





In cooperation with:





Individual monitors coffee cherries at shoulder height in two-tiered metal drying structure, inside of the drying dome with exhaust fans visible behind.

COFFEE INNOVATION United Power Solar Dome Drying

Renewable Energy Powered Solar Domes for High Quality Coffee Drying



The cold weather in Shan hills makes traditional sun-drying methods timeand space-consuming, particularly with longer processing methods like honey and naturals, increasing risk of mold and fungal growth and loss of quality.

INNOVATION

QUALITY AND CONSISTENCY

United Power Company introduces and utilizes a Solar Drier Dome system powered by renewable energy and has developed standard practices for drying coffee beans by sunlight to achieve high quality natural dried coffee beans and maximize return to farmers.

COMPANY DESCRIPTION

United Power is a family business working in coffee production and trading. The company is striving to develop a resource efficient standard process for the natural drying of coffee in relatively cold and humid climate.

NUMBER OF STAFF 20 FULL-TIME

COST-BENEFIT ANALYSIS

COSTS

EXPERTS (AND TRAVEL TO FARM): 18,000 EUR EQUIPMENT AND MATERIALS: 12,200 EUR TOTAL: 30,200 EUR EFFECTS ON REVENUE USD\$21,000 EFFECTS ON YIELD NONE EXPECTED

PREPARATION

TIMELINE 7 WEEKS

STAFFING

REQUIREMENTS

EXPERTS AND TRAINERS ADVISED

MATERIALS & EQUIPMENT*

- STEEL
 - POLYCARBONATE SHEET
 - SOLAR PANEL
 - ELECTRIC FAN AND ELECTRICAL FIXTURES
 - LPG BURNER
 - * (FOR DETAILED LIST SEE ANNEX 2 & 3)

LESSONS LEARNED

CHALLENGES TAKEAWAYS

- Getting specific data in the development of SOP for drying coffee
- Training workforce on SOP and ensuring adherence
- Aligning project implementation with coffee harvest

The dome can increase quality of coffee and also other crops for drying (chillies etc.)



RESULTS

As a result of United Power's trial,

∂ 57% **INCREASE IN SALES FROM** MMK40,032,000 TO 62,755,722 MMK (22,723,722MMK)



INCREASE IN COFFEE PRICE FROM MMK 4,500,000 TO MMK 8,100,000 BECAUSE OF INCREASED COFFEE QUALITY



10-20 TONS OF CAPACITY (ONE SHIPPING CONTAINER!)



IMPLEMENTATION



IMPLEMENTATION



Concept Drawing





Detailed Drawing

2.a. Front View

Open



2.a. Back View



Detailed Drawing

Open

2.c. Foundation Plan



2.d. Section Details



Bill of Quantity

N	Particular	Unit	Quantit y
1	Cement	221.44	bag
2	Sand	15.92	sud
3	Stone (1/4" to 3/4")	10.92	sud
4	Brick	5724.00	nos
5	5/Ply wood (8 'x 4')	4.13	Shts
6	J/wood (Scant)	0.41	Ton
7	W/nail	7.20	Lbs
8	GI Pipe (dia 1.5")	24.00	ea
9	50mm x 50 mm Hollow Pipe (Dome)	47.00	ea
11	25mm x 25 mm Hollow Pipe (1.2 m)	1.00	ea
12	100 mm x 50mm Ridge Piece Hollow Pipe	8.00	ea
14	Wire Mesh (3ft x 20ft)	1.00	ea
15	MS Steel Base Plate (6ft x 6ft)	1.00	ea
16	40mm x 16 mm Hollow Pipe (1.2 m)	2.00	ea
17	6mm thk UV Policarbonated Sheet	20.00	sheet
18	Joint Connector	21.00	ea
19	Corner End	6.00	ea
20	Silicon	7.00	box
21	6' x 6.5' Door - Aluminium with Hydraulic Swing	2.00	ea
22	22in dia Exhaust Fan	8.00	ea
23	Flexible ducting	1.00	roll
24	Electrical switch/breaker	2.00	unit
25	2.5mm2 x 2 core insulated electrical cable	4.00	roll
26	Distribution box	2.00	unit
27	Wire Tape	15.00	ea
28	2in hinge	8.00	ea
29	3in hinge	2.00	ea

30	10in Cable Tie	2.00	pack
31	4-6 mm Wire Nail / Ravit	1.00	box
32	No.4 Screw	1.00	ea
33	Pollcarbonated cutting knife	1.00	ea
34	10in length MS L Bar	6.00	nos
35	12mm Wall Plug	120.00	ea
36	E6011 Electric Welding Rod (No 12)	3.00	pack
37	Cutting / Grinder Wheel	3.00	pack
38	Roofing Screw	1100.00	ea
39	Emulsion Paint	10.00	can
40	300 watt solar panel	2.00	unit
41	Roller	10.00	Nos
	Tray		
13	X-mesh (4ft x 8ft) - Tray	36.00	ea
10	50mm x 50 mm Hollow Pipe (Tray)	144.00	ea

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Published by: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

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Editors: United Power Coffee Plantation and Jen Green, Jakarta

Design: Vanna Sann, Phnom Penh

Photo credit/sources: United Power Coffee Plantation

GIZ is responsible for the content of this publication.

Jakarta, Indonesia, 2020



COFFEE INNOVATION FUND

Developed and funded by the German Federal Ministry for Economic Cooperation and Development (BMZ), and implemented by GIZ.

MISSION

The Fund's objective is to increase profitability of small-holder coffee farmers, and foster greater, more equitable value distribution in the supply chain through promoting innovative farming systems, transparent and inclusive business models, and access to new markets.