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ПРОГРАММА ОРГАНИЗАЦИИ ОБЪЕДИНЕННЫХ НАЦИЙ ПО ОКРУЖАЮЩЕЙ СРЕДЕ

INVESTING IN IMPROVED STOVES IN HAITI

DISCUSSION PAPER JULY 2010



All comments and queries regarding this paper should be addressed to:

Megan.rapp@unep.org and Maximilien.pardo@unep.org, copying Andrew.morton@unep.org

1. INTRODUCTION

1.1 The rationale for this discussion paper

Since the Haiti earthquake of January 12th 2010, the United Nations Environment Programme Haiti office has been facilitating coordination on a range of issues linked to both relief and recovery and natural resource management. This work included the creation and facilitation of a Haiti Improved Stoves Technical Working Group which has met several times in Port au Prince in Q2 2010.

At present substantive short term investments (approximately US\$ 1 million over 12 months) are ongoing in Haiti in the subject area/field of improved cooking stoves. This work is at present largely financed by humanitarian organisations and is occurring in the absence of any centralised thematic plan or substantive government engagement. Initial meetings of the organisations active in this field have resulted in the development of the informal working group. Input from the group and some limited research by UNEP have identified several clear needs and areas for improvement:

- Government engagement and leadership on policy;
- Improved coordination and impact of activities during the relief phase;
- Integration of the lessons from past efforts in this field in Haiti;
- Integration of the lessons and best practices from other countries;
- Development of a clear way forward for the field in the medium to long term;
- Securing resources for a longer term programme.

In the opinion of UNEP these needs cannot be addressed through the actions of one or two parties over a few weeks. Instead they will require concerted effort by a significant number of diverse organisations over a period of 4-6 months.

UNEP is committed to the promotion of improved stoves in Haiti as one logical part of a broader strategy for clean energy and hence is volunteering to continue to play the role of facilitator for activities within this field. However for a range of good reasons the Government of Haiti needs to be fully engaged in this field and ideally lead both the coordination efforts and the policy and planning debate. At the same time, policies and plans need to be developed with the input and ideally the agreement of implementing organisations, including the private sector.

Hence the short term goal of UNEP in this field is to facilitate government leadership of a multi-stakeholder dialogue that will rapidly and efficiently address the needs noted above.

To initiate this dialogue UNEP has developed this discussion paper, which is designed to:

- Inform active and interested organisations of the status of activities in this field in Haiti;
- Suggest a short term and long term way forward;
- Form the basis for an organised consultation process and a stakeholder meeting proposed for the period 17th – 18th August in Port au Prince.

Prompt and practical action is essential in the context of the post-earthquake recovery. In this context, UNEP looks forward to an in depth debate and planning process which is then translated into practical action before the end of 2010.

1.2 Defining Improved Stoves and the focus area

The subject area of improved stoves is potentially very broad: it touches upon issues as diverse as engineering design, food security, land use management, gender, urban and rural livelihoods and climate change mitigation.

This subject breadth can potentially work against clear planning and focused action, hence the first recommendation is for organisations working in the field of improved stoves to understand the broad context but nonetheless tightly focus their own actions towards agreed goals for this specific field.

Other issues can and will be managed in other fields – it is important that such thematic activities are coordinated at the higher level, but it is not critical and in fact it is inefficient and can be very counterproductive for activities in all fields to be tightly interconnected on a day to day basis.

There is no formal global definition of an “Improved Stove” and hence no formal definition of the subject area. For clarity, UNEP is using the following informal definition for its activities in Haiti pending an agreed formal definition:

Improved stoves - Domestic and institutional cooking stoves that use biomass (charcoal, wood, paper or vegetable matter) and are designed to maximise thermal and fuel efficiency, operate safely and minimise emissions harmful to human health.

Hence this definition excludes stoves that use hydrocarbons: LPG, kerosene, ethanol. Such stoves do have a place in a broader clean energy strategy, but are not addressed here.

This definition also focuses on the demand side of the biomass supply chain. The Haitian user of a charcoal burning stove is at the very end of a currently destructive process of natural resource exploitation. The chain extends from tree cutting to charcoal production, wholesaling, transport, retailing and charcoal consumption. These supply issues are important and need to be addressed as part of a comprehensive strategy for addressing clean energy access and sustainable land management – but cannot all be addressed through improved stove initiatives.

A further item for discussion is the focus within the broad field of improved stoves on either generic technical development or nationally focused objectives. Technical development work on improved stoves has been ongoing in multiple countries for over thirty years – there is absolutely no need for Haitian organisations to replicate this work. Instead UNEP recommends a focus on the introduction of already proven technologies to the Haitian population. Technical development work should be confined to fine tuning existing designs and processes to the Haitian context.

In summary, as the first point of discussion, UNEP recommends that the focus area of activities in the field of Improved Stoves in Haiti is: ***The sustainable and large scale expansion of the market share of improved stoves in Haiti through the replacement of existing basic stoves and open fires.*** Such activities need to be well informed by and influence the larger discussions on Haitian livelihoods, food security, environmental health and sustainable natural resource management in Haiti.

2. NATIONAL BACKGROUND

1.2 Post Earthquake Relief, Recovery and Development

Activities in the improved stoves field within Haiti for the next few years will take place against a complex background of disaster relief, recovery and development.

Relief For relief, as of June 2010, over 1.5 million remain displaced from the earthquake and over 1 million are dependent on food aid. Many of the displaced are located in over 1340 camps of variable size and formality. A large scale humanitarian programme is addressing basic needs; however securing adequate shelter and sanitation remains very difficult.

Recovery For recovery, as of June 2010, the general direction of the recovery has been laid out in the Haitian government Plan D'Action de Relevement and Development National (PARDN). The document includes the environment as a cross-cutting issue needing coordination and priority. The PARDN section of Restarting the Finance Sector and Recovery Underwriting has potential to include the alternative energy sector as a significant component.

Development For long term development, the relevant needs are possibly best expressed in terms of access to clean and reliable energy. Less than 10% of Haitians have access to reliable electricity and nearly 80% of cooking and heating needs are supplied by fuel wood and charcoal. A major investment programme in electricity access is proposed but as yet unfunded and plans for expansion of the LPG market are at an early stage. Hence it is expected that biomass will remain the dominant energy source for many years to come.

2.2 Haitian needs and opportunities

Improved stoves offer a multi-thematic solution to multiple problems or needs. In the Haitian context, improved stoves initiatives have the potential to partly address the following four needs:



Charcoal for sale in a Port-au-Prince market

Reducing a major driver of deforestation: Haiti suffers from severe deforestation, with forest coverage in the country estimated at less than 2% of national territory. Over 70% of Haiti's energy needs are met by charcoal and firewood, contributing significantly to the country's deforestation. Households are the main consumer of wood fuels, consuming approximately 70% of the country's energy supply. Charcoal remains the most commonly used fuel source in households, putting further pressure on the country's problem of

deforestation. Improved cook stoves using charcoal more efficiently or technology using alternative fuel sources for cooking provide opportunities to decrease the demand of charcoal and thereby reduce one major driver of deforestation.



Haitian man making Eko Recho

Livelihood generation in urban areas: Haiti is the poorest country in the Western Hemisphere where out of its 9.92 million inhabitants¹, few are employed in the formal sector and 54% of the people live on less than USD 1 a day and 78% live on less than USD 2 per day². Government of Haiti reports stress the importance of job creation programs and projects. Involving Haitians in the production, distribution, marketing, design, management, and implementation of improved stoves initiatives could support governmental objectives of job creation and

livelihoods development. Many Haitians work in the informal sector, and the inclusion of a Haitian labour force in improved stoves initiatives will assist with state capacity building and economic development.



Charcoal being sold in a market

Reducing households cooking costs: Improved stoves which require less charcoal to cook the same amount of food can help relieve some of the pressure of the expensive fuel for Haitian households.

Haitian charcoal can be purchased in various quantities: large sacks, medium sacks, small sacks, marmites, and/or sachets. Many families purchase charcoal by marmite, a measurement roughly the size of a coffee can. Marmites cost between 10 and 30 gourdes, depending on where the consumer purchases the marmite. One marmite cooks one meal; therefore, daily family fuel expenses using marmite purchases cost between 10 and 90 gourdes.

Hence charcoal expenses can cost each Haitian family anywhere from USD 0.25 to 2.25 per day. When 54% of the population lives on less than USD 1 per day, fuel costs on this scale are extremely important.

Reducing indoor air pollution Indoor air pollution resulting from wood fuel fires is globally an important source of health problems for the rural and urban poor. Wood smoke and carbon monoxide from the incomplete combustion of wood causes chronic respiratory and eye problems. Improved stoves for fuel wood generate lower volumes of these harmful emissions, helping reduce avoidable health problems.

¹ Institut Haïtien de Statistiques et d'Informatique (IHSI), May 2009.

² Haiti Regeneration Initiative

2.1 Haitian Improved Stoves background

Some improved stoves currently or previously in use in Haiti include the EcoRecho, Eko Mirak, Bip Ti Cheri, Eko Ayiti, Rocket Stove, and a StoveTec hybrid. However, these stoves have only a very limited market share. Traditional charcoal burning stoves are predominately used in urban areas and wood-burning stoves in rural regions.

Traditional charcoal stoves in Haiti are thermally inefficient and demand that families use large amounts of expensive charcoal to cook meals. Traditional stoves cost between USD 3 and USD 10 and are not durable, lasting between 3 and 24 months.

Improved stoves initiatives are not new in Haiti. From 1983 to 1986, a collaborative project with the Centre de Recherche en Développement International (CRDI), Haitian Government, and World Bank developed the “Recho Mirak” improved charcoal stove. CARE Haiti and the Bureau des Mines et de l’Energie (BME) in the 1990s further promoted the “Mirak” stove, and from 2007-2009 a World Bank project produced and sold at a subsidized price over 30,000 “Mirak” stoves. 80,000 improved stoves using LPG called “Bip Ti Cheri” were sold from 1990-1993 under a Shell Haiti project. Improved stoves projects are not unique to Haiti, and many global models and projects can be drawn from for best practices. It is necessary to use best practices and lessons learned from Haiti as well as globally when designing and implementing a project.

Following the earthquake of January 12, 2010 thousands of improved household stoves have been distributed in the internally displaced persons (IDP) camps, and there are many plans for long-term investments in market promotion of improved stoves. UNEP has generated a Who-What-Where matrix for improved stoves in Haiti through a process of enquiry in Q2 2010. The results to date indicate no less than 23 active institutions and no less than 5 designs for wood, plant fibre and charcoal burning household and institutional stoves.

Improved stoves are either produced locally or imported and then distributed or sold in the market. Some local producers include D&E Green Enterprises, which currently has the capacity to produce 600 EcoRecho improved charcoal stoves per day and can be sold for between USD 6 – USD 12. D&E is currently forming partnerships to increase production and distribution of improved stoves. A second local producer is Eko Ayiti, who uses local material for the stoves and briquettes as a fuel source on a small scale. Other producers import stoves from India and China which are high quality, energy efficient stoves. StoveTec and Prakti stoves are currently in Haiti, and Envirofit may soon be imported.

The “Mirak” improved charcoal stove was introduced in the 1980s and still exists in some Haitian households around the country. However, many of the “Mirak” stoves are copies and not fuel-efficient. It is estimated that approximately 20,000 Recho Miraks exist in the country.

It is estimated that about 30,000 improved stoves are currently in the market, including the 20,000 Recho Miraks³. By the end of December 2010, between 10,000 and 20,000 improved stoves will have been distributed in camps.

Further details on the current improved stoves market are provided as Annex A.

³ See Annex A

2.5 Recent stakeholder feedback on improved stoves

At the 17 June 2010 Improved Stoves Working Group meeting, partners identified coordination as a need on the ground. WFP and the Women's Refugee Commission in March 2010 recommended an integrated, coordinated strategy around stoves to be developed as well, suggesting the inclusion of UNEP and WFP as coordinators.

As a part of this coordination strategy, partners identified the potential for a Stove Resource Centre with an online platform and physical location as one practical coordination activity. This Stove Resource Centre could serve as a neutral, centralized location where stoves could be tested, data collected and analyzed, best practices and lessons learned implemented, and technical expertise found. Partners also identified that a coordination focal point and website strategy where partners can find financial and technical resources would be beneficial.

Partners also identified market-oriented activities promoting improved stoves as essential. A market for stoves which includes choice, warranties, and high-quality products must be encouraged, instead of only distributing improved stoves for free. Assisting consumers to receive access to credit for the initial purchase of improved stoves must be explored. Carbon finance as a source of funding may assist with keeping high quality improved stoves available at low prices, and research on the sustainability of improved stoves projects funded on carbon credit is needed.

Partners explained that distributions of stoves in the internally displaced persons (IDP) camps are necessary in the short run; however, long-run efforts must have an element of market behaviour and commitment to the project to deliver sustained benefits. Along with market-oriented activities, effective marketing and integrated educational initiatives must run in parallel to improved stoves projects.

3. SUGGESTIONS FOR THE WAY FORWARD

3.1 Context

For the field of improved stoves in Haiti, no single party currently has the mandate or capacity to force plans and directives onto the field as a whole. Large scale and sustainable improvements in this field will be secured only through an inclusive process, where policy makers, implementers and facilitators collaborate to jointly develop and then deliver on national scale plans.

In this context, UNEP is offering a range of suggestions for discussion, including proposed next steps.

3.2 Strategic options for the way forward

Three different strategic models have been developed and reviewed for the way forward:

1. **Business as usual** The baseline alternative is to continue with small-scale ad-hoc improved stoves initiatives which provide minimal impact to the greater Haitian population. This alternative has few benefits.
2. **Coordinated business as usual** This alternative entails a centralized, neutral organization overseeing and attempting to coordinate the improved stoves network in Haiti. This could be managed by the Government of Haiti and/or an international agency such as UNEP. This approach will deliver some benefits but has significant limitations – essentially existing inefficiencies will continue and economies of scale will not be possible. It does have the benefit of immediacy; this is already occurring via UNEP facilitation and can continue without interruption.
3. **National Programme** This alternative entails a fundamental and collective rethink of the approach to investment in improved stoves in Haiti. A large number of organisations would be engaged in the development and then implementation of a new strategy via annual or multi-year joint work plans. All future activities within the sector would be linked to the strategy and conflicting and duplicative efforts strongly discouraged.

The suggested way forward is to combine models 2 and 3: continue Coordinated business as usual and in parallel work on its replacement with a National Programme no later than end 2010.

3.3 2010 Interim Programme

If the above suggestion is adopted, Q3 to Q2 2010 will be a very fluid and busy period for the field of improved stoves. Nonetheless it is considered important to try to structure the work and to develop realistic interim objectives. The suggested structure with associated objectives is as follows:

A. Coordination – Coordination and information sharing for activities in this field.

Objective: All organisations significantly engaged in this field are members of the working group and have access to the information resources provided.

B. Relief project implementation – rollout of relief funded stove projects to the earthquake impacted population before end 2010:

Objective: Complete all freely supplied relief stove projects by end 2010, delivering stoves to *X* earthquake impacted households and *Y* schools (***cumulative targets to be developed by collation and agreement with implementing organisations***);

C. Interim research and development – ad hoc activities which will contribute to programme design beyond end 2010;

Objective: Joint interim research and development activities completed and published (***activities and targets to be provided and agreed by implementing organisations***);

D. 2011+ Programme development – Joint planning, design, consultation and resource mobilisation.

Objective: Government launch of a broadly endorsed Haiti Improved Stove Programme document;

E. 2011+ Resource mobilisation - Securing financial resources for a longer term programme

Objective: The 2010 – 2011 Work Plan of the Programme has secured 50% of its proposed budget by end 2010.

3.4 Suggestions for the Programme Strategy 2011+

Suggestions for the 2011+ strategy at this early stage are provided below as a series of bullet points. In its role of facilitator, UNEP would be pleased to debate these points, receive other input from partners and reformat the suggestions into a coherent draft strategy. The government of Haiti should also be active in this process and take ownership of the strategy drafting and finalisation process as soon as possible.

Suggestions to include in the strategy for 2011+:

- **Formalise the strategy with controlling documents** The discussions, draft documents and designs need to have a formal end point and written products to allow for a move from planning to large scale implementation. The suggested documents are a) A Strategic Framework, which provides the background, strategy and overall framework and b) Work Plans (normally 1-5 years) and other Annexes which provide the substance. All of these should be in place by end 2010.
- **Set ambitious but quantifiable goals and objectives** The programme should be designed around a Results Based Management framework – identifying the baseline and then setting ambitious but clear quantifiable goals, objectives and performance indicators. In the absence of a baseline the following goals are suggested for discussion and to assist in programme outline design:
 - **Goal - December 2013:** 250,000 improved stoves in use and a local manufacturing industry well established.

- **Goal 2020:** 1 million improved stoves in use, supplied by local industry and government regulated with international assistance limited to part financing by the global market in carbon credits.
- **End relief activities and convert to recovery** It is suggested that all pure humanitarian relief stove projects are completed by end 2010. Stove projects aimed at the impacted and vulnerable populations continue and expand, but within a recovery framework.
- **Expand to a national scale** Planning and implementation should move from the earthquake impacted regions to a national scale. Within this national framework, local and regional priorities need to be identified and addressed.
- **Clearly map out long term organisational roles and responsibilities** Organisations within the improved stove field can be divided into six main groups: 1. National government, 2. Inter-governmental organisations, 3. International donors, 4. Non-governmental organisations, 5. Private enterprises and 6 Stove users/ Beneficiaries. Each group is best suited to particular roles and an effective strategy will recognise this.

The appropriate roles and responsibilities for each organisation and each group will need to be carefully negotiated and defined. To start the discussion UNEP suggests the following:

- Policy and plan development – All, via a participative process
 - Policy and plan formalisation – Gov. Haiti.
 - Coordination chair – Gov. Haiti
 - Coordination facilitation – UNEP and WFP
 - Lead technical research and development – One international NGO with national presence and mandate provided by the Gov. Haiti.
 - Assistance programme management – UNEP and WFP, but only if truly needed, otherwise direct management by implementing organisations.
 - Assistance programme implementation – Multiple international NGOs with national presence and mandates provided by the Gov. Haiti.
 - Private enterprises – stove manufacturers, distributors and retailers and partners in the assistance programme
 - Resource mobilisation – All, with Gov. Haiti, UNEP and WFP providing key support as part of the coordination role.
- **Improve coordination with web based information and tools** Currently coordination is occurring via ad hoc emails, teleconferences and meetings in Port au Prince. More efficient and cost effective coordination is possible with the use of web based information and tools. UNEP has already developed a neutral site suitable for hosting improved stoves coordination activities (www.haitiregeneration.org) – the Government of Haiti may also have a suitable site.
 - **Create a single physical centre to assistance coordination and development** The improved stove programme and market will be highly disseminated: its customers are spread throughout Haiti and it is expected that manufacturing and distribution will not be highly centralised. However significant benefits could be delivered with a single small physical location for improved stove display, communication and training. Stoves are physical, practical objects and demonstrations require a suitable space. For efficiency, such a demonstration space should be incorporated into a research and development facility.

- **Apply an assisted market based strategy** The sustainable foundation for the expansion of improved stoves should be the market – individuals and institutions buying stoves from local manufacturers, distributors and retailers in recognition of the benefits that these products deliver.

However this market based approach will need to be assisted - supplemented or subsidised in part due to the extreme poverty, under-capitalisation and limited buying power of the potential users. The drawback of such subsidisation is of course its lack of financial sustainability. Hence the form, scale and duration of this subsidisation is possibly the core strategic design issue to be resolved.

- **Focus on national production** Imports of complete stoves after 2010 should be discouraged and resources redirected almost exclusively towards nationally produced stoves and stove components. This component of the strategy is linked to the government imperative for employment creation and sustainable local development.
- **Assist development of local manufacturing capacity** A key part of the initial work plans should be focused on boosting the local capacity to manufacture, distribute and sell improved stoves at an affordable price. This assistance is typically delivered as a package and includes financial (grants and loans), technical (training and specialised equipment) and managerial (small business management training) components.
- **Segment the market** Individual and institutional charcoal stove users have different capacities and needs. Wood fuel users have different needs from charcoal users. All segments of the market need to be well studied and understood as a prerequisite to developing effective strategies for improved stove market expansion.
- **Define the market and programme boundaries between biomass stove and hydrocarbon programmes.** It will be important to work in cooperation with anticipated parallel programmes aimed at expanding the market share of bottled LPG. In particular, the latter programme is aiming to exchange business and institutional charcoal stoves, heaters and boilers with LPG units. Commercial scale business use of charcoal in laundries and similar businesses is already theoretically illegal, so the improved stove programme needs to avoid encouraging the continued use of charcoal in such cases.
- **Regulate the market to ensure quality and value** Flawed designs, badly built stoves and flawed copies of good designs do not provide the full benefits of improved stoves and should not be able to claim those benefits and take market share from the real items. Government regulations in the form of independent quality testing, benchmarking and endorsement can assist in protecting the improved stove market from major quality and counterfeiting-false advertising problems.
- **Define the likely scale and targets for international assistance** The appropriate resource mobilisation strategy depends almost completely upon the scale of the resources needed. To enable RM planning, UNEP estimates the following:
 - Up to \$10 per new stove may be needed as a direct subsidy of some type:
 - In addition up to \$5 per stove may be needed for programme management, technical assistance, research and development, including small business development.
 - Achieving the 2013 goal will require up to \$3.75 million over 3 years

- Achieving the 2020 goal will require up to \$15 million over 10 years.

Hence for planning purposes, UNEP estimates the resource mobilisation needs to be in the order of US\$1.2 -1.5 million per annum for up to 10 years.

- **Develop a resource mobilisation plan** In the context of the multi-billion dollar Haitian recovery process, up to US\$15 million over 10 years is considered a completely feasible target. However such sums will generally not be realised in the absence of a clear plan and consistent effort.
- **Attempt to move quickly from grant aid to finance and carbon markets** Grant aid is the simplest and yet the least sustainable form of market subsidisation. It will be a critical part of the resourcing of the programme; however alternatives need to be found from the outset. The suggested alternatives include a) micro-credit, b) local tax exemptions and c) carbon credits, theoretically obtainable due to the reduced greenhouse emissions resulting in a large scale changeover from conventional to improved stoves.
- **Implement a small local research and development programme** The majority of financial resources (90% as a figure for discussion) should be focused on the rollout of well proven technologies. However the improved stove market is not static and there are ongoing improvements and opportunities that should be taken up when appropriate. To do this without duplication and unduly draining resources a single small centralised research and development programme should be launched in parallel with the main programme. The topics of interest for such a programme could include performance benchmarking, improved biomass briquette production, pelletising, biochar, compressed vegetable fibre sources, stove materials sourcing and preparing for access to the carbon credit market. The space used for research and development should also be used for demonstration and communication.

3.5 Suggested Next Steps

As per Section 3.1 the suggested way forward is to continue Coordinated business as usual and in parallel work on its replacement with a National Programme no later than end 2010.

Coordinated business as usual UNEP has sufficient core funds to continue to provide basic facilitation services to this field until end of December 2010. In addition multiple NGOs have secured funds for implementation of short term humanitarian projects. Hence the basic coordination of existing efforts only can continue until December 2010 without the need for further resources.

The recommended next steps for Coordinated business as usual are:

1. UNEP to continue calling coordination meetings and providing facilitation services
2. The Gov. Haiti to join the meetings and take up the position of coordination chair

2011+ Programme development Funds are however currently lacking for 2011+ programme development and implementation. Development costs for complex multi-stakeholder programmes can range between 1-3% of the implementation costs. Hence for a projected programme of US\$15 million, the full development costs could range from \$150,000 to \$450,000 and the full process could require in excess of 12 months.

Given the imperative to start practical action at an early stage, UNEP recommends that development work is phased, with 60-80% of it deferred and integrated into the first phase of practical action. Therefore the minimum development costs are anticipated to be in the order of \$50,000 and the minimum period to be in the order of 4 months.

In the absence of seed funding for programme development, the only real alternative will be to curtail development and focus on resource mobilisation – essentially drafting proposals rather than developing plans. This is possible and UNEP can support this process, however the resultant proposals will lack detail, led by a limited number of organisations and be less than fully consultative.

The recommended next steps on 2011+ Programme development are:

1. All interested parties to review this discussion paper and circulate comments by email; writing.
2. Key partners need to review interim resource mobilisation options and the potential for obtaining seed financing in Q3 2010
3. All interested parties to attend an initial planning meeting, proposed within the period 17th – 18th August in Port au Prince to discuss this paper and received inputs and to jointly determine the best way forward.

All comments and queries regarding this paper should be addressed to:

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Annex A - Current Haiti Improved Stoves Market Snapshot – July 2010

Recho Mirak (~20,000)

During the 2007-2009, it is estimated that over 50,000 recho miraks were sold in the market. Today, there are probably 20,000 recho miraks being used, although it is unknown if the stoves being used are the true recho mirak improved stove model or a copy.

StoveTec (~5400)

This stove is a wood/charcoal burning hybrid stove. Trees, Water & People (TWP) purchased and distributed 144 (goal of 500) in Delmas 33. AIDG purchased 600, which will be distributed in Cap Haitien.

International Lifeline Fund (ILF) is going to distribute 4632 of them in rural areas and in camps such as Santo 17, Automeca, East Tabar, and Hinche (to be distributed by MPP).

- 1344 donated from TWP
- 2688 purchased by ILF
- 600 donated by Appropriate Infrastructure Development Group (AIDG)

Mud Rocket Stove (~3000)

AMURT distributed 5500 mud rocket stoves in Anse Rouge between 2008-2009, but it is estimated that currently, there are less than 5500 stoves being used.

EcoRecho (~2,600)

D&E Green Enterprises produces the EcoRecho improved charcoal stoves in Haiti. Oxfam purchased and is distributing 1000 stoves, World Vision 600, Earth Spark International purchased (not yet sold) 30 and Terre des Hommes purchased and distributed 500. As of February 2010, D&E reports having manufactured and distributed 2500 stoves. Currently, it is estimated that about 2600 EcoRechos are being used in households.

Eko Ayiti (~40)

Eko Ayiti is locally produced, uses briquettes and/or pellets and 40 were distributed in Corail.

Envirofit (0)

The Envirofit stove being testing for implementation is a charcoal burning stove. To date, none have been purchased, but World Vision is considering this stove as a part of their large-scale import package.

Prakti (0)

Leo Char (improved charcoal household stove) - ILF purchased and will distribute 2200 in camps. *Orka* (briquette fuelled institutional stove) - ILF purchased and will distribute 100. The Paradigm Project and World Vision are considering the *Leo Char* stove as a part of their large-scale import package.

Okella (Recho Lape) (0)

ILF would like to manufacture and distribute 2000.