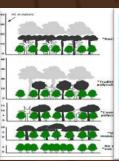


South-South Knowledge Exchange: Colombia, Ethiopia, Burundi and Rwanda

Sustainable Coffee Landscapes

















Smallholder Coffee Grows Better Under Shade







Water:

- Shade trees reduce water stress (dry season)
- Increased climate resilience (Climate Smart Agriculture)

Mulch:

- Shade tree leaves provide free mulch
- **Land and labor savings**

Nutrients:

- Free fertilizer from tree leaves (esp. N-fixing)
- **Reduced chemical inputs**



Income Diversification



Shade Tree Products

- Wood (from pruning)
- Fruits, honey, etc.

Inter-cropping

• Bananas, beans, other

Certification (Price Premium)

Environmental certification includes shade

Agro- and Eco-Tourism

- ⇒ Sustainable Intensification
- ⇒ Risk Reduction
- ⇒ Improved Food Security



Photo by: Taye Kufa



Biodiversity



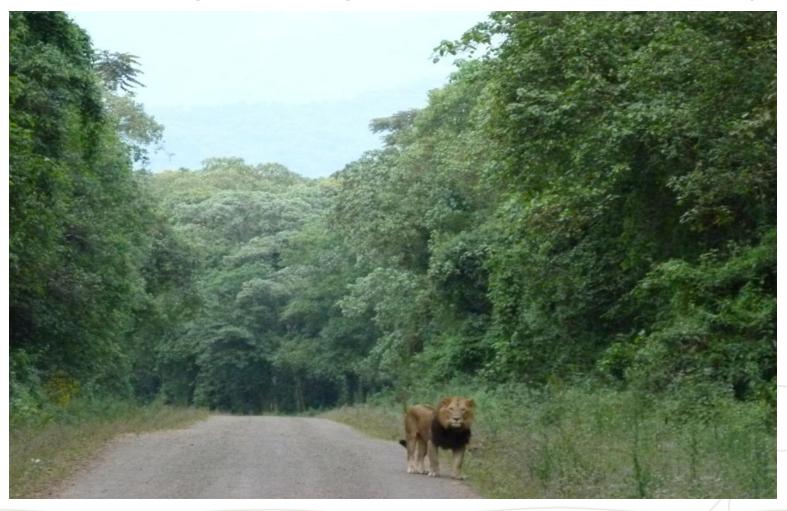
- Coffee with good shade supports many wild species (birds, small mammals, invertebrates)
- Surrogate habitat where natural forest scarce
- Good coffee shade for biodiversity has:
 - High shade tree density (40%+ canopy)
 - Higher shade tree diversity(especially native tree species)
 - Tall, vertically heterogeneous canopy
 - •Connectivity with remaining natural forest







Biodiversity-friendly Shade Coffee in Ethiopia



Other Environmental Benefits







Watershed Management:

- On-farm soil conservation
- Downstream water benefits
 - Improved quality
 - Dry-season availability

Carbon Storage:

- More and bigger trees on land
- Climate Smart Agriculture

What About Yields?



- Yields likely higher with shade, due to reduced water stress.
- Sun coffee yields might be higher where water not a constraint and with heavy chemical inputs (not typical of Burundi, others).
- **Burundi** PADZOC **Impact Evaluation** to compare productivity, farmer incomes, and biodiversity between shade and sun coffee systems.
- Coffee quality often better (not worse) under shade.



Photo: FN0



Who's Got Shade Now? (M) WORLD BANK GROUP







- Coffee naturally is a forest understory small tree
- Coffee cultivated under open sun, or under shade (25-70% canopy cover)
- ETHIOPIA: Almost 100% of coffee area under **shade**, with about
 - Forest (wild Coffea arabica): 10% of coffee area
 - Semi-forest: 30%
 - Gardens: 50%
 - **Plantations: 5%**
- **COLOMBIA:** Now about **40% shade**
- BURUNDI and RWANDA: Now 90%+ open sun coffee for historical reasons (Colonial authorities required coffee monoculture)





