Data Limitations

In designing the relocation program for Storslysia, we used the economic demographic, emissions and hazard event data. The limitations of these data and corresponding details are summarised below.

Limitation	Details
Limited GDP data	We have only access to the 2019 and 2020 GDP data, making it is difficult to give an accurate estimation of GDP growth rate.
Lack of economic, industrial and labour conditions regionally	The model does not account for the economic and industrial conditions in each region, and whether the labour skillsets in a region is applicable to another region, which will result in inaccurate pricing and cost projection of the relocation scheme.
Misleading data	We observe -990% in 2003's inflation rate data, which is likely due to a data error, hence this value is skipped in the model.
Limited population data	Census data for each region is only given for 2019, 2020 and 2021, making it difficult to understand and/or predict movement between the regions prior to the program's commencement.

Assumptions

Economic Assumptions

These economic assumptions have been generated to support the program's success.

Assumption	Justification
No person enters or exits the Storslysia regions during the relocation scheme.	Implies population behaviour remains quite constant, hence simplifying relocation rate calculation.
Relocation only occurs between the 6 regions and not to a location outside Storslysia.	Constant population behaviour does not need to create parameters for external region.
No person will relocate for reasons outside of 'voluntary', 'proactive' and 'involuntary'.	There is limited census data and external reasons for relocation are therefore difficult to predict. Hence, this assumption improves accuracy for relocation rate projections.
GDP and cost of relocation grows at the same rate over time.	Suggests that the program's success will continue in the future if its costs are below 10% of GDP in the considered timeframe.
Population behaviour between rich and poor people are the same across regions	Implies the same percentage of rich and poor people move between regions, which improve accuracy of pricing and cost projection.

Program Cost Assumptions

The assumptions below have the most significant impact on program costs:

Assumption	Justification
The model assumes that the property value is uniformly distributed in each band.	This facilitates the separation of property value groups in our calculations
The model assumes that each injury is associated with an economic cost of 100,000 and each death is associated with an economic cost of 300,000.	Injuries and deaths contribute to a reduction in economic activity as well as additional costs towards the budget. This estimation allows the program to take these costs into account.

Other Assumptions

Assumption	Justification
No transition between SSP scenarios between 2020 and 2150.	Being able to apply the frequency projection model provided.
Storslysia inflation and interest rates are assumed constant annually.	Makes it compatible with the pricing and cost calculation of the relocation scheme.
Current population of each region only increased by 30%	Ensures there is no overpopulation, resulting in resource depletion, unemployment, housing, and healthcare issues, etc.

The program prioritises claims from individuals in higher risk regions over those in lower risk regions	This is due to limited resources. Additionally, the program gives priority to individuals with lower socio-economic status, as they are at greater risk of suffering from the impact of the natural disaster.