

For more information, please contact our offices below:

Office	Phone No.
Montagne Longue Sub Office	245 5759
Solitude Sub Office	261 9216
Mapou Model Farm	266 1587
Goodlands Sub Office	282 0563
Rivière du Rempart Sub Office	412 9969
Bon Accueil Sub Office	418 9482
Flacq Model Farm	413 8125 / 413 4617
L'Unité Sub Office	416 9209
Beau Champ Sub Office	417 6699
St Pierre Sub Office	433 9350 / 433 4378
Quatre Bornes Sub Office	466 4109
Maison Des Eleveurs (Henrietta) Sub Office	684 1228
Wooton Sub Office	670 7453
Union Park Sub Office	677 1419
St Félix Sub Office	622 6601 / 622 6602
Rivière des Anguilles Model Farm	626 2554
Plaisance Demonstration Centre	637 8112

**AGRICULTURAL RESEARCH AND EXTENSION UNIT**  
FOOD AND AGRICULTURAL RESEARCH COUNCIL

VOD/2012/1 Rev. 2.0

## **HYDROPONICS INFORMATION FOR ENTREPRENEURS**

### **Information Unit**

#### **Agricultural Research and Extension Unit**

1<sup>st</sup> Floor FSC Building, Route Royale, Saint Pierre

Téléphone: 433 9350 Fax: 433 9351

E-mail: [areuext@intnet.mu](mailto:areuext@intnet.mu)

Site web: [www.areu.mu](http://www.areu.mu)

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# Hydroponics information for entrepreneurs



## 1.0 Introduction

Hydroponics can be defined as the science of growing plants in a medium other than soil. The word hydroponics is derived from two Greek words: “hydro” (water) and “ponos” (labour).

The plants that are grown in hydroponics are fed with a nutrient solution. This consists of water into which are mixed all the essential mineral elements needed by the plants for their growth and development.

## 2.0 Pre-conditions for implementing a hydroponics system

An area of about 400 m<sup>2</sup> is needed for a 270 m<sup>2</sup> hydroponics unit. Besides the space required for the greenhouse, the remaining land is for the pump house, the construction of a concrete platform for a water tank and a store.

The promoter has to ensure that the following conditions are met:

- Land should be flat or levelled
- A permanent supply of water should be available
- An electric power supply should be available
- Labour should be skilled or given the appropriate training

### **3.0 Equipment and materials required for starting a hydroponics system**

- Greenhouse structure, UV treated plastic sheet and insect proof net
- Fertigation system
- Hydroponics fertilizers
- Growing substrates
- Seeds and substrate (for seedlings production)
- Weighing balance - electronic and spring balance
- pH meter, EC meter, thermometer and hygrometer
- Water pump
- Power generator in case of electric power failure
- Clips, hooks and rope for plant support (trellising)
- Pesticides
- Disinfectants

A list of suppliers where these equipment / materials can be purchased is given in **Annex I**.

Different hydroponics systems have been implemented at Wooton Crop Research Station. For visit, promoters can contact: The Station Manager, Wooton Crop Research Station  
Rue Couvent, Curepipe Road, Wooton  
Tel: 670 8249, 670 8847, 670 5937

## 4.0 Suppliers of hydroponics structures

### 4.1 Imported hydroponics units

See **Annex I** for suppliers of imported hydroponics units

### 4.2 Locally mounted hydroponics units

Instead of buying an imported greenhouse structure, the promoter can also construct his own structure locally. The following persons can be contacted for locally made greenhouses:

1. Mr. Amarnath Kareemun  
17, General de Gaulle Street,  
Eau Coulée  
Mobile No: 721 7391

2. Mr. Mahmood Boodseen  
Royal Road, Camp Fouquereaux  
Phone No: 697 0706  
Mobile No: 711 1503, 741 1266

3. Mr. Harryduth Seenauth  
Bois Cheri Road, Moka  
Phone No: 433 7174  
Mobile No: 750 7679

4. Estoril Ltd  
Morcellement Sonah,  
Allée Brillant, Castel, Phoenix  
Mobile No: 784 2952, 252 8999

5. Advance Space Structures Ltd  
Riche Terre Industrial Park,  
Motorway M1, Riche Terre  
Phone No: 248 2472, 248 8836,  
248 8843

For technical assistance on greenhouse structures, promoters can contact the Principal Agricultural Engineer of AREU at:  
Wooton Crop Research Station  
Rue Couvent, Curepipe Road, Wooton  
Tel: 670 8249, 670 8847  
Mobile No: 498 2850

The model and materials / equipment required to construct a 270 m<sup>2</sup> local greenhouse is given in **Annex II**.

## 5.0 Crops that can be grown in hydroponics

Most crops can be grown in hydroponics. However, it is recommended to cultivate high value crops to ensure profitability. Crops that are grown in hydroponics are: bean, cucumber, lettuce, melon, snow pea, sweet pepper, tomato, strawberry and ornamentals like gerbera and rose.

## Crop Calendar

Crop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Tomato												
Sweet Pepper												
Cucumber												
Melon				Only in hot & dry region								
Beans												
Rose												
Gerbera												

Some varieties commonly grown in hydroponics are listed below:

Crop	Varieties
Tomato (salad)	Synergie, Francesca, Electra, Sefora
Tomato (plum)	Alteza
Tomato (cherry)	Tinker (red), Amberlee (Yellow)
Sweet pepper	Pasoreal (green to red at maturity), Cecilia (green to red at maturity), Golden Sun (green to yellow at maturity), Citrine (green to yellow at maturity)
Cucumber	Acilia, Alladin, Jolica and Navio
Melon	Cezanne, Matisse, Gordes, Orange Beauty, Anasta, Star Plus
Beans	Emerite, Long Tom, Vilbel
Rose	Black Baccara, Red Baccara, Lovely Red, Noblesse, Terracotta
Gerbera	Tiramiso, Dardanella, Dalma, California, Aida, Pink Elegance, Snowflakes, Sangria

## Expected Yield

Crop	Plants per m <sup>2</sup>	Yield/m <sup>2</sup> /crop cycle	No of crop cycles per year	Yield/m <sup>2</sup> /year
Tomato	2.5	12.5 - 15.0 kg	2	25 - 30 kg
Sweet pepper	2.5	7.5 - 10.0 kg	2	15 - 20 kg
Cucumber	2.5	37 - 50 units	3	110 - 150 units
Melon	2.5	7 - 12 units	3	21 - 36 units
Beans	5.0	2 - 3 kg	4	8 - 12 kg
Rose	7.0	Crop cycle: 5 years		150 flowers
Gerbera	7.0	Crop cycle: 2 years		130 - 140

## Indicative expected revenue for the following crops

Crop	Plants/270 m <sup>2</sup>	Yield/270 m <sup>2</sup> /year	Indicative market price	Estimated revenue/year (Rs)
Tomato	675	6,750 - 8,100 kg	Rs 50/kg	337,500 - 405,000
Sweet pepper (green)	675	4,050 - 5,400 kg	Rs 70/kg	283,500 - 378,000
Sweet pepper (coloured)	675	4,050 - 5,400 kg	Rs 90/kg	364,500 - 486,000
Cucumber	675	29,970 - 40,500 units	Rs 10/unit	299,700 - 405,000
Melon	675	5,670 - 9,720 units	Rs 60/unit	340,200 - 583,200
Beans	1,350	2,160 - 3,240 kg	Rs 20/kg	43,200 - 64,800
Rose	1,890	40,500 flowers	Rs 8/flower	324,000
Gerbera	1,890	35,100 - 37,800 blooms	Rs 8/flower	280,800 - 302,400

## 6.0 Cost incurred

Hydroponics needs high initial investment. The cost of an imported hydroponics structure is estimated to be between Rs 2,000 and Rs 3,000 per m<sup>2</sup> while the cost of a locally mounted structure is estimated to be between Rs 2,500 and Rs 4,000 per m<sup>2</sup>.

The implementation and annual running costs for cultivation of tomato in a locally made 270 m<sup>2</sup> greenhouse is given below on an indicative basis.

## Initial Implementation Cost

### Items

	<b>Rs</b>
1. Structural frames + Accessories	310,000
2. Greenhouse coverings	100,000
3. Fertigation system	80,000
4. Pump house, water tank, water pump, concrete platform (+ labour)	105,000
5. Cost of mechanical land preparation	20,000
6. Labour for mounting of greenhouse and installing of fertigation system	115,000
7. Installation of water and electricity	10,000
8. Other items	130,000
9. Sundries + Contingencies + Variation in cost	10,000
<b>Sub-Total</b>	<b>880,000</b>

## Annual Operating Cost

### Items\*

1. Coconut coir bag	25,875
2. Seeds / Seedlings production	15,000
3. Fertilizers	39,600
4. Pesticides & Chemicals (disinfectants)	18,000
5. Water and Electricity	12,000
6. Labour	52,000
<b>Sub-Total</b>	<b>162,475</b>

**TOTAL COST** **1,042,475**

\*Excluding cost for land rent, if any



## 7.0 Financial incentive

(i) Development Bank of Mauritius (DBM) Ltd

The technique of crop production using hydroponics involves high investments and to encourage its adoption, the Biotechnology Loan Scheme was introduced by the Government through the DBM Ltd in 1999.

Under this scheme, the DBM Ltd finances 80% of the project cost up to a maximum of 1 million rupees at 7.9% interest (3% above repo rate) with a two year moratorium period.

Details of the Biotechnology Loan Scheme is given in **Annex III.**

(ii) Duty Free / VAT exemptions

A number of agricultural equipment are exempted from duty and VAT. Growers can submit applications for duty and VAT exemptions through AREU.

A list of items that are exempted from duty and VAT is given in **Annex IV.**

## 8.0 Marketing of hydroponics products

With the development of the tourism industry and more sophisticated marketing channels, there is an increasing demand for quality produce in terms of appearance and of higher nutritive value. Hydroponics produce meets standards and are often marketed, well packed and labelled, in hotels, hyper / super markets and also municipal markets.

## 9.0 Technical support

AREU provides technical support to promoters interested in hydroponics. This support encompasses:

- Preliminary visit to advise growers on possibility of setting a hydroponics system on an identified site
- Assisting growers in the writing-up of their project proposal
- Helping growers in the implementation of their project
- Advising on choice of crops and varieties
- Training of entrepreneurs to help them master all cultural practices in hydroponics cultivation

## ANNEX I List of suppliers

### I. Imported hydroponics units

### II. Tunnel, Plastic sheet, Insect proof net, Water pump, Irrigation / Fertigation equipment.

- |  |  |
|--|--|
| <p><b>1</b> Blychem<br/>IBL Complex, Riche Terre<br/>Mobile No: 940 3501<br/>Fax No: 203 9351<br/>(Mr Vincent Theveneau)</p>   | <p><b>7</b> AGROW<br/>3, Marbella Rd, Trianon<br/>Quatre Bornes<br/>Phone No: 465 4890<br/>Fax No: 465 4811<br/>(Mr Ved Meetaroo)</p>  |
| <p><b>2</b> Roger Fayd'Herbe &amp; Co. Ltd<br/>Industrial Zone<br/>Plaine Lauzun<br/>Phone No: 208 1806<br/>(Mr Clifford Dove)</p>   | <p><b>8</b> Plantech Ltd<br/>Village Council Road<br/>Morc. Tara, Terre Rouge<br/>Mobile No: 766 8834,<br/>781 2354<br/>(Mr Pritam Auckle and<br/>Mr Rajen Auckle)</p>   |
| <p><b>3</b> All-to-All Marketing Ltd<br/>24A, Route Terrasson<br/>Pointe aux Sables<br/>Phone No: 255 1530,<br/>234 0308<br/>Fax No: 234 1852<br/>(Mr Rouben Sadian)</p>           | <p><b>9</b> Greenworld Company Ltd<br/>Solferino No.1, Vacoas<br/>Phone No: 427 8113<br/>Mobile No: 254 4013<br/>Fax No: 427 8383<br/>(Mr Gunshiam Boodram)</p>  |
| <p><b>4</b> Premier Engineering Co. Ltd<br/>440, Royal Road<br/>Forest Side<br/>Phone No: 675 1242<br/>Fax No: 676 3317<br/>E-mail: premram@intnet.mu<br/>(Mr Ramanand Bunjun)</p> | <p><b>10</b> Universal Development<br/>Corporation (PTY) Ltd<br/>(only for plastic sheet &amp;<br/>insect proof net)<br/>34, Eplinge Street<br/>Mont Roches, Beau Bassin<br/>Phone No: 467 9859,<br/>466 0888<br/>(Mr Phillippe Levieux)</p> |
| <p><b>5</b> Aqualia DPI Ltd<br/>Old Quay D Road<br/>Port-Louis<br/>Phone No: 206 3379<br/>(Mrs Sabrina Josephine)</p>  | <p><b>11</b> Aadicon Biotechnologies Ltd<br/>Aadi Park<br/>Piton du Milieu<br/>Phone No: 292 7600<br/>Mobile No: 498 8844<br/>(Mr Sachin Kulkarni)</p>   |
| <p><b>6</b> Sotratch Ltd<br/>29, Meldrum Street<br/>Beau Bassin<br/>Phone No: 467 6970<br/>Fax No: 467 6971<br/>(Mr Kevin Padiachy)</p>  |  |

### III. Weighing balance

- |   |  |
|---|--|
| <p><b>1</b> Ip Min Wan<br/>23, Joseph Rivière Street<br/>Port Louis<br/>Phone No: 242 1668<br/>(Mr Derreck Ip)</p>                  | <p><b>3</b> Universal Weight<br/>International Co. Ltd<br/>Solitude Industrial Zone<br/>Solitude, Triolet<br/>Phone No: 261 9169<br/>Fax No: 261 8950<br/>(Mr Wayne Freeman)</p> |
| <p><b>2</b> Rey &amp; Lenferna<br/>Royal Road<br/>Bell Village<br/>Phone No: 203 4400<br/>Fax No: 208 9876<br/>(Mr Patrick Lee)</p> |  |

### IV. pH meter, EC meter, thermometer, hygrometer

- |  |   |
|--|---|
| <p><b>1</b> Ducray Lenoir Ltd<br/>Laboratory Department<br/>19, Poivre Street<br/>Port Louis<br/>Phone No: 202 7700<br/>(Mr Bernard Lim)</p> | <p><b>3</b> Biswal Trading Co. Ltd<br/>Montée S<br/>Petite Rivière<br/>Phone No: 233 5166,<br/>233 5013, 233 1072<br/>(Mr Ajit Walia)</p> |
| <p><b>2</b> Rey &amp; Lenferna<br/>Royal Road<br/>Bell Village<br/>Phone No: 203 4400<br/>Fax No: 208 9876<br/>(Mr Patrick Lee)</p>          |   |

### V. Hydroponics fertiliser

- |  |  |
|--|--|
| <p><b>1</b> Mauritius Chemical Fertilizer<br/>Industry Ltd (CHEMCO)<br/>Chaussée Tromelin<br/>Fort Georges<br/>PO Box 344, Port Louis<br/>Phone No: 216 3965<br/>Fax No: 240 9969<br/>(Mr Kamal Sookun and<br/>Mr Ranjit Jatooa)</p> | <p><b>2</b> Bonns Agribusiness<br/>Bonne Terre<br/>Vacoas<br/>Phone No: 425 5922,<br/>Mobile No: 761 9760<br/>Fax No: 426 1193<br/>(Mr Chooramun<br/>Gobhurdu)</p> |
|--|--|

**VI. Planting materials**

- |   |   |
|---|---|
| <p><b>1</b> Blychem<br/>IBL Complex<br/>Riche Terre<br/>Mobile No: 940 3501<br/>(Mr Vincent Theveneau)</p> <p><b>2</b> Hortibel Maurice Ltd<br/>194A, La Marie Rd,<br/>Glen Park, Vacoas<br/>Phone No: 684 5501<br/>Mobile No: 255 1530<br/>Fax No: 684 5502<br/>(Mr Rouben Sadian)</p> <p><b>3</b> Roger Fayd'Herbe &amp; Co. Ltd<br/>Industrial Zone<br/>Plane Lauzun<br/>Phone No: 208 1806<br/>(Mr Clifford Dove)</p> | <p><b>4</b> Bonns Agribusiness<br/>Bonne Terre<br/>Vacoas<br/>Phone No: 425 5922,<br/>Mobile No: 761 9760<br/>Fax No: 426 1193<br/>(Mr Chooramun<br/>Gobhurdu)</p> <p><b>5</b> Plantech Ltd<br/>Village Council Road<br/>Morc. Tara, Terre Rouge<br/>Mobile No: 766 8834,<br/>781 2354<br/>(Mr Pritam Auckle and<br/>Mr Rajen Auckle)</p> <p><b>6</b> Greenworld Company Ltd<br/>Solferino No. 1<br/>Vacoas<br/>Phone No: 427 8113<br/>Mobile No: 254 4013<br/>Fax No: 427 8383<br/>(Mr Gunshiam Boodram)</p> |
|---|---|

**VII. Generator**

- |  |  |
|--|--|
| <p><b>1</b> EAL Man Hin &amp; Sons Ltd<br/>31, Brabant Street<br/>Port Louis<br/>Phone No: 203 6337<br/>Mobile No: 499 9855<br/>(Mr Raj Ramsamy)</p> <p><b>2</b> Rey &amp; Lenferna<br/>Royal Road<br/>Bell Village<br/>Phone No: 203 4400<br/>Fax No: 208 9876<br/>(Mr Patrick Lee)</p> | <p><b>3</b> J Kalachand &amp; Co Ltd<br/>Stage II Building<br/>DBM Industrial Estate<br/>Plaine Lauzun<br/>Phone No: 212 8410<br/>Fax No: 212 8244<br/>(Mr Preetam Soobarah)</p> |
|--|--|

## VIII. Growing medium Chipping 4 - 6mm (washed):

Gamma Civic Ltd  
Royal Road  
Chapman Hill  
Beau Bassin  
Phone No: 403 8000  
Mobile No: 250 5005  
(Mr Vicky Ragoobar)

## Peat (for seedlings production)

- |   |   |
|---|---|
| <p>1 Bonns Agribusiness<br/>Bonne Terre, Vacoas<br/>Phone No: 425 5922,<br/>Mobile No: 761 9760<br/>Fax No: 426 1193<br/>(Mr Chooramun<br/>Gobhurdu)</p> <p>2 AGROW<br/>3, Marbella Rd<br/>Trianon, Quatre Bornes<br/>Phone No: 465 4890<br/>Fax No: 465 4811<br/>(Mr Ved Meetaroo)</p> | <p>3 Hortibel Maurice Ltd<br/>194A, La Marie Rd<br/>Glen Park, Vacoas<br/>Phone No: 684 5501<br/>Mobile No: 255 1530<br/>Fax No: 684 5502<br/>(Mr Ruben Sadian)</p> |
|---|---|

## Coconut coir

- |  |  |
|--|--|
| <p>1 Plantech Ltd.<br/>Village Council Road<br/>Morc. Tara, Terre Rouge<br/>Mobile No.: 766 8834,<br/>781 2354<br/>(Mr Pritam Auckle and<br/>Mr Rajen Auckle)</p> <p>2 AGROW<br/>3, Marbella Rd, Trianon<br/>Quatre Bornes<br/>Phone No: 465 4890<br/>Fax No: 465 4811<br/>(Mr Ved Meetaroo)</p> | <p>3 Bonns Agribusiness<br/>Bonne Terre, Vacoas<br/>Phone No: 425 5922,<br/>Mobile No: 761 9760<br/>Fax No: 426 1193<br/>(Mr Chooramun<br/>Gobhurdu)</p> |
|--|--|

## **IX. Galvanised pipes & polypipes**

Polypipe Ltd  
P.O Box 98  
Plaine Lauzun  
Port Louis  
Phone No: 212 9972  
(Mr Sudesh Kunden)

## **X. Pesticides**

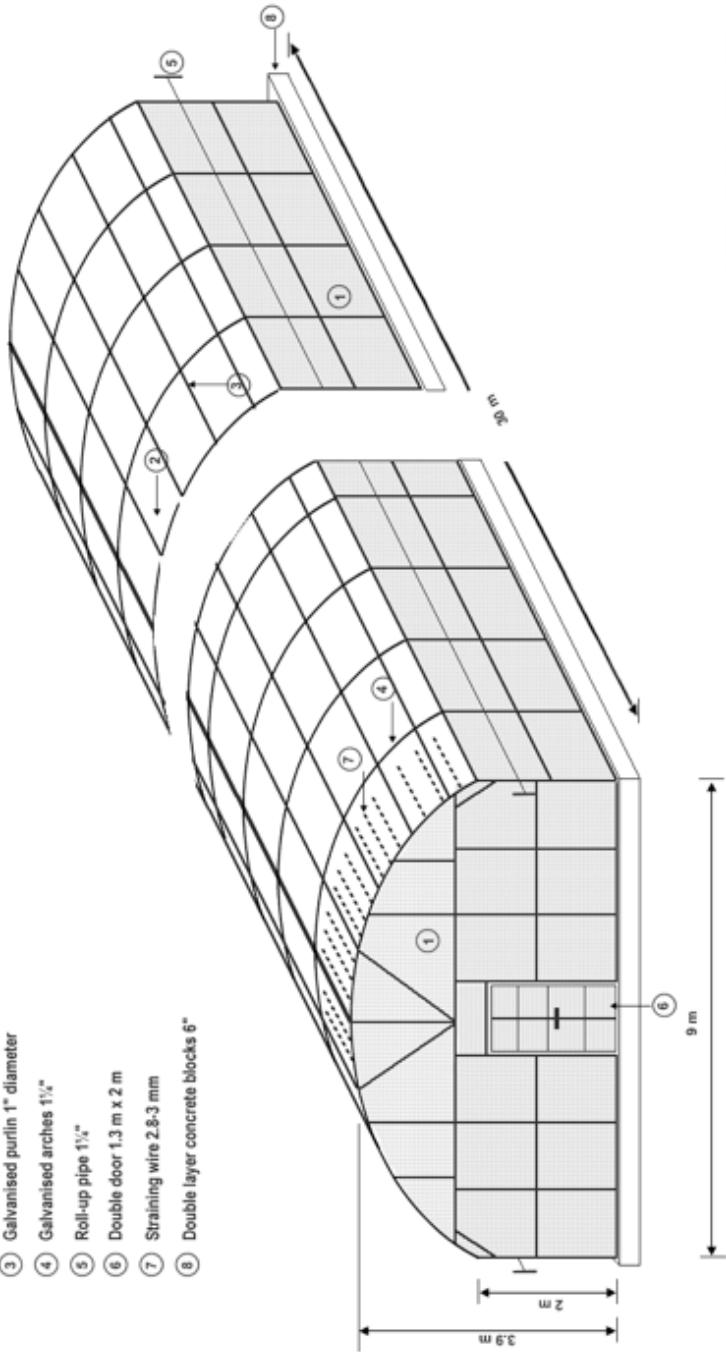
- 1** Blychem  
IBL Complex, Riche Terre  
Mobile No: 940 3501  
(Mr Vincent Theveneau)
- 2** Chemical House  
6, La Corderie Street,  
Port Louis  
Phone No: 208 5199  
Fax No: 208 5199  
(Mr Ramkelawon Matikola)
- 3** Roger Fayd'Herbe & Co.  
Ltd  
Industrial Zone  
Plane Lauzun  
Phone No: 208 1806  
(Mr Clifford Dove)

- 4** Robert Le Maire Ltd  
Royal Road, GRNW  
Phone No: 233  
4544, 233 0438  
Mobile No: 255 7855  
Fax No: 233 1738  
(Mr Sebastien Koenig)

## ANNEX II PLASTIC GREENHOUSE LAYOUT – 30 M X 9 M

MODEL OF PLASTIC GREENHOUSE 9 m x 30 m

- ① Insectproof cloth
- ② PE plastic sheet 180  $\mu$  min. thickness
- ③ Galvanised purlin 1" diameter
- ④ Galvanised arches 1 1/2"
- ⑤ Roll-up pipe 1 1/4"
- ⑥ Double door 1.3 m x 2 m
- ⑦ Straining wire 2.5-3 mm
- ⑧ Double layer concrete blocks 6"



AGRICULTURAL RESEARCH & EXTENSION UNIT

## List of materials for a locally-mounted greenhouse 9 m x 30 m ( 270 m<sup>2</sup>)

Item	Description	Qty	Cost (Rs.)
<b>A</b>	<b>STRUCTURAL FRAMES + ACCESSORIES</b>		
1	Galv. Pipe 1½"	17	
2	Galv. Pipe 1¼"	128	
3	Galv. Pipe 1"	68	
4	Galv. Pipe ¾"	4	
5	Galv. Tee bar 1"	3	
6	Galv. Square tube 1" x 1"	10	
7	Galv. tube 1½" x 1"	6	
8	Galv. Square tube 1½" x 1½"	28	
9	Galv. MS Flat 2" x ¼"	2	
10	Galv. Rail clips + PVC keys	280 m	
11	Galv. Wire 2.8 – 3.0 mm	1.7 km	
12	Galv. Bolt and nut 75 x 10 mm	70	
13	Wire tensioners	54	
14	Metallic hands + tie-down ratchets	20	
15	Straps + tie-down ratchets	10	
16	Cement 50 kg bag	85	
17	Rocksand 04	12 T	
18	Aggregate 1/2" & 3/4"	16 T	



19	Concrete block 6"	390	
20	Welding electrodes No 10	18 kg	
21	Primer	3 L	
22	Two-pack etch primer	1 gallon	
23	Thinner	1 gallon	
24	Paint brush	4	
25	Metal cutting disc 9"	5	
26	Metal twist drill for Item 8	4	
	<b>Sub-total</b>		<b>310,000</b>

Item	Description	Qty	Cost (Rs.)
<b>B</b>	<b>GREENHOUSE COVERINGS</b>		
1	PE Plastic sheet UV-stabilised, 180 $\mu$ min thickness	6.5 x 62 m	
2	Spare plastic sheet (same as above)	6.5 x 62 m	
3	Insect proof netting 3 m x 105 m	1 piece	
4	Black and white soil mulching film	10 x 35 m	
5	PE plastic black 1 m wide	130 m	
6	Repair tape for plastic sheet	2 rolls	
7	Knitted shade cloth 30% (10 m x 31 m)	1 roll	
8	UV-cord 500 m flat type	1 roll	
	<b>Sub-total</b>		<b>100,000</b>

Item	Description	Qty	Cost (Rs.)
<b>C</b>	<b>FERTIGATION SYSTEM</b>		
1	Fertiliser injector pump	2 sets	
2	Screen filter 1" x 100 µ	1	
3	Disc filter 1" x 100 µ	1	
4	Battery-operated cyclic irrigation controller with valve 1"	1 set	
5	Spare motor for item C1	1 set	
6	Compensated button drippers 8 L/h complete with 4 arrow drippers	180 sets	
	<b>Sub-total including pipes + fittings</b>		<b>80,000</b>

Item	Description	Qty	Cost (Rs.)
<b>D</b>	<b>WATER SUPPLY AND PUMPHOUSE</b>		
1	Automatic electric water pump	1 set	
2	Water tank 9 m <sup>3</sup>	1	
3	Concrete platform for water tank + Pump house	1	
	<b>Sub-total</b>		<b>105,000</b>

Item	Description	Qty	Cost (Rs.)
<b>E</b>	<b>OTHER ITEMS</b>		
1	Twine	3 km	
2	Hooks	550	
3	Tomato clips	4,000	

4	Knapsack sprayer	1	
5	Mist blower	1	
6	Full face mask + Protective coat	1	
7	Pruning shears + Crates + Weighing balance	-	
8	Nursery accessories	-	
9	Stand-by generator	1	
10	EC/pH meter	1	
	<b>Sub-total</b>		<b>130,000</b>

Item	Description	Qty	Cost (Rs.)
<b>F</b>	<b>INSTALLATION OF WATER + ELECTRICITY</b>	-	<b>10,000</b>
<b>G</b>	<b>SITE PREPARATION INCLUDING EXCAVATION, LAND LEVELLING AND FILLING</b>	-	<b>20,000</b>
<b>H</b>	<b>LABOUR COST</b>		
1	Labour to bend pipes and mounting of structure (incl. civil works)		
2	Labour to fix all coverings		
3	Labour for installation of irrigation system		
	<b>Sub-total</b>		<b>115,000</b>

	<b>SUNDRIES + CONTINGENCIES + VARIATION IN COST</b>		<b>10,000</b>
	<b>TOTAL COST OF PROJECT FOR ONE UNIT LOCALLY MOUNTED PLASTIC GREENHOUSE</b>		<b>880,000</b>

## ANNEX III

### Biotechnology Loan Scheme

#### Proposed terms and conditions

a. PURPOSE OF LOAN	Promote high tech agriculture such as tissue culture, biotechnology, hydroponics etc.
b. MAXIMUM AMOUNT	80% of project cost with a limit of Rs. 1.0 million
c. RATE OF INTEREST	7.9% p.a
d. REPAYMENT PERIOD	7 years including two years grace period
e. SECURITY	General floating charge and/or fixed charge on immovable property or any other collateral security acceptable to the DBM
f. ELIGIBILITY	Project to be recommended and supervised by AREU

## ANNEX IV

### Items exempted from duty according to Customs Tariff Act.

1. Equipment and identifiable and specialized spare parts thereof, for machinery and for tractors when proved to the satisfaction of the Director General to be used exclusively in agriculture and agro-based industry or in the sugar industry for the production of sugar and electricity.
2. Insecticides 'complement' and wetting agents when proved to the satisfaction of the controller to be used solely for agricultural purposes.

### Items exempted from VAT

1. Sharlon shade, green house, shade screens, fertigation pumps, irrigation pumps, drip irrigation and automatic irrigation controller, imported by persons for use in agriculture under item No. E12.
2. Vegetable seeds, fruit and flower seeds, bulbs and plants, used for sowing or planting
3. Herbicides