

Walter Bradley

Optimizing the Production of Virgin Coconut Oil Using Village Level Technology
(Mechanical Engineering / Engineering and Computer Science)

One way to alleviate poverty in under-developed parts of the world is to identify abundant, renewable resources that may be processed into value-added products using technology that is appropriate for in-country, village scale production. Coconuts are an abundant, renewable resource in many under-developed countries and contain constituents such as coconut oil that with appropriate processing have significant price points. Currently coconut farmers remove the “white meat” from the coconut and ship it to large, commercial processing plants outside the country, receiving minimal income. This project seeks to determine an efficient processing path for production of virgin coconut oil from the “white meat” using technology that is appropriate for village scale production, allowing the villagers to receive a much greater income from their coconuts. The research will explore two processing paths, one that expells the water/coconut oil emulsion and then separates the coconut oil and a second that dries the “white meat” first and then expells the coconut oil subsequently.

The project will be done in partnership with the Sustainable Rural Enterprise’s coconut cooperative in a rural village in the Philippines and a nearby college, Aklan State University. Anna Morton spent June 2007 as an intern in this cooperative and Dr. Walter Bradley visited the cooperative and Aklan State in October 2007. The partnership will allow us to see how the processing paths we develop using carefully controlled laboratory experiment work when deployed in field production in a rural village.

We have identified potential Christian partners in at least ten other countries who are eager to utilize this technology for economic development as part of there respective holistic, Kingdom building ministries. MBA students at Baylor are already preparing business plans that can be used by these Christian organizations to facilitate economic development and job creation for the people to whom they minister based on this technology.