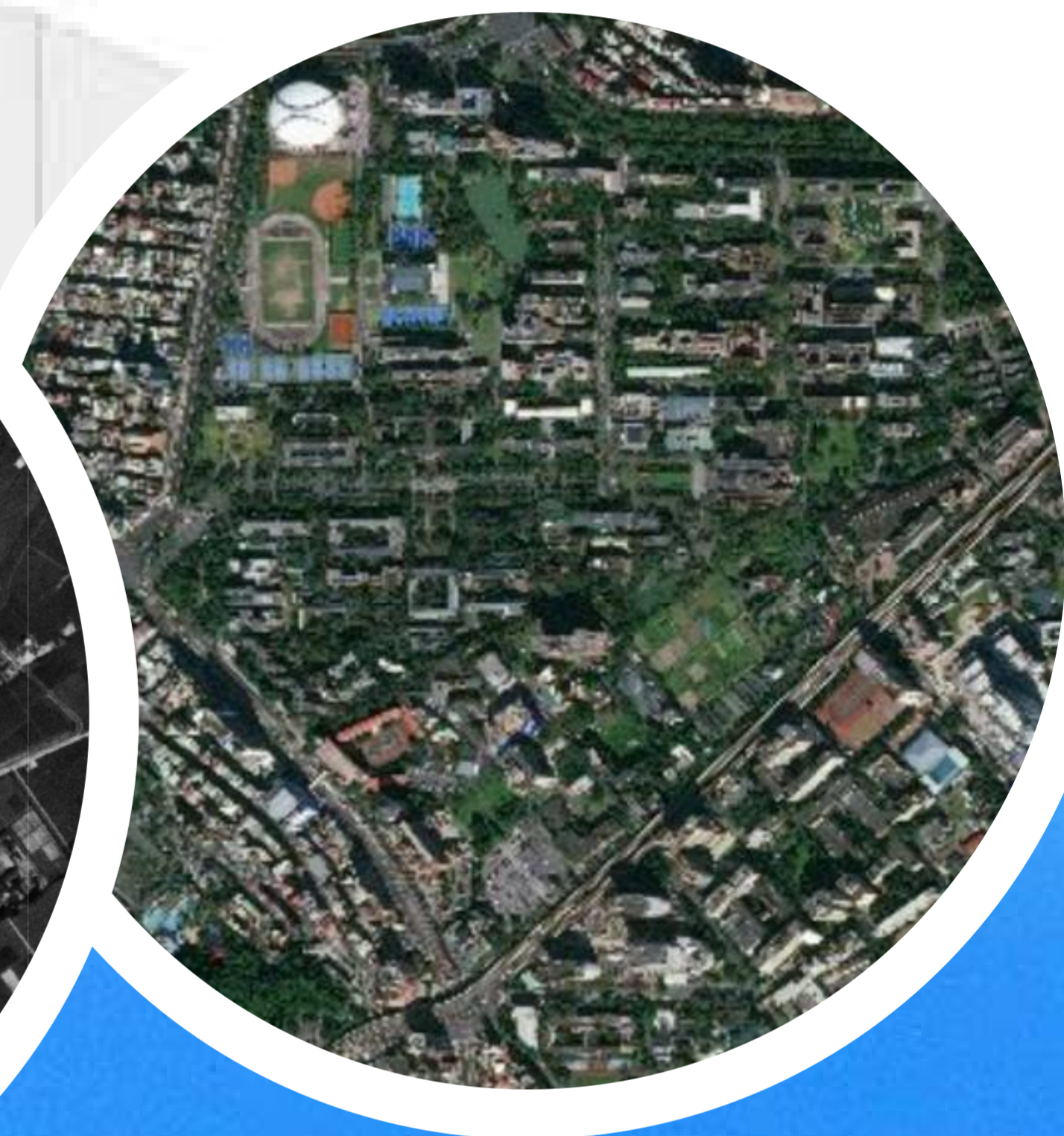


NATIONAL TAIWAN UNIVERSITY

RESEARCH CENTER FOR FUTURE EARTH

Research Theme 4: Social-ecological System in East Asia

Public bike
Hydrological modeling
Social ecological system
Metro access
Urban Chemometrics
Biogeochemistry
Epidemic diffusion
Finite mixture distribution
Spatial optimization
Small mountainous river
Territory
Prediction
Productivity
Environmental policy
Sustainable
Biodiversity
Development
Future Earth
Landscape change
Spatiotemporal pattern
Transport
Citizen science
Rainfall
Mountain trees
Assessment
Crop productivity
Human mobility
Statistical power
Social values
Transformation
Biodiversity observation network
Physical disturbance
Assemblage
Hydrological components
Maximum rainfall
Built environment
Ecology
Taiwan
Outbreak
Conservation strategy
Global sustainability
Food security
Land use planning
Ensemble modelling
Extreme weather
Climate change
Biophysical services
Ecosystem services
Analytic network process
Stochastic simulation
Nimble agriculture
Suburban



National Taiwan University
Research Center for
Future Earth



Challenges and Solutions for Human-nature Interaction in East Asia

National Taiwan University Research Center for Future Earth's research theme 4 addresses the social-ecological system in East Asia. Within this theme, we explore environmental challenges and human adaptation across the region, including: (1) human-nature interaction and human mobility; (2) human impacts on the environment with an emphasis on biogeochemical cycles; and (3) studies of the social-ecological system, including: political ecology, environmental governance, and land use planning.

Research Highlights

Human-nature Interaction: We investigate human mobility and the relationship between rainfall and the transmission of dengue fever. A new model is proposed to predict dengue epidemics to facilitate effective disease control. To promote green transportation, we investigate optimal bikeability solutions used in Taipei, Tokyo, and Beijing.

Human Influence on Nature: We study dissolved organic carbon transport in Taiwan, typified by small scale, steep catchment areas with abundant rainfall; with the goal of optimizing water quality. We combine a metabolic theory of ecology and optical remote sensing technology to develop new environmental monitoring strategies, such as the deployment of unmanned aerial vehicles to assess vegetation coverage.

Social-ecological System: We explore Taiwan's tea cultivation, processing and export in the South East Asian highlands. We interpret the dynamic relationship between regionalization and natural-social relationships in the production and consumption within the context of the broader food-agriculture system. We also propose a framework that facilitates decision making in land use planning, ecosystem services, and conservation strategies where multiple stakeholders are involved.

