



INTRODUCTION

- It is important to have policy alternatives in place to prevent and recover from damage to marine tourism in the event of a situation like COVID-19 pandemic.
- The study aimed to conduct a simulation study using a System Dynamics model to predict changes in marine tourism in the context of COVID-19 and evaluate the effectiveness of policy alternatives.

METHODOLOGY

System Dynamics

- To analyze the impact of the COVID-19 on marine tourism, a Causal-Loop diagram was created, taking into account tourism demand and supply and internal and external risk factors.

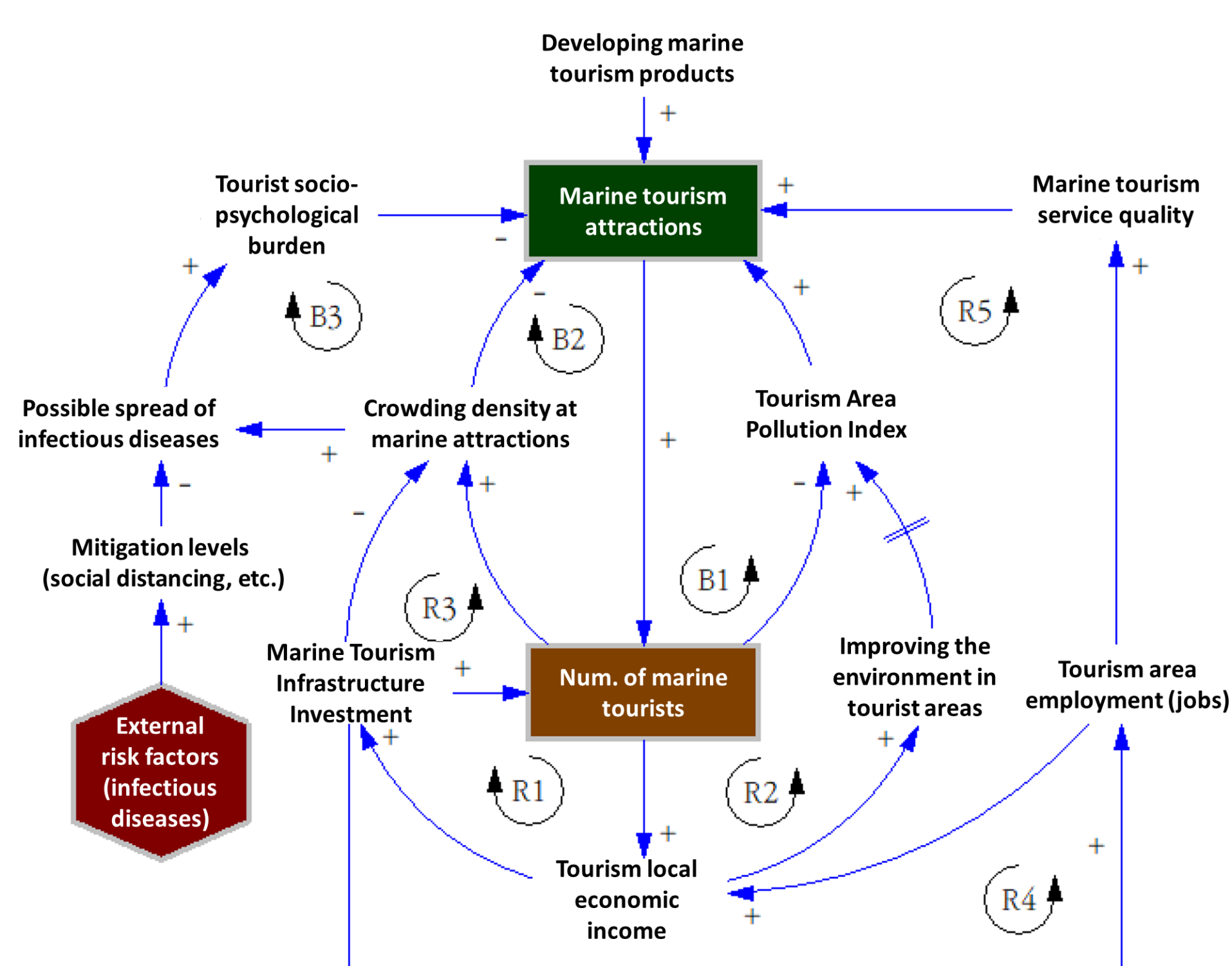


Fig 1. Causal-Loop Diagram of marine tourism ecosystems

- Based on the Causal-Loop diagram, the risk factors of marine tourism due to COVID-19 were derived, and a Stock-Flow diagram was created to analyze various scenarios to respond to external risks.

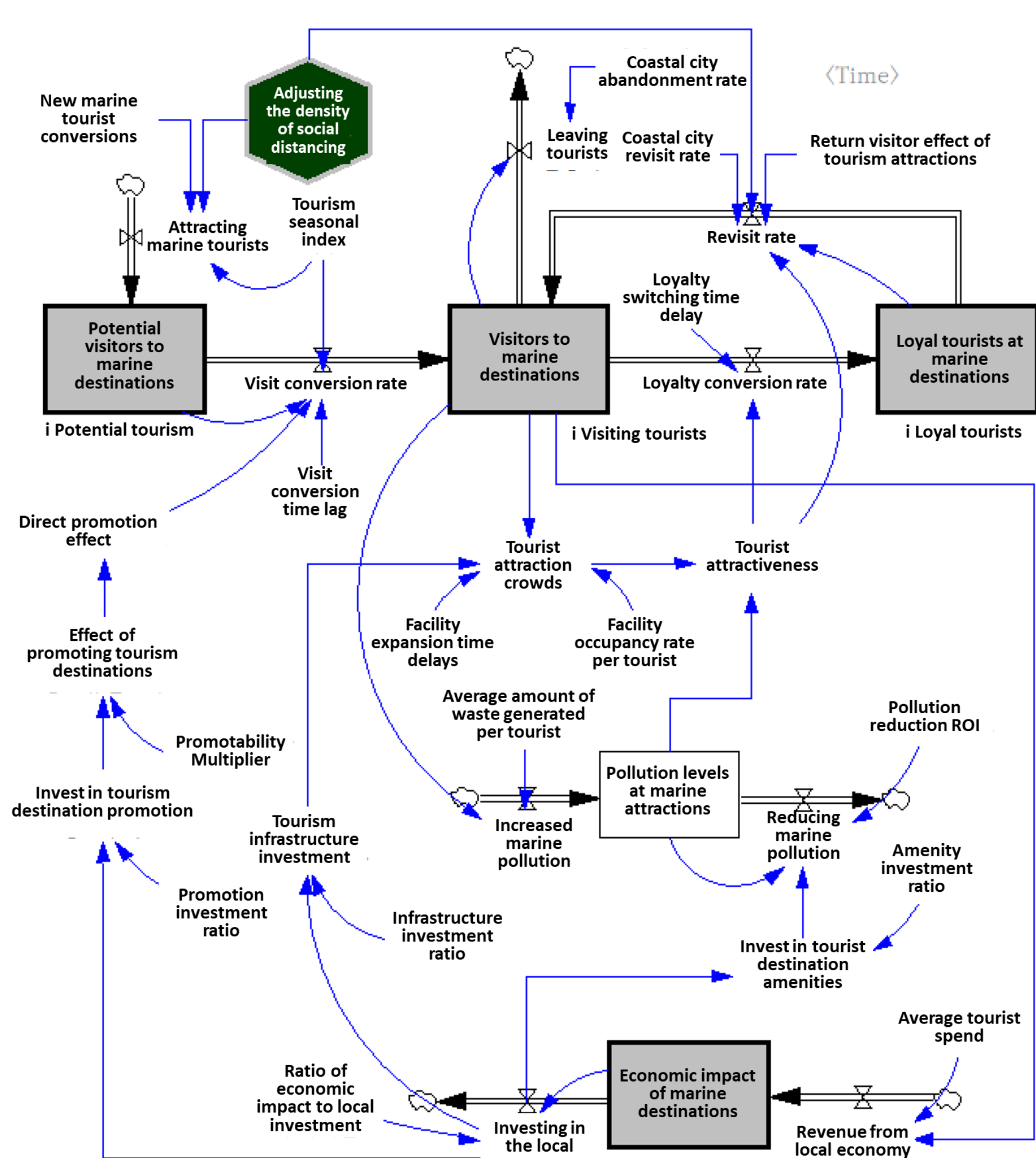


Fig 2. Stock-Flow Diagram of marine tourism ecosystems

Study Area and Data

- As a case study, Geje City is a leading marine tourism destination in South Korea, the study period was five years, from 2018 to 2022.
- Various data were used to analyze tourism supply (tourism industry and resources, etc.), demand (tourism expenditure, visitors, etc.), and regional status (population, GRDP, COVID-19, etc.).

RESULTS & DISCUSSION

Model Optimization

- The modelled trend is overall similar to observations, but significant gaps in the early stages of the coronavirus and during the re-emergence.

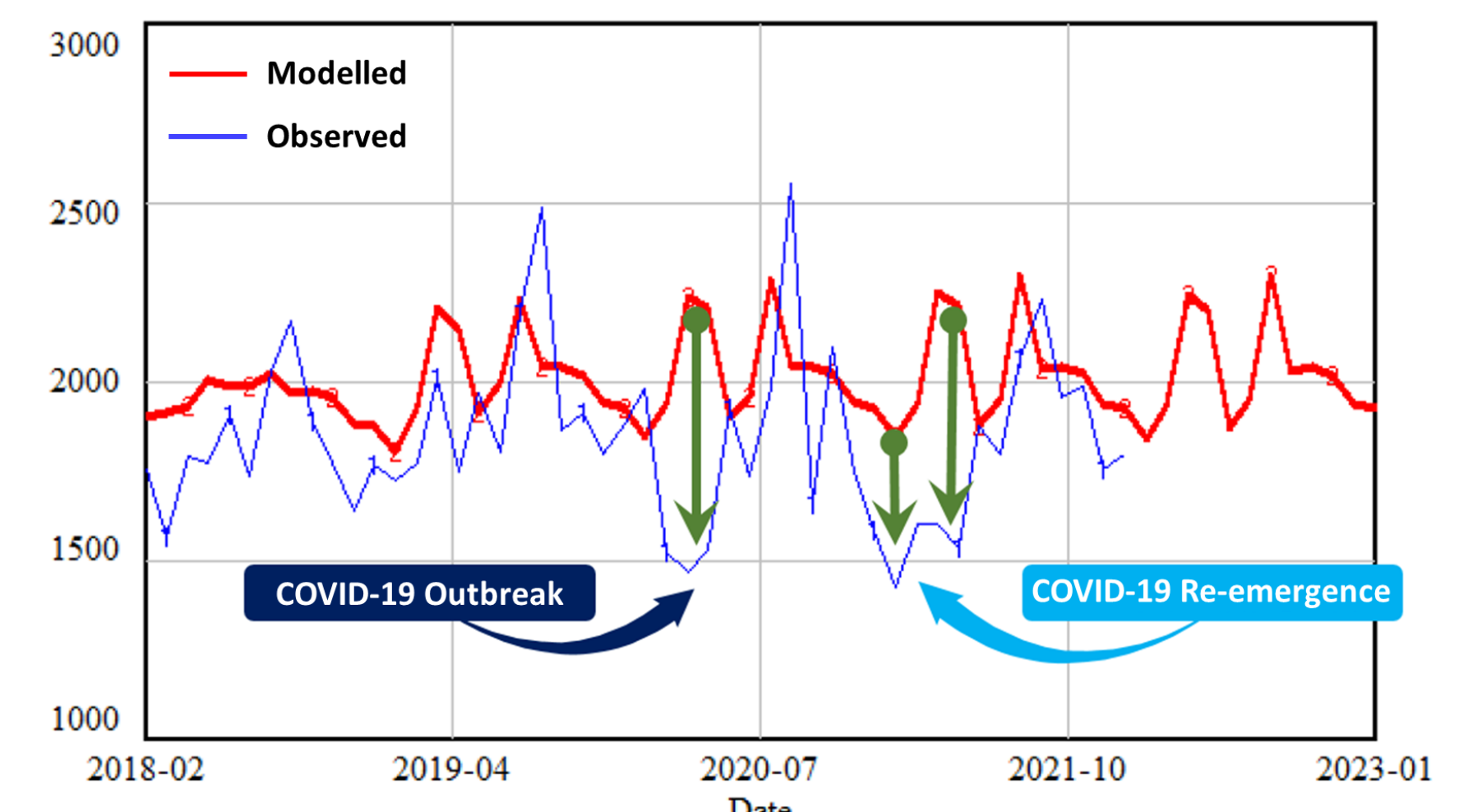


Fig 3. Model optimization result

Simulation Analysis - Social Distance Measure

- First scenario is to explore the impact of social distancing on marine tourism, a significant risk factor for the recent industry.
- Social distancing leads to a sharp drop in tourists from early 2020, with a decline of around 25% by the end of 2022 (left), and a continued decline in the local economy (right).

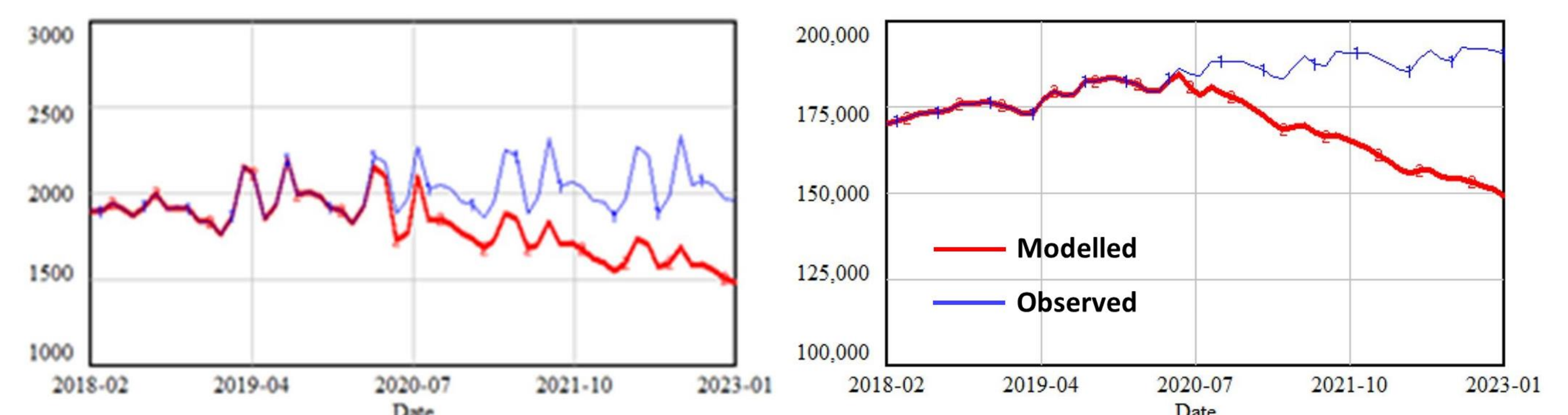


Fig 4. Results of scenario analysis for social distancing

Simulation Analysis - Policy Alternatives

- Second is to assess the effects of amenity and infrastructure investment in promoting tourism and creating favorable conditions.
- Tourism promotion increases tourist arrivals in the short term, but it has limited ability to improve overall demand for a destination.

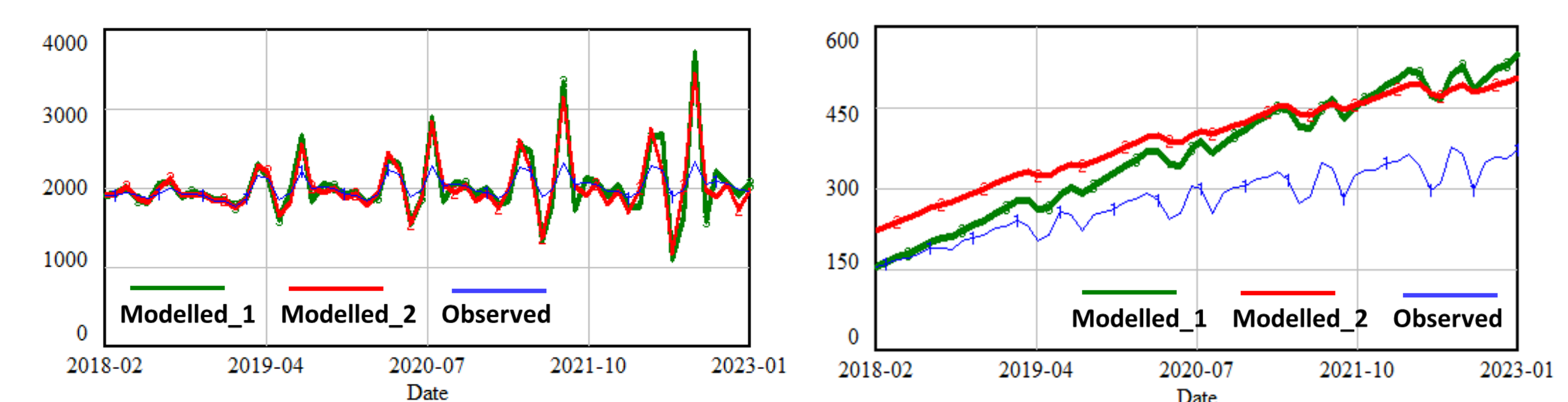


Fig 4. Results of scenario analysis for tourism promotion and investment

- Increased infrastructure investment (Model-2) improves overall attractiveness, while increased amenities and reduced pollution (Model-1) further enhance long-term attractiveness.
- To sum up, an effective respond to the decline in marine tourism requires a mix of short-term strategies, such as infrastructure investment, and long-term strategies, such as amenity investment.

ACKNOWLEDGMENTS

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