The Coca-Cola Company

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Water is Biggest Part of Our Supply Chain and it is Under Growing Stress

- Physical availability – surface or groundwater – and the sustainability of those sources
- Infrastructure existence, pressure, service area, metering
- Pricing – too cheap or too expensive
- Droughts
- Competing use and increased demand from more people and increased GDP
- Climate change
- Regulatory limits
- Social acceptance

Water Risks in Manufacturing Locations

Water Risks in Agricultural Supply Chain
Global Water Stress: 2010

Total Water Withdrawals as a Percentage of Renewable Supply

- Low Stress (<10%)
- Moderate Stress (10-20%)
- Medium-High Stress (20-40%)
- High Stress (40-60%)
- Extremely High Stress (>60%)
- Arid & Low Water Use
- No Data or Out of Area

Classified - Internal use
2020: Water Megatrends and Effects

**MEGATRENDS**

**POPULATION GROWTH**
Expected to increase by 1.5 - 8 billion by 2020

**CLIMATE CHANGE**
0.8°C temperature increase by 2020

**GLOBAL DEVELOPMENT**
Dramatic increase in number of developed economies

**EFFECTS**

1. 2/3 of world population in severe water stress
2. 1/3 of world land area in severe water stress
3. Significant water quality degradation
4. Precipitation patterns change: more droughts and floods
5. Significant increase in competition for freshwater
6. More aggressive allocation, increased prices, conflict potential
7. Two billion more urban residents by 2030
8. Variable adaptation by public sector
9. Water infrastructure needs require $1 trillion+ between now and 2025
2020 Water Stress: Rate of Change
Future demand for water will outstrip our capacity\(^1\) to provide it

Billion m\(^3\), 154 basins/regions

<table>
<thead>
<tr>
<th>Category</th>
<th>Existing withdrawals(^2)</th>
<th>2030 withdrawals(^3)</th>
<th>Basins with deficits</th>
<th>Basins with surplus</th>
<th>Existing accessible, reliable, sustainable supply(^1)</th>
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<tr>
<td>Municipal &amp; Domestic</td>
<td>4,500</td>
<td>600</td>
<td>900</td>
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<td></td>
<td>700</td>
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<td></td>
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<td></td>
<td></td>
<td>3,500</td>
</tr>
</tbody>
</table>

1 Existing supply which can be provided at 90% reliability, based on historical hydrology and infrastructure investments scheduled through 2010; net of environmental requirements
2 Based on 2010 agricultural production analyses from IFPRI
3 Based on GDP, population projections and agricultural production projections from IFPRI; considers no water productivity gains between 2005-2030

SOURCE: 2030 Global Water Supply and Demand model; agricultural production based on IFPRI IMPACT-WATER base case
We need a “resource productivity” revolution

Carbon productivity growth required 2008–50

(U.S.) Water productivity growth required 2008–50

U.S. labor productivity growth 1830-1955

(Average!) Water productivity growth required 2008–50
Groundwater Stress -- India

NASA’s Gravity Recovery and Climate Experiment (GRACE).
Groundwater Stress -- India
“Groundwater overuse hits Mexican state’s citrus growers”

“Conagua regulates artificial aquifer replenishment to mitigate overuse”
Food:Water:Energy Nexus

Water, Energy and Food:
All Three are at the Heart of the Sustainability Challenge

CLIMATE CHANGE
• 0.8°C temperature increase by 2020
• Manifestation in water
• Unabated, climate change could cost the world at least 5% in GDP each year
• If current policies are maintained, global energy demands are expected to grow by as much as 55% through 2030 and further stress water resources

POPULATION GROWTH
• Expected to increase by 1.5 billion to 8 billion by 2020
• By 2030 the number of urban dwellers is expected to be about 1.8 billion more than in 2005 and to constitute about 60% of the world’s population

GLOBAL DEVELOPMENT
• Dramatic increase in number of developed economies
• Surging middle class
Water Footprints

Selected regions and area of assessment:
We selected six countries where we purchase sugar from beet. As some of the sugar beet growing areas stretch over several river basins, we further split them into 10 regions to assess water sustainability at a catchment level.

Region 1: Spain
Blue water footprint sustainability assessment:
- Water quantity problems: High
- Water quality problems: None
- Anoxia: None
- Eutrophication: None

Grey water footprint sustainability assessment:
- Water quantity problems: High
- Water quality problems: None
- Anoxia: None
- Eutrophication: None

Water quality positions in the region:
- NO₃: SW
- BOD: SW
- P: SW
- NH₄: SW
- Total nitrogen: SW
- Total phosphorus: SW

Grey water footprint key:
- NO₃: SW
- BOD: SW
- P: SW
- NH₄: SW
- Total nitrogen: SW
- Total phosphorus: SW

Water footprint:
- Operations
- Packaging
- Natural ingredients
- 5% Operations
- 5% Packaging
- 90% Natural ingredients

Total product water footprint:
- Total Water footprint of all ESI regular Cola: Europe 32.21 m³
Strategy, Goals and Partners

**Strategic Framework**

1. **Plant Performance**
2. **Watershed Protection**
3. **Sustainable Communities**
4. **Global Awareness & Action**

**Goals**

- **Reduce**: improve water efficiency 20% by 2012 compared with a 2004 baseline.
- **Recycle**: 100% fully treated effluent water.
- **Replenish**: “give back” to communities and nature as much water as we use by 2020.
- **Sustain**: source water protection plans in all plants by the end of 2012.
- **Agriculture**: water use, soil health and biodiversity, focus on sugarcane, oranges, corn.
Source Water Protection Requirement

Strategic Intent

1. Protect Manufacturing Capacity
   • Promote and support sustainability of water supplies
   • Secure long term access to sufficient quantities of sustainable water supply

2. Protect Product Quality and Safety
   • Understand current and emerging risks to raw water quality
   • Ensure adequate monitoring and treatment of raw water

3. Address community and broader watershed issues
   • Community water access/infrastructure
   • Watershed protection and conservation
   • Aquifer assessment and recharge

Key Steps

1. Form Water Resource Management Team
2. Complete Source Vulnerability Assessment (SVA)
3. Prepare Source Water Protection Plan (SWPP)
4. Implement action plans
5. Maintain/update SWPP
Linking WRS and Replenish Programs

TCCC Risk
- Water Resource Sustainability
  - Water resources under stress
- Supply Reliability
  - Decreased water availability
- Local Social
  - Adverse social climate

Ecological Health
- Aquatic Ecosystems & Species
- Terrestrial/Riparian Ecosystems & Species

Human Health & Well-Being
- Safe Drinking Water
- Sanitation
- Food Availability
- Economics

Specific Activities
- Watershed Protection
- Water Access & Sanitation
- Water for Productive Use
- Education & Awareness

Linking WRS and Replenish Programs
TCCC System Plant: Groundwater Supply
Early Govt Engagement Prompted by SVA Enables Plant to Maintain Water Supply Reliability & Avoid Quality Risks

SVA Learnings

• Nitrate Plume in Plant’s Aquifer – Headed toward Plant
• Municipality has exclusive rights to deeper aquifer

Source Water Protection Actions

• Engaged Municipality and procured water from deeper aquifer
• Cost of Water will Increase for Plant
TCCC System Plant: Groundwater Supply
SVA Provided Early Identification of Threat to Plant’s Water Supply and Highly Treasured Natural Spring. Plant Actions to Protect Spring Wins Favor with Local Gov’t and Local Activists

SVA Learnings

• Nutrient levels in plant water source below MCL, but rising

Source Water Protection Actions

• Engage municipality and community to protect aquifer and springshed
• Municipality using plant’s groundwater model to support management decisions
• Alleviated local social tensions previously directed toward plant (anti-bottled water), They were previously placing signs in front of plant