

# The Multiple Benefits of Organic Agriculture

Andre Leu, President



Vientiane Laos, March 23, 2012

# IFOAM is the international umbrella organization for organic agriculture



## Mission

Leading, uniting and assisting the organic movement in its full diversity.

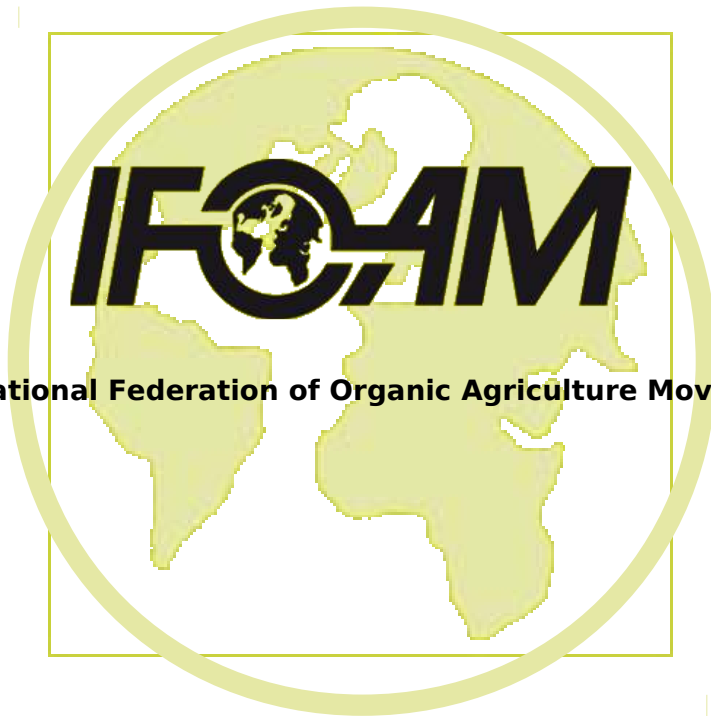
## Goal

The worldwide adoption of ecologically, socially and economically sound systems that are based on the principles of Organic Agriculture.

## People

The global organic umbrella organization has 870 member organizations in over 120 countries worldwide.

1.6 million certified organic farmers and substantially more uncertified organic farmers



International Federation of Organic Agriculture Movements

# IFOAM Advocacy



UNITING THE ORGANIC WORLD

**IFOAM tries to influence the policies of these organizations and has access to up to 194 governments through regular participation in UN, EU and AU processes**

# Fast Growing Market

## World Overview of Organic Markets

- Worth 59.1 billion US dollars or 44.5 billion euros.
- 8% growth over the 2009 figures of 54.1 billion US dollars.
- The United States of America was valued at US \$26.7 billion or 20.2 billion euros
- Europe was valued at US \$26.2 or 19.6 billion euros
- Global organic sales were \$15.2 billion in 1999
- \$33.2 billion in 2005.

Source: Organic Monitor

# World Overview of Organic Markets

## Peru

- Peru's exports of organic food rose by 13% in 2009 to US\$225 million
- Organic coffee is the major revenue earner.
- Peru is the world's leading exporter of certified organic coffee beans.
- It also exports organic cocoa and bananas among other products.
- Source: Teatro Naturale

# Small Farmer Agriculture

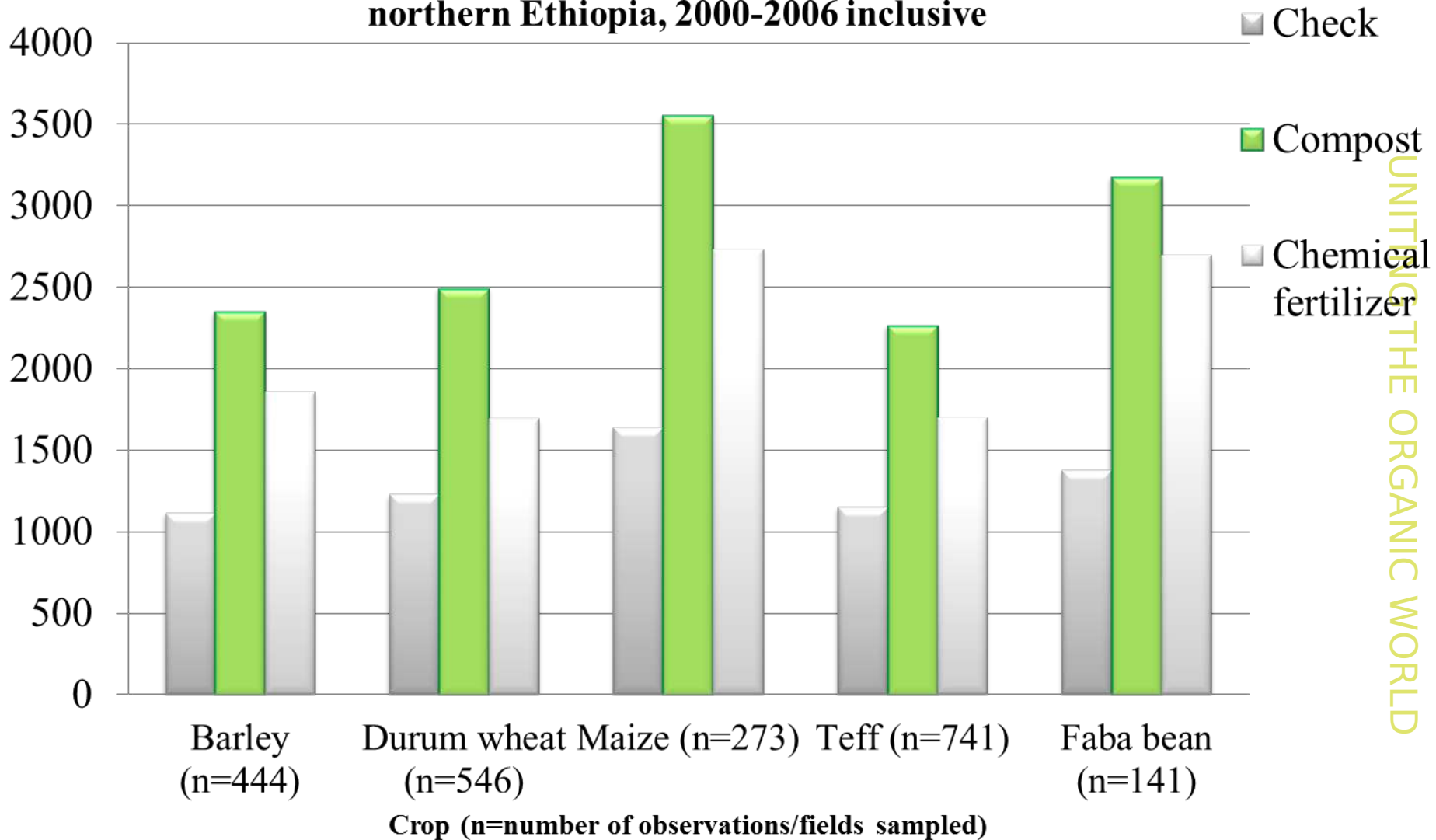
- The majority of small farmers in the developing world are traditional farmers – organic by default
- Teaching these farmers to add good organic practices to their traditional methods:
  1. Better soil nutrition – recycling organic matter (carbon) and mineral balance
  2. Improved pest and disease control
  3. Water use efficiency – especially increasing SOM
  4. Better weed control methods
  5. Eco function intensification: stacking systems
- Leads to significant increases in yields

# Organic High Yield

- A report by the United National Conference on Trade and Development (UNCTAD) and the United Nations Environment Programme (UNEP) stated on Organic Agriculture:
- *'...the average crop yield was ... 116 per cent increase for all African projects and 128 per cent increase for the projects in East Africa.'*
- *Organic Agriculture and Food Security in Africa 2008*

# Impact of using compost - Grain yields from over 900 samples from farmers fields over 7 years

Average mean grain yields in kg/ha for 4 cereals and 1 pulse crop from Tigray, northern Ethiopia, 2000-2006 inclusive





# Organic High Yield

- The report notes that despite the introduction of conventional agriculture in Africa food production per person is 10% lower now, than in the 1960s.
- *'The evidence presented in this study supports the argument that organic agriculture can be more conducive to food security in Africa than most conventional production systems, and that it is more likely to be sustainable in the long term.'*

Source Supachai Panitchpakdi, Secretary general of UNCTAD and Achim Steiner, Executive Director of UNEP 2008

# Organic Systems Approach

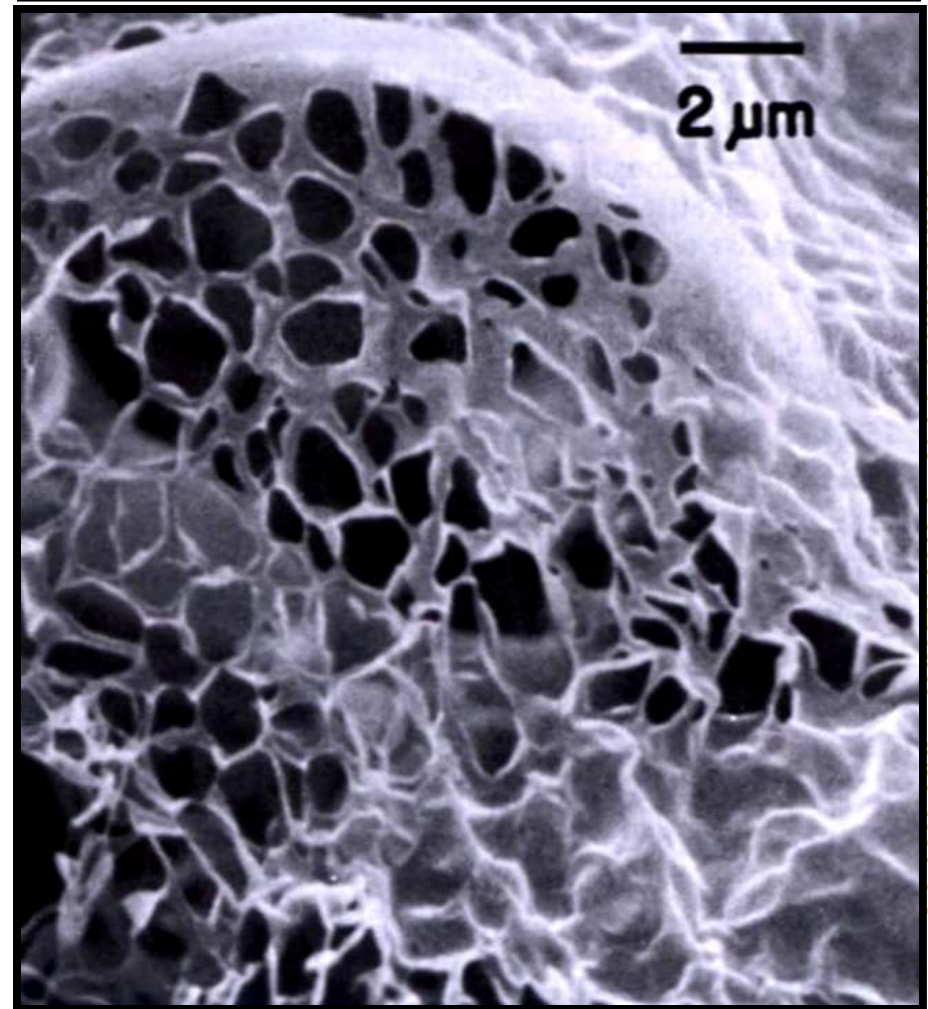
## Adaptation to Climate Change - Resilience

- Published studies show that organic farming systems are more resilient to the predicted weather extremes
- Can produce higher yields than conventional farming systems in such conditions (Drinkwater, Wagoner and Sarrantonio 1998; Welsh, 1999; Pimentel, 2005, Lotter 2004)
- The Wisconsin Integrated Cropping Systems Trials found that organic yields were higher in drought years and the same as conventional in normal weather years (Posner et al., 2008).
- The Rodale Farm Systems trial found higher organic yields in droughts. (Pimentel, 2005)

# Soil Organic Matter -Humus

- Holds up to 30x its own weight in water
- Cements soil particles and reduces soil erosion
- Increases nutrient storage & availability
- Humus can last 2000 years in the soil

Electron micrograph of soil humus



UNITING THE ORGANIC WORLD



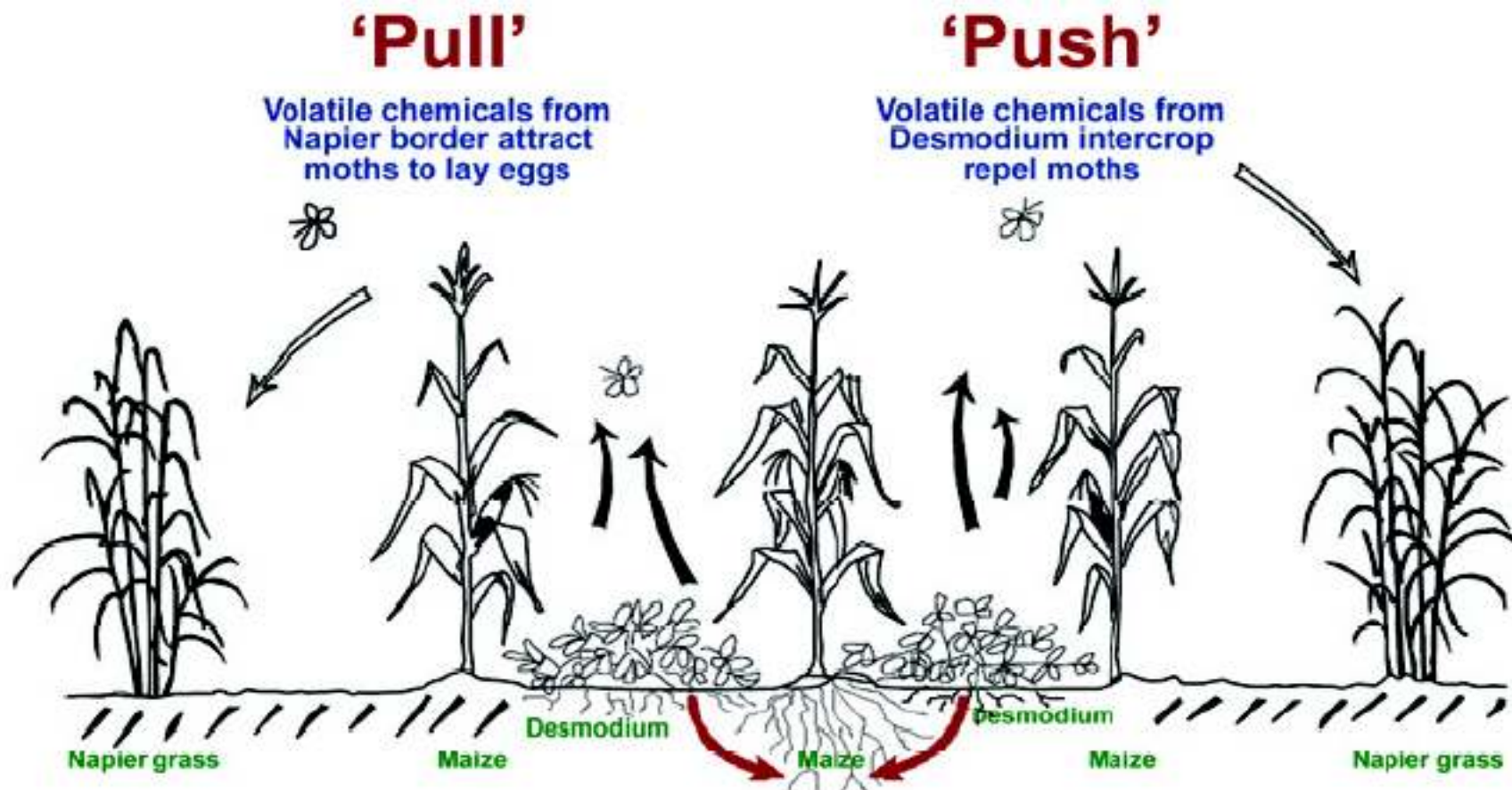
# Organic Corn - 1995 Drought

Better infiltration, retention, and delivery to plants helps avoid drought damage

Organic

Conventional

# Eco Function Intensification



Chemicals (isoflavones) secreted by desmodium roots inhibit attachment of striga to maize roots and cause suicidal germination of striga seed in soil



# Eco Function Intensification

Using natural systems to regulate pest outbreaks

(example of **push-pull** greater farm productivity vs higher yields 2 to 10X)





# Eco Function Intensification



The Napier grass is progressively cut and fed to a cow. The excess fresh milk is sold everyday as a cash income

# Eco Function Intensification



**The desmodium, suppresses weeds, adds nitrogen, conserves the soil, repels pests and provides high protein stock feed**



# Eco Function Intensification

## Scientific Review by Cornell University into the System of Rice Intensification (SRI)

- Organic SRI yields greater than the conventional crops
- Organic SRI had significantly lower input costs (fertiliser, pesticide, weeding etc) than the conventional crops.

# Eco Function Intensification

## System of Rice Intensification (SRI)

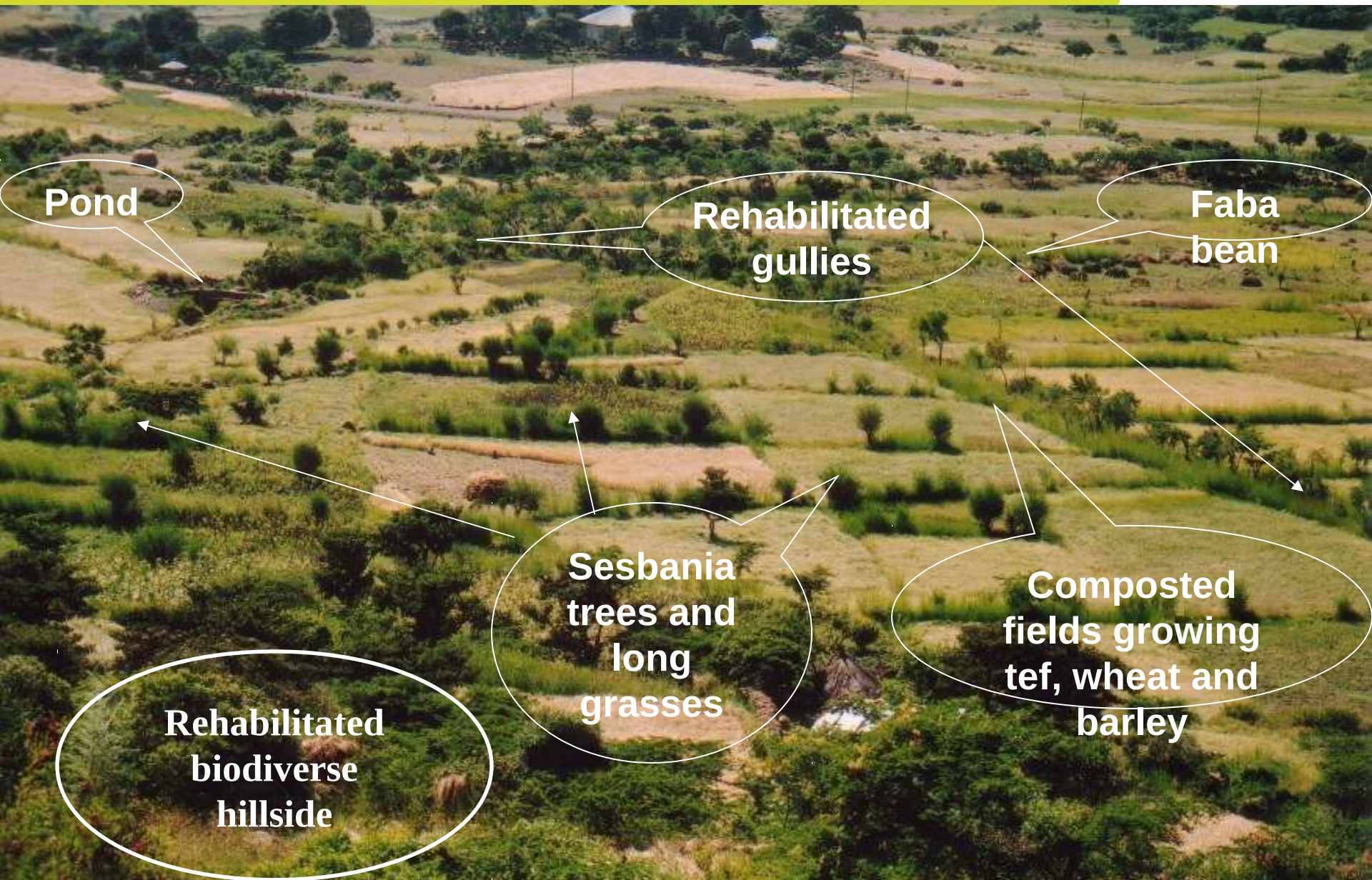


In Madagascar, SRI has increased yields from the usual 2-3 tons per hectare to yields of 6,8 or 10 tons per hectare.

Source: Nicolas Parrott, Cardiff University, 'The Real Green Revolution'



## All the components being used in October 2003



**Pond**

**Rehabilitated  
gullies**

**Faba  
bean**

**Sesbania  
trees and  
long  
grasses**

**Composted  
fields growing  
tef, wheat and  
barley**

**Rehabilitated  
biodiverse  
hillside**



# Resists Diseases



Wheat grown on  
compost treated  
field

Wheat grown with  
chemical fertilizers  
and requiring  
spraying with  
fungicide



# Wheat infested with stripe rust and sprayed – gave yield of 1.6 t/ha





# Wheat grown on composted soil resist the rust – gave yield over 6.5 t/ha



# Innovative SEKEM: - Aiming for the impossible...

Opening  
ceremony of the Sinai  
Project 2008

The land  
before...





...and changing our world.

Apply COMPOST



... and after 18 months.



**THANK YOU**



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