study:

An analysis of the ability to complete a project successfully taking into account legal economic, technological, scheduling and other factors. Rather than just diving into a project and hoping for the best, a feasibility study allows project managers to investigate the possible negative and positive outcomes of a project before investing too much time and money. (Ramly, 2013)

2. Greenhouse:

Greenhouse is a secure place that environment is protected and the atmosphere Artificial availability of plants cultivated by the appropriate conditions for vegetables (tomato, cucumber) at the wrong time and keep all accessories to get the highest yield, the greenhouses different from structure and the materials used to build and the type that we are going to establishment is one of the types of iron greenhouses provides the circumstances and Appropriate conditions to implement the techniques used in agriculture protected as cultivation , sterilization , operations service crop, in addition that he keep the environmental conditions of climate appropriate to control the factors of temperature, humidity, ventilation, irrigation by industrial methods according to the requirements of each type of plants will be laid (planting) inside. Scientific progress has led human to recognize the needs of these plants from the right temperature, humidity, etc. Make him to provide an atmosphere of artificial plants and thus get the crops in the summer time and its presence is natural, where the groundbreaking "new" in the world agriculture.

3. Tomatoes:

Tomatoes *Solanum Lycopersicum L* is a warm season crop , it is most popular Vegetable ,it is nutrition's and Low in Calories, one Medium sized tomato provides %57 of the recommended daily allotment of vitamin C ,%25 vitamin A ,%8 iron ,besides being eaten fresh ,the Versatile tomato can be baked ,stewed, etc. tomatoes are available in a wide variety of shapes, sizes and Colors, but the tomatoes are the most common maybe around, (Lerner, 2012).The tomatoes Fruit is easily damage and should be handled as carefully in all picking and harvested at the maturity stage, a plant of Tomato give approximately 40Kg/plant.

4. Cucumber:

Cucumber *Cucumis sativus* L. belongs to the Cucurbitaceae family, one of important plant families and most popular salad vegetable. The Cucurbitaceae consists of 90 genera and 750 species. The genus Cucumis contains nearly 40 species, it is a quick growing vine crop that produces mature within 2 months after transplanting , cucumber are very susceptible to moisture loss and decay The high water content makes cucumbers a diuretic and it also has a cleansing action within the body by removing accumulated pockets of old waste material and chemical toxins. Cucumbers help eliminate uric acid which is beneficial for those who have arthritis, and its fiber-rich skin and high levels of potassium and magnesium helps regulate blood pressure and help promote nutrient functions. The magnesium content in cucumbers also relaxes nerves and muscles and keeps blood Circulating smoothly. The cucumber plant is a coarse, prostrate annual creeping vine that grows up trellises or any other supporting frames, wrapping around ribbing with thin, spiraling tendrils. The plant has large prickly, hairy triangular leaves that form a canopy over the fruit and yellow flowers which are mostly either male or female. The female flowers are recognized by the swollen ovary at the base which will become the edible fruit and the cucumber as a fruit is a false berry, elongated and round triangular in shape. Its size, Shape and color vary according to the cultivar.

Investment Legal In Kurdistan

1. Article fourth:

The relevant departments' co-ordination with the board to allocate the requirements of the Project such as the lands by lease (rent) with encouraging prices. The Investor has right to purchase and rent the needed areas of land to establish, enhance ,diversify and develop the Project and period of time which are estimated in the light of the Project's targets. The land are parted and classified as per the needs and requirements for establishing Investment Projects 9- Co-ordinations with the Board to provide the Public Services such as water, electricity power, sewage systems, Public Roads, Telecommunications..... that is necessary for the Project.

2. Article Fifth:

The project is exempted from all the taxes and custom tariffs for period of 10 years of the date when the project start forwarding its services. Vehicles, tools apparatus, equipment and machinery which are imported from abroad for the project shall be exempted from taxes. Spare parts imported for production shall be exempted from taxes. Raw material imported for production is exempted from custom tariffs. The investor has the right to import all the requirement of the project.

V. Materials and Methods

1. Research Approach:

This study will be achieving in Sulaimany (Halabja) in order to this location is suitable caused by fertile soil and providing the water resource , The area that required for project is (60 hectors) 45 hectors for establishing 1000 greenhouses (one greenhouse 400m2) and others hectors for building, warehouse,…..etc. The aim of the study is Establishing (1000) greenhouses as the first stage, this project is an investment and at the same time is to provide the daily requirement of vegetables (tomato, cucumber) are permanent and increase local production and available in local markets that try to avoid and minimize adopted the import from outside especially in the neighboring countries and advanced in agricultural production and confirm the support local production, try to gain access to developed countries in the agricultural field because this project is service and production project to serve individual through the provision of vegetables daily and support GDP growth, which encourages to increase of agricultural investment which serve the individual need and reduce costs of transport vegetables as a result adopted the import and lead to decreasing prices in the market when buying and thus contribute to increase income per capita.

2. Work Method:

2. 1– Prepare the land.
2.2 – Make furrow (5) in each greenhouse (50m length x 0.8m width).
2.3 – Distribution of irrigation system (drip irrigation).
2.4 – Planting seedling of (Tomato, Cucumber).
2.5 – Providing fertilizer for 2 stages (green growth, fruiting growth).
2.6 - Requiring labor.

VI. Assumption Process To Produce In Greenhouse

Cultivating 1250 seedling in each greenhouse. 500 greenhouses for tomato, 500 greenhouses for cucumber. Expected yield per greenhouse is 9 tons per year for tomato. Expected yield per greenhouse is 8 tons per year for cucumber. Expected sale price for one kilogram is 30 cent (US$) for (1st, 2nd) years, 27 cent (US$) for (3rd) year, 33 cent (US$) for (4th) year and 25 cent (US$) for (5th) year for tomato.

500 x 9 tons = 4500 tons \ 500 greenhouse (tomato's yield).
30 cent (US$) x 4500 tons\100 = 1.350.000(US$) for (1st, 2nd) years.
27 cent (US$) x 4500 tons\100 = 1.215.000(US$) for (3rd) year.
33 cent (US$) x 4500 tons\100 = 1.485.000(US$) for (4th) year.
25 cent (US$) x 4500 tons\100 = 1.125.000(US$) for (5th) year.

Expected sale price for one kilogram is 25 cent (US$) for (1st, 2nd) years, 27 cent (US$) for (3rd) year, 22 cent (US$) for (4th) year and 20 cent (US$) for (5th) year for cucumber.

500 x 8 tons = 4000 tons \ 500 greenhouse (cucumber's yield).
25 cent (US$) x 4000 tons\100 = 1.000.000(US$) for (1st, 2nd) years.
27 cent (US$) x 4000 tons\100 = 1.080.000(US$) for (3rd) year.
22 cent (US$) x 4000 tons\100 = 880.000(US$) for (4th) year.
20 cent (US$) x 4000 tons\100 = 800.000(US$) for (5th) year.

Cost price for one greenhouse = 3000 (US$)
1000 greenhouse x 3000 (US$) \ 5 years (Depreciation) =600.000(US$) for each year

Data Analysis .I

Chart (1)\ Total consumed of tomato (Local & Import) in 2012, 2013 from Kurdistan region /1000 tons

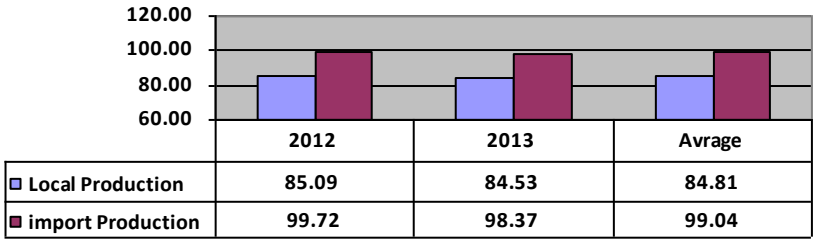

Chart (2)\Total consumed of cucumber (Local & Import) in 2012, 2013 from Kurdistan region / 1000 tons

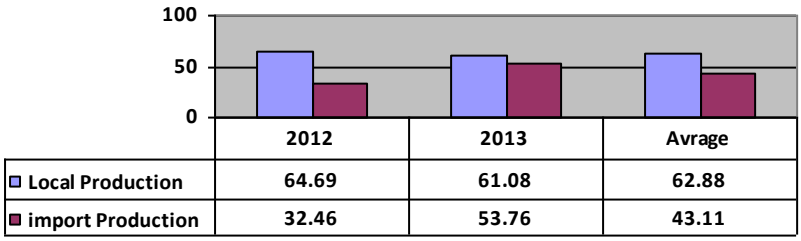

Chart (3)\ Total consumed of tomato (Local & Import) in 2013 from Sulaimaniyah Governorate / 1000 tons

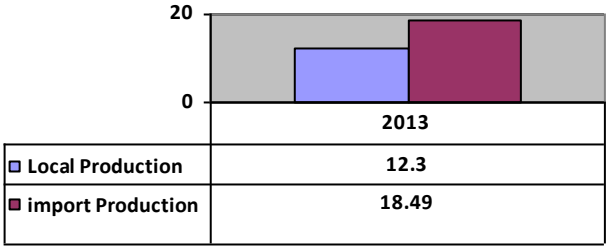

Chart (4)\ Total consumed of cucumber (Local & Import) in 2013 from Sulaimaniyah Governorate / 1000 tons

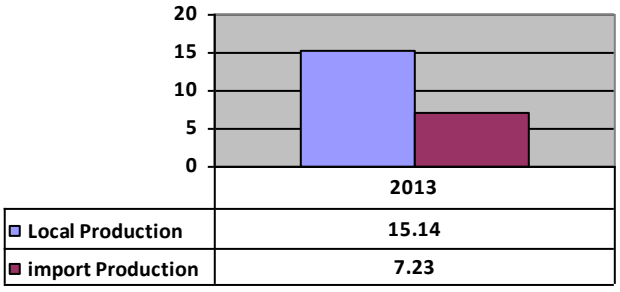

Table (1)/ The Financial Statement are presented thus:

Detail	1st Year ($)	2nd year ($)	3rd year($)	4th year($)	5th year($)
Tomato	1.350.000	1.350.000	1.215.000	1.485.000	1.125.000
Cucumber	1.000.000	1.000.000	1.080.000	880.000	800.000
Total Income	**2.350.000**	**2.350.000**	**2.295.000**	**2.365.000**	**1.925.000**
Cost of Sale (Seed, Seedling)					
Tomato	100.000	10.000	10.000	10.000	10.000
Cucumber	80.000	10.000	10.000	10.000	10.000
Total Cost Of Sale	**180.000**	**20.000**	**20.000**	**20.000**	**20.000**

Gross Margin	**2.170.000**	**2.330.000**	**2.275.000**	**2.345.000**	**1.905.000**
Total Salary & Wages	**400,000**	**400,000**	**400,000**	**400,000**	**400,000**
Expenses Cost					
Greenhouses Purchase	600.000	600.000	600.000	600.000	600.000
Equipment	100.000	100.000	100.000	100.000	100.000
Legal & profession Fee	5000	5000	5000	5000	5000
Office Expenses	10.000	10.000	10.000	10.000	10.000
Other Expenses Telephone and Communication	10.000	10.000	10.000	10.000	10.000
Utility	50.000	50.000	50.000	50.000	50.000
	775.000	**775.000**	**775.000**	**775.000**	**775.000**
Other Expenses	100.000	100.000	100.000	100.000	100.000
Tax	50.000	50.000	50.000	50.000	50.000
	150.000	**150.000**	**150.000**	**150.000**	**150.000**
Total Expenses	**1.505.000**	**1.345.000**	**1.345.000**	**1.345.000**	**1.345.000**
Net Income	**845.000**	**1.005.000**	**950.000**	**1.020.000**	**580.000**

VII. Conclusion

Chart (1) showed total consumed (local, import and Average) of tomato during 2012, 2013 in Kurdistan region, according to the research assumption to expected that yield show as 500 greenhouses can producing 4.5 thousands ton yearly , The average of local produced during two years were 84.81 thousand tons and import were 99.04 thousand tons, in this case the project increasing local production to 89.31 thousand tons and supporting %5.3 from the total of the local produce and decreasing import from 99.04 thousand tons to 94.54 thousand tons and reducing %4.5 from import.

Chart (2) showed total consumed (local, import and Average) of cucumber during 2012, 2013 in Kurdistan region , according to the research assumption to expected that yield show as 500 greenhouses can producing 4.00 thousands ton yearly , The average of local produced during two years were 62.88 thousand tons and import were 43.11 thousand tons, in this case the project increasing local production to 66.00 thousand tons and supporting %6.3 from the total of the local produce and decreasing import from 43.11 thousand tons to 39.11 thousand tons and reducing %9.2 from import.

Chart (3) showed total consumed (local, import) of tomato during 2013 in sulaimanyha city, according to the research assumption to expected that yield show as 500 greenhouses can producing 4.5 thousands ton yearly, The local produced were 12.3 thousand tons and import were 18.4 thousand tons, in this case the project increasing local production to 16.8 thousand tons and supporting %36.5 from local produce and decreasing import from 18.49 thousand tons to 13.99 thousand tons and reducing %24.3 from import.

Chart (4) showed total consumed (local, import) of cucumber during 2013 in sulaimanyah city, according to the research assumption to expected that yield show as 500 greenhouses can producing 4.00 thousands ton yearly , The local produced were 15.14 thousand tons and import were 7.23 thousand tons, in this case the project increasing local production to 19.14 thousand tons and supporting %26.4 from the total of the local produce and decreasing import from 7.23 thousand tons to 3.23 thousand tons and reducing %55.3 from import.

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