

Object-Based analysis and change detection of paddy field at Hokkaido, Japan

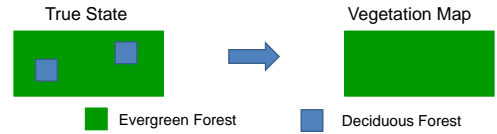
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Introduction

- Vegetation distribution is determined by the topographical features.
- It is seen vegetation communities that have similar characteristics in similar location.
- Location difference is derived from the fact that there is ground undulations.
- Temperature difference is caused by the altitude difference, the result vertical distribution of vegetation is determined.
- Direct factors of vegetation distribution is the climatic conditions and soil conditions, topographical is a background(indirectly) that produce those conditions
- Surface disturbance (ground erosion, slope collapse) and human activity is to direct regulatory factors for the vegetation distribution.

Vegetation Map

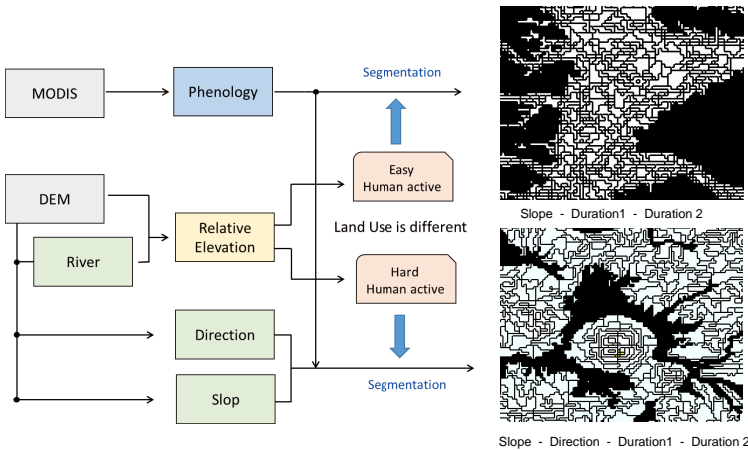
- The Vegetation is whole of the plant populations that covers a certain area.
- Vegetation map is the spatial extent of vegetation communities shown in the map.



Objective

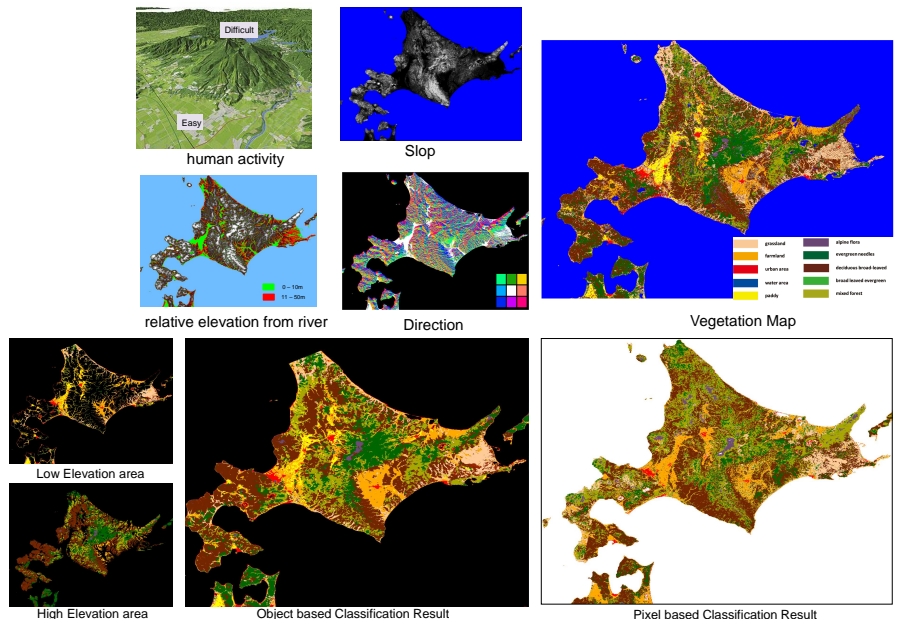
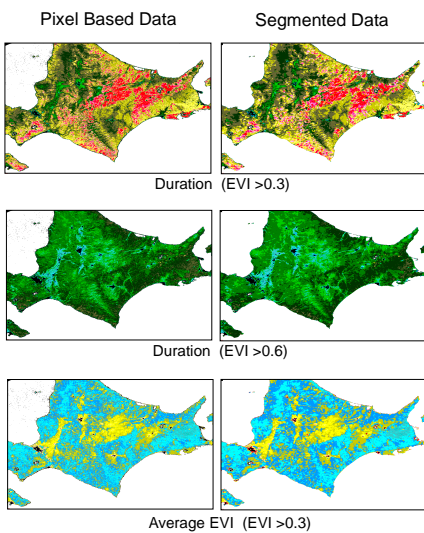
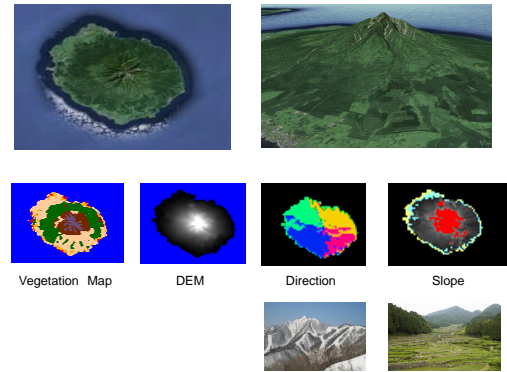
We Propose a valid classification method to make vegetation map in Japan which is covered in 73% of mountainous areas.

Segmentation by topographical feature



Data

- **MODIS**
MOD09A1 (500m) 2002-2004
- **DEM**
USGS HydroSHEDS 15sec BIL : DEM, Flow, Direction
- **Vegetation Map** (Ministry of the Environment of Japan)
Survey :1979-1986
Map with a scale of 1 to 50,000



Conclusion

In this study, we propose a classification by Object-based in order to make vegetation map.

Object generation of divided into two areas.

1. Plain region : Human activities are easy areas
2. Mountainous region : human activities are difficult areas

Plains because land use is complicated, it was divided into detailed Object as possible. The mountainous areas is simple to land use, it was divided into large Object. Pixel-based classification is possible to mean the exact land cover of that point, Object-based classification is determined land covered by a representative coverage of the peripheral.