

THE INTEGRATED SOLAR COOKER PROJECT - RWANDA, AFRICA

A Pilot Project: July 5, 2003 to August 12, 2003

IT was the insightful persistence of two Rotarians from the Rotary Club of Kigali, Rwanda who visited our Integrated Solar Cooker Booth at the RI Convention in San Antonio, Texas 2001. Their enthusiasm and belief in the integrated cooking method and simple technique for water pasteurization and what this would do for their people devastated by a civil war and genocide was recognized by the Rotarians of their club. It took two years of planning and perseverance on their part to welcome four experts (two of which are Rotary Volunteers) to initiate a Pilot study in Kigali, Capitol of Rwanda. The goal was to do two 5 day workshops and one 3 day workshop in a mountain village, Cyohoha, with follow up visits. The Pilot study was funded by a New Opportunities Grant from Rotary Foundation.

Rwanda, “the land of a thousand hills” is slightly smaller than the state of Maryland, a nation of 8 million people where 88 percent live in abject poverty in rural areas barely making it on subsistence farming without any form of mechanization. An average family of 8 burns 10 pounds of wood per day which means that the equivalent of 5,000 tons of firewood is burned per day. The population in Rwanda is expected to double by the year 2020, and the firewood requirements are calculated to be 10,000 tons per day. Imagine the constraints on land available for fuel-wood and huts as large numbers of Rwandans are returning home from their exodus to nearby countries. In the city of Kigali, 80 percent of the cooking is done with indoor charcoal fired stoves! Rural families sometimes use green fire wood and agricultural waste, causing severe lung and eye disease.

This country was devastated and almost destroyed by the civil war and the madness and brutality of genocide that occurred in 1994. President Paul Kagame, a highly respected, good man has managed to bring stability to his beloved country, encouraging foreign/domestic investment, improving health care and education, and assistance for the victims of the Genocide. He firmly believes and espouses "this nation must seek peace and reconciliation and the sharing of political power. He consistently reminds his people that "we are all Rwandans". The countrywide first party elections held on August 25, 2003, retained President Kagame by a vote of 94 percent! The election process was peaceful and a showcase of how far the country has come since the 1994 slaughter.

The 5 day workshops were held in a classroom at the Kigali Institute of Science, Technology and Management, KIST. Twenty-four

adult people were trained from a network of 41 groups formed after the war to deal with the horrendous problems facing the Rwandan people. Groups are called "Community Reintegration and Development or Ministry of Women Development"- all designed to assist in income generating and vocational/technical assistance. There were 2 pre-selected from each group and the class was divided equally between men and women.

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The Integrated Cooking method was taught and demonstrated daily as well as water pasteurization. First method was Solar cooking using local foods, pots and heat resistant bags in the simple cardboard CooKits (solar energy). Secondly, the use of the newly made 'rocket stoves' generating a small hot fire to cook foods completely or pots of food that would be cooked for short periods of time and then be tucked into the Third element of our cooking method, the haybasket/box - a type of Thermos that could finish the cooking of food in two to three hours or keep food from the CooKits very warm for eating several hours later. The 3 parts of this integrated project are made from local materials. Workshop participants employed "Hands On" instructions. They crafted solar cookers, the six brick 'Rocket stove' by plunging their hands into a big tub of clay and sawdust, spreading this mix into wooden brick moulds and turning these bricks out to dry. A skirt was made from corrugated roofing material to reduce wind effect and capture the heat rising from the fire around the pot. This is a highly efficient stove that saves 75 percent wood. The Haybasket is a vital link in this project. It can be made with local baskets or by using large cardboard boxes with 2-3 pillows inside stuffed with dried grass, sawdust, newspapers, blanket pieces, etc. The three workshops attracted attention and many visitors who observed and tasted solar cooked food. Water pasteurization was taught by using a simple 'wapi', a 2 inch piece of plastic tubing with soybean wax inside on a weighted string. The wax melts when the pasteurization temperature (65C) is reached. The trainees received "Certificates of Completion" at the grand closing ceremonies conducted by well known members of the academic communities and government ministries. The Trainees are encouraged to practice and use their new skills during each week to prepare them for their workshops in the rural areas beginning September, 2003. As Trainers, we feel very proud and excited about this Pilot Study. It has begun to bear fruit.

The American Ambassador to Rwanda, Margaret McMillion graciously accepted an invitation to officiate at the closing ceremony of the last workshop, and was very impressed with the simplicity and appropriateness of the technologies. (copy of letter enclosed)

The Rotary Club of Kigali is totally supportive of the project with their positive attitude, generosity of spirit, and readiness to assist us in any way. Their recognition of the needs of their fellowman plus their business/political connections will serve this project well. The Pro Femmes (the umbrella org. for 41 groups and acting NGO) as well as the Rector of the Kigali Institute of Science, Technology and Management (KIST) have committed their manpower, skills and resources to implement this project. KIST will not only make it a part of its Appropriate Technology Department curriculum but will add additional funding and staff to support it. They stand ready to become the resource center for technical skills in teaching, researching and developing many types of solar cookers and expanding the use of fuel efficient stoves and making the 'wapi' for water pasteurization use. This will be a great help to the many groups and agencies throughout Rwanda working with orphans, widows, elderly, homeless, handicapped and those who are seriously ill.

In February 2007 four container loads of wheelchairs (1200) were delivered to all five Provinces of Rwanda to patients who suffered from land mines, Polio, Genocide, and road accidents. Many are learning technologies, and have a self worth with new hope. Integrated Cooking workshops are taught by local women and men with the rocket stove being the official adopted stove to save wood.

There are many challenges and difficulties facing the Rwandan people, however they are committed to the call of their President and hold on to hope and trust in God.