Forest Collaborative Research   Economics

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Forest and Health: China Case

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Citation Details

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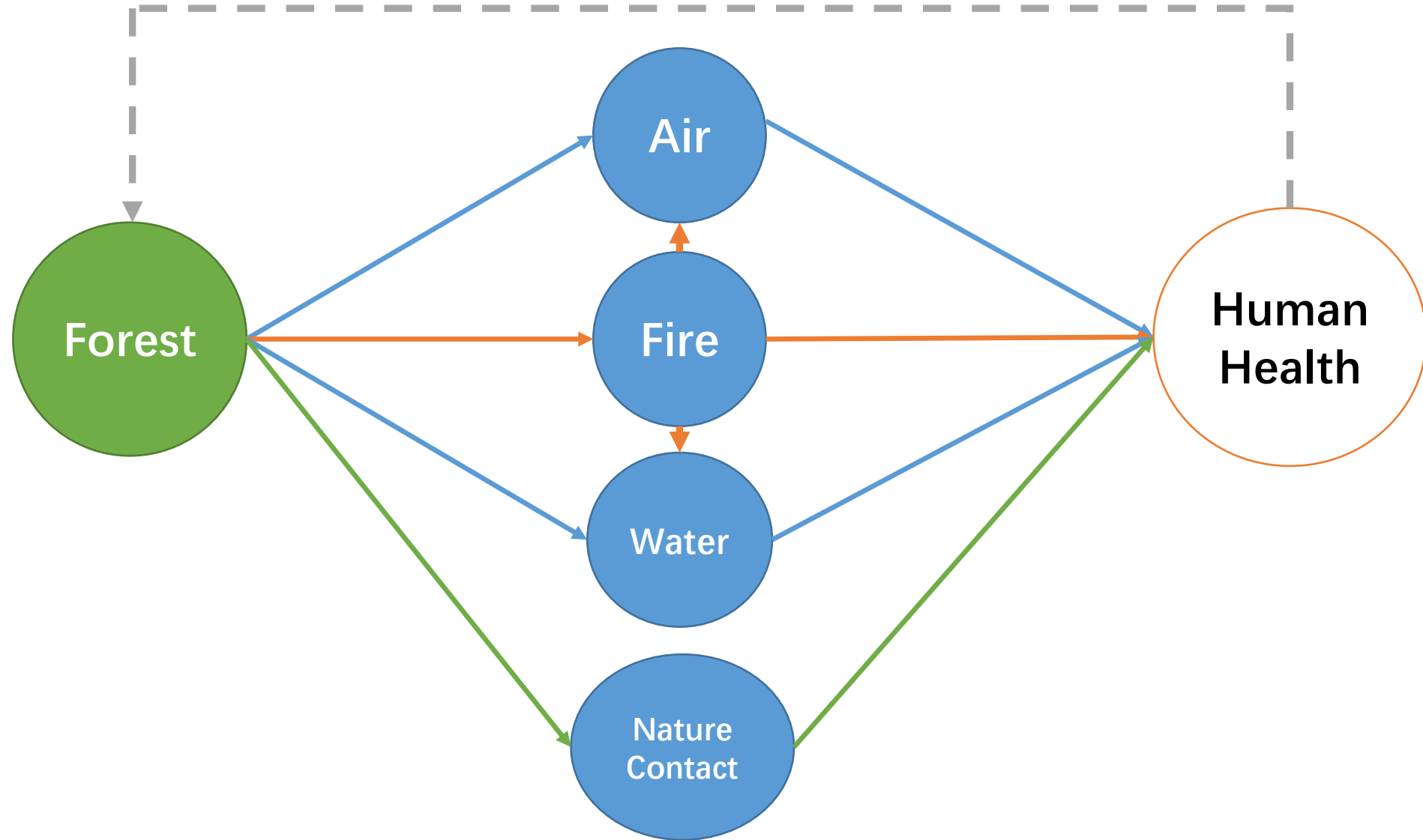
2019/11/23, Bogota, Colombia

Motivation

➢China organizes and encourages afforestation and forests protection through different programs

➢There have been increasing concerns about the impacts of ecosystem change on human health

➢The causal links between afforestation, forests protection and human health are unclear

Potential Channels between forest and human health

Data about Forest in China

Data	Full Name	Information	Source	Data Level	Duration	Sample Size
NFI（Ⅰ）	National Level Forest Inventory	land types; vegetation types; forest classification; topography; soil conditions; forest structure; forest health; biodiversity; land-use change	State Forestry Administration	Plot-Level (all over China)	1973-1976 1977-1981 1984-1988 1989-1993 1994-1998 1999-2003 2004-2008 2009-2013 2014-2018	415000
NFI（Ⅱ）	Provincial Level Forest Inventory	land types; vegetation types; forest classification; topography; soil conditions; forest structure; forest health; biodiversity; land-use change	Provincial Forestry Department	Plot-Level (all over China)	once for one decade differ from province to province	uncertain

Data about Air and Water in China

Data	Source	Number of monitoring points	Data Level	Variables	Duration	Region
Air Quality Monitoring	Ministry of ecology and environment	2100	Monitoring Point-Level	PM2.5; PM10; O3; SO2; NO2; CO; AQI	2003 to present (hourly)	all China
Water Quality Monitoring	Ministry of ecology and environment	2767	Monitoring Point-Level	COD; NH3; PH; Permanganate Index; WQI	2004 to present (weekly)	all China

Data about Human Health in China

Data	CHNS	BMIP	CHARLS	CFPS
Full Name	China Health and Nutrition Survey	Basic Medical Insurance Program	China Health and Retirement Longitudinal Study	China Family Panel Studies
Information	work; income; smoking and drinking; physical activities; health service and disease history; diet; eating disorder	transaction information; personal information; hospital information; drug use information	family; health status and functioning; health care and insurance; work, retirement and pension; income, expenditure and asset	economic activities; education outcomes; family dynamics and relationships; migration; and health
Source	the Carolina Population Center at the University of North Carolina and the National Institute for Nutrition and Health	Ministry of Human Resources and Social Security of the People's Republic of China	National School of Development, Peking University	Institute of Social Science Survey, Peking University
Data Level	individual-, family-, and community-level	individual-level	individual-, and family-level	individual-, family-, and community-level
Variables (Health)	illness; hospital visits; hospital expenditure; diagnosis; health service; disease history; psychological wellbeing	transaction id; medicine id; drug name; Amount; fees	health status; blood pressure; breathing; balance tests; walking speed, etc.	health status; main diseases; hospital visits; hospital expenditure; physical exercise, etc.
Duration	1989 to 2015	1998 to now	2011 to 2018	2010 to 2018
Region	15 provinces	all over China	150 counties/districts	all over China

Data from Chinese Center for Disease Control and Prevention(CDC)
(Yearly/Monthly; Open Source: Province-Level; Non-open Source: county-level)
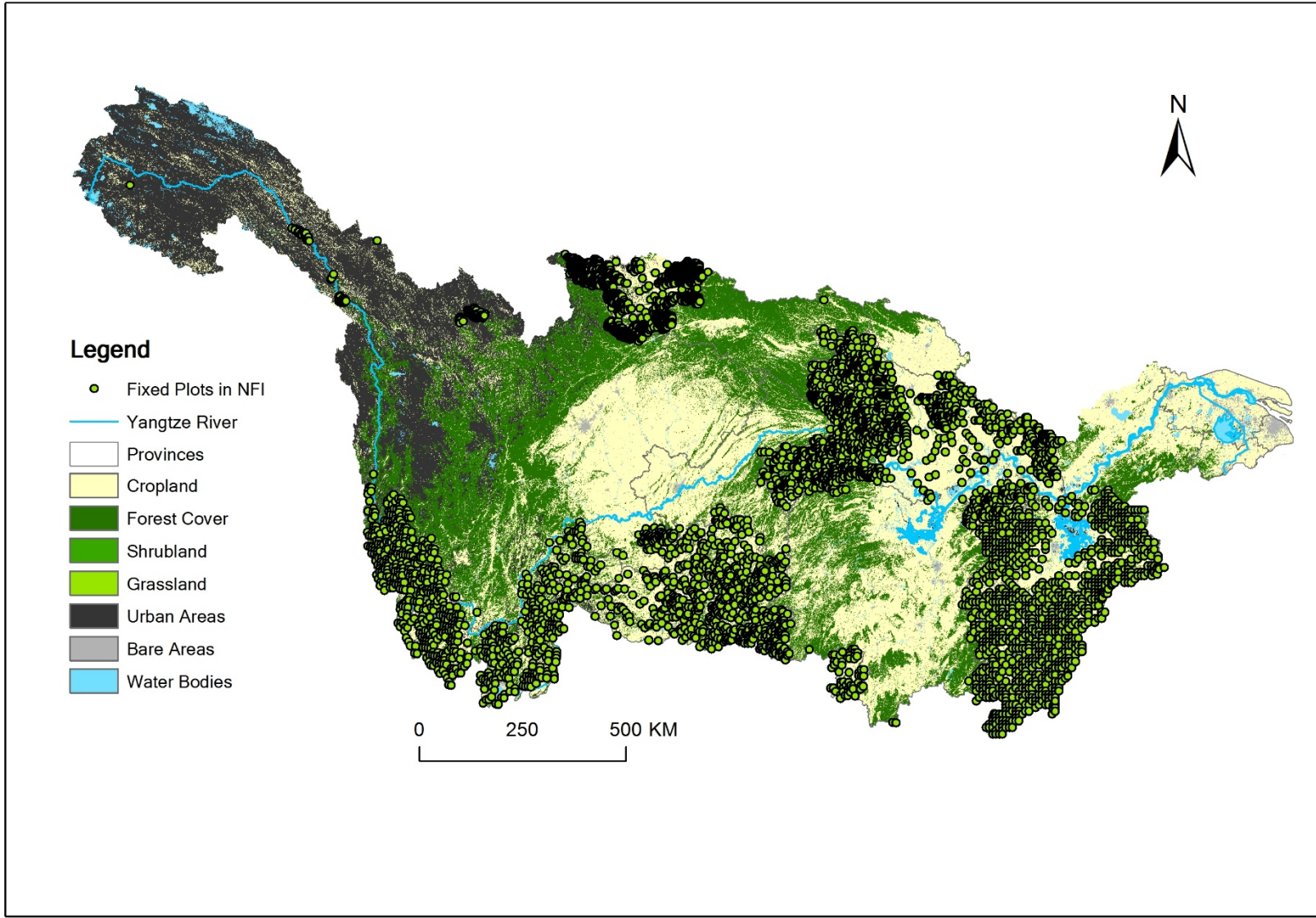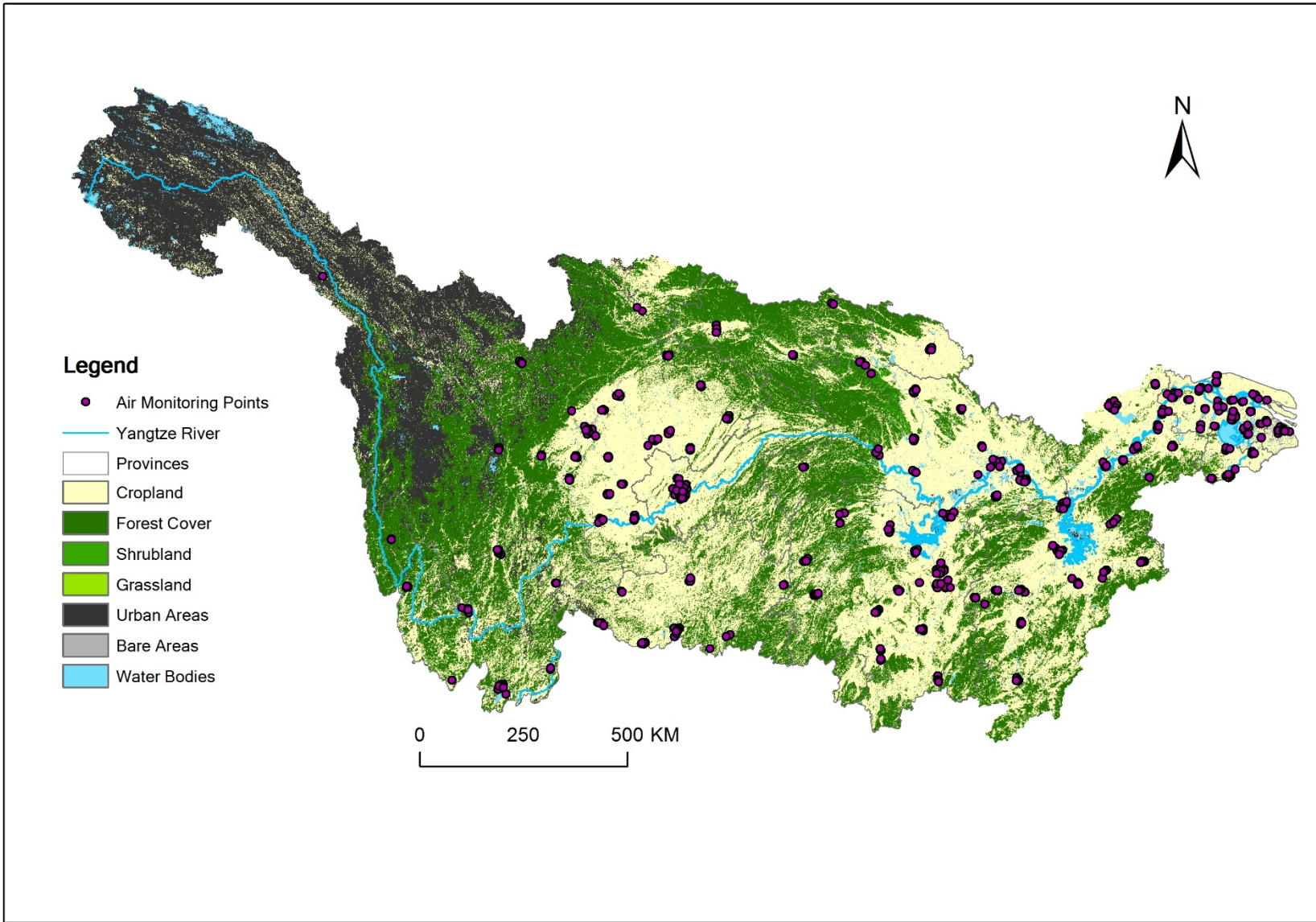
➢**Infectious Diseases**:

- Intestinal Infectious: Typhoid; Cholera; Hepatitis; Dysentery
- Natural focus and vector borne diseases: Plague; Malaria; Schistosomiasis; Hemorrhagic Fever; Leptospirosis; Rabies; Bird Flu; Dengue
- Blood source and sexual transmission: Gonorrhea; Syphilis; AIDS
- Class C infectious diseases: Schistosomiasis; Rubella; Mumps; Echinococcosis; Filariasis; Leprosy; Hand, Foot and Mouth Disease
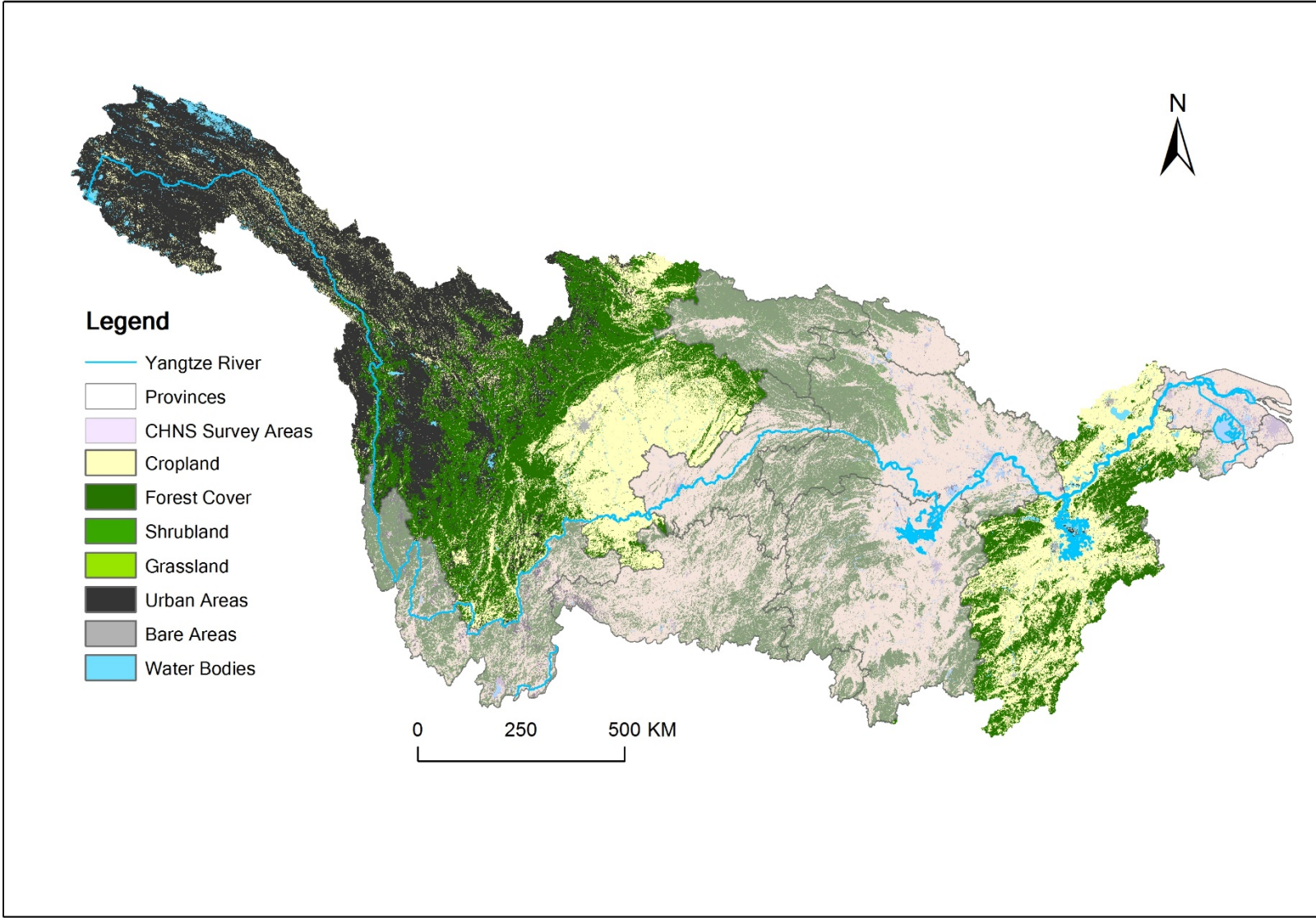
➢**Chronic Diseases**: Hypertension; Diabetes

➢**Health Risk Factors**: Food Composition; Nutrition and Health; Smoking Behavior

➢**Cause of Death**: Retrospective Sampling Survey of Death Causes; Death Surveillance

Legend

- Fixed Plots in NFI
- Yangtze River
- Provinces
- Cropland
- Forest Cover
- Shrubland
- Grassland
- Urban Areas
- Bare Areas
- Water Bodies

0   250   500 KM

N

Legend

- ● Air Monitoring Points
- — Yangtze River
- Provinces
- Cropland
- Forest Cover
- Shrubland
- Grassland
- Urban Areas
- Bare Areas
- Water Bodies

0   250   500 KM

Legend

— Yangtze River

☐ Provinces

☐ CHNS Survey Areas

☐ Cropland

☐ Forest Cover

☐ Shrubland

☐ Grassland

☐ Urban Areas

☐ Bare Areas

☐ Water Bodies

0   250   500 KM

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Forest and Human Health

Empirical Strategy

➢Contemporaneous Effects

➢Health—Air Quality—Forest Conditions (xSeasonality, Weather)

➢Health—Forest Fire

➢Health—Forest Conditions (distance?)

➢Health—Water Quality—Forest Conditions (xSeasonality, Weather)

➢Long Term Effects

➢Health(mortality, life expectancy)—Forest Conditions (Urban Forest and parks)