

# Permaculture

At

# Anisha in 2014



Report Submitted  
To  
Susila Dharma Australia & Helmer Family

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## Permaculture at Anisha in 2014

### **Background**

Permaculture at Anisha is a project that has been developing over the past three years, a collaboration between Anisha Rural Project and permaculturist, Jayadi Paembonan from Australia. The aim of the project is to support the long term viability of Anisha as a sustainable eco resource centre through the introduction of permaculture methods. A five year strategic plan has been established to help Anisha achieve this. The details of the activities conducted in the 2014 project period will be detailed in the following report.

### **Values**

There are a number of core values underpinning this project. These are ecological self-sustainability, following permaculture principles and ethics (care of people, care of earth, care for the future). Permaculture incorporates organic agriculture, integrated design, combined with modern and traditional methods. The project also will focus on utilising indigenous knowledge and local natural resources and methodology.

The project will encompass various disciplines such as energy conservation, ecology, environmental science, and natural landscape design where we will create low energy inputs for high yield. This will help to build and nurture the stability and resilience of these projects, their staff and the communities they work with.

### **About this Report**

This latest project report covers the most recent work visit, December 30th until early March 2014 and marks the third project trip spanning the period of the last three years for Anisha. The aims of this visit was to further extend and progress the permaculture work done at Anisha. This project, has been support very generously by Susila Dharma Australia, George Helmer's family and various individual donors. The following provides documentation on the progress of the project to date, the focus of the latest trip and the activities conducted.

## **Anisha**

### **Visit overview**

Permaculture is a new concept implemented in the local region led by the work we are doing with Anisha and its impact on the environment and local community was very apparent. The normal practice in the project area is monoculture, where farmers use extensive amounts of fertilizers and pesticides and this result in negative impacts on human and environmental health. Turning that negative trend Anisha is working on organic farming and creating a demonstration, educating the farmers on organic farming, conservation of native seed and community development.

It had been 8 months since the last Anisha project visit, and I returned to see much progress, especially in zone 1 and 2 which was originally dry barren land. As a result of the work conducted 8 months earlier the kitchen garden area had turned into a food forest or jungle, overgrown with vegetation (see photos above & covering photos on front page). This overgrown 'jungle' is essential in establishing ground cover, which is an essential

element to dealing with dry arid conditions. Excess vegetation can be 'chopped and dropped' and be used to create mulch or compost for other areas. Shade from the vegetation also provides protection for other plants; it reduces water evaporation, invites beneficial insects and worms and helps to build healthy soil.

Despite the Anisha land being cover with rocky terrain and challenging conditions, the area utilising permaculture techniques showed good to excellent growth and yield. For instance cassava was a new crop introduced eight months' earlier using swale systems on a barren rocky slope. Cassava is a good crop to break down rocky and hardy soil. Eight months later in early 2014 the cassava crop was being harvested averaging 5kg for each tree.



Valli, program coordinator & Mahadev, Field coordinator hold the newly Harvested cassava, in one plant 5 k.g. of cassava

Many local farmers starting to use the permaculture techniques to grow vegetables in the backyard are wherever place is available.

Anisha continued to implement the permaculture design plan from 2013, mulching for which purchased two truck loads of hay which is another essential water management strategy to stop water evaporation. During the project we were very lucky to have a visit from Jill and George Helmer from America. They were one of the very kind supporters of this project. It is very rare that we can show directly the progress and results of our work and it was an honor to meet them and be able to spend time discussing the project with them.

A photograph of a red tractor pulling a trailer loaded with large bales of hay. The tractor is in a field with a white pole in the foreground and hills in the background.	A photograph of several school children and an adult in a field. They are gathered around a pile of hay, and some are kneeling, appearing to be learning or working with the hay.
<p>One of the load is delivering the hay for mulching</p>	<p>School students learning how to make the beddings</p>

## Project Objectives for 2014 visit



### Extending the zone 2 and 3 crop and fruit trees area.

Anish's 9 Acres integrated permaculture design is based on a zoning system. This is a more efficient way to manage a farm system for the long term. The focus of the work for this period was to move into zones 2 and 3. One of the food forest permaculture strategies to rehabilitate the Anisha land is to plant more trees within the swale system, restoring the carbon into the land and increasing the water harvesting system through swales with heavy mulching, which in turn decreases water evaporation. The fruit trees included jackfruit, custard apple, citrus, mango, guava, and native fruit trees.

We also purchased native legume trees as companion plants for the other trees such as Moringa Oliveira and Gliricidia Sepium (a nitrogen fixing legumes to boost and support other plant growth). These legume trees incorporated into an area with other vegetation had a positive impact on growth, while trees and crops cultivated outside the swale system showed less growth and failed to thrive. Legume trees improve soil fertility, provide shade and reduce wind stress. This area also integrated a chicken run with animal husbandry such as poultry and livestock for domestic use. Raised garden bed was created as a food source for the poultry livestock using plants from the legume family such as beans.

Wind breaks utilising perennial vegetation: Moringa Oliveira, Bamboo, Acacia and fruit tree.

During the dry season at Anisha it's very hard to manage the extreme conditions such as wind. Anisha's land is situated on top of a hill in a valley. The site experiences hot wind during the day and cold wind during night time where the range of temperature is around 35-45 degrees. The wind gusts can easily blow off and destroy building roof tiles and the original site does not have enough trees to create a wind break. Very little crops can survive under these conditions.

		
Fruit plants purchased from the nursery 8 hours Drive from the project place.	Drip irrigation to vegetable garden	Fruits trees

The site as such required wind breaks in zones 1 and 2 built into the overall design. We chose a variety as pioneering trees from the legume family and native fruit trees. The challenge we faced was the lack of local resources so we have to drive 8 hours to the nearest available nursery to purchase these trees. For water management we also purchased irrigation drip pipe to help with the tree's growth until the trees became more established. These were planted using a swale system and used Moringa Oliveira and fruit trees. Moringa trees are one of the miracle trees in the world and many benefits and purposes. They are native to the area, they are a nitrogen fixer for the soil, purifies water, produces high nutrient food for people and its foliage is also animal fodder. Once mature they will act as a wind break. It also has many medicinal properties and is used frequently in Aryurvedic medicine.

Extending natural aquaculture- The original plan was to extend the natural aquaculture however due to the lack of rainfall the focus was changed to rain water collection. See below for more details.

Rain water collection and harvesting- There were many aspects to improve Anisha land from challenging conditions into an abundant land. Dry and arid conditions in the regions prevail due to climate change and environmental degradation. The water table is lowering which requires new bores wells to be dug. One way for Anisha to increase their resilience to combat drought was to increase their capacity to harvest water and store on site. Six water tanks were manually constructed and installed. These varied in size between 9,000ltr and 30,000ltr. The round tanks used a reinforced metal frame and the square tanks used bricks. The process of building their own water tank systems and installing them, creates a model for other farmers in the region to follow suit.



The rain water harvesting design takes advantage of the Anisha's sloping land's energy flow which has been designed to minimise energy pumping use. We hope that with this year's monsoon the water tanks can be used to capacity with rain water capture, so to extend the productivity of the land during the summer season and can further develop Anisha as a model of sustainability.

Structure Feature including mud brick oven and mud stove- The cooking option in the area is to use a free standing gas stove but this is expensive due to the high cost of gas. In addition gas refills are sometimes unavailable for months. The solution was to build a combined wooden fire oven and rocket stove. A rocket stove requires very little wood, sticks or combustible materials and uses an internal draft which creates a jet of fire which

comes through the stove. In order to construct the stove/oven available materials were used on site like bricks, stone, mud, sand, local lime, waste materials including bottles from the local bar shops. We are always required to take a self resourceful innovative approach especially in these rural surroundings and conditions.



Composting pit and permanent nursery shed (Permanent structure) 3 hot compost pit was constructed and also build a shed, this is very important to Anisha to produce compost within 18 days, sourcing of materials for preparing compost.



Hot compost pit under the shed

One training for farmers on permaculture-

1. One training was conducted with local indigenous tribal women on basic permaculture in application. Approximately 20 women attended the training for one day and learnt how to make hot compost, as well as other Anisha programs such as the seed bank. Proudly Anisha's land is become more and more productive not just as a demonstration site, but also moving towards their goal of becoming an educational centre as well. This demonstrates Anisha's commitment to long term sustainable living and sharing this through partnerships program with local government, with the local farmer's, communities as well as other service providers.



Training to women groups

2. Training for 7 Asoka project staff for three days- Seven Asoka Community Co-ordinators came to Anisha for 3 days to have some brief information how they can lead the community into sustainable system by using permaculture ethics and principle. Training was successfully provided across three days. They learnt basic theory and practice of permaculture and had the opportunity to apply some of these techniques on site at Anisha. These techniques including raised garden beds, how to create an A frame with available resources and measure contours.



### Summary of Permaculture work at Anisha 2014

We are all very pleased with the progress Anisha is making through implementing their permaculture design plan, thus moving towards becoming a sustainable resource centre. The Anisha site is developing well, the land is rehabilitating and the team have built their capacity in dealing with the many challenges they face.

It is exciting and encouraging to see the potential permaculture has for Anisha, especially considering the rural location and the limited resources available. Much was achieved within the short time frame. We look forward to continuing the support and positive relationship with Anisha and Jayadi in future.

### Pictures





Fruit tree planting



Built food stock in chicken run area using raised garden bed and

Present chicken run area



The Anisha Team with Jayadi. Left to right: Bala, Chinathayi, Anisha Director Valli, Jayadi, Madeva (front), Bhagya and Pariyanayagamma and few staffs are missing in the photo



Anisha receives a visit from the Helmer family, very generous donors of this project. Left to Right, Valli, Jill Helmer, George Helmer and Rajan.