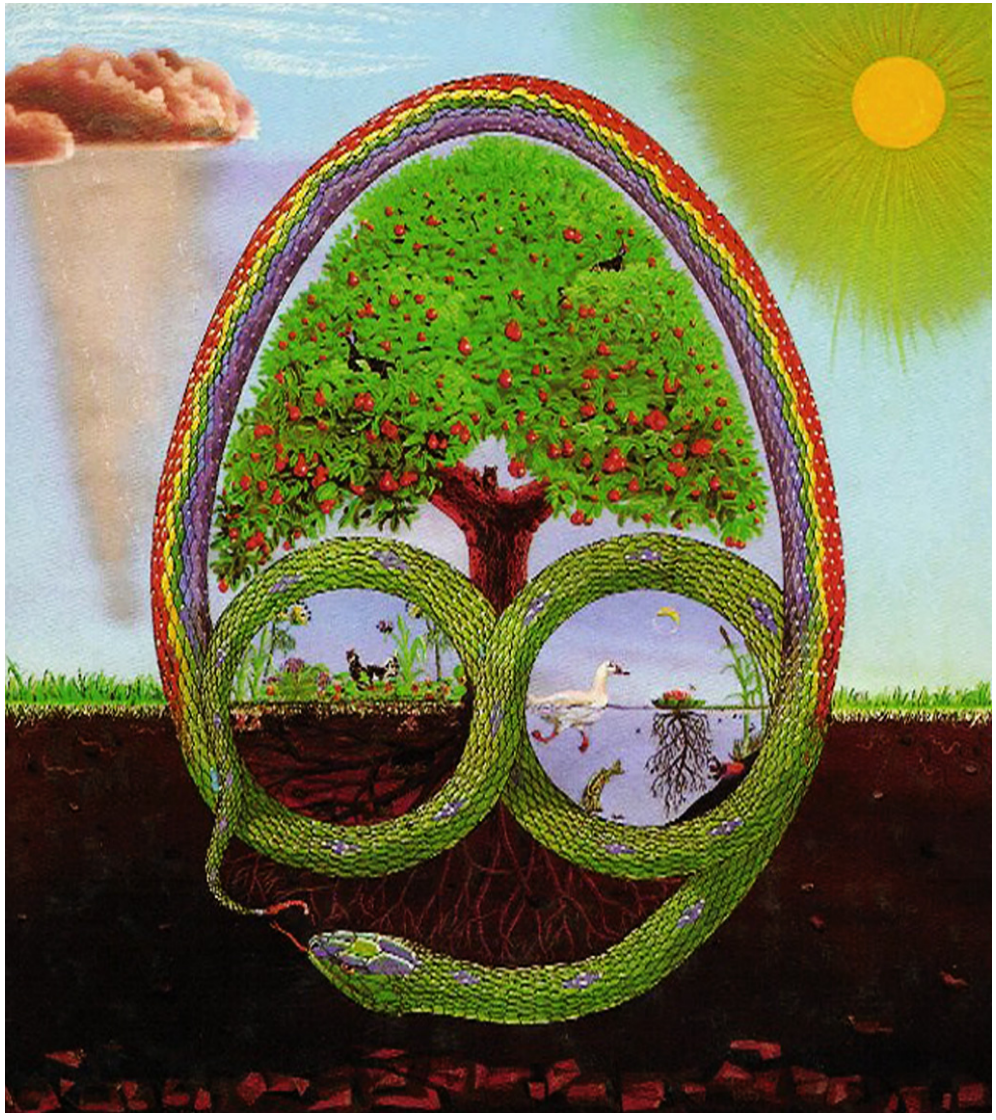
Highlights from IPCUK 2015: "Designing the World We Want"

Sergio Grancagnolo

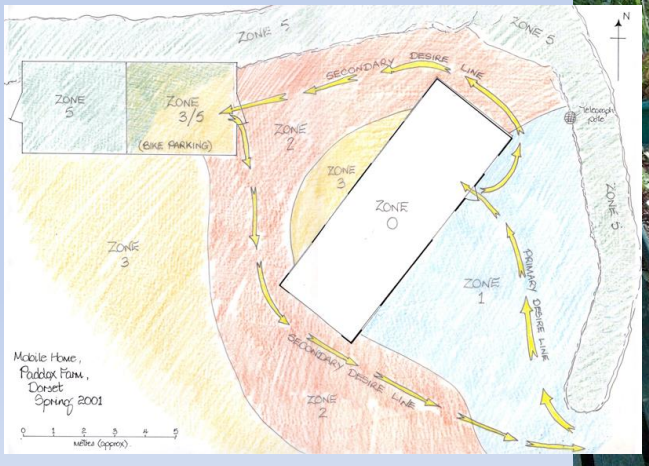
ConCERNed for Humanity club

IPCUK2015

An introduction to permaculture
Real life examples



Aranya Gardens



Energy efficient planning

Permaculture - a design science for all

Aranya Gardens

I'm still identifying microclimates…

…and making good use of them

Italian Permaculture Institute – P. Zucchetti

The demonstration site – before - 2010

Istituto italiano di permacultura

Italian Permaculture Institute

The demonstration site – after - 2015

Istituto italiano di permacultura

Italian Permaculture Institute

Through bread making,kombucha,seedlings in the kitchen and hand washing machine
Use biologic and renewable resources

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Italian Permaculture Institute

I needed some … work to do so I used pc design to make it ...

…..look like this

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Water - Keyline contour dam – feeder channels -rainwater harvesting – The same function is performed by more elements

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Italian Permaculture Institute

Energy cycle – we produce soils – no pollution

See also: Soil Care Card

Italian Permaculture Institute

Appropriate technology – low energy tech that we can produce and maintain ourself

Istituto italiano di permacultura

Real Life Forest Gardens – Remiarz

- Robert Hart: Vision
- Martin Crawford: Proof of concept

- Baseline survey: 127 sites
- UK $>$70, US $\sim$ 20, Europe $\sim$ 20
- $\sim$ 50% private, $\sim$ 25% community, $\sim$ 25% commercial
- $\sim$ 50% rural, $\sim$ 25% farm & rural
- Size: from 5 mq to 30 ha. $\sim$ 25% $<$ 250 m^2, $\sim$ 10% $>$ 1 ha
- Exponential growth since 1990
- Case studies: 40 sites
- Work hours: 1 hour/week to 20 hours/week

Real Life Polycultures - How plants and people interact in the forest garden

Real Life Forest Gardens

Real Life Forest Gardens – Remiarz

reading international solidarity centre

Real Life Forest Gardens – Remiarz

Tomas Remiarz – Real Life Forest Gardens – tomas.remiarz@yahoo.co.uk

Real Life Forest Gardens – Remiarz

Commercial potential

1.5 ha site, 1/3 of site forest garden & perennial polycultures

£20K/year

Forest garden supports veg production

5th skill set: marketing

Tomas Remiarz – Real Life Forest Gardens – tomas.remiarz@yahoo.co.uk

Bringing the Forest Garden Indoors – Osentowski

Climate battery installation

Elkstone sketchup bed design

Steamboat springs, CO

Finished Dome

Roaring fork high school

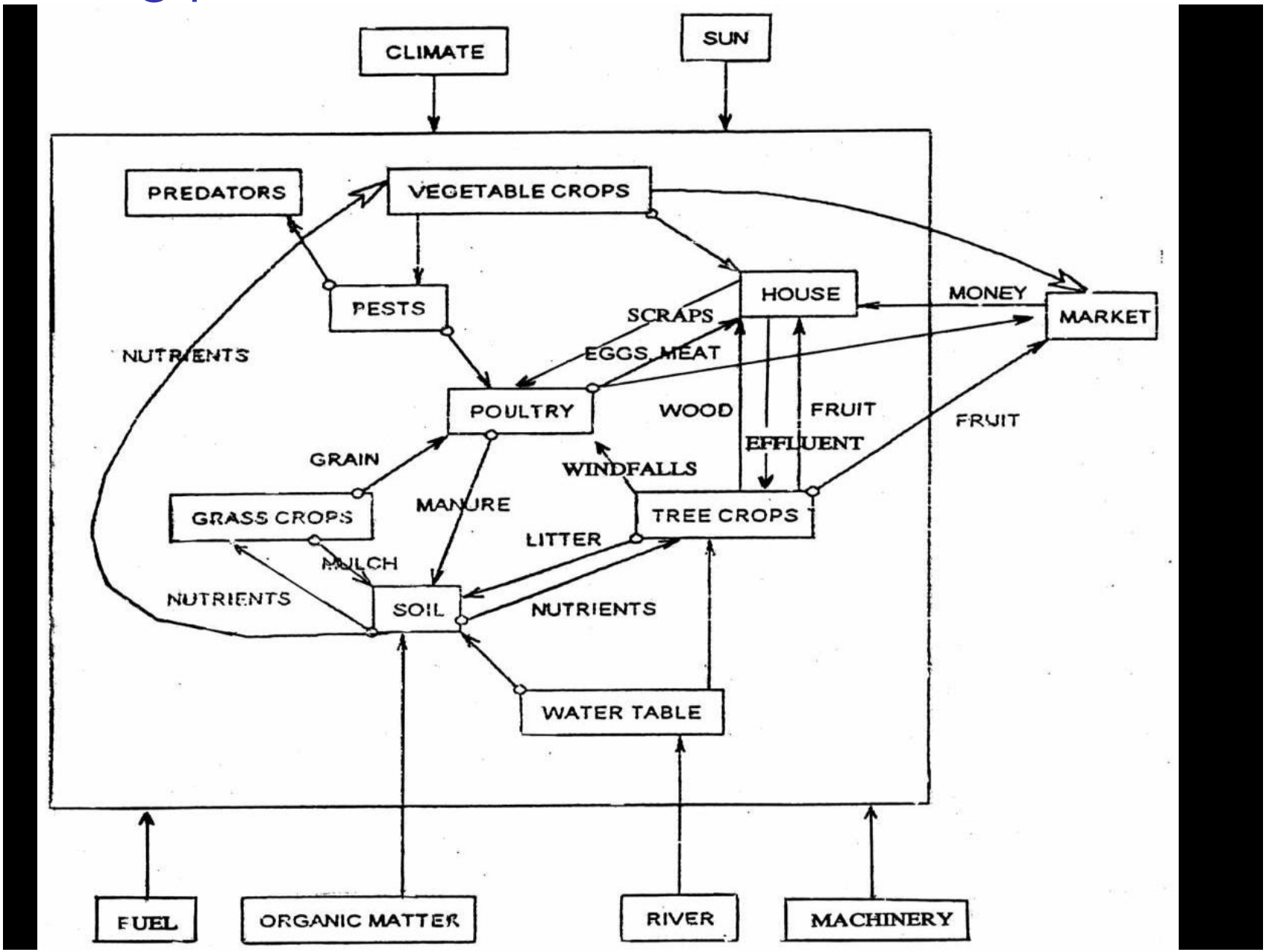
TCI CSA greenhouse

Central Rocky Mountain Permaculture Institute

Other sites

- Bullocks Permaculture Homestead
- Terra Phoenix
- East Devon Forest Garden

Measuring permaculture



Overview of key Indicators

1 Product energy/input energy ratio

2 Income/cost of non-renewable inputs ratio

3 Soil nutrient, pH, organic carbon levels and trends

4 Percentage of property given-over to effective biodiversity plantings and reserves

5 Income & yield per kilolitre of water

Measuring permaculture

Inputs and their energy costs

• Common insecticides per kilo	87000 Kcal
• Common herbicides per kilo	100000 Kcal
• Glyphosate per kilo	110000 Kcal
• Fungicide per kilo	65000 Kcal
• Winter-oil per litre	60000 Kcal
• Petrol per litre	10000 Kcal
• Diesel per litre	11430 Kcal
• Gas per litre	7705 Kcal
• Wood per kilo	4600 Kcal
• Nitrogen per kilo	14700 Kcal
• Phosphorus per kilo	3000 Kcal
• Potassium per kilo	1600 Kcal

Inputs and their energy costs

• Guano per kilo	1000 Kcal
• Rock phosphate per kilo	1100 Kcal
• Electricity per Kwhr	860 Kcal
• Compost per kilo (my estimate)	815 Kcal
Embodied energy per kilo	
• Tractors	3500 Kcal
• Harvesters	3100 Kcal
• Tillage equipment & seeders	2000 Kcal
• Sprayers, manure spreaders, mowers	1760 Kcal
• Forage equipment	1400 Kcal

Input energy costs and yields for Almonds USA

Almonds (Conventional, America) Benchmark *Product Energy/Input Energy* per annum (Pimentel D, 1984)

Inputs	Quantity/ha	Kcal/ha
Labour	198 hours	Not allowed for
Machinery	30kg	540000
Fuel/oil	155 litres	1413600
Elect/ Irrig	301cm	9025000
Nitrogen	224kg	3115000
Phosphorus		
Potassium		
Insecticides	12.2 kg	492800
Fungicides	11.2kg	246400
Herbicides	4.5kg	255400
Gas	37 litres	2331500
Transport	3361kg	373900
Total		**21,150000**
Total yield	**1792 kg almonds**	**10,719000**
Product Energy / Input Energy Ratio		**0.51**

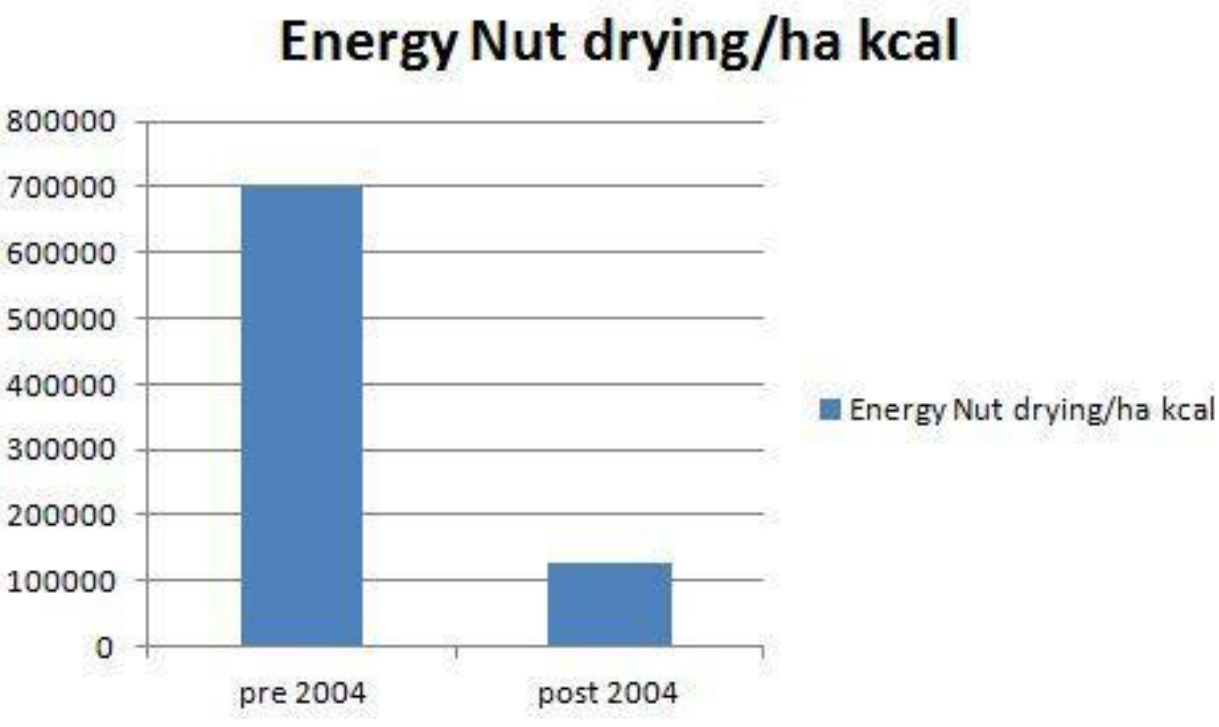
Input energy costs and yields for Pistachios at The Food Forest

Pistachios (Organic) at The Food Forest, *Product Energy / Input Energy* per annum

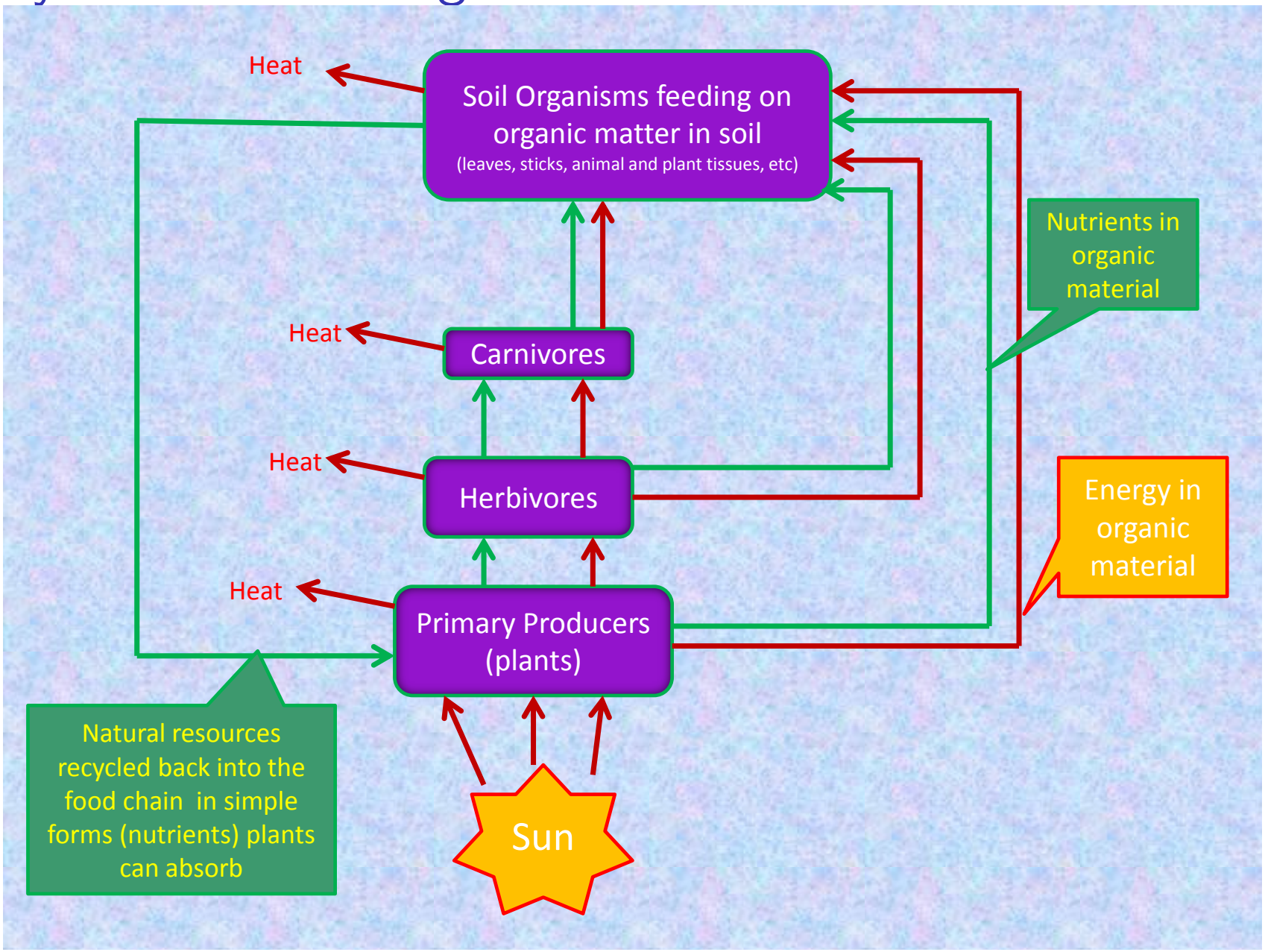
Inputs	Quantity/ha	Kcal/ha
Labour	198 hours	Not allowed for
Light machinery	20 kg	340200
Fuel/oil	15.5 litres	141360
Elect/irrig (notional)	6cm	100000
Phosphorus + Nitrogen etc – composted byproducts	224 kg	182560
Potassium - ash	100kg	byproduct
Insecticides – winter oil	10 kg	600000
Fungicides - Cuprous oxide	0.5kg	50000
Herbicides	-	-
Electricity (drying)	116 kWhr	126133
Total inputs		**1,223762 Kcal inputs**
Total yield	**250kg pistachio nuts**	**1,548250 Kcal (food energy)**
Product Energy / Input Energy Ratio		**1.27**

Measuring permaculture

Effect of change to drying on site with locally-built, ultra-efficient electric dehydrator. Figures include the energy cost of transport

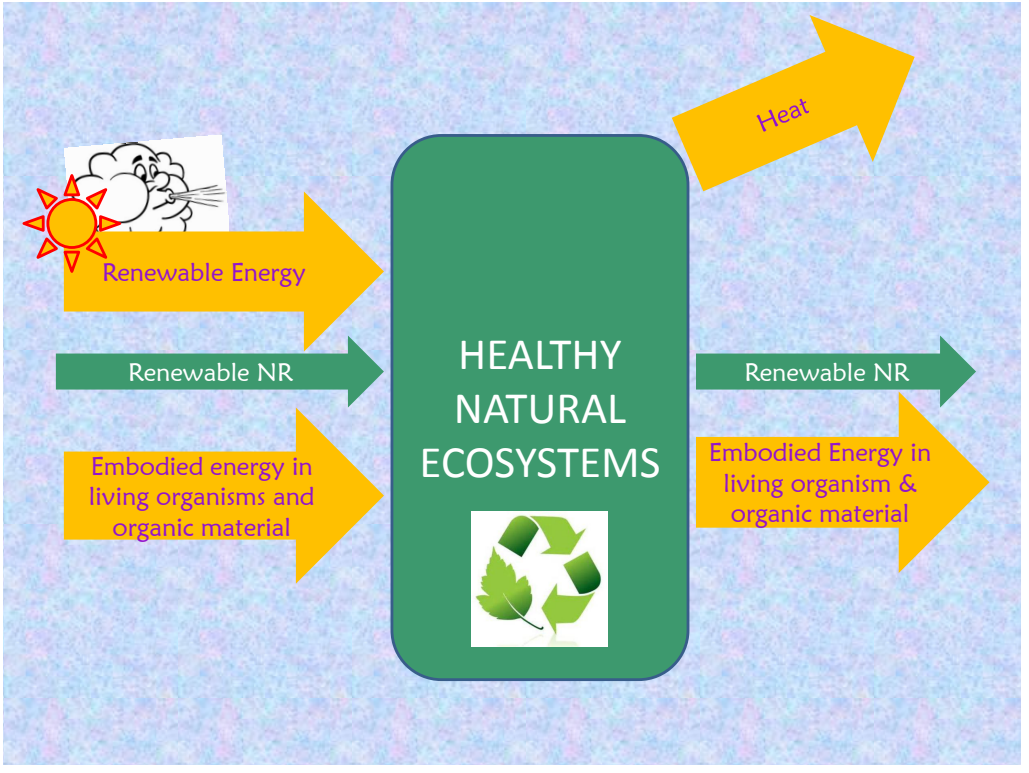


Ecosystem based design – Seabrook

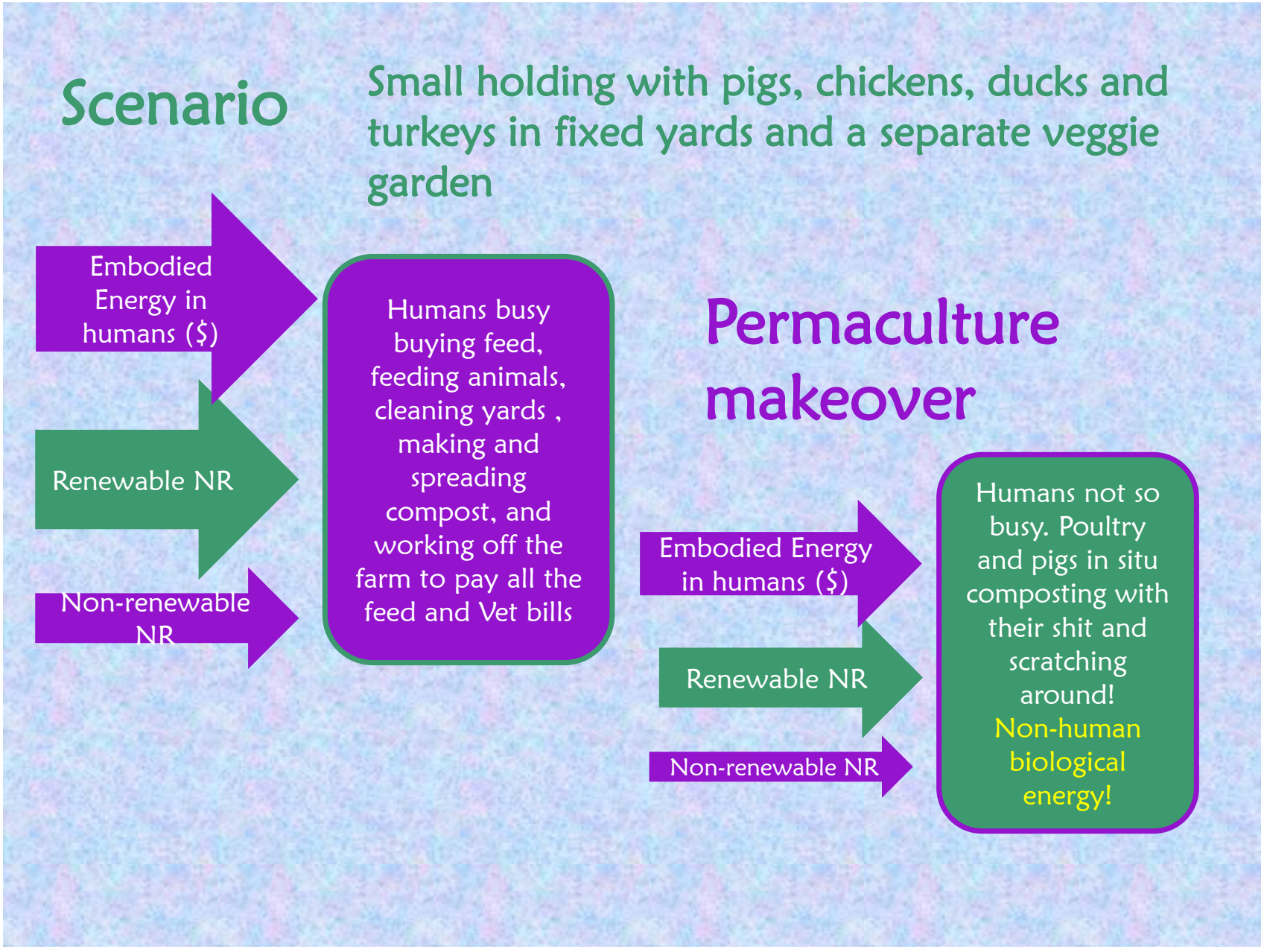


Using Ecosystem based design to enhance our Sustainability Outcomes

Ecosystem based design



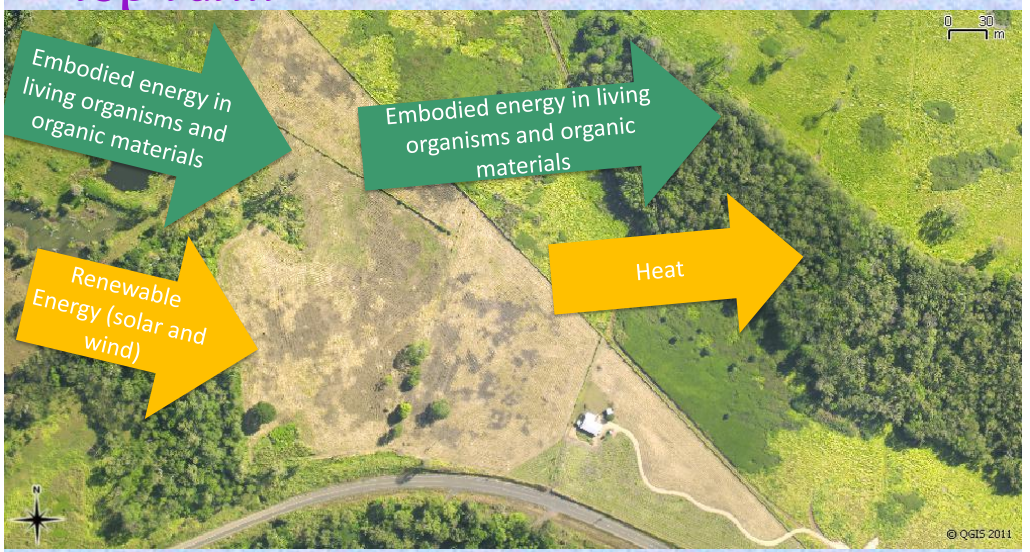
Ecosystem based design



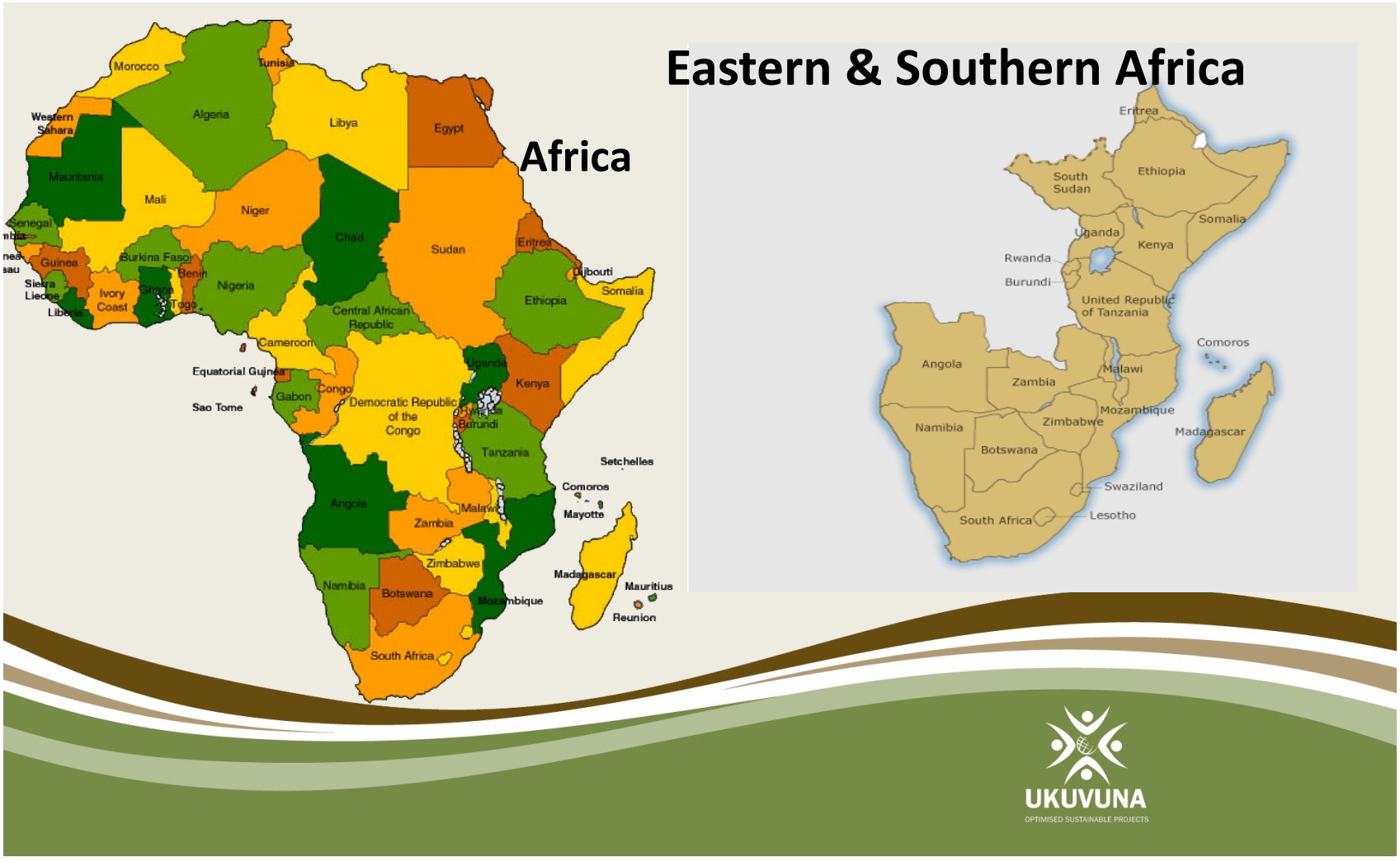
Ecosystem based design

'Wild' natural resource inputs and outputs Hill Top Farm

'Wild' Energy inputs and outputs Hill Top Farm



Households as permaculture nodes – Nzira



A Promising Sustainable Living System for Communities in Eastern and Southern Africa Households as permaculture nodes

Permaculture and Development – McKenzie, Henriques

Harnessing the Potential of Permaculture for Sustainable Development and Resilience

See also: Black Permaculture Network

Permaculture and Development

Post Tsunami rehabilitation Aceh

Permaculture and Development

Permaculture and Development

From a few terraces many terraces grow

Many More Relevant Projects


Geoff Lawton


Transition Network

Permaculture International Research Network

International Permaculture Convergence
ipcindia2017.org

Conclusions

"We have the skills to heal the earth, now it is time to scale up"

'Oil' - Formidable Vegetable Sound System

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