CYBER SECURITY AND BUSINESS CONTINUITY

SCENARIO 3: Climate Change

Hans Christensen surveyed his farm from the far west gate. It was a rare sunny day, and the farm looked like something out of a child's painting, with rich green grass and bright blue sky. Hans took a lot of pride in his farm. He was a fourth-generation commercial pork farmer. Since the 1920s, his family prided themselves on producing prize-winning, high quality, free-range pork products that were sold all over Europe. Like his predecessors, Hans took care to implement the latest in agricultural science to raise the pigs in optimal conditions and with minimal use of antibiotics.

However, this was becoming more difficult as Denmark's weather was getting wetter every year. Hans knew global warming had raised the earth's temperature by 1.5C, but changes to the jet stream made Denmark warmer, but also rainier, and much windier. The summer of 2029 has set a record for rainfall and windstorms. The wet weather meant more cases of porcine foot rot, which necessitated more treatment with antibiotics, and higher veterinary bills.

The excessive precipitation meant that crops that thrived on sunshine no longer grew, unless under artificial light. Some farmers had lost their fields altogether, as rising sea levels had devastated low-lying coastal regions, and there was a persistent risk of flooding during the winter storm season, which now seemed to last for six months. The government had to invest in building coastal flood defences to prevent communities from washing away. There had been a flood mapping and coastal erosion study conducted in 2020, but the scale and intensity of storm surges were frightening even to people who had been discussing climate change impacts for nearly a decade.

Climate change had been an acknowledged risk in Denmark for years. Hans had tried to do his bit to reduce the farms environmental impact: installing solar panels on the house at the suggestion of his engineer neighbour Anna, recycling as much as he could, feeding the pigs forage legumes to improve their gut health and reduce methane outputs, and filtering manure to reincorporate it into the soil. He had even participated in a public forum on a local climate change adaptation plan, but the risks had all seemed quite abstract and distant, a threat for subsequent generations to contend with.

Across Europe, emergency infrastructure projects were underway to protect people from extreme weather events: flooding, landslides, wildfires, and electrical storms, that seemed to be occurring

with alarming frequency. These emergency infrastructure projects came at vast expense, reducing national and EU-wide subsidies for agriculture, education, and the arts. Hans really noticed the subsidy reduction when he paid for the installation of climate control features in his pig barns, and when he paid the huge monthly bill for air-conditioning during the summers. He hoped the investment would pay off if his herd remained healthy. Regulating the pig's temperature helped keep their immune systems strong. There were many new zoonotic diseases circulating in Europe that thrived in the changing climate, including mosquito and tick-borne illness, and soil-based pathogens. There were even reports of people becoming infected with dengue fever as the tiger mosquito made its way north, lured by milder temperatures and stagnant water in low lying areas.

As well as the challenge of keeping his family, and the herd in good health, getting the farm's pork products to market was becoming increasingly unpredictable, and profits were impacted as result. Storms, increased air turbulence, flash flooding and fires made transportation - by air, sea, or roads - more dangerous, and this reflected in higher insurance premiums for shipping companies, costs that were passed on to the consumer, leading to higher prices and lower sales. In the dramatic storm season of 2028, a flash flooding on the autobahn in Germany caused the 18-wheeler carrying Hans' pork products to crash, destroying nearly DKK 250 000 worth of meat. Hans had received an insurance pay out for the loss, but this year he had received a letter from his insurers, informing him that they no longer covered the cost of damages sustained in climate-related weather events, as these were becoming too common.

As an experienced farmer, Hans understood well the relationship between weather and animal health but climate change, and mitigation efforts, were inflicting costs in ways that Hans could never have dreamed. In 2026, the EU had taken the decision to halt the use of computationally intensive AI, that used a significant amount of energy, to reduce IT-related carbon emissions. While emission reduction targets were met, the prohibition of services that used AI to detect cyberattacks programs meant European companies were more vulnerable to cyberattacks. Cyberattacks were particularly common after major climate events, as cybercriminals took advantage of disruptions and destabilisation. COPA-COGECA, the EU farmer's association, distributed information on how farms and agribusiness could avoid cybercrime.

Hans did not fully understand how AI worked, but he had felt the impact of a cyberattack firsthand. His feed supplier had suffered a ransomware attack, and order fulfilment had been suspended. At very short notice, Hans had to find an alternative supplier at short notice. For Hans' farrow-to-finish operation, this was a significant unexpected cost, as his pigs consumed an average of 2 600kg of feed a week. Hans had been caught completely off guard, as he had prepared to lose feed to fire, floods or spoilage, not computer-related events.

Climate events were not only affecting farming. Rising sea levels forced nearly 100 000 people to relocate from the Faroe Islands and Greenland as rising sea levels and increased rainfall put their communities in danger. Some brought their Faroese sheep too, adding variety to agricultural exhibitions and stockyards. The government provided substantial social welfare support for the new arrivals, prompting some opposition and disgruntled commentary from more extreme political

groups, who thought the support was overly generous.

Hans was not overly concerned about newcomers arriving in the country. Most settled in urban areas, rather than small farming towns, so he had limited contact with them. What kept him awake at night was keeping his family business profitable and operational. Farming had always been a tough business and had always been at the mercy of the weather. But while his father and grandfather could recall only a few legendary storms, Hans never knew when or where to expect the next disaster.

Climate Change **Potential risks for business**
1. What are the key risk factors and vulnerabilities in this scenario?
2. What risks does this scenario pose to Danish businesses?
3. What vulnerabilities affect your business?
4. What mitigation, if any, has your business considered or implemented?

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