

PROGRAM OF WORKS						
Project Title:			ESTABLISHMENT OF GREENHOUSE WITH DRIP IRRIGATION SYSTEM AND SOLAR POWERED			
Category:						
Brgy./ Mun./ Province						
Total Project Cost:			PHP 2,574,000.00			
Source of Fund/Year:						
Implementation Mode:			By Contract			
Project Description: Establishment of Greenhouse with Drip Irrigation System and Solar Powered			Project Duration:		CD 60	
			Equipment Needed:		-	
			Technical Personnel:		Foreman	
					Skilled Worker	
				Unskilled Worker		
Item No.	Scope of Works	% Weight	Quantity	Unit	Adjusted Unit Cost	Total
1.0	SITE WORKS/ GENERAL REQUIREMENTS					
1.1	SITE LAY-OUT WORKS	#REF!	453.60	sq.m	17.58	7,973.00
1.2	EXCAVATION	#REF!	8.89	cu.m	#REF!	#REF!
2.0	FOUNDATION	#REF!	2.81	cu.m	12,739.50	35,798.00
2.1	MASONRY WORKS	#REF!	35.20	sq.m	1,837.10	64,666.00
3.0	STEEL WORKS	#REF!	453.60	sq.m	1,588.05	720,339.20
4.0	ROOFING, SIDING, SHADING & ANTEROOM	#REF!	453.60	sq.m	1,510.56	685,191.70
5.0	DRIP IRRIGATION SYSTEM	#REF!	1.00	lot	354,129.71	354,129.71
6.0	SOLAR POWERED SYSTEM	#REF!	1.00	lot	570,522.40	570,522.40
7.0	PROJECT SIGNBOARD AND COA BILLBOARD	#REF!	1.00	lot	12,932.50	12,932.50
8.0	MOBILIZATION AND DEMOBILIZATION	#REF!	1.00	lot	42,000.00	42,000.00
9.0	OCCUPATIONAL SAFETY AND HEALTH PROGRAM	#REF!	1.00	lot	68,320.00	68,320.00
		#REF!				
			TOTAL ESTIMATED COST			#REF!

BREAKDOWN OF ESTIMATED PROJECT COST				
A.	Direct Cost			1,838,571.43
	Equipment			15,467.50
	Labor			373,150.00
	Materials			1,449,953.93
B.	Indirect Cost			735,428.57
	OCM	15.00%	of EDC	275,785.71
	Contractor's Profit	10.00%	of EDC	183,857.14
	Tax	12.00%	of (EDC+ OCM + Contractor's Profit)	275,785.71
			Total Estimated Project Cost	PHP 2,574,000.00

## DETAILED QUANTITY AND COST ESTIMATES

Project Name: ESTABLISHMENT OF GREENHOUSE WITH DRIP IRRIGATION SYSTEM AND SOLAR POWERED

Location:

Item: **1.1**

Description: **SITE LAY-OUT WORKS**

Quantity: **453.6 square meters**

Designation	No. of Person	No. Days	Daily Rate	Amount
<b>1. LABOR</b>				
Construction Foreman	1	2	650	1,300.00
Skilled Worker	1	2	500	1,000.00
Unskilled Worker	2	2	400	1,600.00
Sub-Total for 1				3,900.00
Name and Capacity	No. of Units	No. Days	Daily Rate	Amount
<b>2. EQUIPMENT</b>				
Minor Tools (5% of Labor)				195.00
Sub-Total for 2				195.00
Name and Specification	Quantity	Unit	Unit Cost	Amount
<b>3. MATERIALS</b>				
Batterboard and Other Lay-out Materials	1	lot	1600	1,600.00
Sub-Total for 3				1,600.00
Direct Cost				<b>5,695.00</b>
Indirect Cost				
OCM	15.00%	of EDC		<b>854.25</b>
Contractor's Profit	10.00%	of EDC		<b>569.50</b>
Tax	12.00%	of (EDC+ocm+Contractor's Profit)		<b>854.25</b>
Total Item Cost				<b>7,973.00</b>
Item Unit Cost				<b>17.58</b>

DETAILED QUANTITY AND COST ESTIMATES

Project Name: ESTABLISHMENT OF GREENHOUSE WITH DRIP IRRIGATION SYSTEM AND SOLAR POWERED  
Location:  
Item: 1.2  
Description: EXCAVATION  
Quantity: 8.89 cubic meters

Designation			No. of Person	No. Days	Daily Rate	Amount
1. LABOR						
Construction Foreman			1	3	650	1,950.00
Skilled Worker			1	3	500	1,500.00
Unskilled Worker			4	3	400	4,800.00
Sub-Total for 1						8,250.00
Name and Capacity			No. of Units	No. Days	Daily Rate	Amount
2. EQUIPMENT						
Minor Tools (5% of Labor)						412.50
Sub-Total for 2						412.50
Name and Specification			Quantity	Unit	Unit Cost	Amount
3. MATERIALS						
Sub-Total for 3						#REF!
Direct Cost						#REF!
Indirect Cost						
OCM	15.00%	of EDC				#REF!
Contractor's Profit	10.00%	of EDC				#REF!
Tax	12.00%	of (EDC+ocm+Contractor's Profit)				#REF!
Total Item Cost						#REF!
Item Unit Cost						#REF!

## DETAILED QUANTITY AND COST ESTIMATES

Project Name: ESTABLISHMENT OF GREENHOUSE WITH DRIP IRRIGATION SYSTEM AND SOLAR POWERED

Location:

Item: **2.0**

Description: **FOUNDATION**

Quantity: **2.81 cubic meters**

Designation	No. of Person	No. Days	Daily Rate	Amount
<b>1. LABOR</b>				
Construction Foreman	1	2	650	1,300.00
Skilled Worker	2	2	500	2,000.00
Unskilled Worker	3	2	400	2,400.00
Sub-Total for 1				<b>5,700.00</b>
Name and Capacity	No. of Units	No. Days	Daily Rate	Amount
<b>2. EQUIPMENT</b>				
Minor Tools (5% of Labor)				285.00
Sub-Total for 2				<b>285.00</b>
Name and Specification	Quantity	Unit	Unit Cost	Amount
<b>3. MATERIALS</b>				
Portland Cement (40kg per bag)	26	bags	300	7,800.00
Fine Aggregates (washed)	2	cu.m.	1800	3,600.00
Coarse Aggregates (screened)	3	cu.m.	2000	6,000.00
Pinolic 1/2"; 4ft x 8ft	2	pcs	1050	2,100.00
CWN 1 1/2"	1	kg	85	85.00
Sub-Total for 3				<b>19,585.00</b>
Direct Cost				25,570.00
Indirect Cost				
OCM	15.00%	of EDC		3,835.50
Contractor's Profit	10.00%	of EDC		2,557.00
Tax	12.00%	of (EDC+ocm+Contractor's Profit)		<b>3,835.50</b>
Total Item Cost				35,798.00
Item Unit Cost				12,739.50

## DETAILED QUANTITY AND COST ESTIMATES

Project Name: ESTABLISHMENT OF GREENHOUSE WITH DRIP IRRIGATION SYSTEM AND SOLAR POWERED

Location:

Item: **2.1**

Description: **MASONRY WORKS**

Quantity: **35.2 sq.m.**

Designation	No. of Person	No. Days	Daily Rate	Amount
<b>1. LABOR</b>				
Construction Foreman	1	4	650	2,600.00
Skilled Worker	2	4	500	4,000.00
Unskilled Worker	3	4	400	4,800.00
Sub-Total for 1				<b>11,400.00</b>
Name and Capacity	No. of Units	No. Days	Daily Rate	Amount
<b>2. EQUIPMENT</b>				
Minor Tools (5% of Labor)				570.00
Sub-Total for 2				<b>570.00</b>
Name and Specification	Quantity	Unit	Unit Cost	Amount
<b>3. MATERIALS</b>				
Portland Cement (40kg per bag)	39	bags	300	11,700.00
Fine Aggregates (washed)	3	cu.m.	1800	5,400.00
Coarse Aggregates (screened)	1	cu.m.	2000	2,000.00
CHB 4"	470	pcs	18	8,460.00
RSB 10mm x 6m	37	pcs	180	6,660.00
Sub-Total for 3				<b>34,220.00</b>
Direct Cost				46,190.00
Indirect Cost				
OCM	15.00%	of EDC		6,928.50
Contractor's Profit	10.00%	of EDC		4,619.00
Tax	12.00%	of (EDC+ocm+Contractor's Profit)		<b>6,928.50</b>
Total Item Cost				64,666.00
Item Unit Cost				1,837.10

## DETAILED QUANTITY AND COST ESTIMATES

Project Name: ESTABLISHMENT OF GREENHOUSE WITH DRIP IRRIGATION SYSTEM AND SOLAR POWERED

Location:

Item: **3.0**

Description: **STEEL WORKS**

Quantity: **453.6 square meters**

Designation	No. of Person	No. Days	Daily Rate	Amount
<b>1. LABOR</b>				
Construction Foreman	1	18	650	11,700.00
Skilled Worker	8	18	500	72,000.00
Unskilled Worker	6	18	400	43,200.00
Sub-Total for 1				<b>126,900.00</b>
Name and Capacity	No. of Units	No. Days	Daily Rate	Amount
<b>2. EQUIPMENT</b>				
Minor Tools (5% of Labor)				6,345.00
Sub-Total for 2				<b>6,345.00</b>
Name and Specification	Quantity	Unit	Unit Cost	Amount
<b>3. MATERIALS</b>				
GI Pipe Post (2"ø X 6.0m sch-20)	20	pcs.	1683	33,660.00
GI Pipe Foundation/Mid Column (1 1/2"ø X 6.0m sch-20)	22	pcs.	1231	27,082.00
GI Pipe Balcony/Arc/Braces (1 1/4"ø X 6.0m sch-20)	82	pcs.	1047	85,854.00
GI Pipe A-frame (1"ø X 6.0m sch-20)	4	pcs.	821	3,284.00
GI Pipe Purlins/Roll up (3/4"ø X 6.0m sch-20)	34	pcs.	572	19,448.00
GI Pipe Connector/Handle (1/2"ø X 6.0m sch-20)	6	pcs.	449	2,694.00
GI Tubular (1" x 1" X 6.0m)	15	pcs.	520	7,800.00
GI Tubular (1" x 2" X 6.0m)	5	pcs.	715	3,575.00
GI Tubular (2" x 2" X 6.0m)	19	pcs.	1400	26,600.00
GI Tubular (1 1/2" x 1 1/2" X 6.0m)	25	pcs.	715	17,875.00
Post Gutter Connector	30	pcs.	305	9,150.00

GI Gutter x 10ft	27	pcs.	2600	70,200.00
Stainless Cable 5mm	120	pcs.	70	8,400.00
Top Connector	22	pcs.	200	4,400.00
Arc Connector	22	pcs.	200	4,400.00
Vent Connector	22	pcs.	300	6,600.00
Spring Clip 1 1/4" x 1"	44	pcs.	45	1,980.00
Assorted Clamps	1	lot	5000	5,000.00
Assorted Bolt and Nuts	1	lot	30000	30,000.00
PVC Pipe 4" x 3m	6	pcs.	1142	6,852.00
PVC Elbow 4"	3	pcs.	143	429.00
Welding rod	40	kg.	150	6,000.00
Sub-Total for 3				<b>381,283.00</b>
Direct Cost				514,528.00
Indirect Cost				
OCM	15.00%	of EDC		77,179.20
Contractor's Profit	10.00%	of EDC		51,452.80
Tax	12.00%	of (EDC+ocm+Contractor's Profit)		<b>77,179.20</b>
Total Item Cost				720,339.20
Item Unit Cost				1,588.05



### DETAILED QUANTITY AND COST ESTIMATES

Project Name: ESTABLISHMENT OF GREENHOUSE WITH DRIP IRRIGATION SYSTEM AND SOLAR POWERED

Location:

Item: **4.0**

Description: **ROOFING, SIDING, SHADING & ANTEROOM**

Quantity: **453.6 square meters**

Designation	No. of Person	No. Days	Daily Rate	Amount
<b>1. LABOR</b>				
Construction Foreman	1	15	650	9,750.00
Skilled Worker	7	15	500	52,500.00
Unskilled Worker	5	15	400	30,000.00
Sub-Total for 1				<b>92,250.00</b>
Name and Capacity	No. of Units	No. Days	Daily Rate	Amount
<b>2. EQUIPMENT</b>				
Minor Tools (5% of Labor)				4,612.50
Sub-Total for 2				<b>4,612.50</b>
Name and Specification	Quantity	Unit	Unit Cost	Amount
<b>3. MATERIALS</b>				
Roofing and Curtains(PE plastic, 200 micron)	1100	sq.m.	95.00	104,500.00
Insect Mesh ( mesh#24, 3.6m)	468	sq.m.	85.00	39,780.00
Door (Sliding, 1.2m x 2m)	2	sets	5,000.00	10,000.00
Locking Profile (Aluminum, 3m)	230	piece	350.00	80,500.00
W wire (coated, blue, 2.3mm x 2m)	690	piece	90.00	62,100.00
Texscrew	3500	piece	3.00	10,500.00
Eyebolt (3/8 x 4")	68	piece	30.00	2,040.00
Turn bucke (12mm)	10	piece	125.00	1,250.00
Black strap (300m)	2	roll	2,000.00	4,000.00
Silver Shade net 40% shade 3.6m x 50M	3	roll	10,200.00	30,600.00
Aluminum Tube 19mm x 16ft	30	piece	300.00	9,000.00

Cable roller with nut		10	piece	60.00	600.00
Pillow Block 1 1/4"		3	piece	403.00	1,209.00
Pillow Block 3/4"		2	piece	360.00	720.00
Solid Shafting		3	piece	144.00	432.00
V-groove		10	piece	260.00	2,600.00
Sprocket with Chain		1	piece	3,069.14	3,069.14
Sprocket based		1	piece	1,440.00	1,440.00
Stainless Cable 3mm		360	meter	42.00	15,120.00
Polyester wire		1700	meter	5.00	8,500.00
Steel Screen Clip Small		320	piece	6.00	1,920.00
Steel Screen Clip Big		160	piece	6.00	960.00
Net Clamp Screwing		50	piece	11.00	550.00
Turn Buckle 10mm		13	piece	90.00	1,170.00
Sub-Total for 3					392,560.14
Direct Cost					489,422.64
Indirect Cost					
OCM	15.00%	of EDC			73,413.40
Contractor's Profit	10.00%	of EDC			48,942.26
Tax	12.00%	of (EDC+ocm+Contractor's Profit)			73,413.40
Total Item Cost					685,191.70
Item Unit Cost					1,510.56

### DETAILED QUANTITY AND COST ESTIMATES

Project Name: ESTABLISHMENT OF GREENHOUSE WITH DRIP IRRIGATION SYSTEM AND SOLAR POWERED

Location:

Item: **5.0**

Description: **DRIP IRRIGATION SYSTEM**

Quantity: **1.00 Lot**

Designation	No. of Person	No. Days	Daily Rate	Amount
<b>1. LABOR</b>				
Construction Foreman	1	10	650	6,500.00
Skilled Worker	3	10	500	15,000.00
Unskilled Worker	2	10	400	8,000.00
Sub-Total for 1				<b>29,500.00</b>
Name and Capacity	No. of Units	No. Days	Daily Rate	Amount
<b>2. EQUIPMENT</b>				
Minor Tools (5% of Labor)				1,475.00
Sub-Total for 2				<b>1,475.00</b>
Name and Specification	Quantity	Unit	Unit Cost	Amount
<b>3. MATERIALS</b>				
DRIPTAPE 16MM; 15MIL X 20CM SPACING	1200	M	18.00	21,600.00
START CONNECTOR 16MM	45	pcs	29.00	1,305.00
ENDLINE 16MM	45	pcs	25.00	1,125.00
CROSS FOGGER	50	pcs	450.00	22,500.00
PIPES, FITTINGS AND CONNECTORS	1	lot	14,000.00	14,000.00
ELECTRIC DRIVEN PUMP 1HP WITH PRESSURE TANK	1	lot	22,260.36	22,260.36
CONTROLLER/TIMER	1	SET	18,500.00	18,500.00
SOLENOID VALVE	3	pcs	2,900.00	8,700.00
WATER TANK 2000 LITERS	1	pcs	35,100.00	35,100.00
SEEDS AND FERTILIZERS	1	lot	28,884.43	28,884.43
BASIC TRAINING FOR GREENHOUSE MAINTENANCE	1	lot	48,000.00	48,000.00
Sub-Total for 3				<b>221,974.79</b>

Direct Cost				252,949.79
Indirect Cost				
OCM	15.00%	of EDC		37,942.47
Contractor's Profit	10.00%	of EDC		25,294.98
Tax	12.00%	of (EDC+ocm+Contractor's Profit)		<b>37,942.47</b>
Total Item Cost				354,129.71
Item Unit Cost				354,129.71

## DETAILED QUANTITY AND COST ESTIMATES

Project Name: ESTABLISHMENT OF GREENHOUSE WITH DRIP IRRIGATION SYSTEM AND SOLAR POWERED

Location:

Item: **6.0**

Description: **SOLAR POWERED SYSTEM**

Quantity: **1.00 Lot**

Designation		No. of Person		No. Days	Daily Rate	Amount
1. LABOR						
Construction Foreman		1		10	650	6,500.00
Skilled Worker		3		10	500	15,000.00
Unskilled Worker		2		10	400	8,000.00
Sub-Total for 1						29,500.00
Name and Capacity		No. of Units		No. Days	Daily Rate	Amount
2. EQUIPMENT						
Minor Tools (5% of Labor)						1,475.00
Sub-Total for 2						1,475.00
Name and Specification		Quantity		Unit	Unit Cost	Amount
3. MATERIALS						
Solar Panel		1		lot	130400	130,400.00
Inverter 5kWatts		1		set	67000	67,000.00
Battery 100AH		1		set	84000	84,000.00
Railing: 2.4 mtrs		24		pcs	1169	28,056.00
Solar Mounting L-foot		72		pcs	90	6,480.00
Mid Clamp		14		pcs	51	714.00
End Clamp		28		pcs	51	1,428.00
Rail Splice		12		pcs	90	1,080.00
Grounding Lug		12		pcs	51	612.00
4mm2 DC Cable (Twin Cable)-PV MODULES		60		Mtrs.	129	7,740.00

MC4 Connector	10		pcs	64	640.00
DC Breaker: 550VDC 16A, 2P (PV MODULES)	2		pcs	1559	3,118.00
DC SPD 1000Vdc, 40kA, 2P	2		pcs	909	1,818.00
1" PVC PIPE	12		pcs	168	2,016.00
1" PVC ADAPTER	10		pcs	64	640.00
1" PVC elbow	20		PCS	64	1,280.00
1" Metal C Clamp	50		pcs	64	3,200.00
ENCLOSURE BOX 12WAY	1		pcs	519	519.00
Fire Sealant	2		Mtrs.	168	336.00
PVC Cable Tie 6" UV Rated 100pcs	1		pcs	129	129.00
PVC Cable Tie 10" UV Rated 100pcs	1		pcs	129	129.00
3.5mm2 Cu THHN (Green-Grounding)	150		m	45	6,750.00
NELTEXT SOLVENT	1		can	129	129.00
AC. Breaker: 32AT, 2P, 240VAC	1		pcs	259	259.00
AC SPD 2P	1		pcs	584	584.00
AC CABLE: 5.5mm2 Cu THHN BLACK	150		Mtrs.	58	8,700.00
AC CABLE: 5.5mm2 Cu THHN WHITE	150		Mtrs.	58	8,700.00
WIRING DUCT 50X50MM	1		pcs	519	519.00
3.5mm2 Cu THHN (Green)	150		pcs	45	6,750.00
Ground Rod	1		pcs	25	25.00
Ground Rod Clamp 3.5mm <sup>2</sup>	1		pcs	909	909.00
Tox & Screw	1		pcs	259	259.00
8mm Metal Drill Bit	1		pcs	454	454.00
10mm Metal Drill Bit	1		pcs	519	519.00
NEMA 3R	1		pcs	649	649.00
Sub-Total for 3					<b>376,541.00</b>
Direct Cost					407,516.00
Indirect Cost					
OCM	15.00%	of EDC			61,127.40
Contractor's Profit	10.00%	of EDC			40,751.60
Tax	12.00%	of (EDC+ocm+Contractor's Profit)			<b>61,127.40</b>
Total Item Cost					570,522.40
Item Unit Cost					570,522.40

## DETAILED QUANTITY AND COST ESTIMATES

Project Name: ESTABLISHMENT OF GREENHOUSE WITH DRIP IRRIGATION SYSTEM AND SOLAR POWERED

Location:

Item: **7.0**

Description: **PROJECT SIGNBOARD**

Quantity: **1.00 lot**

Designation	No. of Person	No. Days	Daily Rate	Amount
<b>1. LABOR</b>				
Construction Foreman	1	1	650	650.00
Skilled Worker	1	1	500	500.00
Unskilled Worker	2	1	400	800.00
Sub-Total for 1				<b>1,950.00</b>
Name and Capacity	No. of Units	No. Days	Daily Rate	Amount
<b>2. EQUIPMENT</b>				
Minor Tools (5% of Labor)				97.50
Sub-Total for 2				<b>97.50</b>
Name and Specification	Quantity	Unit	Unit Cost	Amount
<b>3. MATERIALS</b>				
Tarpauline	96	sq.ft	40.00	3,840.00
2" x 2" x 8' Good Lumber	40	bd.ft.	38.00	1,520.00
4' x 8' x 1/2" Marine Plywood	3	pc.	550.00	1,650.00
Assorted CWN	2	kg	90.00	180.00
Sub-Total for 3				<b>7,190.00</b>
Direct Cost				9,237.50
Indirect Cost				
OCM	15.00%	of EDC		1,385.63
Contractor's Profit	10.00%	of EDC		923.75
Tax	12.00%	of (EDC+ocm+Contractor's Profit)		<b>1,385.63</b>
Total Item Cost				12,932.50
Item Unit Cost				12,932.50

DETAILED QUANTITY AND COST ESTIMATES

Project Name: ESTABLISHMENT OF GREENHOUSE WITH DRIP IRRIGATION SYSTEM AND SOLAR POWERED  
Location:  
Item: 8.0  
Description: MOBILIZATION AND DEMOBILIZATION  
Quantity: 1.00 lot

Designation		Quantity		Unit Cost	Amount
1. LABOR					
MOBILIZATION AND DEMOBILIZATION		1		30000	30,000.00
Sub-Total for 1					30,000.00
Name and Capacity		No. of Units	No. Days	Daily Rate	Amount
2. EQUIPMENT					
Sub-Total for 2					-
Name and Specification		Quantity	Unit	Unit Cost	Amount
3. MATERIALS					
Sub-Total for 3					-
Direct Cost					30,000.00
Indirect Cost					
OCM	15.00%	of EDC			4,500.00
Contractor's Profit	10.00%	of EDC			3,000.00
Tax	12.00%	of (EDC+ocm+Contractor's Profit)			4,500.00
Total Item Cost					42,000.00
Item Unit Cost					42,000.00



## DETAILED QUANTITY AND COST ESTIMATES

Project Name: ESTABLISHMENT OF GREENHOUSE WITH DRIP IRRIGATION SYSTEM AND SOLAR POWERED

Location:

Item: **9.0**

Description: **OCCUPATIONAL SAFETY AND HEALTH PROGRAM**

Quantity: **1.00 lot**

Designation	Quantity	No. Days	Daily Rate	Amount
<b>1. LABOR</b>				
SAFETY OFFICER	1	52	650	33,800.00
Sub-Total for 1				<b>33,800.00</b>
Name and Capacity	No. of Units	No. Days	Daily Rate	Amount
<b>2. EQUIPMENT</b>				
Sub-Total for 2				-
Name and Specification	Quantity	Unit	Unit Cost	Amount
<b>3. MATERIALS</b>				
Personal Protective Equipment (Safety Helmet, Gloves, etc)	1	lot	12,000.00	12,000.00
Safety Signages (Warning, Safety)	1	lot	2,000.00	2,000.00
First Aid Kit	1	set	1,000.00	1,000.00
Caution Tape, 100ft	1	roll	350.00	350.00
Sub-Total for 3				<b>15,000.00</b>
Direct Cost				48,800.00
Indirect Cost				
OCM	15.00%	of EDC		7,320.00
Contractor's Profit	10.00%	of EDC		4,880.00
Tax	12.00%	of (EDC+ocm+Contractor's Profit)		<b>7,320.00</b>
Total Item Cost				68,320.00
Item Unit Cost				68,320.00