

COFFEEBRIDGE - Bridging knowledge to the field: an evaluation of the agronomic and socio-economic potential of Robusta coffee genetic resources as a cash crop in the Congo Basin

Context

This report details the findings of the CoffeeBridge project, which investigated the potential of Robusta coffee production in the Tshopo province of the Democratic Republic of the Congo (DRC). Coffee is a critical agricultural commodity globally, with *Coffea arabica* (Arabica) and *Coffea canephora* (Robusta) being the two main commercially significant species. While Arabica is valued for its superior sensory profile, Robusta is often perceived as lower quality, despite its resilience to climate change, pests, and diseases. The project addresses the need to explore and develop the underutilized potential of Congolese Robusta coffee amidst rising global challenges such as climate change, pest pressures, and shifting consumer demands. Historically, the DRC, particularly research stations like Lula and Yangambi, played a vital role in Robusta breeding and global distribution. However, due to political instability, economic challenges, and disease outbreaks, this sector declined significantly. The CoffeeBridge project aims to revitalise the Robusta coffee sector in Tshopo province by integrating research on genetics, cultivation systems, household surveys, socio-economic analysis, and historical insights.

Objectives

The CoffeeBridge project aimed to strengthen the scientific knowledge transfer and socio-economic foundations of Robusta coffee production in the Tshopo province. Key objectives included:

- Assessing the socio-economic dimensions of the local coffee sector, including land tenure, governance, and market access.
- Characterizing and valuing Robusta coffee genetic resources, studying genetic, agronomic, chemical, and sensory diversity.
- Optimizing agronomic practices for sustainable production, including analyzing soil fertility and cropping systems.
- Investigating the role of coffee in agroforestry systems, comparing monoculture and agroforestry models.
- Reconstructing the historical trajectory of Robusta coffee in the DRC.
- Strengthening the coffee value chain and policy frameworks, identifying economic constraints and trade barriers.

These objectives were pursued through six interconnected work packages focusing on coordination, socio-economic evaluation, genetic resources screening, agroforestry, historical research, and value chain/policy recommendations.

Conclusions

The report concludes that the DRC, and specifically Tshopo province, holds significant untapped potential for Robusta coffee production. Key findings include:

- Historical research reveals that the DRC played a crucial role in the early development and global dissemination of Robusta coffee, with research stations like Lula and Yangambi being 2 pivotal.
- Genetic screening identified promising Robusta genotypes within the INERA Coffee Collection, exhibiting desirable traits such as large bean size, high cupping scores, and potential adaptation to dry environments.
- Agroforestry systems are preferred over monocultures, offering a balance between yield, biodiversity conservation, carbon sequestration, and farmer needs. Wild forest coffee populations are crucial for genetic diversity and ecosystem services.
- Socio-economic challenges, including lack of buyers, poor transportation infrastructure, low farmgate prices, and unclear land tenure, hinder the sector's growth.
- Value chain analysis shows that producing medium quality roasted coffee for the local market and exporting green coffee are the most promising strategies for growth.
- Policy recommendations emphasize the need for government intervention in improving infrastructure, supporting farmer training, and establishing a national strategy for Robusta revitalization.
- Engaging stakeholders, including farmers, traders, policymakers, and researchers, is critical for the long-term success of the Robusta coffee sector.

Keywords

Robusta coffee, *Coffea canephora*, Tshopo province, Democratic Republic of the Congo (DRC), CoffeeBridge project, genetic resources, agronomy, agroforestry, socio-economic analysis, value chain, policy recommendations, historical research, coffee quality, market access, sustainability, genetic diversity, breeding programs, INERA Coffee Collection, Yangambi.