

# EuroMCM Sample Problem $\delta$ : Bronze Age Collapse



*Map by Hendrik Wuckelt*

## 1 Background

Around 1177 BCE, the flourishing civilisations of the Late Bronze Age, including the Mycenaeans in Greece, the Hittites in Anatolia, the New Kingdom of Egypt, and the trading hubs of the Levant, suffered a catastrophic and nearly simultaneous collapse. For centuries, these empires had formed a globalised economy, bound together by complex diplomatic ties and a vital international trade network.

The lifeblood of this system was bronze, an alloy requiring copper and tin. While copper was relatively abundant, primarily from Cyprus, tin was a rare strategic resource, often transported over vast distances from Afghanistan or Western Europe. This created a highly interconnected supply chain in which no single state was fully self-sufficient.

Modern research suggests that the collapse was not caused by a single war, but was instead systemic. A perfect storm of stressors, including earthquakes, drought, internal rebellions, and the migration of the Sea Peoples, disrupted the trade network. Due to the high degree of interdependence, a failure in one node, such as the destruction of a port, transmitted shockwaves throughout the entire Mediterranean, causing a cascading failure of economies and governments.

## 2 Requirements

- Reconstruct the major Late Bronze Age civilisations and trading centres as an interconnected network system, distinguishing between different types of interactions. Identify structural features indicating vulnerability or resilience, determine critical choke points, and assess how control over specific resources or routes translates into systemic influence.
- Model how external and internal stressors propagate through a highly interconnected trade network. Identify which types of disruptions are most likely to trigger cascading failure, and analyse whether there is evidence of a tipping point. Consider how the vulnerability of centralised palace economies compares with that of more decentralised agrarian communities.
- Choose one Late Bronze Age civilisation that experienced severe disruption during the collapse period. Using your model:

1. Propose plausible strategic interventions (e.g., trade diversification, resource stockpiling, political reforms) that could have been implemented given historical constraints;
2. Simulate outcomes to assess whether collapse could have been delayed, softened, or locally avoided;
3. Discuss the limitations and trade-offs of your proposed interventions.

### 3 Share Your Insights

Write a one-page advisory letter to a Late Bronze Age ruler of your choice, framed within the political and technological constraints of the period, arguing whether collapse can be avoided or only postponed.

### 4 Submission

Your PDF solution ( $\leq 25$  pages) should include:

- One-page Summary Sheet
- Table of Contents
- Complete Solution
- One-page Letter of Advice
- References
- Report on Use of AI Tools (if applicable; excluded from the 25-page limit)

There is no mandatory minimum length. Teams may submit incomplete solutions. The use of AI tools is allowed but optional; compliance with [EuroMCM AI usage policy](#) is required.

### 5 Links

[Bronze Age Collapse](#)

[Sea Peoples](#)

[The Ugarit Archive](#)

[From Land's End to the Levant: did Britain's tin sources transform the Bronze Age in Europe and the Mediterranean?](#)

[Tin from Uluburun shipwreck shows small-scale commodity exchange fueled continental tin supply across Late Bronze Age Eurasia](#)

[Reconstructing Archaeological Networks with Structural Holes](#)

[Are civilizations destined to collapse? Lessons from the Mediterranean Bronze Age](#)

### 6 Glossary

**Choke Point:** A strategic node or route whose disruption disproportionately impairs the functioning of the network.