1. LITERATURE REVIEW AND BACKGROUND

- This research aims to integrate socioeconomic and biophysical driving factors in the forest land-use change study and to analyze the interactive effects.
- China has experienced significant forest coverage change throughout years, mostly associated with social economic factors rather than natural forces.
- The percentage of the country covered by forest increased 1.66%, compared to the late 1990’s. Nevertheless, plantation contributes to about 90% of the increased forest coverage whereas the natural forests are declining.

2. THEMORATICAL MODEL

3. RESEARCH QUESTION AND HYPOTHESES

Research Questions 1: Do socioeconomic factors affect forest distribution?
- H1a: GDP is negatively correlated with the probability of occurrence of forest
- H2b: Population is negatively correlated with the probability of occurrence of forest
- H3b: Road accessibility is negatively correlated with the probability of occurrence of forest

Research Question 2: Is there an interactive effect of socioeconomic and biophysical factors on forest distribution?
- H2a: High-density population on low soil drainage level would decrease the probability of occurrence of forest.
- H2b: High-density population on high soil drainage level would decrease probability of occurrence of forest

* Population and soil drainage level are selected because they have the highest impact on the probability of occurrence of forest

4. STATISTICAL MODEL AND DATA

- A probit model is adopted in this study. The statistical unit of analysis is the grid-cell (2x2 square kilometers resolution) in the Arc-GIS system.
- Dependent Variable Forest Land Use Map: grid cell (1x1 km2) covered by forest is coded as 1, otherwise 0
- Independent Variable: GIS-based Land Use Change Driving Factors (multi-year average)

5. RESULTS AND DISCUSSION

- Population and road accessibility are the driving factors of deforestation. In other words, population growth and road infrastructure development contribute to the deforestation pattern in China.
- GDP is not significantly correlated with the probability of occurrence of forest. This probably implies that economic development may not have a conflict with reforestation and forest conservation.

6. REFERENCE AND DATA

- All data from Database Centre, Institute of Geography and Natural Sciences, Chinese Academy of Sciences.