

A large concrete dam with a road on top, set against a backdrop of a mountain and a reservoir. The dam is curved and has several cars driving on the road. The water is a deep blue-green color. The sky is dark and overcast.

Can spatial technologies minimize the impoverishment risks of project-induced displacement

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Project-induced resettlement

- airports, dams, mines, major lines
- Complexity: size, cost, social impacts
- Harms: rights
- 6 stages (mainly focus on profiling and baseline data collection)



Research Question

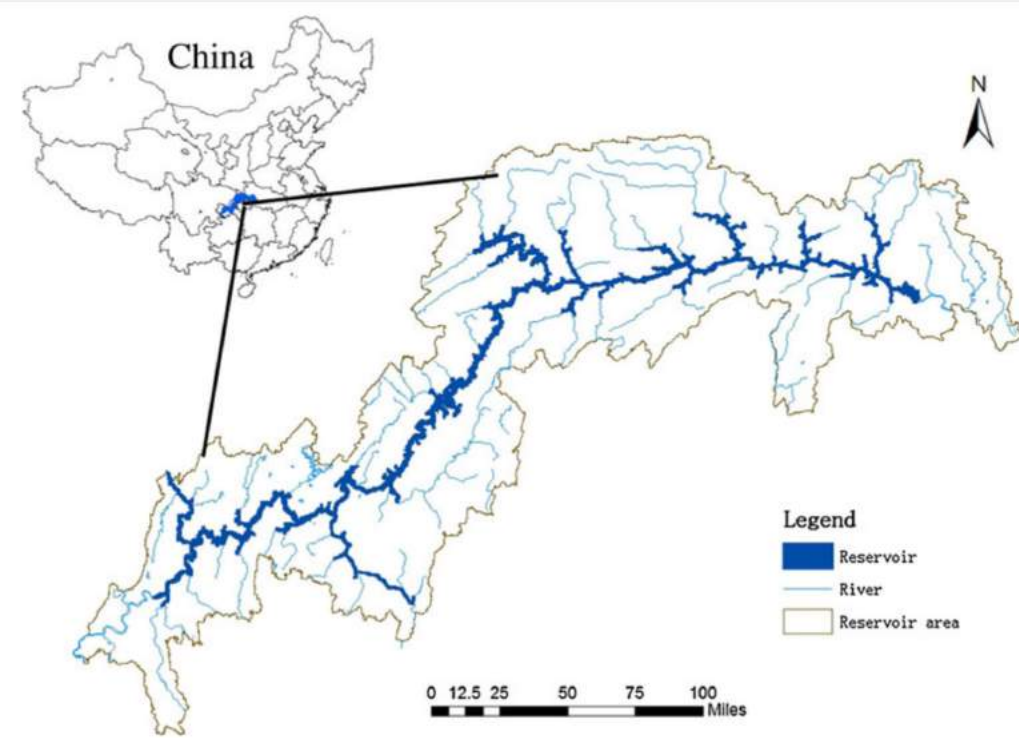
- Why people are always worse off after the project-induced resettlement?
- How can we change this?



Three Gorges Project

Resettlement and relocation

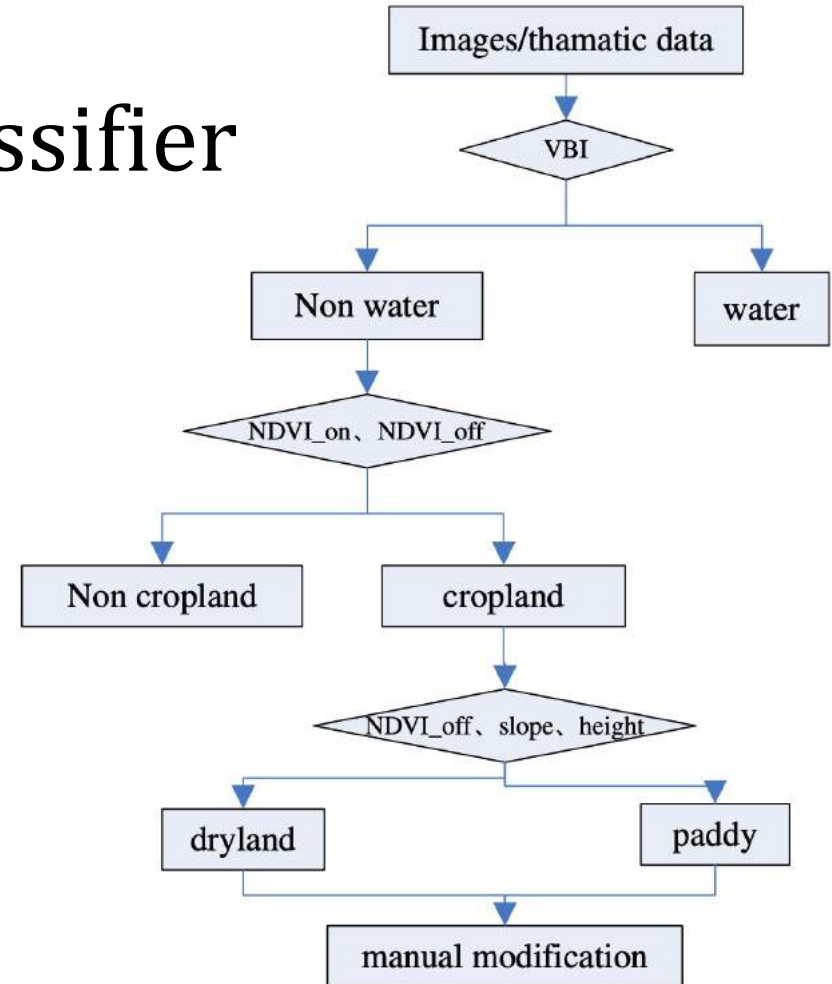
- Settling in nearby areas
- Moving far away
- Moving to Urban Enterprises



Data Sources

- For cropland mapping at a scale of 1: 50,000 in Three Gorges Area.
- Acquired Landsat/CBERS images, with a resolution of 30 m for 1992, 2002
- SPOT multi/pan images with 10 m resolution for 2002
- SPOT5/ALOS multiple spectral images with 10 m resolution for 2007.
- DEM (digital elevation model) and slope gradient data

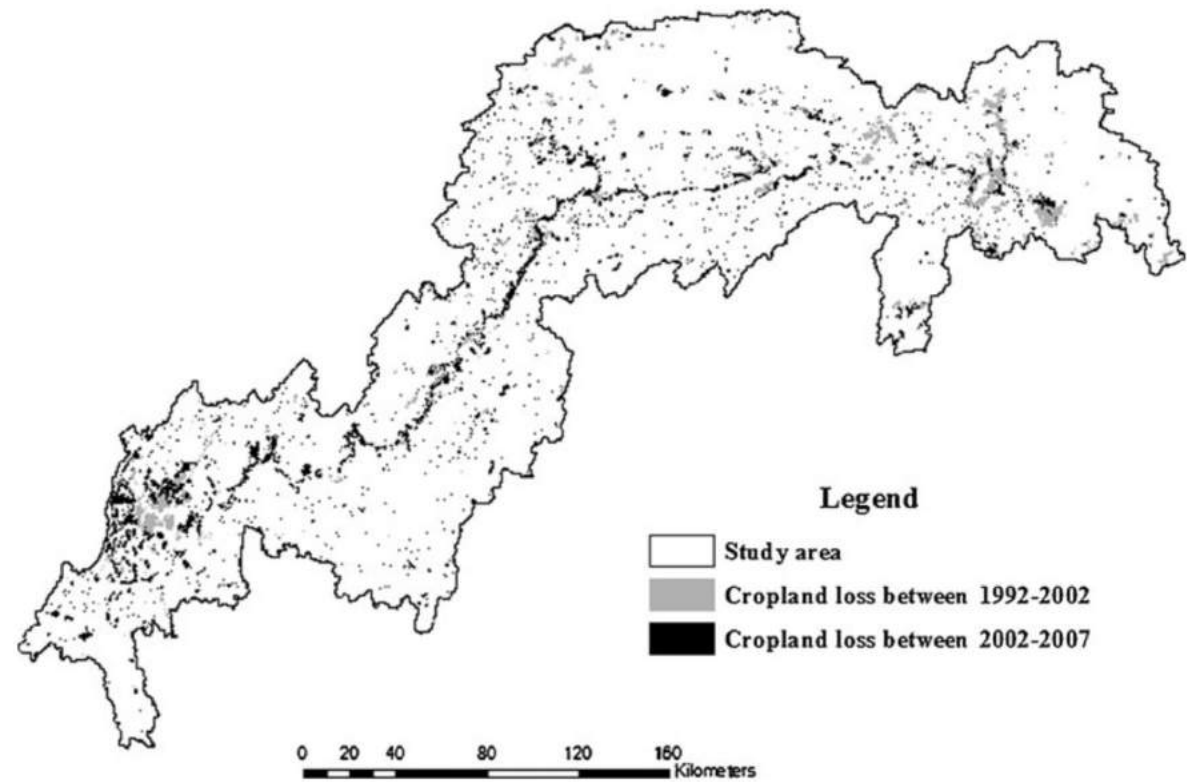
Decision Tree Classifier



VBI : vegetation brightness index $(Nir+Swir)$
NDVI_on : summary NDVI $((Nir-Red)/(Nir+Red))$
NDVI_off : spring NDVI $((Nir-Red)/(Nir+Red))$

Decision Tree Classifier

Changes in cultivated land from 1992 to 2007 typically occurred along the Yangtze River and its tributaries in TGRA, which was the region with high population density



Class	In 1992	In 2002	In 2007	Change 1992–2002	Change 2002–2007
Paddy	468,718	465,640	457,472	−3,078	−8,168
Dryland	1,012,311	981,289	963,902	−31,022	−17,387
Total	1,481,029	1,446,929	1,421,374	−34,100	−25,555
Cultivation index*	0.256	0.250	0.246	−0.006	−0.004

* Cultivation index: ratio of cropland to total area

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Research Plan

- Reproduce what happened by machine learning
- Random Forest Model
- Apply the historical topographic variables before 1994 as model inputs
- Compare the results

Further Investigation

- Corruption
- Compensation tends to be based on an inventory of losses
- Monitoring and evaluation

