

# Development of Biodiversity Infrastructure in China

Xuehong Xu, Keping Ma

Biodiversity Committee, Chinese Academy of  
Sciences

July 6th, 2018





01

China  
Biodiversi  
ty  
Observatio  
n and  
Research  
Network  
(Sino BON)

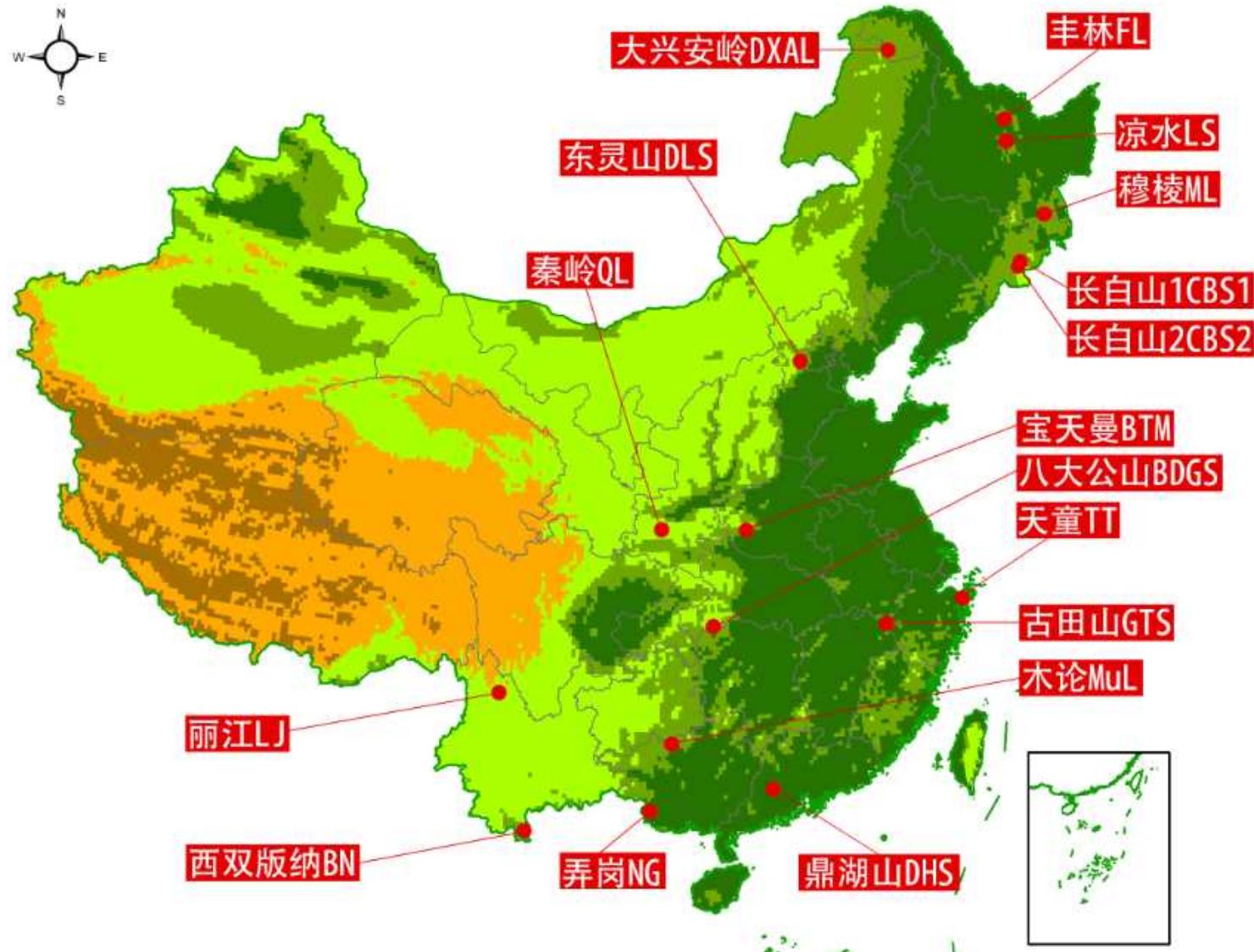
02

National  
Specimen  
Information  
Infrastruct  
ure  
(NSII)

03

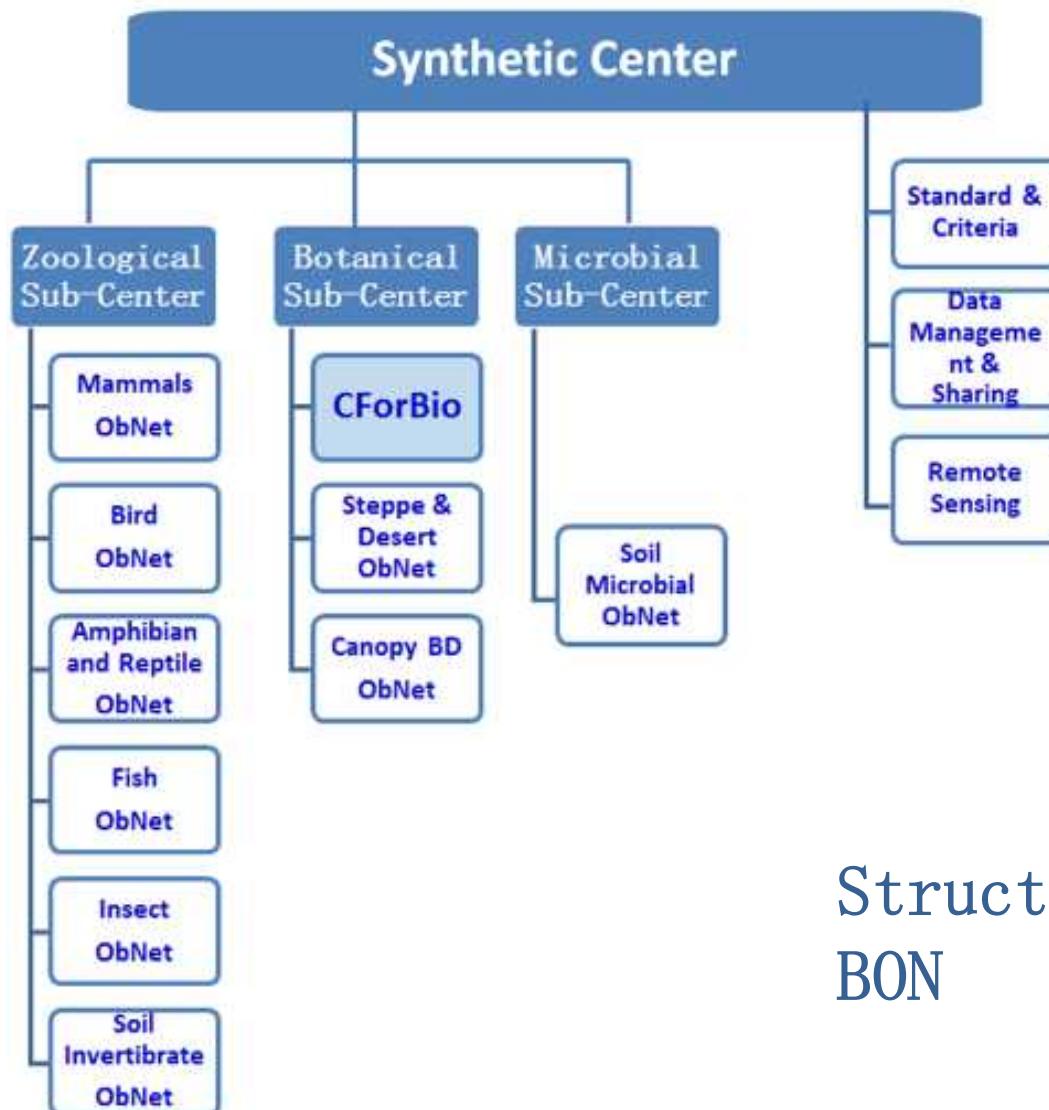
Mapping  
Asia  
Plants  
(MAP)

# Chinese Forest Biodiversity Monitoring Network (CForBio)



01

# China Biodiversity Observation and Research Network (Sino BON)



Structure of Sino  
BON

01

# Sino BON

## Data Sets

Zoological diversity network

Botanical diversity network

Microbial diversity network

Synthesis center

Global-regional coverage



Regional-local coverage



Citizen scientist with cell phone



Drone



Camera trap



Wildlife officer with receiving antenna



Transmitting collar

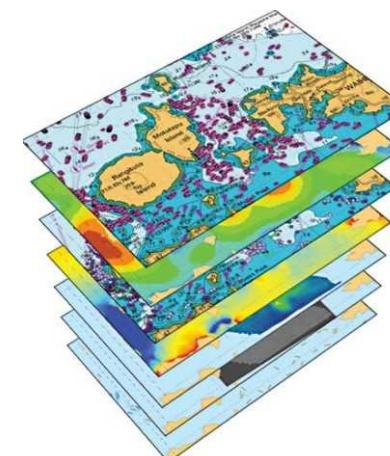


Collecting environmental DNA

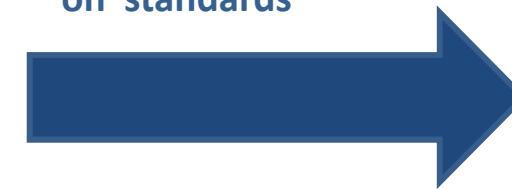
**Sensor power:** Networking satellite and airborne remote sensing with in situ sensing will allow changes in many elements of biodiversity to be tracked over time.



## Data Analysis Service



Biodiversity and ecological layers based on standards



data integration

Tools, models & workflow

S

Decision makers

Resources managers

International treaties & programmes

Conservation organizations

01

## Sino BON

- National biodiversity observation data sharing platform
- 17 fields, incl. kingdom, family, scientific name, common name, location, date, coordinate information, etc..

SinoBON

首页

数据查询

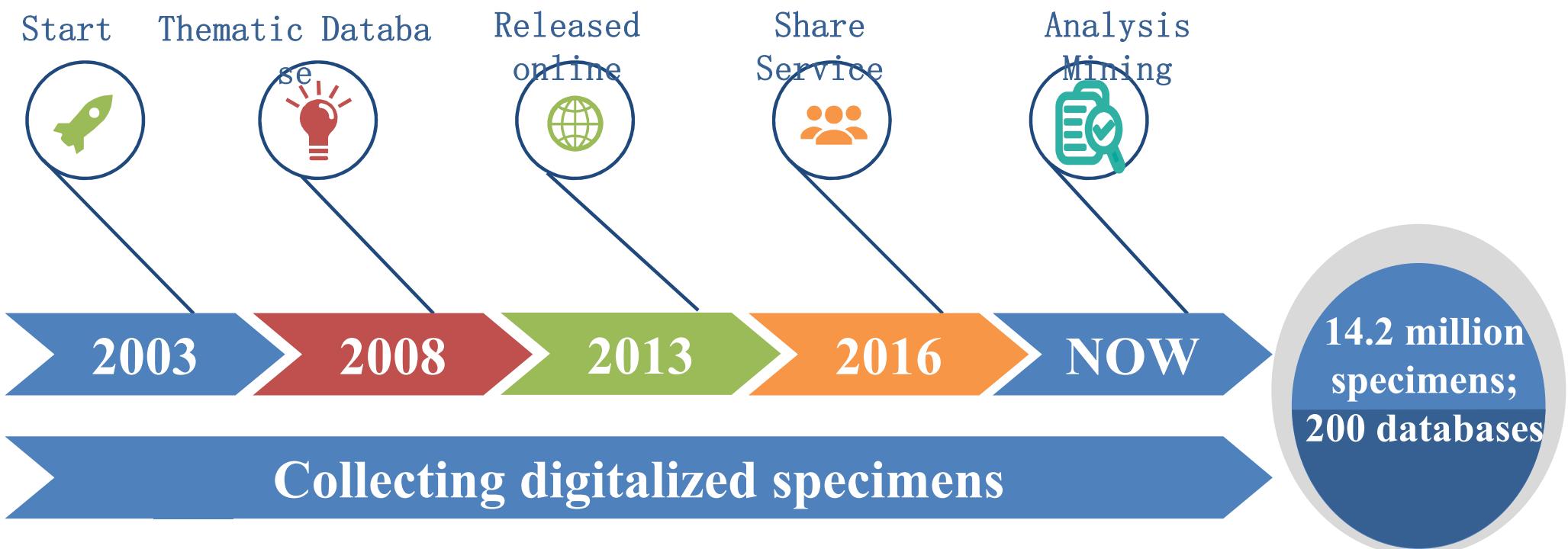
在线分析 关于我们

### 欢迎访问SinoBON (中国生物多样性监测与研究网络)

中国科学院在“十二五”计划期间安排专门经费开始建设中国生物多样性监测与研究网络(Sino BON)。目标是通过多种方法从整体上对中国生物多样性的变化开展长期的监测与研究。SinoBON将包括10个专项网和1个综合监测管理中心。其中10个专项网包括兽类多样性监测专项网、鸟类多样性监测专项网、两栖爬行类多样性监测专项网、鱼类多样性监测专项网、昆虫多样性监测专项网、土壤动物多样性监测专项网、森林植物多样性监测专项网、草原荒漠多样性监测专项网、林冠生物多样性监测专项网、土壤微生物多样性监测专项网.....

更多详情

## 02 National Specimen Information Infrastructure (NSII)



<http://www.nsii.org.cn/2017/home.php>

02

## NSII

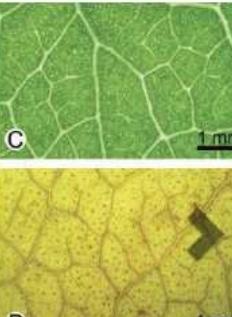
 **NSII** 国家标本平台  
National Specimen Information Infrastructure

首页 数据 工具 网站 关于 English 登录 旧版入口

请键入学名、中名或英文名搜索标本

**14,260,397** Specimen    **6,047,765** Image    **102,302** Literature    **2,735** Video

 植物资源     动物资源     地质资源     极地资源     最新推荐     专题资源

 A     B     C 1 mm     D 1 mm

NSII动态 新物种记录 国内动态 国际动态 NSII通讯 新书推荐

中国常见植物野外识别手册(北京册) (2018-05-28)  
《中国生物物种名录》(植物卷)又添新成员 (2018-04-16)  
《非洲常见植物野外识别手册:肯尼亚山》 (2018-04-12)  
《拉汉科技词典》正式出版 (2018-04-04)  
三十余年磨一剑 《东北树木彩色图志》出版 (2018-03-30)  
《上海植物图鉴·乔灌木卷》 (2018-03-23)  
《杭州植物志》(第2卷) (2018-03-20)

新物种记录: 征镒木属——番荔枝科一新属

02

## NSII

### Data Sets



190 organizations  
Digitalize specimens



Chinese Virtual  
Herbarium



National digital-museum  
of animal specimens



National Infrastructure of  
Mineral, Rock and Fossil  
Resources for  
Science and Technology  
Specimen Resources Sharing  
Platform for Education



Resource-sharing platform of  
polar Samples



National Infrastructure of  
Specimen Resources for  
Nature Reserves  
6 sub-platforms  
Organize &  
Integrate

## 03 Regional Initiative: Mapping Asia Plants (MAP)



### Mission:

A better mapping infrastructure for plant diversity conservation in Asia



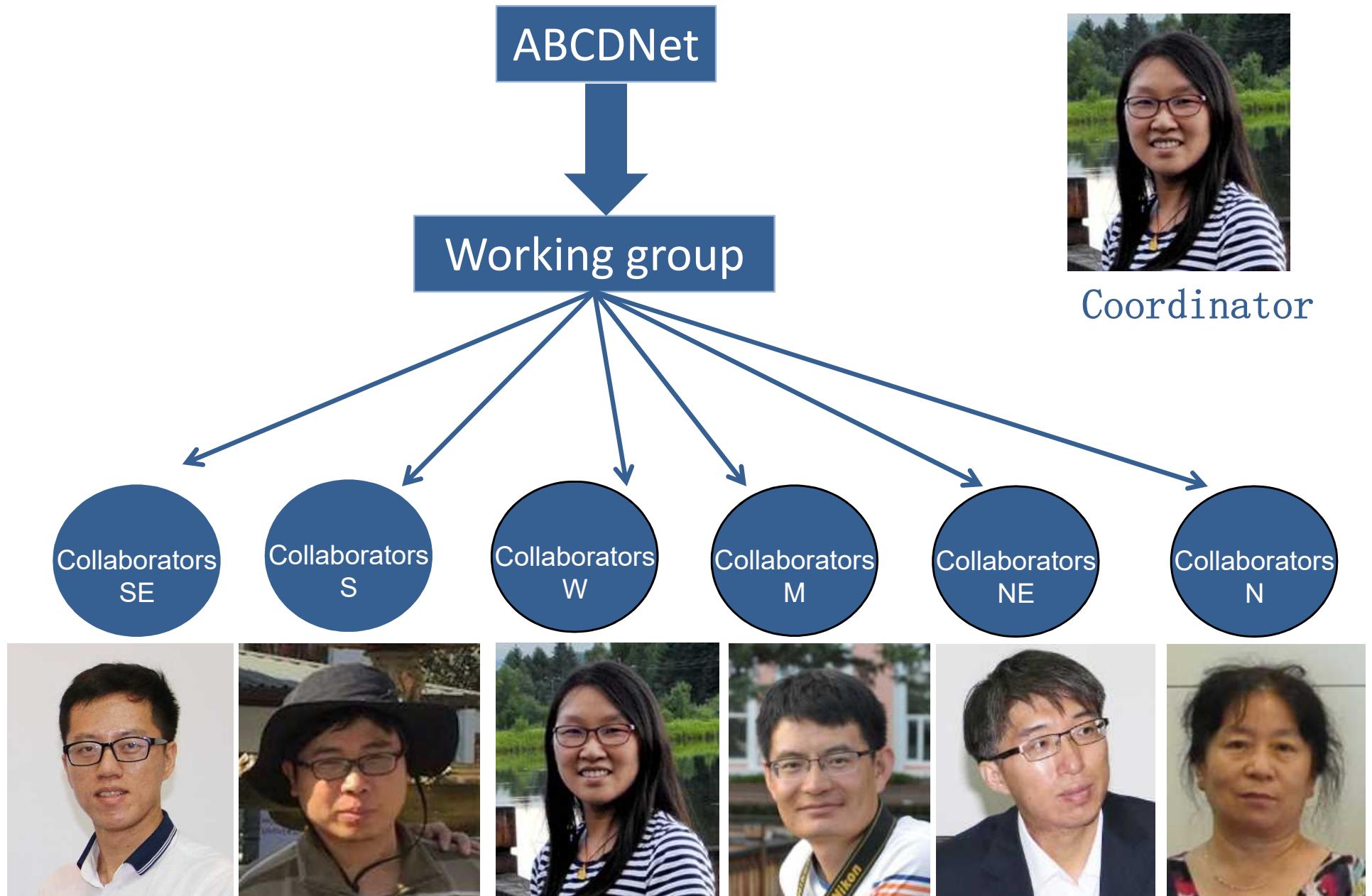
### Goals:

Access to

- Geographic range maps, diversity maps;
- Species checklists;
- Standardized botanical observation datasets;
- Standardized workflow and informatics engine for the integration, access, and discovery of disparate sources of botanical information in Asia



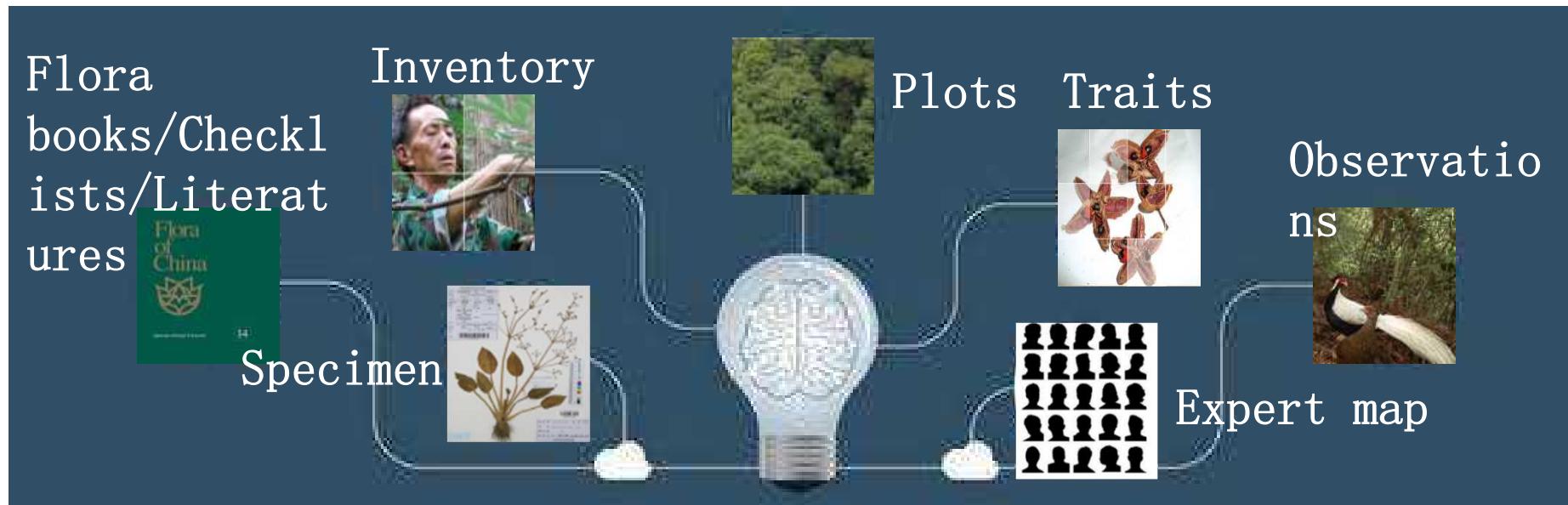
# OMAP: Organization structure



03

# MAP

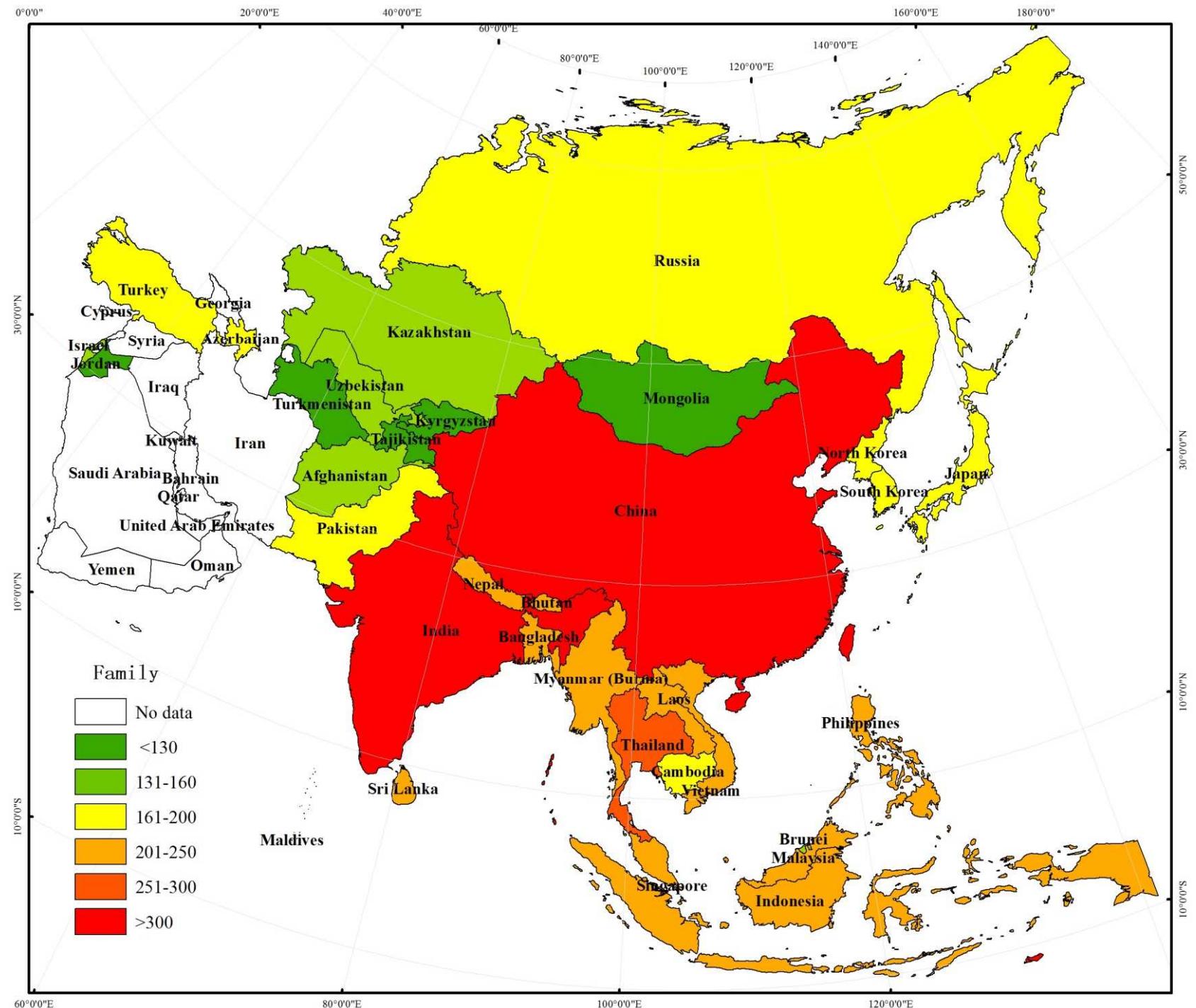
## Data Sets



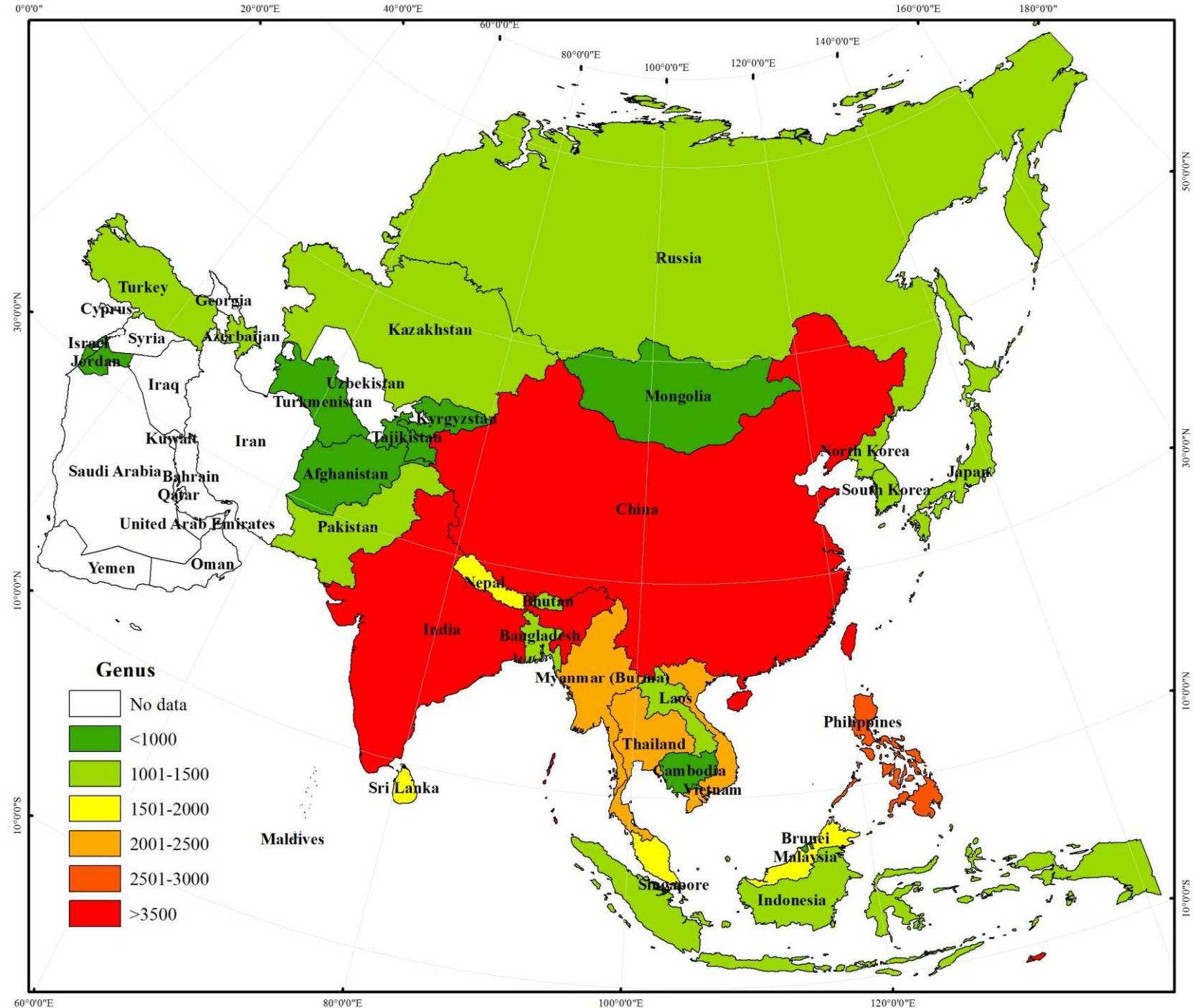
Service  
s



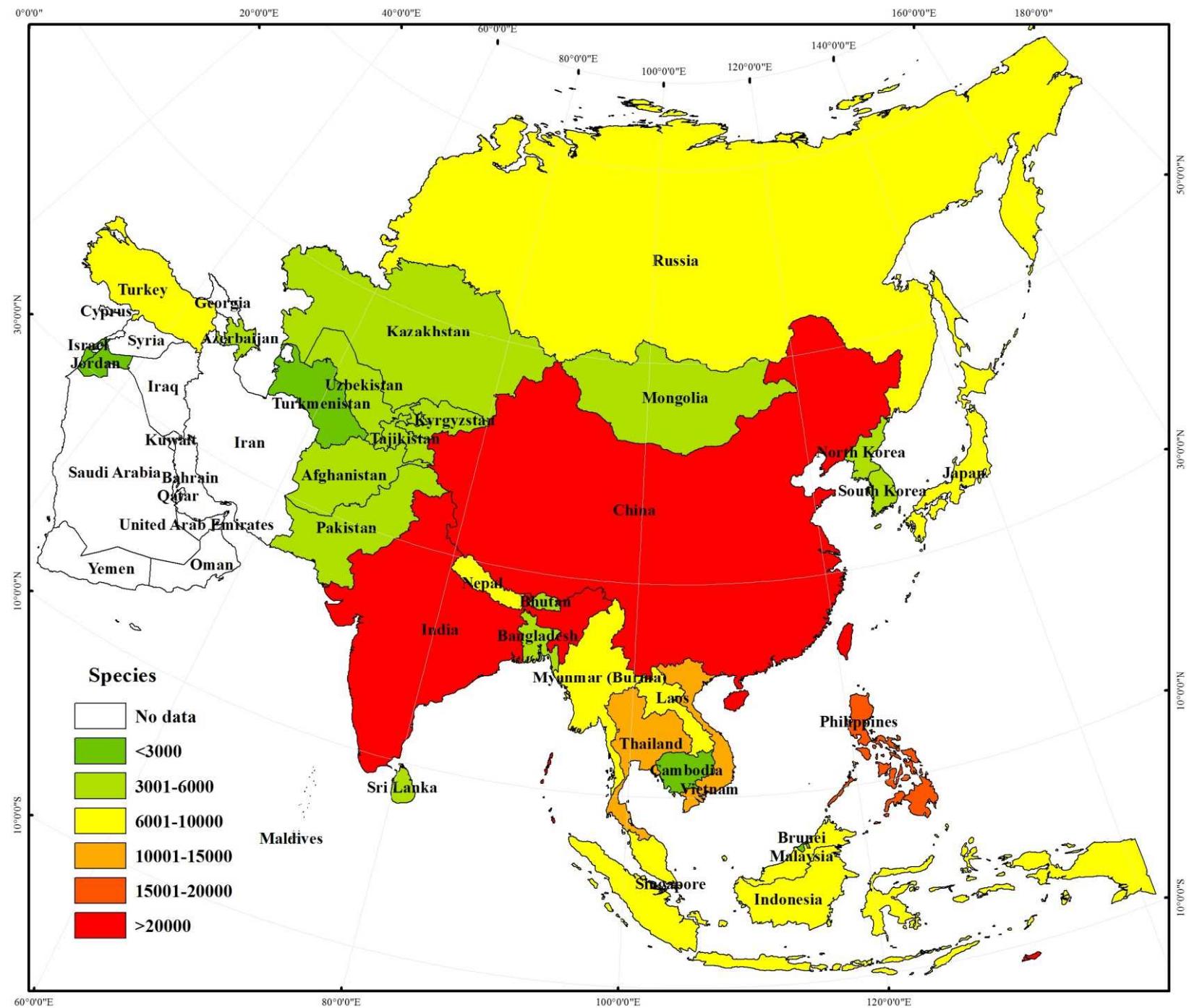
# Family



# Genera

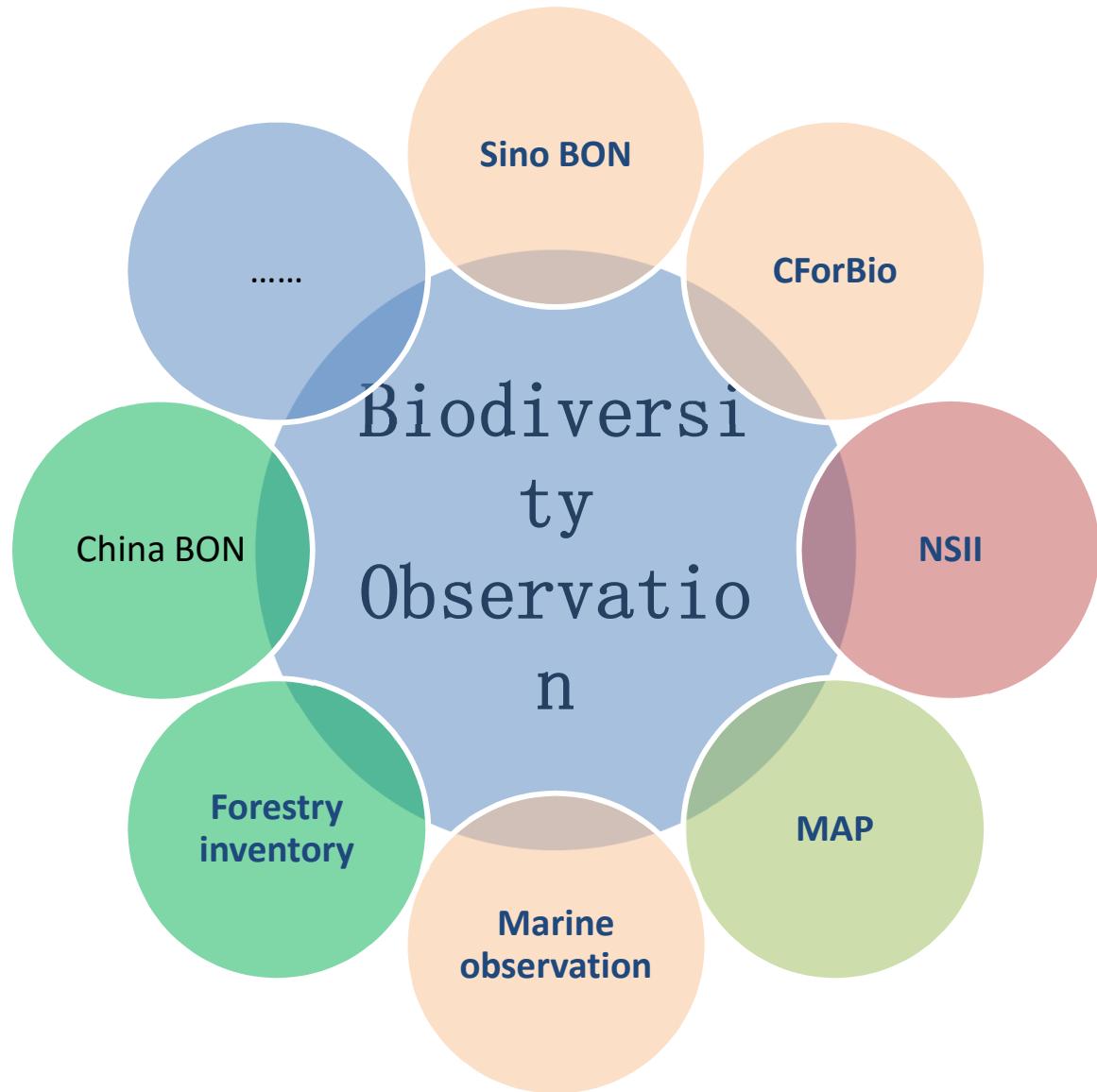


# Species



# Current Status

---



# Data Types of Biodiversity

## Observation

- Checklist
- Specimen
- Observation
- Inventory
- Literature
- DNA sequencing
- Remote sensing
- Environmental data
- Social media data
- .....





Thank you!



中国·GEO