

Energy Efficiency reduces enterprise vulnerability: the case of Taho production in the Philippines

The DFID KaR research project on “Enabling Urban Poor Policy Making: Understanding the Role of Energy Services” produced a number of success stories of how poor women’s micro-enterprises using energy-efficient technologies helped reduce their families’ vulnerability to economic shocks. Below is the story of Aling Nena from the Philippines and her Taho factory. Taho is a nutritious food made from soft soybean curd in syrup however the production is very energy intensive.

The crisis begins

An unemployed husband, four children and retrenchment – this is Aling Nena’s nightmare. She has been employed for over ten years with one of the leading company’s in the Philippines engaged in agriculture and food products. Since she was dedicated to her work, she was confident this will be her lifetime employment which gave her some sense of security.

In the late 90s, however, Aling Nena’s crisis began when one night before she was ready to rest from a long day’s work, a neighbour came informing her that they had seen her husband, Glenn, lying in the grass along the road, bathed in his own blood unable to walk. Glenn had received several deep knife wounds and a broken skull.

Aling Nena, with only a few pesos in her wallet, rushed to the nearby houses of her colleagues in the company to borrow money to rent a vehicle and bring her unconscious husband to the hospital for treatment. After almost two hours drive in a dark and slippery road at midnight, Glenn arrived in the hospital -through the generous and helping hands of neighbours. Friends and colleagues offered assistance from taking care of the children and watching Glenn in the hospital, to lending cash to help offset transport cost and medical expenses. This is a good example of how strong social networks help poor people overcome shocks to their livelihoods brought about everyday incidents such as medical bills. Aling Nena’s social network come to her aid a number of times in this story.

An enterprise to overcome the deepening crisis

A year after Glenn’s recovery and before Aling Nena could pay her debts, the company where she worked downsized. Aling Nena was one of those affected. She felt

the world collapsed and she was left alone to take care of the increasing needs of her family without a source of income.

Returning to their farm did not seem a good option if they were to provide their children with a good education. The alternative was to make productive use of Aling Nena's small compensation payment from the company she'd received on termination of employment. She decided to invest the amount in an appropriate business. Here again her social network helped in finding a business. A friend recommended the *Taho* business of a neighbour who wanted to sell his business. At first sight this did not look such an attractive option. Unfortunately, the business was no longer profitable since it faced the problems of the high cost of fuelwood, increasing transportation costs and securing a steady source and supply of fuelwood. No one was keen to take-over a bankrupt business with nine workers and vendors plus the factory, equipment, utensils, land and building facility.

So if Aling Nena was to make this business work then it would need careful planning. With help from Glenn her friends and the *Taho* employees, a simple formula was devised on how to make the business profitable. The employees were a key to success since they know well the customers and the operations. The operation of the business requires a tight cash flow. All the *taho* made in a day has to be sold by the vendors to pay their employees and buy the raw materials for the following day's operation.

A reliable source of fuelwood was not difficult to locate. Since Aling Nena's parents own a farm with wood lot planted to *ipil-ipil* (*Leucaena leucocephala*) and *kakawate* (*Glyrecidia sepium*). Their farm is just two hours drive away. Transport cost could be kept to a minimum if they load fuelwood once a month. So the energy problem which had been a major problem to the previous owner could be easily solved. The decision to buy the business could now be made.

Micro-credit isn't an option

Despite the tight operating budget, Aling Nena did not attempt to avail herself of the micro-credit facility operating in her district. She learned, in one of the orientation meetings about the cycle of poverty that borrowing money and trying to pay the capital

and interest back could lead people into serious financial problems. She understood the explanation to mean that she should never borrow money when she is not sure of her capacity to pay back the loan. Missing payments would mean higher monthly amortizations. Also, she learned that going into business means taking the risk, especially in the first 12 months when customers are not yet regular. She took this as a warning sign for a struggling business.

For the first three months, the business was almost at break-even point. Aling Nena and Glenn took the risk to increase the volume of production and hired four more vendors to sell in residential subdivisions and in front of schools on specific hours of the day. The business picked-up after six months and profits continued to increase.

Improved cook stoves help increase profitability and reduce vulnerability

In 2004, Aling Nena learned from a friend about the Improved Cookstove Programme offered by APPROTECH. With the help of the friend, she visited the Improved Cookstove (ICS) Center and inquired about the activities of the programme. She told her story. Together, Aling Nena and the staff agree on the conclusion that there is the need to reduce fuel consumption to reduce fuel expenses. Aling Nena became excited not only about the financial gains from improved fuel efficiency but also the health benefits from using the improved stove. She then scheduled the visit of the technical person to her *taho* factory and to discuss the investment involved. The half day visit paved the way to the improvement of the kitchen and the construction of an energy-efficient stove and kitchen.

The ICS Center staff told Aling Nena to record her fuel expenses and the complaints of the cook before the improvement of her kitchen and over a three month period after the stove was installed. In the fourth month, the staff assisted Aling Nena to compare her fuel expenses before and after three months of using the improved cookstove. The staff also interviewed the cook and the helpers in the kitchen and observed the cleanliness of the walls and equipment.

Aling Nena realized that her savings were not only in fuel but even more important protecting the health of her cook and her family as well as the clean and hygienic preparation of the products. Although, it is common knowledge that soybean

curd will not form in its finest state if it is not clean and well processed, *taho* processors do not pay attention to the cleanliness of their clothing. However, the clean and energy-efficient kitchen environment reminded the *taho* processors that they should physically look clean to attract more customers. The improved hygiene in *taho* preparation would also be better for customers.

Keeping ahead of the competition

The *Taho* business is fast growing. The economic crisis in the Philippines has seen the number of *taho* vendors doubled in the past year. This means that Aling Nena is facing increased competition so she needs to ensure that her business stays profitable.. Aling Nena is willing to invest for the business. She plans to mechanize her kitchen and use stainless equipment for processing the ingredients. She has grown in confidence and has now sought assistance from a micro-finance organisation the very type of organization whose help she had shunned a few months earlier. The organisation provides assistance for micro and small-scale industries in the preparation of a business plan to determine the financial investment needed to upgrade the *taho* processing facility and how grid electricity can be best utilized within her enterprise

Lessons learnt

. This case study shows how energy has played a key role in the vulnerability of an enterprise using process heat. Once a cheap and reliable source of biomass was found the business could begin to move to a more secure future. It also shows that women entrepreneurs are low risk takers. Aling Nena refused micro-credit at first when first starting her business. This might possibly be due to the approach of the organisation which was not supportive to Aling Nena in the way that the ICS Center staff were. An energy technology with multi-benefits as we see here with the improved stove can be more attractive to entrepreneurs than those with only one benefit. Although the increase efficiency of improved stoves receives a lot of attention, the significant progress in hygiene standards that accompanies a stove such not be underestimated in commercial stoves.

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