



## ***Tony Rinaudo*** (Australia)

*“for demonstrating on a large scale how drylands can be greened at minimal cost, improving the livelihoods of millions of people”*

### **Short bio**

The Australian agronomist Tony Rinaudo is known as the “forest maker”. Having lived and worked in Africa for several decades, he has discovered and put in practice a solution to the extreme deforestation and desertification of the Sahel region. With a simple set of management practices, farmers regenerate and protect existing local vegetation, which has helped to improve the livelihoods of millions.

Rinaudo has pioneered a technique that involves growing up trees from existing root systems, which are often still intact and which Rinaudo refers to as an “underground forest”. By choosing the right plants, and by pruning and protecting them in a certain way, they soon grow into trees. Rinaudo realised that if it was people who had reduced the forest to a barren landscape, it would require people to restore it. Changing attitudes has been key to Rinaudo's successful work.

Rinaudo's farmer-managed natural regeneration method, has restored 50,000 km<sup>2</sup> of land with over 200 million trees in Niger alone. It has the potential to restore currently degraded drylands with an area the combined size of India. What Rinaudo has created is much more than an agricultural technique, he has inspired a farmer-led movement regreening land across the Sahel region and beyond.

### **Long bio**

#### **A young agronomist in a deforested country**

Tony Rinaudo was born on 19 January 1957 in Australia. He grew up in the agricultural region of the Ovens Valley in north east Victoria. Already at a young age, he was disturbed by the environmentally-destructive farming practices in his region. "At that time, they were using planes to spray the crops with pesticides," he remembers, "spray drift would kill fish in the stream. They would clear-fell the native bush, which I loved, and replace it with a monoculture of pines."

Concerned about the living conditions of the world's poor, Rinaudo studied agricultural science at the University of New England in Armidale. After graduating with a degree in Rural Science, he joined the missionary organisation 'Serving in Mission', and in 1981 moved to Niger hoping to use his knowledge to improve people's lives. The Sahel region had been hit by



severe drought and famine in the 1970s. The impacts of traditional land clearing along with colonial, and later, internationally assisted 'farm modernisation' initiatives were compounded by the desperate economic situation, growing population and a climatic drying trend: A perfect storm which resulted in extreme deforestation and land degradation.

Like many other development specialists, Rinaudo's focus was to help the rural population plant trees. He organised village tree nurseries and worked with communities to plant and protect the seedlings. But success rates were low. Scarcely 10% of seedlings survived the heat and dust storms, and the surviving ones would be eaten by goats or cut down by people for firewood. Rinaudo was close to giving up.

### **Discovering the "underground forest"**

In 1983, when stopping by the roadside on his way between rural villages, Rinaudo had a realisation that would radically change his approach. He remembers how one of the common small 'bushes' growing in the field caught his eye, "I had 'seen' these bushes many times before but had never registered their significance. I walked over to take a closer look." Rinaudo realised that the 'bush' was in fact a tree, which had been cut down and was re-sprouting from the stump. There were millions of such 'bushes', which farmers would routinely cut or burn in preparation for planting their annual crops. Their root systems were still intact but hidden in the ground. With some appropriate care, he realised, the trees that he had been so desperately trying to plant might grow up naturally from this "underground forest".

"In 'discovering' this underground forest", Rinaudo recalls, "the battle lines were immediately redrawn. Reforestation was no longer a question of having the right technology or enough budget, staff or time. It was not even about fighting the Sahara Desert, or goats or drought. The battle was now about challenging deeply held beliefs, attitudes and practices and convincing people that it would be in their best interest to allow at least some of these 'bushes' to become trees again." He realised that if it was people who had reduced the forest to a barren landscape, it would require people to restore it—and false beliefs, negative attitudes and destructive practices would need to be challenged with "truth, love and perseverance."

### **Farmer-managed natural regeneration**

From this insight, Rinaudo developed the concept of farmer-managed natural regeneration (FMNR), a very simple set of actions that farmers can take to regreen their land. Firstly, farmers survey their land and choose among the existing local species the ones they want to regenerate. Secondly, from each chosen tree stump farmers select up to five of the best stems that they will allow to grow, while cutting the rest to be used e.g. as fodder or mulch. Then, the selected stems are pruned of any side branches to halfway up the trunk. Finally, the farmer



may mark the re-growing trees with a ribbon or dab of paint and protect them. The process is repeated every two to six months.

In 1983, Rinaudo began experimenting and promoting the concept with just 10 willing farmers. The venture could have ended there as these individuals were ridiculed for their foolishness and their emerging trees were sometimes plundered by others. While it quickly became obvious that the technique definitely worked, how to popularise it and make it mainstream remained elusive. Ironically the breakthrough came through the tragedy of severe drought and subsequent famine in 1984. Through *Serving in Mission*, Rinaudo introduced a food-for-work programme that introduced some 70,000 people to farmer-managed natural regeneration and implemented its practice on around 12,500 hectares of farmland. It was during this time of hardship that a 'critical mass' of farmers adopted FMNR as a routine farming practice. From 1985 to 1999, the project continued to promote the method locally and nationally as Rinaudo organised exchange visits and training days for various NGOs, government foresters, Peace Corps Volunteers as well as farmer and civil society groups. While there are examples of FMNR adoption occurring independently, it appears that for the most part that the movement spread by word of mouth from farmer to farmer, through observation and copying. FMNR truly became a grassroots movement.

### **Greening the Sahel – impact and future potential**

The significance and future potential of this positive development for the people of the Sahel, a region strongly impacted by global megatrends such as climate change and migration, can hardly be underestimated.

Farmer-managed natural regeneration became an enormous success in Niger. Because of its simplicity, local adaptability, low cost (circa USD 20 per hectare), easy combination with other agricultural methods, and quick results, once established the method spread through peer-to-peer learning among farmers, with limited need for outside intervention. In Niger, within twenty years, [five million hectares of land with over 200 million trees have been restored](#) that way, with two and a half million people benefiting from the improved use of the land. Today at least 24 countries in Africa and Asia are already using the method.

*“If Niger, one of the world’s poorest countries, with an extreme climate on the edge of the Sahara Desert, with minimal NGO and government interference or funding can restore 200 million trees on 5 million hectares over a 20-year period largely through a farmer-to-farmer movement, what would be possible if all stakeholders—donors, scientists, governments, policy makers, business, NGOs, traditional and religious leaders and farmers—partnered and were serious about land restoration? Technically, there is no reason why simultaneously 5 million hectares of land could not be restored in multiple countries within five years.”*

Tony Rinaudo



There is extensive grassroots adoption of the FMNR method by farmers across the Sahel and beyond, along with more and more NGOs who are promoting it in collaboration with farmers and community groups. Governments are also increasingly adopting this method and setting ambitious targets for land restoration, with the support of both bilateral donors and development banks. The World Resources Institute estimates that over 300 million hectares of currently degraded land, an area the combined size of India, would respond positively to farmer-managed natural regeneration. Rinaudo has plans to spread the technique to 100 countries by 2030. In 1999, he was employed by the faith-based development organisation World Vision, which provides a platform and resources for this vision to become reality.

To provide policy-makers and practitioners with the knowledge required to fully implement FMNR, World Vision has now joined forces with a growing body of research and advocacy organisations and International Non-Government Organisations in what is called the Global Evergreening Alliance.

Luc Gnacadja, former Executive Secretary of the UN Convention to Combat Desertification and a member of the World Future Council, concludes:

*“In farmer-managed natural regeneration, the power of traditional knowledge systems that are combined with conventional science truly comes alive. The scale of land rehabilitation in this region (Sub-Saharan Africa) and the impact it has had on the well-being of the local people is nothing short of phenomenal.”*