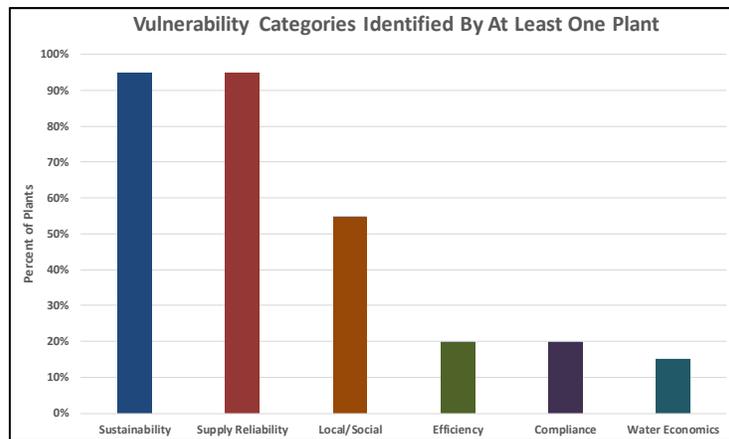


WATER SUSTAINABILITY RISK MODELING APPLICATION

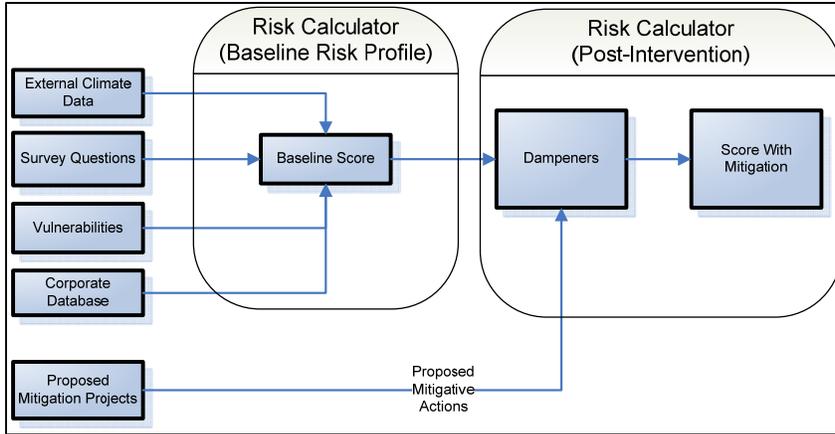
CONFIDENTIAL FOOD AND BEVERAGE CLIENT

Dextra assembled and managed a team that created a customized application for assessing, communicating, and managing risk associated with a confidential client’s production facilities around the world. Dextra’s initial work on the project involved bringing an expert panel together to develop the framework for the risk evaluation, which connected the value of water sustainability to the company’s strategic objectives and identified the key risk factors and root causes for water related risk events at the facilities. After the risk evaluation framework was created with the expert panel, risk assessment algorithms and data inputs needed for the risk assessment process were developed. Data collection included assembling internal facility production and water use data, external drought and flood data sets, and plant-level survey data on water use activities. The plant-level survey questions were distributed via web application to each of the facilities, with a utility for management review and validation of survey responses. Survey questions were grouped into six categories based on plant vulnerability areas identified during development of the framework:



- 1) **Water Resources Sustainability:** Are water resources in the local watershed under stress?
- 2) **Supply Reliability:** What is the potential that the facility’s access to water could be substantially reduced?
- 3) **Efficiency:** What is the potential that the facility could be perceived as an inefficient user of water?
- 4) **Wastewater Compliance:** What is the potential for facility non-compliance with statutory regulations or internal standards?
- 5) **Supply Economics:** What is the potential for a large increase in the cost of water?
- 6) **Local / Social:** What is the potential for local social pressures to cause a substantial reduction in production?

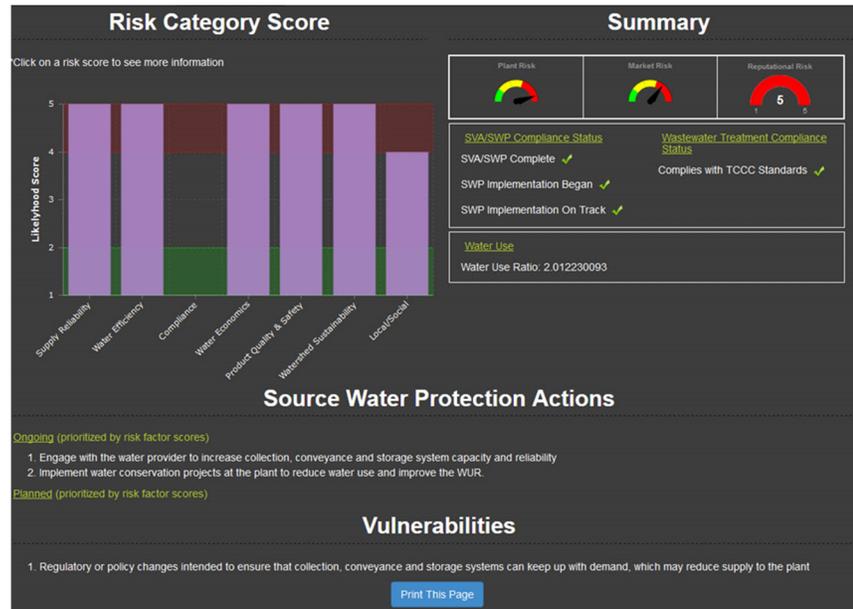
The team then began work on developing a semi-quantitative, decision support system for calculating and dashboarding information on the relative risks of the production facilities. The risk calculations are based on a simple model of risk = probability * consequence. The calculations are fed by the data inputs (company data sets, external climate data, and survey results) with each data input element being assigned a risk level such as low, medium, or high



risk. The ability to adjust risk scores to account for risk mitigation measures, such as water efficiency initiatives or adding backup water supplies, was included so that the risk reduction benefit of future actions could be reflected.

The ultimate result is a dashboard that displays relative risks for each facility that can be aggregated further at the business unit, geographical region, or global level. Provided below is page 1 of an example report card. The report cards are used for identifying high risk facilities, compiling vulnerabilities, assisting facilities with preparing mitigation plans, and budgeting during business planning cycles.

This project was highly successful in driving the client’s water risk reduction philosophy throughout the entire organization, and provided substantial benefits in demonstrating sustainability performance to its external stakeholders.



Contact Dextra for more information about customized environmental business solutions, including tools for business risk assessment.

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