

ROA Business Plan Principles- DRAFT

Discussion Document

June 28 2011



- CONFIDENTIAL -

The purpose of this document is to provide the basic business plan principles for the international ROA operation. At this early stage, this is not a full executional plan, and additional detailed work needs to be done post the investment.

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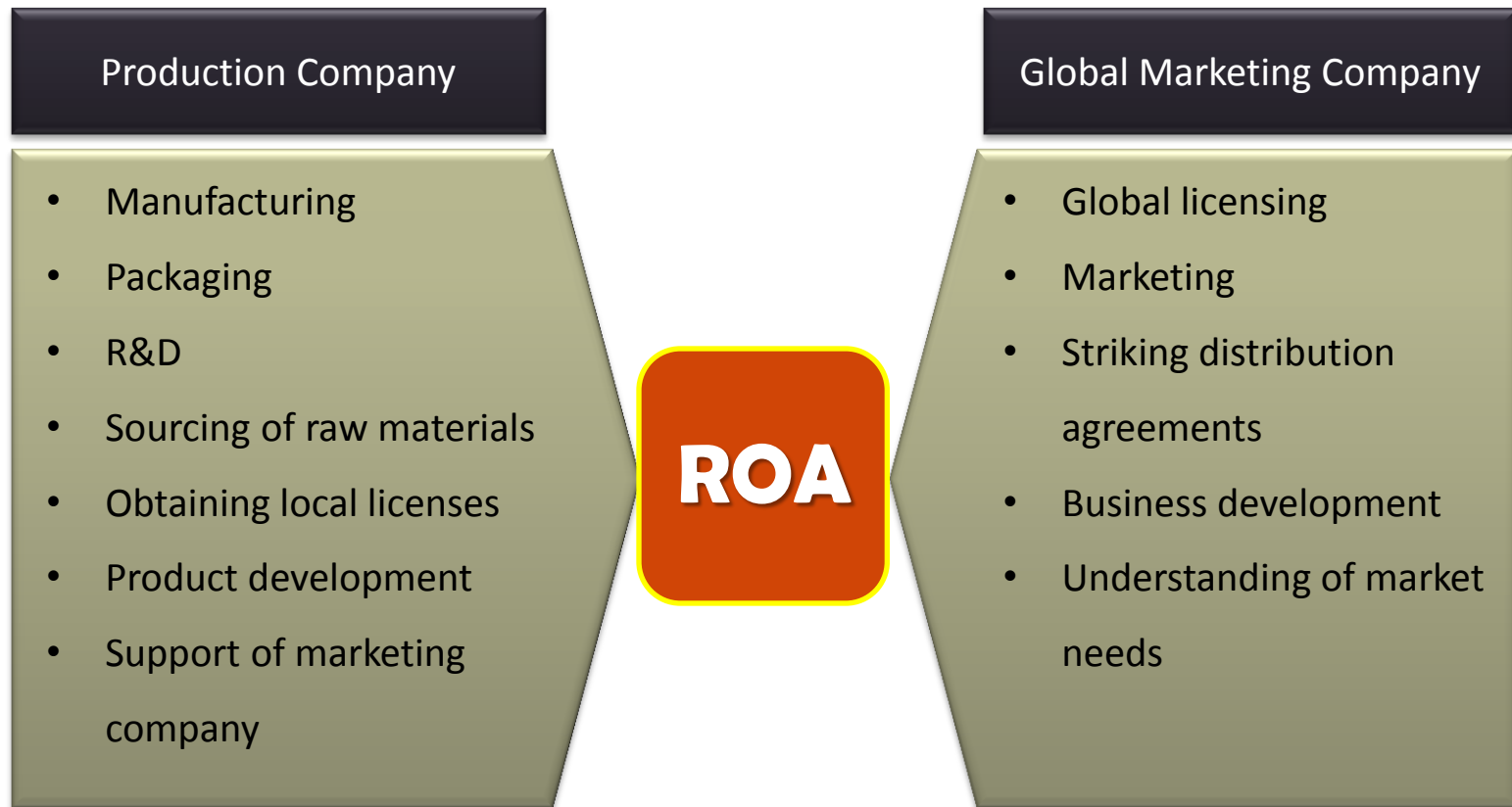
Content

- Vision and market
- Principles of business plan
- Economics
- Work-plan
- Appendix

The vision

- To provide a ground breaking alternative to toxic chemical substances in the agriculture and food industry, efficiently and effectively by developing, manufacturing, and marketing ROA 9223 based application globally
- The initial primary focus would be on pesticides, fungicides, and fertilizers. Future application could include shelf life extenders, personal care products, and medicines

The structure and responsibility

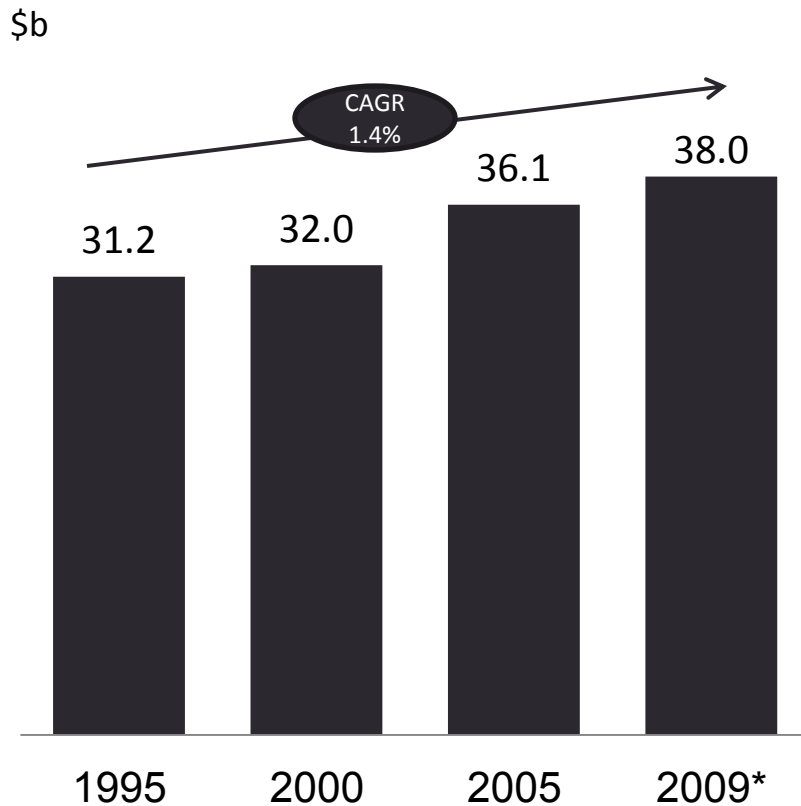


The market and the competition

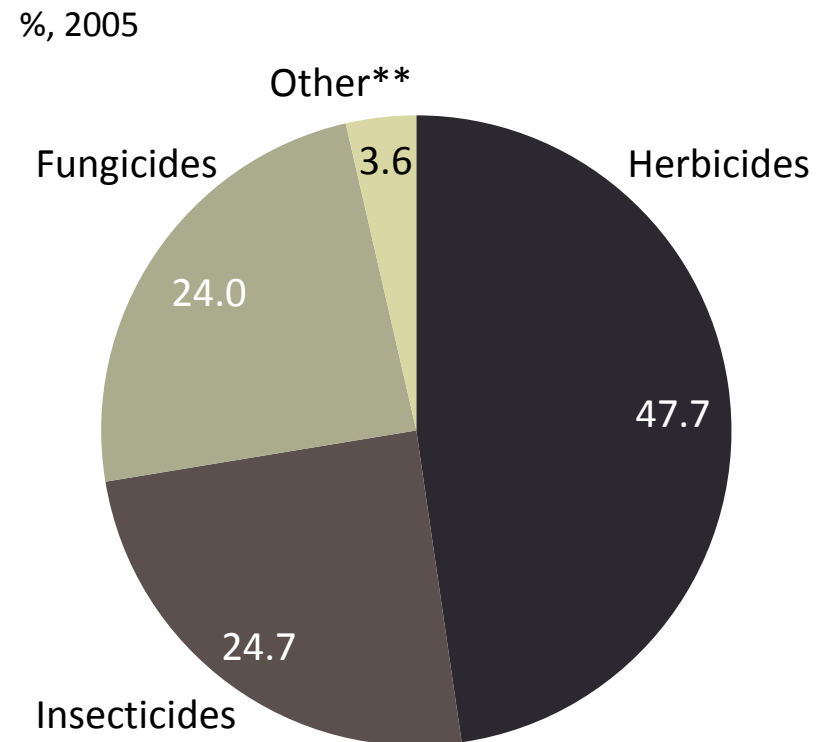
- The key competition of ROA is the traditional agrochemical market primarily in:
 - Insecticides
 - Fungicides
 - Fertilizer
 - Plant growth regulators
- These include hundreds of specific products usually providing a limited solution. Moreover, these products could be harmful, and the market is looking for alternative solutions
- ROA could offer a unique, effective and cost-efficient solution to compete in the large agrochemical global market

The global agrochemical market is large, slowly growing and about half of it is relevant to ROA applications

The global agrochemical market is slowly growing



Approximately half of the market is Insecticides and Fungicides



* Estimates

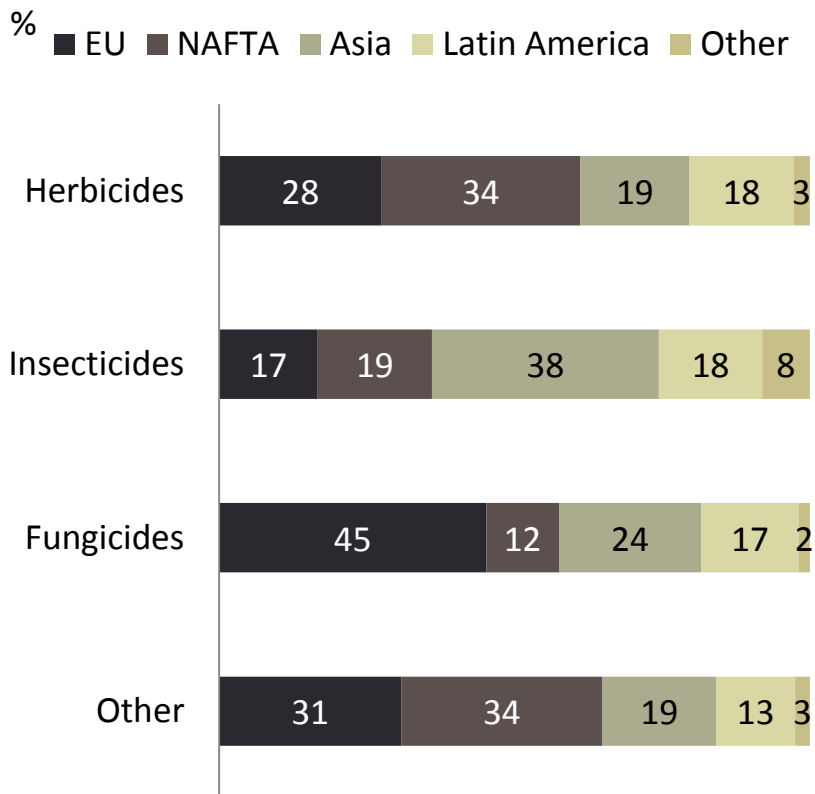
** includes Include, e.g., plant growth regulators, fumigants

Source: Phillips McDougall, McKinsey

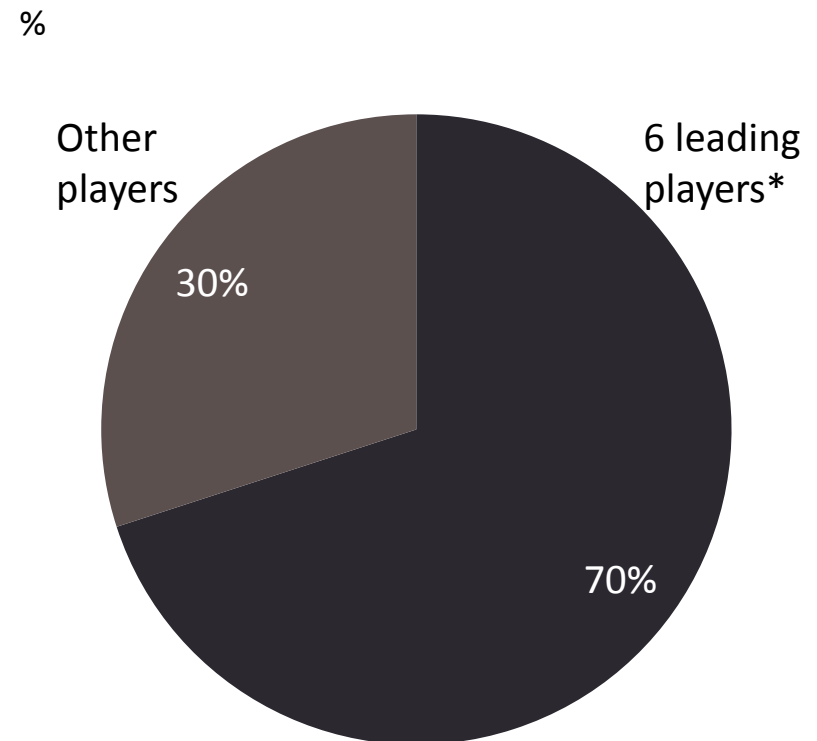
Types of usage varies by geography; the manufacturing market is concentrated

Usage varies by geography

(2005)



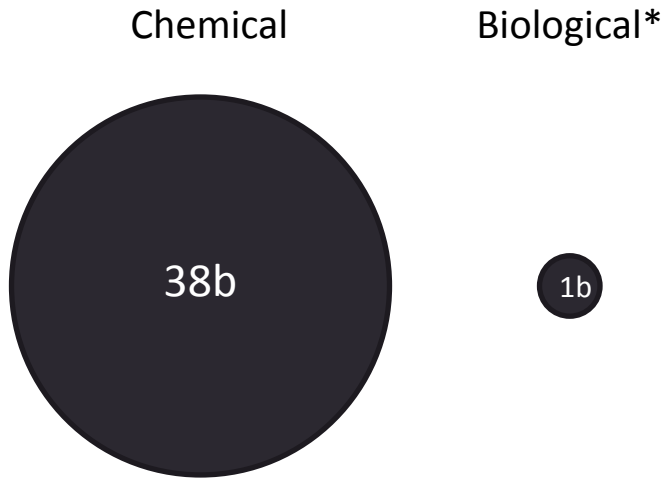
The 6 leading players capture about 70% of the market



* Syngenta, Byer, Monsanto, BASF, Dow, Du Pont
Source: Phillips McDougall, McKinsey

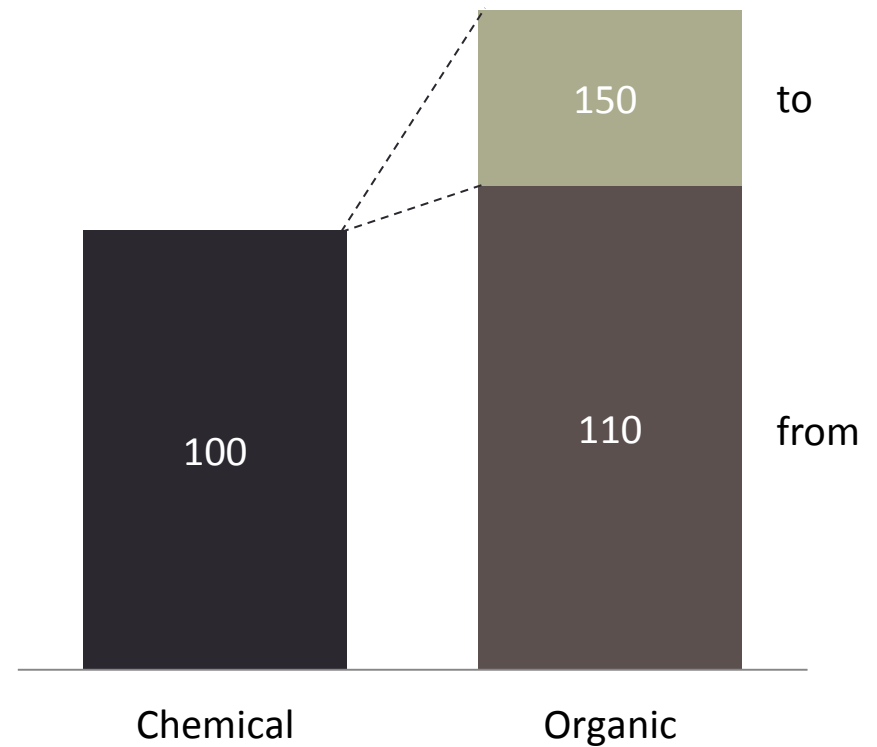
The biological market is small, but attracting a price premium

The Biological market is small



But attracts a significant price premium

Illustrative price*



* Estimates

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The main focus would be on pesticides in selected countries and crops

Main focus

- We should seek to develop and market ROA applications where the market need is greatest, the selling prices are high, the volumes large, and licensing and distribution is feasible
- Pesticides products to large developed countries, seem like the most attractive initial market for ROA
- As the licensing process is lengthily, until the time of successfully obtaining the required licenses, ROA will be sold as a microbiological fertilizer in non-core countries
- Once initial licenses are obtain, the sales focus would be shifted to the more lucrative products and countries

We will differentiate between core and non-core countries

Core country selection

- We shall focus on about 5 core countries to initially penetrate
- The criteria for selecting the core countries to focus on will be based on:
 - Size of the agriculture market, and variety of crops
 - Known problems with pathogens
 - Ease of regulatory licensing
 - The distribution landscape (concentration, competition)
- More detailed work should be done on the exact country selection
- Our initial hypothesis for the selected countries is:
 - China/ Brazil
 - USA
 - Italy
 - Spain
 - Israel (mainly for R&D and demonstration purposes)

Non- Core countries

- In the non-core countries, we will initially sell Microbiological fertilizer, until obtaining the pesticide licenses for the core countries
- Non-core countries are those with easier regulatory regimes, and those with more limited potential to become core countries (not to cannibalize the pesticide market with the fertilizer product)
- Likely to include 3-4 African and Asian countries where we have an existing agriculture relationship

We will lead the market entry with specifically selected crops

Core crops

- Licenses should be obtained for specific crops. It is therefore important to select the right crops to be initially licensed
- The criteria for selecting the core crops will be based on:
 - Size of the crop market in the core countries
 - Its prevalence between the countries (crops that are present in various countries)
 - Crops with that require large amounts of traditional pesticides, and that suffer from severe pathogens
- More detailed work should be done on the exact crops selection
- Our initial hypothesis for the selected crops and are:
 - Tomatoes
 - Peppers
 - Cucumber
 - Vine
 - Peach
 - Pear

Poultry

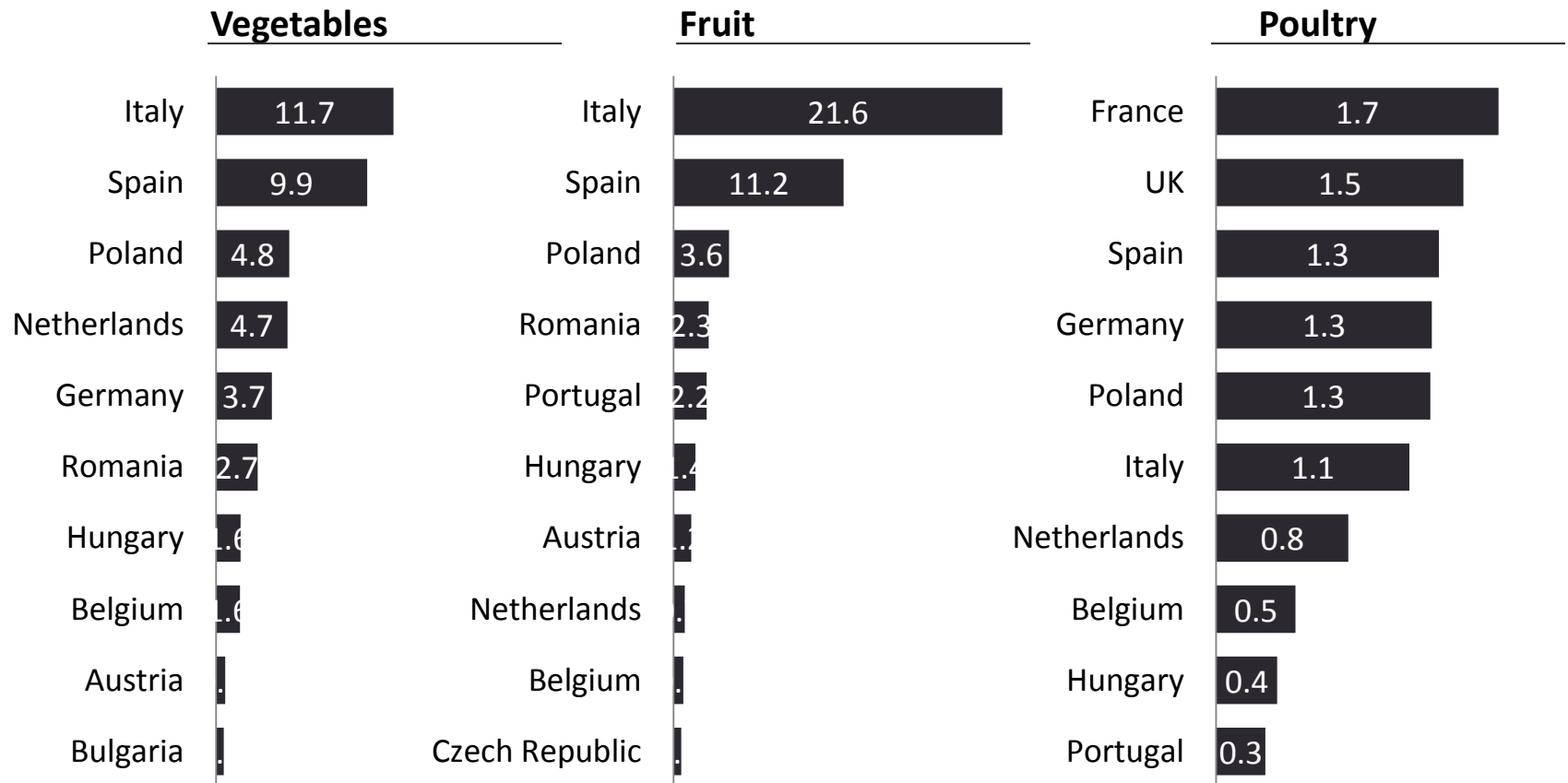
- In addition to the fruit and vegetable above, Poultry (broiler chicken) will be a core segment for ROA, as a food and water additive and as a disinfectant

Example of data to use in country and crop selection

m ton, 2009

*Additional data in the document:
 "An Advisory Study About Global
 Marketing of ROA9223 Based Products"
 by Osman Yildiran*

- European example -



We will run a parallel licensing process

Licensing fertilizer

- Licensing for Microbiological fertilizer is expected to be quick and easy to obtain, and would be obtained immediately for the non-core countries

Licensing fertilizer

- After selecting the core countries to enter, we shall commence a licensing plan and experiment schedule for the various crops and pathogens
- We shall aspire to minimize the number of experiments conducted, and combine several varieties of pathogens into one experiment, taking into account the we do not have full control over the spreading of the pathogen
- Licensing each label is expected to cost \$35k. We assume that 3 experiments would be needed for each crop, for each country. The Poultry licensing is expected to be more expensive at about \$250k
- The total budget for the licensing of the core crops in the core countries is:
 - 5 countries x 6 crops x 3 experiments x \$35k = \$3.2m
 - 5 countries x \$250k = \$1.3m
 - Total licensing cost for the first 3 years = \$4.5m
- GMC will lead the licensing effort and be the owner of the licenses (not the local distributors)
- The licenses would be obtained with the assistance of first-class licensing consultancies

Quantities and prices

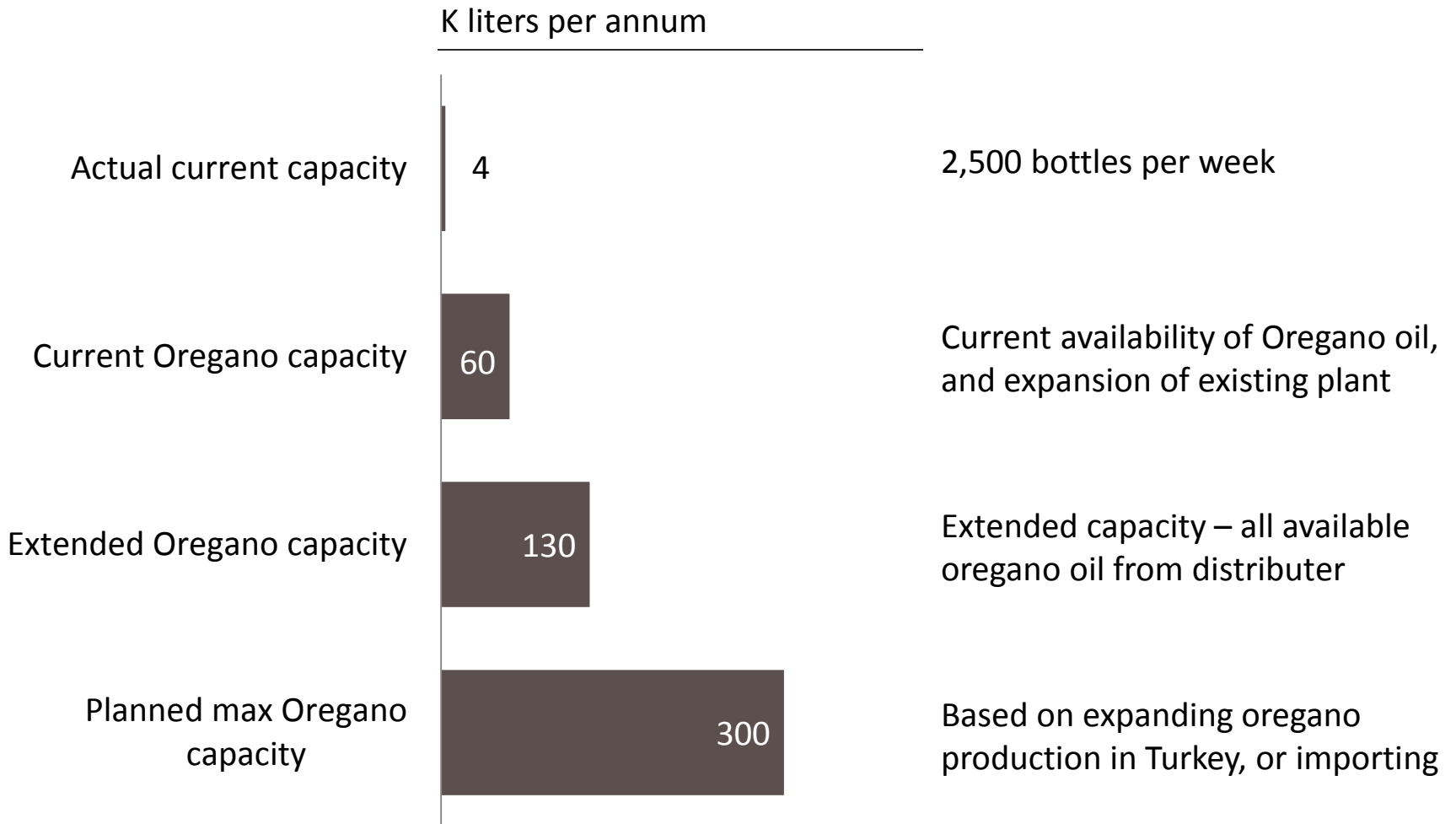
Quantities

- Based on expansion of today's ROA's manufacturing captivity of fertilizer and supported by the availability to raw materials in the market, we estimate that the initial annual production could be ~2m bottles per year
- This will require modifications to the existing plant (a gallery floor, closing some of the outside area and adding some equipment)
- The oregano for this quantity is available from the current supplier. A 30% down-payment can secure the quantity
- This annual quantity will support the first 2 years (year 1 only $\frac{3}{4}$ of the year), until the initial licenses are obtained
- During year 2, an evaluation will be made for the case of moving to the free-zone and establishing a more modern automated facility
- It is estimated that the maximum annual capacity of the plant could be 288k liter, mainly limited by oregano oil availability

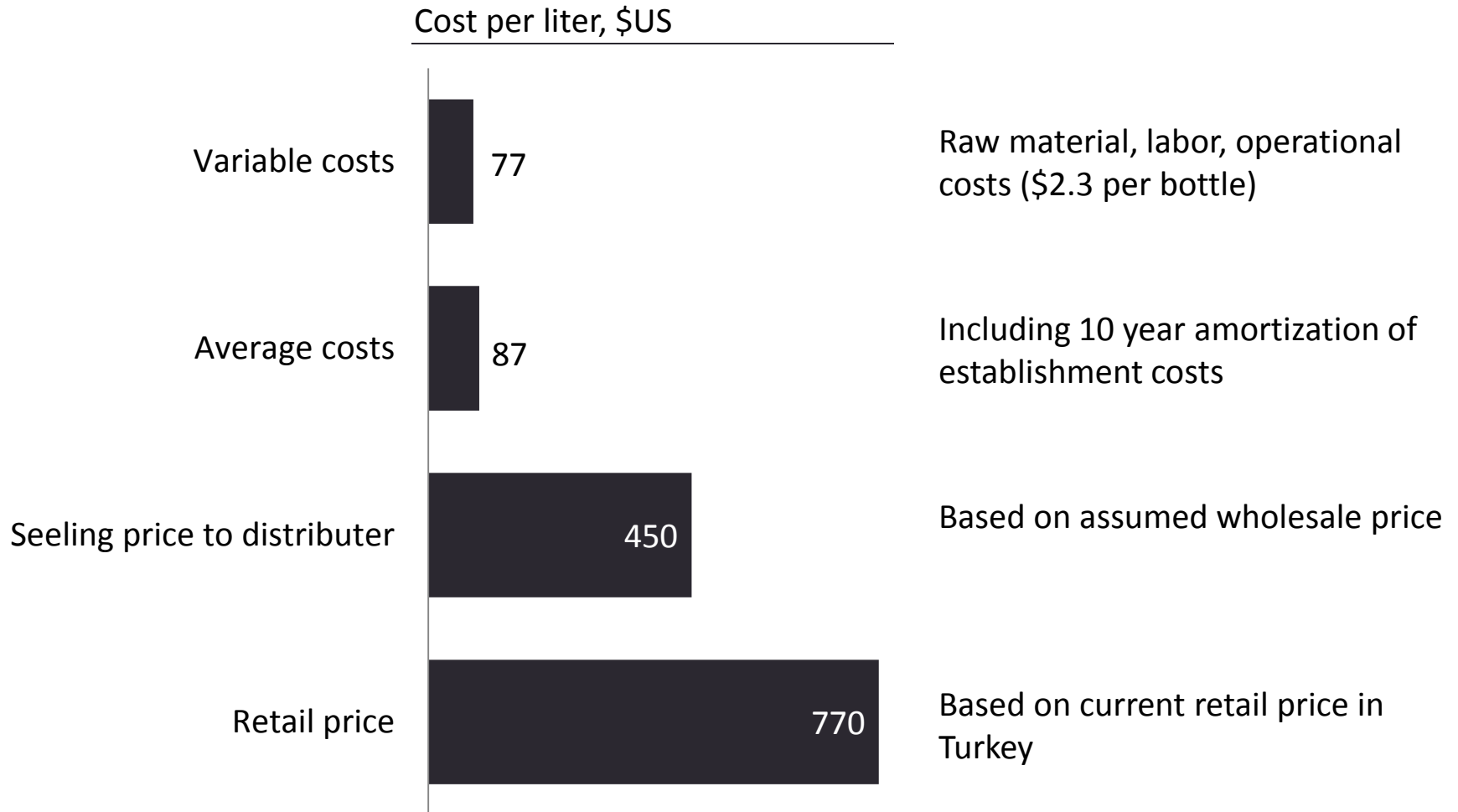
Assumed prices

- Prices are assumed based on the experience in Turkey, selling microbiological fertilizer
- The ongoing selling price to distributors is assumed at \$450 per liter (based on 60% of the Turkish retail price of TL35 per bottle)
- To be conservative, we are assuming a flat price even when licenses are obtained

The various quantity stages depend on availability of oregano oil and the expansion of the manufacturing plant



The pricing assumptions demonstrate the high margins based on capacity of 130k liter per annum



Content

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High level financial summary

Rough calculations, excluding tax

SUMMARY OF FINANCIALS

\$m

	Year					
	0	1	2	3	4	5
Total sales		18.2	24.3	41.5	83.0	124.5
Running costs		7.2	10.6	16.2	29.2	43.2
<u>Setup, licensing and capital costs</u>		<u>4.5</u>	<u>2.4</u>	<u>4.7</u>	<u>7.2</u>	<u>7.3</u>
Total cash flow	(5.0)	6.5	11.3	20.6	46.6	74.1
<i>Accumulated cash-flow</i>	<i>(5.0)</i>	<i>1.5</i>	<i>12.8</i>	<i>33.4</i>	<i>79.9</i>	<i>154.0</i>

Calculations of sales and quantities

Rough calculations

DETAILS OF CALCULATIONS

	Year					Comments	
	1	2	3	4	5		
Quantities, k liter							
Implied production quantity		45	60	100	200	300	Start with 2m bottles in first year, up to max capacity in year 5. year 1 only 3 quarters of sales
Int'l quantity	90%	40.5	54.0	90.0	180.0	270.0	
local quantity	10%	0.0	0.0	10.0	20.0	30.0	
Prices, \$ per liter							
Assumed wholesale selling price to distributors		450	450	450	450	450	Assumed constant price to be conservative Based on 60% of today's retail price in Turkey Base on \$3 per bottel
Assumed wholesale selling to Turkey		100	100	100	100	100	
Sales, \$m							
Sales international		18.2	24.3	40.5	81.0	121.5	Assumption
<u>Sales in Turkey (wholesale only to TMC)</u>		<u>0.0</u>	<u>0.0</u>	<u>1.0</u>	<u>2.0</u>	<u>3.0</u>	Assumption
Total sales, \$m		18.2	24.3	41.5	83.0	124.5	

Calculation of licensing and running costs

Rough calculations

	Year					
	1	2	3	4	5	
Setup, licensing and capital costs, \$k						
Plant establishment costs	100		800			Year 1 minor costs, year 3 reduced original assumptions
Machinery (CAPX) 1.8	200	-	-	168	184	Assume expand as you grow. Min 200K
Registration cost	1,500	1,500	1,500	1,000	1,000	Assumption (5 countries x 6 crops x experiments) + poultry
<u>Change in working capital</u>	15% 2,734	911	2,430	6,075	6,075	% of int'l sales. 1st year an assumed number
Total setup and capital costs, \$k	4,534	2,411	4,730	7,243	7,259	
Running cost						
<i>sqmt needed</i> 17	1,000	1,042	1,736	3,472	5,208	Assume expand as you grow. Min 1000 sqmt
Rent 15	20	20	30	60	80	Base on ROA's estimated prices
Semi fixed costs 1,200	300	1,200	1,200	1,200	1,200	As per ROA estimates. 1st year minimal
Variable costs 77	3,500	4,700	7,700	15,400	23,100	As per ROA estimates
Royalties to Alper 3%	550	730	1,220	2,430	3,650	% of int'l wholesale sales (int'l quant * wholesale price)
Logistic costs, \$m 5%	911	1,215	2,025	4,050	6,075	Assume % of sales to distributors
Marketing costs 5%	911	1,215	2,025	4,050	6,075	Assume % of sales to distributors
<u>G&A</u>	<u>1,000</u>	<u>1,500</u>	<u>2,000</u>	<u>2,000</u>	<u>3,000</u>	Assumption
Total running costs, \$k	7,193	10,580	16,200	29,190	43,180	

Calculation of semi-fixed and variable costs

USD, per ROA estimates

Semi-fixed			Comments
Personnel	100		Assume 100 out of 300 is fixed Mainly air conditioning to keep 21-25c
Energy and fuel	200		
R&D	120		
Intra-office	60		
Insurance	50		
Communication	40		Does not include product liability
<u>Security</u>	30		
Total semi-fixed for 6 months	600		
Annual semi-fixed costs	1,200		
Variable costs		per liter	
Raw material	2,580	75.9	for 34k liter in 6 months
Personnel and labour	200	0.7	Assume 200 out of 300 are variable
<u>Catering</u>	80	0.3	
Variable cost per liter		76.9	
per bottel (30 ml)		2.31	

Calculations of fixed costs and machinery

USD, per ROA estimates

Fixed costs

Modification and infrastructure	100	estimate
Legal permits	70	
Power unit	65	
Blower unit	50	
Heating-fixing unit	140	
Technical equipment and SW	260	
<u>Filling and packaging unit</u>	<u>100</u>	manual labor, estimated machinery cost
Fixed establishment costs	785	

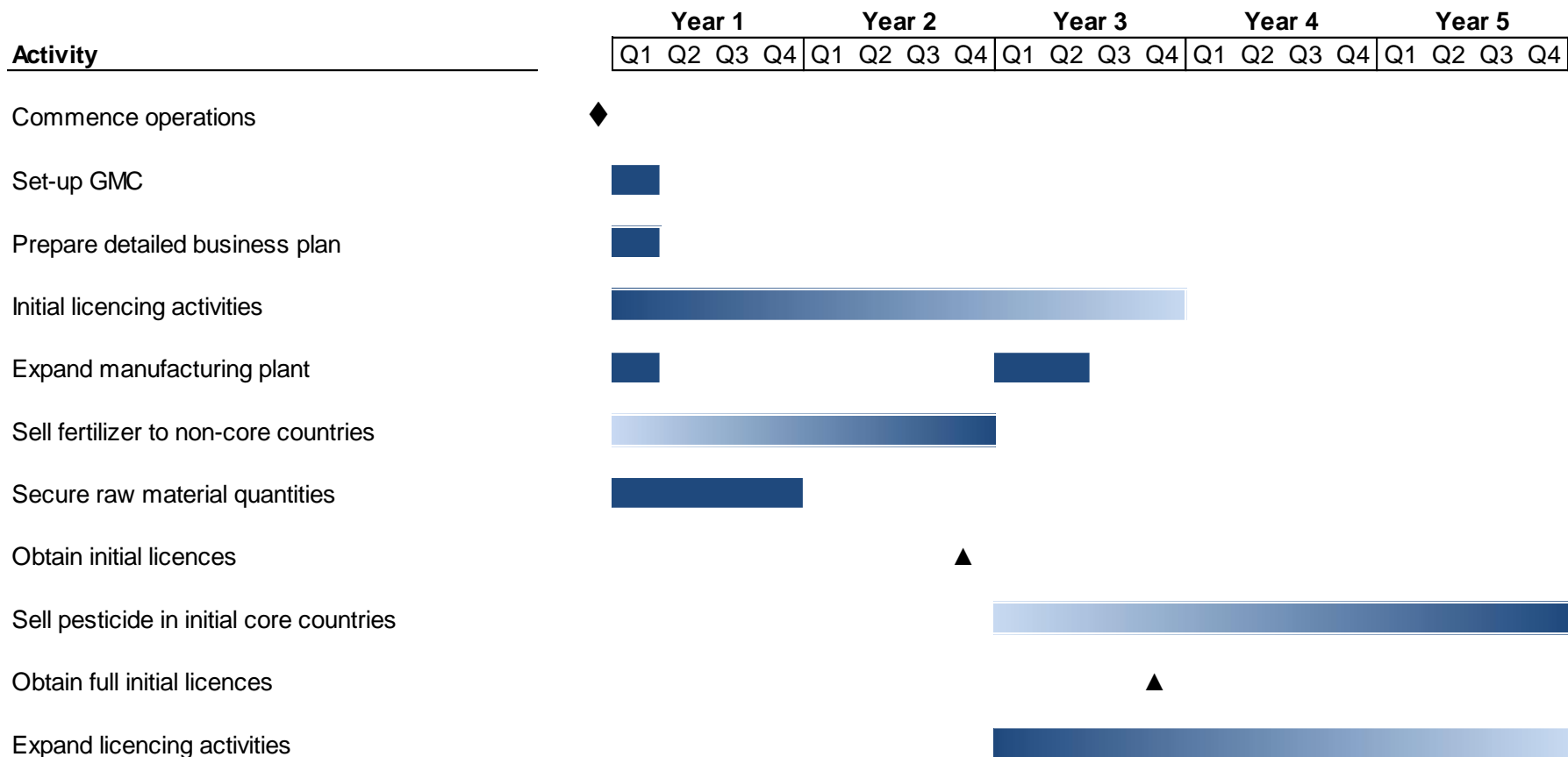
Machinery

Tanks (process)	1.04	per k liter
Mixers	0.69	per k liter
<u>Tanks (finished products)</u>	<u>0.10</u>	<u>per k liter</u>
Total machinery	1.84	per k liter

Content

- Vision and market
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- Appendix

High level 5-year work-plan



Risks and mitigations

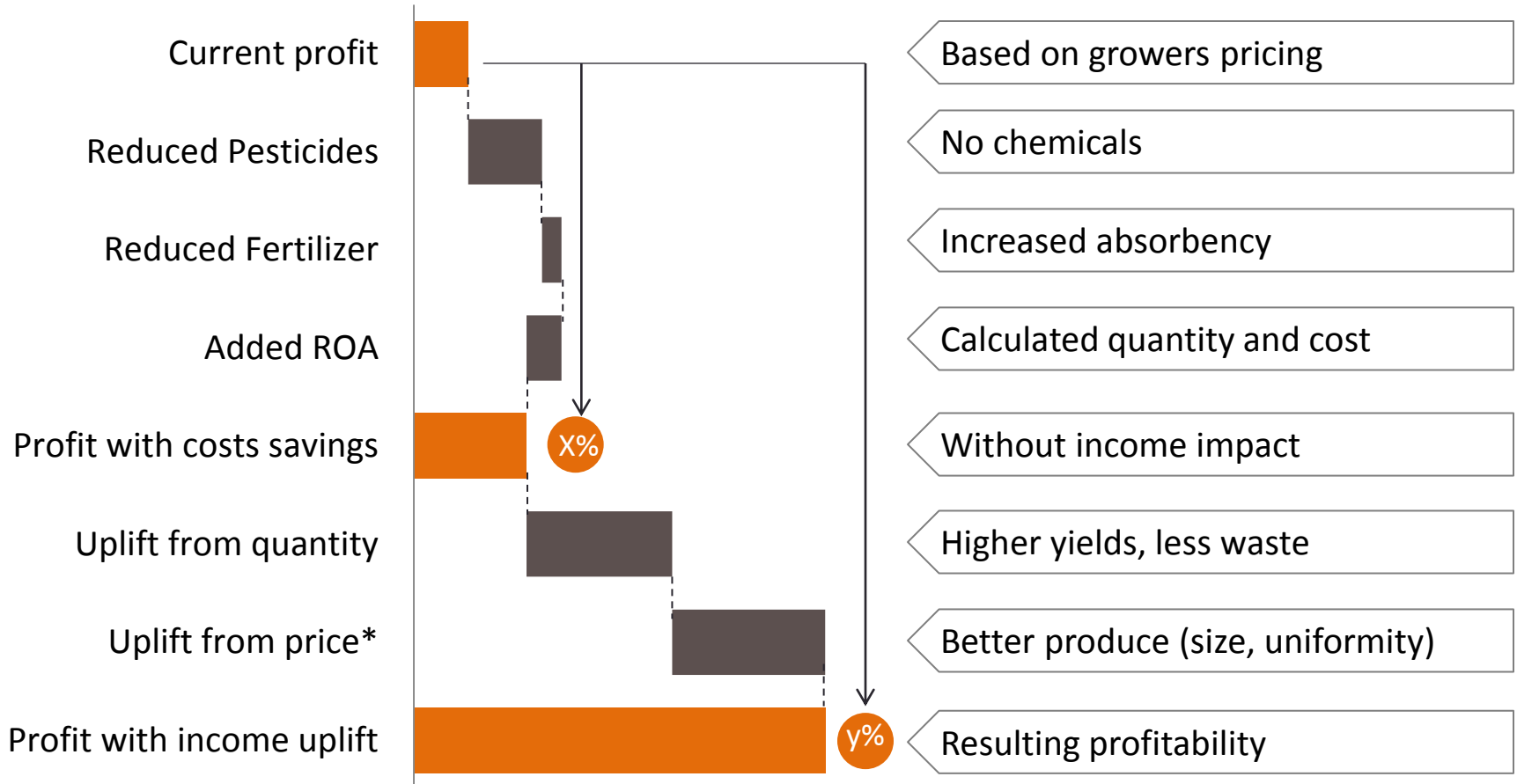
Risks	Mitigation
Limited availability of oregano oil, prevents growth	<ul style="list-style-type: none">• Secure available oil in advance• Ensure oregano for future years production increase• Source internationally
Inability to obtain pesticides licenses	<ul style="list-style-type: none">• Exiting experience suggest effective results• Diversify license across countries and crops• Staggered license approach (learn from experience)
Increase completion	<ul style="list-style-type: none">• The market is large enough from many competitors• Conservative pricing in line with competition• No known biological product in the market
Inability to establish plant in the free-zone	<ul style="list-style-type: none">• Can expand production in existing location• Financial plans do not rely on tax exemptions

Content

- Vision and market
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- Work-plan
- Appendix
 - Economics for selected growers

We calculate the change in profitability for ROA potential users

Conceptual illustration

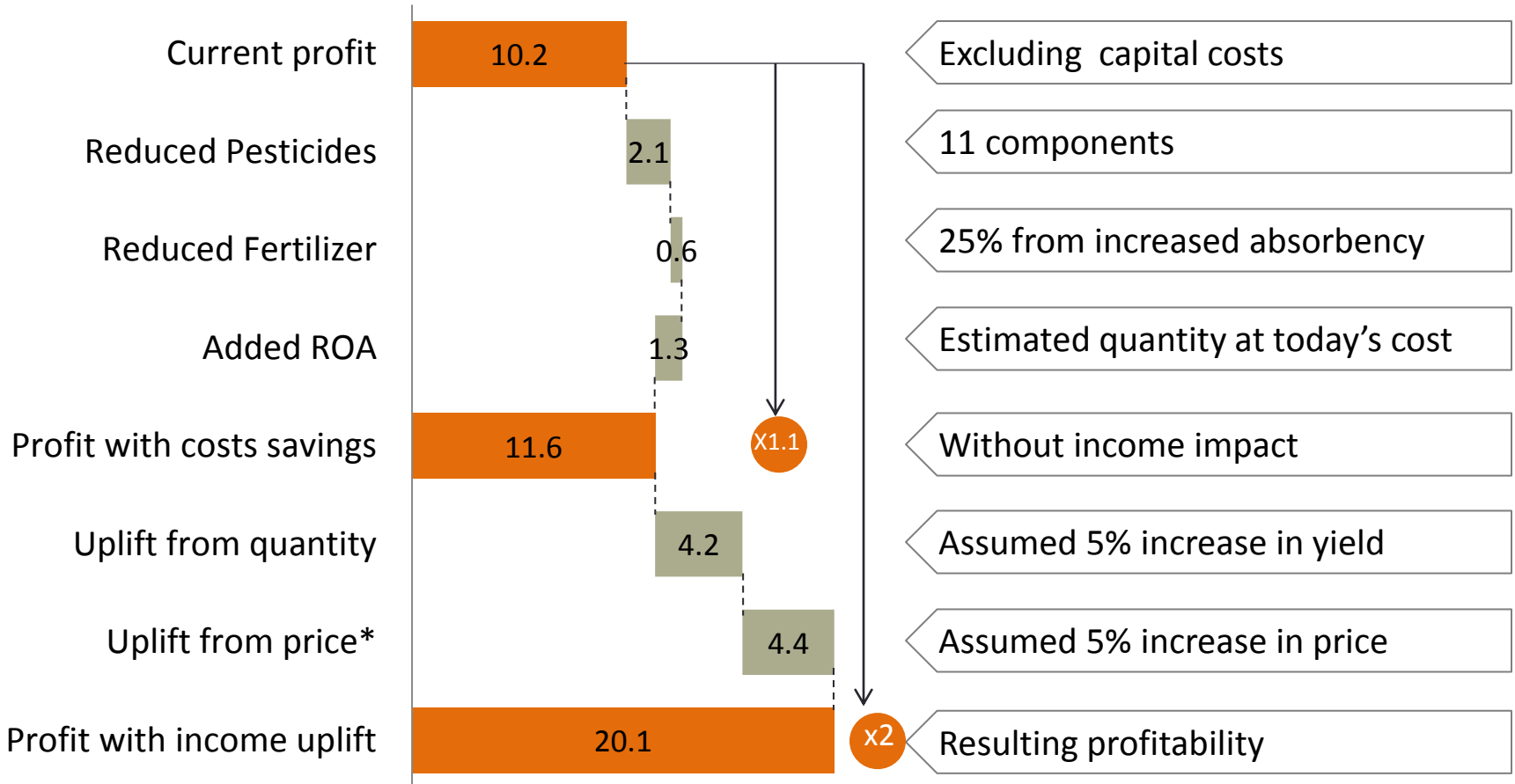


* Including change in quantity x change in price impact



Peppers export in greenhouse

ILS K, per Dunam, 2007, current ROA costs



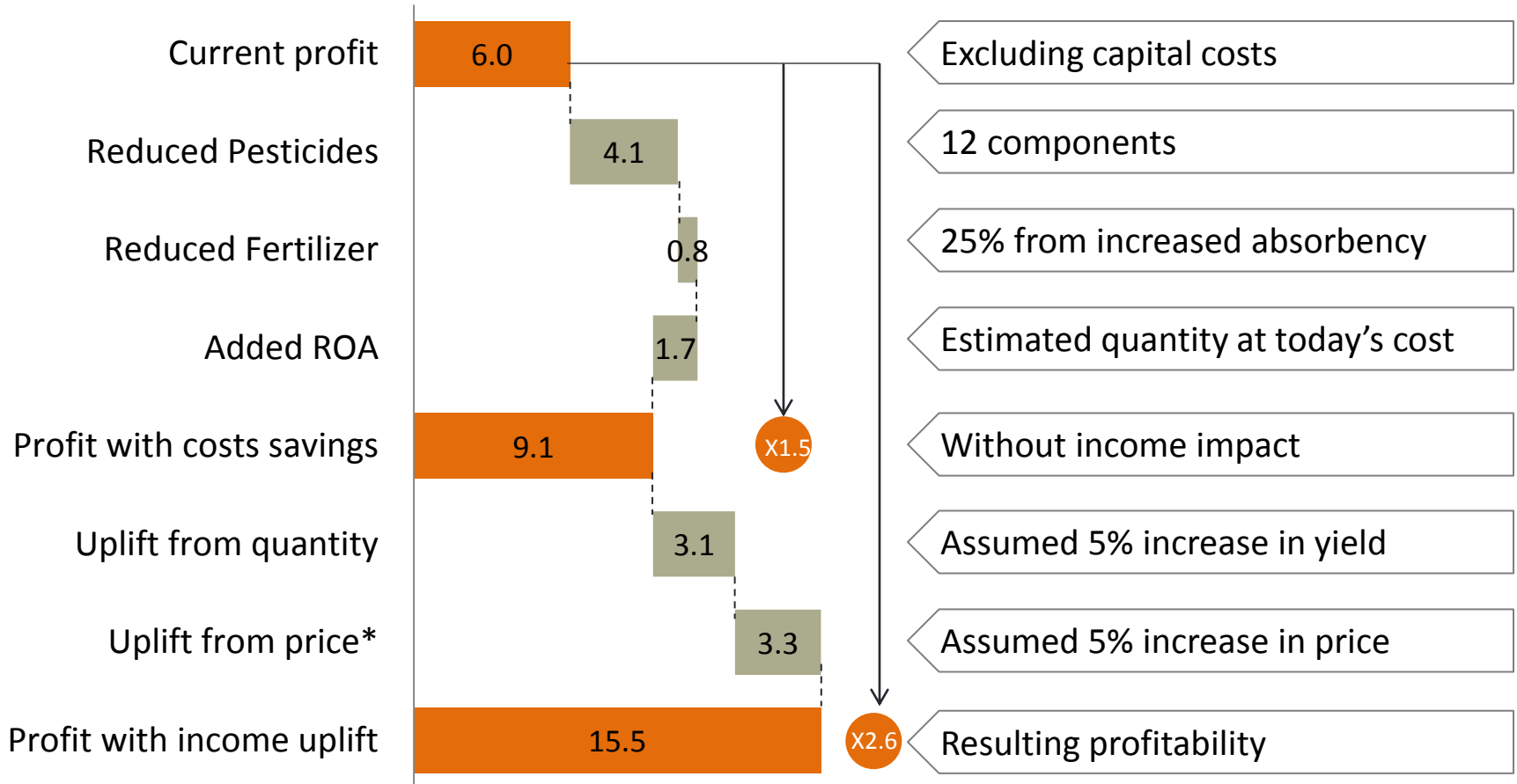
* Including change in quantity x change in price impact

Source: Ministry of agriculture; ROA



Tomatoes local in greenhouse

ILS K, per Dunam, 2007, current ROA costs



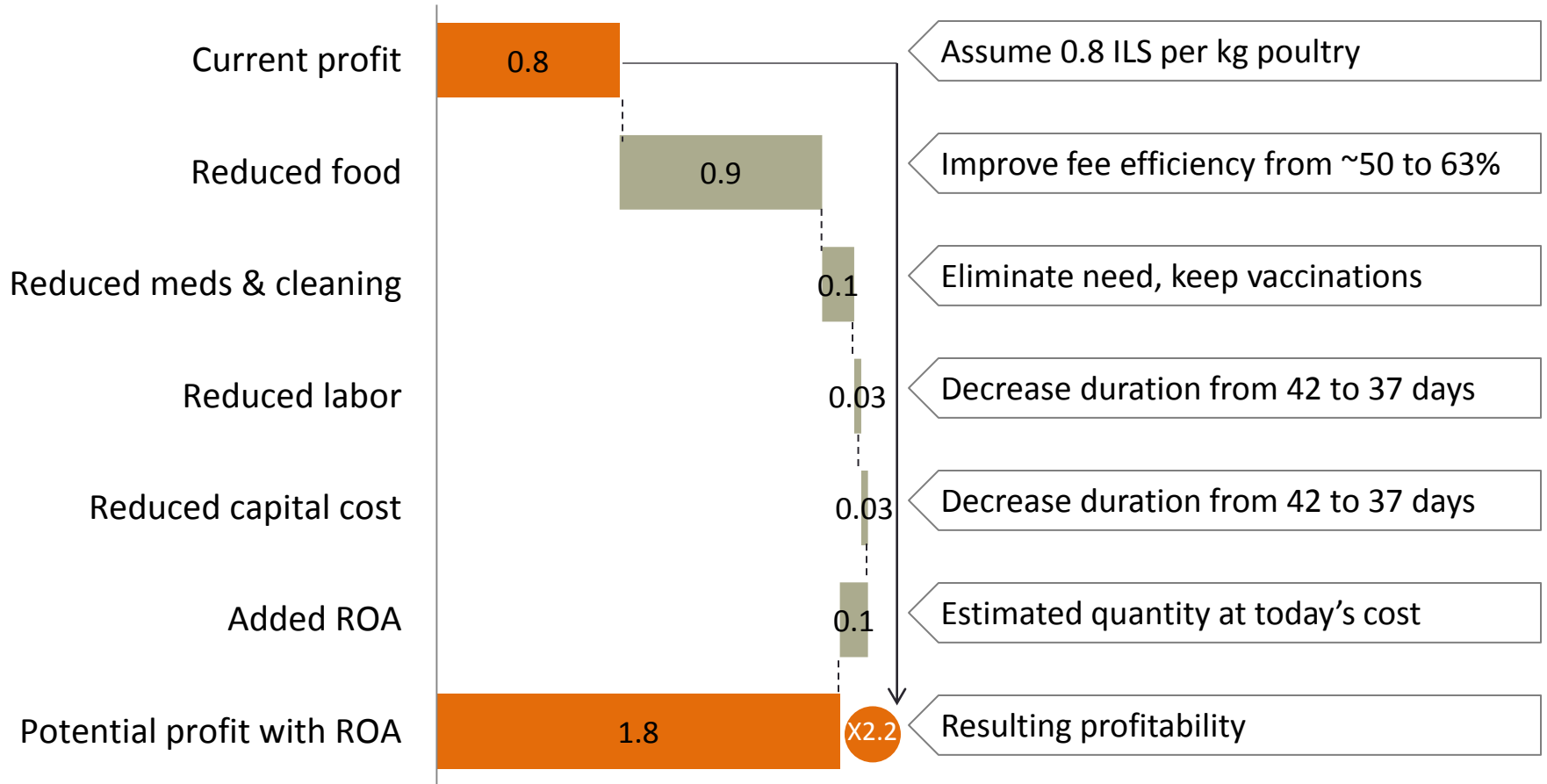
* Including change in quantity x change in price impact

Source: Ministry of agriculture; ROA



Broiler poultry

ILS K, per 1000kg poultry, 2011, current ROA costs





Vines – fresh fruit

ILS K, per Dunam, 4th year, current ROA costs

