Our Approach

**Literature Review**
- AgMIP and CMIP data
- WRI Aqueduct
- International Center for Tropical Agriculture (CIAT)
- CP Procurement Professionals
- Mint Industry Experts
- WRI Researchers
- Sustainable Food Lab Experts

**Expert Interviews**
- Cocoa
- Potato
- Barley

**Benchmarking Research**
- Mapping of Key Risks
- Development of Recommendations to Address Risks

**Recommendation Development**

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**Mint Cultivation: Current State**

<table>
<thead>
<tr>
<th>Location</th>
<th>Use</th>
<th>Cultivation</th>
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<tbody>
<tr>
<td>US (and some parts of Canada)</td>
<td>Flavor</td>
<td>~250 large farms; one of many crops</td>
</tr>
<tr>
<td>India</td>
<td>Cooling refreshing effect, as well as flavor</td>
<td>~2 million smallholder farms; rotational crop</td>
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**Risks Include Changes in Water Availability, Crop Competition, Seasonal Variability, Viable Growing Regions, and Temperature**

**Potential Risks from Climate Change**
- Could impact the availability, quality, and cost of mint and menthol.
- These risks have varying levels of uncertainty.

**Companies are Responding to Climate Risk with Various Management Strategies**

**Benchmarks: Climate & Crop Management Strategies**

**COCOA**
- Farmers ecosystem approach:
  1. Certification- RA & UTZ certified suppliers
  2. Research- Increase plants quality and performance
  3. Technology Transfer- Share knowledge between farmers in growing area

**Cocoa**
- Farmers training program- training and assistance on more efficient, sustainable farming methods
- Collaboration between several research institutes to increase cocoa's quality and quantity

**Potato**
- Collaboration with industry partners and peer companies on environmental standards
- Farmer engagement on carbon emissions and water use reduction

**Barley**
- Farmer engagement through Web-enabled tools for agricultural supplier
- Pilot programs focused on water and resources management
- Data science and research

**Literature Review: Climate and Agriculture (Wheat, Soy, Corn, Rice)**
- Climate change is likely to have significant, multifaceted impacts on agricultural production around the world
- An intercomparison of seven crop models “indicate strong negative effects of climate change” on yields for the four major crops, especially at greater levels of global warming and low latitudes
- A multimodel assessment of global hydrological models indicates that “climate change is likely to exacerbate regional and global water scarcity considerably”
- Another multimodel analysis of water supply and demand projections suggests that climate impacts to these crops will result in crop yield losses of 8-24% of the present day totals

**Recommendations for Colgate-Palmolive**
- Research impact on mint of commodity crop stress due to climate change
- Research on climate change impacts specific to mint cultivation

**Technology**
- Invest in research and development of climate resilient varieties of mint and substitutes for natural mint

**Partnerships**
- Explore opportunities for precompetitive collaboration with the Mint Industry Research Council and peer companies

**Risk Mitigation**
- Incorporate climate change data, projections, and considerations into broader risk mitigation strategies

**Farmer Engagement**
- Consider supporting or investing in farmer engagement regarding resource management and agricultural