PhATS Technical Note



Sustaining **Demand** Through Supply Side Intervention

May 2015

Sanitation Marketing: Fabricating Low-Cost Sanitation Products

The Phased Approach to Total Sanitation (PhATS) seeks to sustain demand for sanitation products and services through Supply Side Intervention. Supply-side activities include the development and promotion of low cost sanitation products. Samaritan's Purse (SP), in its role as backstopping partner to other NGOs has developed several low-cost sanitation options therewith further operationalizing the PhATS.

A collaborative development effort was conducted at two Human Centered Design workshops, where local entrepreneurs, experienced sanitation engineers, representatives from the Philippines Department of Health (DoH) and several PhATS partner NGOs were invited to work alongside each other to produce a catalog of sanitation products well-suited to the Philippines. The resulting fifteen (15) products fall into one of three categories: substructure/septic tank; mid-structure/toilet bowl; and superstructure/privacy

shelter. In order to best accommodate a wide consumer base, each category of products includes options for variable environmental conditions and geographic regions: septic tanks for both low and high water tables, different soil permeability; superstructures in varying degrees of material strength and durability; toilet bowl and septic pairings for pour flush and dry flush.

Pricing, including calculation of material, labor and service/ delivery charges were determined by a council of advisors comprised of SP SanMark technicians, sanitation business owners, local entrepreneurs, and Filipino sanitation engineers with more than 20 years of experience in the industry.

Recorded in this document are the bills of quantity for the products offered.



transformed one of its 24ft flatbed trucks into a mobile showroom of sorts, displaying a collection of sanitation products: to-scale models of superstructures and toilet bowls are on display, along h slightly modified versions of septic tank sub-structure models. Its bright colors, eye-catching branding and unusual cargo draw a crowd wherever the SP SanMark truck goes.

















World Vision

SUPERSTRUCTURES













WALL: NIPA SHINGLES WALL: AMAKAN WALL: PLYWOOD ROOF: NIPA SHINGLES ROOF: NIPA SHINGLES PHP2,600 PHP3,140 PHP4,625

WALL: AMAKAN ROOF: CGI PHP3,660

WALL: PLYWOOD ROOF: CGI PHP5,150

WALL: FERROCEMENT ROOF: CGI; DOOR: PLYWOOD



MODEL #1 ₱2,600

ROOF: NIPA SHINGLES WALL: NIPA SHINGLES FRAMING: COCO LUMBER

ITEM	QTY	UNIT	UNIT PRICE	AMOUNT
2IN X 2IN X 8FT COCO LUMBER	15	PIECE	₱27.00	₱405.00
2IN X 2IN X 6FT COCO LUMBER	14	PIECE	₱20.00	₱280.00
4FT LENGTH NIPA SHINGLES	60	PIECE	₱10.00	₱600.00
1IN X 6FT BAMBOO STRIP	20	PIECE	₱3.00	₱60.00
4FT X 8FT PLAIN GI SHEET	0.5	PIECE	₱400.00	₱200.00
3IN X 3IN HINGES	1	PAIR	₱50.00	₱50.00
4IN COMMON WIRE NAILS	0.5	KG	₱ 51.00	₱25.50
2IN COMMON WIRE NAILS	0.5	KG	₱41.00	₱20.50
1½IN COMMON WIRE NAILS	0.25	KG	₱48.00	₱12.00
				₱1,653.00
LABOR: 25% O	F MAT	ERIAL COST	25%	₱413.25
		₱2,066.25		
PROFIT: 20% OF LA	20%	₱413.25		
		₱2,479.50		
DELIVERY CHARGE: 5% OF LABOR, MA	LS & PROFIT	5%	₱123.98	
		₱2,603.48		

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MODEL #2 ₱3,140



MODEL #3 ₱4,625

ROOF: NIPA SHINGLES WALL: WOVEN BAMBOO SHEETING (AMAKAN) FRAMING: COCO LUMBER

ITEM	QTY	UNIT	UNIT PRICE	AMOUNT
2IN X 2IN X 8FT COCO LUMBER	15	PIECE	₱27.00	₱405.00
2IN X 2IN X 6FT COCO LUMBER	14	PIECE	₱20.00	₱280.00
4FT X 8FT WOVEN BAMBOO SHEETING (AMAKAN)	4	PIECE	₱182.00	₱728.00
4FT LENGTH NIPA SHINGLES	20	PIECE	₱10.00	₱200.00
1IN X 6FT BAMBOO STRIP	20	PIECE	₱3.00	₱60.00
4FT X 8FT PLAIN GI SHEET	0.5	PIECE	₱400.00	₱200.00
3IN X 3IN HINGES	1	PAIR	₱50.00	₱50.00
4IN COMMON WIRE NAILS	0.5	KG	₱51.00	₱26.00
2IN COMMON WIRE NAILS	0.5	KG	₱41.00	₽ 21.00
1½IN COMMON WIRE NAILS	0.41	KG	₱48.00	₱20.00
				₱1,990.00
LABOR: 25% C	F MAT	ERIAL COST	25%	₱497.50
		₱ 2,487.50		
PROFIT: 20% OF LA	20%	₱497.50		
		₱2,985.00		
DELIVERY CHARGE: 5% OF LABOR, MA	5%	₱149.25		
		TOTAL		₱3,134.25

ROOF: NIPA SHINGLES WALL: MARINE PLYWOOD FRAMING: COCO LUMBER

ITEM	QTY	UNIT	UNIT PRICE	AMOUNT
2IN X 2IN X 8FT COCO LUMBER	15	PIECE	₱27.00	₱405.00
2IN X 2IN X 6FT COCO LUMBER	14	PIECE	₱ 20.00	₱280.00
4FT X 8FT X 1/4IN MARINE PLYWOOD	3	PIECE	₱645.00	₱1,935.00
4FT LENGTH NIPA SHINGLES	20	PIECE	₱10.00	₱200.00
1IN X 6FT BAMBOO STRIP	20	PIECE	₱3.00	₱60.00
4FT X 8FT PLAIN GI SHEET	0.5	PIECE	₱400.00	₱200.00
3IN X 3IN HINGES	1	PAIR	₱50.00	₱50.00
4IN COMMON WIRE NAILS	0.5	KG	₱ 51.00	₱25.50
2IN COMMON WIRE NAILS	0.5	KG	₱41.00	₱20.50
1½IN COMMON WIRE NAILS	0.23	KG	₱48.00	₱11.00
				₱2,937.00
LABOR: 25% C	F MAT	ERIAL COST	25%	₱734.25
		SUBTOTAL		₱3,671.25
PROFIT: 20% OF LA	MATERIALS	20%	₱734.25	
		₱4,405.50		
DELIVERY CHARGE: 5% OF LABOR, MA	LS & PROFIT	5%	₱220.28	
		TOTAL		₱4,625.78

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MODEL #4 ₱3,660



MODEL #5 ₱5,150

ROOF: CGI WALL: WOVEN BAMBOO SHEETING (AMAKAN) FRAMING: COCO LUMBER

ITEM	QTY	UNIT	UNIT PRICE	AMOUNT	
2IN X 2IN X 8FT COCO LUMBER	15	PIECE	₱27.00	₱405.00	
2IN X 2IN X 6FT COCO LUMBER	14	PIECE	₱20.00	₱280.00	
4FT X 8FT WOVEN BAMBOO SHEETING (AMAKAN)	4	PIECE	₱182.00	₱728.00	
3FT X 12FT CORRUGATED GI SHEET	1.5	PIECE	₱355.00	₱532.50	
4FT X 8FT PLAIN GI SHEET	0.5	PIECE	₱400.00	₱200.00	
3IN X 3IN HINGES	1	PAIR	₱50.00	₱50.00	
2IN UMBRELLA NAILS	0.71	KG	₱80.00	₱56.80	
4IN COMMON WIRE NAILS	0.6	KG	₱ 51.00	₱30.60	
2IN COMMON WIRE NAILS	0.6	KG	₱41.00	₱24.60	
1½IN COMMON WIRE NAILS	0.3	KG	₱48.00	₱14.40	
				₱2,321.90	
LABOR: 25% C	F MAT	ERIAL COST	25%	₱580.48	
		₱2,902.38			
PROFIT: 20% OF LA	20%	₱580.48			
		₱3,482.85			
DELIVERY CHARGE: 5% OF LABOR, MA	ATERIA	LS & PROFIT	5%	₱174.14	
		₱3,656.99			

ROOF: CGI

WALL: MARINE PLYWOOD FRAMING: COCO LUMBER

ITEM	QTY	UNIT	UNIT PRICE	AMOUNT
2IN X 2IN X 8FT COCO LUMBER	15	PIECE	₱27.00	₱405.00
2IN X 2IN X 6FT COCO LUMBER	14	PIECE	₱20.00	₱280.00
4FT X 8FT X 1/4IN MARINE PLYWOOD	3	PIECE	₱645.00	₱1,935.00
3FT X 12FT CORRUGATED GI SHEET	1.5	PIECE	₱355.00	₱532.00
3IN X 3IN HINGES	1	PAIR	₱50.00	₱50.00
2IN UMBRELLA NAILS	0.25	KG	₱80.00	₱20.00
4IN COMMON WIRE NAILS	0.5	KG	₱51.00	₱26.00
2IN COMMON WIRE NAILS	0.5	KG	₱41.00	₱ 21.00
1½IN COMMON WIRE NAILS	0.25	KG	₱48.00	₱11.00
				₱3,269.00
LABOR: 25% C	F MAT	ERIAL COST	25%	₱817.25
	SUBTOTAL		₱4,086.25	
PROFIT: 20% OF LA	20%	₱817.25		
		₱4,903.50		
DELIVERY CHARGE: 5% OF LABOR, MA	LS & PROFIT	5%	₱245.18	
		TOTAL		₱5,148.68

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MODEL #6 ₱5,370

ROOF: CGI WALL: FERROCEMENT DOOR: MARINE PLYWOOD

ITEM	QTY	UNIT	UNIT PRICE	AMOUNT
2IN X 2IN X 8FT COCO LUMBER	4	PIECE	₱27.00	₱108.00
2IN X 2IN X 6FT COCO LUMBER	5	PIECE	₱20.00	₱100.00
4FT X 8FT X 1/4IN MARINE PLYWOOD	1	PIECE	₱645.00	₱645.00
3FT X 12FT CORRUGATED GI SHEET	1.5	PIECE	₱355.00	₱532.50
3IN X 3IN HINGES	1	PAIR	₱50.00	₱50.00
2IN UMBRELLA NAILS	0.25	KG	₱80.00	₱20.00
PORTLAND CEMENT	3	40KG BAG	₱255.00	₱765.00
FINE SAND	10	30KG BAG	₱23.00	₱230.00
7MMØ X 6M REINFORCED STEEL BAR	4	6M PIECE	₱65.00	₱260.00
9MM∅ X 6M REINFORCED STEEL BAR	4	6M PIECE	₱105.00	₱420.00
WIRE MESH 1.2M WIDTH	8	М	₱20.00	₱160.00
				₱3,290.50
LABOR: 25% C	F MAT	ERIAL COST	25%	₱822.63
	SUBTOTAL		₱4,113.13	
PROFIT: 20% OF LA	20%	₱822.63		
		₱4,935.75		
DELIVERY CHARGE: 5% OF LABOR, M.	ATERIA	LS & PROFIT	5%	₱246.79
	•	TOTAL		₱5,182.54



VISITORS TO THE SP SANMARK CARAVAN STOP TO LOOK AT A SUPERSTRUCTURE ON DISPLAY. AT EVERY BARANGAY, HUNDREDS OF POTENTIAL CUSTOMERS TOUR THE FLATBED DISPLAY TRUCK, ASKING QUESTIONS ABOUT DIFFERENT PRODUCT MODELS.

MID-STRUCTURES



CEMENT ARBORLOO BOWL ₱300



CEMENT BOWL W LIQUID TILE PAINT \$\mathrightarrow\$350



CEMENT ECOSAN BOWL ₱350

Mid-structures are produced in group batch and require a concrete mold. Materials for each bowl type are the same, although they yield a varying number of bowls per batch. Bowl molds can be used for multiple batches.

BATCH FABRICATION OF ALL BOWLS						
MATERIAL	QTY	UNIT	UNIT PRICE	AMOUNT		
FINE SAND	3	30KG BAG	₱23.00	₱69.00		
PORTLAND CEMENT	1	40KG BAG	₱255.00	₱255.00		
DAVIES LIQUID TILE PAINT	4	LITER	₱200.00	₱800.00		
DAVIES PAINT REDUCER	1	PINT	₱155.00	₱155.00		
2 INCHES PAINT BRUSH	1	PIECE	₱50.00	₱50.00		
#60 SANDPAPER	3	PIECE	₱20.00	₱60.00		
#120 SANDPAPER	3	PIECE	₱20.00	₱60.00		
				₱1,449.00		
LABOR: 35%	OF MA	TERIAL COST	35%	₱ 507.15		
		SUBTOTAL		₱1,956.15		
PROFIT: 20% OF L	ABOR 8	MATERIALS	20%	₱391.23		
DELIVERY CHARGE: 5% OF L	5%	₱ 97.81				
		₱2,445.19				
CONCRETE ARBORL		₱305.00				
ECOS		₱611.00				
CONCRETE BOWL: 7 BOWLS				₱349.00		

REUSABLE MOLD FOR ALL BOWLS						
ITEM	QTY	UNIT	UNIT PRICE	AMOUNT		
USED OIL	1	GALLON	₱50.00	₱50.00		
PORTLAND CEMENT	1	40KG BAG	₱255.00	₱255.00		
FINE SAND	3	30KG BAG	₱23.00	₱69.00		
7MMØ REINFORCED STEEL BARS	0.2	6M PIECE	₱85.00	₱17.00		
				₱391.00		
LABOR: 35% OF MATERIAL COST			35%	₱136.85		
		SUBTOTAL		₱527.85		

SUBSTRUCTURES



3FT CONCRETE RING ₱2,550

ITEM	QTY	UNIT	UNIT PRICE	AMOUNT
PORTLAND CEMENT	1	40KG BAG	₱255.00	₱255.00
¾ IN GRAVEL	3	40KG BAG	₱33.00	₱99.00
COARSE SAND	2	30KG BAG	₱ 23.00	₱46.00
8MMØ REINFORCING STEEL BAR	3	6M PIECE	₱85.00	₱255.00
SANITARY PIPE, 2IN∅	1.5	3M PIECE	₱100.00	₱150.00
SANITARY PIPE, 4IN∅	1	3M PIECE	₽ 261.00	₱261.00
SANITARY ELBOW, 2IN∅	2	90° PIECE	₱30.00	₱60.00
SANITARY T, 4INØ X 2INØ	2	PIECE	₱50.00	₱100.00
SANITARY CLEANOUT PIPE, 4IN∅	1	PIECE	₱36.00	₱36.00
				₱1,262.00
LABOR: 35%	OF MA	TERIAL COST	35%	₱ 441.70
		SUBTOTAL		₱1,703.70
PROFIT: 20% OF L	20%	₱340.74		
		₱2,044.44		
DELIVERY CHARGE: 5% OF LABOR, A	ALS & PROFIT	5%	₱102.22	
		TOTAL		₱2,146.66



4FT CONCRETE RING ₱2,750

ITEM	QTY	UNIT	UNIT PRICE	AMOUNT	
PORTLAND CEMENT	2	40KG BAG	₱255.00	₱ 510.00	
3/4 IN GRAVEL	4	40KG BAG	₱33.00	₱132.00	
COARSE SAND	3	30KG BAG	₱23.00	₱69.00	
8MMØ REINFORCING STEEL BAR	3	6M PIECE	₱85.00	₱255.00	
SANITARY PIPE, 2IN∅	1.5	3M PIECE	₱100.00	₱150.00	
SANITARY PIPE, 4IN∅	1	3M PIECE	₱261.00	₱ 261.00	
SANITARY ELBOW, 2IN∅	2	90° PIECE	₱30.00	₱60.00	
SANITARY T, 4INØ X 2INØ	2	PIECE	₱50.00	₱100.00	
SANITARY CLEANOUT PIPE, 4IN∅	1	PIECE	₱36.00	₱36.00	
				₱1,573.00	
LABOR: 35%	OF MA	TERIAL COST	35%	₱550.55	
		SUBTOTAL		₱2,123.55	
PROFIT: 20% OF L	20%	₱424.71			
		₱2,548.26			
DELIVERY CHARGE: 5% OF LABOR, N	DELIVERY CHARGE: 5% OF LABOR, MATERIALS & PROFIT				
		TOTAL		₱2,675.67	

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ITEM	QTY	UNIT	UNIT PRICE	AMOUNT
PORTLAND CEMENT	3	40KG BAG	₱255.00	₱765.00
FINE SAND	8	30KG BAG	₽ 23.00	₱184.00
6MMØ REINFORCING STEEL BAR	10	6M PIECE	₱50.00	₱500.00
WIRE MESH 1.2M WIDTH	4.8	М	₱ 20.00	₱96.00
SANITARY PIPE, 2IN∅	1.5	3M PIECE	₱100.00	₱150.00
SANITARY PIPE, 4IN∅	0.5	3M PIECE	₱261.00	₱130.50
SANITARY ELBOW, 2IN∅	2	90° PIECE	₱30.00	₱60.00
SANITARY T, 4INØ X 2INØ	2	PIECE	₱50.00	₱100.00
SANITARY CLEANOUT PIPE, 4IN∅	1	PIECE	₱36.00	₱36.00
				₱2,021.50
LABOR: 30%	OF MA	TERIAL COST	30%	₱606.45
		SUBTOTAL		₱2,627.95
PROFIT: 20% OF L	20%	₱525.59		
		₱3,153.54		
DELIVERY CHARGE: 5% OF LABOR, A	5%	₱157.68		
		TOTAL		₱3,311.22

FERROCEMENT 4FT³ CONCRETE CUBE ₱3,300



ITEM	QTY	UNIT	UNIT PRICE	AMOUNT
PORTLAND CEMENT	4	40KG BAG	₱255.00	₱1,020.00
COARSE SAND	0.25	30KG BAG	₱650.00	₱163.00
¾ IN GRAVEL	0.5	40KG BAG	₱900.00	₱450.00
9MMØ REINFORCING STEEL BAR	4	6M PIECE	₱105.00	₱420.00
SANITARY PIPE, 2IN∅	1.5	3M PIECE	₱100.00	₱150.00
SANITARY PIPE, 4IN∅	0.5	3M PIECE	₱261.00	₱131.00
SANITARY CLEANOUT PIPE, 4IN∅	1	PIECE	₱36.00	₱36.00
SANITARY T, 4INØ X 2INØ	2	PIECE	₱50.00	₱100.00
SANITARY ELBOW, 2IN∅	2	90° PIECE	₱30.00	₱60.00
				₱2,530.00
LABOR: 30%	OF MA	TERIAL COST	30%	₱759.00
		SUBTOTAL		₱3,289.00
PROFIT: 20% OF L	20%	₱657.80		
		₱3,946.80		
DELIVERY CHARGE: 5% OF LABOR, A	5%	₱197.34		
		TOTAL		₱4,144.14

BUHOS TYPE 4FT³ CONCRETE CUBE ₱4,150

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PLASTIC DRUM SEPTIC SYSTEM ₱2,463

ITEM	QTY	UNIT	UNIT PRICE	AMOUNT
PLASTIC DRUM	1	.7M³ VOL	₱1,000.00	₱1,000.00
SANITARY PIPE, 2IN∅	1.5	3M PIECE	₱100.00	₱150.00
SANITARY PIPE, 4IN∅	0.5	3M PIECE	₱261.00	₱131.00
SANITARY CLEANOUT PIPE, 4IN∅	1	PIECE	₱36.00	₱36.00
SANITARY T, 4INØ X 2INØ	2	PIECE	₱50.00	₱100.00
SANITARY ELBOW, 2IN∅	2	90° PIECE	₱30.00	₱60.00
				₱1,477.00
LABOR: 15% OF MATERIAL COST		15%	₱221.55	
SUBTOTAL				₱1,698.55
PROFIT: 20% OF LABOR & MATERIALS			20%	₱339.71
SUBTOTAL				₱2,038.26
DELIVERY CHARGE: 5% OF LABOR, MATERIALS & PROFIT		5%	₱ 101.91	
TOTAL				₱2,140.17



ECOSAN SEPTIC SYSTEM ₱2,713

ITEM	QTY	UNIT	UNIT PRICE	AMOUNT
PLASTIC DRUM, 0.7M ³	1	.7M³ VOL	₱1,000.00	₱1,000.00
SANITARY PIPE, 2IN∅	1.5	3M PIECE	₱100.00	₱150.00
SANITARY PIPE, 4IN∅	0.5	3M PIECE	₽ 261.00	₱131.00
SANITARY CLEANOUT PIPE, 4IN∅	1	PIECE	₱36.00	₱36.00
SANITARY T, 4INØ X 2INØ	2	PIECE	₱50.00	₱100.00
SANITARY ELBOW, 2IN∅	2	90° PIECE	₱30.00	₱60.00
JERRY CAN	1	20L VOL	₱ 250.00	₱250.00
				₱1,727.00
LABOR: 20% OF MATERIAL COST		20%	₱345.40	
SUBTOTAL				₱2,072.40
PROFIT: 20% OF LABOR & MATERIALS			20%	₱414.48
SUBTOTAL				₱ 2,486.88
DELIVERY CHARGE: 5% OF LABOR, MATERIALS & PROFIT		5%	₱124.34	
TOTAL				₱2,611.22



UNLINED PIT ₱950

* A 4FT² UNLINED PIT IS ALSO OFFERED (THOUGH NOT RECOMMENDED IN AREAS WITH HIGH SOIL PERMEABILITY) AS A SEPTIC OPTION IN THE PRODUCT CATALOG FOR SP SANITATION MARKETING PROJECT. AS NO MATERIALS ARE NEEDED FOR SUCH A PIT, BILL OF QUANTITIES IS NOT PROVIDED HERE. PRICING FOR THIS PRODUCT REFLECTS COST OF LABOR AND FLOORING (INCLUDED ON NEXT PAGE).

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THE COST OF CONCRETE FLOORING IS ABSORBED WITHIN SUBSTRUCTURE PRICE FOR ALL ORDERS. ALTHOUGH THE FLOOR IS OFTEN THOUGHT TO BE PART OF THE SUPERSTRUCTURE, SP SANITATION MARKETING TEAM LEADERS, ENTREPRENEURS, CONSULTANTS, AND ADVISORS CHOSE TO HAVE THE SUBSTRUCTURE PRICING ADJUSTED (BY AN INCREASE OF ₱800) TO INCORPORATE FLOORING COSTS.

FLOORING: 4FT ² X3IN					
ITEM	QTY	UNIT	UNIT PRICE	AMOUNT	
PORTLAND CEMENT	1	40KG BAG	₱255.00	₱255.00	
3/4 IN GRAVEL	3	40KG BAG	₱33.00	₱99.00	
COARSE SAND	2	30 KG BAG	₱23.00	₱46.00	
7MM∅ REINFORCED STEEL BAR	2	6M PIECE	₱65.00	₱ 130.00	
4IN∅ SANITARY PIPE	0.25	PIECE	₽ 261.00	₱65.25	
4IN∅ SANITARY ELBOW	1	90° PIECE	₱50.00	₱50.00	
				₱645.25	
LABOR: 20% OF MATERIAL COST		20%	₱129.05		
DELIVERY: 5% OF MATERIAL COST		5%	₱32.26		
TOTAL			₱800.00		





CERAMIC TILE FLOORING				
ITEM	QTY	UNIT	UNIT PRICE	AMOUNT
8IN X 8IN CERAMIC FLOOR TILES	36	PIECE	₱13.00	₱468.00
TILE GROUT	0.5	1KG PACK	₱50.00	₱ 25.00
GI SHEET 1FTX4FT	4	PIECE	₱40.00	₱160.00
				₱653.00
LABOR: 20% OF MATERIAL COST			20%	₱ 130.60
DELIVERY CHARGE: 5% OF MATERIAL COST			5%	₱32.65
TOTAL				₱816.25



FOR MORE INFORMATION:

SIMONE KLAWITTER, PHD WASH TEAM LEADER YOLANDA RESPONSE SKLAWITTER@UNICEF.ORG

KRISTINE WAGER

KNOWLEDGE MANAGEMENT SPECIALIST SAMARITAN'S PURSE INTERNATIONAL RELIEF KWAGER@SAMARITAN.ORG

OR WRITE TO:

SP designed and printed a trifold Tagalog Sales Brochure (English version pictured above) in order to enable entrepreneurs to provide potential customers with a streamlined and professional display of products when away from the caravan. The brochure adds legitimacy to the brand and allows customers opportunity to share the experience with those unable to attend caravan sales promotions.