NOMINATION INFORMATION

Nominations For: Organization
Name of Individual/Project/Organization: Mwanza Rural Housing Programme (MRHP_NGO)
Name of Person/s in charge: Ashililya Nyanda (Mrs)

NOMINEE DETAILS

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Actions or Areas of Human Settlements: Environment (conservation),Housing(building materials and Technology), Economic Development (Informal economy)

Human Settlements Achievements: 1. MRHP has developed processes for making high quality bricks from local clays and firing them using readily available agricultural residuals like rice husks, cotton waste and coffee husks. 2.Houses made from the fired bricks are durable,clean,health (insect free) comfortable and freed from hassle of frequent rebuilding. 3. The quality of bricks is such a way that they are now been used to by PPF Pensions Fund to construct 3,000 quality- houses in Kiseke Mwanza city for its low income members. The bricks are also been used to construct classsrooms in the villages and urban areas of Mwanza to facilitate Tanzanian government programme of universal primary education-The health programme to construct village health centre in Mwanza have also recommendaded use of MRHP bricks. (The cost of cement is very high-17,000Tzs a bag of 50kgs). 4.Brickmaking using MRHP processes have been approved to an international quality starndard and this has enabled enterprises run on the MRHP model to sell to the high quality housing market. 5. The bricks which have been produced by MRHP and its trained entrepreneurs have been used to build an average of 1500 houses in each of 70 villages where MRHP works amounting to a total of over 100,000 homes. Most houses are constructed from mo re urbanized villages known as trading centres because they have pontential for commercial use. 6. MRHP has equiped many artisans and entrepreneurs with the skills to establish and operate brick making enterprises. They are now over 50 kilns in MRHP working areas in addition there is one large parmanent kiln at MRHP Demonstration centre. 7. Using agricultural waste for brick making reduces the pressure on the scarce wood supply in Mwanza. Prior to MRHP work brick makers had even started to cut down mango trees as fuelwood. MRHP has estimated that the traditional firing of 3000 bricks needed for a typical house consumes 1 cubic metre of fuelwood; the MRHP entreprenuers have produced 300million bricks

which have avoided the use of about 100,000 cubic metres of wood (roughly 50,000 tons). In addition , the agriculture resdues is produced sustaibably and burning does not contribute a net amount of carbondioxide to the atmosphere, unlike burning wood. For more informatio n see attachment sent as an attachments by emails and and CD -film by normal registered mail.)

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HABITAT SROLL OF HOUNOR FOR THE 2007 AWARD
"Submitting Organization: Mwanza Rural Housing Programme (MRHP_NGO)"

1. Background – "Mwanza Rural Housing programme"

- **Vision**

MRHP – NGO is committed to see communities of Mwanza Region in Tanzania having sustainable human settlement and food security.

- **Mission**:

Having gender, culture and environment in mind, MRHP-NGO will enable communities of Mwanza Region to have better habitat, good health, increased production in terms of food and building materials and giving loans to groups so as to improve household living standards.

MRHP will achieve this mission through training and advisory services by collaborating with other NGO's / Institutions (National and International) with same mission for its betterment.

- **Development of MRHP as an organization.**

Mwanza Rural Housing and Food Security (MRHP-NGO) is non-government organization registered in November 1995. The NGO got a double registration, first as an association of members (registration number SO 1619) issued on 28/11/1995 and second as a trustee to take care of legal matters in the NGO. The trustee was registered by the administration General of Trustees on 13th October 1996. The memorandum of understanding was signed by (10) founder members. To date, the total members are more than 300. Most membership is group based with an average of 5 to 30 individuals per group. There is specific attention on the Gender aspect. Seventy (75%) of the member groups are women groups while only (25%) of the either men groups and/or mixed groups membership of men and women. All these groups are partners to MRHP program.

During MRHP inception in 1990s, Coopibo International Development Argent from Belgium the main donor funded the program. Other donors were OXFAM UK and the Tanzanian Government. COOPIBO donation program was phased out in year 2000. OXFAM donation based on the MRHP savings and credit was phased out much earlier. From year 2000 onwards MRHP continued to get financial support from ICCO Netherlands and USA/Catholic Relief Services. ICCO Netherlands has also phased out from March 2004. Member contribution in

terms of en trance fee, annual contribution and deposits/share are also relatively financing sources to the program especially the savings and credit scheme. Later MRHP negotiated with 3 other Northern Donor NGOs to take over from ICCO. The Donors namely; Bread for the World (BftW) (Germany), and DKA/WELTHAUS GRAZ (Austria) are financing sustainable Agriculture USA/Catholic Relief services since 2005 has partnered with MRHP again on the side of Agro-Enterprise.

MRHP decided to look further into the possibility of assisting farmers to raise their agricultural production so that they can also get cash to finance housing. MRHP entered a partnership with Catholic Relief Services (CRS) so as to meet the objective. The crops promoted are leguminous crops that are market catching and have high value. These crops are chickpea and green grams.

In short; MRHP assists the local population in improving quality of life through various projects such as: Agriculture/Food security, Low-cost housing, and Micro-finance scheme, grass-root population capacity building, campaign and advocacy.

In this presentation MRHP will concentrate on the core purpose of the organization and that is "promotion of low lost housing through Production of Burnt bricks"

Operating area

MRHP in the 1990s, started working with only Missungwi Division. The Program in the last 15 years has expanded to more than eight Divisions of Mwanza Region. These are Divisions of Ilemela, Nyamagana (Mwanza urban District/City council), Inonelwa, Mbarika, Usagara (Missungwi District), kayenze-Isangijo, Itumbili of Magu District and Mwamashimba of Kwimba District. The area of operation to date has therefore expanded to cover the Districts of Missungwi, Kwimba, Ilemela and Nyamgana (Mwanza City) and Magu.

2. **Background and description of the Housing Project**

The project started in the 1990's in response to people's felt needs asking to be facilitated to improve their housing conditions. It is now 17 years since inception.

The first steps towards use of alternative fuels for brick making were taken in the 1990s, when strategies of producing low cost building materials were first drawn in Mwanza Rural Housing Programme (MRHP).

The aim was to develop technologies for production of improved building materials using locally available resources.

The materials that were selected were micro-concrete tiles for roofing, hollow blocks and soil cement blocks for walling. All these materials use little quantities of cement to produce durable low cost building materials. During designing the project, the idea of using burnt bricks was completely disregarded. Why?

- There were very few examples of production units in the lake zone producing burnt bricks. Many attempts to burn bricks had failed because it was not easy to find deposits of clay soil, firewood was very expensive and in fact not many trees are available in Mwanza Region.

- The brick producers were cutting mango trees to fire bricks. Which is a precious fruit mango tree that had lived for almost 100 years? Even than the firewood from mango tree were of very low quality and bricks were coming out half fired.

These introduced techniques had not brought any change in the improvement of housing and proved to be very expensive.

In the 1992, DANIDA and MISERIO demonstrated to about 40 technicians on the use of rice husks and cotton waste to fire bricks using open field kilns. The technicians were also trained on the selection and mixing of soils to come up with quality soils. It was also demonstrated that the mixing of two soils the black cotton soils and hilly red soils if well mixed and treated can produce very good and strong bricks.

The project concerns the promotion of firing bricks by use of agro-waste by special kilns, Clay Energy saving stoves for heating, Solar technology for lighting and planting of trees around compounds for protection of houses from been blown by wind/storm, shed and for authencity purpose. The project scope includes 5 Districts of Mwanza region. About 840 members of the association in 70 villages are participating. The activities include excavation and transport of suitable clay/sand soils and rice husks/cotton waste to the project sites, making of bricks, drying, building field kilns where necessary or arranging of bricks in the permanent tunnel kiln and eventually firing of bricks. The main objective of the whole project is to improve the wall element of the houses by using burnt bricks instead of the traditional mud bricks which is poor technology resulting into semi-permanent structures. Also improving the heating and lighting systems by promoting energy saving stoves, solar technology and the housing compounds by planting trees.

- **Activities under taken**

There ae 50 Production Units spread all over the 5 target Districts. Women are mostly involved in the making and firing of energy saving stoves. 10% of families are using improved energy saving stoves. Rural solar electrification is been promoted and they are installations going on.

These activities are supported by a well- established MRHP Micro-finance fund. Over 400 members or clients are accessing the fund annually**.**

Kilns are designed and fired by agro waste. This technology has been perfected and bricks are baked well. The setting of the bricks in both open-field and permanent brick kilns is that bricks are set apart at the first two layers of bricks and at the very bottom resting on the fireplace (platform), setting is done in such a way that these spaces remain entirely free so that they can function as vertical channels otherwise the heat will have problem to rise to the upper courses. A system of channels and passages is necessary to allow the vapour for easy upward as well as enable the fire to reach the top of bricks for through and equal burning. During pre-heating the field kiln using rice husk as fuel does not need any firewood. Fire is started by pieces of waste paper or dry grass collected near the site. The big permanent tunnel kiln is pre heated by using fire-wood. The open /field/temporary kiln has very simple/cheap technology and has been adopted by brick producers in many parts of Tanzania.

The rice husks used to fire bricks are from rice hulling machines. In the beginning it was regarded as a waste. The piles and hills were noticed in all industrial areas where de-hulling of rice was taking place. After dissemination of the field kiln and a wider coverage of firing bricks using rice husks which was considered as a waste, MRHP has put value on a product and indirectly assisting to manage the waste.

To build a field mobile kiln to fire bricks using rice husks is very simple, MRHP has trained artisans since 1990's and technology is being used all over Mwanza region and even beyond.
The complicated kiln is the one constructed as a demo kiln with the assistance of German Engineer Gehard Meschmeyer. This is a kiln that is saving fuel at high rate than field kiln. This is the channel permanent kiln built at a MRHP field sites. Three aspects were considered right from the beginning; that the solutions had to be ecologically sound, technology should be feasible and flexible to brick makers. An example agreed upon is the use of different agro-waste materials available in the region including cotton, coffee, sow dust, maize cobs, and rice husks and shopped.
MRHP team took the ideas seriously and started indoor trying and testing the technology. After MRHP engineers found out the technology is feasible they started building the capacities of MRHP animators. The training was carried out from year 1994 to 1998.

To build a field mobile kiln to fire bricks using rice husks is very simple, MRHP has trained artisans since 1990's and technology is being used all over Mwanza region and even beyond.

The complicated kiln is the one constructed as a demo kiln with the assistance of German Engineer Gehard Meschmeyer. This is a kiln that is saving fuel at high rate than field kiln. This is the channel permanent kiln built at a MRHP field sites In the year 1998, an intensive evaluation was carried out in collaboration with Ku-Leaven Belgium and University College of lands, archtect and surveys of Dar-es-Salaam.

The biggest problem that was observed was the problem of walling element in the rural housing improvement. All the tests to plaster mud walls had failed. To improve walls to use cement/soil cement blocks in Mwanza rural had also failed because of high prices of cement and press machines. The solution was to improve the adobe block by training the artisans to fire it using rice husks or cotton waste before house construction.
MRHP promoted it and took off completely starting from year 2001 with the support of ICCO Netherlands Organization and own fund accumulated as a housing revolving fund.
This had had a big impact in the housing construction, both in rural and semi urban areas of Mwanza. It is physical and the open kilns are spread all- over the Mwanza countryside. This has brought about youth employment and income generation. Housing construction has become easy in Mwanza; both for rich and poor.
Youths are no longer cutting mango trees for if they use rice husks all the bricks are fired and found out that building of clamp/open field kiln is much easier to build than that of fire-wood.

Why not non-fired bricks?

When the project was started in 1990's, MRHP builders in the working area were exposed to many low cost building technologies. The non-fired bricks (soil cement bricks was one of the technology). MRHP, Missungwi District council houses are build of this materials as demonstration houses. For ten years no body from the community adopted the technology. With the introduction of fired bricks there is a very high adoption. Local builders are saying burnt bricks are cheap and easy. Soil cement blocks are very expensive because of high prices of cement and press machines which are imported. The technology was imposed. MRHP still needs to solve the problem of villages which has no good clay soils to produce burnt bricks and where possibility of husks is zero. There is a need of continuing with researches and tests on non-fired bricks.

3. Main Partners

MRHP collaborates with District councils against deforestation. Youths are encouraged to participate in the activities so that they can have self- employment and improve their HABITAT. District council has seconded staff to MRHP-NGO. MRHP is also working with Energy networks and agencies such as East African Energy networks, Tanzania solar Energy Association, Ministry of Energy and Minerals, NGO such as Tanzania Traditional Energy Development Organization (TATEDO), Several Mwanza businessmen supplying solar equipments to MRHP. MRHP partners are; Program for Biomass Energy conservation (PROBEC) managed by SADCC and GTZ, ITDG-Kenya, University college of lands and University of Dar-es-Salaam and Ku-Leuven – Belgium, Utamaduni Cultural Association (Knud Erik Asak) earthwork and firing bricks by use of agro-waste trainer (1992), designing and training on continuous channel kiln (Mr. Gerhard Meschmeyer private advisor on earth construction, GATE, Basin news- GTZ German and CRAterre-education on earth construction.

MRHP is highly regarded by the Tanzanian Government as a result of developing and promoting local sustainable energy projects with full participation from local communities. MRHP has good links with local government, particularly local planning offices and town planning departments who sometimes second staff to work with MRHP. A range of international organizations have supported and funded the organization and it maintains close working links with Universities in Tanzania.

MRHP employs 11 staff on an annual budget of approximately £80,000. About 85% of its central costs and overheads are covered by external funding. Brick-makers work as independent businesses after they have received the initial training and support from MRHP

4. Impact

- Youths are employed in brick making firing bricks, constructing low-cost houses (especially classrooms) 350 artisans engaged.
- Women are producing Energy saving stoves for sell
  840 persons (men and women) are engaged in the project and each person employs 5 persons to accomplish the activity, creating employment up to, 4,200 persons.
- Last year 2005, the biggest MRHP production units of Kiseke and Missungwi employed over 100 youths in Brick production
- A few youths are engaged in the solar PVCs installations for the technology is recently introduced.
- MRHP has supported 50 field kilns under sheds that can fire bricks even during the rainy season

- The project has installed-14,000 Energy saving stoves , (Upesi stoves and mud stoves 600 in @ 70 MRHP villages).women have earned 21,000 pound sterling
- Installed 13 -PVCS since year-2004-2005 (2 system in Health centres, 1 education centre and 10 to individual households).
- The project has constructed a permanent channel kiln with a built up area of 48.41 sq.m with a chimney of 2.8 sq.m under a shed measuring 252 sq.m The kiln was built with the assistant of a retired German Engineer called Gehard Merschmeyer through correspondence.. The construction started in year 2001 to 2002. Tests continued to year 2003. The kiln was targeted to use Rice husks but it has proved better with the cotton agro - waste. Since year 2004 to date the kiln is operating efficiently. The kiln is saving fuel by 75% only little fuel wood is needed during pre-heating. The kiln is firing 5,000 bricks measuring 29cm*14cm*9 cm at a time.
- The system of firing bricks by use Rice husks or cotton waste has served 20%-30% fuel wood consumption. This is measured by-comparing firewood kiln and rice husk kiln. This is field research carried out by housing technicians over the last 10 years.
- The energy saving stoves; saves 10%-20% energy. This is again field experience.
- Solar technology has produced 849 WP DC/AC and is measured in Watt peak
- Approximately 5,000 people have benefited.

Across section area of permanent kiln as designed by engineer Gerhard Merschmeyer but build by MRHP technicians and local artisans.

Longitudinal section of the permanent kiln at MRHP centre.

Note: arrangement of bricks into the kiln and fired bricks by cotton waste. (cotton waste is described in the specific questions)

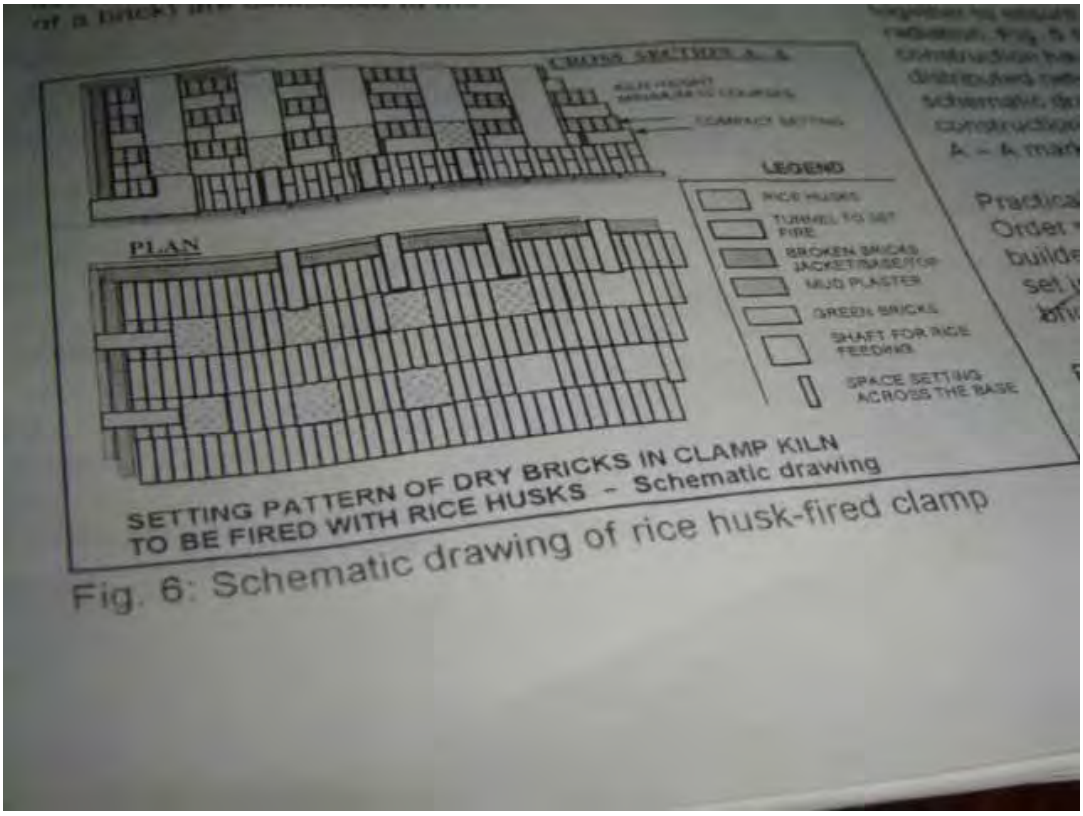


Fig. 6: Schematic drawing of rice husk-fired clamp

Note: Clamp kiln is mentioned in the report as open/temporary/field kiln. See below fired bricks under the shed with clamp kiln. It needs a shed during rainy seasons.

“fired bricks under the shed with clamp kiln. It needs a shed during rainy seasons.”

- benefit the local environment reducing deforestation and improving waste management
- While the use of timber and poles for construction of houses can have short term relief to residents, harvesting of firewood for firing bricks is generally the most environmentally damaging activity in the villages in the long term. Therefore the use of rice husks and cotton-waste in firing bricks saves the environment from deforestation, soil erosion
- Before the introduction of the project woodlands, trees in hills, mango tree s old as 100 years, along catchments area were invaded for wanting of trees s fuel-wood for brick firing leading to severe deforestation and climatic changes. With the introduction of alternative energy to fire bricks and for heating the situation has improved environmentally/reasonably

- Environment is conserved; ***Fuel is replaced***

Eg; .Brick firing by field kilns (house construction)

One cubic meter of wood burns 3,000 bricks. (MRHP)
One standard rural house (24m2) requires 3,000 bricks to construct
In the programme area, 1500 houses were built from 2000-2005. Therefore 1,500houses *3,000 bricks were used i.e. 4,500,000 bricks or 1500 cubic metres of wood would be used.
However, these field kilns use 100% rice husks. It therefore means 1.5 tones of wood were saved from 2000-2005 that could have otherwise been cut for brick firing.

- . Improved firewood stoves (house heating)

Thermal efficiency of the commonly used 3 stone firewood stoves in Tanzania is reported to be 10%-18% (TATEDO 1998 and Ministry of Energy and Minerals)
I kilogram of wood that is burned in a three-stone wood fired stove, about 18% of the energy goes into the pot, 8% into the smoke and 74% into waste heat.
However, improved MRHP mud/cow dung three stone, plus clay mobile “Upesi stove” saves 30% of energy. MRHP has measured the saving capacity of improved mud stoves for the last 10years.The methodology used is a very simple field one where housewives from different MRHP working villages are asked to compare the two stoves in terms of firewood consumption. The trend is that a Sukuma housewife in an extended family of 10 persons uses 3 bundles of firewood (weighing 20 kilograms) for heating by using a normal 3 stone stove; while MRHP “reinforced mud/cow dung stove and mobile “Upesi stove” uses only two bundles of the same size saving 30% of energy.
(See images of these stoves attached)

- Solar Power.(house lighting)

This will be measured against use of kerosene which is non- renewable and used by 90% of families in Tanzania.
Normally house holds in Mwanza uses 5ltrs of kerosene per month and it is sold at 1.50 pounds sterling. 13 families with solar will use 780 litres a year @ 1.50 pounds which gives 1,170 pounds a year. This is the money saved.

- The technology is demanded is good source of income.

"I shall give an example of bricks which has the highest demand"

Brick size is 29cm*14cm*9cm weighing 7kgs. Fired by rice husks using field kiln.

Example of PPF - Pensioners houses in Mwanza city.

The demand for burnt bricks is very high. As mentioned above The government of Tanzania has accepted the technology and as such MRHP- CBOs have been given the responsibility of supplying bricks to the ongoing Pensioners Provident Fund low cost houses in Mwanza City – Kiseke area. The agency has planned to build 3,000 houses from 2005-2007of which @house will use 5,000 bricks that gives a demand of 15million bricks. Until now MRHP CBOs have supplied 1.4million bricks worth 70,000 pound sterling. - employing 160 youths. The job of brick making is going on.

5. Sustainability

In the initial years of the housing project 1990-1995, MRHP carried out intensive training to brick makers, animators and artisans on new low cost housing technologies. The training was given free using donor money. This time MRHP started to build a fund that will assists in the development of the technologies.
In the 1998 MRHP started getting application from the Production units who had picked up the technology. The MRHP Revolving fund was used to give loans to the groups. The loans were directed to working sheds so that they can be able to produce the brick throughout the year even in rainy seasons. Repayment rate is good.
The brick making systems only needs training and demonstration. The youths are learning from each other by doing.

Energy saving stoves

Trained MRHP Animators in the villages charge ½ a pound to install one mud/cow dung stove, The Upesi stoves are sent to markets and one is sold a pound and half.
The animators are also training other women in villages and hence dissemination of the technology. The activity that started as a service has now turned up to an income generating activity and this is the credit part of MRHP technology it is sustained.

Solar system

Generally solar PV equipments/initial investment is very expensive and as such MRHP rural poor- target population cannot afford a onetime purchase of the

system. That is why MRHP has established a small revolving fund to assist in the installation of the system.
MRHP has developed a loaning system whereby the clients pay an advance of 50% of the cost and then the system is installed. Later, the client pays the outstanding balance in a period of 6 months up to 12 months with an interest ranging from 15-20% depending on the size of the system. The dissemination of the technology has 2 years and it is gaining momentum.

Solar system

Yes! The end user pays 50% of the total cost of the system. This has to be paid before installation. Then after installation the balance is being charged with an interest of 15-20%
Payment collection is done by MRHP solar technician who visits the clients' house every month for checking the system and collecting the loan.

Loans to brick production units;

The brick makers are members of MRHP saving and credit scheme and have a right to access the loan and borrow as much as they want. Already 12 production units have obtained loans ranging from 1mill to 3millionTshs. Repayment is good but for those PU that have not built permanent sheds; bricks are sometimes destroyed by rain.
MRHP loan is supporting working sheds, water supply and transport of fuels i.e. rice husks or cotton waste from factories to the sites.
Women producing mud ESS have not asked for loans. The stoves are produced on the sites using clay and cow dung. Women producing the other type, Mobile Upesi Stove they are always asking for working gears and to be assisted with transporting the product to the markets, this is not very much commercialized.
The savings and credit clients collect loans from MRHP office and repayment is through local banks. Supervision is carried out by two MRHP credit officers who are assisted by field workers and loan committees at community level.

6. Transferability and up scaling

The following MRHP aspects are transferable;

- Firing bricks by use of agro-waste i.e. rice husks, cotton waste, coffee husks with same field kiln promoted by MRHP. This technology can be implemented easily in the regions where rice is grown.
- Participatory training of the artisans on the technology.
- The provision of small loans to the community to promote and commercialize low cost building materials.
- Strategies of installing Solar power to very poor families.
- Installation of Energy saving stoves by village women animators as income generating activity.

7. Main Innovation aspects of initiative

- Empowerment of the target population especially women, the sense of self-help, ownership and sustainability cultivated in over years through participatory approaches.
- Sensitization on environmental issues. Protection and improvement of environment-knowing that traditional improved houses use readily available traditional building materials such as poles, grass and fired bricks that can bring adverse environmental problems if not addressed properly.
- Firing bricks by use of rice husks or agro-waste with special open/field kilns. The simple open kiln introduced and disseminated to Brick makers is great innovation. The production units have stopped completely using fuel-wood to fire bricks. The open /field/temporary kiln has very simple/cheap technology and has been adopted by brick producers in many parts of Tanzania where rice is grown.
- Dissemination and extension methodology, use of village animators. MRHP has over 40 trained animators working at village level diffusing the technologies voluntarily.
- The introduction of MRHP community based Savings and credit system to support production of energy products on loan basis.

8. **Recognition of the Initiative**

MRHP initiative is recognized locally, nationally and internationally after winning 1st ASHDEN African Award 2006 on sustainable Energy. Nationally, Tanzania Government has approved MRHP products (Burnt Bricks) to used to construct public /social buildings./real estate etc. The winning of the award has been advertised on different papers, Business magazines nationally and internationally. MRHP featured also in BBC world television on the climate change series. For more information visit ASHDEN award website www.ashdenawards.org. The award ceremony is held every year in London. MRHP was awarded £30,000 to continue the activity of training Brick entrepreneurs and assist them construct sheds under their open/clamp kilns. (Please see a copy of the certificate of award enclosed with this report.) Other references have been sent to you recently with a separate normal mail.)
In order to systematize and Institutionalize MRHP best practice Catholic University of Leuven – Belgium in collaboration with MRHP are documenting the experience. The job started in may 2006 and is expected to end this year 2007. The output will be a book and manuals of different technologies developed by MRHP. The work is been supervised by Prof. Han Vanchure.of Post Graduate centre for Human settlement.

Group Photo. with Prince Charles. ASHDEN AWARD WINNERS JUNE, 2006

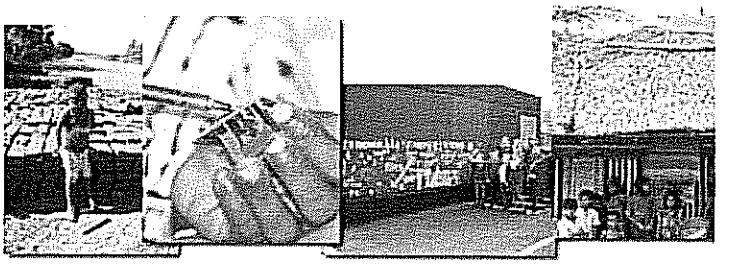
MRHR NGO COORDINATOR WITH Prince Charles 1st AFRICAN ASHDEN AWARD WINNER JUNE, 2006

MRHP-NGO COORDINATOR.

RECEIVING A TROPHY FROM LORD MAY; Former Chief Scientist advisor to the U.K government and President of the Royal Society.

June, 2006.

the **Ashden Awards** for sustainable energy



Technical summary: 2006 Finalist: Mwanza Rural Housing Programme (MRHP), Tanzania

Using agricultural residues to fire high-quality bricks for low-cost housing

Summary

Mwanza Rural Housing Programme (MRHP) has trained villagers in northern Tanzania to set up enterprises making high-quality bricks from local clay fired with agricultural residues. These enterprises have made sufficient bricks to construct over 100,000 homes with greatly improved comfort and durability in 70 villages.

MRHP is based in Mwanza, Tanzania's second city. The city is situated on the southern shores of Lake Victoria and is a lush and relatively well off area. MRHP works in 70 villages further away from the lake which suffer from extensive deforestation and high levels of poverty. The houses in these villages are usually made from mud and need frequent repairs and rebuilding as they are easily damaged by heavy rain and minor earth tremors. MRHP has developed a system to make bricks from local clay which uses readily-available agricultural residues like rice husk and cotton waste, instead of wood, to fire the bricks. It has trained local people in brick making and business management and enabled over 50 brick making businesses to start up. Homes built from fired bricks are more durable, comfortable and clean than homes built with mud.

MRHP has also developed more efficient cooking stoves which are made and sold by local entrepreneurs. It runs a programme of tree planting and reforestation in all its project villages and has recently started to supply photovoltaic (PV) solar home systems for lighting.

The organisation

MRHP was established in 1990 by a Belgian agency called COOPIBO in response to local requests for help to improve the quality of housing.

Since 1995, MRHP has become a fully Tanzanian NGO working at the local level. It employs 11 people and operates in five districts of the Mwanza Region of northern Tanzania.

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Technology

Traditional housing in northern Tanzania consists of huts built from mud which often need to be repaired or even rebuilt after heavy rain or minor earth tremors. MRHP looked in detail at what could be done to make housing more durable and identified the foundations and walls as major problems.

The region has a good supply of local clay which can be used to make durable, fired bricks for walls although there is a shortage of wood to fire the bricks, owing to severe deforestation. The region does, however, have a good supply of agricultural residues, including rice husks and cotton waste which can replace wood in the firing process. The husks are the dry coverings of rice grains which are discarded during rice-milling to give polished white rice. The cotton waste consists of the outer shell of cotton seeds, poor quality seeds and dirty or broken cotton fibres which are removed during the processing of cotton seed oil. Coffee waste can also be used as a fuel, although this is not grown near Mwanza but in the Musoma Region of northern Tanzania.

MRHP developed a mould so that all bricks can be made the same size. After drying in the sun, about 4,500 bricks are stacked into a specified shape to make a temporary kiln (the 'kiln' is made of the bricks that are being fired and is dismantled as soon as firing is complete). MRHP has determined the best method of stacking the bricks to give effective flow of heat and water vapour between them which produces uniform firing. The agricultural residue is poured between the stacked bricks and the outside of the structure has a wall made of unfired bricks. Users find it much easier to pack a kiln with residue than with wood because it flows more easily into the gaps between the bricks. Paper or dried grass is used to start the fire which then ignites the residue. This burns slowly for three days during which time the bricks are fired. After four days the kiln is cool enough to be dismantled and the bricks are then ready for sale.

MRHP encourages brick-makers to build a simple canopy over their temporary kilns to protect their bricks from rain which can damage bricks during brick making, drying and firing. The development of the kiln

system has been participatory with entrepreneurs feeding back suggestions for modifications.

MRHP also has a permanent kiln which has outer walls made from fired bricks. This can fire larger quantities of bricks at a lower cost but is fixed in one place. Unlike the temporary kilns
the permanent kiln uses sawdust as the fuel.

MRHP has also developed energy saving stoves using local clay which can be stoked with agricultural waste instead of wood. The simplest stoves can be built in the home at a cost of only about £0.50. Prefabricated "Upesi" stoves sell for about £1.50 in the market and last for at least 18 months. They reduce fuelwood use by about 25% compared to conventional stoves.

MRHP runs programmes in all 70 villages to encourage people to plant trees in designated common areas and around their homes, in order to replace lost timber. A programme to supply PV lighting systems to homes and community buildings has recently started.

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How users pay

MRHP has a savings and credit scheme from which it provides loans to trained brick-makers to help them set up businesses. 12 production enterprises have borrowed from 1 million to 3 million Tsh (£500 to £1500) as start-up capital. Loans are charged at an annual interest rate of 15%. The brick-makers sell their bricks commercially and repayments go back into the credit fund. A repayment rate of 91% has been achieved. MRHP prefers to lend to brick-makers who have canopies over their kilns as these produce better bricks increasing the reliability of loan repayments.

Many stove producers also belong to the savings and credit scheme.

Training, support and quality control

In the early 1990s when the project started, MRHP used donor funds to train brick-makers in low cost methods of house construction. It continues to provide essential training including business training to help enterprises start up. Existing brick-making entrepreneurs also train people to assist them. MRHP has tried to encourage the full participation of women in both the brick-making and stove-making businesses.

The field kilns do not require servicing, since they are rebuilt for every new firing. The permanent MRHP kiln is expected to last over 50 years with minimal maintenance.

Bricks made using the MRHP process have been approved to an international quality standard and this has enabled enterprises run on the MRHP model to sell to the high-quality housing market.

Benefits and replicability

Prior to the establishment of brick-making enterprises brick housing was relatively rare. Many people now live in houses that are more durable and of much higher quality. They are also cleaner and healthier and attract fewer insects. The bricks which have been produced by MRHP and its trained entrepreneurs have been used to build an average of 1,500 homes in each of the 70 villages where MRHP works amounting to a total of over 100,000 homes. Most houses are constructed in the more urbanised villages known as 'trading centres'. These houses have more value because they have the additional potential for commercial use.

This project has equipped many artisans and entrepreneurs with the skills to establish and operate brick-making enterprises. There are now 50 kilns throughout the 70 project villages, 30% of which are run by women's groups. In addition, there is one large permanent kiln.

There are 350 trained artisans working on brick production, five in each of the 70 MRHP working villages. Five people are usually involved during firing a kiln. MRHP has also trained six women in each village in stove production. These women have in turn trained their neighbours and together they have produced and sold about 14,000 stoves since 2000.

The clay and agricultural waste for brick-making are all sourced locally. Using agricultural waste substantially reduces the pressure on the scarce wood supply. Prior to MRHP's work, makers of fired bricks had even started to cut down mango trees as fuelwood. MRHP estimates that the traditional firing of the 3,000 bricks needed for a typical house consumes 1 m^3 of fuelwood; the MRHP entrepreneurs have produced 300 million bricks which has avoided the use of about 100,000 m^3 of wood (roughly 50,000 tonnes). In addition, the agricultural residue is produced sustainably and burning it does not contribute a net amount of carbon dioxide to the atmosphere, unlike burning wood.

Demand for MRHP bricks is also growing in urban areas. The bricks are currently being used in a programme run by one of the national pension funds to construct 3,000 quality houses for retired civil servants and members of parliament. This will raise awareness of MRHP at a national level. There is also demand for bricks to use in constructing secondary schools and in other social housing programmes.

Management, finance and partnerships

MRHP is highly regarded by the Tanzanian Government as a result of developing and promoting local sustainable energy projects with full participation from local communities. MRHP has good links with local government, particularly local planning offices and town planning departments who sometimes second staff to work with MRHP. A range of international organisations have supported and funded the organisation

and it maintains close working links with Universities in Tanzania.

MRHP employs 11 staff on an annual budget of approximately £80,000. About 85% of its central costs and overheads are covered by external funding. Brick-makers work as independent businesses after they have received the initial training and support from MRHP.

How an Ashden Award will be used

The Award will be used to provide further training to women in the use of energy saving stoves and enable further loans to brick-making businesses to construct rain-shelters over the temporary kilns. MRHP will also continue its work on enforcing environmental legislation and promoting tree-planting in the 70 villages where it works.

This report is based on information provided to the Ashden Awards judges and findings from a visit by one of the judges to see their work in Tanzania.

Dr Anne Wheldon, Technical Director of the Ashden Awards
Jeremy Rawlings, Technical Assistant
June 2006.

Click here to return to the list of 2006 finalists.

Coordinator

From: "Joanna Walton" <joanna.walton@ashdenawards.org>
To: "Ashden judges" <joanna.walton@ashdenawards.org>; "2006 UK winners" <joanna.walton@ashdenawards.org>; "2006 International winners" <joanna.walton@ashdenawards.org>; "2005 UK winners" <joanna.walton@ashdenawards.org>; "2005 International Winners" <joanna.walton@ashdenawards.org>; "2001 - 2004 International winners" <joanna.walton@ashdenawards.org>; "2001 - 04 UK Winners" <joanna.walton@ashdenawards.org>
Cc: "Anne Wheldon" <anne.wheldon@ashdenawards.org>; "Danielle Jones" <danielle.jones@ashdenawards.org>; "Martin Wright" <martinw@easynet.co.uk>; "Maya Vaughan" <maya.vaughan@ashdenawards.org>; "Sarah Butler-Sloss" <SarahBS@compuserve.com>; "Juliet Heller" <juliet@julietheller.co.uk>; <victoria.hornby@sfct.org.uk>; <mike.pepler@ashdenawards.org>; <Jane.Howarth@ashdenawards.org>
Sent: Wednesday, April 18, 2007 2:05 PM
Subject: Climate Challenge series on BBC World TV

Dear all,

We thought you would be interested to hear about a series of programmes looking at the challenges presented by climate change which will be shown on BBC World TV in April and May.

We are very pleased that three of the episodes will feature the work of 12 previous Ashden Award winners which is fantastic exposure for them and us.

Robert Lamb, series producer said "Climate change can seem overwhelming, leaving a member of the public asking what possible difference can I make? The Ashden award winners are the best answer I can think of to that question. I was therefore delighted that the BBC was prepared to give us so much airtime to feature inspiring stories from Barnsley to Bangladesh."

The three episodes featuring our winners are:

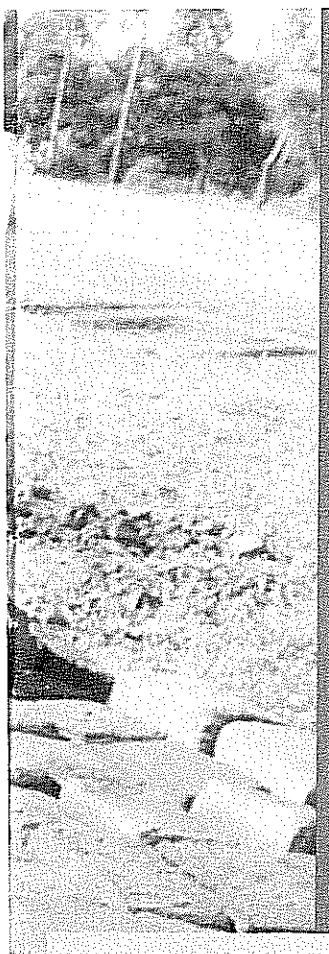
April 25 – 'The Home Front', with **Shaanxi Mothers** from China, **Kirklees** from the UK, **GERES** in Cambodia and **ARTI** in India.
May 2 – 'Doing the Business', with **SEEDS** from Sri Lanka, **IDEI** from India, **MRHP** from Tanzania and **Grameen Shakti** from Bangladesh.
May 9 – 'Bright Ideas', with **Rahimafrooz** from Bangladesh, **Aprovecho** from Malawi and from the UK **Barnsley Metropolitan Council** and **Cassop primary school**.

For full details of broadcast times go to www.oneplanetpictures.co.uk or www.bbcworld.com. To find out more about the projects featured visit our website, www.ashdenawards.org

I know that those of you who are in the UK won't be able to view the programmes but thought you'd like to hear about them.

With best wishes,
Jo
--
Joanna Walton
Communications Manager, The Ashden Awards for Sustainable Energy
joanna.walton@ashdenawards.org www.ashdenawards.org
Tel: + 44 (0) 20 8487 5967 Mobile: + 44 (0) 7958 480 771

DFID - Magazine - April, 2007



While developed nations are struggling to adapt to greener forms of energy which favour the global environment, a series of innovative projects in developing countries are blazing a trail. **Louise Tickle** reports on some of the 2006 winners of the annual Ashden International Awards for Sustainable Energy, rewarding initiatives which tackle climate change and improve quality of life through the generation of sustainable energy at a local level.

and the winner is... the world!

another brick in the wall

Just as in the story of the "Three Little Pigs", villagers in the outlying rural area around Tanzania's second city of Mwanza found that mud and straw weren't the best materials for building a house. Well, not one that would last through the rainy season. As Mzee Isangu of Massawe village explains, "I am tired of rebuilding houses every year."

Though local people had tried to fire more durable bricks out of clay, cutting down the large amounts of wood they needed to fuel their kilns was worsening the area's already extensive deforestation.

So, in 1993, the Mwanza Rural Housing Programme began to develop a solution using, quite literally, rubbish. They observed that rice and coffee husks, maize cobs and cotton waste could be used as fuel for the kilns instead of wood.

"It has taken us 13 years because we had to prove that we had a cheap, effective technology that could be adapted easily," says the MRHP co-ordinator, Mrs Nyanda. "From the inception, the solution had to be ecologically sound, and the method easily learned by brick makers, and flexible so it can be done anywhere, not relying on a big static kiln."

First, MRHP developed a standard mould so that all the bricks could be made to the same specification. This ensured that if successful, brick makers could sell their product to commercial customers beyond just the local market.

After the clay is pressed inside the mould, it's left to dry and a temporary kiln is made by stacking 4,500 bricks in a carefully designed shape to give a uniform firing.

Shredded agricultural waste is then poured through the gaps in the stack and packed around the outside of the structure and a surrounding 'wall' of unfired bricks. After a three-day burn, the bricks are ready for use. The kiln is built entirely in situ, so bricks can be made anywhere they are needed without the cost and carbon emissions of transportation. The burning of agricultural waste is considered carbon neutral while also preventing further swathes being cut through scarce forest resources.

The most obvious benefit, says Mrs Nyanda, is that people can now build cleaner, more durable houses that won't disintegrate in the rainy season. "There is less dependency on factory cement to improve housing conditions, and much better supply of low-cost building materials to social projects such as primary school classrooms, teachers' houses and health centres," she says.

Employment for young people too has increased, and MRHP has a small amount of capital it can lend to brick-makers who train in their kiln-firing methods to help them set up in business. "I have only been working as a brick maker for one year, but with the loan from MRHP I have already made 60,000 bricks, so I have already been able to repay the money, and live comfortably," explains Pius Mzinganzila of Mkolani village, who next year plans to double his production.

MRHP says it still needs to train more brick-makers and ensure continuing quality control, but with 100,000 dwellings already built with bricks made in the project's innovative kilns, whole communities can now direct their energies towards making a living rather than constantly repairing their homes – and depleted forests now stand a chance of regeneration.

to maintain constant levels of humidity deep in the soil, with a small quantity of water. Thanks to this technology, some 400,000 trees (mainly mango and cashew) have been planted in Senegal over the past 15 years. In the past 5 years, the pace has been stepped up even further to an annual rate of 60,000 trees.

Principle of the system: Maintaining constant moisture levels in deep soil, with no risk of water loss

Diagram of an *Irrigasc* system

The technique involves making two holes close to each other. A sapling is placed in the first hole, while a plastic tube pierced with tiny holes and filled with earth is placed in the second. Water is then poured around the tube and into the tank positioned at its upper end. The water filters out through this process eliminates the risk of hydric stress, a problem which causes significant losses and massive wastage of water. The success rate of over 95% enables farmers to count on a guaranteed source of income. Producers sign contracts pledging to maintain plots of land or to plant between 150 and 500 trees. In exchange, they receive assistance from local plantation managers who supply them with saplings, tubes and instructions on how to use the irrigation system.

Encouraged by these results, womens' groups are planning to set up on-site processing initiatives to turn the fruit from the trees into, for example, concentrated mango juice and dried mangos.

Photo: © D Fagot

Contact: Jacques Gasc
BP 3974
Dakar principal
Senegal
irrigasc@orange.sn
or irrigasc@sentoo.sn
www.irrigasc.com

□ Sustainable bricks

Tanzanian communities are making sustainable bricks out of clay, using kilns fired with agricultural residues such as rice husk and cotton waste. The Mwanza Rural Housing Programme has trained villagers in northern Tanzania to set up enterprises which have so far made enough bricks to build over 100,000 homes in 70 villages, with greatly improved comfort and durability. Houses in these rural areas are usually made from mud and need frequent repairs and rebuilding as they are easily damaged by heavy rain and minor earth tremors.

Mwanza Rural Housing Programme
PO Box 2745
Mwanza
Tanzania
coordinator@mrhpngo.org

□ From cotton to water melons

Farmers in Bunyaruguru County in Southern Uganda's Bushenyi district are turning to growing water melons to replace their traditional cotton crop. Cultivation of watermelons (*Citrullus vulgaris*), whose inputs are less costly than those of cotton, is part of a diversification strategy being adopted by many local farmers. Local NGOs are providing producers with seeds and basic tuition.

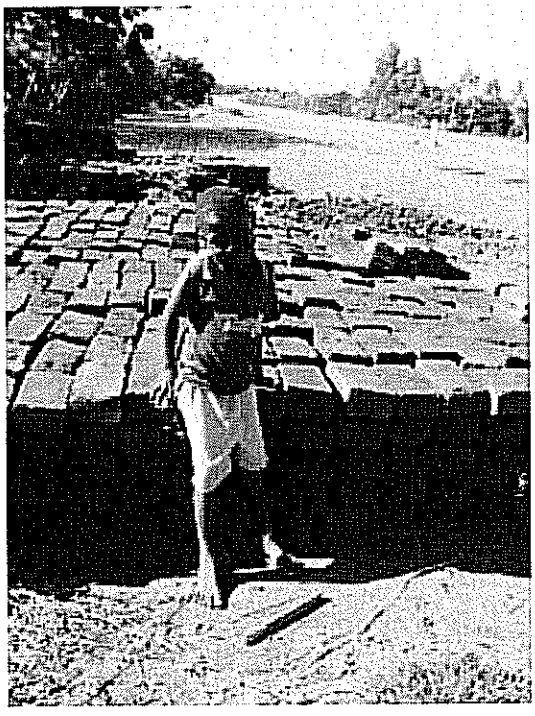
□ Trapping a mango pest

The red banded mango caterpillar (*Deanolis sublimbalis*), a serious mango pest in Papua New Guinea (PNG), can now be controlled using a new trapping technology. The technique involves the use of a pheromone, the scent released by insects in response to sex or food. Pheromone is placed in a trap hung in a shady canopy and remains active for 4-6 months. An average of 90 moths can be caught per trap, significantly reducing damage levels to the fruit. The technology was developed by researchers from Australia, New Zealand and the National Agricultural Research Institute (NARI) in PNG and is now available to farmers.

NARI
Sir Alkan Tololo Research Centre
PO Box 4415
Lae, Morobe Province
Papua New Guinea
Fax: +675 475 1450
narlhq@narl.org.pg

SPORE - MAGAZINE ⇒ Sharing knowledge, improving Rural livelihoods."
#128 April 2007.
www.spore.cta.int

Mwanza Rural Housing Programme, Tanzania



Bricks fired in kiln fuelled by agricultural waste, Tanzania

House built using bricks fired in an MRHP-designed kiln, Tanzania

Coordinator

From: "Coordinator" <Coordinator@mrhpngo.org>
To: "Charlie Bwanausi" <cjmalawi@yahoo.com>
Sent: Thursday, June 21, 2007 9:13 AM
Attach: MRHP woodless kilns and rural housing improvement.doc
Subject: Re: Sustainable Bricks

Dear Charlie,

Thank you very much for your reaction to this article. MRHP has appeared in many articles. We were rewarded first African ASHDEN award prize in year 2006 for promoting production of sustainable bricks. I remember a few years ago a high delegation of Malawi visited MRHP to come to learn how we have promoted rural Housing- They found us experimenting on the kilns. We are happy to say this was successful and we are telling everybody that this is possible. Our product is firing bricks using woodless kilns- the kilns are firing brick by use of Rice husks , cotton waste and coffee husks. Every village can try this.

Please receive the technical paper and also the photos of the kiln-and welcome to Mwanza tanzania to see for yourself. Please acknowledge and tell more about yourself. What do you do in Malawi.

Regards,

A.E Nyanda (mrs)
MRHP Coordinator

> ----- Original Message -----
> **From:** Charlie Bwanausi
> **To:** coordinator@mrhpngo.org
> **Sent:** Wednesday, June 20, 2007 12:54 PM
> **Subject:** Sustainable Bricks
>
> I read an article about sustanable bricks in spore magazine.
> I would like to know more about these clay bricks since the article was so brief.
> I am a Malawian from rural Lilongwe district.
>
> Charles Bwanausi
> Lilongwe
> Malawi
>
> ---
>
>

Coordinator

From: "Coordinator" <Coordinator@mrhpngo.org>
To: <whd@unhabitat.org>
Sent: Friday, June 22, 2007 9:40 AM
Attach: MRHP woodless kilns and rural housing improvement.doc; Tanzania Ashden Awards Media Release.doc
Subject: Re: MRHP_NGO presentation to Habitat Scroll of Honour award 2007

Dear Sir/Madam,

Please receive herewith another file of technical presentation of woodless kilns that has made a big impact on Housing in Mwanza city and beyond on the production of sustainable bricks. Cement from Tanzanian factories prices are too high- more people are switching to MRHP fired bricks-fired using rice husks. Tanzanian Victoria lake zone has no cement factories. Housing situation in this area has changed abruptly starting year 2000 because of the invention and adoption of the woodless kiln. (see photographs in the documment). This is a technology worth spreading.
I have also attached a media release after winning 1st African ASHDEN prize in London on sustainable energy 2006.

A. Nyanda (Mrs)
MRHP Coordinator.
P.O box 2745
Mwanza
Tanzania.

> ----- Original Message -----
> **From:** Coordinator
> **To:** whd@unhabitat.org
> **Sent:** Friday, June 22, 2007 9:15 AM
> **Subject:** Fw: MRHP_NGO presentation to Habitat Scroll of Honour award 2007
>
> See attachment
>
> ----- Original Message -----
> **From:** Coordinator
> **To:** whd@unhabitat.org
> **Sent:** Thursday, June 21, 2007 6:28 PM
> **Subject:** Re: MRHP_NGO presentation to Habitat Scroll of Honour award 2007
>
> Dear sir,
>
> Please acknowledge receipt of the files. I am trying to send a film . It will come to you soon.
>
> MRHP - Coordinator.
>
> > ----- Original Message -----
> > **From:** Coordinator
> > **To:** whd@unhabitat.org
> > **Sent:** Thursday, June 21, 2007 6:07 PM
> > **Subject:** MRHP_NGO presentation to Habitat Scroll of Honour award 2007
> >
> > TO: World HABITAT Day Coordinator
> > Information services Section
> > P.O Box 30030
> > Nairobi, 00100
> > Kenya

Dear Sir/Madam

Please receive herewith two technical papers as presented by Mwanza Rural Housing Programme MRHP - NGO to show description of the organization and detail of MRHP achievement for the last 15 years. MRHP presented the same achievement to London Last year 2006 and was awarded 1st African ASHDEN award prize for sustainable Energy. Since then MRHP has appeared in different papers and also appeared in BBC worldTelevision on CLimate change series in the Month of May 2007.After Presentation in London (and Press release see attachment) MRHP has been reached by many national & international organizations seeking for advise and knowledge on the use of woodless kilns . We would like HABITAT to hear our story for it is true,sustainable and replicable to many countries in Africa and Asia. We would be encouraged, honored and happy if we shall be considered as one of the candidates to be nominated for Hahitat Scroll of Honour for the 2007 award.

Regards,
Ashililya Nyanda (mrs)
MRHP Coordinator

Coordinator

M.R.H.P.
Received

From: "Coordinator" <Coordinator@mrhpngo.org>
To: "Thomas, Terence" <T.H.Thomas@warwick.ac.uk>
Sent: Monday, May 21, 2007 5:48 PM
Attach: MRHP woodless kilns and rural housing improvement.doc
Subject: MRHP woodless kilns

Dear Thomas,

Please receive this report I prepared for TED-GLOBAL Africa 2007-Arusha. TED is a Network of innovators and great world thinkers. The Network is located in Dc Washington -this year they will have a three day conference in Africa and for that matter Arusha. I shall try to tell MRHP story of housing and environment especially the woodless kilns. you can also browse TED website. Uganda can use coffee husks as alternative to fuelwood. Masaka Parish in Uganda under further Simon are using coffee husks-try to visit Massaka Uganda

Please acknowledge.

Kind regards,

A.E Nyanda
MRHP Coordinator.

----- Original Message -----
From: Thomas, Terence
To: coordinator@mrhpngo.org
Sent: Thursday, May 17, 2007 1:06 PM
Subject: Brick-making

Dear Mrs Ashililya E. Nyanda,

I saw your name, organisation and programme on the web page of 'Ashden Awards' - you got the award last year and I have connections with this year's winner (from Philippines).

I have some interest in bricks in East Africa, although my 'base' - where I spend 3-4 months a year - is Uganda not Tanzania. I have however visited Mwanza a couple of times, most recently in 2006, and like taking the boat to Bukoba. I have a mature Tanzanian PhD student from Dar working on characterising 'mortarless interlocking bricks', as are becoming rather popular on the coast. (He also took me to see such housing in Singida).

Clamp-fired bricks have 'swept' East Africa in the last 30 years, although they are less common where brick kilns are established or where firewood is short. So I have for some years looked more at cement-stabilised-soil bricks and blocks, where the energy is put in at the cement works and then one tries to minimise cement use. That minimisation includes accurate and 'pressurised' moulding, though the pressure may come from impact - as in the slam-down-lid brick moulds you see all over Africa. In Mwanza I noticed multistorey town buildings were mostly using hollow cement blocks (7 parts sand: 1 part cement I guess) . Otherwise NW Tanzania seems keen on a triple-brick style (alternating 3 slim bricks laid horizontally with 3 laid on edge) which style however disappears instantly as you cross the Mutukula frontier.

In Uganda there is a huge and unnecessary consumption of cement mortar used to plaster and to lay fired-brick walls. The layer between bricks is often 3 cm thick - and ugly! I am therefore interested in reducing cement usage for laying bricks (via using more accurate bricks?), reducing energy use in firing bricks (can we miniaturise energy-recovery kilns like they use so widely in India) and can crop waste replace wood? In my favoured part of Uganda, the West, deforestation hasn't yet really pushed up wood prices too far, but it will. However there may not be so much crop waste in that matooki zone and some people in any case would argue that burning wastes is unwise where agriculture relies entirely on recycling of nutrients by organic methods.

As you see - lots of interesting issues, however I am more a researcher than an implementer! What I do implement is roofwater harvesting, but that is another technique within the compass of more sustainable housing. Incidentally one can make water tanks from stabilised soil blocks, though it isn't normally the cheapest technique.

I am writing mainly just to introduce myself and explore whether we have sufficient common interests to somehow collaborate in the future.

Yours sincerely

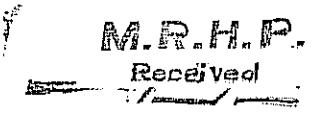
Terry Thomas

[Our web site www.eng.warwick.ac.uk/dtu has a section on building materials, but I regret that section hasn't been updated for several years and is not very useful.]

Programme Coordinator
Mwanza Rural Housing Programme
P.O Box 2745
Mwanza
Tanzania
Tel: +255 744 88 41 30
E-mail: coordinator@mrhpngo.org

Coordinator

From: "Coordinator" <Coordinator@mrhpngo.org>
To: "dilip pawar" <raby28@yahoo.co.in>
Sent: Tuesday, June 19, 2007 3:35 PM
Subject: Re: afro-india trade magazine india



Thank you I shall do so. With email India is here in my office.
Pass my greetings to your coleagues.

Mrs nyanda

----- Original Message -----
From: dilip pawar
To: Coordinator
Sent: Tuesday, June 19, 2007 2:56 PM
Subject: Re: afro-india trade magazine india

DEAR NVANDA
THANK YOU FOR YOUR RESPONSE PLEASE SEND ME EXACT REQUIREMENT QUANTITY SO I CAN TELL THE SOLAR PEOPLE TO CONTACT YOU .
REGARDS
DILIP

Coordinator *<Coordinator@mrhpngo.org>* wrote:

> Dear Dilip,
>
> Our interest was to obtain solar energy equipments (eg pvc)and items like solar batteriesetc.from your country.
> These iterms are still too expensive for poor communities in Tanzania. We would like to promote solar energy in our rural working area
>
> Regards,
> nyanda
>
> > ----- Original Message -----
> > **From:** dilip pawar
> > **To:** Coordinator
> > **Sent:** Tuesday, June 19, 2007 2:03 PM
> > **Subject:** Re: afro-india trade magazine india
> >
> > dear nyanda i recived ur write up we will publish this in the coming june july issue , i want to say u are doing a very good work in your country and i really support it, i will make it apoint to put up ur write up to other magazine in india also.
> >
> > to say abt afro-india trade magzine u will see some good companies from construction industry from india and there is a company involved in roof tiles making one NGO organisation from zambia has also approched this manufacturer after seeing there information from afro-india trade magazine, hope this roofing tiles machines also helps ur development plan.
> >
> > please tell me if you need any information from my end on any prodcut or some latest

innovation that are cost effective and that can help in the good cause .

meantime iam sending one copy of my magazine to you and expect that u also promote the magazine thru your end that can reach the people who need information.

Thanking you

Regards'

Dilip Pawar
0091 9324319221

Coordinator <Coordinator@mrhpngo.org> wrote:

dear dilip pawar,

Thank you for this email. I shall bring a technical report of MRHP to familiarize ourselves and then you will need to summarize it for yourself. Also spme photos of woodless kilns will also come.

Ashililya Nyanda
MRHP Coordinator
Mwanza - Tanzania

---- Original Message ----
From: dilip pawar
To: coordinator@mrhpngo.org
Sent: Tuesday, June 19, 2007 11:24 AM
Subject: afro-india trade magazine india

dear madam it was nice talking to you today, we are from afro-india trade magazine , this magazine goes allover africa and india, we highlight the opptunities, in africa and india , we also would like to highlight the work of your organiastion in rural development area.

please do send us some infromation on the same.

regards
dilip pawar
publisher
afro-india trade magazine
www.afro-indiatrade.com