

## The Raintree Foundation, Annual project report 2009

WEDNESDAY, DEZEMBER 30, 2009

### HOT COFFEE in High Season



Hot Coffee is a welcomed rest stop, restaurant and resort in North Thailand close by the highest mountain of Thailand, Doi Inthanon, measuring 2560 meters in height. Hot Coffee resides beside the Mae NaChorn children's home. Many Thai and foreign tourists stop over on their holiday trip to Mae Hong Sorn and Pai and visit our Hot Coffee restaurant

and resort. To our own surprise even local farmers come in for a lunch break from their field work and enjoy our meals. During the past rainy season we closed for some renovation and construction work to improve our facilities. The new bamboo roof and bamboo furniture from Mae Hae Bamboo project turned out very well and is admired by local and foreign guests alike. During the holiday season (December and January) the Hot Coffee is busy pampering tired travelers with delicious local food and refreshing hot coffee.



Our staff is most capable in dealing well with all kinds of world travel guests. We cater to cyclists on a world tour, motorcyclists, 4x4 off-road adventure tours, backpackers, Thai tourists from Bangkok and local farmers from different ethnic groups all with different requests which we try to accommodate. The older children together with the house parents and staff are helping to prepare delicious food and serving the guests in our restaurant. This provides them with the opportunity to gain work experience in the service industry. Some of our children are weaving or producing some wooden handicrafts as well which we are selling at the integrated souvenir shop. All income generated is for the benefit of the children's home. It is our goal to create enough income in order for the children's home to be self sufficient. It is still a long way for us to get a few stars like a real hotel, but our real stars are the children receiving an education and the opportunity being provided for a brighter future. Looking forward to seeing you at the Hot Coffee...





TUESDAY, DECEMBER 29, 2009

### Christmas in Mae Hae Village



At the end of December 2009 we had a great Christmas celebration in Mae Hae village. There were about 200 people including our children from the projects, village people and friends joining. Our bamboo manufacturing workshop was turned into the stage for all the presentations. The celebration was a 2 day event with a full program of competitions, fun

games, presentations, songs, drama plays, singing, traditional tribal dancing and a worship service to honor the birthday of Jesus. To feed all our guests we had send two goats and one pig to the kitchen. At night we had a few bone fires on to warm up those shivering in the "cold" Thai winter. Everybody enjoyed the local band with drums and guitars who entertained us with traditional Thai and tribal songs.



Many children came to compete for prizes to be won in the many different games played often requiring high skills and talent. But not only the children participated, there were also the adults that had their competitions and demonstrated their shooting skills with blow pipes and cross bows. Many of the young men were surprised by losing against tribal elders who showed off their ability to hit the well aimed target.



We want to thank you all for your help which made it possible for us in 2009 to help the children and communities with various projects and initiatives. Without your concern for the poor we could not archived so much in 2009. Thank you for being in partnership with RainTree.

We wish you all a Happy New Year and that your dreams in 2010 will come true.

Best regards,

The RainTree Team

MONDAY, DECEMBER 21, 2009

Ken Hagerman Project brings clean water to a rural village  
A Boost for Mae Pun Deng Village

10 TUESDAY DECEMBER 22, 2009 Chiang Mai Mail VOL. VIII No. 51 By Dave White



Several years ago, a Canadian buddy of mine, Ken Hagerman, came to Thailand with us for the first time. As we ventured throughout the north country, he fell in love not only with the country, but the people. What better adventures for a people person? Ken returned in mid-October, 2009 with his wife Donna and our travelling group of seven Canadians from British Columbia and Alberta. Sadly on Nov. 1, Ken suffered a massive heart attack and died at Chiang Mai's Ram Hospital.

On our first trip to Thailand in 2004, my wife and I met a very unassuming, but inspiring tour guide Hod Chommala, whom we hired for a four-day family trek in the Chiang Dao area. Every year we've reconnected with Hod, always curious and fascinated with how he, his family and others were doing at Mae Pun Deng, a small village about an hour and a half south of Lamphun. If given a choice, Hod would be the stay-at-home farmer, growing crops, improving his land, home, and looking enthusiastically to the village's future. But he continues work as one of Chiang Mai's most outstanding tour guides, all while keeping his fellow villagers in mind. One of Mae Pun Deng's major needs has been clean drinking water. It's a dilemma Hod and I discussed many times. How can the village's drinking water sources be improved? What can the villagers do to help themselves? What can outsiders do, without interfering. How can villagers take ownership? The unfortunate death of a best buddy friend ultimately created an overwhelming opportunity. His wife, Donna, knowing the village's need, initiated the Ken Hagerman Water Project for Mae Pun Deng, with a view to improving the villagers' drinking water, and as an acknowledgment of Ken and Donna's love of Thailand. Since that fateful Nov. 1, the stars have been aligned...it's been a serendipitous whirlwind.

We Canadians have known about an innovation of Dr. David Manz of the University of Calgary, Alberta, Canada...the biosand water filter, which makes use of local supplies and workers to provide drinking water 99.999 percent pure. A water biolayer is the key. Simply stated, after a 21-day maturation period, germs in the water eat germs, as the water filters down through the biolayer. Water finally filters through three layers of sand and differently sized gravel. Gravity-fed, it requires no electricity, only the requirement that water be poured into the filter at least once a day, creating approximately 20 litres of pure, clean drinking water with each filling. A quick email outlining our proposal whizzed off from Chiang Mai to the Centre for Affordable Water and Sanitation Technology (CAWST), a Canadian humanitarian, not-for-profit group in Calgary, Alberta. Within 24 hours I was meeting in Chiang Mai with Shauna Curry, P. Eng, CAWST's Director, International Services and one of her local contacts, Stefan Geiger of the Chiang Mai's Rain Tree Foundation. She received my email from the Calgary office just after stepping off a plane in Bangkok. It just so happens that Rain Tree (principals Ralf Oberg, Stefan Geiger and Thomas Singer), manufactures the biosand filter in Doi Saket using local products and labor. It's a made in Thailand venture.



Quickly, we had the Ken Hagerman Water Project on its way, while back in Canada, Ken's family, friends and colleagues joined Donna in making this project become a financial reality. The village of Mae Pun Deng is receiving 250 concrete biosand filters – one for each household, two for each of the schools and two more for each of the village's temples, and other locations as required. Canadians have contributed approximately 455,000 BHT (about \$14,000 CDN) to the Ken Hagerman Water Project. Our latest visit in Thailand is finished...we're on our long flight back to cold, snowy weather, and friends and Ken's family in Canada. At the same time, the Ken Hagerman Water Project objectives are being achieved through a co-operative effort among the villagers of Mae Pun Deng, our friend Hod Chommala, village headman Nhan Heun, and Rain Tree's Oberg, Geiger and Singer, and of course, Donna Hagerman in Canada. Tuesday, Dec. 8, the first 35 filters arrived and were installed at Mae Pun Deng...the monk's blessing ceremony and a remembrance of Ken Hagerman highlighted an astonishing village celebration between the Farang and their new-found Thai friends.



As filters are manufactured, villagers will pitch in and transport them to Mae Pun Deng with their own trucks over the next few weeks...again a co-operative effort that keeps everyone in the village involved in the Ken Hagerman Water Project.

Rain Tree, along with installation, is training villagers how to operate and maintain the filters and with our friend Hod will keep a close eye on the project over the next year.

It's a wonderful tribute to a 'buddy' and an awe-inspiring experience, just like so many others we've been involved in during our visits to Thailand. Then again, we just wouldn't expect anything less.

FRIDAY, NOVEMBER 20, 2009

## Clean Energy Expo Asia in Singapore



Our volunteer Stefan G. went to attend the CEEA (Clean Energy Expo Asia) exhibition in Singapore. There we met with participants and organizations that presented their clean energy solutions and new developments. It was quite an international event and it was good for us to get information about new ways to save energy and how to use energy resources more efficiently. Our main focus was finding solutions for people in rural areas that do not have access to the main grid power.

It was interesting to find out about the latest technology development for wind and solar applications. There were lots of new vertical windmill types, new long life LED lights and advanced battery systems to see. We hope that we can use these technologies in our projects for the benefit of rural people in the future.

To find more about the CEEA just visit this link <http://ceea.wordpress.com/>

SUNDAY, NOVEMBER 8, 2009

Cold Season in the mountains of NW Thailand



It is getting Winter in Thailand. As the raining season is finished the weather now shifted to "winter mode" and especially at night it is becoming very cold. So far the coldest temperatures we have experienced this season was +14 C. With simple wood and bamboo houses, a bit of wind and fog the felt temperature is very, very cold.

For our 100 children in 2 projects, we were able to give each one warm pullover which is highly appreciated by the children. Special thanks to Tony and friends who made this early Christmas possible. With the warm clothes our children stay healthy and warm at night. They even will sleep with them. Usually shortly before sunrise if the weather will get too chilly than they will sit around a fire to warm themselves up. In the picture you see some of the children that received the pullovers at the Mae Hae Childrens Home.



WEDNESDAY, SEPTEMBER 30, 2009

ECHO Asia Agricultural Conference, September 21-25, 2009 in Chiang Mai



ECHO was exactly what we were looking for, a conference with several NGO's, grass roots organizations which work in community development, education for minorities, agriculture and the goal to connect all together. So we registered for the event and looked forward to get in touch with people which do the same things as we do. We could set up our demo table and information materials at the conference hall. After the excellent breakfast all the participants got

introduced to ECHO, we were about 150 people from over 16 countries. From the beginning it was a pleasure to be together with all these nice and kind people. The next three days, the morning workshops started with really interesting and practically useful topics. In between the workshop breaks we had a lot of time to talk about our projects and goals and we find out what other people and organization done so far and where they are located. It was amazing to hear what other people do and we shared our experience from the past. Everyone was looking forward to have a network which provides all the information and help out when it's needed. Connecting our small world would be also a good slogan for the ECHO conference.

On the 22nd we held an evening workshop about hydraulic ram pumps ([http://www.meribah-ram-pump.com/meribah\\_ram\\_pump\\_2inch.aspx?mn=4&sm=4-1](http://www.meribah-ram-pump.com/meribah_ram_pump_2inch.aspx?mn=4&sm=4-1)) and stream driven snail pumps. Surprisingly the most participants knew these ancient water pumps but it was nice to involve them into the new generation of these pumps. The next day in the afternoon we presented the Bio Sand Water Filter (<http://www.meribah-ram-pump.com/waterfilter.aspx?mn=7>) to the attendees and afterward we had a couple of interesting questions and solution for specific cases.



At the 25th was the last workshop day and we all celebrated together with a barbeque dinner. In the evening 7 pm the ECHO team took a review over the whole conference with a few pictures and a recitation. On Saturday started the post conference tours with ten different locations all around Chiang Mai. These tours showed how to work with all the learned and explained information in the field. After all we are really pleased to be with such

a community network and we enjoyed every single minute. We're looking forward for the next ECHO event in 2011 and hopefully more national meetings around in Thailand. To learn more about the ECHO organization and the useful information just visit their web page <http://www.echonet.org>

WEDNESDAY, AUGUST 19, 2009

### MaeNaChorn bamboo construction



Project description : Water supply and bamboo house for the Mae Nachorn Project. Based near to Mae Cheam is the day care center which needs water supply and new buildings. We dig a deep well to collect the water from the stream. After that we installed an electric pump to fill the already built concrete tanks. It was necessary to mount a filter because of the dirty water. Now we install additional two floating switches to provide a steady water supply for the kids. The second thing

we've done was building a bamboo house. The basement was made completely new with iron and concrete. We choose bamboo because of the costs and the possibilities of a light construction. The bamboo is treated with a chemical to keep all the bugs out of it, so the life time increases up to 20 years. At first we prepare the basement with steel bars and big stones for the corner posts. Then prepare the bamboo measured it out and fill the bottom with concrete. Then we set up the posts and connect the bamboo with the iron bars from the basement. Then we have to clean all the bamboos and prepare them for the further connections. We use a drill and screws for a long lasting construction. Meanwhile it was time to wattle teak tree leaves for the roof and paint them with diesel oil. Hereafter we started to fix the cross connections on each side of the building. To stiffen the whole construction also diagonal bamboo shoots were fixed with screws on each side. Because of sometime heavy rain falls and windy weather the roof construction must be build strong and stout. We keep a small distance of the bamboo shoots for the roofing. The first layer with the teak tree leaves on top of them. Then we painted the leaves with a special kind of plastic lacquer. Sheet metal was used as second layer on top of the teak tree leaves. Layer three was also teak tree leaves and at least a net to keep the leaves on position. Finally we sprayed all the bamboo shoots and the roofing two times with a special lacquer which removes all of the dampness inside the building. After everything was drawn in and dry we rub down the dirt and scratches from the construction work. Then we sprayed again the plastic lacquer all over the whole building to protect the bamboo from the sun and rain water. At least we made a wiring diagram for all the lights and also some fans so we could buy everything necessary in town. At the next day it starts to rain so we could check if the roofing was really rain prove. There was a few points we have to fix and we had to leave to buy the wiring and electrical parts in town.



TUESDAY, JULY 28, 2009

### Cleaning water with O3 at Garden Eden – Doi Saket



The goal of the project was to clean water from the fish pond on a farm through advanced O3 Air purification to achieve a biological safe water quality, which can be consumed without the risk of falling sick due to pollutions often found in waters at rural areas. The condition was that the whole system has to be stand alone without electrical power from the main grid. Therefore the whole system is operated by a solar cell system, a ram pump and a micro hydro unit

and with the Advanced 12 Volt O3 Air system to add enough O3 and Air to the Water to treat. Based on the concept of Mr.Manfred Fendrich from Envopark (<http://www.envopark.com/>) it is an environmental sound system to produce drinking water to people in rural areas. The project started at Doi Saket Chiang Mai. First a tank was build, using a unique 3000+ year old layout Square in Square which is made out of concrete. Tank outer diameter is 4 meter to 4 meter and is split into three separate reaction and activation chambers. Each tank section has its specific purpose. The second step was to build up and assemble all wiring of a 400 Watt solar cell system. The solar energy feeds the 12 Volt Air pump and as well the 12 Volt O3 high voltage corona discharge Units. To get water into system the most environmentally sane solution was the use of a ram pump. Ram Pumps are powered by only the power of water and gravity. To save waste water coming out of our ram pump we build a tank to collect the release water which is needed to Pump Water by the Factor X to the user – in our case the Envopark system, which is feed with 6 liter/minute. The release water is then pumped up again to the gravity tank, so no water is wasted; the pump source is a 220Volt submersible pump with floating switch ON-OFF.



---

The waste water from the ram pump is again converted into electricity through a turbine, which feeds a 220volt submersible pump with electricity. Basic function of the O3 Envo Park Air System. The system all components are working together in a symbiotic way. O3, and other radicals formed within the Corona Discharge high voltage system breaks down the integrity of the bacterial cell wall by discharge the electron field of the bacteria and virus through oxidation of the phospholipids and lipoproteins. In fungi, O3 inhibits cell growth at certain stages. With viruses, the ozone damages the viral capsid and upsets the reproductive cycle by disrupting the virus-to-cell contact with per oxidation. The weak enzyme coatings on cells which make them vulnerable to invasion by viruses make them susceptible to oxidation and elimination from the body, which then replaces them with healthy cells. The oxidized material provides an excellent organic fertilizer for farming purpose. Fish can be grown within the system, offering a source of protein and essential fatty acids. Water for Shower and washing and in the last step a biological safe drinking water which is free of dangerous pollution and virus. The EnvoPark system is best described as a bio physical concept using the power of the nature and as well man made technology at low costs. The system is now in operation and the results so far seem to be within the target range. We continuously measure the output quality to ensure the long term success.

Stefan Geiger

THURSDAY, MAY 21, 2009

### Clean water for Bahn Pong Hai Village



A workshop of how to build and use an Bio Sand Filters (BSF) in Bahn Pong Hai Village . We were building five Bio Sand Water Filter with the local people who had no previous experience with BSF. We started with the basics step by step from the beginning. First we went to the local sand store and sand benches on at local rivers to find suitable sand. We were searching also special stones they we can use for the filter body and for the filter media. After we find all the sand and

stones we went back to the village and prepared our materials. Than we sieved the stones and selected them into big stones (12 to 6mm) and small stones (6 to 1mm). Next was sieving the sand and separate it also. The sand is the actual filter media sand (>0.7mm). On we went to build the Bio Sand Filter, for this we need to mix the right amount of all our different stones, sand, concrete and water. When we got the right consistence of our concrete we filled the concrete in the Bio Sand Filter mold. We explained and demonstrated the villagers how to create a strong and proof filter body. Between the times the concrete needs to dry we prepared the filter media. In this step we have to wash our already separated stones and our fine sieved sand. Than we measured out the right amount of stones and sand in liter and stored it also separate. After the concrete in the filter mold dried out, about 24 hours later after pouring we opened the filter mold. After removing the new filter we cleaned the inside of the mold. We installed the Bio Sand Filter in the house of the village leader, where the village people including the children learned how to place the filter media. After we checked the flow rate that we had good results and made sure that the villagers know how to use it. With the new filters the village people have now access to clean drinking water and will be healthier. They also learned how to build their own filters for future needs.



SUNDAY, MARCH 1, 2009

### Water supply for village school



Water supply for the Poblaki village school in Mae Sot We get a request from the Border Green Energy Team (BGET) based in Mae Sot to provide a school with about 80 children with water for the sanitation facilities. The challenge there was the area it's about 3 hours away from the next bigger village, only reachable with a 4 wheel truck. There was just solar power available and gasoline hard to carry that far. The decision for an alternate pumping system was indispensable. So we choose a hydraulic ram pump from Meribah which work only with water power and gravity. This device is able to pump water very high and over long distances without any power sources. And Meribah is the only manufacturer which guarantees a pump operation even with insufficient water supply for a common ram pump. Step one

we did a site survey to get all the required parameters for the installation. After that we calculate and bought all the necessary equipment for the project. We build a dam to collect as much water as we could get from the water source. The next step we build the collection tank and connect it with 4 inch PVC pipes with the dam. We measured out the optimum place for the pump and build the basement for the ram pump. Until the concrete dried we start to prepare the pipes. Now it was time to install the pump and the steel pipes and fix them with pipe clips and concrete. Meanwhile the delivery water pipes could be mounted. The high difference to the school was about 80 meters and the length about 250 meters. For this case the first 20% of the delivery pipe should be made out of steel pipes. After that PVC is sufficient enough. But we have to fix them also with clips and concrete. At that we opened the dam and fill up the collection tank for the first time. In normal operation of a ram pump doesn't stop and runs 24 hours the whole year. Because of the low amount of the water source we have to add an overflow pipe to the collection tank to provide the Meribah automatic starter device. The pump will stop when the collection tank is empty and normally somebody has to restart the ram pump manually. But the Meribah automatic starter, feed by the overflow pipe, will do this work. Finally we connect the last PVC pipe up to the school and check what we get out a day. So we have now about 2000 liters a day this makes 25 liter for each child and this with just a drop of water for the pump operation. At least we teach some of the villagers how to take care for the pump and the pipes to guarantee along lasting water supply. Ideally this ram pump is nearly maintenance free so the lessons are limited to keep the dam and tanks clean and check the pipes from time to time for leakages. So our project successful and the school have water now. We did three follow up checks to see if everything working properly and the people understand.