

Does God Care about Tree Stumps?

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Right: Tony Rinaudo. Early 1980's.

We ran a typical reforestation project relying on tree planting. In this very hostile environment, establishment rates were very low. In fact, it was quite futile and I was ready to give up, but I believed that God had called me to Niger to make a difference, though I didn't know how. II Peter 1:3 was a mystery to me and I did not think God had included Niger when he said that he had provided everything that we needed for life (our physical bodies), though I believe the bible is true.

What I did not realize was that before this landscape was altered it provided abundantly. What I did not know was that by working with nature much of that abundance could be restored.



I grew up in a beautiful part of Australia – with many forests.



However, it was the environmental degradation that I witnessed that moved me to work in this area of reforestation and sustainable agriculture and land use.

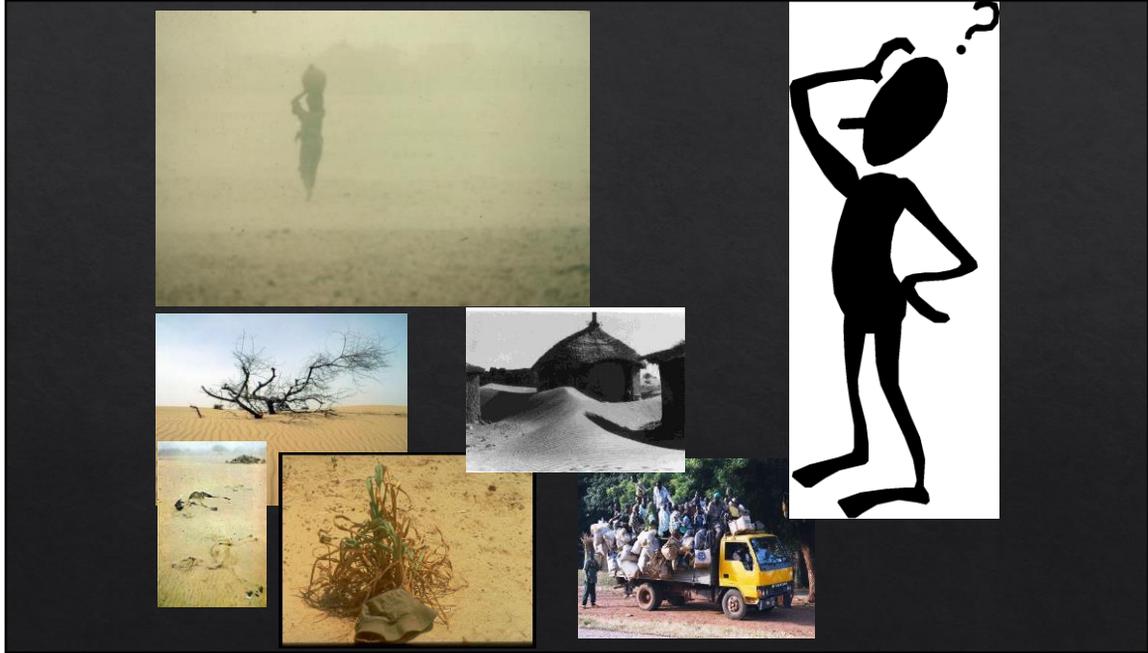
Ephesians 2:10 (NIV)

¹⁰ For we are God's handiwork, created in Christ Jesus to do good works, which God prepared in advance for us to do.

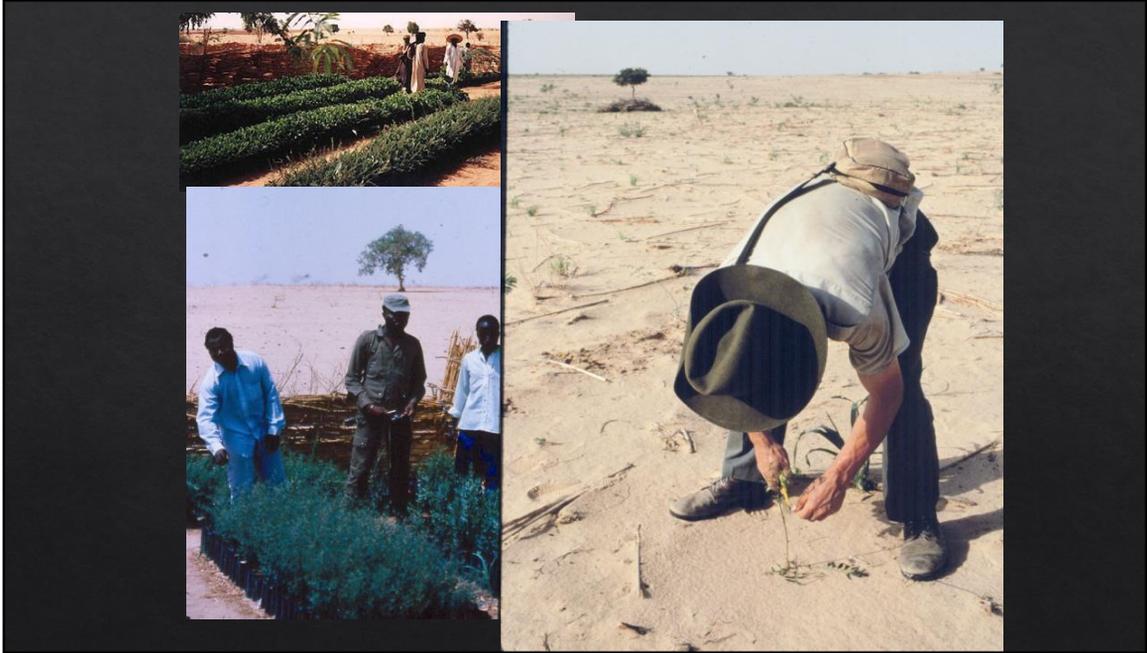


In 1980 my wife and I moved to Niger Republic, on the edge of the Sahara desert.





Dust storms became a common occurrence. Some days it was hard to see 50 – 100 meters ahead of you because of the dust storms.



Many projects attempted to solve the problem by planting trees. However there were enormous problems even in the nursery – water shortage, birds, lizards, frogs, grasshoppers, termites, goats, cattle,all made it extremely difficult to raise seedlings. And the constant, daily need to draw water by hand from 50 – 100 meter deep wells meant that few farmers wanted to raise trees.



It is estimated that in Niger 60 million trees were planted from nurseries over 20 year period with less than 20% survival. I felt very discouraged. I looked North, South, East, West – and thought, using this nursery and tree planting technique, at this rate – it was impossible revegetate the land on a large enough scale to make an impact. How many million dollars would I need? How many staff would I need? How many decades would it take? For me the solution came as an answer to prayer, and I saw for the first time, what I had seen all along but hadn't recognized for what it was. There are millions of living tree stumps in farmlands, grazing lands and degraded forests across Africa and other countries with the potential to re-grow into trees, if we give them a chance.

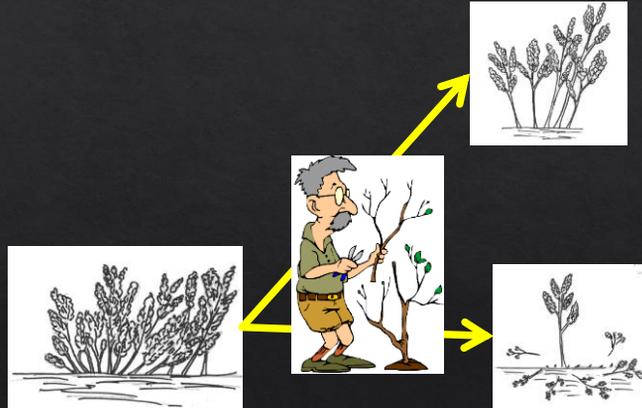
Insert: this 'bush' is actually regrowth from a tree stump and has the potential to rapidly grow into a tree if pruned and cared for properly.



All we see after clearing are the tree shoots.

In fact, these shoots are supported by a mature root system full of stored energy which can feed shoot growth and cause them to grow very quickly.

FMNR: The systematic regeneration & management of trees and shrubs growing from living tree stumps, roots & seedlings

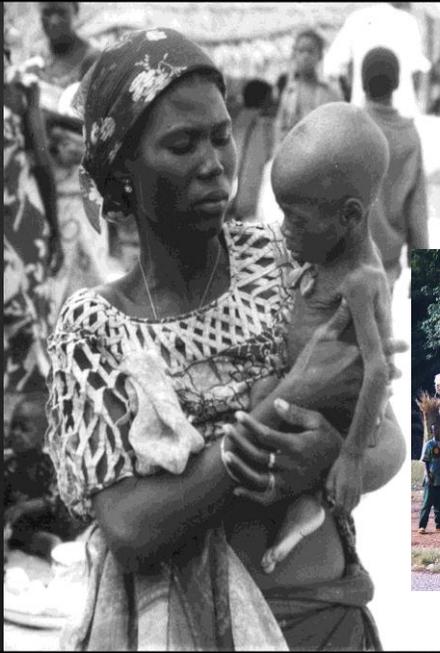




*Primarily FMNR is about **winning hearts and minds***



1984 Sahel Famine



Hunger and poverty were direct outcomes of deforestation and one of Niger's biggest exports is its own people who regularly have to go to neighbouring countries in order to survive.

Fear not and do not be
dismayed by this great
multitude, for the battle is
not yours but mine says
the Lord.

2 Chronicles 20:15



Top left: even seemingly barren land can harbour stumps, roots and seeds with the ability to grow, if given a chance.

Bottom Left: during the first year since pruning and allowing the re-growth from stumps to grow. Notice also that farmers are now able to leave crop residues on the field – for they are beginning to realize the benefits of agro-forestry – more fuel wood and more fodder.

Top Right: 3-4 years after commencing FMNR, trees have transformed the landscape, and are contributing to a more favourable environment for crops and livestock.

Bottom right: This farmer is happily growing indigenous trees with his annual grain crop. Notice behind him – there are bundles of wood for sale. The tree trunk to his right will be harvested next year, and he is grooming numerous shoots (to his right and in front of him) to be harvested in future years.

Notice also that the crop is growing well, beneath and right up to the trunk of the tree.

Greater crop resilience to drought.

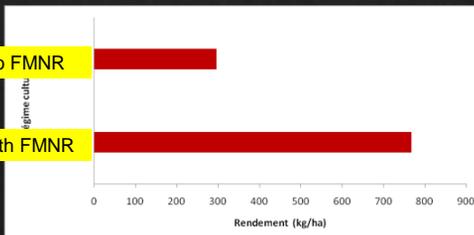


Crop yields doubled

Senegal Agric. Research Institute. 2010

Crop yield: No FMNR

Crop yield: with FMNR



Above left: This photo was taken in a drought year. Notice, crops planted close to the tree are growing better than those planted away from the tree. The tree has provided shading, protection from wind, increased organic matter and mulching, hence there is more moisture in the soil and greater soil fertility.

Right: Livestock have access to more fodder, even during the driest time of the year.

Bottom: Preliminary tests done in Senegal showed a doubling of crop yield where crops were grown in fields with trees.



Farmers practicing FMNR have greatly increased their incomes through sale of wood and non timber forest products such as fodder, honey, traditional medicines etc.



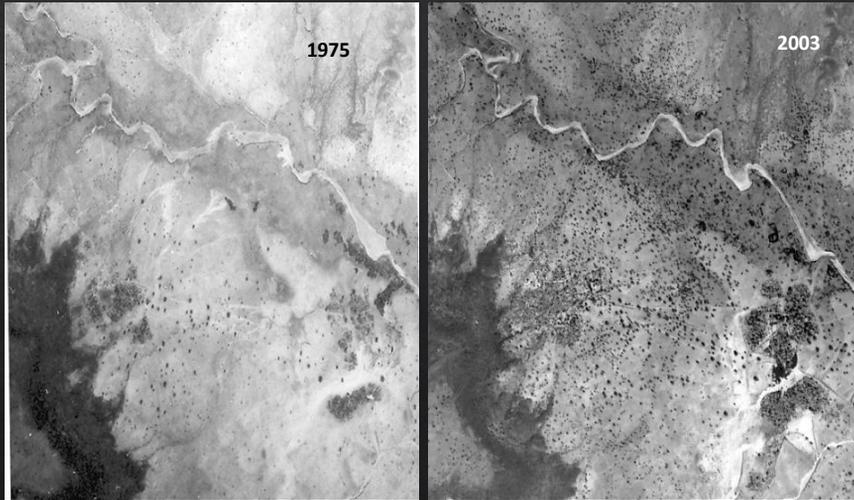
Wild Fruits, edible leaves, honey, traditional medicines.....



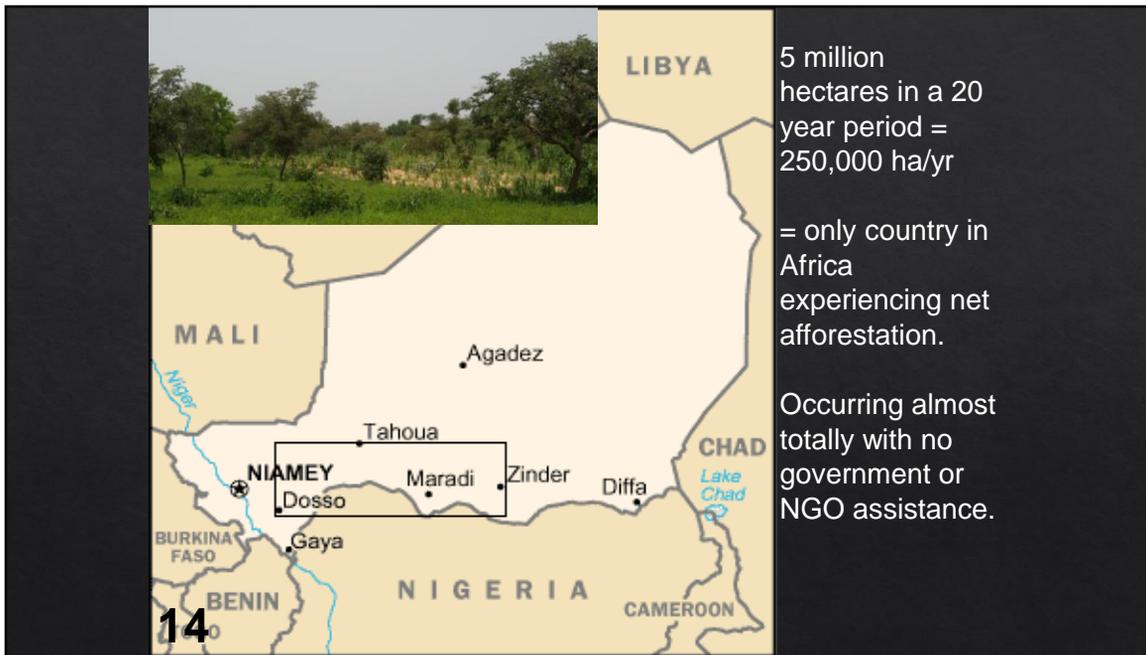
At time of writing, five indigenous fruit species had begun bearing fruit. Some of these fruits had not been seen in 40 years!

Right – income generation through keeping bee hives is now possible.

Vegetation in Galma in 1975 and 2003



The work is visible from satellite images. Black dots represent trees showing a vast increase in tree density between 1975 and 2003.



In Niger today, FMNR has spread to over 50% of the farmland, or 5-6 million hectares.

Due to FMNR, gross income has grown by \$200 - \$1,000 per household per year, equivalent to \$900 million/year nationally, benefiting 4.5 million people.

Farmers produce 500,000 more tons of cereal per year than in the 1970s and 1980s due to FMNR. As a result, 2.5 million people are now more food secure

Pye-Smith, C. 2013. The Quiet Revolution: How Niger's farmers are re-greening the parklands of the Sahel; ICRAF Trees for Change no.12. Nairobi; World Agroforestry Centre.

Reij, C., Tappan, G., Smale, M. 2009. Agro-environmental transformation in the Sahel: another kind of "Green Revolution". IFPRI Discussion Paper 00914. International Food Policy Research Institute, Washington DC

Sendzimir, J., Reij, C.P., Magnuszewski, P. 2011. Rebuilding Resilience in the Sahel: Regreening in the Maradi and Zinder Regions of Niger Ecology and Society 16 (3): 1 <http://www.ecologyandsociety.org/vol16/iss3/art1/>





Before



After – two years



Two year transformation in Upper East Region of Ghana.

FMNR & Livelihoods

187% increase in farm income in two years.



Musa Chelego, Nakuru. From poverty stricken day-labourer to commercial farmer in two years.



2,700 ha. Humbo Community
Managed Natural Regeneration
Project, Ethiopia.



“We are too much happy.”

Large mountain range – was forest probably as recently as the 1960’s, was completely cleared by 1999 (top left). Through organizing the communities utilizing this mountain, providing legally binding user rights, providing training and follow up, communities have realized rapid reforestation and are benefiting in many ways.

FMNR & Food Security - Humbo reforestation -

Ethiopia 2016, Worst drought in 30 years. ~ 10 million people affected.

One of the 7 Humbo cooperatives: 30 tons of grain in storage.



Humbo received food aid every year to one degree or other since 1984. In 2013, seven years after project commencement, the cooperatives sold 106.7 tons of grain to the World Food Program! Out of World Visions some 1,687 ADPs,

Humiliation was like our daily food as insults kept on pouring on us which sometimes led to a fight with the farmers. But now, we are glad to have abundance of fodder and we can easily move our cattle to graze without destroying crops from people's farm and picking up quarrels with them.

Incomes from the sales of our cows have also increased tremendously as the fodder has helped to increase the size of the animals we now take to the market.

<http://fmrhub.com.au/conflict-resolution-sustainable-management-trees-ghana/>





God cares even about
tree stumps!

“This gift of FMNR is from the
Almighty God and therefore
anywhere you visit you bring life
and joy”.

- Chief of Yameriga, Yamdaan Zimbil Longmoare, Ghana.

This Ghanaian chief was so overjoyed by the changes witnessed in his village in the space of just two years that he said the following: