Tomato farming venture using greenhouse technology

Business plan

Contents

1. Executive summary

The tomato farming project will be the first project carried out by Donma limited and will involve the establishment of one greenhouse tunnel on a freehold piece of land at Maseno near Kisumu.

Greenhouse farming is a modern way of growing crops that involve the growing of crops in an artificially controlled environment that ensures reduced susceptibility to diseases and increased yield of crop. Plants are fed nutrients through a drip irrigation system and they are grown in the most suitable conditions, which allow each plant to produce the maximum fruit possible.

The greenhouse method of farming will have the following advantages:

- High tomato yield
- Reduced disease attack
- Reduced labour costs since operating the system is not labour intensive.
- Consistent production of the crop irregardless of the prevailing season
- Uniformity of crops in terms of size and quality

The demand for tomatoes has been and still remains high in the country due to the fact that most Kenyan families use tomatoes as a basic ingredient in most of their meals. Tomato growing using greenhouse technology is steadily picking up in the country and we wish to profitably position ourselves in this industry by producing quality products and aggressively marketing it to our customers. The customers for our products will include the following market segments in Kisumu and its environs:

- Hotels, eating joints and lodgings
- Open air Markets
- Supermarkets
- Schools and colleges
- Groceries and independent retailers
- Customers buying from the farm
- Processing industries

Donma Enterprises Limited is a private company limited by shares incorporated in December of 2010. The company is seeking to raise funds for the purpose of financing the acquisition of the greenhouse facility and to commence operations. The project will utilize one greenhouse tunnel sourced from Amiran Kenya, a company that has been supplying greenhouses to Kenyan farmers for decades. The greenhouse comes in a comprehensive kit that includes all the equipment necessary for the first season of crop. The largest portion of the start-up requirements is for the purchase of this greenhouse kit, its installation and agronomical support from the suppliers.

The total project will cost a sum of Kshs 250,000. We are injecting Kshs 50,000 into the business. We require an extra Ksh **200,000 as loan** to successfully buy the kit, establish it on the farm and commence and continue operations until the project is self sustaining.

We intend to begin operations in the month of June 2011 and begin making sales by mid august or early September. In order to ensure continuity of supply, we intend to acquire another greenhouse before the first crop dies out. This will ensure that there are no gaps in our supply and no subsequent loss of customers.

2. General company description

Donma enterprises limited is a private company limited by shares and incorporated under the companies Act Cap 486 laws of Kenya.

Corporate information

Postal Address:	P.O.Box292 Maseno
Physical Address:	Kisumu Milimani NHC housing estate opposite central primary school. Block 38
Telephone	0726 775 839
E-mail:	albertzachary@yahoo.com

Directors

Michael Omollo	Chairman
Albert Agutu	Managing Director
Silas Odhiambo	secretary
Janet Akeyo	
Martha Awidhi	
Perez Joan	
Fanuel mbola	

The Company was formed with the intention of ameliorating the financial standards of the family but uptake of membership has been unimpressive. We therefore wish to start of a profitable project that will stir uptake of shares in the company. We feel that a greenhouse tomato project offers the best way to start off since the possible returns are considerably high compared to the reasonable start-up costs.

The Managing director will be the project manager for this project.

3. Operational plan

Production

The tomatoes will be grown in a state-of-the-art greenhouse tunnel. The greenhouse kit comes complete with hybrid seeds, agro-chemicals, fertilizers, an irrigation system, knapsack sprayers, and safety equipment. The advantages of growing crops in greenhouse tunnels are:

- Higher yield, thus higher profitability.
- Faster, longer growth (harvesting begins in 21/2 to 3 months and continues for 6months!)
- Labour reduced by almost 80%
- Crop is grown irregardless of prevailing season

The greenhouse will have the capacity sufficient to produce approximately 6,000 Kgs (6 tonnes) of tomato in one season.

The tomatoes are grown following a specified regimen recommended by the suppliers of the equipment. In order to be conversant with how to operate the system, the supplier, Amiran Kenya offers training on aspects of technical operation, disease control, record keeping and a user manual is provided in order to get the most out of the kit.

The quality of the crop is ensured because the regimen used is set to produce specific results. The amount of water and nutrients supplied to the plant is specified and experience shows that the quality (size, taste, health) of the crop is constant and guaranteed.

Location

The farm will be located in Kisumu karateng near Maseno on a freehold, ancestral piece of land. The said piece of land has access to reliable supply of piped water necessary for irrigation and is easily accessible to the main road (Kisumu-Busia highway) thus ensuring that produce will easily be delivered to the market.

Personnel

There will be a project manager who will be responsible for overall management and one employee responsible for the day to day operations of the green house. The work involved is not labour intensive and therefore only one employee is required.

Personnel plan (Amounts in Kshs)

	Jun	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb
P.manager	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
Employee	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Total people	2	2	2	2	2	2	2	2	2
Total payroll	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000

The project manager will oversee the project, maintain proper records and accounts, ensure repayment of the loan and ensure the produce is effectively marketed.

The employee will receive the required training necessary to competently carry out the operations.

A comprehensive schedule and written procedures will be prepared in order to guide the employee on the procedures. This is important in case of any chance of forgetfulness.

Suppliers

Key supplier: Amiran Kenya.
Physical address: Old Airport North Road.
Postal address: P.O. Box 30327-00100, Nairobi.
Telephone: 0719 095000
Fax: 020-82485/7
Email: afk@amirankenya.com
Website: www.amirankenya.com

Amiran will supply the greenhouse, all the required supplies (fertilizers, seeds, pesticides), set up the structure at the site and offer training on how to operate the greenhouse. They will also provide the services of a regional extension officer to provide us with relevant advice pertaining to any challenges we face.

Amiran Kenya has had a long presence in the country and has supplied several farmers with greenhouses for decades. Our research has revealed that they are competent and reliable and that working with them will be beneficial to us.

Credit policies

Some of our sales will have to be credit sales. Sales to supermarkets, schools and some hotels will have to be credit sales due to the purchasing policies of such customers.

The credit period will be the subject of agreement between us and individual customers and will not be a blanket predetermined period. However, we will set our maximum repayment period at one month in order to ensure proper cash flow. Before taking on any new credit customer, we will first establish their credit-worthiness. This will be done by

consulting with their suppliers for other products to establish their repayment history. If we establish a healthy payment history, we will then agree on the payment terms.

We will also factor in the cost of extending credit into our prices.

Management and organization

The daily operations will be carried out by the employee who will be trained prior to the commencement of the operation.

The overall management will be carried out by the project manager. The project manager, Albert Agutu, has a degree in law, has accounting background (CPS section 2) and sufficient experience in growing and marketing tomatoes. He has grown tomatoes four times:

- The first attempt ended in a dismal failure.
- The second attempt produced better results but due to lack of water, only a small profit was realized.
- The third attempt was successful but the major problem was the kind of tomato grown-the money maker variety which is not popular in the market because of its highly perishable nature. Thus, though profitable, maximum returns were not realized
- The last attempt failed due to the 2008 post election violence,

This experience will come in handy in ensuring the success of the enterprise. The anticipated employee was instrumental in all the previous attempts and is thus a suitable farm hand.

The project Manager is not in any employment and will therefore have no time constraints and can therefore dedicate sufficient time and attention to the project to ensure its success.

4. Marketing plan

Marketing will be one of the major pillars of this venture. Having quality products is meaningless if the product is not bought by customers. We will therefore put immense emphasis on marketing and selling our product. Our marketing plan is based on 1) a market research study carried out between 20th December 2010 and 5th January 2011 and 2), the project manager's experience gained after growing tomatoes on four occasions. The details of the market research study are included in the appendices section.

Industry analysis

Most of the regions in Kenya produce tomatoes which are marketed in the local markets. The produce marketed in the bigger cities that is Nairobi, Mombassa, Nakuru, Kisumu, Eldoret and other major towns are sourced from Kirinyaga district ,Meru central, Nyeri District, Nakuru district, Taita Taveta District, Eldoret and western Kenya.

The Nyanza region does not produce as much tomatoes and therefore the demand for the product in Kisumu and its environs is mostly satisfied by farmers in Eldoret and western Kenya. The demand for tomatoes has been constant because it is indispensable in a majority of Kenyan meals-most families use tomatoes in at least two meals every day. This ensures that the demand for tomatoes will continue to be constant in the future.

Customers

The market for tomatoes is segmented into the following main categories of customers:

- Schools and universities
  There are many schools and universities in the region that will provide a good market for our products. These include Maseno university, Maseno school, Chulaimbo secondary, Huma girls, Kisumu boys, Kisumu Girls and much more.
- Supermarkets
  Almost all supermarket sell fresh produce. They often require quality products and a reliable supply-we will certainly be able to satisfy these requirements. Supermarkets in the region include the different branches of Nakumatt, Ukwala, and Yatin.
- Open air Markets
  Selling at markets is best done through agents. There are a number of markets where we will be able to sell our products: Kibuye market, Maseno market, Daraja mbili market, Lwanda market, lela market.
- Independent retailers and groceries
  We will also target retailers by emphasizing competitive pricing and consistent supply of tomatoes.
- Customers buying directly from the farm
  Our experience has shown that the number of customers attracted by selling direct from the farm is quite considerable. This method of selling involves lower prices since there are no extra costs and these lower prices attract quite a number of customers.
- Hotels, lodgings, eating joints
  Our research and experience shows that this is one of the best market segments. The demand for tomatoes by high-end hotels, middle class restaurants and backstreet eating joints is phenomenal and is bound to ensure that our produce sells well.
- Processing industries
  This market segment will be approached when we increase our output due to the demand for high quantity by these industries.

Competition

There are a few tomato farmers in the region and most tomatoes come from other areas such as Eldoret and western Kenya. This increases their cost due to increased transportation costs. Since we will be selling our products locally, the transport costs will be kept relatively low thus making our tomatoes more affordable.

Competitive advantage

Our main competitive advantages are:

- Consistent supply - most farmers rely on traditional rain-dependant agriculture which makes the availability of tomatoes seasonal. However, with greenhouse technology, the environment is artificially controlled and the prevailing seasons do not affect the availability of tomatoes.
- Consistent quality- since the same regimen is followed, the quality of our tomatoes is first-class irregardless of the season.

- Competitive pricing

Marketing and sales strategy

Our strategy is to profitably and efficiently utilize greenhouse technology in the production of tomatoes and aggressively market our produce to our customers. We also plan to use the first greenhouse as a step to phenomenal growth in the near future thereby capturing a substantial percentage of the market not only for tomatoes but for other farm produce as well.

The company's goals in the first year are to:

- Purchase and establish the greenhouse on the farm
- To repay the entire loan plus interest.
- To achieve profits of KShs 200,000 for the season.
- To establish a second greenhouse

The company's long term plan is to also produce a wider variety of vegetables as well as well as other farm produce.

We will market and supply our products to potential customers aggressively, focusing at first on local markets, and then later on nationwide and even export options. We will emphasize the reliable year-round output of our climate-controlled greenhouses.

We will send out sales letters along with flyers introducing ourselves and what we have to offer

We will also make door-to-door visits and market our products to potential customers. This will be done immediately after the plants are planted (i.e. two months before harvesting)

The company will also eventually develop a website and advertise on the Internet, although these future marketing avenues are not included in this plan.

Our tomatoes will be mainly sold through wholesale marketing. Produce will be transported in wooden crates on hired pick-up as per orders. Later on we plan on repairing and using an old family pick-up at our disposal

Anticipated challenges

We expect the production stage to be generally hassle-free. This is because of he experience we have and the ease of growing crops in a greenhouse.

The main challenge we anticipate is in the marketing stage. This is especially so during seasons when tomatoes flood the market. We will try to counter his by building concrete relationships with our clients, emphasizing our competitive advantages and concentrating on aggressive marketing. It will also be difficult to determine these bountiful seasons because of current erratic weather patterns.

Sales forecast

We expect to have exceptional sales in the first year due to our anticipated aggressive marketing and our high quality produce.

	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Total
Unit sales										
Total unit sales	nil	nil	nil	600 kg 9crates	1 ton 16crts	1.5tons 23crts	1.5tons 23crts	1ton 16crts	400 kgs 6crates	6,000Kgs 93crates
Unit prices (Kshs)										
	-	-	-	3,800	3,800	3,800	3,800	3,800	3,800	-
Sales (Kshs)										
Total sales	nil	nil	nil	34,200	60,800	87,400	87,400	60,800	22,800	353,400

Notes

- We will not make any sales in the month s of June, July and August as the crop will not have matured. Harvesting begins 3 after planting and we therefore expect our first sales from mid August to early September.
- Production of tomatoes varies from month to month depending on the stage of growth.

- 1 crate of tomatoes weighs 64 Kgs. Tomatoes are sold either in crates or in Kilograms. We will use both of these units in order to maximize profits.
- The sales forecast covers a period of 9 months since this is the seasonal duration of one crop.

5. Financial Plan

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Start-up expenses

This statement estimates the amount of money we will need to launch and maintain the project until sales receipts can cover operating expenses and debt service

Donma Enterprises

Start-up cost estimate

Start-up assets			
Item		Units	Estimate
Greenhouse tunnel		1	155,500
Installation		-	10,000
Agronomic support		-	12,000
cement			1,400
Ballast			1,500
Casual labour to put up greenhouse and prepare land			1,500
Transportation of greenhouse to Maseno			10,000
Cash required			10,000
SUB_TOTAL			201,900
Operating expenses			
Item	Est.cost per month	No of months	Total estimated cost
P. manager salary	5,000	3	15,000
Employee wages	2,000	3	6,000
Promotion & management costs	4,000	3	12,000
Transport cost of initial harvests	5,000	1	5,000
Contingency			10,100
TOTAL FUNDING FOR ASSETS			201,900
TOTAL OPERATING EXPENSES			48,100
TOTAL ESTIMATED START-UP CAPITAL			**250,000**

Notes

*Management expenses include transport and telephone expenses and other expenses to enable adequate project supervision.

Income Statement

The following is a projected income statement for the first season of business (i.e.9 months)

Donma Enterprises limited
Pro Forma profit and loss statement for the first season of business

Sales		353,400
Less Cost of inputs		22,000
Gross profit		331,400
Less operating expenses:		
Wages and salary	63,000	
Transport expenses	30,000	
Management & promotion expenses	30,000	
Depreciation	5,000	
Total Operating expenses		128,000
Profit before loan repayment		203,400

Notes

- The amount for sales is derived from the sales forecast.
- The cost of inputs includes the cost of seeds, agro-chemicals and fertilizers, which amounts to 22,000 shillings.

Opening Day balance sheet

The following is the pro forma balance sheet at the commencement of the business.

Donma Enterprises limited
Balance sheet as at June 1st 2011

Fixed assets		*Capital*	
Greenhouse kit	201,900	Cash introduced	50,000
Current assets		*Long term liability*	
Cash	10,000	Loan	200,000
Bank	38,100		

Total assets	250,000	Total liabilities and Capital	250,000

Projected cash flow

The following table is the projected cash flow for the first 12 months:

Pro Forma cash flow

	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
Cash received									
Cash introduced	48,100							Nil	nil
Sales	nil	nil	nil	34,200	60,800	87,400	87,400	60,800	22,800
total cash received	16,033	16,033	16,033	34,200	60,800	87,400	87,400	60,800	22,800
Expenditure									
Wages	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000
Transport	-	-	-	5,000	5,000	5,000	5,000	5,000	5,000
Management & promotion expenses	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
Loan repayment	nil	nil	nil	15,000	40,000	60,000	60,000	40,000	-
Total cash spent	10,000	10,000	10,000	30,000	55,000	75,000	75,000	55,000	15,000
Net cash flow	6,033	6,033	6,033	4,200	5,800	12,400	12,400	5,800	7,800

6. Loan required and proposed repayment terms

Amount of loan needed

We require financing to the tune of Kshs 200,000 to be able to purchase the necessary assets and to commence operations.

How the funds will be used

Here is a breakdown of how the loan will be used:

- Purchase of a greenhouse kit from Amiran 155,500
- Transporting greenhouse to the farm 10,000
- Installation costs 14,400
- To pay for Agronomic Support 12,000
- Cash to carry out operations 8,100

What this will accomplish

The loan will be instrumental in enabling us to purchase and establish the greenhouse at the farm and to commence operations. Commencement of operations will eventually enable us to begin harvesting the crop and make sales. We anticipate that the sales will enable us repay the loan and to thereafter establish a successful business operation.

Requested repayment terms

We propose to repay the loan over a period of one year at an interest of 10% of the borrowed amount beginning three months from commencement of business. The following repayment schedule will enable us repay the loan in the proposed period.

	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
Loan repayment	nil	nil	nil	15,000	40,000	60,000	60,000	40,000	5,000
Total				15,000	55,000	115,000	175,000	215,000	220,000

Collateral offered

There is no direct collateral offered. However, as a form of security, the financier, or co-financiers will have a lien over the fixed asset (i.e. the greenhouse) and will be able to reposes it in case of failure or inability on our part to repay the loan.

7. Appendices

A) Market research studies

In order to effectively determine who our customers would be, the size of our market and whether our products would be marketable, we carried out a market research in Kisumu and its environs between 20th December 2010 and January 5th 2011. The region was the base of our research since it is where we intend to market our products.

Our study was designed to elicit the following information:

- Who will we sell our produce to?
- Is there sufficient demand for tomatoes in the region?
- Who is our competition and how can we beat them?
- Will our produce be marketable?
- Will our business be profitable?

It took the form of interviews with various people and secondary research on the internet. We conducted the following interviews

- Interviews with 20 retailers and groceries: 5 in Milimani estate, 5 in kibuye market, 5 in Kenya Re estate and another five randomly picked in various locations in Kisumu.
- Interviewed 10 popular eating joints located near the Akamba bus stop. The stretch of eating joints in this area of town is quite popular with the locals and a good number of their meals are cooked using tomatoes.
- We also sought to establish how we could get our produce to be sold at the open air markets in the region. We therefore toured Kibuye market in Kisumu town, daraja mbili market, Lwanda market and lela market. Use of agents is popular in this kind of marketing.
- Interviews with 22 households in different estates in Kisumu to establish the frequency of use of tomatoes by the average Kisumu family.

We managed to elicit a substantial part of the information we were looking for. This information is as presented below.

<u>Who we will sell our produce to</u>

The project manager's prior experience was useful in determining who our target market would be. However, to confirm that the market was still intact, we conducted interviews with possible customers in different market segments. We came up with the following possible groups of customers for our produce:

- Schools and colleges
- Retailers and groceries
- Supermarkets
- Open air markets
- Customers buying directly from the farm
- Hotels, lodgings and eating joints
- Processing industries

<u>Is there sufficient demand for tomatoes?</u>

Most of the hotels we interviewed use tomatoes in most of their meals. Their supply is however uncertain because of the fluctuating supply of tomatoes. 80% of the households

interviewed use tomatoes in at least two meals per day. The agents at the open air market revealed that at most times, they have problems meeting the demand for the fruit.
We therefore established that there is good demand for the produce, sufficient to sustain our business.

Who is our competition and how can we beat them?

It was a challenge trying to conclusively determine exactly who the competition is. However, due to the seasonal fluctuations in the availability of the fruit, we established that the main competition include farmers who rely on rain-fed agriculture. This fact is what will give us one of our competitive edges. Because we won't have to rely on the seasonal conditions, we can guarantee a constant supply at a constant predictable price.

Will our produce be marketable?

On one of the earlier attempts at growing tomatoes, we grew a variety of tomato (money maker) that was extremely difficult to market. It was too juicy and therefore more perishable than other varieties. We later learned that it was preferred by processing industries and not other segments of the market.

In order not to repeat this mistake, sample of tomatoes from one of Amiran's demo farms was presented to retailers to determine if they found it to their taste. We thereafter concluded that the products we will be selling will be marketable.

Will our business be profitable?

Our secondary research reveals that tomato growing is one of the more profitable horticultural businesses in the country. The profit margins are healthy and the demand is high. Growing tomatoes the traditional way is quite labour intensive and a bit risky. High disease prevalence and high cost of inputs make many farmers avoid it altogether. Greenhouse technology is still more than local farmers can afford. The combined effect of these two factors is that the few who seriously venture into this area of business get rewarded handsomely.

We are also convinced of the profitability when we estimate the amount of yield we expect to get in one season and the going prices of tomatoes in the market.

B) Quotation from Amiran Kenya as at February 2nd 2011

Email received from Amiran Kenya

Thank you for Visiting Amiran Kenya
Wednesday, February 2, 2011 9:19 PM
From:
"Silas Tuwei" <silas.tuwei@amirankenya.com>

Add sender to Contacts
To:
"albertzachary@yahoo.com" <albertzachary@yahoo.com>
Cc:
"afk" <afk@amirankenya.com>
Dear Albert,
Thank you for visiting Amiran House and for expressing interest in becoming an Amiran Farmer.
We hope that after the visit at Amiran House you have a better understanding of the technological innovations that Amiran is offering. We invite you to visit any of Amiran's Official Demonstration Units in, Nakuru, Mombasa, Kisii and Malindi, where we are growing a variety of Crops.

The Amiran Farmers Kit is an all inclusive farming unit that includes the following integrated technologies;

1. The Farmers Greenhouse.
2. Drip irrigation system (to cover 1/8 of an acre).
3. Collapsible tank.
4. Farmers sprayer.
5. Seeds (Green house crop and open field).
6. Fertilizers (to cover for one season of crop).
7. Agro- Chemicals (to cover for one season of crop).
8. Personal Protective Equipment (Overall, Catridged mask and Gloves).
9. Training.
10. Renewable Annual Agronomy Support.

The cost of the Amiran Farmers Kit (with 8m x 15m Greenhouse) is as per the table below;

ITEM	Ksh.
Amiran Farmers Kit	139,600.00
Installation	10,000.00
Renewable Annual Agronomic Support	12,000.00
TOTAL	161,600.00

Please let us know your progress in acquiring the Amiran Farmers Kit (AFK) for your project as we are keen to help in any way possible to make your project a success.
Feel free to contact us for any further information or clarification that you may require.

Regards,

Silas Tuwei
Integrated Projects Officer| Amiran Kenya Ltd
Tel: 254 (0) 719 095 226 I | Mobile: 254 (0) 735 769 577/ (0) 725 895 445| Fax: 254 20 824856-7 / 824837
Email: silas.tuwei@amirankenya.com |Website: www.amirankenya.com

The price of the greenhouse went up due to inflationary pressures and the current quotation stands as follows.

Quotation as at 3rd May 2010.

Amiran KENYA Kenya Ltd

Quotation

CLIENT: ALBERT AGUTU

PROJECT IN: KENYA

REF: AFK/025/2011 **03RD MAY 2011**

The quotation for ONE Amiran Farmers Kit (8m by 15m) is as follows;

AMIRAN FARMERS KITS @ 155,500.00	= Kshs.155,500.00
INSTALLATION COST	= Ksh.10,000.00
RENEWABLE AGRONOMIC SUPPORT [Optional]	=Ksh. 12,000.00
TOTAL	**= Kshs.177,500.00**

NB: QUOTATION VALID FOR 30 DAYS

With Regards,

FOR C.N.N. 03/05/11

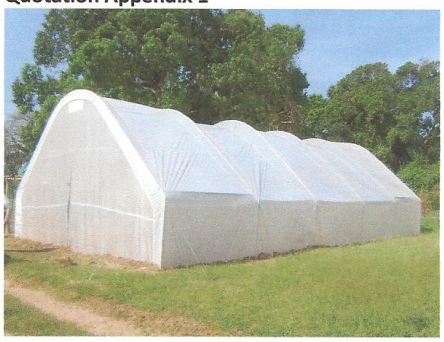
AMIRAN KENYA LTD

Please direct all enquiries to

afk@amirankenya.com Tel: +254 719095000

Amiran Kenya Ltd

Quotation Appendix 1



INSTALLATION REQUIREMENTS-8m by 15m

If a client chooses Amiran to guide the installation, then he will be required to incur the following costs;

1. Have 2 bags of cement on site.
2. Have 8 wheelbarrows of sand on site.
3. Have 8 wheelbarrows of ballast on site.
4. Have enough water for concrete preparation and curing.
5. Each day of installation to plan and have at least 4 casual workers/labourers on site.
6. Have basic equipments such as; spade, mattock, Taribo or digging hoe(s).
7. Have 2 ladders of 3M high – Tri stands
8. Materials for constructing a collapsible tank tower/stand.

NB: These materials are for installation of one greenhouse tunnel.

Transportation of the Kit to the site is organized for by the client.

It's after the collection and transportation of the kit to site that Amiran organizes for an installing technician.

TECHNICIAN'S HAND TOOLS & WELFARE

These tools which come with the technician such as; tape measures, spanners, painting roller, knives and etc are Amiran Kenya Ltd property.

The technicians' welfare costs are taken care of by Amiran Kenya Ltd including transport, accommodation and meals.

No arrangements other than those known to Amiran should a client engage in with Amiran staff.

CONTACTS

In case of any further clarifications please contact us on the following contacts;

Email: afk@amirankenya.com ; **Tel: +254 719 095 000**

C) Web articles

These two articles from reputable dailies illustrate the profitable nature of the greenhouse business and the way it is picking up in the country.

African Agriculture

October 08, 2007

Kenya to test greenhouse tomato production model for small scale farmers

Kenya has started greenhouse production of tomatoes, raising hopes that the popular vegetable will become available throughout the year at affordable prices.

In the new system developed by the Kenya Horticulture Development Programme (KHDP) and agricultural inputs suppliers Seminis Seeds and Osho Chemical Industries, a grower requires about 240 square metres of land and a greenhouse kit to get started.

The cheapest kit, comprising a 500 litre water tank, irrigation drip lines, plastic sheet, seeds and chemicals has been put at Ksh150,000 ($2,239) for those participating in the project. The plot of land can grow 1,000 plants.

The fourth demonstration site, for the Coast province, was launched last week at the Agricultural Training Centre in Mtwapa, Mombasa. Others are in Nairobi at the Horticultural Crops Development Authority compound; at the Agricultural Training Centre in Kericho, and at the Lake Basin Development Authority compound in Kisumu.

According to the KHDP, one of the activities the programme is supporting to help increase the incomes of rural households, is borrowed from Israel, where the country has most of its agriculture under greenhouses due to scarcity of water and land. It is also widely practised in the United States.

If the concept is widely embraced, Kenya could start enjoying year-round supply of tomatoes, which currently get damaged during the wet seasons, pushing prices through the roof. According to Peter Randa, the marketing manager and project technical advisor, growing crops under greenhouses has many advantages, among them the ability to produce huge quantities on a small piece of land and continuous harvesting. The tomatoes have a shelf-life of 21 days compared with 14 for those grown in the open.

It takes a shorter period — two months — for greenhouse-produced tomatoes to mature, while it takes a minimum of three months with outdoor farming. Due to controlled irrigation and temperatures, the crop sports a continuous output of flowers and fruits, all at different stages. One plant has a potential of up to 15 kg at first harvest, going up to 60 kg by the time it has completed its full cycle, at one year.

The supported vines can grow up to 50 metres in height. If well looked after, the minimum plot of land under greenhouse production can yield up to 25,000 tonnes of tomatoes.

Tomatoes are generally highly susceptible to diseases, requiring heavy application of pesticides, which constitute a huge part of production costs. But under the greenhouse hygienic growing techniques, most of the common infections are easily kept at bay, as are insects and other pests, as well as weeds. Apart from huge savings on crop protection chemicals, less labour is employed in a greenhouse, while exposure to chemical toxins associated with application is minimised or eliminated altogether. It is also good for the environment.

Planting materials for the greenhouse tomato production have been specially developed as high yielding, although they can grow outdoors as well.

The East African

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Turn your garden into a profitable greenhouse

Published on 07/04/2010

By Maore Ithula

When Ms Florence Wanjiku Wang'ombe went on early retirement last year, she did not think she would end up in urban farming. Now she is one of the dozens of tomato producers in Utawala Estate, Embakasi.

Although Wanjiku is a trained journalist who had no basic knowledge in modern farming, she is a proud owner of a small greenhouse where she is producing tomatoes. The project is located on a quarter of an acre piece of land where her home also stands.

What prompted Wanjiku to take up horticulture, how does she do it and why does she produce tomatoes and not any other crop? "I got the idea from a neighbour who has been in this business for a year. Research revealed that tomato production has few risks especially if it is cultivated in a greenhouse," she says.

Invest wisely

A single mother of two and jobless, Wanjiku had to invest her savings wisely lest she fails to see her children through school.

Greenhouse tomato production in Utawala Estate is a one-man show, says Wanjiku, introducing Mr Charles Oola who The Standard team found tending her crops.

Consultant Charles Oola tends tomatoes in a greenhouse farm. [PHOTO: Jenipher Wachie]

"This is the man behind this project and many others in this area. He helps us build greenhouses, prepares seedbeds, transplants seedlings, applies fertiliser and shows us how to weed and guides us on general plant husbandry including crop protection," she says.

Two years ago, Oola retired from formal employment where he worked as an agricultural

extension officer for 20 years. He became a consultant in small-scale horticulture in Nairobi .

High returns

"At the beginning of my consultancy, it was difficult to sell my ideas because I do not own a piece of land in the city where I could demonstrate what I am capable of doing. But over time people are getting to understanding me."

Today Oola has helped establish more than 20 small greenhouses in the estate where tomatoes are being produced. "The returns are high. It is the in-thing for women," he says.

Wanjiku's greenhouse stands on a six by 12m potion of the land accommodating about 300 plants.

Oola says the project will produce about 10 tones of the vegetable over one year.

A kg of tomatoes goes for about Sh40. He says Wanjiku is likely to make about Sh400, 000 from her investment in the next one-year.

The cost of putting up the project, Waniku says, is Sh100, 000 including the cost of the greenhouse materials, seeds, manure, labour cost and Oola's expert fee.

It takes three months from the seedbed to the first harvest, says Oola.

To build a small greenhouse Oola charges Sh20, 000 and Sh1, 000 per week per farmer for weekly visits.

Oola says tomato farmers in the area will make a fortune this season because the prevailing heavy rains are likely to ruin crops grown in open fields.

"To minimise application of agrochemicals, all my clients are practicing soil less farming," he says.

Business plan prepared by Albert Agutu
CEO Donma Enterprises.

This is some experience about greenhouse tomato farming, which is what I have done.

Please don't believe the information that you see out there in impressive brochures by greenhouse sellers.. ati 40Kes/Kg farm gate.. That is on a very good day (and they are not many).

Key areas:
- Production - Have your guy trained by some professionals in the field. Make sure they do what they are supposed to - if its spraying, applying fertilizers, watering schedule, top dressing e.t.c.
Please try and keep insects away at whatever cost. They can make or break you.
Make sure you have a constant supply of water (one way or the other).
Do a soil and water test, it will save you alot in future.
- Harvesting period can be as long as 8 months to as low as 3 months. Depends on how well you take care of your plants.
- Marketing - either do your own marketing, in which case you need a vehicle for ferrying produce, or have some agent come and get the crops at some ridiculous price. Obviously, if you are marketing yourself, you get more money, but with more hussle.
- Keep abreast with market prices. There was a week a crate was going for 2800, it rained a little, the same crate went for 3600 after 3 days. Taking to the soko is hasara if you don't have big quantities. Those mamas for the soko will frustrate you thoroughly. Try and avoid going to the market, but sell to end users or retailers.. those mama mbogas, restaurants, e.t.c you can get upto 50% more by right market targetting.
- Even if you have people coming to the farm, they will also frustrate you at times, especially when they know you are dependent on them. I know someone who opted to feed his cows rather than sell at 10/kg, yet retail price is about 60/Kg.
- Something always goes wrong at one point. Try and look for a solution.

Personnel: Get a trustworthy guy, who will not sell your produce when you are busy working. Fire and hire as many times as may be necessary, until you get the right person. Always conduct interview first before giving someone the job. This guy is a deal breaker. it helps if you are staying within the farm, or have someone who can run the farm and stays in it.

I still wonder how people farm on those 8x15m Greenhouses for commercial purposes.. If you want it to make sense, go for the bigger sizes, e.g. 8x30m - then you have some economies of scale.

Depending on area, you will face other challenges. For example, I planted during rainy season, and the roads there are near impassable if it rains. We had to transport a lorry of manure by wheelbarrows a distance of about 200m, because the lorry got stuck in mud. Even a tractor got stuck in the same mud. Its in such times that you question what you are doing, and whether its all worth it.

If you get production, personnel and marketing right, then you are onto something. Forget about those spreadsheets that say you return your money in 6 months. That is hogwash.. Give it 1.5-3 years for it to start generating money for you.

This is a high capex, low opex business if you can get 80% of it right. Its quite challenging doing it remotely (I go to farm twice a week, but its doable).

I can answer questions if there are any.