PROJECT EXPERIENCE

Integrated Digital Agricultural Platform of XXX City, China 2021-2022
Business Project at A Digital Agriculture Company

Oriented by the needs of farming and animal husbandry activities, the platform comprehensively consolidates and exploits the existing farming and animal husbandry-related data resources, and provides valuable data services for the governments, industrial stakeholders, and farmers through the use of technologies such as remote sensing, cloud computing, artificial intelligence, and other IoT technologies. The project is fully funded by XXX municipal government.

Characterizing extensive green roofs using airborne remote sensing technology 2019
Master Dissertation at KU Leuven

The main objectives were to (1) detect the extensive green roofs from other land cover types based on image classification techniques; and (2) examine the possibility of monitoring plant species diversity and functional diversity using empirical regression techniques and physical modeling. First, Multiple Endmember Spectral Mixture Analysis(MESMA) approach was used for land cover classification. Two endmember optimization methods were compared for accuracy. Second, the predictive performance of Vegetation Indices (VIs) and Partial Least Regression (PLSR) analysis was compared to monitor the plant abundance. Spectral Variance Hypothesis (SVH) was tested to estimate plant diversity.

A Cost and benefit analysis of bauxite mining in Atewa forest, Ghana 2020
Individual Research Project

The objective is to evaluate the opportunity costs of bauxite mining in Atewa forest, Ghana. The framework is constituted of two parts: (1) the environmental impact assessment (EIA) which used as a baseline; (2) an optimal choice of environmental valuation method for estimation of environmental goods. Following issues would be addressed: (1) Which ecological functioning would be hampered and what would be the consequent environmental impact? (2)Who will be the recipients of the impacts and to what extent? (3) How to estimate the value of the change? Contingent Valuation Method (CVM) will be applied to elicit the estimation of willingness to accept (WTA) for the lost. A questionnaire has been designed.

Spatial and temporal dynamics of global drought vulnerability 2019
Internship Project at UN

The objective was to reveal global drought vulnerability dynamics in both spatial and temporal axes. The Drought Vulnerability Index (DVI) is a composite index that consists of 21 indicators. The raw data were collected from open source databases and expert weights for each indicator were derived after by survey. Multiple Imputation by Chained Equations(MICE) method was used to replace missing data values in the datasets. The DVI global maps were thus visualized at a time interval of 5 years spanning 15 years since 2000.