R&R need in Colombia is low, since national replanting programs have already revitalized the tree stock, and current yields are high.

Quick facts: Colombia is the world’s 2nd largest producer

<table>
<thead>
<tr>
<th>Production '000 tons</th>
<th>Production share Global &amp; region</th>
<th>Coffee land '000 hectares</th>
<th>Varieties Arabica-Robusta</th>
</tr>
</thead>
<tbody>
<tr>
<td>728</td>
<td>3rd in world</td>
<td>796</td>
<td>100% A</td>
</tr>
</tbody>
</table>

R&R need: <10% of total land is in need of R&R

SHF land in R&R need out of all land '000 hectares

- 728 No need
- 796 R&R need
- ~2% of global need

Drivers of R&R need:

Most of the diseased and aged trees were successfully renovated. There is not a strong case for R&R in Colombia.

Uplift potential: Low uplift potential given high current SHF yields

Current SHF yield & potential uplift

<table>
<thead>
<tr>
<th>Current SHF yield</th>
<th>Potential uplift</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.70 Tons per hectare</td>
<td>+10%</td>
</tr>
</tbody>
</table>

Potential increase in supply

~0-1%

Total national supply could increase ~0-0.5% if R&R and GAP is implemented on all SHF land in need of R&R.

Viability: Relatively minor impact from climate change

- Climate change is forecast to have minor impact on Colombia.
- Given its topography, there may be opportunities to move coffee plantations to higher altitudes if needed.
- The lowest lying areas are the ones forecast to be hardest hit by climate change.

Other viability considerations

- Farmer share of export price is high at 85-90%.
- Colombia coffee production performs at record levels not seen since the 1990’s, creating overall confidence in the sector. This high level of production could be maintained given that 74% of production is planted with rust resistant varieties, compared to 35% in 2010.
- The Colombian specialty coffee market is booming, increasing the value added for producers.

Notes: (1) The current yield is calculated on the basis of SHF production divided by SHF land area, the potential yield uplift comes from the GCP study on Colombia; GCP, Colombia: GCP: Economic Viability of Coffee farming, 2017 - The study estimates a potential 20% yield uplift reached through fertilization, pest and shade management and targeted rejuvenation. We use a 10% yield estimate for this study since we do not account for irrigation; (2) Rounded to the nearest 5%, estimate assumes that R&R and GAP increase yields with 10%, and the range reflects a 25-100% R&R success rate. Sources: FAO Statistics database; ICO statistics; GCP and Technoserve, Economic Viability of Coffee Farming, 2017; Root Capital, Learning Report: the CFIR, 2016; USDA, Annual Coffee Report, 2017; IHCAFE, Programa de Asistencia al Pequeno Productor, 2017; IHCAFE, El sector café de Honduras: avances, institucionalidades y desafíos, 2017; Dalberg Interview.
Colombia’s successful renovation programs were supported by strong coffee institutions

**Farmer segmentation:** Most SHFs are in tight and loose value chains

- National production is dominated by SHFs
  - The majority of SHFs are either in tight or loose value chains. The national coffee federation (FNC) has strong linkages with SHFs
  - **# SHFs ‘000** 535 – ~3% of global SHFs
  - **SHF land ‘000 hectares** 676 (~85% of national land) – average farm size ~1-2 hectares
  - **SHF production ‘000 tons** 503 (~70% of national production)

- Assessment of SHF orgs.
  - The FNC has a network of 34 cooperatives that deliver TA to their members

- Links to market
  - Many SHFs are linked to market through the FNC’s network of 530 buying stations

Enabling environment for R&R: Well organized sector and supportive policies

- Coffee share of GDP: N/A [Coffee share of exports: 7.2% (2015)]
- Coffee institutions (FNC, Coffee Fund) are strong and well organized
- Strong involvement of the Colombian government in renovation programs since the late 1990s. The Government and the FNC signed the “Coffee Prosperity Accord 2010-15” in 2009 and established an ambitious renovation program
- Cenicafé leads research on varietal development, and has developed several rust-resistant varieties
- Since 2011, Cenicafé has been providing seeds at commercial volumes. Cenicafé also established a network of private nurseries to ensure a sufficient supply
- SHFs have access to long term loans for R&R
- Public actors and local financial institutions such as the Colombian Ministry of Agriculture, Finagro, Banco de Bogotá, the National Coffee Fund (FoNC) provide finance to SHFs for renovation
- Coffee institutions provide extension services at national, regional and district level. However, these public extension services do not meet the demand and need of the SHFs
- Some cooperatives provide TA

**Examples of R&R programs:** Past R&R programs successfully met most of the R&R need

- **FNC and the Colombian Government – Competitiveness³ and Permanency, Sustainability and Future (PSF) programs** (late 1990s and 2009 – 2013): Through these two programs, more than 300,000 ha of land were renovated, both for SHFs and medium farmers.

Notes: (1) The Centre of Coffee Research was established in 1937 by the FNC, and has since remained under the management of the FNC; (2) Variety Castillo, rust resistant. (3) The Competitiveness Program (Competividad) targeted large and medium scale producers. Source: FAO Statistics database; ICO statistics; GCP and Technoserve, Economic Viability of Coffee Farming, 2017; USDA, Annual Coffee Report, 2017; FNC, Sostenibilidad en Accion, 2013; Santiago Silva Restrepo, Evaluacion de impacto de las progresas de renovacion de cafetales 2007-11, 2012; Risk and Finance in the Coffee Sector, The world Bank, February 2015; Dalberg Interview