



Introduction



Description

Open Tenure is a mobile application that supports community-based mapping and recording of activities, allowing for the capture of details of land parcels, information about the legitimate tenure right holders, and the associated legitimate tenure rights by the communities to those parcels. Open Tenure is an open source product, developed by the Food and Agriculture Organization (FAO) of the UN and distributed free under a “Modified BSD License”.

Open Tenure could be used in conjunction with the SOLA Community server, which is a web application, used for uploading and processing the collected claims or with other similar software product, which supports the workflows for processing the collected field data initial, systematic or sporadic recording of claims and supports the workflows for recording the secondary changes to the existing parcels records. The SOLA Community server also provides initial configuration settings for Open Tenure application (see more details in SOLA Community Server quick reference guide).

Key features

- Fully open source, based on best practices and well-known platforms and tools.
- Multilingual – currently supports 10 languages (English, Arabic, French, Italian, Spanish, Khmer, Russian, Portuguese, Albanian, and Vietnamese).
- Works online and offline.
- Uses Google maps and WMTS layers (including offline mode).
- Supports local database encryption.
- Works even with slow and unreliable Internet connections.
- Supports dynamic forms handling – additional fields configured by the user¹.
- Has a tutorial component to guide users on the application.
- Allows capturing land-related claims and submitting them for further processing.
- Features capturing of disputing claims, challenging existing ones.
- Supports capturing of additional land features (e.g. big tree, building, rock, etc.).
- Implements import and export of collected claims in the form of archive, password-protected.
- Allows capturing of community area boundaries (e.g. village boundary) for using this information later, when recording a claim.
- Auto-saves claim details, preventing information loss.
- Supports capturing evidence in form of documents, attached to claim.
- Allows adding and submitting additional documents for claims already submitted.
- Implements reliable and convenient mapping tools, allowing administrative or parcel boundary capturing and accurate editing.
- Supports boundary points snapping and automatic geometry validation.
- Allows download of claims, captured by other recorders.

¹ Dynamic forms configuration should be made on the SOLA Community Server.

Requirements

Prerequisites

Open Tenure application is interoperable with the **SOLA Community server**. It receives configuration parameters and existing claims from the SOLA Community server and communicates captured claims. With this in mind, SOLA Community server must be currently running on a server, accessible to the Open Tenure application; this can be a local server or one hosted on the Internet.

Minimum requirements for mobile device

- Android 4.4
- 1 GB memory
- 2 GB of disk
- Rear camera
- GPS sensor
- Compass sensors

Preparation



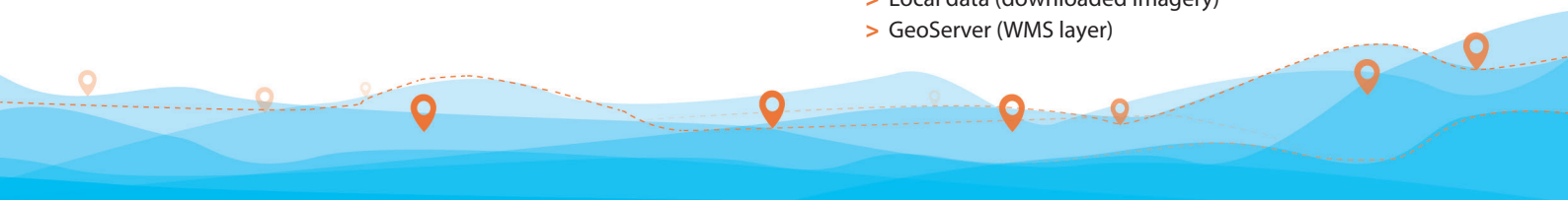
Installation





Installation of Open Tenure is straightforward and the application can be found on Google Play or installed from an APK file provided by your administrator.

Overview

The main screen of Open Tenure application contains the following tabs:

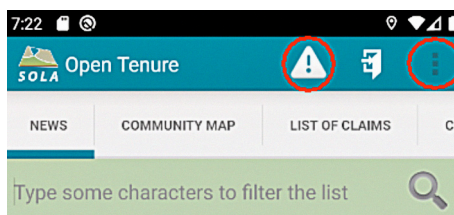
Tab	Description	Toolbar and menu
NEWS	List of news from the Open Tenure community	<ul style="list-style-type: none"> Login Encrypt local data <ul style="list-style-type: none"> > Settings > View tutorial > Export log
COMMUNITY MAP	Shows the map with claims, zoomed to the Community area	<ul style="list-style-type: none"> Zoom to Community area Zoom to current location (based on GPS data) Download claims from Community server Download imagery (when zooming in closely) <ul style="list-style-type: none"> > Settings > View tutorial > Export log > Log in > Google Maps > Google Hybrid > Google Earth > Google Terrain > Open Street Map MapNik > Open Street Map MapQuest > Local data (downloaded imagery) > GeoServer (WMS layer)



Tab	Description	Toolbar and menu
LIST OF CLAIMS	Contains list of captured or downloaded claims	 Import a claim from the file, exported on other device  Create new claim <ul style="list-style-type: none"> > Settings > View tutorial > Export log > Log in > Backup local data > Show deleted
COMMUNITY AREAS	Contains list of captured or downloaded Community areas	 Create new Community area  Download Community areas <ul style="list-style-type: none"> > Settings > View tutorial > Export log > Log in

Initialization

Once the application is installed and running, a tutorial will guide you through the main application features. To start using the application, it must be initialized from SOLA Community server. An uninitialized application has a white warning triangle in the header as shown below.



By default, Open Tenure is configured to communicate with SOLA Community server at <https://demo.opentenure.org>². Please note that you will have to change this URL to that of your server to establish a new project or local testing. To change this setting, click on the menu options icon (triple vertical dots) and select **Settings** option.

The **Settings** page can be used to configure various settings like map sources, language, dynamic forms and others. To configure the SOLA Community server URL, click and enter your address as shown below. Make sure to add the port number if your server is using non-standard HTTP port (e.g. <http://my-server.org:8080>).

Enter the URL of your OpenTenure Community Server

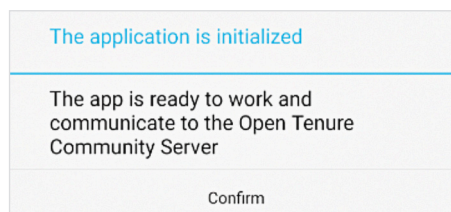
<http://my-server:8080>

Cancel
OK

¹ For more information about running demo server URL visit the following link:
<http://www.fao.org/tenure/activities/administration/recording-of-rights/software/en/>

Once the correct address is entered and saved, you may return to the main screen by clicking the back navigation button of your device.

Now that you are ready to initialize Open Tenure, click on the white triangle icon to start the process. This will gather all required configuration data to capture new claims and upon successful completion, the ready message below will be displayed:










Claims



New claim

Start creating new claims by switching to the **LIST OF CLAIMS** tab and clicking the **New claim** icon. You will be asked to confirm the creation of a new claim and upon confirmation, a claim form will be opened. For first time users, a tutorial will be displayed, guiding you through the main steps of creating a new claim.

Claim form consist of the following tabs:

Tab	Description	Toolbar and menu
CLAIM	General information about the claim and claimant	 Validate claim form for any issue  Generate PDF from this claim > View tutorial
OWNERS ³	List of legitimate tenure right holder shares	 Add new share
DOCUMENTS	List of attached documents	 Add new document
ADJACENCIES	Description of neighboring adjacencies from four sides and a list of neighboring claims, detected automatically	
MAP	Map component for drawing parcel boundaries	 Add a point from GPS  Make a map snapshot and attach it as a document  Open map mode menu > Rotate map using device compass > Go to > Google Maps

³ Note that wherever the label Owner is used, it is referred to the legitimate tenure right holder.

- > Google Hybrid
- > Google Earth
- > Open Street Map MapNik
- > Open Street Map MapQuest
- > Local data (downloaded imagery)
- > GeoServer (WMS layer)
- > Export geographic data

CHALLENGES	Automatic list of disputing claims, challenging this claim
OTHER TABS	Additional tabs may appear as well, if they are configured through dynamic forms feature of SOLA Community server

+ Add Claimant

Start with the **CLAIM** tab and provide general information. At the bottom of this tab, click the **"Add Claimant"** button to add claimant information. Once the claimant is added, legitimate tenure right information will be automatically created as well. You can view and adjust it on the **OWNERS⁴** tab.



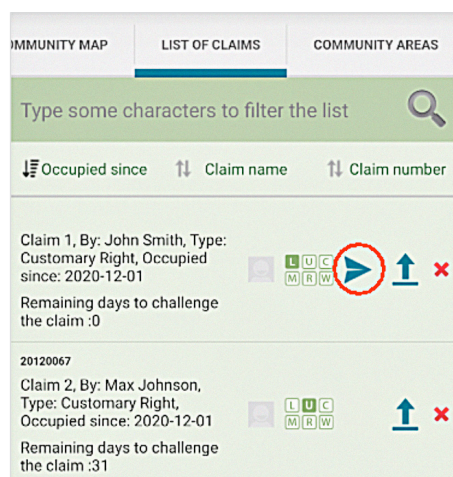
Continue clicking on the other tabs to capture the required information. While mapping the parcel's boundary, use the **"Add GPS point"** icon to create a point at your current position, or click on the map to add it manually.



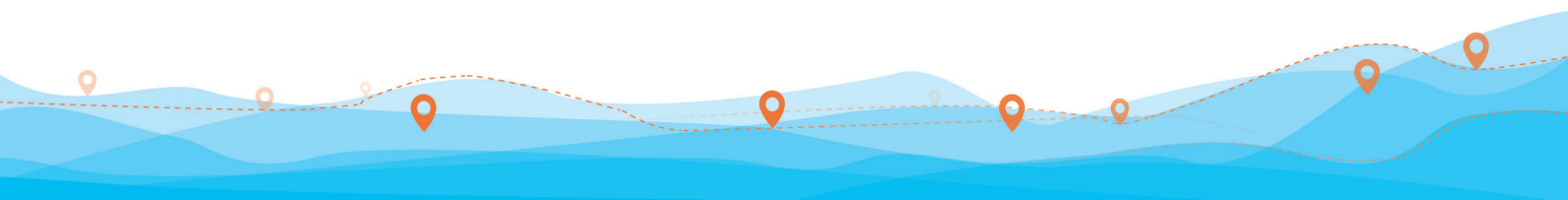
Once you have added the attributes and parcel boundary, go back to the **CLAIM** tab and click the **"Validate"** icon to check if all rules and requirements are met. This is an optional step; you may leave the form as is and come back to it later.

Submitting claims

Claim submission is done through the **LIST OF CLAIMS** tab of the main screen. Depending on the claim's status, there will be different buttons available next to it. The image below shows **Claim 1** available for submission and **Claim 2** already submitted. Claim 2 has the claim number assigned by the server (#20120067).



⁴ See footnote n.3: Note that wherever the label Owner is used, it is referring to the legitimate tenure right holder.





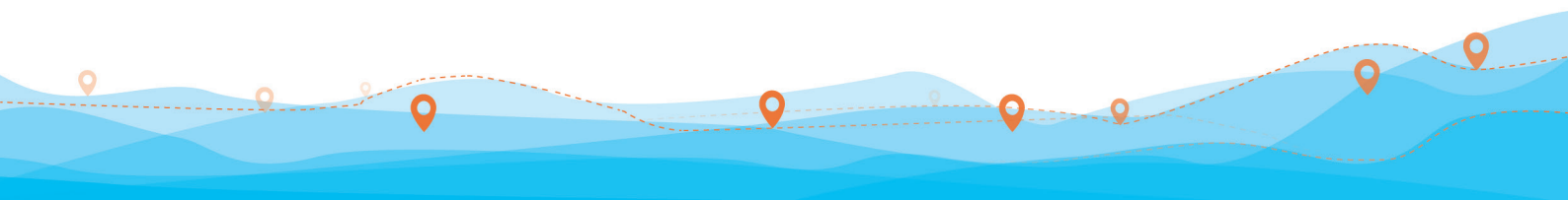
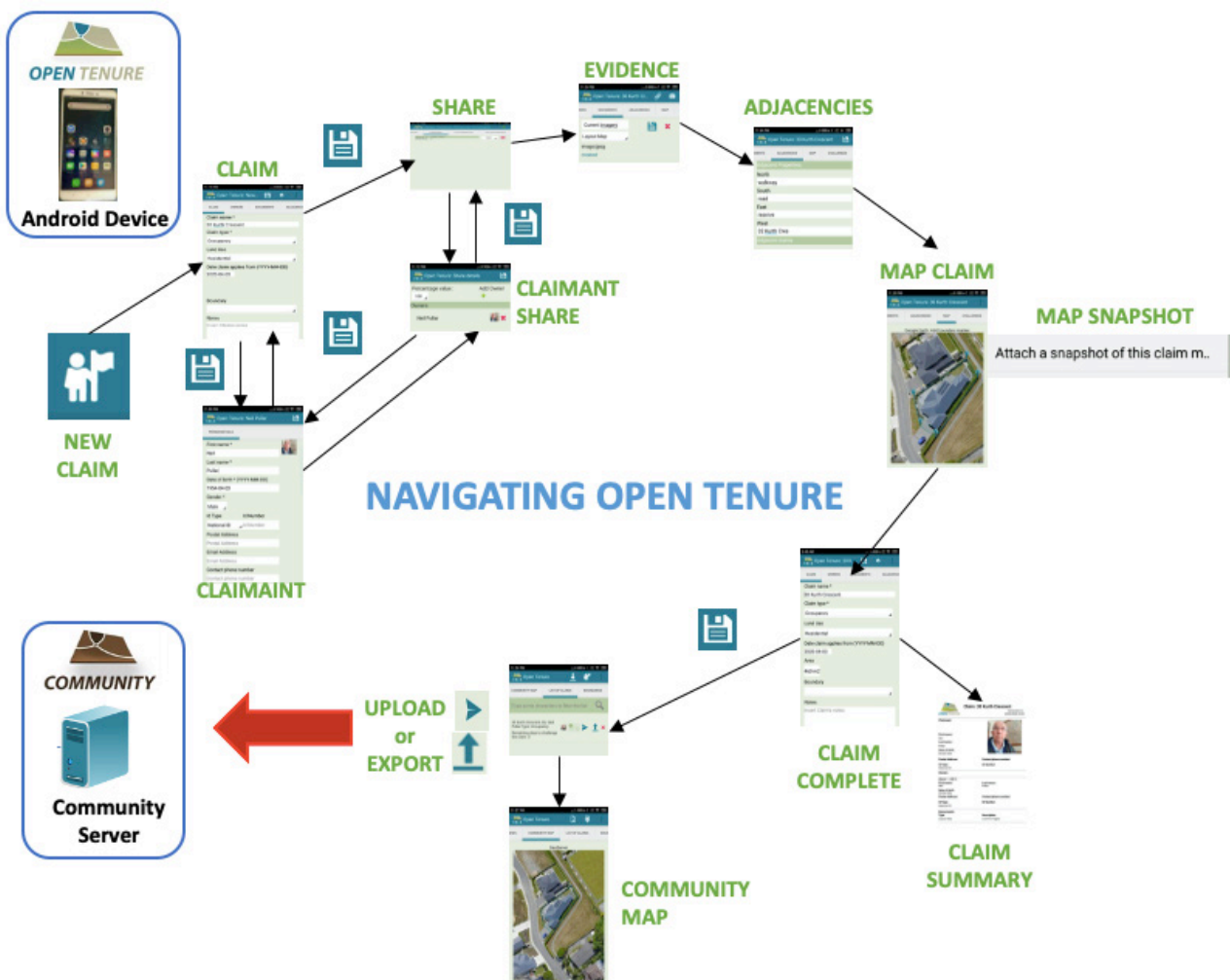
Click the "**Submit**" icon next to the claim to initiate submission. Before submitting a claim you will need to login; if you are already logged in, an appropriate message will be displayed. If you are logged in, the application will run claim validation again to make sure all entries are correct.



If any issues are found, submission will be stopped and an error message will be displayed. Otherwise, upon successful submission, the claim will be assigned a unique claim number and become available on the server for public display and further processing.

Submitted or downloaded claims can be deleted only locally, but not from the server. Not submitted claims can be deleted permanently.

Navigating



Navigating

TO ADD BOUNDARY & OTHER POSITIONS



Press screen to add new position (and drag "tail" to correct position)

YOU CAN "SNAP" TO EXISTING POSITIONS DEFINED BY OPEN TENURE

To add GPS position

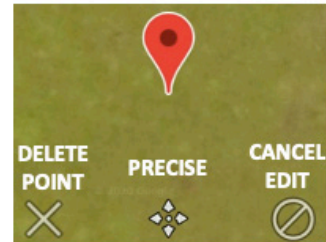


OR

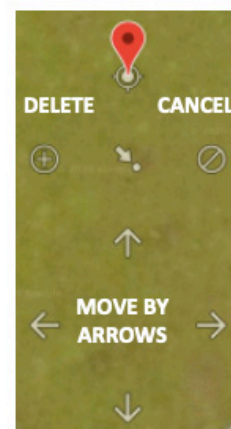


TO EDIT POSITIONS

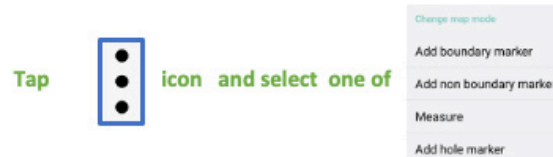
Tap to select point to be edited



PRECISE MODE



TO CHANGE MAP CAPTURE MODE



Community areas



New area

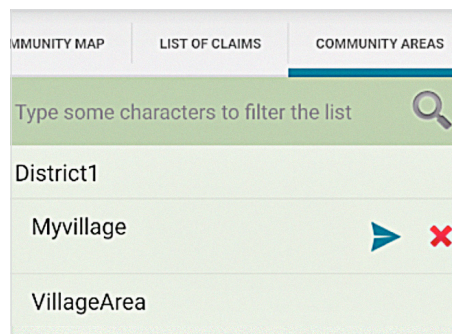
As well as capturing claims, Open Tenure allows mapping of various community areas, such as village boundaries. A new Community area can be created by switching to COMMUNITY AREAS tab on the main screen, then clicking on the "Create new community area" icon. It will lead to the basic form as shown below.

The next step is switching to the **MAP** tab and drawing the community area boundary in a similar way as capturing claim boundary. You can add new points by selecting menu option "**Add marker from GPS**" or do so manually by clicking on the map.

Submitting area

Once the Community area attributes and its boundary are captured, click the "**Save**" icon on the **COMMUNITY AREA DETAIL** tab or select it from the menu options on the **MAP** tab.

Newly created Community Areas will have Submit and Delete buttons next to it.



Click the **Submit** button to send the Community Area to SOLA Community Server, where it will be further reviewed and processed.