BAOBAB MARULA



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INTRODUCTION:

Why Are Baobab and Marula So Important?

THE EDITORS

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his book advocates widespread domestication and planting of two iconic African trees, the baobab and the marula, as an important part of a holistic solution to some of humanity's most pressing problems. These two species, which dominate the landscape and vegetation in large areas of mainland Africa are scientifically known as Adansonia digitata and Sclerocarya birrea.

Humanity faces complex, dynamic challenges that are difficult to solve because they are connected to so many different elements of our existence. These wicked problems affect individuals and local communities in unique ways, but they also have a global dimension. The diversity of perspectives on how to tackle these global challenges further complicates the situation, creating tensions and making it more difficult to understand how problems could be dealt with both effectively and in a just and ethical way. Strategic, collaborative action is required to tackle the intractable, global challenges of climate change and loss of biodiversity. If we fail, unpredictable climate patterns and inequitable economic realities could lead to a new growth of poverty and serious public health emergencies. Differences in the cultural understanding of the world add to the difficulties of the situation.

The African continent is disproportionately exposed to these global challenges, due to historical underinvestment in infrastructure and capacity development. On the other hand, Africa already has essential capacity for collaborative action, which is required to address the wicked problems. Moreover, the continent is exceptionally rich in biodiversity which has been used sustainably by African communities for thousands of generations.

To take just one example, the African oil palm (*Elaeis guineensis*), one of the most valuable gifts to the world from West African small farmers, provides almost 40 per cent of the world's edible oil using eight or nine times less land per ton of food oil than its main competitors, despite being actively boycotted by the mainstream of European and North American environmental organizations, and even by the European Union.

This extremely unfair boycott started to develop because African oil palms were planted on a few million hectares of deep peat soils, in swampland rainforests, where they do not really belong, in Indonesia and Malaysia. However, things might soon improve because International Union for the Conservation of Nature (IUCN), the organization maintaining the Red List of Threatened Species, has started to pay serious attention to the problem.

According to IUCN, 37 per cent of the world's cropland is already devoted to cultivating oil crops. Despite this, hundreds of millions of people are still suffering from a lack of essential fats, which probably is the most neglected form of malnutrition. According to some predictions, global production of edible oils might grow from 200 million to 600 million tons this century. If this demand is met by producing more seed oils, we may soon have very little natural vegetation left, and huge amounts of carbon dioxide could be released into the atmosphere from the soils of new agricultural lands. But if the world focused on growing African oil palms and other oil-producing African tree species, future demand for food oil could be met using even less land than is currently devoted to growing oil crops. India has already launched a major oil palm growing program, aiming to make the country self-sufficient in food oil. India currently imports 60 per cent of its edible oil, which is the second largest foreign exchange drain after petroleum, at 20 billion euros a year.

African oil palm is only one of the many African trees with unique potential to provide "global-local" solutions that could both support local communities and contribute to overcoming the global challenges about sustainable development. Both marula and baobab might soon become even more valuable to humanity in a world threatened by rapidly escalating global warming.

Baobab and marula are exceptionally important because they are immensely popular and seen by people almost everywhere where they grow as some of the most valuable tree species. Both trees produce large crops of edible fruit. The pulp and seeds of the baobab fruit, as well as the tree's leaves, flowers and roots, are consumed as food by many African communities.

The two trees are also important because they could be successfully planted and grown in vast areas of land with different soil types and very different levels of rainfall. Areas where they are known to occur together cover about half of the African continent. Both trees can grow large in arid and semi-arid conditions where almost nothing else grows well.

Both trees could be planted sparsely over vast areas, one or a few or a dozen per hectare, without really changing the prevailing, traditional and perhaps even ancient land use patterns. This is important because sequestering carbon dioxide in trees usually requires drastic changes in the local land use patterns, typically transforming fields or pastures into closed forests. Such changes tend to lead to complex land use and land ownership conflicts. Baobabs and marulas could generate income for rural communities and state governments from carbon sequestration without such complications. But it may also be worth testing what they can do when planted more densely, as are most of our present tree crops. Used in this way, they could contribute more to preventing a global climate catastrophe than any other trees growing on planet Earth.

According to an ancient African legend, baobab is the upside-down tree. The origin of the joke is easy to understand: many baobabs look like the stump of a fallen tree that the gods planted in the ground, roots up and branches down. Stump or bottle-shaped baobabs can be as thick where the trunk ends as at ground level and the largest specimens are among the thickest trees in the world. The widest currently existing baobab tree, the Sagole baobab, growing in South Africa's Limpopo province, is 11 meters in diameter, but during the colonial period British and French officials claimed to have measured even larger baobabs, up to 18 or 20 meters in diameter. Marula never reaches similar dimensions, but it can still become a relatively large tree, up to one and a half meters in diameter, even in semi-arid conditions.

In this book we argue for a re-examination of the rich wisdom and expertise of the indigenous communities on these two trees. This should be integrated with in-depth, interdisciplinary and transdisciplinary research and evaluation of the trees' potential and possibilities.

One focus of the research should be domestication. Without domestication, it will be more difficult to attract sufficient attention to the two species, and to the necessity to protect their genetic base. In our vision, there should be separate cultivars for the production of baobab oil, fruit pulp and leaves, as well as many different varieties of marula. It is important to select marula cultivars producing larger fruit with a better ratio of edible pulp to kernel than even the best existing varieties. Similarly, it is important to select early fruiting baobab trees guaranteed to produce a good fruit crop. Without this, the planting of baobab and marula trees cannot achieve widespread popularity.

To avoid mistakes made in the domestication of other species in the past, it is essential to follow agroecological principles closely. While enhancing crop production and the utilization of the unique traits of baobab and marula, we must also ensure that their genetic diversity is passed on to future generations.

However, domestication is imperative and cannot be avoided. While we must be mindful of the dangers involved, domestication is necessary to secure the wild populations of marula and baobab trees against overuse caused by the already rapidly growing global market demand. Both African and European governments should devote far more resources to research on these two globally important species and to preserving their genetic diversity. One of the most striking examples of their extreme under-valuation has been that in the Spitzbergen Seeds Vault there are 150,000 admissions of wheat but only 15 of baobab and 2 of marula.

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