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Summary Sheet

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The Wandering Homeland

Summary

Global warming has caused the rising of sea level, making the seawater flooded the land, leaving some people homeless and becoming **Environmentally Displaced Person (EDP)**. However, there is not a single unified policy for solving the EDP problem in the world. As the sea level continues to rise, the land area of small island countries and some coastal countries is decreasing, and the EDP problem is becoming increasingly urgent.

We analyse **the Issue Paper** and find the main problems in **EDPs' survival and cultural protection**. To address these problems, we propose a policy named **'the Wandering Homeland Policy'**.

According to the sea level rising data in recent years, with the land area and altitude data from 4 countries, we use geometric knowledge to build **a cone model** to **predict the annual growth of EDP** in Small Island Developing States (SIDS) over the next 50 years. Taking only small island developing countries into consideration, there will be **18,230,968 EDPs worldwide in the next 50 years to come**. Then, we use Greenhouse Gas emission (GG), GDP per capita, Arable Land per capita (AL), and Renewable Freshwater Resources (RFR) per capita as factors to determine the receiving country and the receiving share. After that, we use **the Entropy Weight Method (EWM)** to obtain the weights of these four indicators by **Matlab**, which is [0.259 0.239 0.139 0.363], and get its scores of 50 countries. Then we identify 20 countries that receive EDP and redistribute their proportion of recipients.

Based on **the Lotka-Volterra Model**, we build a competing model between local cultures and foreign cultures, **mapping the relationship between local and foreign cultures over time** and illustrate the need to implement a protection policy for EDPs' culture.

We establish a model to **estimate the economic impact of EDP** on the receiving countries, integrating the forecast data of EDP in the next 50 years, obtaining **the income curve of each receiving country** in the next 50 years, and analysing the income and expenditure of countries with different economic conditions. The results show that our policy is brilliant for the economic development of developed countries, but not good for some of the developing countries.

Moreover, we **analyse the results of our model** and evaluate it objectively to help us improve our policy. Combining with the actual situation, we **explain the necessity and strengths** of implement our policy.

At the end of our paper, we make **sensitivity analysis**, the result of which proves that our model has a good stability.

Keywords: Sea level rising, EDP, Policies, EWM, Lotka-Volterra Mo