

Refilwe Orchard Project Final Report

December 2008

PREPARED FOR

NOW MEDIA

COMPILED BY



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I. GENERAL BACKGROUND

Food & Trees for Africa (FTFA) has, for the past 11 months, assisted with the development of a naturally grown Orchard at the Refilwe project in Lanseria, Johannesburg. Refilwe is a Non-Profit and Public Benefit Organization which focuses on child care, education, life skills and income generation programs to benefit members of disadvantaged communities in the Lanseria area. The Refilwe Centre hosts various relief programs including a community clinic, day care centre, God parent's project and various skills development projects.

FTFA previously assisted Refilwe with training and the implementation of a nursery which assisted with the agricultural interests of its members. During late November 2007, Mr. Dave Marsh, the director of the advertising company Now Media, met with FTFA to discuss the ideas and vision of an Orchard at the Refilwe centre which could assist the project with skills development and income generation. Following this meeting, Ryan Dickey, a consultant for FTFA, conducted an assessment at Refilwe which later resulted in the sponsorship of the implementation of a fruit Orchard at the centre. The following is a report on the implementation and development of the Orchard.

2. PROJECT OBJECTIVES AND ACTIVITIES

Objectives:

The following is a list of the objectives of the Refilwe Orchard:

- To encourage an income generating resource, whereby Refilwe would be able to harvest fruit, herbs and vegetables to sell for income generation.
- To harvest and bottle fruit for jam and sell as income generation for the project.
- To use the Orchard as an educational and skills development component for those individuals who have an interest in organic technologies.

Activities:

Over the last 11 months Ryan from FTFA has assisted the Refilwe Orchard project leader in establishing the basic ecological foundations for bio-diversity and sustainable growth and development for the Orchard in the form of theoretical and practical training sessions. These sessions have included the participation of volunteers from all over the world who donated their time and energy into the various programs at the Refilwe centre. Please see schedule **(Appendix I)** for a breakdown of the visits.

3. PROGRESS OF ACTIVITIES AND IMPLEMENTATION

During the course of the training sessions individuals learnt various processes to enhance the growth of plant life and increase bio-diversity within the Orchard. Particular technologies were conveyed to assist the project leader in understanding the key components of sustainable production and maintenance of the system.

Through the application of these technologies the Orchard has evolved successfully over the last year and there are clear indications of natural succession within the Orchard.

The following is a breakdown of the procedures utilized to assist with the stable and progressive development of this system to accomplish a sustainable foundational phase for the Orchard.

- Soil fertility technologies were implemented to rehabilitate the eroded and weak soil. These included applications of compost and mulch in combination with soil conditioning and dynamic accumulating plants.
- These plants, including borage, white clover, comfrey and yarrow, assisted with inoculating concentrates of potassium and nitrogen into the soil which has allowed the slow, healthy, accumulation of microorganisms back into the soil which assisted the fertility and growth of plant life within the Orchard.
- Liquid manure and green manure applications were prepared and injected into the system by overhead irrigation systems which have had a profound affect on the plant life within the Orchard. These applications are constantly applied on a rotation basis every two weeks to continue fertilizing the area.
- A large variety of culinary herbs and insect repelling and attracting plants were introduced into the system. These plants were interplanted with the fruit trees and have attracted a variety of healthy insect life into the Orchard. Predatory insects such as the golden orb spider and wasps are prevalent within the system and assist with controlling the balance of insect habitation.

- Swales, furrows or trenches, were used to direct and harness water concentration and conservation within the Orchard and provide a natural design to assist corridor planting within the Orchard.
- Staple crops such as maize and pumpkin have been introduced to assist with bio-diversity and food production whilst the fruit trees grow and develop.
- A large variety of herbs were planted within the Orchard and provide an opportunity for income generation. It is important to have perennial species constantly supporting the system and income needs of the project.
- Pest repelling technologies were conveyed in order to further control insect species that stunt the growth of the species being cultivated.
- The Orchard is continuously mulched to sustain the moisture and soil conditioning needs of the Orchard. Chipped mulch has been which assists with building a top soil base to work from in the near future. It is suggested that more grassy mulch be used in the near future to mobilize carbon within the soil.

These technologies and implementation processes have successfully assisted in the development of a healthy ecosystem at Refilwe. If these technologies are continued, the Orchard will benefit immensely, maintain its fertility and provide high yields.

4. COMMUNITY AND BENEFICARY PARTICIPATION

It is clear that Refilwe attracts great community and beneficiary participation with their sincere and dedicated motivation to make a success from their project programmes. Volunteers from all over the world assist local community members and project beneficiaries in sustaining a healthy livelihood through the many programmes at the Refilwe centre. The Orchard is another success story which will assist with income generation and skills development at the centre.

5. PROBLEMS AND OBSTACLES

The only problems or obstacles FTFA can see within the project is the design planning, development and maintenance of the surrounding areas enclosing the Orchard.

In a sustainable and holistic approach to the development of the remainder of the cultivation areas, the effect of poor water flow management and planning should be taken into consideration and observe the natural flow of rain water in this area. Conventional landscaping can cause terrible soil erosion and it is very clear that the top soil is being washed away through poor landscaping in the successive areas below the Orchard. Silt is already

accumulating on the central areas of these planes which show the movement of minerals being flushed out of these zones. If this continues, it will be very hard to plan or implement any form of cultivation within these zones due to the loss of minerals, fertility and top soil.

FTFA suggests a complete restructuring on this area which would include the implementation of furrows/swales and trenches to harvest, accumulate and spread the water and minerals evenly and productively through this landscape. Presently all the work that has been done on these development sites is floating down the Jukskei. To confirm the appropriate conservation and sustainable technologies needed, one only needs to stroll through the fruit Orchard and witness proper water harvesting techniques which enhance bio-diversity, and plant life and maintain soil fertility in an ecologically sound system.

6. FTFA ASSESSMENT OF ACHIEVEMENTS FOR 2008

FTFA recognizes the achievements of the Refilwe project through the implementation phase.

Considering that the main components of the project were initiated in the late summer/early winter of 2007/8 which is an unreliable time to plant trees, the project has successfully established and implemented a naturally grown Orchard through the means of Permaculture design technologies and the help and faith of the Refilwe members. This is a wonderful success story.

It is clearly visible that the Orchard has successfully achieved the goals for its first phase of development. The basic fundamental mechanisms and technologies to establish a sustainable Orchard have been met. The young fruit saplings have produced fruit, which is a sign of healthy life within the soil and Orchard itself. There is a multitude of fertile herbs and edible plants within the Orchard which will generate income if harvested and packaged. The corridor planting and colonies of healthy dynamic accumulators enhance the bio-diversity and life within the system.

The project leader and members of Refilwe are proud and attentive to the development of the system and follow an almost clinical approach to the guidelines suggested by FTFA. The Orchard project leader is extremely competent and dedicated to maintaining the fruit Orchard and always is open to advice and guidance. The social and practical aspects of the Orchard project are sound. The is sustained by more than just productive and holistic technologies but also by the sincere dedication and motivation of the project members.

7. FORWARD 2009

FTFA would suggest the following for further sustainability and a way forward for this project:

- Production of jam from current fruit yields to assist income generation, current small yields will be ready to harvest during December 2008.
- Harvest the large yields of artichoke to pickle or sell to local restaurants, grocery stores or supermarkets. Artichoke is an expensive commodity and will fetch a good price.
- The large amounts of culinary herbs within the garden; thyme, rosemary, oregano, and sage, should be harvested, dried, bottled and sold. For example, the herbs could be combined and sold as “Refilwe herb mix”. Chamomile could be dried and packaged as Refilwe naturally grown tea. A one day workshop on how to process and package herbs would be appropriate.
- Harvest the current corridor crops when ready. These are organic Asian maize and hundred weight pumpkin. These should be crop rotated with peas/legumes during winter of 2009 to continue production in the Orchard.
- Continue to mulch with either chipped bark mulch or teff. This will assist with moisture and pioneer species within the Orchard.
- Prune fruit trees at the end of summer/early autumn.
- Continue to remove unwanted pioneers within the Orchard.
- Continue to fertilize with organic techniques – liquid manure etc.
- Apply sifted compost to tree beds to assist development and growth.
- Experiment with spinach and other leaf cultivates in the Orchard.
- Plant wind break plants around the perimeter of the Orchard for wind during winter. This will also provide a supply of mulch for the Orchard during summer.
- Plant more pest repellent plants such as marigolds. Mullin is an efficient biomass plant and pest attracter.
- Continue to apply organic pest sprays.
- Swale/furrow/trench the lower succession areas in this area to assist with combating soil erosion and loss of top soil.

8. EVALUATION OF PROJECT

FTFA suggests a project evaluation every 6 months to assist with advice on maintenance of the system and possibly propose further development in the lower areas dedicated for cultivation. Follow up visits are important and enable the project members to gain further insight and knowledge into Permaculture technologies.

9. CONCLUSION

FTFA would like to formally thank Now Media and especially Mr. Dave Marsh, for their support and vision on this project. A special thanks Jaco Van Schalkwyk and the staff and project members of Refilwe for their support and trust in the development of the Orchard.

Thanks to the many international and national volunteers who assisted in the implementation and maintenance of the Orchard, their dedicated efforts have proved invaluable to the project.

The project has been a great success thus far and it is clear that viable opportunities will arise from the implementation. The Orchard has the system is complete and FTFA looks forward to further assisting the Refilwe members with the continued growth of this opportune, positive initiative.

10. APPENDICES

Appendix 1: Training Schedule

Appendix 2: Photographs

Compiled By Ryan Dickey, FTFA, November 2008

Appendix I: Training Schedule

Activity Schedule for Refilwe Orchard

Date	Activity
25 April	Introduction to under story polycropping. Legume and Nitrogen fixing theory Practical- planting herb and under story cultivates
2 June	Introduction to Pest Repelling and attracting cultivates and herbs. Theory on Liquid and Green Manures Practical- preparation of Liquid and Green Manures, Legume seed.
20 June	Introduction to Pruning and tree maintenance. Theory on cuttings, grafting and layering. Practical- cuttings etc and application of liquid and green manures.
18 July	Orchard maintenance and legume cultivation and harvesting. Soil analysis and Theory on Effective Micro-organisms. Preparation of Effective Micro-organisms.
22 August	Application of Effective Micro-organisms. Theory on orchards and grain crops. Theory on animals in orchards. Temperate plant guild for fruit orchards.
19 September	Dry land and subtropical orchard theory. Corridor planting in orchards. Project assessment and accountability. Preparation of liquid and green manures. Preparation of Pest repellants
14 November	Project assessment. Pollination techniques and insect study. Bio diversity assessment and tree assessments. Final Report.



Community Members



Planting herbs



Community group



Clearing and mulching



De- Weeding



American Volunteers



Developing orchard during spring



Healthy growth of trees



First sign of fruit



Healthy fruit



Flowering lavender



Flowering fennel



Established yarrow



White clover



Giant artichoke



Chamomile



Red Peaches



Healthy Catnip



Globe Artichoke



Chamomile



Thyme



Established system



Healthy peaches



Summer growth



First Grade naturally grown peaches



Corridor planting



Flowering artichoke



Hundred weight pumpkin



Maturing peach



Big fruit small tree



Predatory ladybug



Healthy white clover



Golden orb spider



Chamomile



Flowering Thyme



Beautiful specimen



Flowering comfrey



Asian Maize



Volunteer photo shoot



Volunteers



Preparation stages



Preparation stages



Before



After



The visionaries


