

# The economic value of coffee (*Coffea arabica*) genetic resources

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## Abstract

Whereas the economic value of genetic diversity is widely recognized there are, to date, relatively few experiences with the actual valuation of genetic resources. This paper presents an analysis of the economic value of *Coffea arabica* genetic resources contained in Ethiopian highland forests. The valuation is based on an assessment of the potential benefits and costs of the use of *C. arabica* genetic information in breeding programs for enhanced coffee cultivars. The study considers the breeding for three types of enhanced cultivars: increased pest and disease resistance, low caffeine contents and increased yields. Costs and benefits are compared for a 30 years discounting period, and result in a net present value of coffee genetic resources of 1458 and 420 million US\$, at discount rates of 5% respectively 10%. The value estimate is prone to considerable uncertainty, with major sources of uncertainty being the length of breeding programs required to transfer valuable genetic information into new coffee cultivars, and the potential adoption rate of such enhanced cultivars. Nevertheless, the study demonstrates the high economic value of genetic resources, and it underlines the need for urgent action to halt the currently ongoing, rapid deforestation of Ethiopian highland forests.

**Keywords:** Genetic resources, coffee, *Coffea arabica*, damage costs, economic value, Ethiopia