Investment Opportunities in Kosovo's Agribusiness

CONFERENCE 2015

Creating Connections

Vegetable

INFORMATIONAL BOOKLET

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VEGETABLES IN KOSOVO

Vegetables represent one of the main agricultural products in Kosovo. Out of the 577,000 Ha of agricultural land in Kosovo, 47% is planted with various agricultural crops. Of this total, 14,330 Ha is planted with vegetables. Although vegetable production is very wide spread in Kosovo, there remains a lot of space for new investments in, and development of, this subsector.

The production of vegetables in Kosovo is mostly of a seasonal character. The dominant form of cultivation of vegetables is cultivation in open fields, with a significant orientation of producers toward commercial production, mainly dedicated to local fresh markets. Production of vegetables in protected environments, including greenhouses, is still in its infancy and is not yet developed to the extent that it can supply the market throughout the year, presenting another good investment opportunity.

CONTENTS

THE VEGETABLE MARKET IN KOSOVO

Demand for vegetables in the domestic market, with a few exceptions, is not met by domestic production, especially outside the typical growing season. Estimated total consumption of vegetables in Kosovo is 273,000 tons per year. Out of this, domestic production is about 235,000 tons, while net imports account for about 36,000 tons. In general this provides for a general self-sufficiency rate of 86%. However, this can be deceiving as it incorporates all vegetables. According to the Ministry of Agriculture, the total domestic market size in Euros, as based on producer (farm) prices, for vegetables was 104 million Euro in 2012. In addition, the still-underdeveloped export markets account for only 3.5 million Euros.

The domestic production of vegetables mostly consists of peppers, potatoes, tomatoes, cucumbers, pumpkins, cabbage, garlic and beans. The self-sufficiency ratios vary considerably based on the specific crop, as presented in the following table for a select number of vegetables, based on 2013 data.

Vegetable	Total Consumption Quantity - tons/year	Net Imports tons/year	Domestic production tons/year	Self-sufficiency rate
Pepper	80,891	7,963	72,928	90.2%
Tomatoes	31,016	13,724	17,291	55.7%
Cucumber/Gherkins	51,923	5,373	46,550	89.6%
Lettuce	466	166	300	64.3%
Asparagus	12	2	10	83.3%

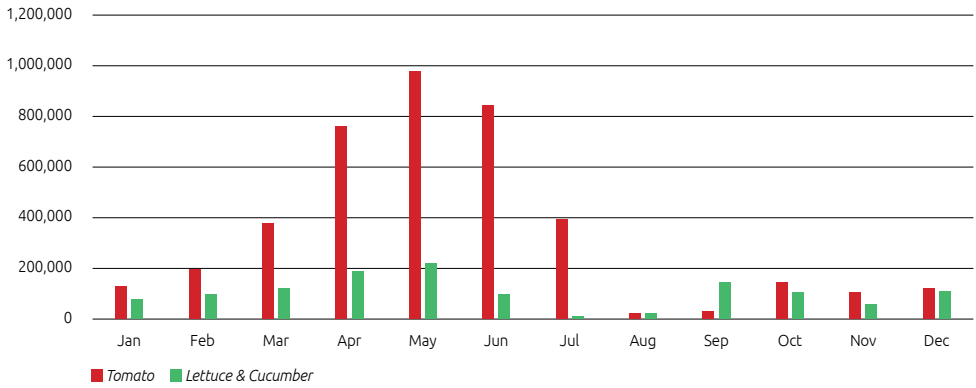
Out of all the highest volume vegetables, there are possibilities for import substitution through investments in Kosovo. Industrial production, especially in protected environments (greenhouses) has huge potential, especially off-season. The highest potential in import substitution and meeting direct domestic market demand lies with tomatoes, where the potential of the local market is the greatest with about 13,724 tons per year. In addition, industrial production off-season, including utilization of storage capacities, opens up many additional export market opportunities.

Intensive production and cold storage capacities enabling supply off-season together provide for a nice market opportunity to invest, as presented in the following table, with a number of selected crops.

Vegetable	Total value of domestic market at farm prices – EUR	Value of domestic production at farm prices – EUR	Potential for import substitution –EUR
Pepper	57,600,000	54,600,000	3,000,000
Tomatoes	12,600,000	9,300,000	3,300,000

In terms of seasonality of imports, imports are very low during the peak production period beginning in late July through October; the large imports in summer reflect how local consumption in this period far outweighs local production.

MONTHLY IMPORT DATA FOR PERISHABLE VEGETABLES



Average monthly import value of tomato, lettuce and cucumber for the previous 4 years

The main vegetables processed are peppers, potatoes and gherkins, with minor processing crops including tomatoes and cabbage.

According to 2014 data, there are 67 processing firms for fruits and vegetables, which typically are engaged in processing both fruits and vegetables. Based on surveys, about 73% of the inputs are domestically supplied, while 27% are imported. Active processing firms report that they currently utilize only 50% of their installed capacities, leaving room for doubling of demand from the processing sector, not accounting for new market entrants and additional capacity investments. According to research data by the Horticulture Project Kosovo (HPK, 2012), annually Kosovo imports around 12.3 million Euros in processed vegetables. In addition, Kosovo exports about 1 million Euros in processed vegetables. Due to favorable environmental conditions and very low-cost labor, the presented data show that there is a lot of addition market potential in processed vegetables, which could further grow provided there is increased domestic production and supply.

The potential of the domestic market, even at current levels of consumption, show that overall there is a potential import substitution market for vegetables of 14.4 million Euros per annum.

The trade balance for vegetables is negative in all seasons. Data show that all of the major imported vegetables are also vegetables currently grown in Kosovo, showing the large potential for import substitution.

ANNUAL TRADE BALANCE – MAIN VEGETABLE CROPS IN EUROS

	2007	2008	2009	2010	2011	2012	2013
Cabbage	-519,511	-688,782	-711,569	-896,083	-79,427	-328,713	-557,454
Cucumber	-983,349	-1,329,860	-1,369,068	-1,563,968	-1,607,579	-1,040,789	-1,042,020
Onion	-820,023	-1,372,404	-1,070,066	-1,779,241	-260,646	-1,442,969	-1,987,417
Peppers	-1,906,459	-3,138,757	-3,443,961	-4,099,622	-3,233,083	-2,942,445	-3,039,615
Potatoes	**953,569**	**1,789,394**	**1,634,663**	**1,565,620**	-166,758	**1,031,832**	-227,968
Tomatoes	-5,153,048	-4,666,148	-4,695,504	-5,174,122	-5,424,880	-3,013,406	-3,294,371
Other	-1,484,868	-3,331,061	-2,547,528	-2,679,876	-5,412,325	-6,204,656	-4,280,825
Annual Trade Balance – All Vegetable Crops							
All Vegetables	-9,913,689	-12,737,618	-12,203,033	-14,627,292	-16,184,698	-13,941,146	-14,429,670

Trade balance (in Euros) for vegetable products in Kosovos

THE VEGETABLE VALUE CHAIN

Advisors

Agriculture Extension Service, Economic Analysis Unit, RECURA AGRO CENTER, Rahoveci Institute, Univeristy of Pristina - Agriculture Faculty, KFVA, KIA, "Ferma Ime" portal, Kosovo Weather Forecast Institute, Sara dhe Meti, Agrovet

Input Dealers

Jonathan, Agrodrini, Rimida Agrokop, Semenai na, Fidanishtja e Godancit, Fitofar- ma, Agrounion, Yara, Agrofarma, Yaprak, Pegasus

Collection Centers / Large buyers

Peme e Perime te Kosoves (Fruits and Vegetables Processors of Kosovo, PePeKo), Koral, Agroser- ra, Kelmendi GmbH, Rizona, ETC, Agrocelina, Elkos Group, ASK Foods, Moni, Euro Tac, ABI Progress, Eurofood, Mix Product, Shala Produkt, Fitimi, Ananas Impex, Etlinger, KB Krusha, Kovraga, Rudi, Fjolla.

Service Providers

Pro Credit Bank, Reiffeisen Bank, TEB Bank, NLB, Economic Bank and BKT, Association for Finance and Account- ing Services, Recura, KIESA, Sigal Insurance Company, EDI Consulting Company, FINCA, Advance Global Capital, KEP, Investment Promotion Agency, CFF

Farmers / Growers

DST Product, Agro Meti, Moni, Hibridi, Ferma, AgroProduct, Agrovizioni, MeAGro, Fresikimi, Agrofreshi, Kasimi, Mamusha, Koop Krusha, Fortesa, Agroplant, Mogilla, Ratishi, Perdrini, Grate e Krushes, Agrokor.

Large processors / aggregators

Peme e Perime te Kosoves (Fruits and Vegetables Processors of Kosovo, PePeKo), Koral, Kelmendi GmbH, Rizona, ASK Foods, ABI Progress, Eurofood, Mix Product, Fitimi, Ananas Impex, Etlinger, KB Krusha, Fungo FF, Rudi, Fjolla.

Retail and local markets

Viva Fresh, Albi, Tregu i ri i gjelbert, Interex, Maxi, QTA Arjeta, Emona, Agmia, ETC, Green Market

Wholesalers and Distributors:

Osman Fejza, Gazi, Rifat Kameri, Xhevat Zymeri, Remzi Makolli, Granit Krasniqi, Dardan Jupolli

INVESTMENT CASE FOR VEGETABLES

The following sections present a typical investment case for several of the main vegetables with the greatest market potential.

This document is for informational and illustrative purposes only and does not purport to show actual results. It is not, and should not be regarded, as investment advice or as a recommendation regarding any particular security or course of action. Opinions expressed herein are current opinions as of the date appearing in this material only and are subject to change without notice. Reasonable people may disagree about the opinions expressed herein. In the event any of the assumptions used herein do not prove to be true, results are likely to vary substantially. All investments entail risks. There is no guarantee that investment strategies will achieve the desired results under all market conditions and each investor should evaluate its ability to invest for a long term especially during periods of a market downturn. No representation is being made that any account, product, or strategy will or is likely to achieve profits, losses, or results similar to those discussed, if any.

The investment cases presented below are calculated on a per-hectare basis and represent an illustration of investments required, operational costs, labor effort, output and sales, in the process analyzing the investment case for each crop.

The cases presented are based on typical years and natural conditions. Input prices as well output yields and prices depend on a number of factors, including market developments and inputs and care provided by the investor. No liability for the authors can be inferred from the following calculations. The presented cases are for illustrational purposes only with the intention of providing an indication for the investment opportunity.

TOMATOES
GREENHOUSE

INPUTS

INVESTMENTS REQUIRED

Investments	Total
Greenhouse establishment	€ 150,000
Irrigation system	€ 1,200
TOTAL INVESTMENTS REQUIRED	**€ 151,200**

OPERATIONAL COSTS

Operational Costs	Year 1	Year 2	Year 3	Year 4	Year 5
Soil analyses	€ 30	€ 30	€ 30	€ 30	€ 30
Soil preparation and basic fertilization	€ 1,333	€ 1,333	€ 1,333	€ 1,333	€ 1,333
Irrigation pumping and maintanance	€ 150	€ 150	€ 150	€ 150	€ 150
Drip line replacement	€ -	€ -	€ 600	€ -	€ -
Green house maintenance	€ 300	€ 300	€ 300	€ 300	€ 300
Green house cover replacement					€ 6,000
Mulching	€ 400	€ 400	€ 400	€ 400	€ 400
Trellising	€ 300	€ 300	€ 300	€ 300	€ 300
Spraying	€ 250	€ 250	€ 250	€ 250	€ 250
Fertigation	€ 600	€ 600	€ 600	€ 600	€ 600
Bedding	€ 50	€ 50	€ 50	€ 50	€ 50
Packaging	€ 6,400	€ 6,400	€ 6,400	€ 6,400	€ 6,400
Transportation	€ 1,200	€ 1,200	€ 1,200	€ 1,200	€ 1,200
Interest and principal payment	8,316	8,316	8,316	8,316	8,316
Investment amortization	€ 7,560	€ 7,560	€ 7,560	€ 7,560	€ 7,560
TOTAL ANNUAL OPERATIONAL COSTS	**€ 26,889**	**€ 26,889**	**€ 27,489**	**€ 26,889**	**€ 32,889**

LABOR COSTS

Labor costs	Year 1	Year 2	Year 3	Year 4	Year 5
Labor costs	€ 3,500	€ 3,500	€ 3,500	€ 3,500	€ 3,500
TOTAL ANNUAL LABOR COSTS	**€ 3,500**	**€ 3,500**	**€ 3,500**	**€ 3,500**	**€ 3,500**

OUTPUTS AND RETURNS

YIELD PER HECTARE

Operational Costs	Year 1 Kg	Price
TOTAL YIELD PER HECTARE	120,000	
Farm gate price 1st Class per kg	84,000	€ 0.30
Farm gate Price 2nd Class per kg	36,000	€ 0.12

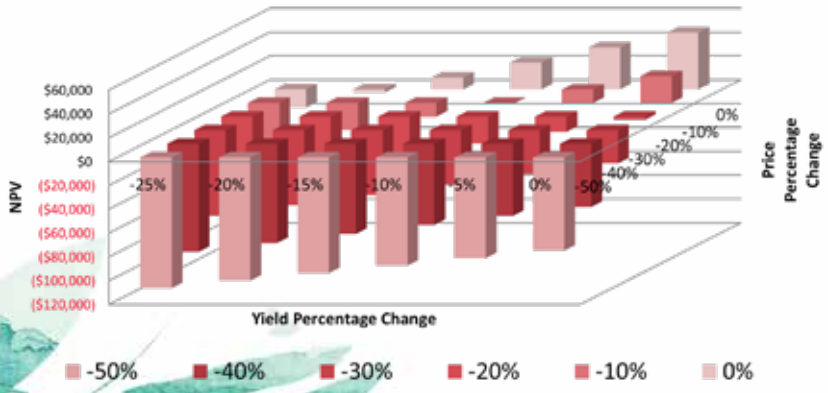
SALES AND PROFIT

Proforma Profit and Loss Statement	Year 1	Year 2	Year 3	Year 4	Year 5
SALES					
1st Class	€ 25,200	€ 25,200	€ 25,200	€ 25,200	€ 25,200
2nd Class	€ 4,320	€ 4,320	€ 4,320	€ 4,320	€ 4,320
TOTAL SALES	€ 29,520	€ 29,520	€ 29,520	€ 29,520	€ 29,520
TOTAL COSTS	€ 30,389	€ 30,389	€ 30,989	€ 30,389	€ 36,389
NET PROFIT BEFORE TAX	€ (869)	€ (869)	€ (1,469)	€ (869)	€ (6,869)
Cash flow wo amortization	€ 6,692	€ 6,692	€ 6,092	€ 6,692	€ 692

RETURN ON EQUITY

The annual Return on equity for an optimal case of investing in tomatoes when accounting for the investment and operational costs required of 35793 Euros), including discounting for cost of capital of 20%, is 537% . The graph bellow shows the Net Present Value profile depending on changes in price and yield.

TOMATO NVP VS. YIELD & PRICE



TOMATOES
OPEN FIELD

INPUTS

INVESTMENTS REQUIRED

Investments	Total
Irrigation system	€ 1 200
TOTAL INVESTMENTS REQUIRED	**€ 1 200**

OPERATIONAL COSTS

Operational Costs	Year 1	Year 2	Year 3	Year 4	Year 5
Seedling production (0.12€ per unit seedling)	€ 3 000	€ 3 000	€ 3 000	€ 3 000	€ 3 000
Soil analyses	€ 30	€ 30	€ 30	€ 30	€ 30
Soil preparation and basic fertilization	€ 1 120	€ 1 120	€ 1 120	€ 1 120	€ 1 120
Irrigation pumping and maintanance	€ 150	€ 150	€ 150	€ 150	€ 150
Drip line replacement			€ 600		
Mulching	€ 400	€ 400	€ 400	€ 400	€ 400
Trellising	€ 300	€ 300	€ 300	€ 300	€ 300
Spraying	€ 250	€ 250	€ 250	€ 250	€ 250
Fertigation	€ 600	€ 600	€ 600	€ 600	€ 600
Packaging	€ 4 200	€ 4 200	€ 4 200	€ 4 200	€ 4 200
Transportation	€ 900	€ 900	€ 900	€ 900	€ 900
Investment amortization	€ 120	€ 120	€ 120	€ 120	€ 120
TOTAL ANNUAL OPERATIONAL COSTS	**€ 11,070**	**€ 11,070**	**€ 11,670**	**€ 11,070**	**€ 11,070**

LABOR COSTS

Labor costs	Year 1	Year 2	Year 3	Year 4	Year 5
Labor costs	€ 3,500	€ 3,500	€ 3,500	€ 3,500	€ 3,500
TOTAL ANNUAL LABOR COSTS	**€ 3,500**	**€ 3,500**	**€ 3,500**	**€ 3,500**	**€ 3,500**

YIELD PER HECTARE

Yield per Hectare	Kg per Ha	Price
TOTAL YIELD PER HECTARE	80,000	
1st class Tomato	56,000	€ 0.30
2nd class Tomato	24,000	€ 0.12

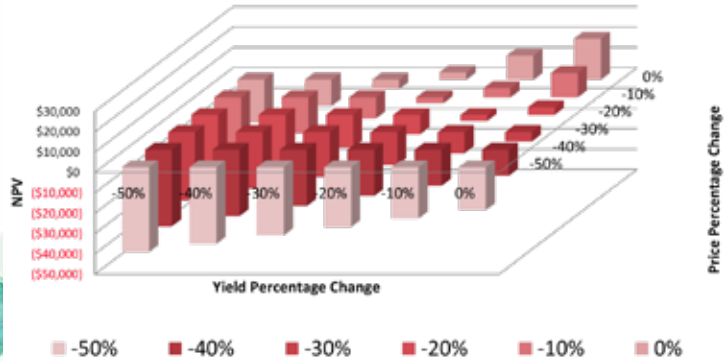
SALES AND PROFIT

Proforma Profit and Loss Statement	Year 1	Year 2	Year 3	Year 4	Year 5
SALES					
1st class Tomato	€ 16,800	€ 16,800	€ 16,800	€ 16,800	€ 16,800
2nd class Tomato	€ 2,880	€ 2,880	€ 2,880	€ 2,880	€ 2,880
TOTAL SALES	€ 19,680	€ 19,680	€ 19,680	€ 19,680	€ 19,680
TOTAL COSTS	€ 14,570	€ 14,570	€ 15,170	€ 14,570	€ 14,570
NET PROFIT BEFORE TAX	€ 5,110	€ 5,110	€ 4,510	€ 5,110	€ 5,110

RETURN ON EQUITY

Return on equity for an optimal case of investing in tomatoes when accounting for the investment and operational costs required of 15,770 Euro, including discounting for cost of capital of 20%, provides for a 25% average return on equity.

TOMATO NVP VS. YIELD & PRICE



INPUTS

INVESTMENTS REQUIRED

Investments	Total
Establishing green house	€ 150,000
Irrigation system	€ 1,200
TOTAL INVESTMENTS REQUIRED	**€ 151,200**

OPERATIONAL COSTS

Operational Costs	Year 1	Year 2	Year 3	Year 4	Year 5
Seedling production (0.13€ per unit seedling)	€ 3,250	€ 3,250	€ 3,250	€ 3,250	€ 3,250
Soil analyses	€ 30	€ 30	€ 30	€ 30	€ 30
Soil preparation and basic fertilization	€ 1,050	€ 1,050	€ 1,050	€ 1,050	€ 1,050
Bedding	€ 50	€ 50	€ 50	€ 50	€ 50
Irrigation	€ 150	€ 150	€ 150	€ 150	€ 150
Drip line replacement			€ 600		
Green house maintenance	€ 300	€ 300	€ 300	€ 300	€ 300
Green house cover replacement					€ 6,000
Mulching	€ 400	€ 400	€ 400	€ 400	€ 400
Trellising	€ 300	€ 300	€ 300	€ 300	€ 300
Spraying	€ 230	€ 230	€ 230	€ 230	€ 230
Fertigation	€ 500	€ 500	€ 500	€ 500	€ 500
Packaging	€ 3,500	€ 3,500	€ 3,500	€ 3,500	€ 3,500
Transportation	€ 800	€ 800	€ 800	€ 800	€ 800
Interest and principal	8,316	8,316	8,316	8,316	8,316
Investment amortization	€ 7,560	€ 7,560	€ 7,560	€ 7,560	€ 7,560
TOTAL ANNUAL OPERATIONAL COSTS	**€ 26,436**	**€ 26,436**	**€ 27,036**	**€ 26,436**	**€ 32,436**

LABOR COSTS

Labor costs	Year 1	Year 2	Year 3	Year 4	Year 5
Total labour costs	€ 3,000	€ 3,000	€ 3,000	€ 3,000	€ 3,000
TOTAL ANNUAL LABOR COSTS	**€ 3,000**	**€ 3,000**	**€ 3,000**	**€ 3,000**	**€ 3,000**

YIELD PER HECTARE

Yield per Hectare	Kg per Ha	Price
TOTAL YIELD PER HECTARE	80,000	
1st class Pepper	56,000	€ 0.45
2nd class Pepper	24,000	€ 0.20

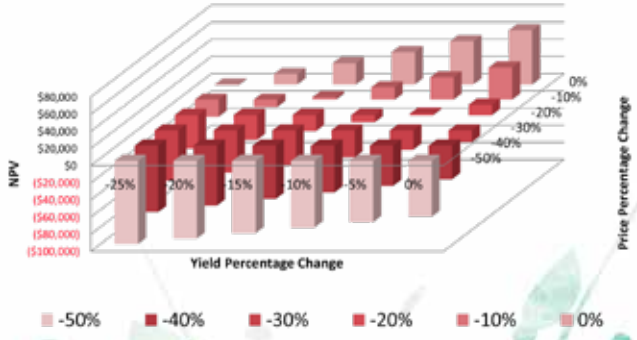
SALES AND PROFIT

Proforma Profit and Loss Statement	Year 1	Year 2	Year 3	Year 4	Year 5
SALES					
1st class Pepper	€ 25,200	€ 25,200	€ 25,200	€ 25,200	€ 25,200
2nd class Pepper	€ 4,800	€ 4,800	€ 4,800	€ 4,800	€ 4,800
TOTAL SALES	€ 30,000	€ 30,000	€ 30,000	€ 30,000	€ 30,000
TOTAL COSTS	€ 29,436	€ 29,436	€ 30,036	€ 29,436	€ 35,436
NET PROFIT BEFORE TAX	€ 564	€ 564	€ (36)	€ 564	€ (5,436)
Cash flow wo amortization	€ 8,124	€ 8,124	€ 7,524	€ 8,124	€ 2,124

RETURN ON EQUITY

Greenhouse peppers require an initial investment of 19,950 Euros in the green house facility and irrigation system. Accounting for the initial investment and operational costs of 14,890 Euros, the project revelas an average return of equity of 42%. The net present value of the project is 46,076 Euros when calculating for a cost of capital of 20%. The graph below shows the net present value profile depending on changes in price and yield.

PEPPERS NPV VS YIELD & PRICE



INPUTS

INVESTMENTS REQUIRED

Investments	Total
Irrigation system	€ 1,200
Other small equipment	€ 250
TOTAL INVESTMENTS REQUIRED	**€ 1,450**

OPERATIONAL COSTS

Operational Costs	Year 1	Year 2	Year 3	Year 4	Year 5
Plants	€ 1,500	€ 1,500	€ 1,500	€ 1,500	€ 1,500
Plowing and harrowing	€ 170	€ 170	€ 170	€ 170	€ 170
Bedding	€ 50	€ 50	€ 50	€ 50	€ 50
Irrigation pumping and maintanance	€ 150	€ 150	€ 150	€ 150	€ 150
Drip line replacement			€ 600		
Fertilizer	€ 600	€ 600	€ 600	€ 600	€ 600
Spraying	€ 200	€ 200	€ 200	€ 200	€ 200
Transport	€ 150	€ 150	€ 150	€ 150	€ 150
Packaging	€ 1,200	€ 1,200	€ 1,200	€ 1,200	€ 1,200
Investment amortization	€ 145	€ 145	€ 145	€ 145	€ 145
TOTAL ANNUAL OPERATIONAL COSTS	**€ 4,165**	**€ 4,165**	**€ 4,765**	**€ 4,165**	**€ 4,165**

LABOR COSTS

Labor costs	Year 1	Year 2	Year 3	Year 4	Year 5
Harvesting average 600 kg per day (67 harvesting days	€ 1,005	€ 1,005	€ 1,005	€ 1,005	€ 1,005
Transplanting working days	€ 225	€ 225	€ 225	€ 225	€ 225
Maintening transplanted field	€ 750	€ 750	€ 750	€ 750	€ 750
TOTAL ANNUAL LABOR COSTS	**€ 1,980**	**€ 1,980**	**€ 1,980**	**€ 1,980**	**€ 1,980**

OUTPUTS AND RETURNS

YIELD PER HECTARE

Yield per Hectare	Kg per Ha	Price
TOTAL YIELD PER HECTARE	40,000	
1st class peppers	24,000	€ 0.35
2nd class peppers	16,000	€ 0.25

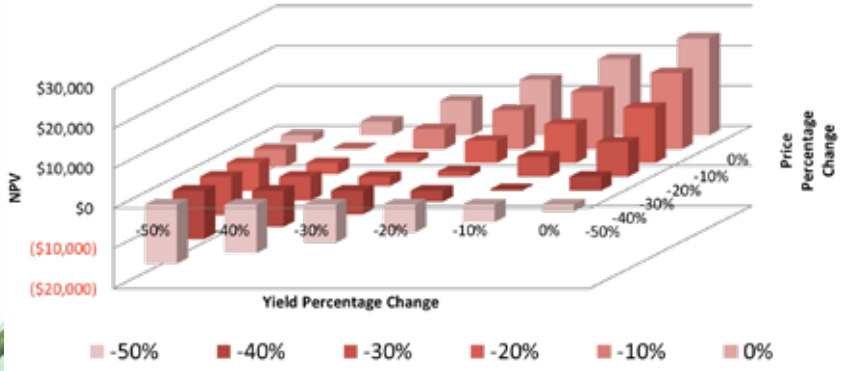
SALES AND PROFIT

Proforma Profit and Loss Statement	Year 1	Year 2	Year 3	Year 4	Year 5
SALES					
1st class peppers	€ 8,400	€ 8,400	€ 8,400	€ 8,400	€ 8,400
2nd class peppers	€ 4,000	€ 4,000	€ 4,000	€ 4,000	€ 4,000
TOTAL SALES	€ 12,400	€ 12,400	€ 12,400	€ 12,400	€ 12,400
TOTAL COSTS	€ 6,145	€ 6,145	€ 6,745	€ 6,145	€ 6,145
NET PROFIT BEFORE TAX	€ 6,255	€ 6,255	€ 5,655	€ 6,255	€ 6,255

RETURN ON EQUITY

An optimal case of investing in peppers when accounting for the investment and operational costs required of 6,145 Euros , including a discounting for cost of capital of 20%, reveals a 80% yearly average return on

PEPPERS NPV VS YIELD & PRICE



ASPARAGUS

INPUTS

INVESTMENTS

Investments	Total
Planting materials(investment only year one)	€ 3,000
Irrigation	€ 1,200
Other small equipment (Year one)	€ 250
Ploughing and harrowing	€ 600
Manure	€ 300
TOTAL INVESTMENTS REQUIRED	**€ 5,350**

LABOR COSTS

Labour Costs	Year 1	Year 2	Year 3	Year 4	Year 5
Total yield	-	-	3,600	3,900	4,500
Harvesting kg per day	100	100	100	100	100
Labour days	-	-	36	39	45
Labour cost per day	15	15	15	15	15
TOTAL LABOUR COSTS	**225**	**-**	**540**	**585**	**675**

OPERATIONAL COSTS

Cost Category	Year 1	Year 2	Year 3	Year 4	Year 5
Irrigation pumping and maintanance	150	150	150	150	150
Drip line replacement			600		
Fertilizer	560	400	400	400	400
Spraying	190	100	100	100	100
Bedding	50	50	50	50	50
Investment Amortization (15 years)	357	357	357	357	357
TOTAL ANNUAL COSTS	**1,307**	**1,057**	**1,657**	**1,057**	**1,057**

OUTPUTS AND RETURNS

YIELD PER HECTARE

Yield per Hectare	Year 1	Year 2	Year 3	Year 4	Year 5
TOTAL YIELD	-	-	3,600	3,900	4,500
1st class asparagus	-	-	2,520	2,730	3,150
2nd class asparagus	-	-	1,080	1,170	1,350

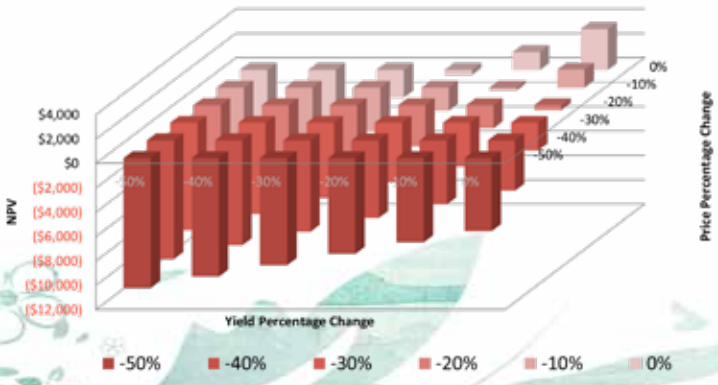
SALES AND PROFIT

Proforma Profit and Loss Statement	Year 1	Year 2	Year 3	year 4	Year 5
SALE					
Quantity 1st class asparagus	-	-	2,520	2,730	3,150
Quantity 2nd class asparagus	-	-	1,080	1,170	1,350
Price 1st class asparagus	€ 2.00	€ 2.00	€ 2.00	€ 2.00	€ 2.00
Price 2nd class asparagus	€ 1.20	€ 1.20	€ 1.20	€ 1.20	€ 1.20
TOTAL SALES	€ -	€ -	€ 6,336	€ 6,864	€ 7,920
TOTAL ANNUAL COSTS	€ 1,532	€ 1,057	€ 2,197	€ 1,642	€ 1,732
NET PROFIT BEFORE TAX	-€ 1,532	-€ 1,057	€ 4,139	€ 5,222	€ 6,188

RETURN ON EQUITY

The investment in asparagus yields a return on equity of 45% when accounting for the initial investment and operational cost of 11,682 euros. The projects has a positive net present value of 3,331 Euros. The graph below shows the Net Present Value profile depending on changes in price and yield.

ASPARAGUS NPV VS YIELD & PRICE



LETTUCE

INPUTS

INVESTMENTS

Investments	Total
Irrigation system	€ 1,200
Small equipment	€ 250
TOTAL INVESTMENTS REQUIRED	**€ 1,450**

OPERATIONAL COSTS

Operational Costs	Year 1	Year 2	Year 3	Year 4	Year 5
Plants	€ 6,000	€ 6,000	€ 6,000	€ 6,000	€ 6,000
Ploughing and harrowing	€ 170	€ 170	€ 170	€ 170	€ 170
Irrigation pumping and maintanance	€ 150	€ 150	€ 150	€ 150	€ 150
Drip line replacement	-	€ -	€ 600	-	-
Fertilizer	€ 520	€ 520	€ 520	€ 520	€ 520
Spraying	€ 190	€ 190	€ 190	€ 190	€ 190
Bedding	€ 50	€ 50	€ 50	€ 50	€ 50
Packaging per head	€ 3,750	€ 3,750	€ 3,750	€ 3,750	€ 3,750
Investment amortization	145	145	145	145	145
TOTAL ANNUAL OPERATIONAL COSTS	**€ 10,975**	**€ 10,975**	**€ 11,575**	**€ 10,975**	**€ 10,975**

LABOR COSTS

Labour Costs	Year 1	Year 2	Year 3	Year 4	Year 5
Harvesting average 3000 heads per day (50 harvesting days)	€ 750	€ 750	€ 750	€ 750	€ 750
Transplanting working day	€ 600	€ 600	€ 600	€ 600	€ 600
Maintening transplanted fiel	€ 450	€ 450	€ 450	€ 450	€ 450
TOTAL ANNUAL LABOR COSTS	**€ 1,800**	**€ 1,800**	**€ 1,800**	**€ 1,800**	**€ 1,800**

OUTPUTS AND RETURNS

YIELD PER HECTARE

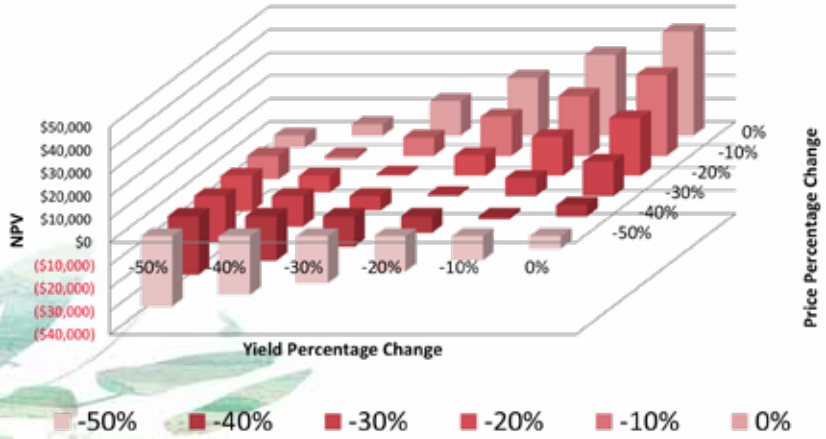
Yield per Hectare	Kg per Ha	Price
TOTAL YIELD PER HECTARE	0	
1st class Lettuce	120,000	€ 0.20
2nd class Lettuce	30,000	€ -

Proforma Profit and Loss Statement	Year 1	Year 2	Year 3	Year 4	Year 5
SALES					
1st class lettuce	€ 24,000.00	€ 24,000.00	€ 24,000.00	€ 24,000.00	€ 24,000.00
2nd class lettuce	€ -	€ -	€ -	€ -	€ -
TOTAL SALES	€ 24,000	€ 24,000	€ 24,000	€ 24,000	€ 24,000
TOTAL COSTS	€ 12,775	€ 12,775	€ 13,375	€ 12,775	€ 12,775
NET PROFIT BEFORE TAX	€ 11,225	€ 11,225	€ 10,625	€ 11,225	€ 11,225

RETURN ON EQUITY

Return on equity for an optimal case of investing in lettuce when accounting for the investment and operational costs required of 14,225 Euros, including discounting for cost of capital of 20%, results in a 78% average return on equity. Below you will find the net present value profile for lettuce depending on price and yield change.

LETTUCE NPV VS YIELD & PRICE



GHERKINS

INPUTS

INVESTMENTS REQUIRED

Investments	Total
Irrigation system	€ 1,200
Small equipment	€ 200
TOTAL INVESTMENTS REQUIRED	**€ 1,400**

LABOR COSTS

Labour Costs	Year 1	Year 2	Year 3	Year 4	Year 5
Harvesting average 400 kg per day (100 harvesting days)	€ 1,500	€ 1,500	€ 1,500	€ 1,500	€ 1,500
Transplanting working days	€ 150	€ 150	€ 150	€ 150	€ 150
Maintenance	€ 600	€ 600	€ 600	€ 600	€ 600
TOTAL ANNUAL LABOR COSTS	**€ 2,250**	**€ 2,250**	**€ 2,250**	**€ 2,250**	**€ 2,250**

OPERATIONAL COSTS

Operational Costs	Year 1	Year 2	Year 3	Year 4	Year 5
Plants	€ 1,200	€ 1,200	€ 1,200	€ 1,200	€ 1,200
Plowing and harrowing	€ 170	€ 170	€ 170	€ 170	€ 170
Bedding	€ 50	€ 50	€ 50	€ 50	€ 50
Irrigation pumping and maintanance	€ 150	€ 150	€ 150	€ 150	€ 150
Drip line replacement	€ -	€ -	€ 600	€ -	€ -
Fertilizer	€ 600	€ 600	€ 600	€ 600	€ 600
Spraying	€ 200	€ 200	€ 200	€ 200	€ 200
Packaging	€ 400	€ 400	€ 400	€ 400	€ 400
Transport	€ 150	€ 150	€ 150	€ 150	€ 150
Investment amortization	€ 140	€ 140	€ 140	€ 140	€ 140
TOTAL ANNUAL OPERATIONAL COSTS	**€ 3,060**	**€ 3,060**	**€ 3,660**	**€ 3,060**	**€ 3,060**

OUTPUTS AND RETURNS

YIELD PER HECTARE

Yield per Hectare	Kg per Ha	Price
TOTAL YIELD PER HECTARE	40,000	
1st class Gherkins	24,000	€ 0.30
2nd class Gherkins	16,000	€ 0.25

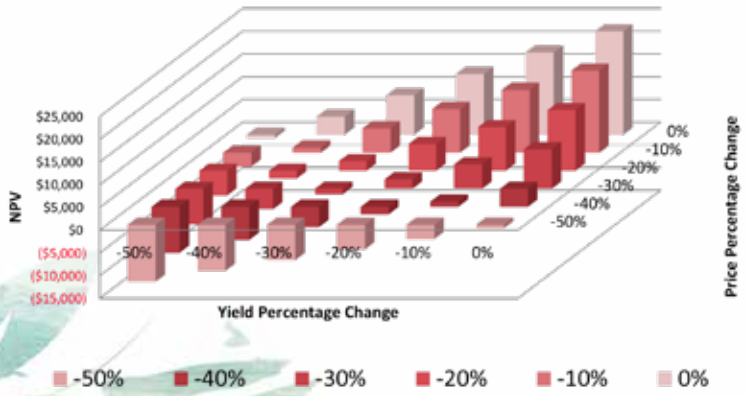
SALES AND PROFIT

Proforma Profit and Loss Statement	Year 1	Year 2	Year 3	Year 4	Year 5
SALES					
1st class Gherkins	€ 7,200	€ 7,200	€ 7,200	€ 7,200	€ 7,200
2nd class Gherkins	€ 4,000	€ 4,000	€ 4,000	€ 4,000	€ 4,000
TOTAL SALES	€ 11,200	€ 11,200	€ 11,200	€ 11,200	€ 11,200
TOTAL COSTS	€ 5,310	€ 5,310	€ 5,910	€ 5,310	€ 5,310
NET PROFIT BEFORE TAX	€ 5,890	€ 5,890	€ 5,290	€ 5,890	€ 5,890

RETURN ON EQUITY

Return on equity for an optimal case of investing in gherkins when accounting for the investment and operational costs required of 6,710 Euro, including discounting for cost of capital of 20%, results in 85% average return on equity.

GHERKINS NPV VS YIELD & PRICE



INFORMATION SOURCES WITH ACKNOWLEDGEMENTS TO:

USAID/Kosovo Agriculture Growth and Rural Opportunities Program

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