

# Causes and Effects of Cold Chain Ruptures

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# Why are cold chain ruptures important?



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Approx. **35%** of  
fruits and  
vegetables are  
lost in the  
supply chain<sup>(94)</sup>

More than **900  
million** people  
are  
undernourished  
<sup>(57)</sup>

Food waste  
amounts  
globally to **1.3  
billion tons** per  
year<sup>(103)</sup>

Prediction of  
global  
population to  
reach **9 billion**  
by 2050

Food waste  
emits approx.  
**4.5 times** of its  
weight in **CO2**  
emissions <sup>(57)</sup>

Food  
production and  
transport  
**highly  
resource  
intensive**



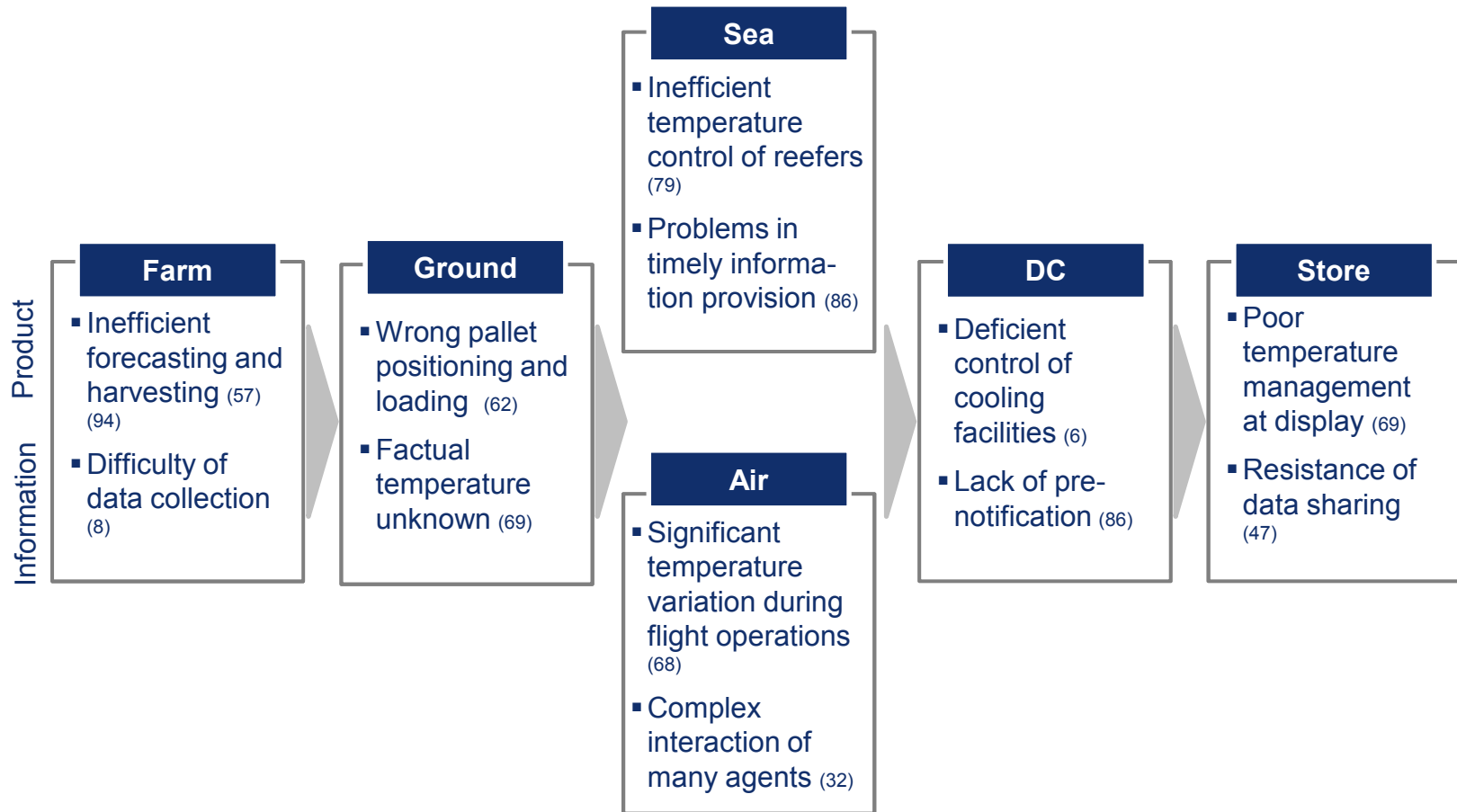
# Agenda



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- **The Key Challenges in Cold Chains**
- **The Case Study of South Africa**
- **Potential Solutions**

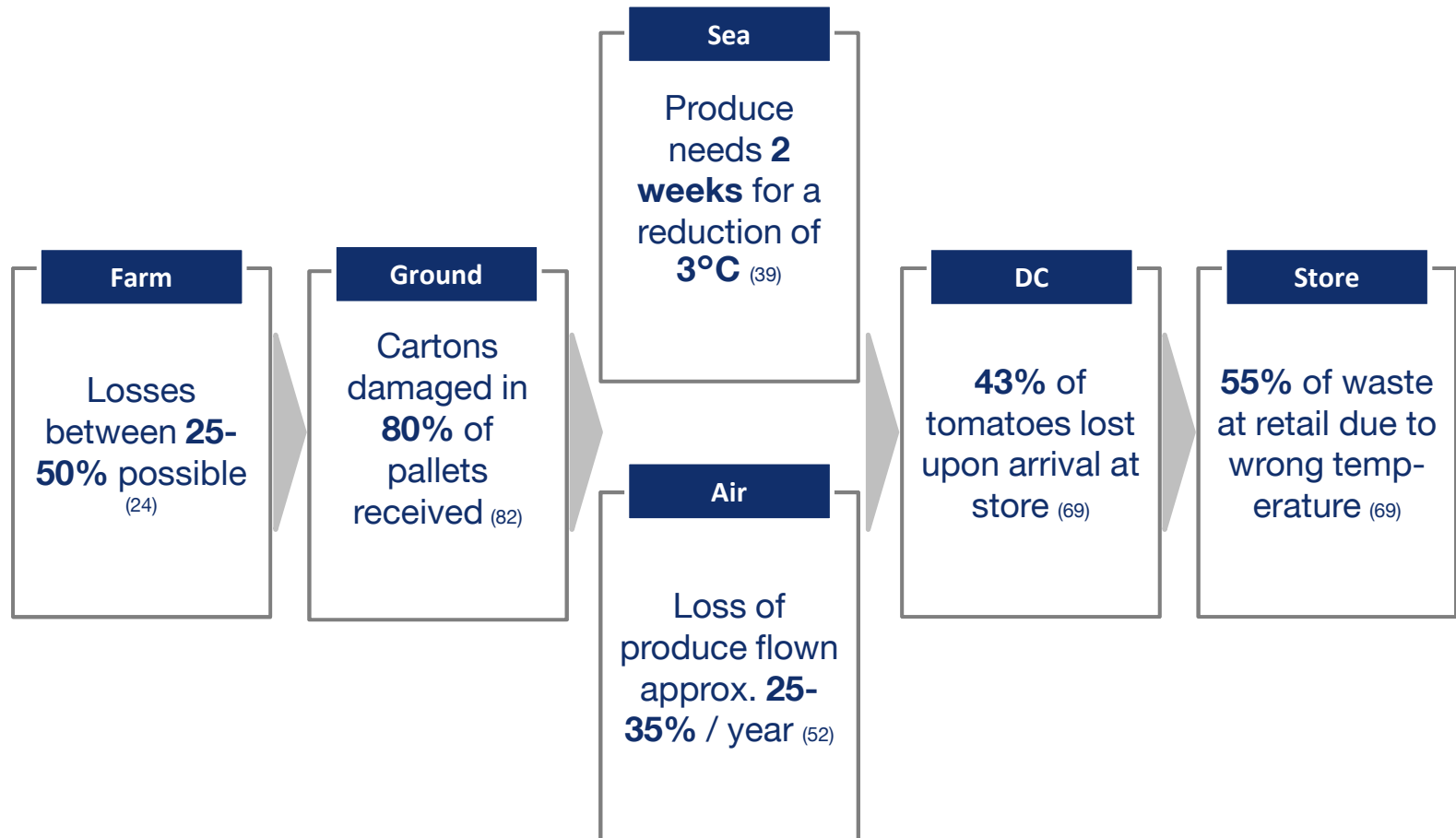
# The Key Challenges: Every Link has its Weak Points



# Exemplified Effects of Cold Chain Ruptures



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# The Case: Challenges in the South African Maritime Cold Chain



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e.g.: The costs of quality certification standards



Investment of **R 130 000** + yearly costs of up to **R 35 000** <sup>(95)</sup>

e.g.: The lack of qualified staff



**Missing knowledge** on cooling equipment of containers

e.g.: Lack of infrastructure



Design of cooling facilities causes **53%** of all delays during peak seasons <sup>(37)</sup>

e.g.: Lack of compliance with hygienic requirements



Workers returning from a **smoking break** without washing their hands <sup>(95)</sup>

e.g.: loss of traceability



a total mixing of fruit resulting in **cross contamination** <sup>(95)</sup>

# Agenda



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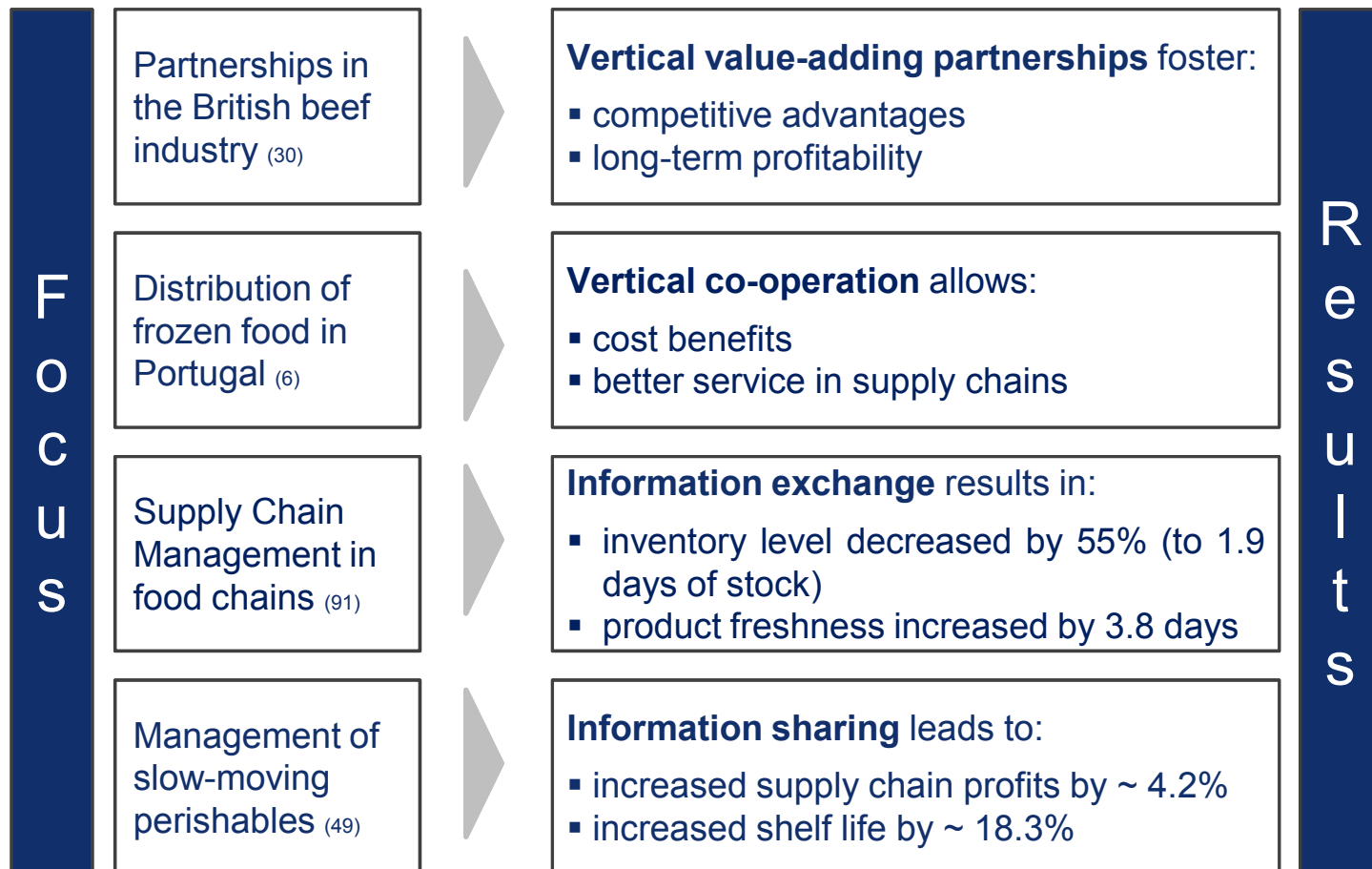
- The Key Challenges in Cold Chains
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# Potential Solutions: Best Practices and Benefits



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# Synopsis: Starting points for improving cold chains





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This presentation and its sources are based on:

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Systems Management · International Logistics · School of Engineering and Science · Jacobs University Bremen

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