

SWIG Award 2015
International Project
“Running Water Uphill through Ram Pumps Powered by Water and Passion”
AIDFI-Philippines

This project or rather ongoing program is about supplying higher-than-the source elevated villages or farms with drinking or irrigation water through the use of locally manufactured and installed Hydraulic Ram Pumps in a sustainable way.

From a small Non Government Organization (NGO) involved in manufacturing and installation of several low cost technologies for basic needs on just the island of Negros/Philippines, AIDFI has in 25 years' time become a 'big' social enterprise with around 60 fulltime staff and a nationwide and international operation all around its flagship technology a locally developed hybrid model of the hydraulic ram pump.

As of today AIDFI has installed ram pump systems in some 385 villages with around 231.000 beneficiaries supplied with 'free' flowing water delivered near to their houses or farms. In the same time the ram pump model from AIDFI ended up already in countries like: Peru, Costa Rica, Colombia, France, Portugal, Afghanistan, Cambodia, Nepal, West Timor, Japan, Cameroon and complete Technology Transfer was carried out to Afghanistan, Nepal, Colombia and Mexico, where the AIDFI model is now manufactured and spreading by local NGO's or enterprises.

Already in the 1980's, Auke Idzenga, one of the four founders of AIDFI discovered the potential for ram pumps because many of the isolated upland areas on the island of Negros he visited were without basic services like water, sanitation, proper roads, electricity, schools and so on. Water was expressed by the villagers as their number one priority but many of their places were higher elevated than the source. Having worked with a hydraulic ram pump made from concrete on the Technical University in Holland, Auke saw a huge potential for this renewable energy operated technology to make a great impact on the life of upland villagers.

The ram pump in general as being a century old technology never spread the world despite its 'magical operation' of pumping water to very high elevations without the use of external energy like fuel or electricity except for the power of falling water. The pump converts velocity into pressure. Up till some 3-4 decades there were only expensive and antique looking models made in some developed countries. It is hard to buy and import such units on your own. Then universities and Appropriate Technology groups came up with inferior models through mostly short lived programs. But technical and management problems were not helpful in promoting this alternative models.

The idea of AIDFI was to develop locally a model being a cross or hybrid breed between the expensive imported models and those developed by the universities. We applied the following quote: 'the designer knows he has reached perfection not when there is anything to add but no longer anything to take away'. Auke started in 1990 with three different models, tested under same circumstances. One of them had the brilliant solution of a door

hinge as the main spare part. It lasted in the test operations and it became the basis for the further development model. It took years of designing, testing (actual in the field), monitoring and re-designing till the model was for us AIDFI more or less perfected. We now had a model with the efficiency and capacity of the imported ones at the cost of the inferior ones developed by universities. Over the years AIDFI added more sizes and is the only one in the world producing the ram in ten sizes. The pumps are made piece by piece making the production flexible. The pump uses only locally available spare parts like the door hinge and a check valve made out of an old exterior of a car.

Since AIDFI considers the sustainability issue as very important, we started developing a holistic program around the technology. The software as equal importance as the hardware. AIDFI started doing social preparation with formation and recognition of water associations, participation of local people in the hauling and actual construction and training of local technicians in operation, repair and maintenance with no secrets kept. This has been very successful in keeping the systems in operation and ensuring a continued water supply in the villages and farms.

The pumps are made in a well-equipped shop of 700 m². Then AIDFI itself has installation teams which stay in the field during the installation. The technical people are rather well paid since AIDFI considers itself a social enterprise. The General Assembly of which all staff are member owns the organization. The staff are super motivated and proud of the ram pump model.

To upscale AIDFI has trained several installation teams over the country, which get ram pumps from AIDFI but install those themselves. Then AIDFI transfers the technology to other countries, just a pure humanitarian act even though a onetime license fee is paid to filter out the serious candidates.

The benefits are 'huge'. Many of the households were used to getting a maximum of 40 liters per day per household since they had to fetch the water manually. Now that the volume has increased tremendously (at an average of 10 times), many benefits come in: less skin diseases and diarrhea cases, less kids skipping classes because of the water fetching, older people no longer paying much for the water fetching, possibilities for vegetable growing and even selling the surplus and pig or fish raising.

The work, benefits and impact didn't remain unnoticed and AIDFI received several awards already, not for just its unique ram pump model but the whole holistic approach. AIDFI is advocating the concept of social enterprising and tells people especially the young ones that even simple and low cost (SMART) technologies can become very successful and sustainable.

Right now AIDFI has two major funders: Coca Cola which sponsors ram pump systems in 50 villages per year all over the Philippines and the Department of Agriculture with several ram pump irrigation systems per year in its High Value Crop Program. From shouting in the desert in promoting the technology (mostly totally unknown), the ram is now spreading as wild fire. AIDFI uses awards to show it is an authority in the technology, not only technically but also socially.