Economic Values of Coffea arabica Biodiversity in Ethiopia

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Introduction

Ethiopia possesses the most important and diversified genepool of the species of *Coffea arabica* including wild populations in montane rainforests, and the traditional landraces and cultivated varieties on farm. High genetic diversity has high economic value in breeding to develop premium quality, disease tolerant , drought resistance and low caffeine varieties.

Materials/Methods

We the total economic value framework, which includes use and non-use values. Use values were estimated in term of value for genetic enhancement to increase yield, pest and disease resistance, low caffeine, high cup quality, drought and climate change resilience, and indirect values of GHG reduction.

Figure 1: Yayu Coffee Forest Biosphere Reserve

No	Attributes of *Coffea arabica* biodiversity	National Value (million UD$)		Global value (millions of US$)	
		Low	High	Low	High
1	Yield increment benefit	1,465.00	4,688.00		
2	Disease resistance	100.00	157.00	600.00	1,000.00
3	Low caffeine			225.00	292.00
4	Cup taste quality	65.80	65.80	1,260.00	1,260.00
5	Climate resilience	615.30	615.30	5,500.00	5,500.00
6	Ethiopian coffee forests Ecosystem service- Climate change mitigation	64.61	64.61		
7	Pest control of forest birds	60.00	248.00		
Total		***2,370.71***	***5,838.71***	***7,585.00***	***8,052.00***

Figure 2: Estimates of economic of coffee diversity

Results/Discussion

If Ethiopia exploits its coffee genetic resources potential for coffee production in the country, it can generate an additional benefit of US$2.37-5.84 billion per year. Besides, if coffee producing countries use coffee genetic resources in Ethiopia to solve their coffee production problems, there is a potential economic benefit of US$7.6-8.1 billion per year. If users of these genetic resources are willing to pay 5% of their gain in economic benefit from Ethiopian's coffee genetic resources, to Ethiopia, the country can get additional income of about USD380-403 million per year.

Conclusion/Perspectives

Our assessment revealed enormous potential of Ethiopia's Arabica coffee biodiversity to improve and sustainably produce coffee globally and in the country. To exploit this potential, we recommend research capacity building, mobilzing resources for research and development, support ex situ and in situ conservation of coffee genetic resources, promote partnership, policy enforcement, awareness creation at global level and technology transfer

References:

Pearce, D. and D. Moran.1994. The Economic Value of Biodiversity. The World Conservation Union, Earthscan Publications Limited, London; Hein, L. and F. Gatzweiler. 2006. The Economic Value of Coffee (Coffea arabica) Genetic Resources. Ecological Economics 60:176-185; DOI: 10.1016/j.ecolecon.2005.11.022.