Assessing the Potential for Rainwater Harvesting in Vietnam

Snapshot of Key Findings

Rural Water Supply and Sanitation INGO
Working Group Meeting
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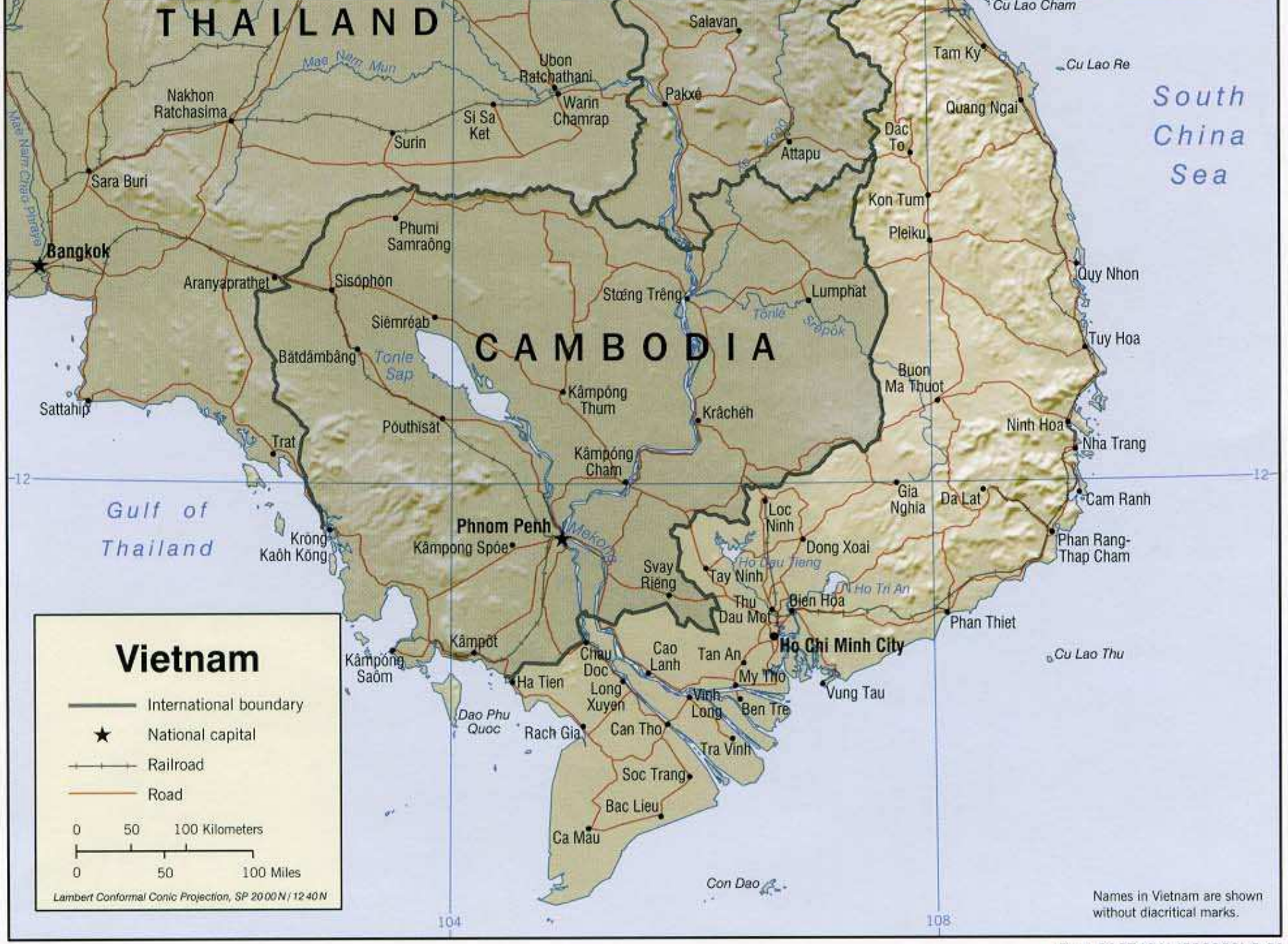
Project Background

- EnterpriseWorks/VITA – American NGO implementing economic development programs
- Five-year grant from the Bill & Melinda Gates Foundation
- Desk-based research to analyze domestic rainwater harvesting systems throughout the world (20 countries)
- Study of rainwater jars in Thailand – example success story
- Field research in four countries to assess demand and potential for private-sector distribution models
- Implement pilot project to test technology through market-based approach

Research Methodology

- Desk based secondary research
- Mixture of primary research tools
  - Focus group discussions with households
  - Semi-structured in-depth interviews with households, masons, retailers, Social Policy Bank, manufacturers, water factories
  - Market observation
  - Key informant interviews with government, NGOs research institutes, and university officials.
- Field research conducted in cross-section of provinces
  - Ben Tre
  - Dong Tap
  - Tien Giang
  - Binh Duong
  - Khanh Hoa
  - Phu Yen



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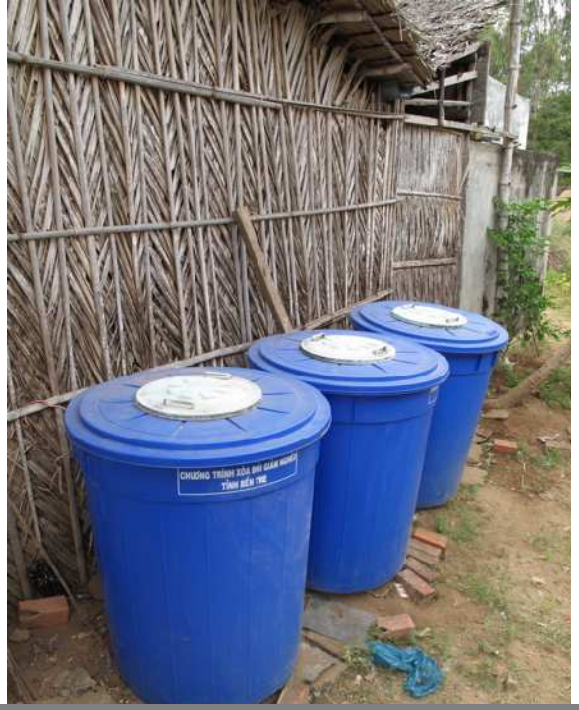
Levels of Rainwater Harvesting

	Vietnam Living Standards Survey	Vietnam National Health Survey
Red River Delta	31.2	52.3
North East	2.3	3.2
North West	0.2	0.7
North Central Coast	4.1	9.6
South Central Coast	0.1	0.2
Central Highlands	0.3	0.4
South East	0.8	0.9
Mekong River Delta	8.6	15.4

Key Findings on Use & Demand

- Geographical factors influence use & demand.
- Where present rainwater collection is the tradition.
- People use rainwater preferentially as a hygienic source for drinking and cooking purposes.
- Rainwater is a complimentary water and never as the exclusive water source.
- Full potential of rainwater harvesting not yet reached in many areas (SEE CONSTRAINTS).
- Areas where rainwater is in demand are more likely experiencing social, economic stresses directly related to clean water supply situation in general.
- Supply driven approaches did not seem to stimulate uptake of DRWH technologies.

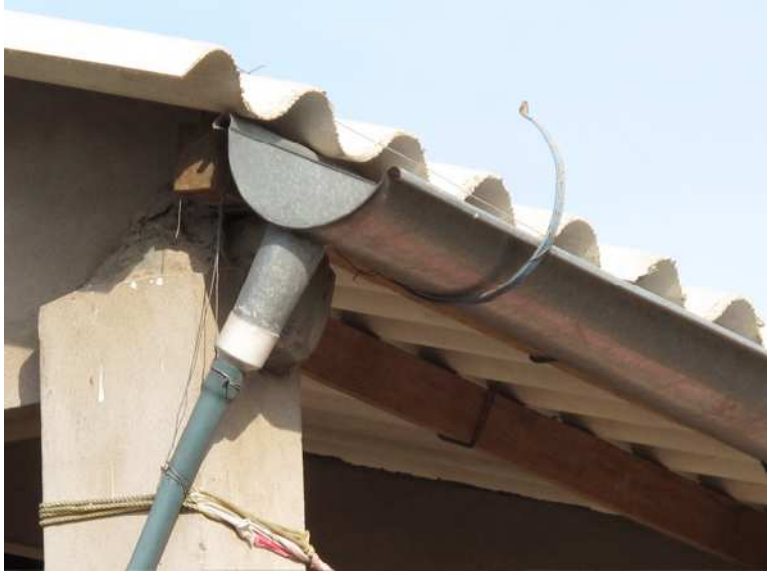


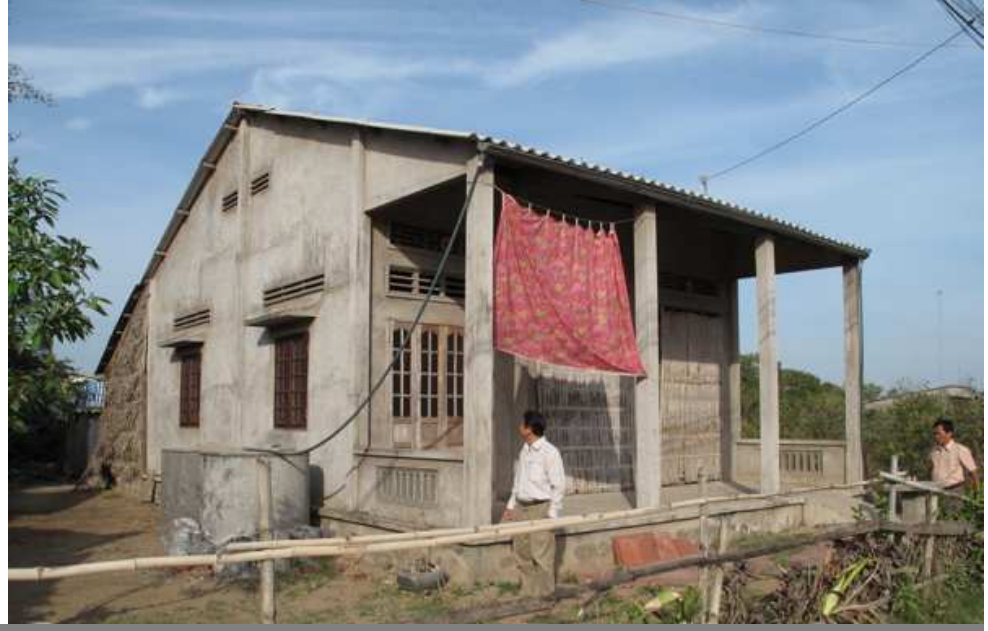
Snapshot of Existing Technologies

Comparative Prices			
Volume	**Type and source**	**Average Price Point**	**Price/Litre**
100	Plastic Bin (Pail)	168,000	1680
240	Ceramic Jar	125,000	521
400	Cement Tank With Lid (Ring Mold)	180,000	450
400	Cement Jar (Thai)	120,000	300
500	Blue Plastic Pail	430,000	860
500	Branded Metal Drum	2,195,000	4390
700	Blue Plastic Drum	1,240,000	1771
800	Cement Jar (Thai)	260,000	325
1000	Cement Tank (Ring Mold)	413,500	414
1000	Plastic Drum in Steel Cage	1,200,000	1200
5000	Cement Tank (Ring Mold)	3,525,000	705
10000	Cement Tank (Ring Mold)*	3,200,000	320
10000	Rectangular Cement Tank**	5,500,000	550

Comparative Product Features

- Consumers consider the following characteristics in rainwater tanks:
  - Cost
  - Transportability
  - Durability
  - Modernity
  - Ease of cleaning
  - Reliability of supply
  - Effort on water collect, manage and protect
  - Space and aesthetic





Snapshot of Roofs & Guttering

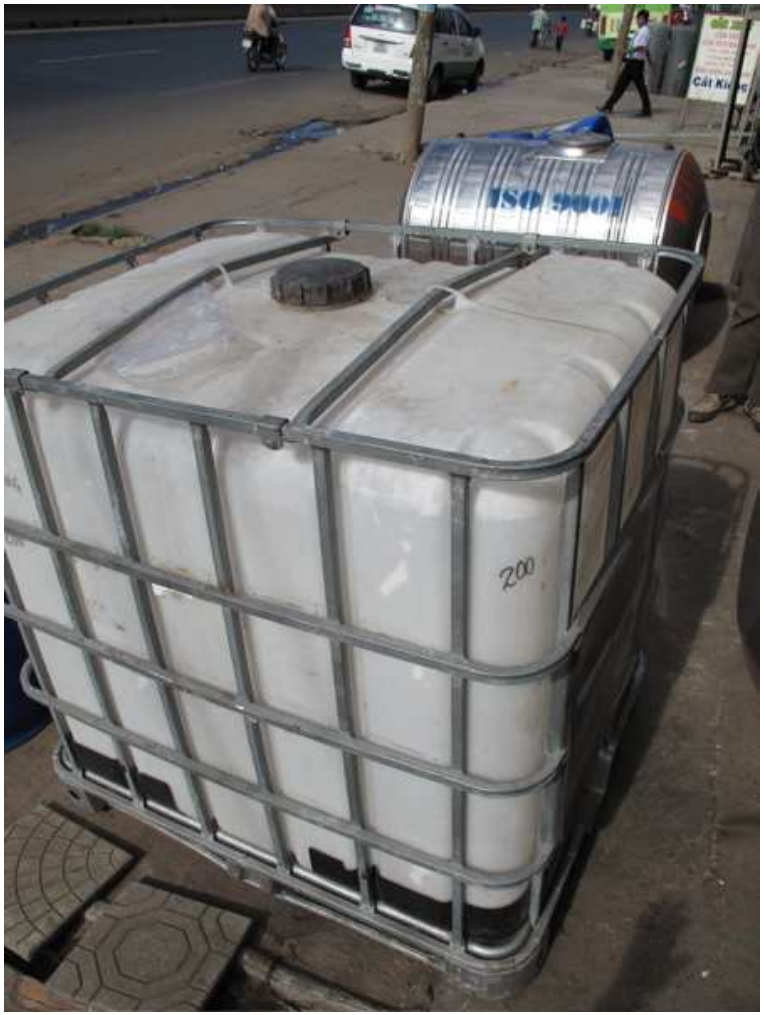
Key Constraints for Increased Uptake

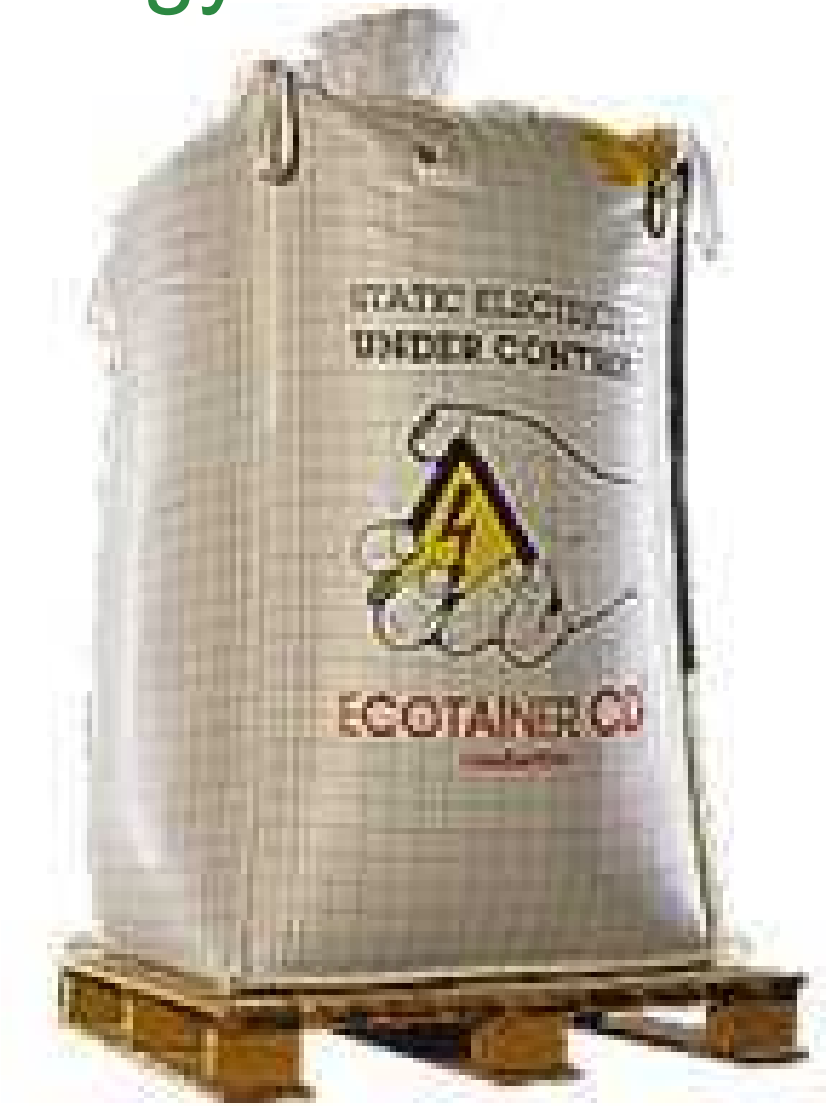
- Affordability
  - Construction Costs
  - Expectation of giveaways
  - Neglected by provincial RWSS programs
  - Lack of suitable finance
  - Land access and affordability
- Negative perceptions:
  - Effort for household water manager(s)
  - Partial solutions
  - Aesthetic considerations
  - Water quality
- Environmental Health Risks
  - Dengue fever
- Availability of other water sources

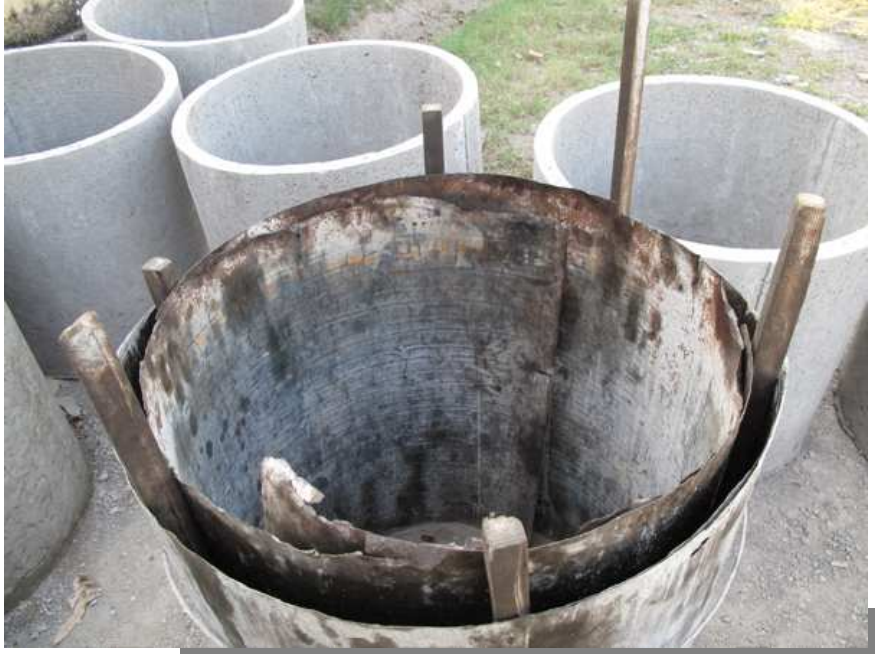
Proposed Solutions - Technology

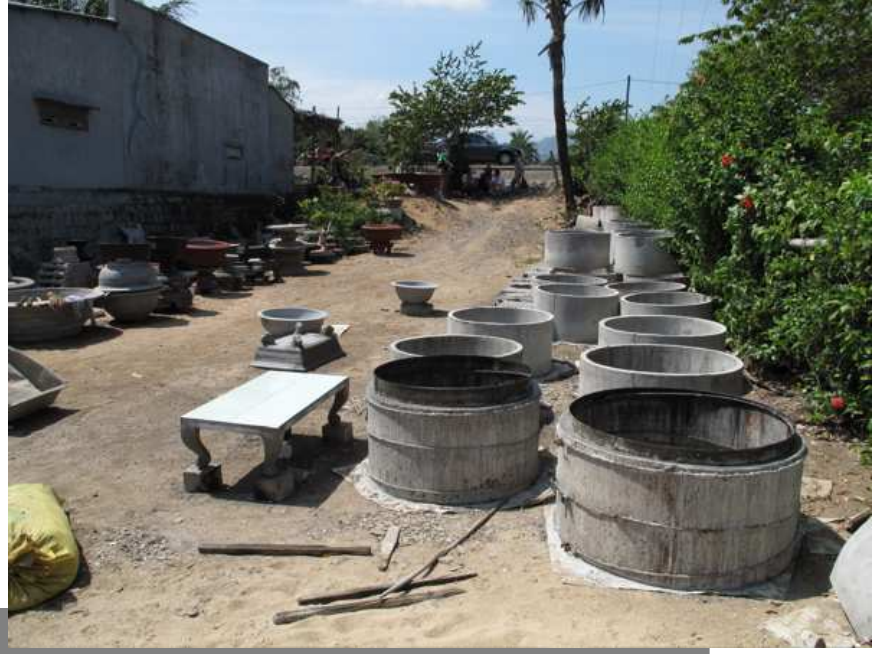
- Goal is to make a larger volume, durable and locally affordable tank technology.
- Two possible pathways (storage):
  - Improve efficiencies, reduce costs and introduce high-value design features of existing cement ring mold tank technology
  - Develop and introduce a new technology based on plastic bag, extruded plastics or fibreglass.
- Complimentary activities with private sector on guttering collection system technologies
- Integrate vector mitigation program
- Target intervention basing on geographic determinants
- Enable as many technologies possible until the market speaks!

Potential New Storage Technology

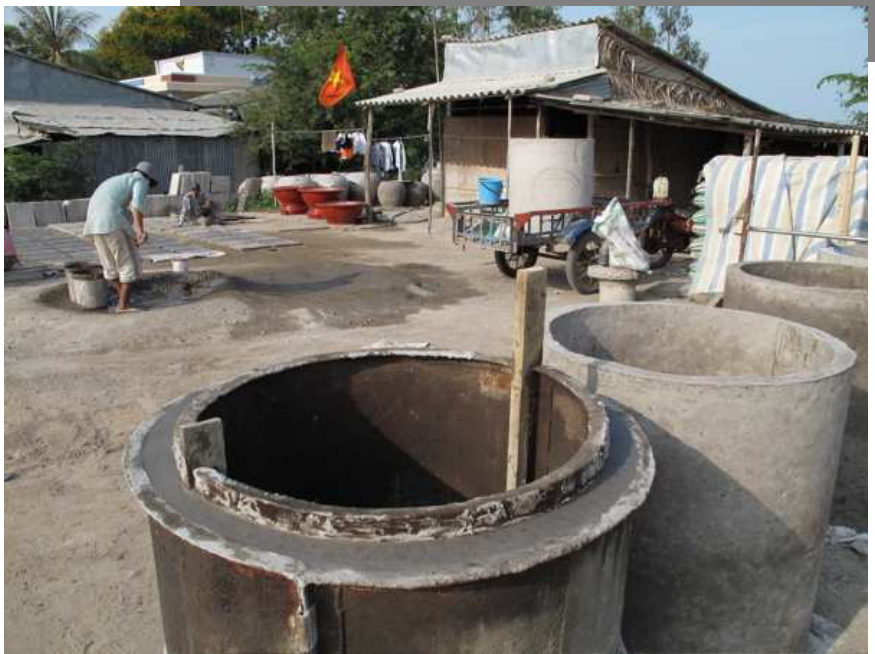


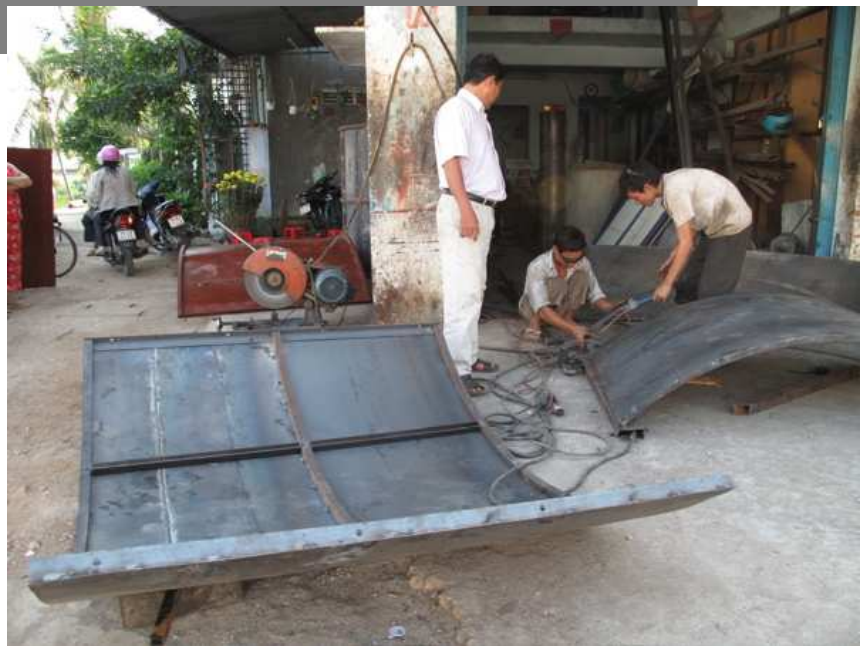






Snapshot of Tank Suppliers





Proposed Solutions - Market

- Potential Supply Side Interventions
  - Identify appropriate distribution models based on selected technologies
  - Capacity Building at Supply Level (Marketing, Business Management, Production Upgrading/Efficiencies)
  - Support alternative payment mechanisms – installment plans, credit plans, hire-purchase
  - Access to financial services for suppliers
  - Matching Grants
- Potential Demand Side Interventions
  - Promotion through the Social Policy Bank
  - Revolving Loan Fund (through pre-existing association)
  - Incentives to stimulate market
  - Social marketing campaign

Next Steps

- Finalize assessment
- Identification and field research in two additional countries
- Selection by EWV of one country for pilot project
- Design and implementation of project to test technology and commercially based distribution models

Questions for Discussion

- Have you seen other RWH technology models?
- Lump sum payment for households is critical challenge. Are there financial models/service providers that could work?
- Are there additional geographic areas where rainwater harvesting is appropriate?
- What key messages should be included in a social marketing campaign?