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THE   
GAIA-MOVEMENT  
TRUST  
LIVING EARTH   
GREEN WORLD ACTION

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Our Planet and its wealth of life is under threat by Global Warming and Climate Change. This will especially affect the poor parts of the world. The GAIA-Movement sees it as one of its greatest tasks to support projects that improve livelihoods and enable people to cope with the impacts of these changes, while at the same time benefiting their local environment. The projects supported in 2008-9 by the Swiss registered non-profit association, The GAIA-Movement, are located in six different countries in Asia and Southern Africa. The actions have reached school children, teachers, farmers and other groups of people, and increased their awareness of the importance of their environment and how to preserve it. Affordable model systems have been established that show how improving the environment can be combined with a continued improvement of people's daily life.

The GAIA-Movement has created the projects, assisted and supervised the implementing parties, as well as secured the funding for the projects. A major effort has also been to raise funds for more environmental projects.

The projects and activities have been made possible through donations to The GAIA-Movement, direct funding from partners, monetary and in kind donations by the dedicated implementers of the projects, and assistance from many volunteers.

Of special importance have been the royalty payments from Green World Recycling Ltd., without which The GAIA-Movement would not have been able to run and develop its activities. (see more pg. 15)

The GAIA-Movement wishes to thank you all for your contribution to make the environmental projects and activities possible.

On behalf of The GAIA-Movement Trust Living Earth Green World Action,

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# Community Water Management



## Community Water Management Projects

### WHY THE PROJECTS ARE NEEDED

With the increasingly more irregular weather patterns it becomes more and more urgent to be able to manage and preserve the local water resources. Scientists are not in doubt that Africa and India are among the regions that be worst affected by climate changes caused by global warming. In both regions there will be longer drought periods and more frequent and severe floods. Many more people - and many other of our fellow living organisms - will experience water stress and water scarcity.

Groundwater tables are already falling more and more, and the number of wells that have no water at the end of the dry season continue to increase.

Vegetation in water catchment areas is being cut down, and rivers are dry for longer periods. The reduced tree cover and soil erosion lead to loss of fertile topsoil and more destructive floods.

There are, however, many things that communities can do to safeguard and improve their local water resources. It is therefore essential to assist them to do so.



Rope pumps can be produced in simple workshops. Villagers can install and maintain them with locally available materials.



The water can be used for household uses and it can be used for garden irrigation.

### PUMP PRODUCTION

15 units for production of rope pumps have been established as a result of GAIA supported projects:

- Mozambique: Chimoio, Itoculo and Bilibiza
- Zambia: Monze, Chibombo, Kalomo, Choma, Kaoma, Kapiri, Mpika and Nchelenge
- Zimbabwe: Shamva
- Angola: Cabinda
- Malawi: Chiradzulu
- India: Tamil Nadu

Several experts connected to Arrakis/Connect International/Practica Foundation, have greatly assisted by continuously improving the models and the production methods. The workshops are now able to produce quality rope pumps at affordable prices.

# Community Water Management



## “Integrated Community Water and Sanitation in Southern Province, Zambia”

### ACHIEVEMENTS IN 2008-9

- 85 wells rehabilitated, 66 new wells and 12 boreholes completed – all provided with rope pumps
- 198 rope pumps produced
- 24 groundwater recharge systems have improved water levels in the wells benefiting 170 households.
- The Monze earth dam (weir dam) provides water for 150 households and their livestock during drought periods,
- 130 latrine masons trained
- 2,886 families have built improved pit latrines.
- 121,000 people have been reached with campaigns on basic sanitation and hygiene.
- 19,234 people have obtained access to safe water from new and restored water points.
- 49 farmers have received rope pumps as revolving loans.
- 100 community agricultural committees trained in water management
- 10,327 farmers using systems to reduce erosion, and 155 km of contours established
- 212,000 trees planted
- 192 stove masons trained and 3,850 families have built firewood saving stoves



121,000 people have been trained to improve hygiene and sanitation practices – such as using improved dish racks.



10,000 farmers are now using systems to manage water – such as trenches which are then filled with compost material.

### CONCLUSION

The project has had a big influence in the area by introducing and spreading simple and affordable systems to improve sanitation and access to safe water. A large number of people have adopted improved practices in relation to sanitation, water management and environment.

### FACTS

- The project started in April 2007 and ended in April 2009
- Implemented by the DAPP in Zambia project - Child Aid and Environment, Southern Province
- The EU Water Facility is the main funding source. The GAIA-Movement co-funds the project with direct funding and contribution of environmental expertise. DAPP Zambia as well as community members also provide co-funding in the form of labour.

# Community Water Management



## “Green Pumps - Sustaining Women Livelihoods and Water Resources”

### ACHIEVEMENTS IN 2008-9

- 20 groups of women farmers - 200 women - have established wells, which have been lined and covered to protect against contamination. 20 women groups have been formed.
- 20 wells have been equipped with rope pumps. On average each pump benefits 240 people.
- 10 pump menders have been trained to maintain and install rope pumps.
- 9 garden groups have managed to sell their garden produce and have expanded their gardens.
- 18 kinds of vegetables are produced in the gardens
- 20,000 trees have been planted by the communities in Shamva and Bindura. On average a group produces and plants 500 eucalyptus, 150 jatropha trees, 150 fruit trees, 100 moringa trees and 100 animal fodder plants.
- All group members and 40 village development committee members have been trained in horticultural production and environmental issues.
- 200 firewood saving stoves have been built.
- 7 garden days held for all community members.
- A 15 minute videofilm about the project has been produced.



20 women self help groups have established irrigated vegetable gardens. The pumps also provide household water.



The food gardens have had a huge impact during the periods of droughts, lack of inputs and economic problems in the country.

### CONCLUSION

20 vegetable gardens have been established in Shamva and Bindura, where the pumps provide water for both households and irrigation.

The project has meant that 200 families have been able to produce sufficient food during a difficult period, and they have additionally inspired many others in their communities.

### FACTS

- Green Pumps started in May 2007 and ended in May 2009.
- Implemented by the DAPP Zimbabwe project “From Communal to Commercial Farmer”.
- Funded by The McKnight Foundation (USA) through The GAIA-Movement.

# Community Water Management



## “Pumps for Life”, Northern Province, Zambia

### WHAT THE PROJECT DOES

The project will assist 5,000 households organized in 250 Village Action Groups with technologies and training to improve access to safe water for household and irrigation purposes.

50 water points will be established in the form of new and rehabilitated wells to function as model systems. 50 Agricultural Committees will be trained to manage revolving funds, where rope pumps are given out as loans to farmers selected by the Committee. The farmers generate income from the vegetables they can produce and will be able to pay back the loan within 1-2 years. The Committee then selects a new farmer to receive a rope pump loan.

### ACHIEVEMENTS IN 2008-9

- 35 Agricultural Committees in Mpika District have been trained.
- 177 Village Action Groups are involved in the project, and so far 3,600 group members have been trained in sustainable and water efficient farming.
- One rope pump workshop has been established.



20 village water technicians have been trained to install and maintain the rope pumps.



Hundreds of farmer will get pumps as revolving loans to provide water for profitable garden farming that can repay the loans.

- 20 rope pumps have been installed as demonstration models. The farmers will pay for these pumps by producing and distributing 1,000 tree seedlings.
- 20 pumps have been sold through the system of revolving loans managed by the Agricultural Committees, and two pumps have been sold to private individuals.
- 20 Pump Menders have been trained to install and maintain the pumps.
- A field day has been held to demonstrate the pump system and garden production.

### FACTS

- The Pumps for Life project started in May 2008 and will end in May 2011.
- Implemented by DAPP (Development Aid from People to People) Zambia Child Aid in Mpika
- The main funding comes from the British Waterloo Foundation with co-funding from The GAIA-Movement through a donation from The GAIA-Movement Living Earth Green World Action USA, Inc.

# Community Water Management



## TAZAMO (Tanzania, Zambia, Mozambique) Water & Sanitation Project

### ACHIEVEMENTS IN 2008-9 (Za+Mo)

#### Zambia

- 5 workshops to produce rope pumps have been established in Choma, Kaoma, Kapiri, Mpika and Nchelenge.
- 51 new wells and 44 wells have been rehabilitated. Pumps have been installed in all of them.
- 2,314 + 1,294 latrines built.
- The rope pumps have been marketed at during Agricultural Shows in Lusaka, Livingstone and Ndola, and through local radio broadcasts.
- 40,000 families reached with hygiene and sanitation education

#### Mozambique

- 90 rope pumps produced and installed on wells and boreholes in 2008, and 50 more by Aug. 2009.
- 4 bricklayers have made and sold 254 latrine slabs.
- 7 teams of 2 drillers received more training, and 18 new were trained.
- 138 water technicians trained.
- 22,800 families reached with hygiene and sanitation education, led by 207 Village Action Groups.



TAZAMO is reaching out to hundreds of thousands of people, including children, with water and sanitation messages.



Rope pump installation in Northern Mozambique. Thousands benefit from having safe water and spending less time to get it.

- 11,019 traditional latrines built (pit with slab of clay on logs)
- 9,086 dish washing racks set up.
- 10,206 garbage holes made.
- 851 hand-washing systems set up.

### FACTS

- The TAZAMO project started in Jan. 2006 and will end Dec. 2010
- Implemented by several DAPP (Development Aid from People to People) Zambia Child Aid projects, by ADPP Mozambique Child Aid Itoculo and by Southern Highland Participatory Organization in Tanzania. Coordinated by the Dutch NGO Connect International. The GAIA-Movement contributes to coordination of activities in Zambia and Mozambique.
- The main funding comes from the Dutch Government. Connect International raises funds from other Dutch donors. The implementing partners co-funds the project, as does The GAIA-Movement through royalty income from Green World Recycling Ltd. and through donations from The GAIA-Movement Living Earth Green World Action USA, Inc.



# Community Development Projects



## “Improving Environment and Living Conditions in Peri-Urban Kinshasa”, DRC

### WHAT THE PROJECT DOES

The project targets the peri-urban areas around Kinshasa, the capital of DR Congo, where the relative dense population and the lack of any public infrastructures offer a serious threat against the environment, which at the same time provides the main source of income.

The project targets issues such as treeplanting, firewood saving stoves, erosion control, latrine construction, solar energy and conservation farming.

### ACHIEVEMENTS IN 2008-9

- 440 firewood saving stoves benefiting 440 families have been established
- 2 solar panels installed
- 8 latrines have been constructed
- 3.000 families organized in Family Action Groups have benefited from training in improvement their local environment
- 8 community cleaning actions have been held in the communities
- 3 areas affected by erosion have been secured.



The 3,000 families in the areas close to Kinshasa benefit greatly from the project activities. Here from a firewood saving stove.



Local officials drinking water from a source that has been turned into a source of safe drinking water by the project.

- 200 garden farmers organized in 8 groups have been trained in horticultural techniques, composting, storage of food crops, the importance of trees and a healthy environment, and have been given seeds and tools
- 1 nursery has been set up and 5,000 tree seedlings are currently under production
- 1 water source has been established, serving 50 households
- 1 district development committee has been established

### FACTS

- The project started in December 2008 and will end in December 2009
- Implemented by Humana People to People (HPP) – Congo
- Funded by The GAIA-Movement through royalty income from Green World Recycling Ltd. and through donations from The GAIA-Movement Living Earth Green World Action USA, Inc.

# Community Development Projects



## “Harit Sankalp - Green Action, a GAIA Project”, India

### MAIN ACHIEVEMENTS

- 85 households have rainwater collecting systems
- 1,527 kitchen gardens are using waste water for irrigation. 345 have installed drip or sprinkler irrigation.
- 869 vermiculture units established (earthworms producing compost)
- 4,262 households with at least 5 trees planted
- 1,314 households now have smokeless kitchens by using firewood saving stoves (chulhas)
- 1,110 farmers using sustainable farming practices on model plot of 0.25 ha
- 1,125 farmers practicing organic farming on some parts of their land
- 936 households have built toilets
- 1,542 households have systems to separate animals from people
- 6 villages have made groundwater recharge systems
- 6 villages have established road drainage systems
- 9 villages have set up functioning systems for treating waste and recycling items
- 1 village has planted Children’s Forest for Future of 10,000 trees, and 9 villages have model gardens full of trees covering 40 ha



Farmers have made jatropha nurseries and plant jatropha fences around their fields to give seeds for biofuel.



Water saving systems, such as drip irrigation, are crucial in Rajasthan, where water tables fall at least 1 m/year.

### CONCLUSION

This project is a pilot project with the large goal of mobilizing whole communities to become “green”. The project has on a large scale mobilized community members to change practices that influencing the environment.

The goal of having at least 1,500 households using sustainable practices has been reached.

### FACTS

- The first phase started in June 2005 and ended June 2007. The second phase extended this for two more years and ended in June 2009.
- Implemented in Rajasthan by Humana People to People India.
- The GAIA-Movement has funded Harit Sankalp with donations from The GAIA-Movement Living Earth Green World Action USA, Inc. as well as a donation from Green World Recycling, Ltd.

# Community Development Projects



## “Trees for Life”, Soyo Province, Angola

### WHAT THE PROJECT DOES

The project has the subtitle:

“Improving Food Security, Income and Management of Natural Resources among Women Farmers”.

The project improves food security in 30 communities in Soyo Municipality, through sustainable management of forest and other natural resources, through changes in agricultural practices and through improved tree cover in the project area.

The project promotes diversification, nutritious crops, low cost irrigation and improved processing practices. Access to water for household uses is also improved.

### ACHIEVEMENTS SINCE START

- 30 garden farmers clubs have been established with 1.248 members.
- 15 teacher trainees have been trained in environmental issues
- The club members are being trained in literacy and numeracy.
- 5 new wells have been dug and existing wells have been repaired.



The 1,250 members, mainly women, have been trained in sustainable practices, such as solar drying of fish and leaves.



10,000 moringa trees have been produced in such nurseries and now provide nutritious leaves in 25 communities.

- 9,300 seedlings of jatropha, moringa, acacias, and many different fruit trees: mango, papaya, lime, orange, avocado, cashew and palm oil are being produced in the 30 club nurseries.
- 10,000 moringa trees planted.
- 100 families have built firewood saving stoves
- 18 community cleaning actions have been held.
- 20 clubs have been trained in bamboo cultivation and have started production.
- 16 clubs have established model gardens
- The FC members have been trained in drying of fish and of moringa leaves.

### FACTS

- The project started in February 2008 and will end in February 2010
- Implemented by Ajuda de Desenvolvimento de Povo para Povo (ADPP), Angola
- Funded mainly by the EU Food Facility Programme and co-funded by The GAIA-Movement through a donation from The GAIA-Movement Living Earth Green World Action USA, Inc.

# Community Development Projects



## “Eco-Service Center, Tamil Nadu”, India

### WHAT THE PROJECT DOES

The project has established the Eco-service Centre where a number of sustainable systems are demonstrated and targeted— such as the issues of treeplanting, firewood saving stoves, erosion control, latrine construction, solar and other renewable energy systems, sustainable farming, affordable and water-efficient irrigation, vermiculture, efficient micro-organisms and in general environmentally sustainable practices.

### ACHIEVEMENTS SINCE START

- 5 farmers clubs established
- 5 Women Self Help Groups have started 5 EM units, 2 organic pesticide units and 10 Kitchen gardens.
- 5 Children’s Clubs started and carried out 28 actions on sanitation, nutrition
- 2 Open Sundays held at the Eco-Service Center to give awareness about global warming and sanitation
- 2 small films produced and available on Youtube. One about biogas made from food waste and the other about skill training of Development Instructors.
- 18 Development Instructors trained in sustainable



Preparing leaves for production of EM – Efficient Micro-organisms – to improve crop yields and reduce diseases.



Youth club members visiting the Eco-Service Centre, and told why to use drip irrigation systems.

development practices

- 1 rabbit production started as income generation for the Centre.
- 1 biogas system has been set up at the Centre, producing gas for 2 hours of cooking.
- 2 eco-sanitation toilets have been built at the Centre
- Achieved to get a donation for 10 rope pumps, which the centre will build and set up in five villages.
- Started income generation by making films for other NGOs.

### FACTS

- Started in March 2009 and will end in December 2009.
- Implemented in Tamil Nadu by Humana People to People India.
- Funded by The GAIA-Movement through royalty income from Green World Recycling Ltd. and through donations from The GAIA-Movement Living Earth Green World Action USA, Inc.

# Renewable Energy Projects



## “Community Generated Power”, Zambia

### ACHIEVEMENTS SINCE START

- 80,000 jatrophas have been planted by 800 farmers – both from seeds and from cuttings
- 400 farmers have been trained in soap production and use of jatropha oil for lamps
- 1 oil press and 1 biodiesel unit set up at DAPP’s Children’s Town.
- 1400 liters of biodiesel have been produced from jatropha, cottonseed and waste oil at DAPP’s unit at Children’s Town and used in 20 tractors, grinding mills and vehicles in the project area.
- 3 endurance tests of 512 hours have been conducted at Delhi College of Engineering on a direct injection diesel engine, and on test of 512 hours on an indirect injection engine in order to find a safe, viable system.
- 2 diesel engines in Zambia have run with dual fuel systems for 500 hours on jatropha oil.
- 1 conference held to spread the project approaches to local and governmental authorities, the Zambia biofuel association, other NGOs and entrepreneurs.
- 1,200 guests informed about the systems at the Lusaka Agricultural Show.
- 2,000 pamphlets on jatropha growing distributed.



Conference explaining how the project has started local biofuel production based on the jatropha plants grown by 800 farmers.



Biodiesel is produced from jatropha oil after it has been pressed from the seeds at the unit in DAPP’s Children’s Town.

### CONCLUSION

There is great interest among farmers for the system of having local energy systems run on oil from their crops. There are two ways to use the oil. One is to produce biodiesel. This can be done locally but requires some skills, equipment and certain chemicals.

The other option is to use the jatropha oil directly as fuel in engines. The tests in India have shown that this can be done safely with indirect injection engines (old Lister types). The final test of the more modern engines are very promising, and further tests are being conducted to develop this method.

### FACTS

- The project started in April 2008 and ended in October 2009
- Implemented by The GAIA Movement and DAPP Zambia
- Funded by GVEP Int. (Global Village Energy Partnership) with USAID funds to the GAIA-Movement and co-funded by Green World Recycling Ltd.

# Renewable Energy Projects



## “Jatropha oil for local development in Mozambique”

### WHAT THE PROJECT DOES

The project has started local production of Jatropha seeds and will develop a local market for the oil. 250 ha of land will be cultivated with Jatropha after 3 years. Another important component of the project is to build capacity among the local small farmers in general by setting up 25 farmers clubs where the members are trained in sustainable farming practices. Project technicians are trained to process the oil and to adapt 25 stationary diesel engines so that they can run on the plant oil. The oil will also be used as lamp oil and for soap production.

### ACHIEVEMENTS SINCE START

- About 250,000 jatrophas planted and growing since the start of 2007, most of these as fences.
- 36 Farmers Clubs have been established and the club committees trained.
- 22 irrigated gardens and jatropha nurseries established.
- 5 tons of jatropha seeds sold by farmers and ready to be pressed.



The project promotes jatropha fences such as this one, which keeps wild animals out – and does not reduce food production.



Some stationary diesel engines can easily be adapted to run mainly on plant oil, if they are started and shut down on diesel.

- Bilibiza Biofuel Center established with a project technician, 2 oil presses and a generator adapted to run on plant oil.
- A number of trials have been started to determine the best planting distance and pruning systems in the fences.
- A number of high ranking officials have visited the centre and want to support the activities.

### FACTS

- Started in January 2007. The project will end in December 2010
- Implemented by the ADPP Moçambique projects - Farmer's Club (FC) Bilibiza.
- Funded by various Dutch organizations - Stichting HIVOS, Stichting Doen and Solidaridad - through FACT Foundation (Fuels from Agriculture in Communal Technology). The GAIA-Movement co-funds the project through donations from The GAIA-Movement Living Earth Green World Action USA, Inc.

# Smaller projects funded by the GAIA-Movement

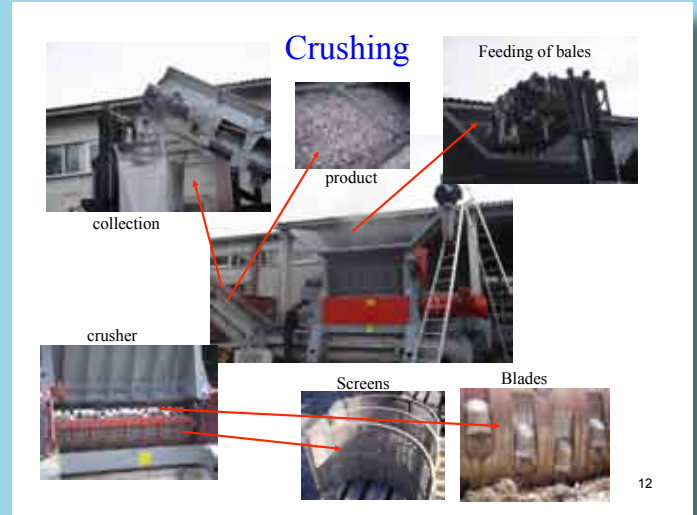


## “Solar Lamps to Mozambique”



Checking solar lanterns. 2,000 units are sold through the sales network for second-hand clothes of ADPP Mozambique, and through commercial entities. Many Mozambicans can pay for the cost of a lantern within a year due to reduced expenses on candles or kerosene.

## “Recycling of Textile Fibres”



A joint project with Technische Universität Wien, Humana Austria and Green World Recycling Ltd. aiming at developing a sustainable and commercially way to recycle textile fibre by testing various shredding systems and researching on the use of the resulting microfibres.

## “Info on Global Warming, Russia”

Малое количество имеющегося в мире хлопка выращивается следующим образом: без машин и с небольшим количеством удобрений и пестицидов



100,000 flyers and 1050 posters have been distributed through a chain of second-hand clothes in Russia – on the effect of Global Warming, and how buying second-hand clothes reduces emissions of greenhouse gases – and the use of pesticides in cotton production.

## “Increasing Crop Production”



ADPP Mozambique’s Itoculo Community Development Centre aims at raising yields of garden farming and cashew production by using bio-pesticides, repellents, moringa leaves as foliar spray to enhance growth, and as shown here compost produced from earthworms.

# THE GAIA-MOVEMENT TRUST LIVING EARTH GREEN WORLD ACTION



## INFORMATION



Production of a 15 minute video of the “Green Pumps” project in Zimbabwe, describing how the women groups have benefited from their garden farming. The Eco-Service Centre in Tamil Nadu has also produced small films on the use of rope pumps, construction of a simple biogas system and eco-sanitation toilets. Placed on Youtube (search for udhayanaraja - the Project Leader). Other examples of information activities are small publications in English and Portuguese with the titles: “How Must Africa Adapt to Climate Change”, “Re-greening Niger”, “Restoring Watertables in India” and “Cotton Farmed Sustainably, South Asia” . This work has partly been funded through donations from The GAIA-Movement Living Earth Green World Action USA, Inc.

## FUNDING



Green World Recycling Ltd. in the UK pays royalties for using The GAIA Movement’s logo in its business to collect and sell used clothing. This enables people to support protection of the environment twice: by recycling their used clothes - and therefore reducing the need for landfills or emissions of greenhouse gasses - and by supporting environmental projects and activities.

## RESEARCH & DEVELOPMENT



Presenting results and lessons learned of the Zambian biofuel project in Washington together with other projects funded by the World Bank. R&D has also been to raise funds for projects with environmental activities: “Green Pumps”, Malawi, “Biofuels for Local Development”, Guinea Bissau and “Training Farmers for Green Action”, Mozambique.