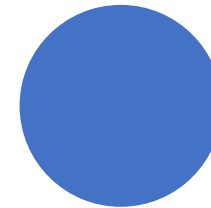# GVG, an agricultural information collection APP

Fuyou Tian

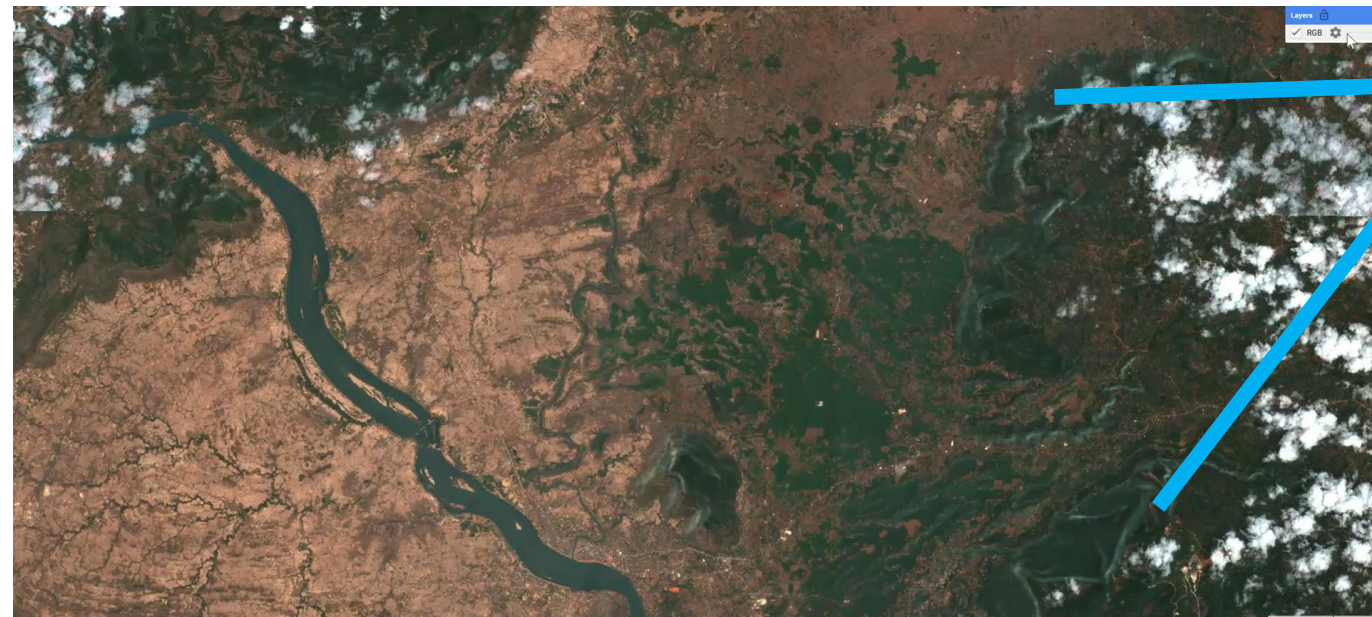Aerospace Information Research Institute, Chinese Academy of Sciences

- Background
- Development of GVG Software
- Tutorial of GVG APP
  - Installation
  - Registration and activate your account
  - Settings
  - Data collection, backup to cloud and export

Outline

- **Remote sensing can benefit agriculture a lot**
- **But can do more by integration with field survey data**

What kind of vegetation? Crops or trees?

Field survey is needed

A efficient tool to collection field information?

Background

Crop Areas

- Crop area information needs field data
- CropWatch integrates crop area estimation with geo-statistics & crop mapping
  - The CPTP method in complex agricultural landscapes (66%)
  - Transfer learning methods are integrated to reduce the reliance on in situ data (34%)

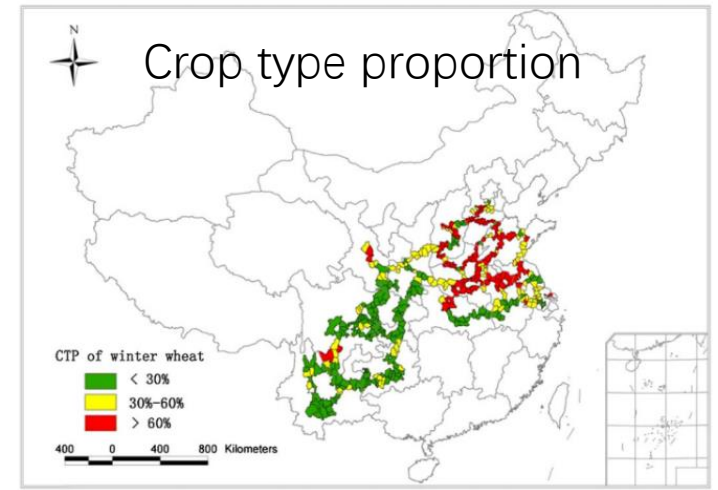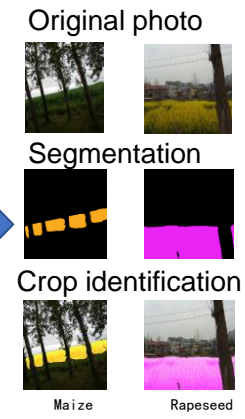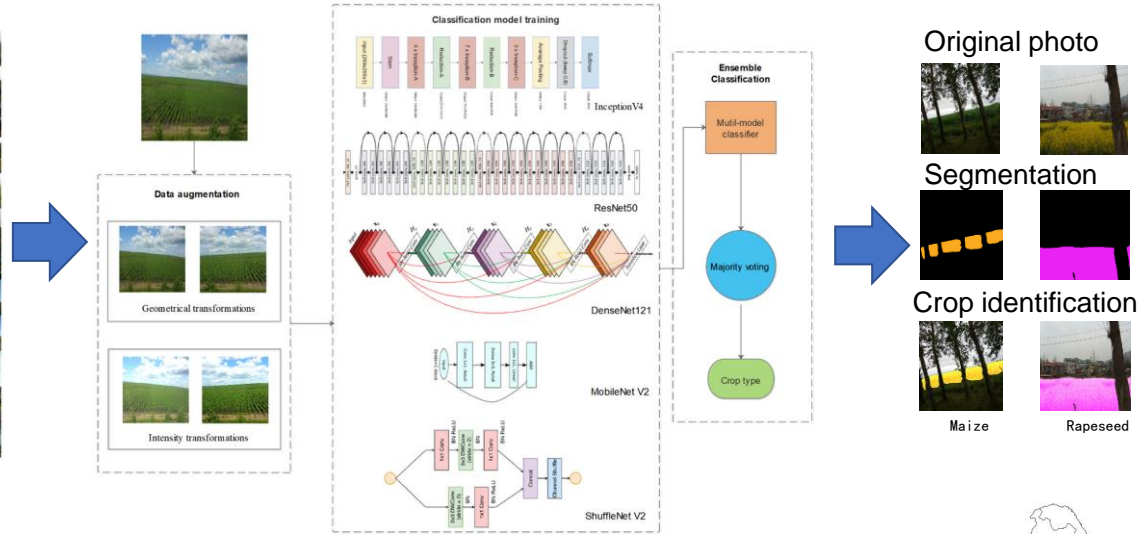**Crop type area = Cropland area * UEC * cropping proportion * crop type proportion**
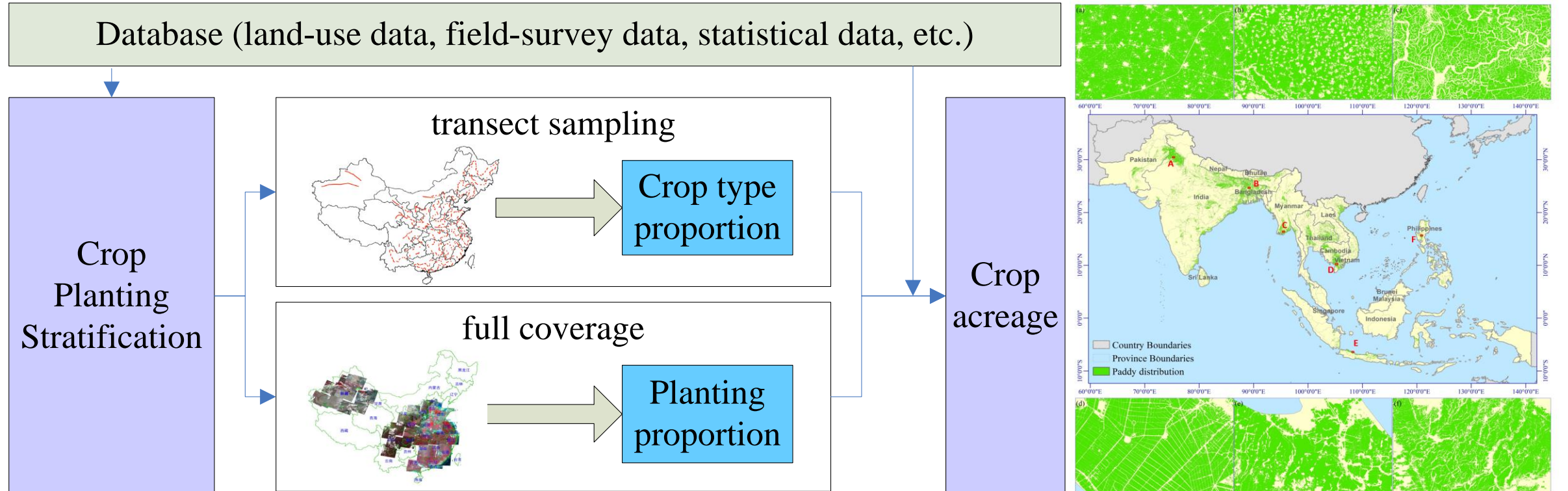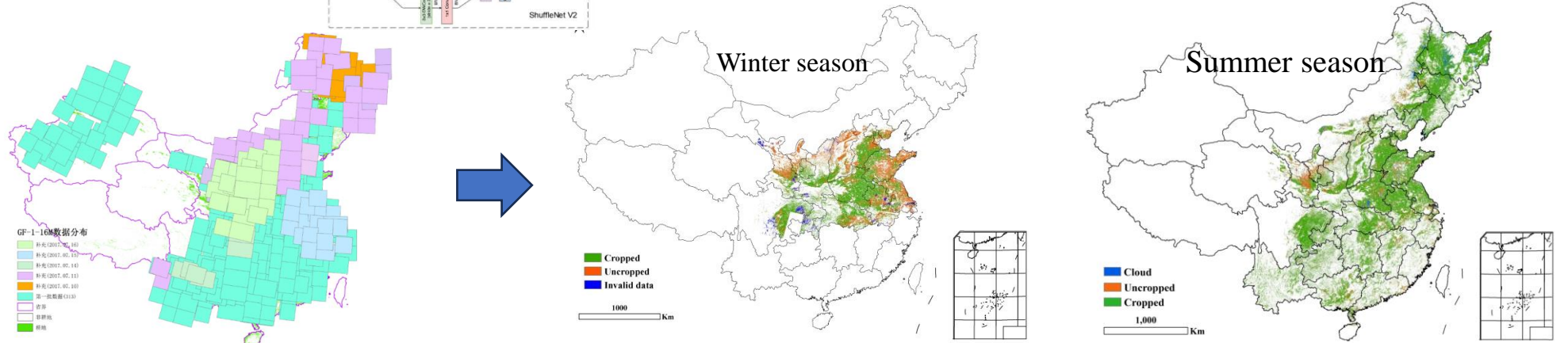
Area estimates at fragmented areas

- Fully automated objects identification from massive photos by integration of multiple deep learning networks
- Currently major crops such as wheat, soybean, rice, maize, rapeseed could be precisely identified

GVG APP

Wu et al., 2021

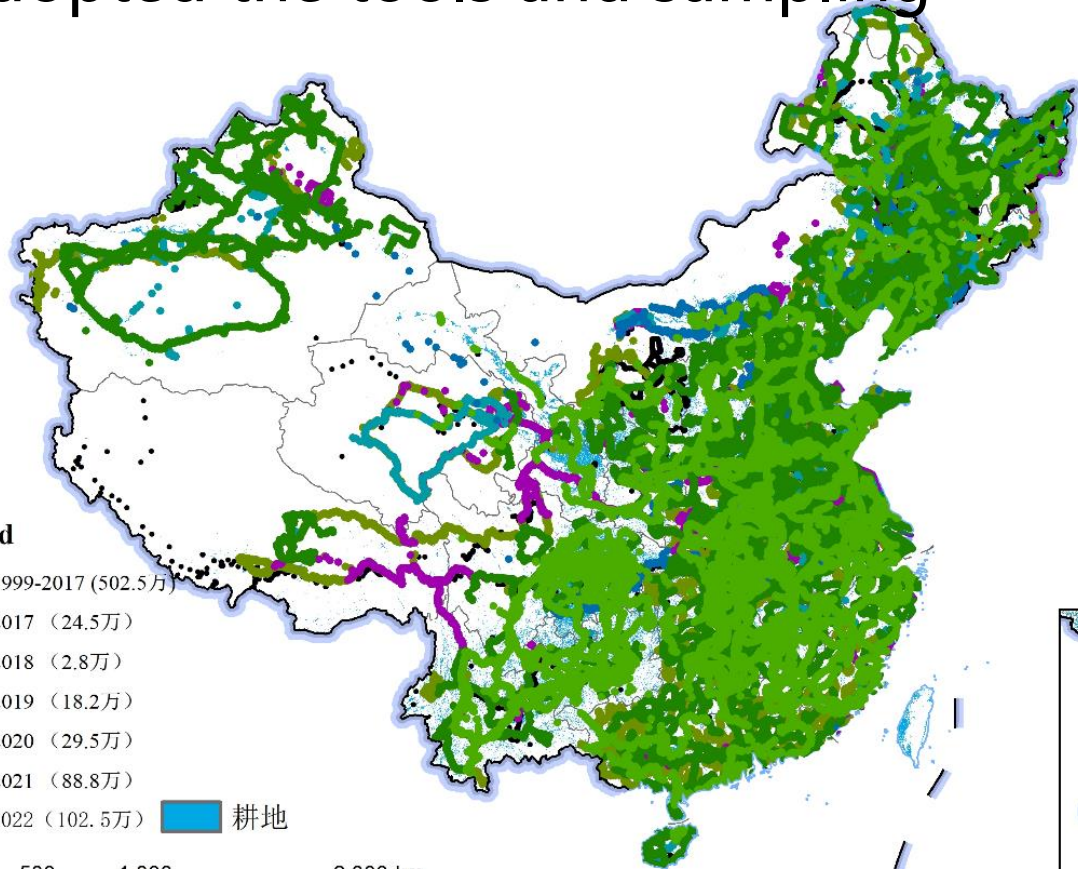Remote sensing-based identification of cropped and fallow fields

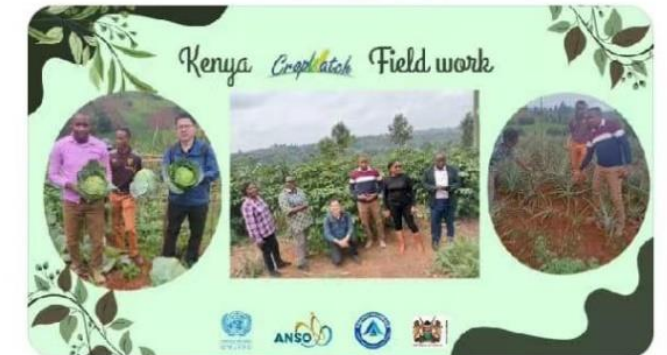Crop type area = cropland area * cropping proportion * crop type proportion

Crop type proportion sampling
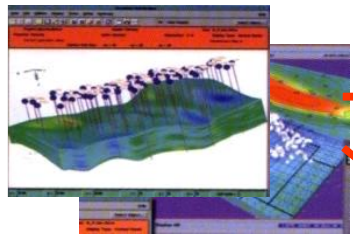
China：Millions of samples collected every year

Global application：More than 20 countries already adopted the tools and sampling

ZIMBABWE *CropWatch* FIELD STUDY

UNCTAD Innovation @UNCT... ·20h

#Kenya completed the first field study on crop growth monitoring and yield prediction, under the #UNCTAD-#China Academy of Science #CropWatch Innovative Cooperation Programme.unctad.org/project/cropwa...

Kenya *CropWatch* Field work

♡1   ılı 38

Legend
- 1999-2017 (502.5万)
- 2017 （24.5万）
- 2018 （2.8万）
- 2019 （18.2万）
- 2020 （29.5万）
- 2021 （88.8万）
- 2022 （102.5万） ▢ 耕地

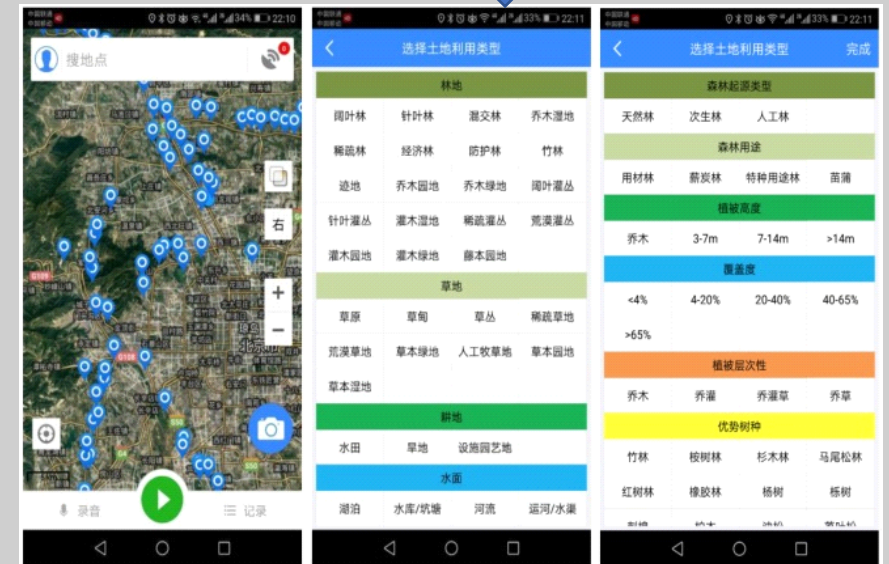0   500   1,000   2,000 km

全球推广应用

GIS

VIDEO

GPS

Development of GVG software

What is GVG stands for? GPS, Video, and GIS

Development of GVG software

To make it portable

GVG APP

Where to download and install

iOS App Store: Search for **GVG**

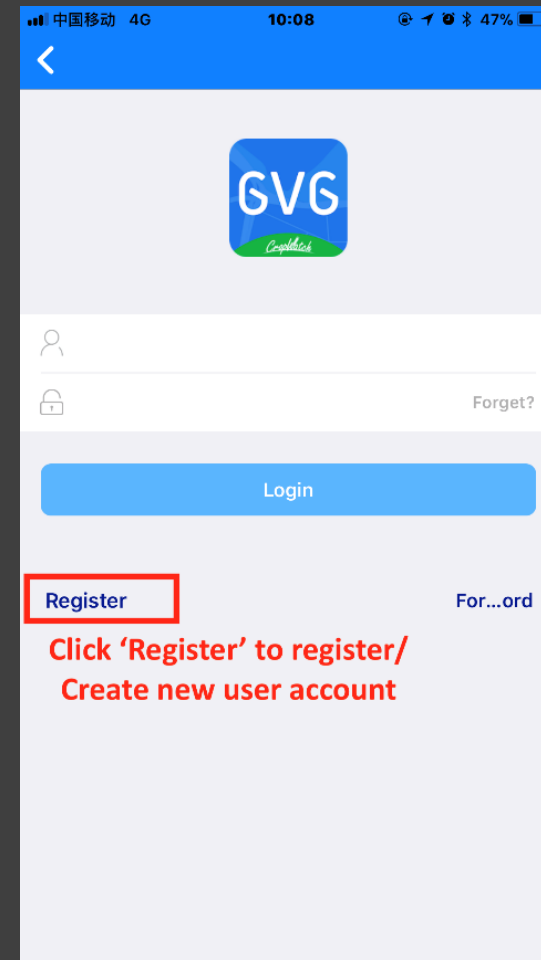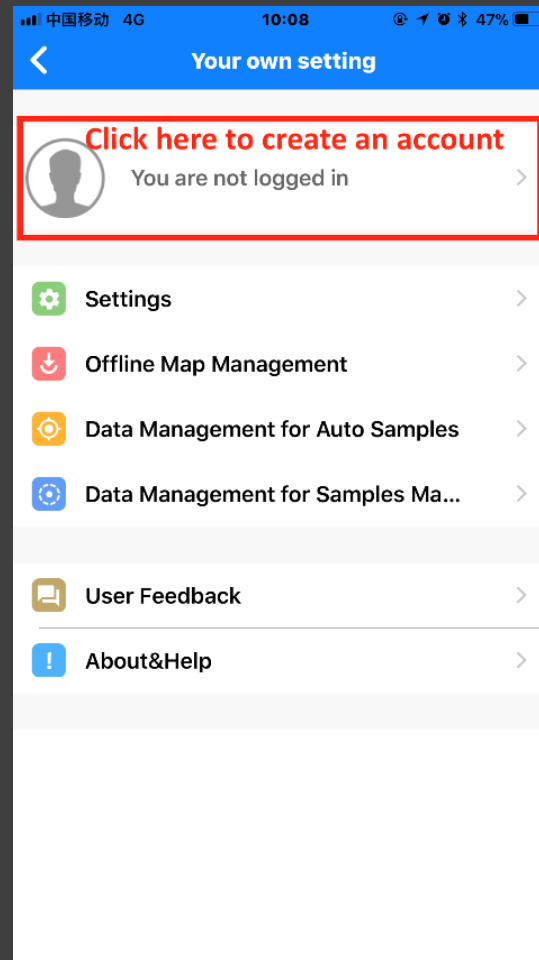Android phones:

Use the following link or scan the QR code:

https://gvgserver.cropwatch.com.cn/download

Registration

Registration and activate your account

- When go to the registration page, first type in your email address, then click the blue button 'acquire verification code'

- Then check your email to get the verification code. When you get the code, type in the verification code, and set your password

- Click register button to finish the registration

- Send an email to gvg@radi.ac.cn with your email account requesting activation

- Wait for activation until you get confirmed email and then you will be able to login
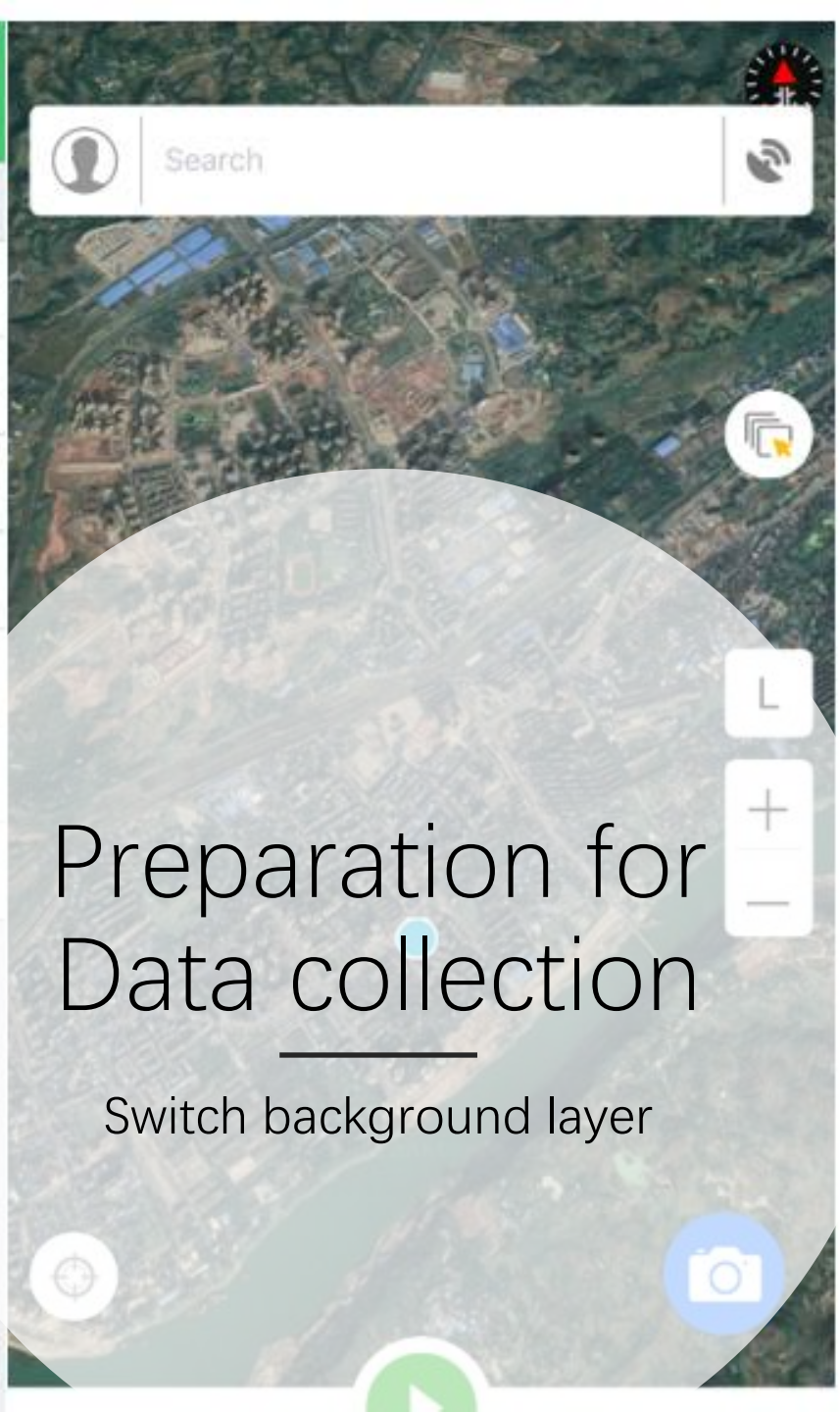
Test account: cropwatch@radi.ac.cn
Password: cropwatch
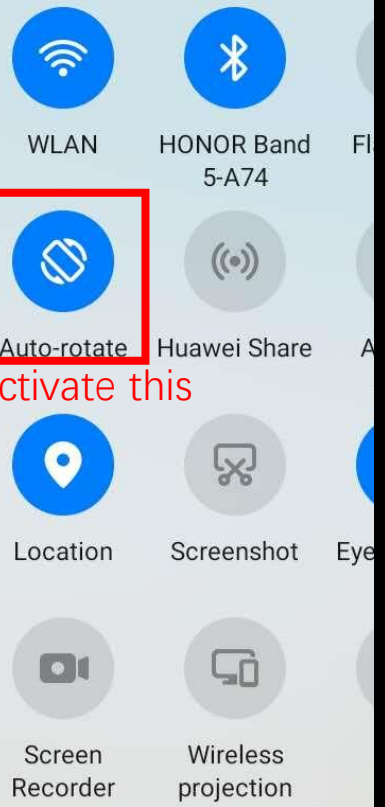
Settings

- four main settings, each one regarded to one task: Recording Settings, Camera Settings, GPS Settings and Update Settings.

- Remember to activate the auto-rotate of your cellphone

- Remember to give permission to GVG APP
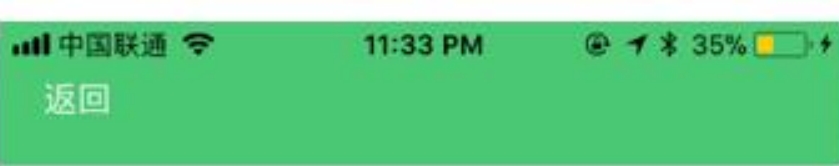
Activate this

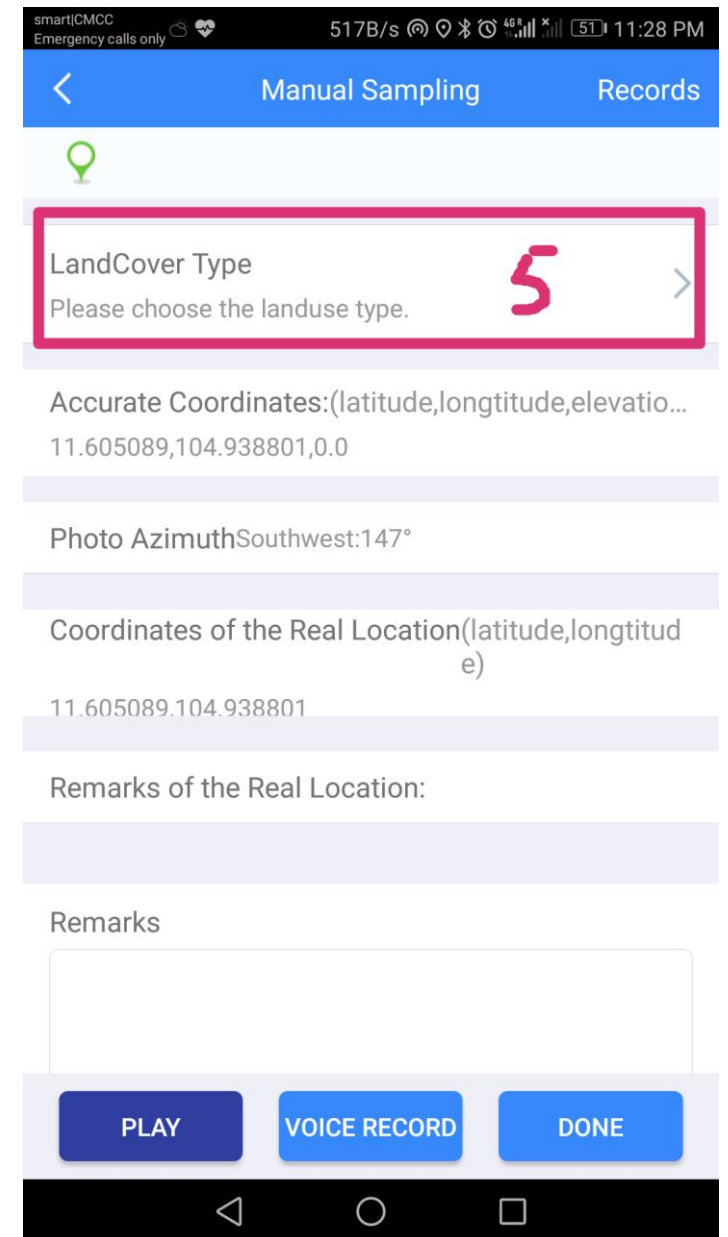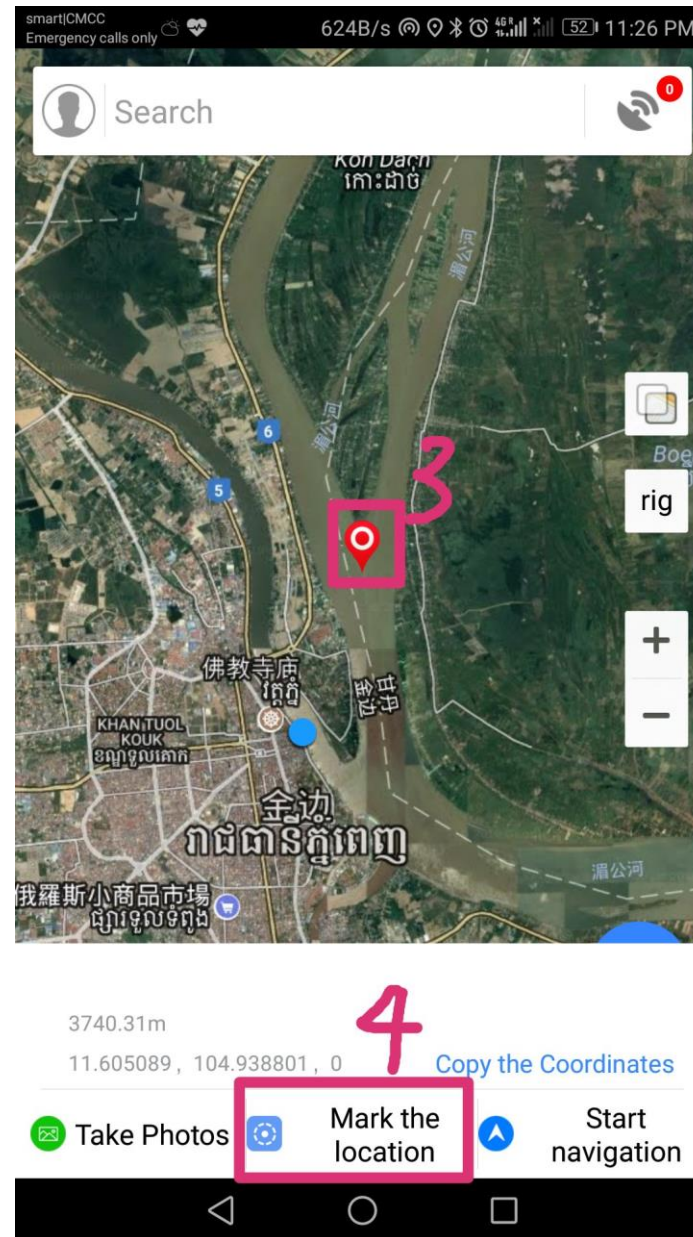# Preparation for Data collection

Switch background layer

Data collection

- Land use and land cover data
- Crop type proportion

LULC Data collection

To mark the sample on the map, click and hold for seconds, click [4] to start the navigation. The [5] is Landcover Type selection part.

Photo can be also added [8]. After all, to click save button to keep your information saved [9].

Mark the sample
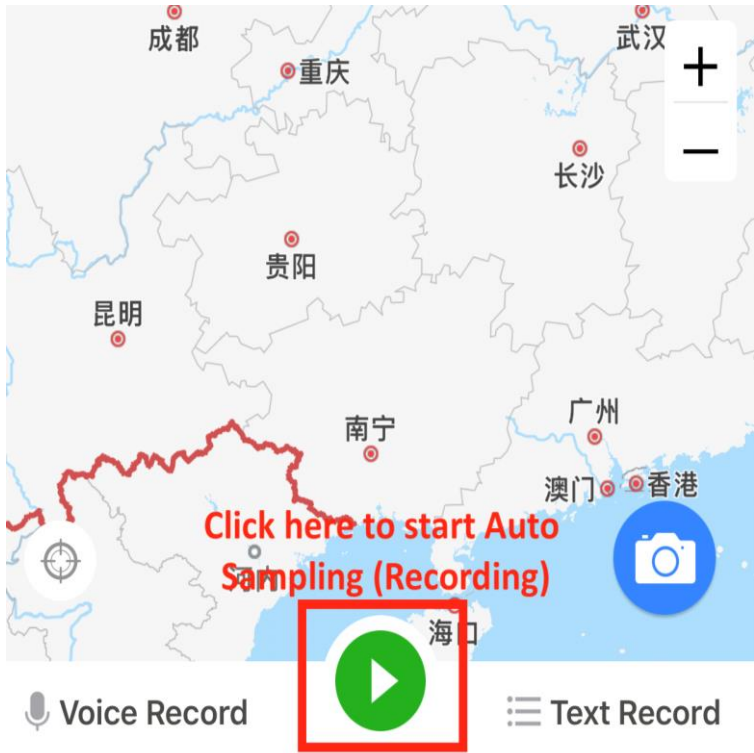
Crop type proportion
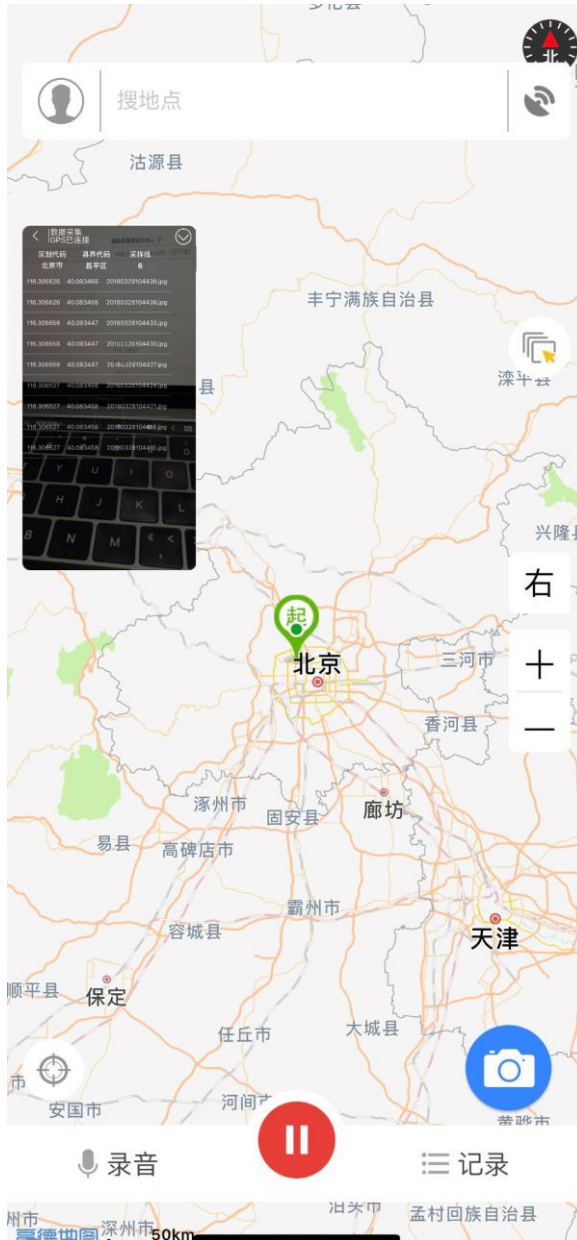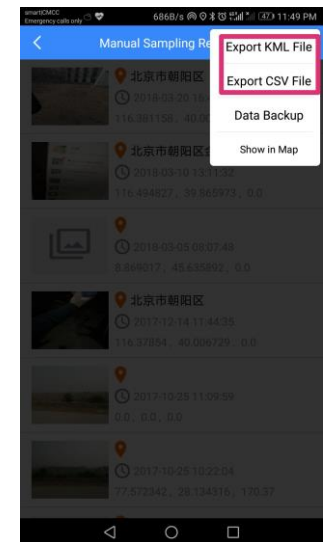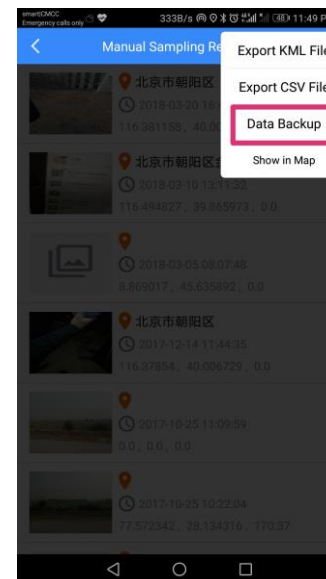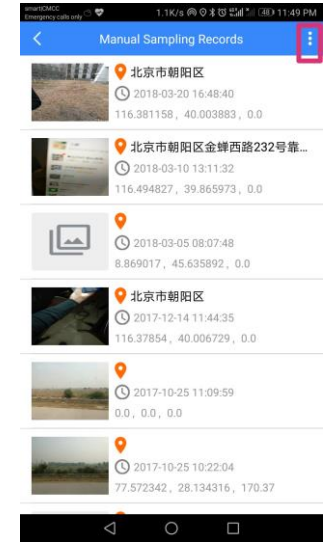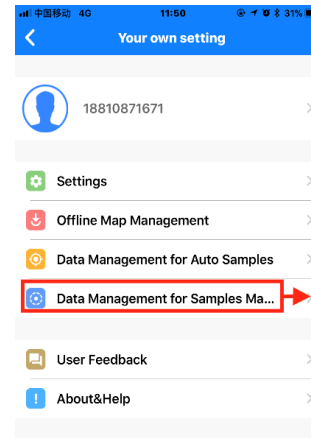
allows uses to record images automatically in every stated time as shown below

Backup your data to cloud and export to external files

- open the settings and Choose Data management for manual samples to backup your data

- After backup is done, points can be exported into KML or csv file

Thanks for your attention!