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Author Interview: Roger Leakey

This month CABI is publishing *Living with the Trees of Life* by renowned agroforestry academic and researcher – Roger Leakey.

In his new work, the author focuses on integrating agroforestry practices into farming to improve yield, reduce poverty and reduce environmental impacts in Tropical and sub-tropical regions. Louise Rock-West caught up with Roger to learn more about his new book and ask him how agroforestry can help tackle these global problems.

Can you briefly explain the concepts within “Living with the Trees of Life”?

My book offers a diagnosis of the global problems behind large-scale rural poverty, malnutrition, hunger and serious land and natural resource degradation – including climate change. It then looks at some practical ways of addressing these problems by meeting the everyday needs of farming households; improving the yields of modern crop varieties, and restoring environmental and ecological sustainability.

It is important to recognize that poverty leads to land degradation and that degradation leads to poverty, in an inexorable downward spiral - with farming as one of the culprits. Numerous international reports on the future of agriculture have emphasised that ‘business as usual’ is not an option. Most discussions about the future of agriculture present one or other side of a highly polarized debate – biotechnology versus organic farming. Neither of these opposing views really tackles the questions that need to be addressed. The crux of the matter is that modern industrial agriculture is not appropriate for the smallholder farming systems that make up most of the agricultural area of the tropics and sub-tropics. Poor farmers have to provide all the everyday needs of their families from 1-5 hectares without adequate access to the whole Green Revolution package of technologies. Consequently, I believe, we have to find affordable and appropriate technologies that restore soil fertility, rehabilitate degraded land and create income-generating opportunities so that farmers can gain access to agricultural inputs. Within this alternative package, we need to diversify and fortify peoples’ diets with crops that are rich in micro-nutrients, and which have income generation potential in local markets.

How can the ideas laid down in your book benefit world food security as a whole?

Tropical agriculture is nowhere near as productive as it could be for a host of agronomic, environmental and social reasons too complex to explain here. The problem is not that the yield potential of current crop varieties needs to be increased. Food security could be easily achieved if the crop husbandry of modern varieties allowed them to achieve their current potential. The need is to fill what is called the Yield Gap – the difference between yield potential and what the farmers are actually achieving. I present a 3-step process that would enable this Gap to be filled.

Your ideas for the 3-point action plan have been tested in an Equator Prize-winning project – could you explain these three Steps?

The first step involves the use of ‘fertilizer’ trees (trees of the pea family that fix atmospheric nitrogen and return it to the soil) to improve soil fertility and to restore the failing ecological processes that lie behind land degradation and poor crop yields. This should improve crop yield 2-to 3-fold. The attainment of these higher crop yields then allows the farmer to grow a reduced area of food crops.

The next step introduces commercially important indigenous trees into the farming system to produce traditional forest foods. Part of this process is their domestication to improve the quality and yield of these tree products. These trees are then grown by the farmers as new cash crops to generate income and diversify the farming system

In the third step, the products of these trees are marketed, traded and processed. This generates further income and diversifies the local economy. Farmers have the option to use this income to purchase agricultural inputs and further improve crop yield – so closing the Yield Gap. Steps 2 and 3 together enhance the livelihoods of local people by

meeting their needs for crucial life support systems lost by deforestation, generating income and creating new business and employment opportunities.

In your book, you discuss “harnessing the ecological power of trees” – could you explain in broad terms what this means?

Trees lie at the heart of mature ecosystems providing thousands of organisms with the niches they need to perform a dynamic balancing trick based on the regulation of each other’s life cycles and food chains. This makes ecosystems function sustainably to allow the populations of plants, bugs and beasts to keep each other in check. They also play a pivotal role in the cycling of nutrients, water and carbon; they protect watersheds and regulate water flows; and very importantly they produce a wide range of products from timber and wood to foods, medicines and other products of day-to-day importance to local people. Adding productive tree crops to farming systems in appropriate ways would allow the ecological functions of these farms to be ‘healthy’ in the same way.

Your book states that “... Agroforestry is poorly recognised by policy makers and development agencies” ...what do you feel needs to happen in global policy to change this?

The issues are complex and the tendency has been to take a narrow view of the world and its problems. As mentioned above this is seen in the current polarized debate about agriculture in which different ideologies fight their own corner. What is needed is a broader debate. I hope this book initiates that broader debate.

In the introduction to the book, you say that you come from “the agrarian branch of the tribe more famous for its head-hunting in Olduvai Gorge and Turkana” has your connection with the East African Leakey family helped or hindered you in your work?

I think the benefits coming from my family history are mostly those that flow from being a third generation tropical forester brought up in Africa to know about the tropical environment and its flora and fauna. During the course of my own career, I think I have benefited greatly from the opportunity to interact with local people of the countries in which I have worked.

I have been very fortunate to work in forestry and agroforestry research in Africa, Asia, Oceania and Latin America for over 40 years seeing, often in remote locations. This has allowed me to see for myself the devastating effects of land degradation on both food security and poverty. I have also seen some little-known farming systems with potential to offer solutions on a much wider scale.

Roger Leakey was Professor of Agroecology and Sustainable Development at James Cook University from 2001-2006. He was also formerly Head of Tropical Ecology, Centre for Ecology and Hydrology, Edinburgh, UK (1997-2001 and worked at the World Agroforestry Centre (formerly the International Centre for Research in Agroforestry) as Director of Research from 1993 to 1997.

His current posts include Vice Chairman of the International Tree Foundation and Vice President of the International Society of Tropical Foresters.

About the Book:

Living with the Trees of Life is available to purchase from CABI in hardback and paperback formats:

Living with Trees of Life: Towards the Transformation of Tropical Agriculture

R R Leakey, formerly Professor of Agroforestry and Novel Crops Unit, James Cook University, Australia

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