

# **Appropriate Technology for the Poor**

***Why the “South to South” Approach Works Best:  
A Case Study on Technology Transfer  
From the Philippines to Liberia***

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# “The Tree of Life”



**More than 20 million Filipinos are dependent on the coconut industry**

**There are more than 3.5 million coconut farmers in the Philippines**



## Some of the high-value products from coconuts

- Virgin coconut oil (cosmetics, health supplements)
- Refined coconut oil (cooking, fuel)
- Excellent soap
- Pure, organic vinegar (from coconut “water” and sap)
- Coco “peat” (from coconut dust): high-quality soil conditioner; water filter; coco-fiberboard
- Coco fiber soil stabilization nets; doormats
- Coconut shells for clean-burning charcoal & jewelry
- Coco methyl ester (CME) – diesel fuel alternative and diesel fuel additive
- High-nutrient animal and poultry feed
- Low-sucrose/-glycemic index sugar (from coconut sap)

(Requires electricity)



*This, too, is Liberia, with an estimated 200+ miles of coastline planted to coconuts*





The existing coconut “industry” in Liberia due to: no electricity, no roads, virtually no value-adding

L\$100-L\$150 per sack of 100

(US\$1 = L\$60)





To market to sell coconuts @ L\$10 each, or  
L\$25 for three pieces



# The Filipino farmer shows the way: Technology Appropriate for the Poor



Who needs sophisticated machinery?

De-husking process







Coconut meat grater

## How to make coconut oil (for cooking, making animal feed, lamps, etc.)



Squeezed-out grated meat = high-nutrient animal/poultry feed ??





. . .nope, not for  
poultry or animal  
feed....but as. . .



Yummy  
coco  
burgers!!



Cooking with coconut milk

Cassava, sweet potatoes,  
and plantains stewed in  
coconut milk



## Coconut oil-making faster, easier than palm oil-making



This is a part of a coconut tree

Aromatic  
coconut  
cooking  
oil.....

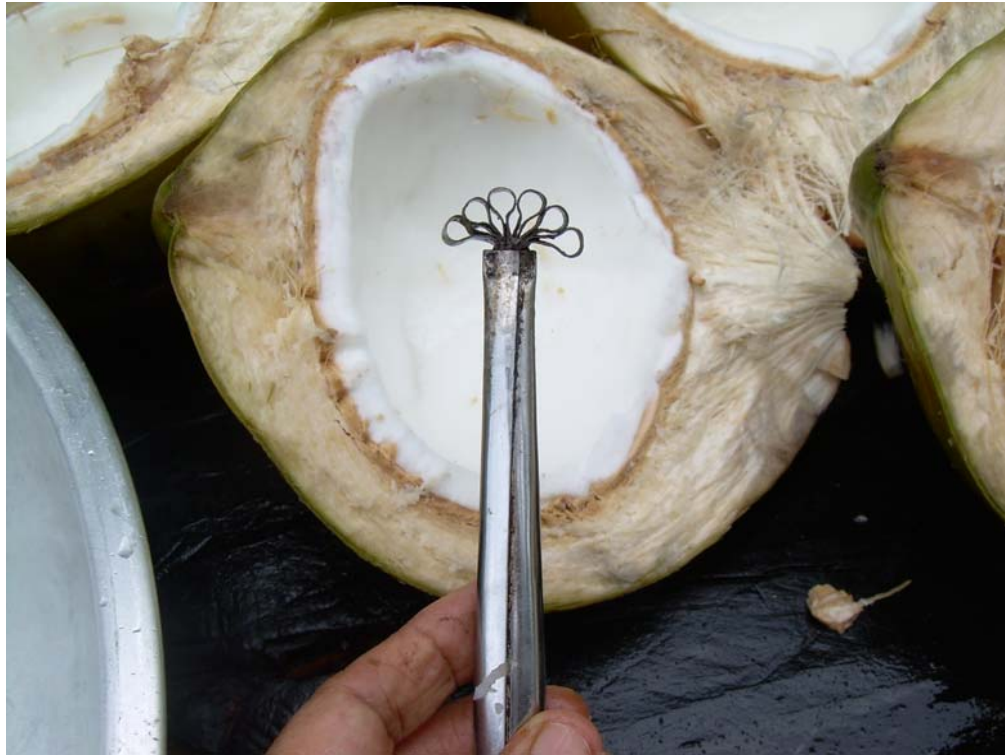


.....and  
yummy  
coconut  
candy



## How to make a coconut oil lamp with re-used/recycled parts





The making of candy from  
young coconut

Another home-made gadget designed to  
scrape the softer meat of green coconut





Cooking the grated coconut  
“noodles” in brown sugar, then  
shaping them into mounds on fresh  
banana leaves

*Bokayo*, a popular Filipino treat



# How to make coconut sugar



Cutting coconut “slate” also increases fruit yield  
Used plastic water bottles are a necessity





Even an old discarded tire can be useful



Low-glycemic index, low-sucrose sugar





Typical charcoal-making process in Liberia



... and its aftermath

## Charcoal-making from coconut shells....in 24 hours



## Liberia's first-ever charcoal made out of COCONUT SHELLS





Instead of this typical Liberian  
back-breaking broom.....

...why not the longer, sturdier  
broom from the coconut fronds?





From early on, it's the little girls – who grow up to be strong and sturdy women - who do most of the work....



What's wrong with this picture??



“Now, my family can eat more than one meal a day...”





So why focus on  
coco shell jewelry...

...and doormats???





Expensive, complicated  
equipment vulnerable to local  
power fluctuations

A process that diverts  
coconut shell resources  
from the more important  
charcoal production





Instead of spending money to promote a clean-burning, portable stove that uses abundant wood chips for fuel....





...Why import an expensive oil expeller whose function can be done manually, and at home??



# Success factors in Liberia

Hard-working women...



....and cellphones!



# The biggest success factor of all: FAITH



Churches of all kinds....everywhere....anywhere in Liberia  
(This one is made out of coconut fronds!)



....working women who sing and pray and dance before going off to work





Da Kokonut Lady and her friends after church service

....someday, no more plastic flowers!



# SUMMARY

- Small-scale value-adding of abundant, untapped natural resource
- Keep “technology” simple, bottom-up, and applicable to local conditions
- Cut costs via “**RE-USE, RE-CYCLE**”
- Introduce “**clean and green**” processes
- . . . and, above all, follow SRE’s motto:

*Our Mascot Coco Pete says:*



# **Sustainable Rural Enterprise**

***RE<sub>3</sub> = Renewable Energy + Rural Enterprise = Robust Economy***

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