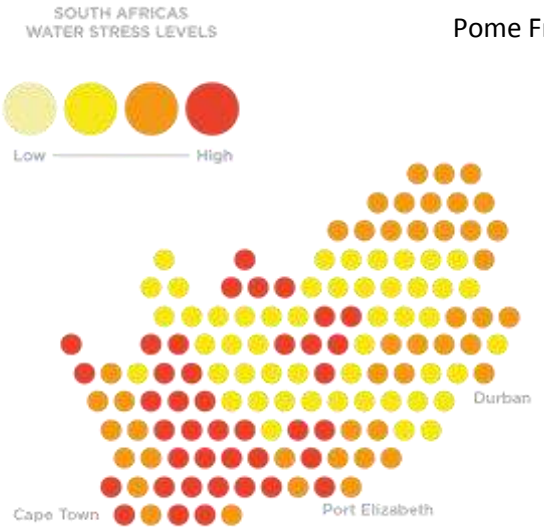
What are your Water Risks?

Pome Fruit Packhouse and Cold Storage

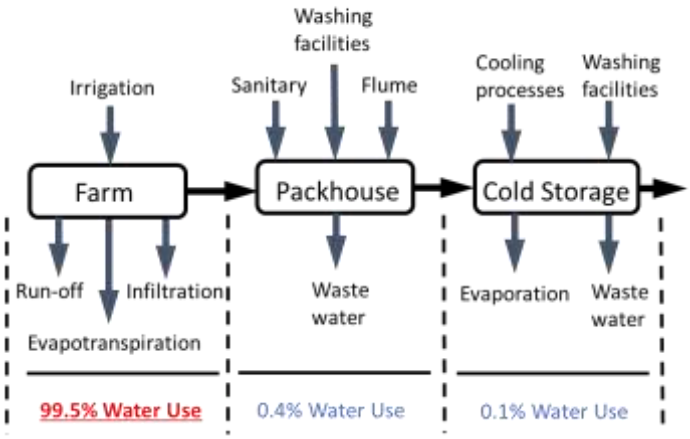


- SA's annual rainfall is **40% lower** than the global average.
- **98% of SA's water** has already been allocated.
- Water demands are projected to increase by **32% by 2030**.

Additional challenges:

- General mismanagement of water resources.
- Storage and conveyance inefficiencies.
- Contamination of water resources.
- Heavily degraded river and wetland ecosystems.
- Current El Nino climatic period: **Drought**.
- Longer term shifts associated with **Climate Change** (already evident): reduced annual rainfall by 2050 (particularly in western parts of the country); increased frequency of droughts, floods and heatwaves (Midgley, 2016).

Water Consumption: Pome Fruit Value Chain



Source: Modified from Gush and Dzikiti (2012) and Blue North data.

Across Pome Fruit value chains

- **Water quantity (scarcity) risks are greatest at the supply base**, with the potential to impact all stages of the value chain.

  Insufficient irrigation water = reduced yields = insufficient volumes through packhouse and cold storage

- **Water quality (contamination)** risks are present wherever water comes into contact with fruit, directly and indirectly: irrigation; washing of fruit; transport of fruit (flumes); washing of packhouse and cold storage facilities; and domestic water use (sanitation facilities). Contamination risks have the potential to impact all stages of the value chain, directly and indirectly, through restricted access to desired markets.

Direct water risks: packhouse and cold storage (Driver → Mechanism → Impact)

Driver	Mechanism	Impact
Water restrictions; changes to water use licenses/permits; inefficient water use	Insufficient water supply	Inability for operations to continue as per normal
Contamination of water resources	Breach of fruit quality standards (legislated and compliance (e.g. G.GAP))	Restricted access to desired markets (local and export)
Irresponsible use of water resources	Stakeholders (commercial & within catchment) become aware of this.	Impact on business reputation; restricted 'license to operate' within society; and restricted access to desired markets.
Irresponsible discharge of waste water into the environment.	Stakeholders (commercial & within catchment) become aware of this.	Impact on business reputation; restricted 'license to operate' within society; and restricted access to desired markets.
Irresponsible discharge of waste water into the environment.	Breach of waste water discharge regulations	Fines, suspension, and/or closure of operations.

References

Gush and Dzikiti (2012). Observations on the water-use, water-use efficiency and total water footprint of a 'cripps pink' apple orchard in the winter rainfall region of the Western Cape.

Blue North Sustainability (2016). Analysis of the water footprint of stone fruit cold storage operations.