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From ethnobotany to mainstream agriculture: New crops for subsistence farmers in the tropics

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Statement of the Problem: Tropical agriculture is both failing local people and the environment with serious impacts on food and nutritional security, poverty, the global well-being of society and the planet. Addressing this problem requires a new mindset that recognizes the need to reverse the cycle of land degradation and social deprivation that drives the complex processes that result in very low and declining yields of staple food crops – creating a yield gap.

Methodology & Theoretical Orientation: To achieve this, African smallholder farmers have requested help to diversify their farming systems with new crops that produce the traditionally and culturally-important food and medicinal products that their ancestors used to gather from forests and woodlands. Cultivating these nutritious and ecologically important species producing locally marketable products creates healthier agroecosystems and income generation opportunities; as well as new business possibilities. Over the last 25 years, techniques and strategies to allow a decentralized and participatory approach to the rapid domestication of these ethnobotanically important species have been applied and implemented in over 500 communities in Cameroon.

Findings: The results have been very positive and are being increasingly adopted and up-scaled, involving some 50 species. (1) Communities can select individual trees with desirable traits from among the 3- to 10-fold intraspecific variation available at the village-level. (2) These species are high amenable to simple, low-technology horticultural techniques for cultivar development that can be implemented at the village level. (3) Participating communities have reported numerous social and economic benefits from the domestication and cultivation of these species: and, in parallel, increased staple crop yields resulting from improved soil fertility and health.

Conclusion & Significance: There are great opportunities to develop new tropical crops producing culturally important foods and traditional medicines to transform subsistence agriculture and the lives of local people and benefit the global environment.

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