STDM 1.4 User Manual

Revision: 26-09-2016

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Preface

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Introduction

Social Tenure Domain Model

The Social Tenure Domain Model (STDM) is a pro-poor, gender responsive and participatory land information system developed by the Global Land Tool Network (GLTN). It is one of eighteen land tools being developed, tested and applied by GLTN partners to promote secure land and property rights for all.

STDM, as it stands, has the capacity to broaden the scope of land administration by providing a land information management framework that would integrate formal, informal and customary land systems and administrative and spatial components. STDM makes this possible by incorporating tools that facilitates recording of all forms of land rights, all types of rights holders and all kinds of land and property objects/spatial units regardless of the level of formality.

Core Values
STDM's core values and principles are pro-poor, good governance, equity, subsidiarity, sustainability, affordability, systematic large scale, and gender responsiveness.

The STDM Universe

STDM is a pro-poor, participatory and affordable land tool that broadens the scope of land administration by incorporating all person/s to land relationships beyond formal/legal land rights, cognizant of the continuum of land rights. STDM has four inter-related components:

1. A new way of thinking about land records
2. A free and open-source software package to record information about land
3. An approach of collecting data about land
4. A way of using and disseminating information about land

The STDM Universe consists of an extensible data model, conceptual and operational model, database implementation, software modules and an extensible architecture.

What is New in STDM Version 1.4?

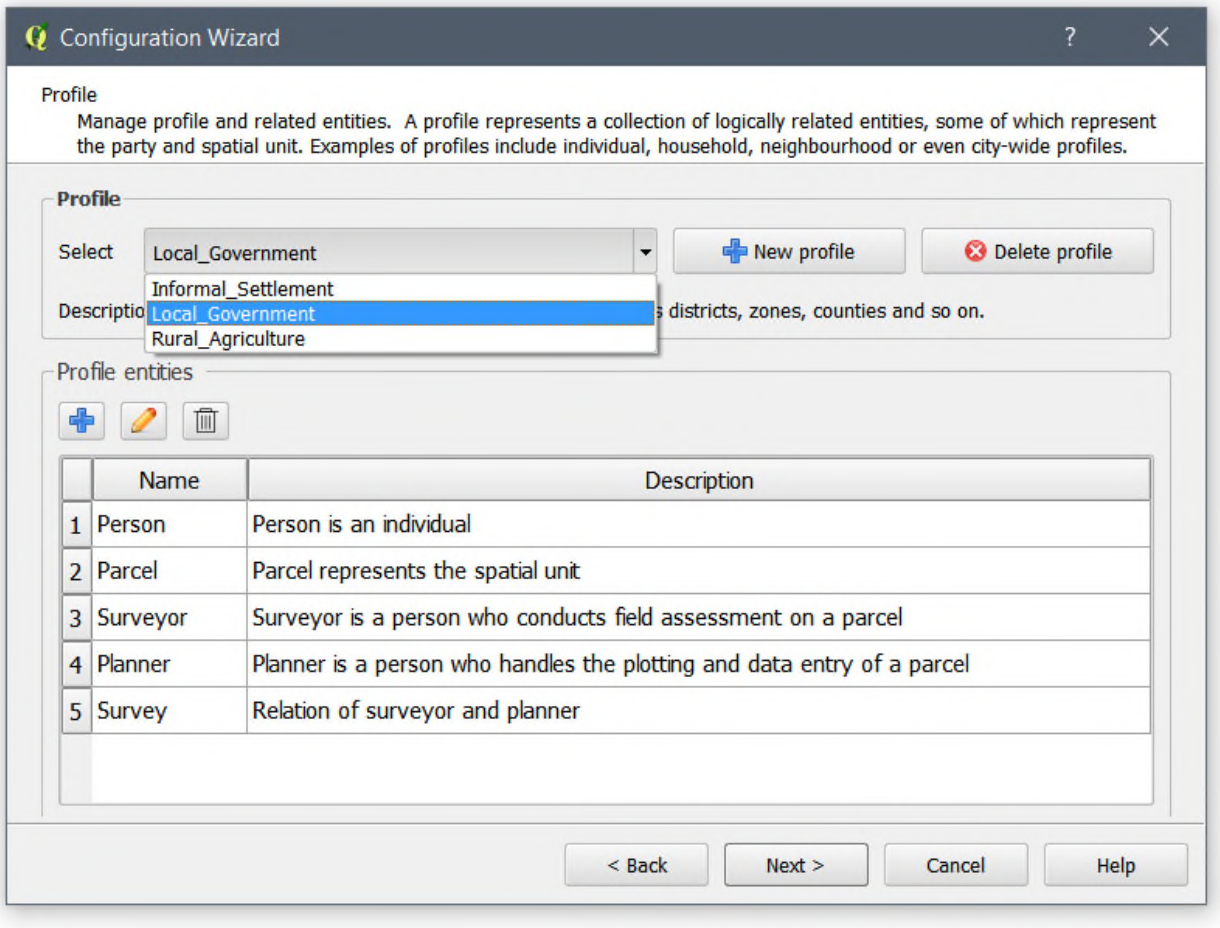
STDM 1.4 is a full release which includes enhanced functionality and stability improvements. One special highlight is the complete redesign of the database customization module, which not only improves the stability of the system but also allows more data types to be defined by the user. The following sections summarize changes in different functional areas of STDM with reference to the previous version.

Database Configuration

The configuration backend has been redesigned to be more stable and extensible. This has opened up the possibility of customizing the tool further based on the data requirements of the specific application context. These new features are highlighted below:

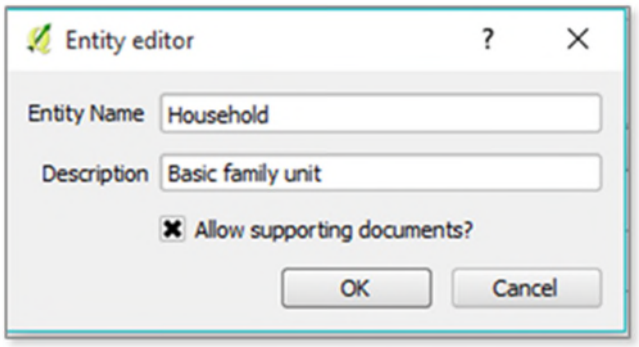
Data Profiles

STDM now supports the definition of one or more data profiles. A data profile represents a logical set of interrelated tables for a specific application context of STDM. For example, an informal settlement profile can contain tables representing household, structures, household members, priority projects, etc. whereas, a rural agriculture profile can include information pertaining to a farmer, garden, productivity and socio-economic impacts. For each data profile, STDM implicitly creates a social tenure relationship whose types are user-defined depending on the application context e.g. tenancy, ownership, leasehold, farming. The default installation is shipped with three basic data profiles which can either be customized by the user, deleted or new ones created from scratch.



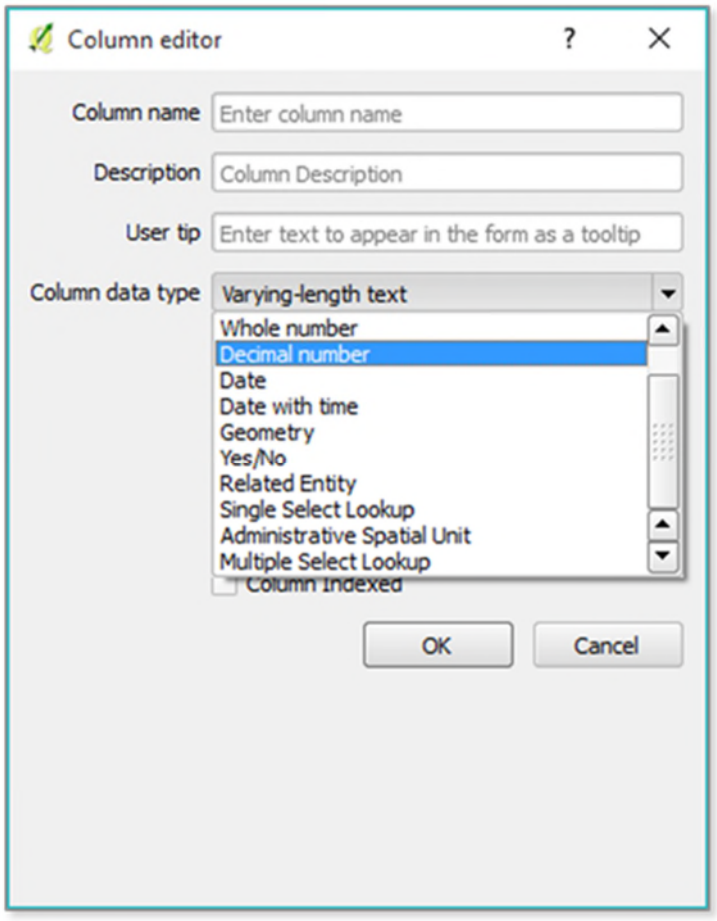
Supporting Documents

For each new entity, there is now an option for enabling supporting documents to be attached to a record. By default, this is automatically enabled for new social tenure relationship definitions.



For each entity with supporting documents enabled, a user-defined set of document types can also be specified.

Column Types



The following column types can now be added to entities:

Administrative Spatial Unit – Specifies a particular location within a custom administrative unit hierarchy. This can be applied, for example, when attaching place of birth, previous residence, place of work, etc. from a preset list of location names.

Multiple Select Lookup – Used for specifying the selection of one or more choices from a preset list. For instance, when defining income sources for a person or household, the options can be business, employment and/or from spouse.

Related Entity – Used for specifying one-to-many relationships between entities. For instance if a data profile has both 'household' and 'household members' entities, then a new column can be added to the 'household members' entity thereby enabling 'household members' to be linked to the 'household' they belong to.

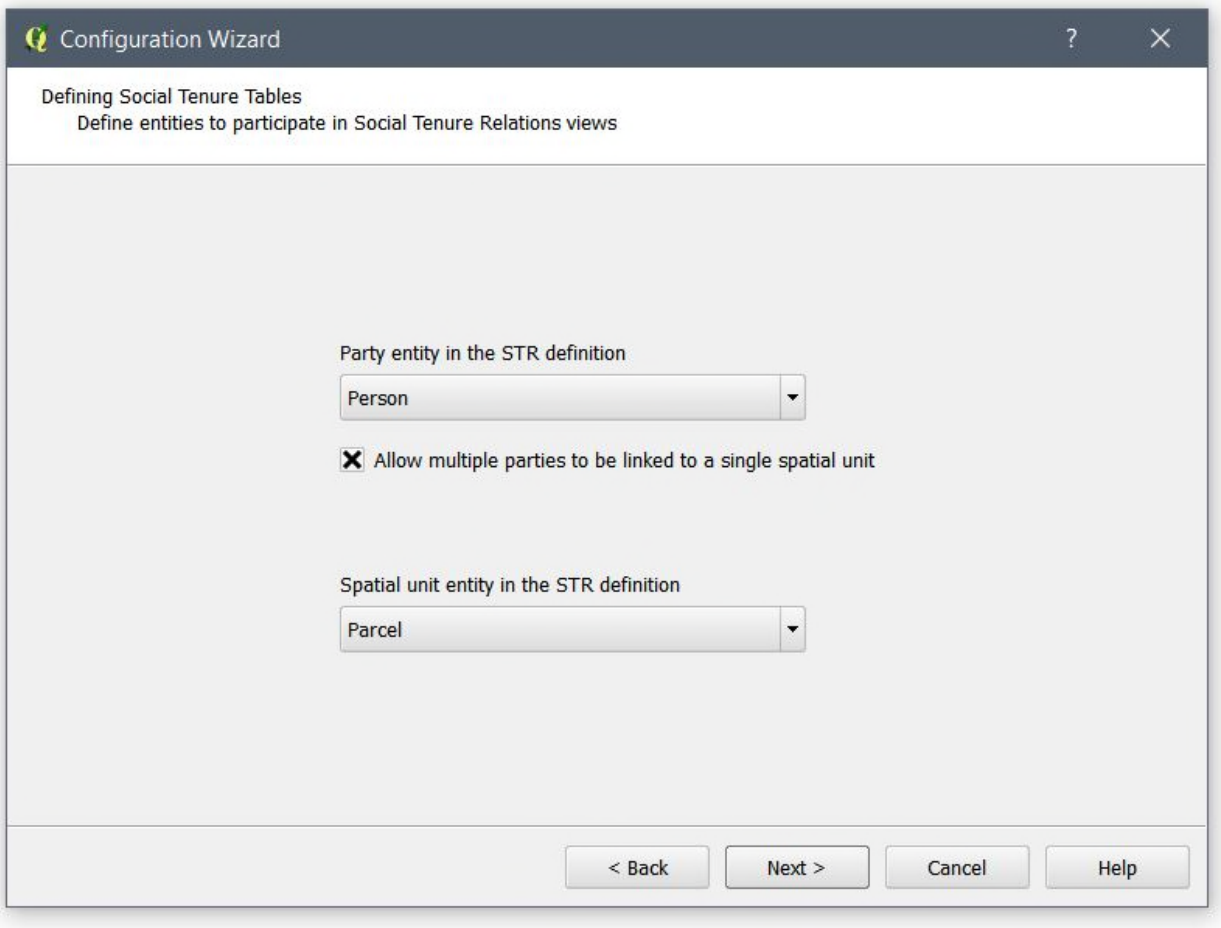
Unlimited Text – Used for specifying free-form text that has no constraints on the length of characters.

Yes/No – For specifying a Yes/No column. This appears as a checkbox in the forms.

Date with Time - Used for specifying date with time.

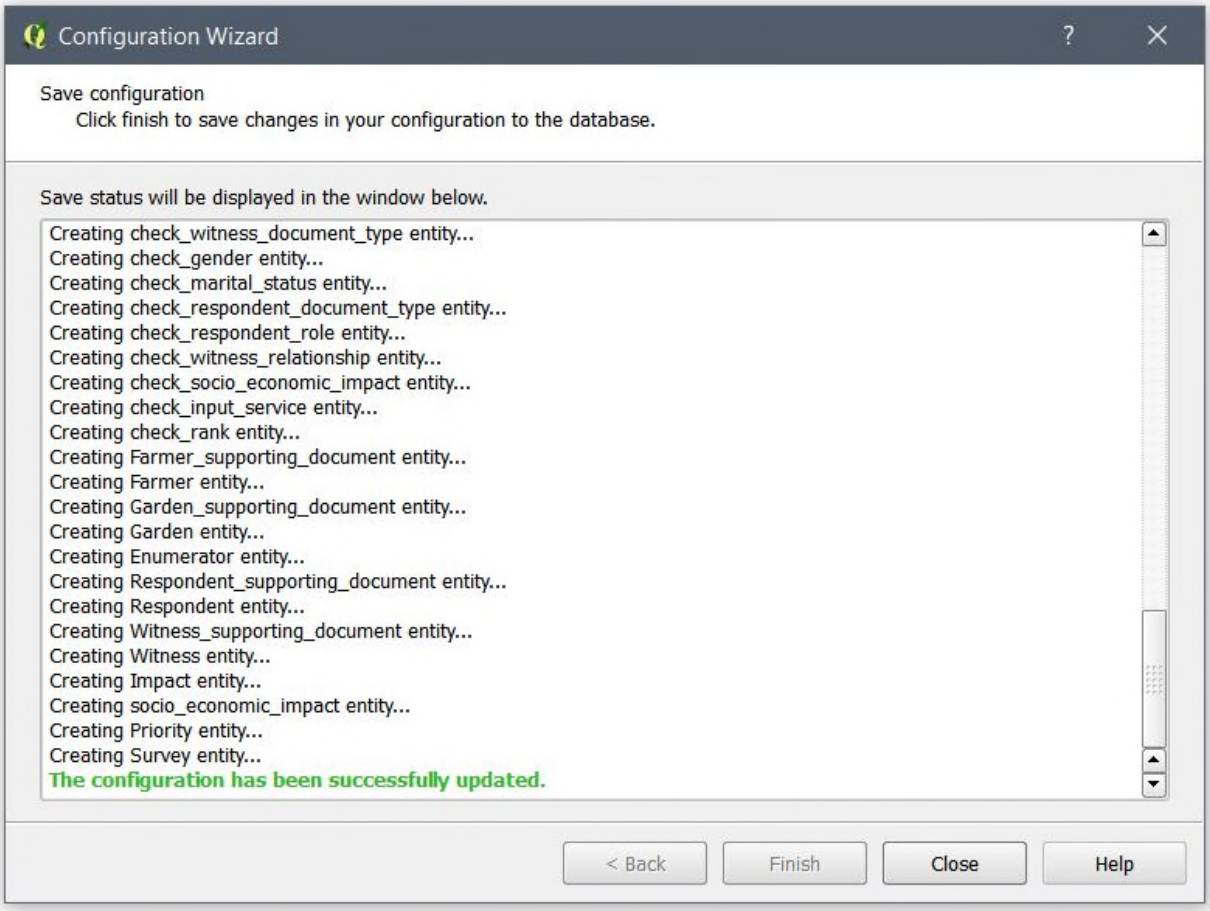
Permissible Number of Parties per Spatial Unit

A check constraint can now be applied to limit a single party to one spatial unit when defining a new social tenure relationship. By default, multiple parties are allowed to be linked to a single spatial unit using the 'new social tenure relationship' module.



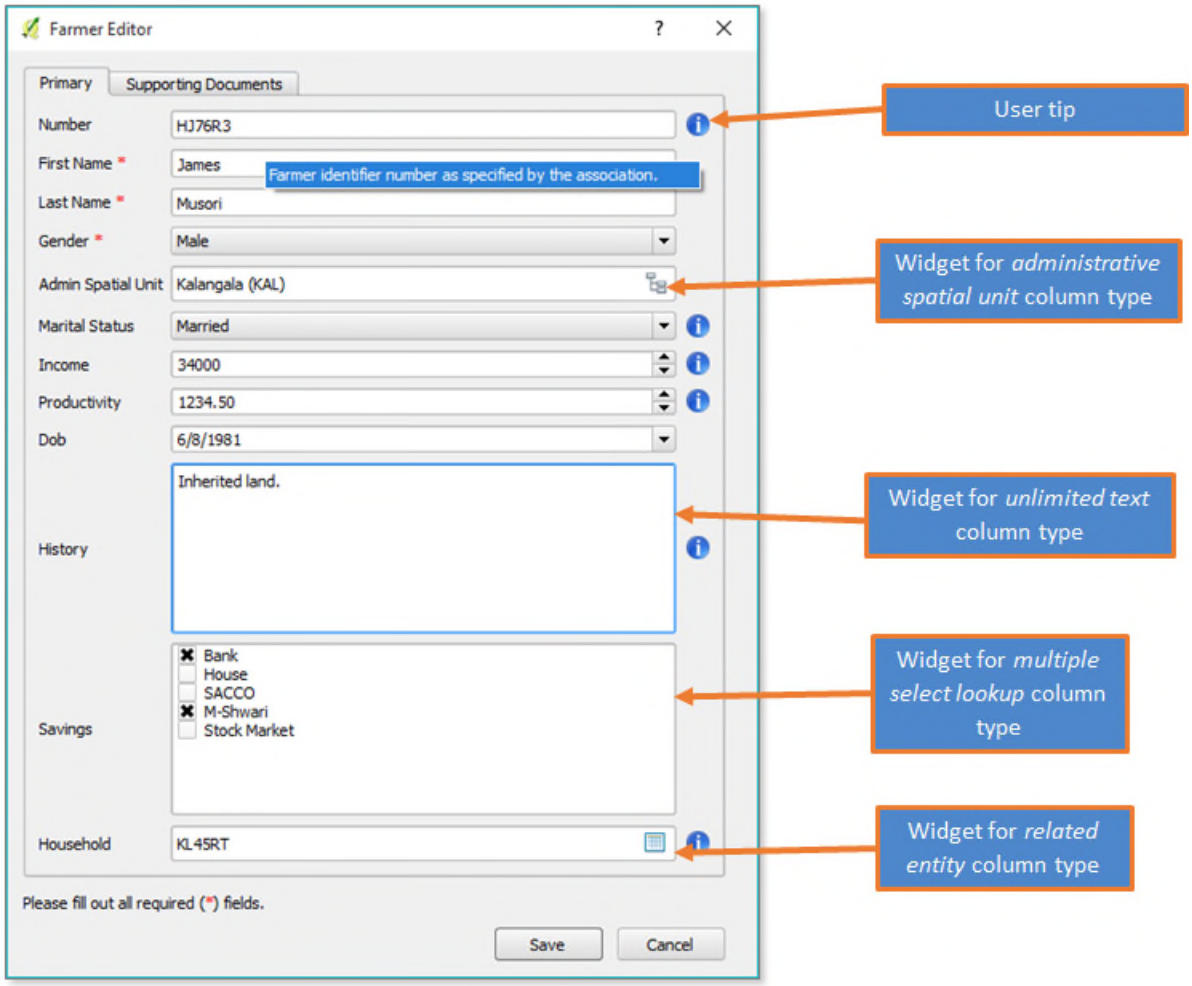
Configuration Wizard

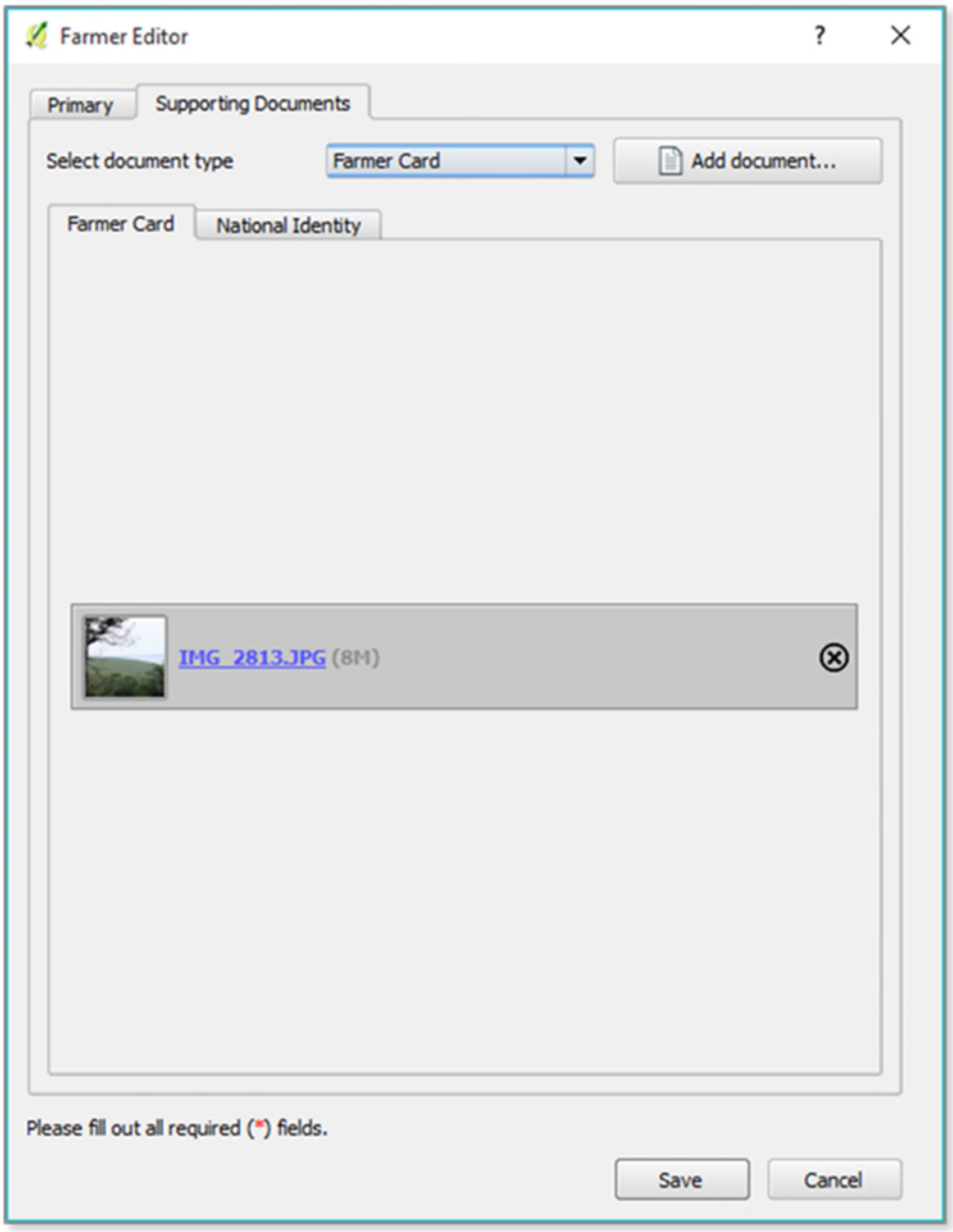
The configuration module has been simplified to automatically update the database by first checking existing tables and updating them accordingly thereby removing the options of creating new or updating existing tables, as was the case in the previous versions.



Data Entry Forms

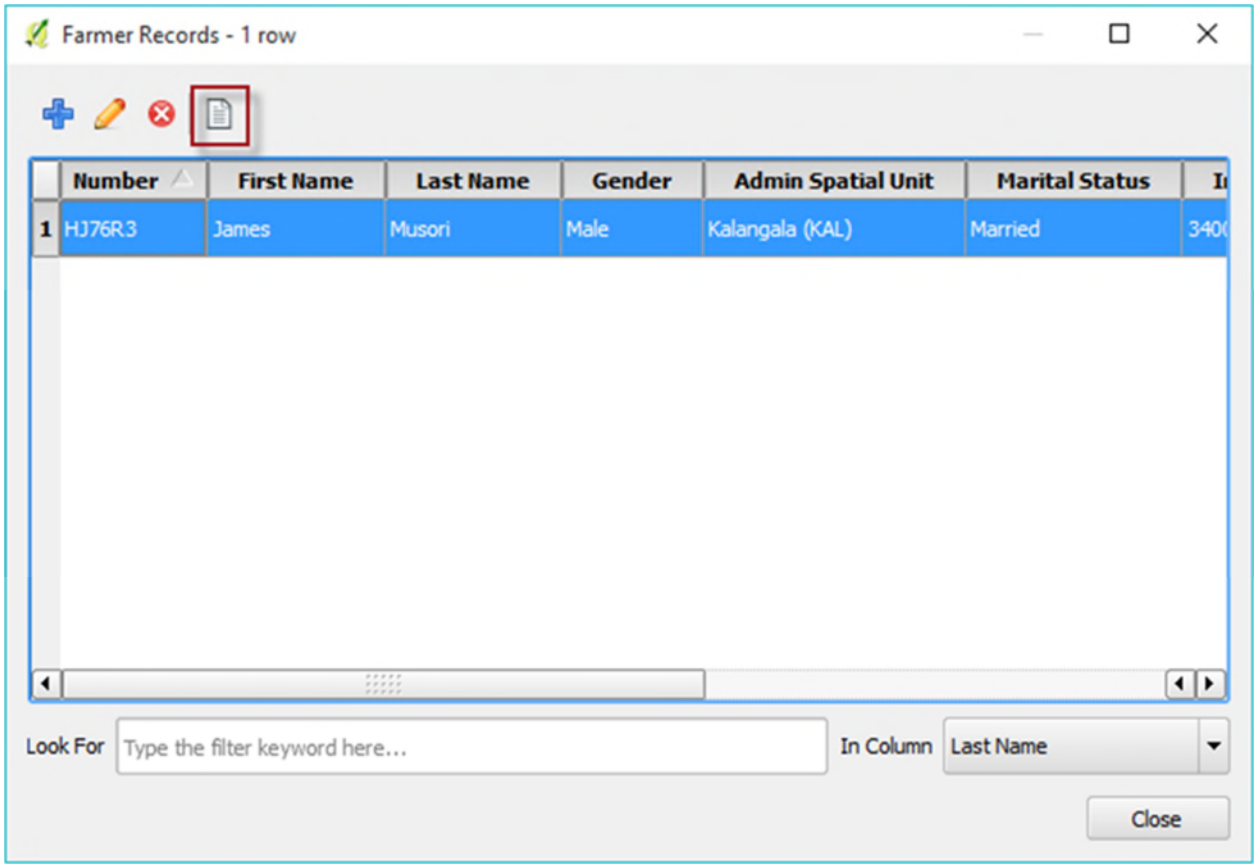
The forms are more intuitive with the option of specifying user tips for each data entry widget. Similarly, supporting documents can be easily uploaded for each entity based on the document type.





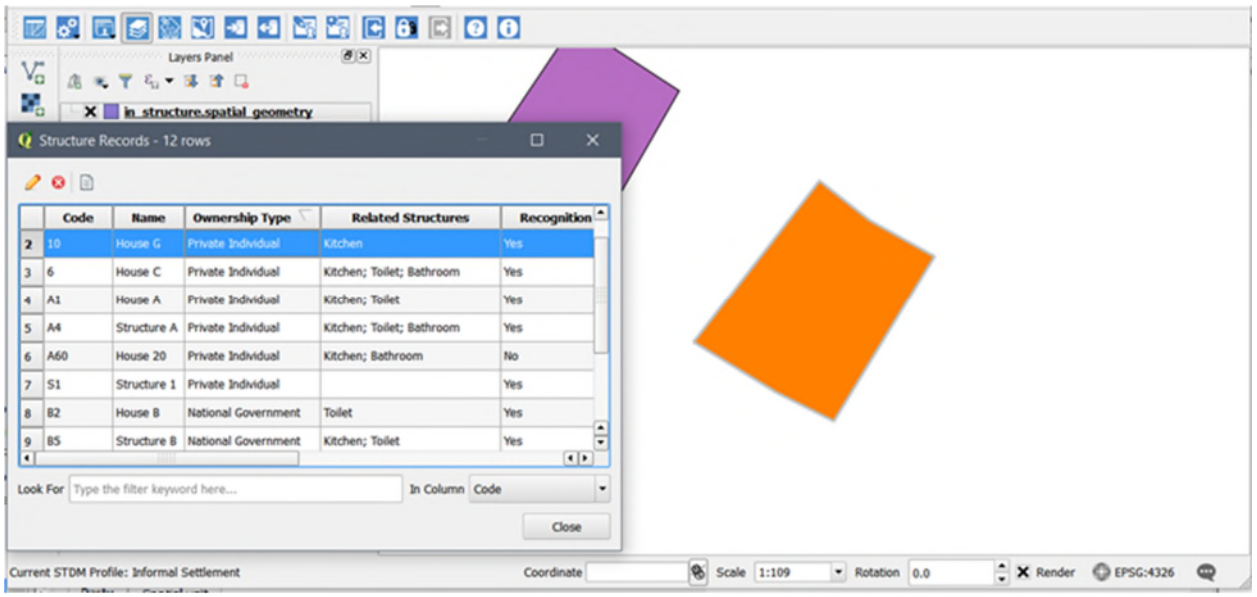
Entity Browser

For those entities that allow supporting documents to be uploaded, the entity browser has an additional toolbar item for viewing supporting documents for a selected record.



Spatial Unit/Spatial Entity Browser

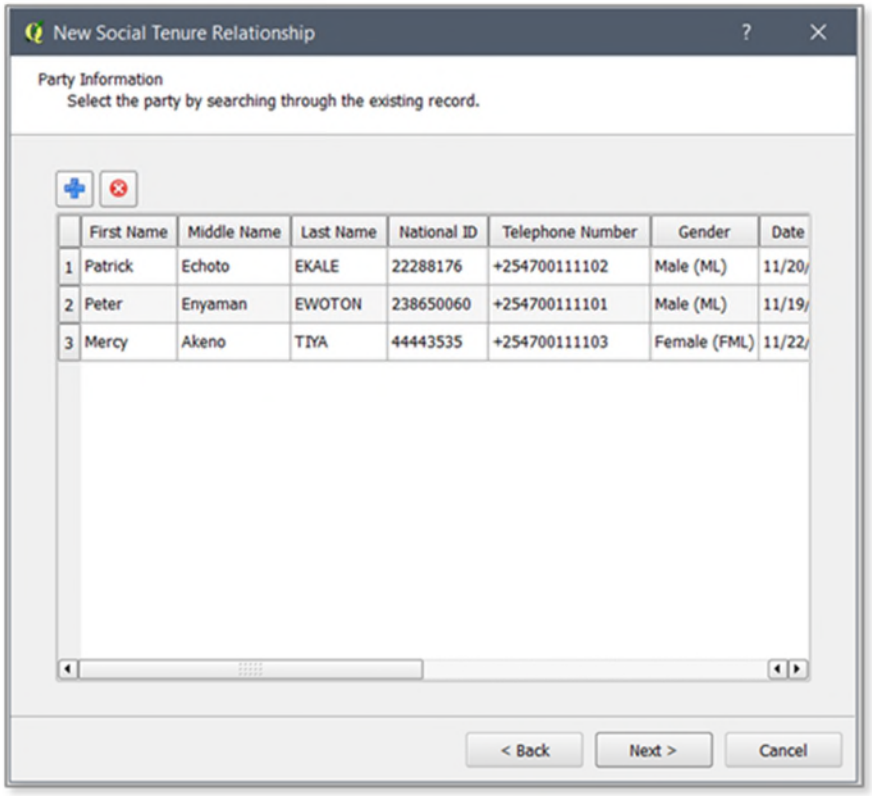
The Entity Browser of a spatial unit or any other entity is now accessible in the Entities menu. This enables the user to edit, delete and view document of a spatial unit record. In addition, by single selecting a record, the user can preview the record's geometry in QGIS Map Canvas as shown below.



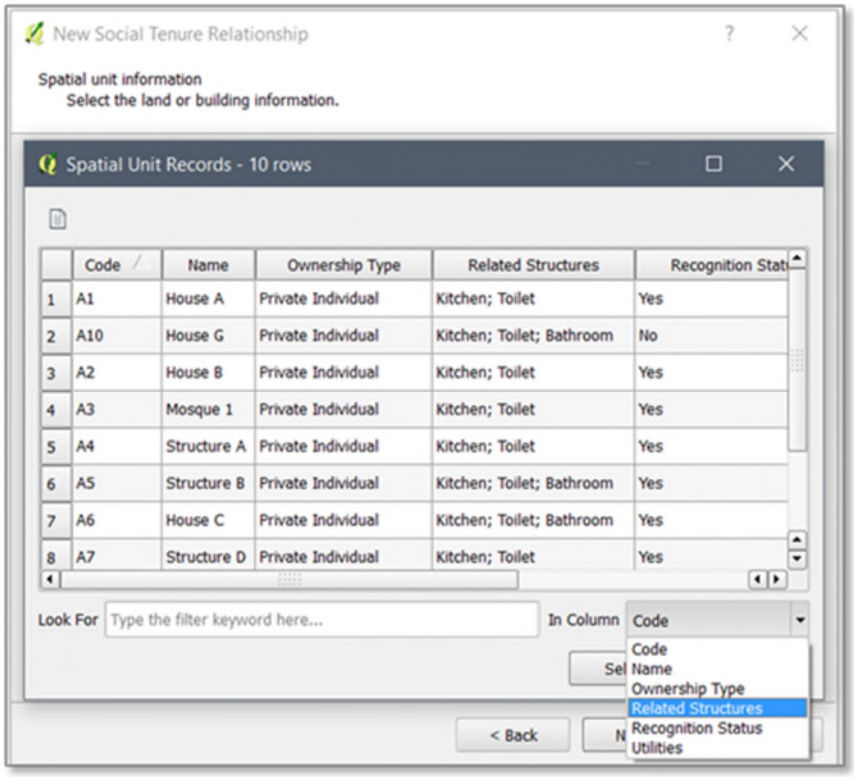
Social Tenure Relationship

New Social Tenure Relationship Wizard

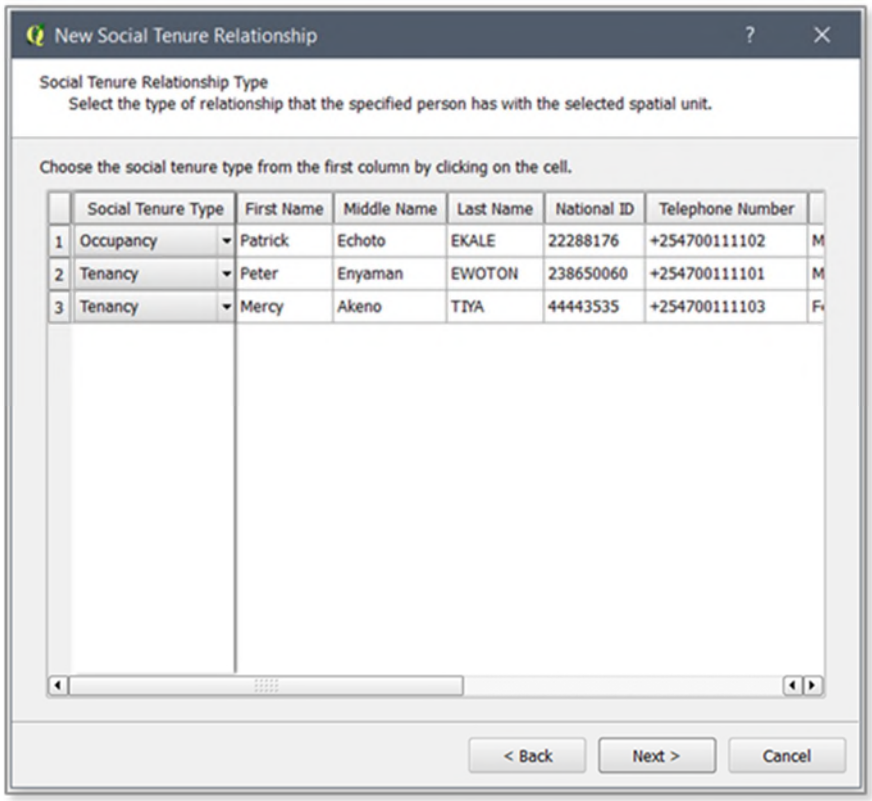
Multiple parties can now be linked to a single spatial unit (applicable if this option has been enabled for the current data profile).



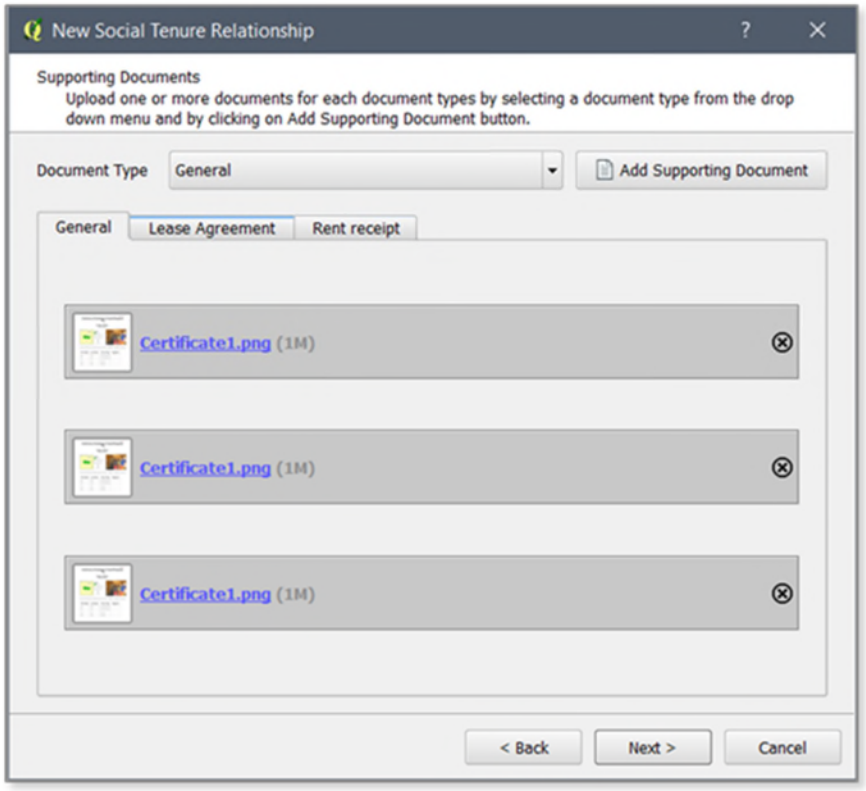
A spatial unit can now be selected using any criteria e.g. name, code, use type etc.



The tenure type can now be easily specified for each selected party.

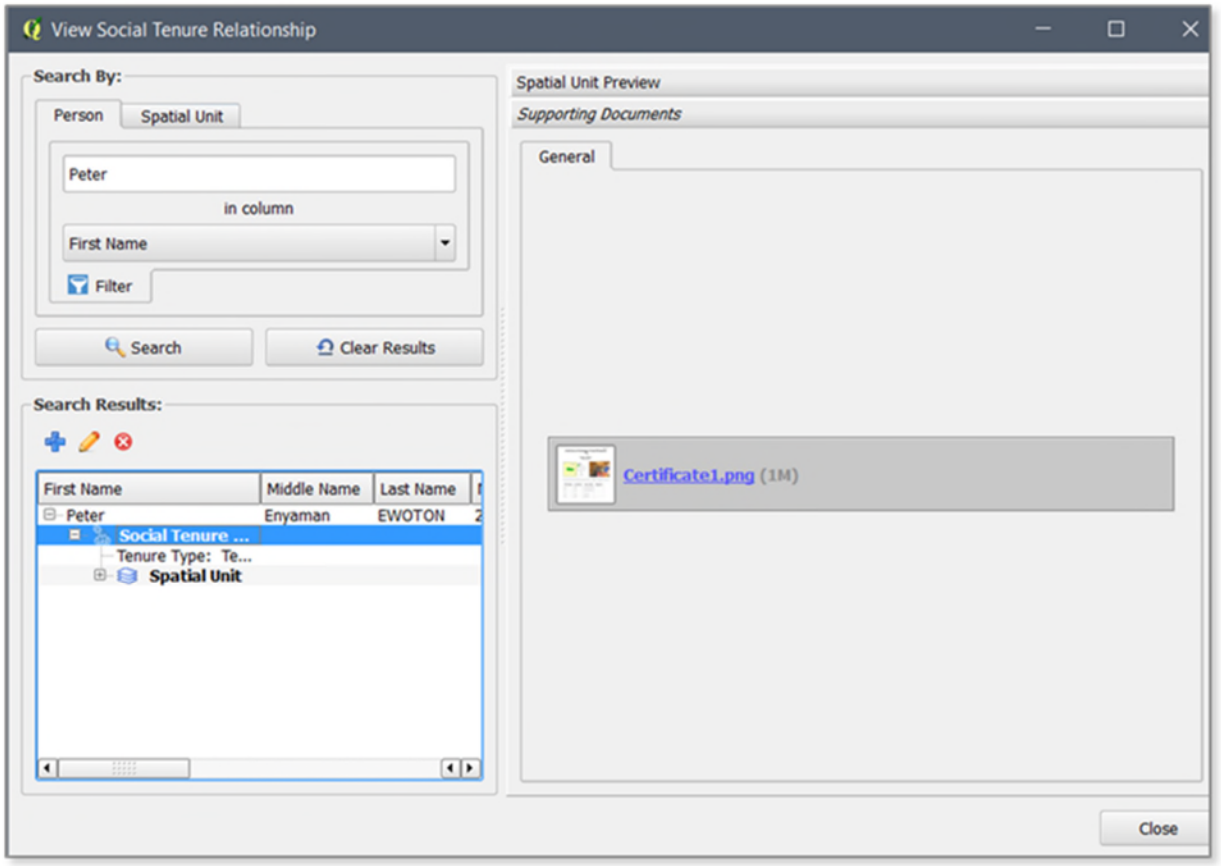


Supporting documents for social tenure relationships are now grouped based on the document type. When assigning multiple parties for one spatial unit, a copy of supporting document is created for each party.



View Social Tenure Relationship

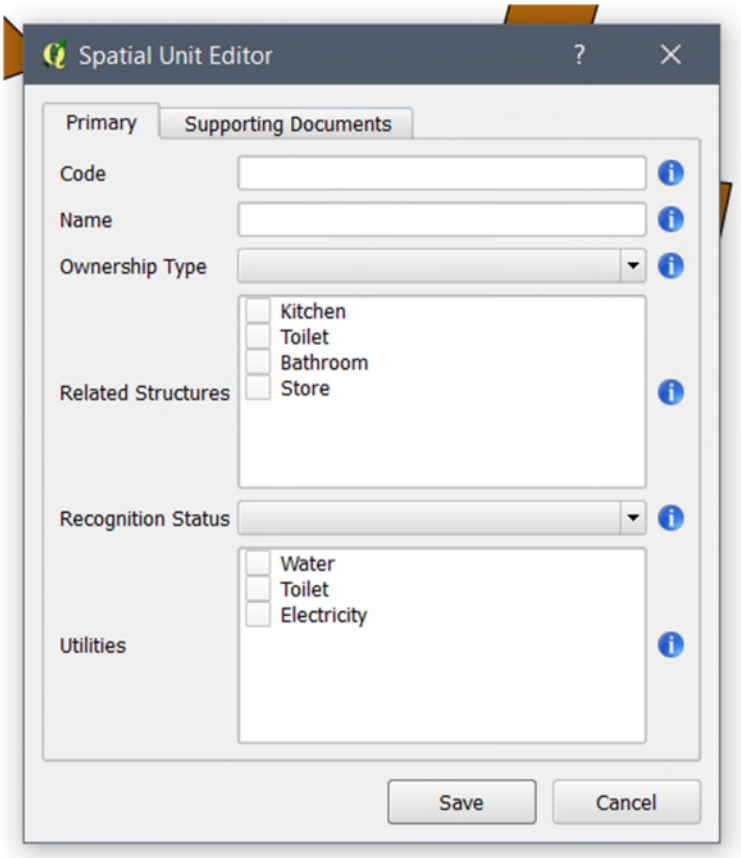
Existing social tenure relationship records can be edited from the selected search using the New Social Tenure Relationship wizard. This gives more flexibility in modifying the person, spatial unit, social tenure type, and supporting document for the selected Social Tenure Relationship.



Spatial Unit Manager

The custom data entry forms have now been incorporated to replace the stock QGIS forms for vector data sets listed in the 'Spatial Unit Manager'. These forms are used when:

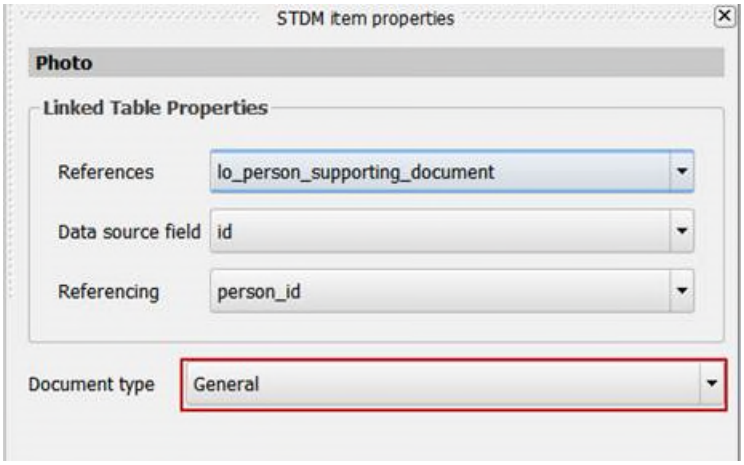
- Digitizing spatial units in the QGIS map canvas;
- Importing a single spatial unit from a GPS (GPX) file;
- Editing attribute data related to a spatial unit.



Document Designer

Image Composer Item

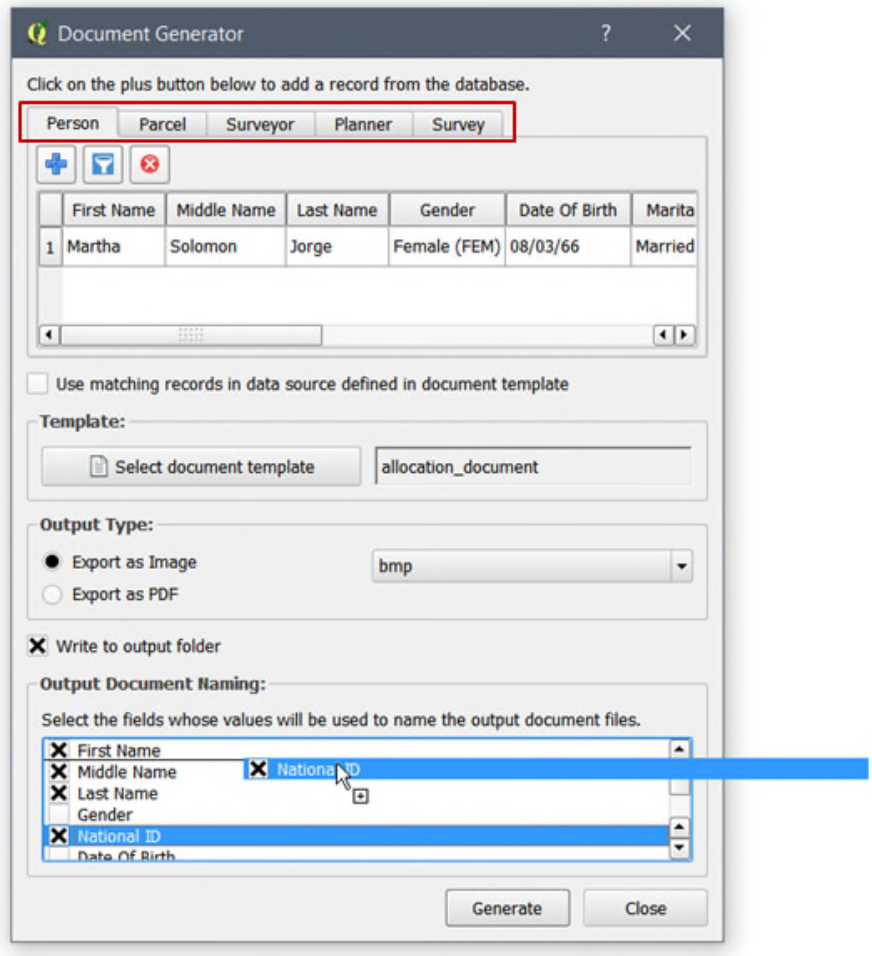
Images can now be added to the document layout based on a specific document type. If an entity supports, say, four different types of documents then four separate image composer items (corresponding to each document type) can be added to the layout and configured accordingly.



Document Generator

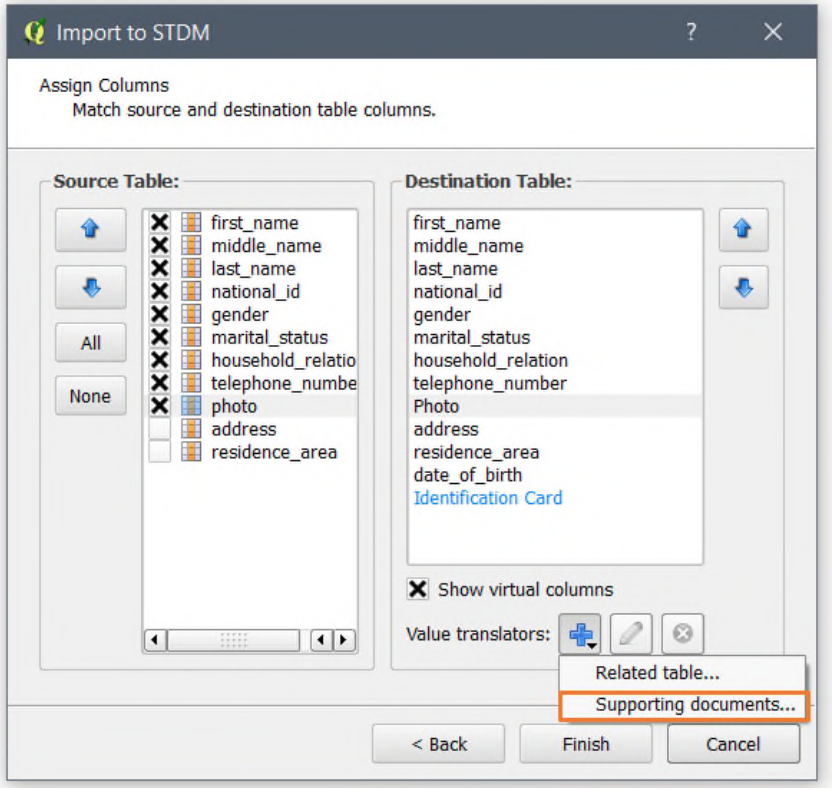
Reports can be generated for all primary entities in the current profile regardless of whether they participate in the social tenure relationship or not. This provides more flexibility for generating individual or aggregate reports for all data-sets managed by STDM.

Output document naming fields are ordered as they are created in the Configuration Wizard and they can be sorted by drag and drop as shown the bottom of the image below.



Importing Supporting Documents

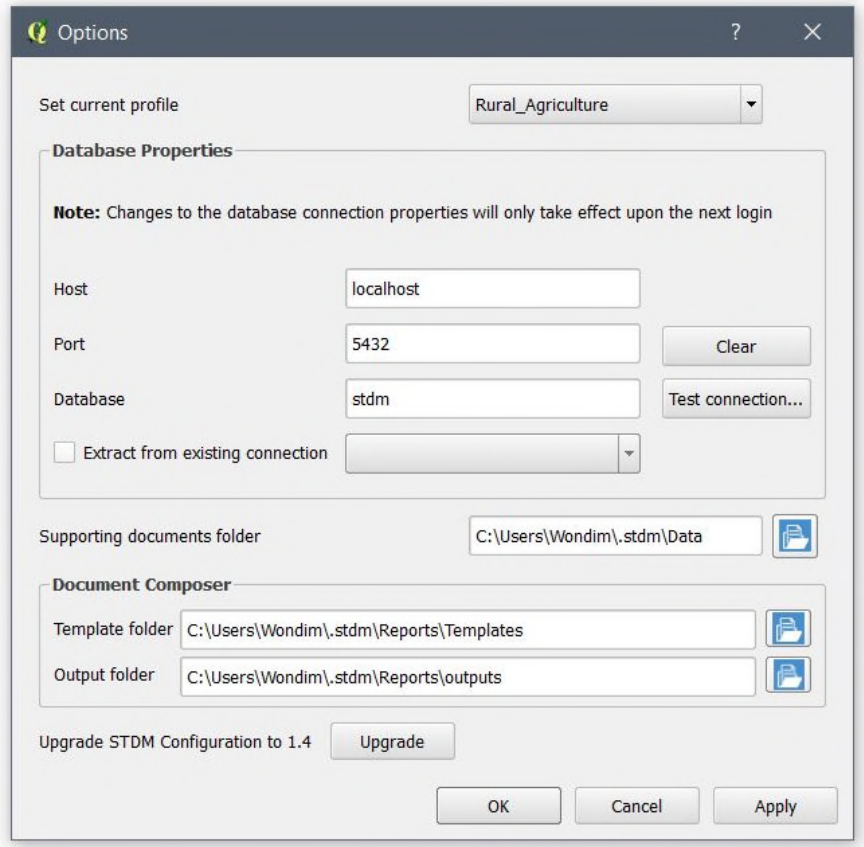
Using the value translator framework located in the Import module, supporting documents can now be imported for each record by specifying the document path in the module and the file name in the csv file.



Quick System Settings

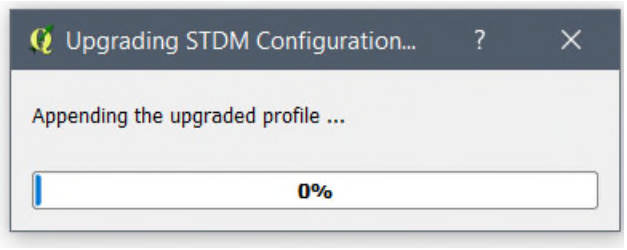
An interface has been added for managing most commonly used system settings. These include:

- Setting the current profile;
- Editing database connection properties;
- Path settings for supporting documents, report templates and outputs.



Migration from Previous Versions

Migration from the previous versions of STDM is seamless. For existing installations, the upgrade of STDM is done through the QGIS Plugin manager, which notifies the user to upgrade to the new version. Then a configuration and data migration is done through the new Upgrade module. It is accessible on the first time login and from the Options module.



Note: This only works for STDM 1.0 to STDM 1.1.2.

General

The all-in-one installer for STDM 1.4 is built upon the following packages: PostgreSQL v9.5, PostGIS 2.2 and QGIS 2.14. The new versions of these dependencies not only provide improved stability and workflows, but also include functional enhancements such as row-level security policies, new

geometry processing functions, trace digitizing tools etc. See the links below for the full list of feature updates:

PostgreSQL 9.5

PostGIS 2.2

QGIS 2.14

The logical flow of the user manual has been greatly improved by incorporating more illustrations and use-case examples.

Getting Technical Support

To access help topics, click on the topic on the left panel of this document and the help text will be loaded on the viewing pane.

Depending on the context of the support services required, you can use the online resource below to get in touch with GLTN's STDM team:

- For more information, please visit www.stdm.gltn.net or subscribe to: lists.osgeo.org/cgi-bin/mailman/listinfo/stdm-user
- To receive important news and updates around STDM in general, subscribe to: lists.osgeo.org/cgi-bin/mailman/listinfo/stdm-announce
- If you experience any issue while working with STDM, please report it so that developers can check and fix it. To report a bug, subscribe to: lists.osgeo.org/cgi-bin/mailman/listinfo/stdm-dev or post it in GitHub at: https://github.com/gltn/stdm-plugin/issues

To browse the source codes or extend the core platform, access the repository here: https://github.com/gltn/stdm-plugin

Note: While asking an STDM related question via the mailing lists, kindly provide the following information.

- A descriptive title for your email
- The computer's operating system and version
- The exact STDM version used at that moment
- The process taking place when the system broke down, e.g. new installation, re-installation, system update, etc.
- The exact error that has occurred. If possible, attach a screenshot or copy of the error text along with the email.

System Requirements

Operating system Requirements

Windows:

- Windows 2000

- Windows XP
- Windows Vista
- Windows 7
- Windows 8
- Windows 8.1
- Windows 10

Linux Based:

- Debian
- Ubuntu
- Fedora
- Red Hat
- openSUSE

Hardware Requirements

- At least 2GB of RAM
- At least 2GB free disk space
- 1024x768 screen resolution or higher

Installing STDM

Before Installing

What do I need to install to have a fully functional STDM?

In the provided installation package, there are core components of software packages that are mandatory for an installation of STDM to work properly.

The following need to be installed:

- Quantum GIS (current version 2.14)
- PostgreSQL (current version 9.4.2)
- PostGIS (current version 2.1.7)
- Sample data - this is optional if you want to have a sample data to manipulate and test features of STDM.

Do I need to uninstall previous installation of the above software?

This is not necessary especially if you are working with QGIS 2.14 or higher and PostgreSQL 9.4 or higher. If you have lower versions, we cannot guarantee the full functionality of STDM. However, in this case, you need to do the following:

1. Start QGIS normally and wait for it to load

2. Download the latest version of STDM plugin from GitHub: https://github.com/gltn/stdm by adding STDM download repository in the QGIS Plugin manager. See instructions here (Download From repository)

4. Using postgreSQL database Administrator i.e **pgAdmin** ( ), create a new database called **stdm**.

5. Within stdm database in pgAdmin, add the postgis extension to it by selecting on **Extension and** clicking on **Create a new object..** button located in pgAdmin toolbar as highlighted in the image below.

In the **New Extension...** popup window, click on the **Name** drop down and select **postgis.** Then, click on the **Ok** button. If you do not find it, it means the PostGIS extension is not installed in your computer.

Install PostGIS extension by downloading it from http://postgis.net/install/. Scroll down and find an installer for your operating system. After installing it, repeat step 5.

6. On the QGIS window, check if STDM is enabled on the menu and toolbar 

Using Bundled STDM Installer

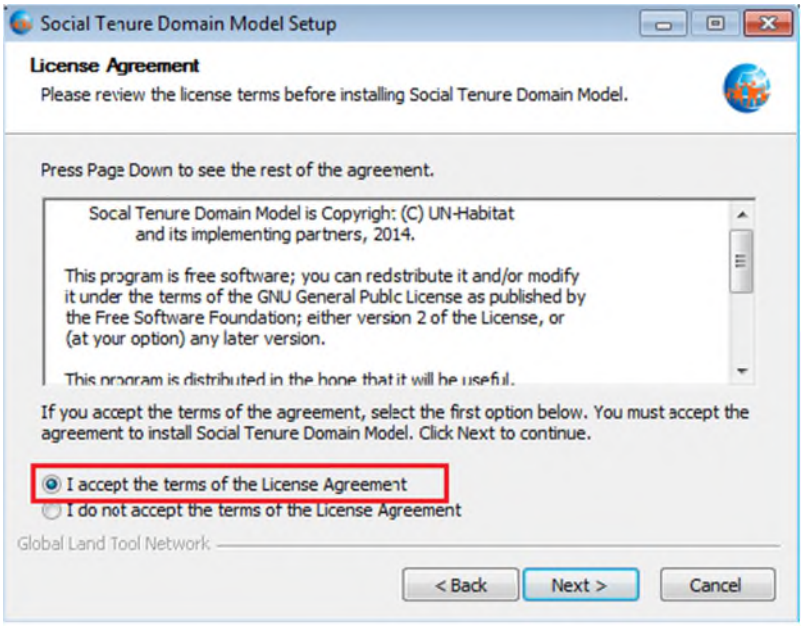
The bundled installer is the custom installer that is built to help you easily install STDM and dependent software packages.

Note: *For 32bit machine please select and run* ***STDM-1.4-Final-x86.exe*** *setup file. For 64bit machines run* ***STDM-1.4-Final-x64.exe*** *setup file.*

Installation steps

1. Run the installer by double clicking on setup file and select 'Next'.

2. Read the license agreement. If you accept select the first option and click 'Next' to proceed.



3. Choose the components you would like to install, the following are the available components;

A **QGIS Wein 2.14 for STDM** – This will install QGIS with STDM plugin embedded

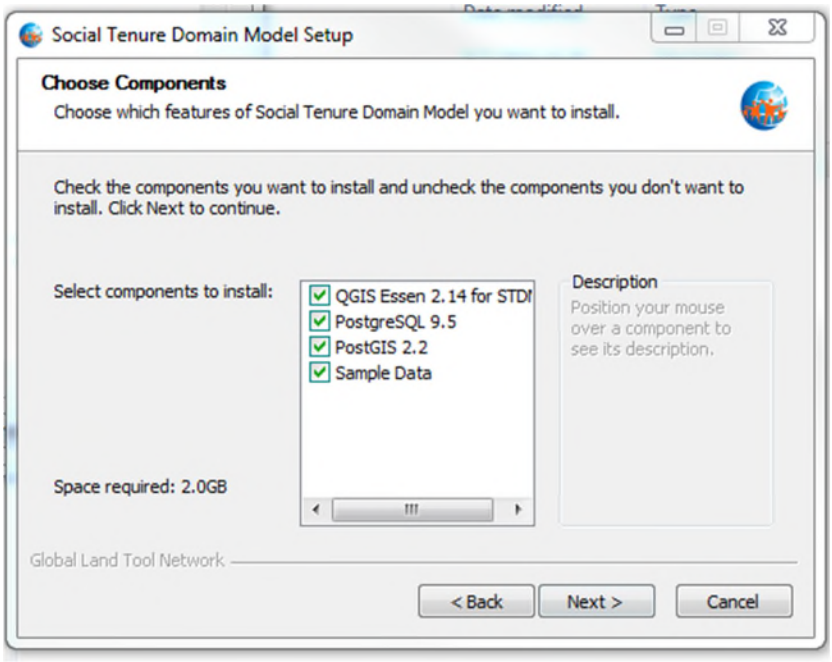
B **PostgreSQL 9.5** – This will install PostgreSQL database server, if you don't have PostgreSQL make sure you select this option, STDM will not work without it.

C **PostGIS 2.2** – This install the GIS plugin for PostgreSQL, if you don't have it in your machine make sure you select for installation.

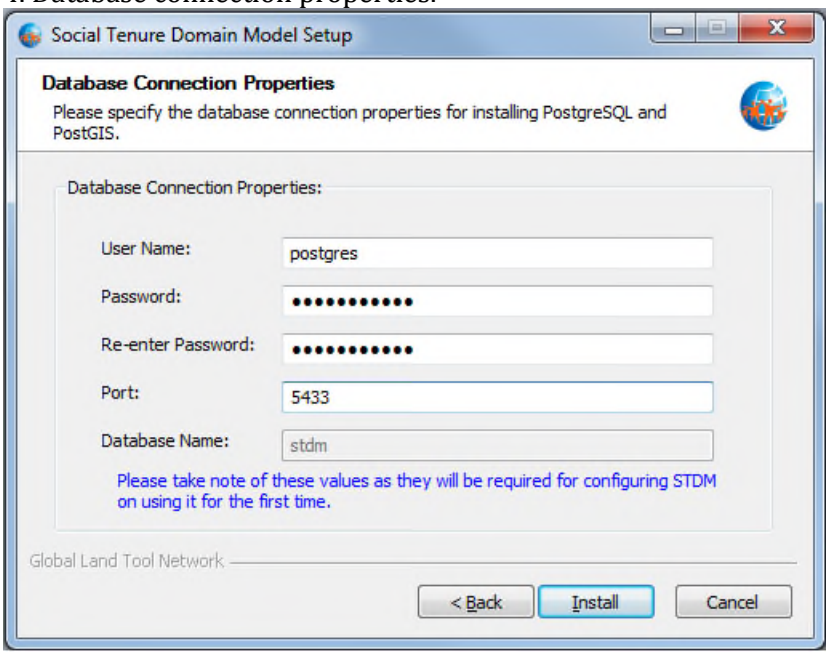
D **Sample data** – This will install sample files for STDM plugin. This is not a mandatory option, but new users are recommended to install to help them jump start with STDM practice.

***Note**: If you already have PostgreSQL or PostGIS installed, the installer will skip installation of those components.*

After your selection, click '**Next**' to start the installation.

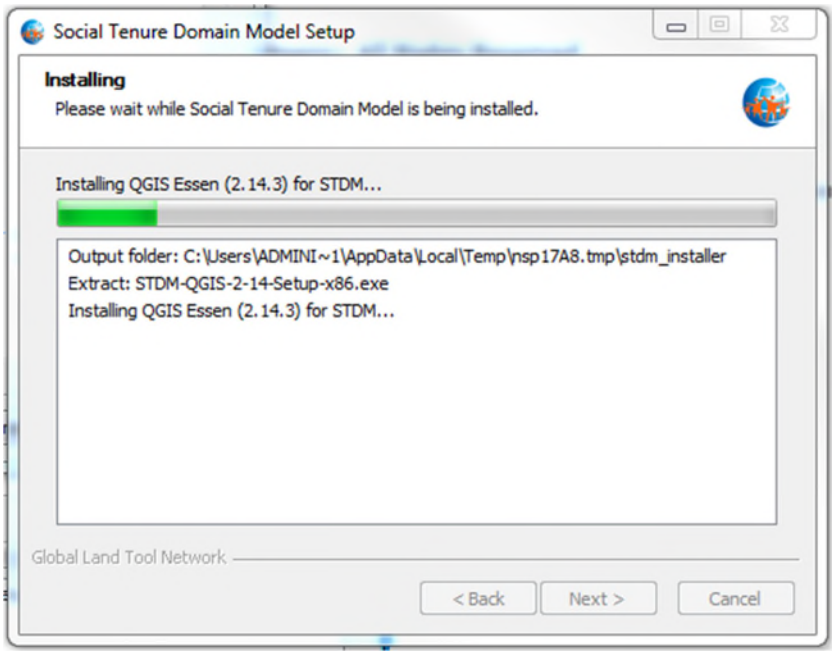


4. Database connection properties.

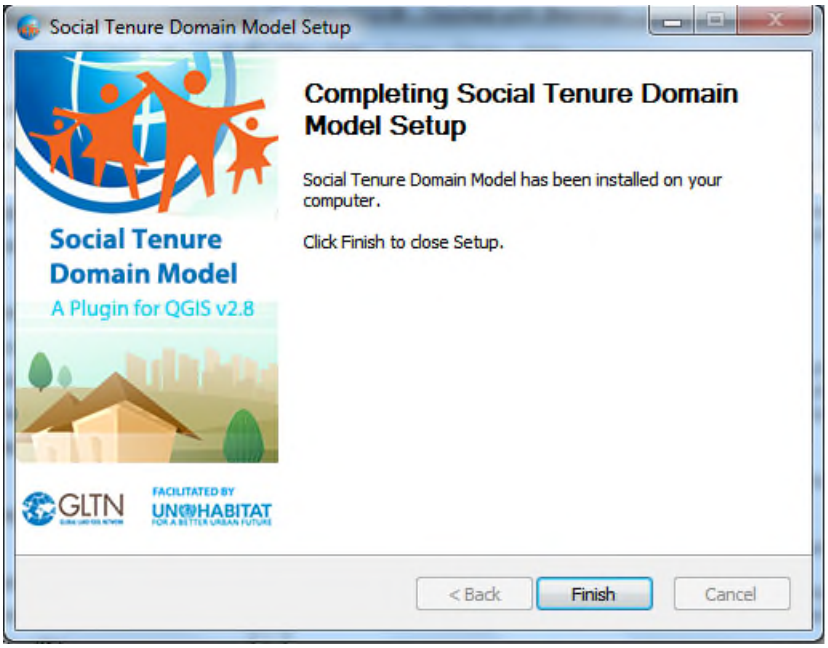


*The window allows you to set the **username** and **password** to use with STDM. Leave the default port to 5433. This is where PostgreSQL server will be listening for database connections. For more details on PostgreSQL connections setup please see documentation in* http://www.postgresql.org.

5. This is the actual component installation. ***QGIS, STDM, PostgreSQL, PostGIS*** and all other dependencies will be installed in C:\Program Files\QGIS Essen folder. Depending on the speed of your machine, this process might take approximately 15 minutes.



7. After successful installation, please close the installer by selecting **Finish** button. Go ahead and run QGIS for STDM from the icon created on your computer desktop.

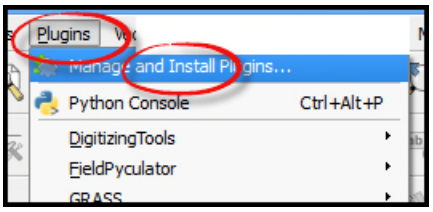


Continue to [User Interface]

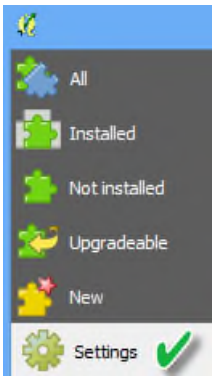
Installing from GLTN Plugin Repository

For users with an already existing installation of QGIS version 2.14 or higher and who do not want to uninstall the current version, we recommend that you download STDM plugin from the repository using the following steps.

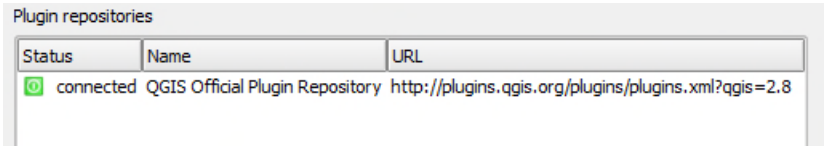
- Start QGIS normally and wait for it to load
- Go to menu **Plugins -> Manage and Install Plugins ...**



- Wait for the plugin to fetch available plugins from the web repository (only if online)
- ” On the **Plugins** dialog select **Settings** tab



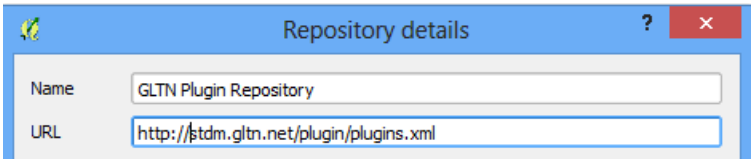
Available repositories will be shown under "**Plugin repositories**"



- Select Add... to open repository details dialog. The dialog allows you to enter additional repository properties,

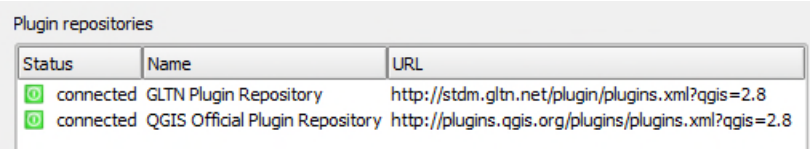
To add STDM plugin repository, please enter the details as follows;

1. In the Name field enter: **GLTN Plugin Repository**
2. In the URL field enter: http://stdm.gltn.net/plugin/plugins.xml
3. Ensure the Enabled option is checked then select Ok to close.

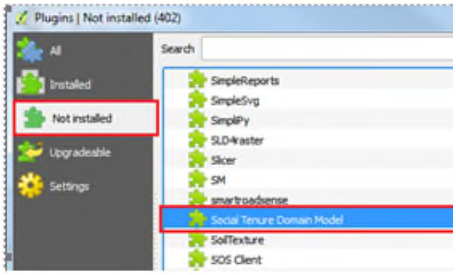


- Click **Ok** to dismiss the dialog.

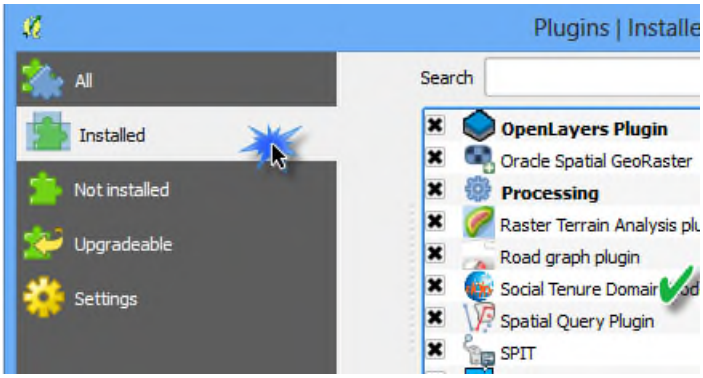
- The dialog will try accessing the added repository (if online) and pull the linked plugins. If successful the repository will be added to the list.



- While still on the **Plugins** window select **Not installed** tab, look for STDM plugin on the list of `Not installed` plugins. Select it and click **Install plugin**.



- QGIS will download and install STDM plugin. The plugin should now be available on the Installed tab and also on the QGIS main panel.



- Click close to dismiss the dialog.

You are now ready to start using STDM.

Migration from Previous Version

Migration from the previous versions of STDM is seamless. The migration will not affect your data. The migration process is handled by the Upgrade Module of STDM. The module executes automatically when you login to STDM 1.4 for the first time after upgrading from STDM 1.1.2 and

earlier, up to version 1.0. You can also run it manually by clicking on the Upgrade button in the options Menu.

When upgrading from the old STDM configuration to STDM 1.4 configuration, the following will take place.

1. A new **configuration.stc** will be created based on **stdmConfig.xml** inside the **.stdm** folder under the user directory.

2. Your existing configuration file, **stdmConfig.xm**l will **not** be removed.

3. A new profile will be created based on the old configuration profile name.

4. New tables will be created based on the old table names with a prefix of the first two words of the profile name.

5. The existing tables and data will **not** be deleted.

6. All the new tables will be populated with data that was stored in the old tables to allow you access your data in the new version.

7. Update your templates by replacing the old tables, views, and directories with the new tables, new views, and directories.

- Custom views will be re-created with the same name with 'new_' prefix.
- Always use views with **new** prefix for custom views.
- The default **social_tenure_relations** view will be replaced by **your_profile_name_vw_social_tenure_relationship** view.
- The views will not be deleted but stop using them to create new templates as they will no longer be updated. Use the new views.

8. If you upgrade manually while having a newly created configuration through the configuration wizard or the default configuration template, the configuration will be re-named with a format configuration_year_month_date_hour_minute.stc format. Eg. configuration_2016_08_24_02_03.stc. The extension **stc** might not be visible based on your Operating System file extension display setting.

Automatic Upgrade

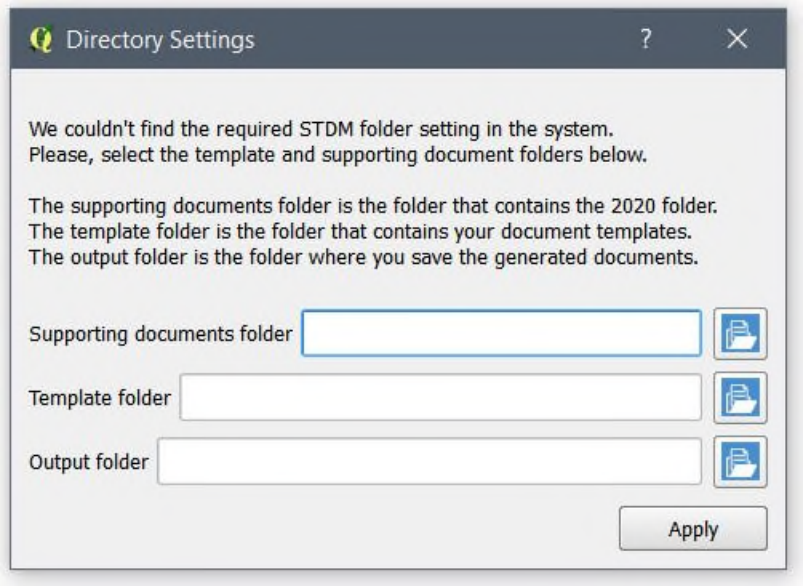
The automatic upgrade happens when you login to STDM for the first time after upgrading to STDM 1.4.

To upgrade automatically, follow the steps below.

1. You will be asked to agree on the terms and conditions of STDM.

In case you have uninstalled QGIS with its registry using third party uninstallers, STDM might lose all the directory settings.

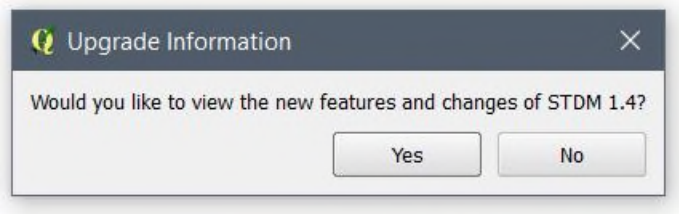
In such a case, you will see the **Directory Settings** dialog requiring you select the supporting document, template and output folders. At the top, the **Directory Settings** dialog explains for what purpose STDM uses those directories to help you remember the folders. Click on the folder browse button ( ) to select the required folders (see the image below).



Note: Closing the Directory Settings dialog without selecting and applying the settings will lead to the cancellation of the migration process. This will lead to the temporary loss of access to the existing profile, data, and templates.

If you do not see the dialog, it means, your directory setting is not removed from your system.

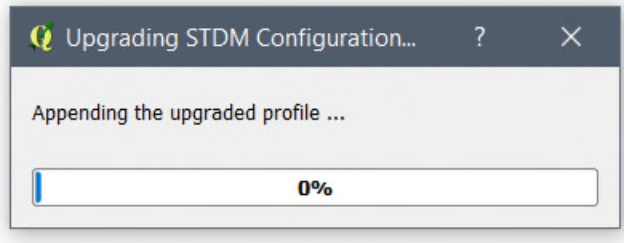
You will then see a popup requesting you to view changes and new features of STDM (see the image below).



It is recommended to view it. Click the Ok button to view the changes and new features or click on No button if you do not wish to see the changes.

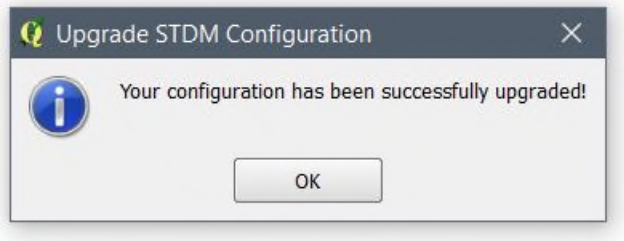
Then, the upgrading of the configuration takes place.

You will see a progress dialog that looks like the following image.



It is not recommended to interrupt the upgrade process as the process involves your data. To reduce the risk of interruption, the progress bar cannot be closed by clicking on the close button; this also prevents QGIS from being closed.

Once the process is complete, you will see a success message as shown below.



Then, you will be able to see your profile with the default profiles of STDM.

You can explore these profiles and on the way learn the capabilities of STDM 1.4 configuration. If you don't need them, you can delete them as discussed in Deleting Profiles topic.

In case of a failed upgrade, you can upgrade using the Manual Upgrade Option.

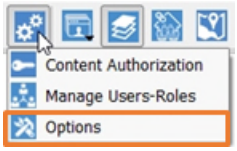
Note: Once you make a successful upgrade, you will no longer be able to upgrade an old configuration. The Upgrade button will be disabled.

Manual Upgrade

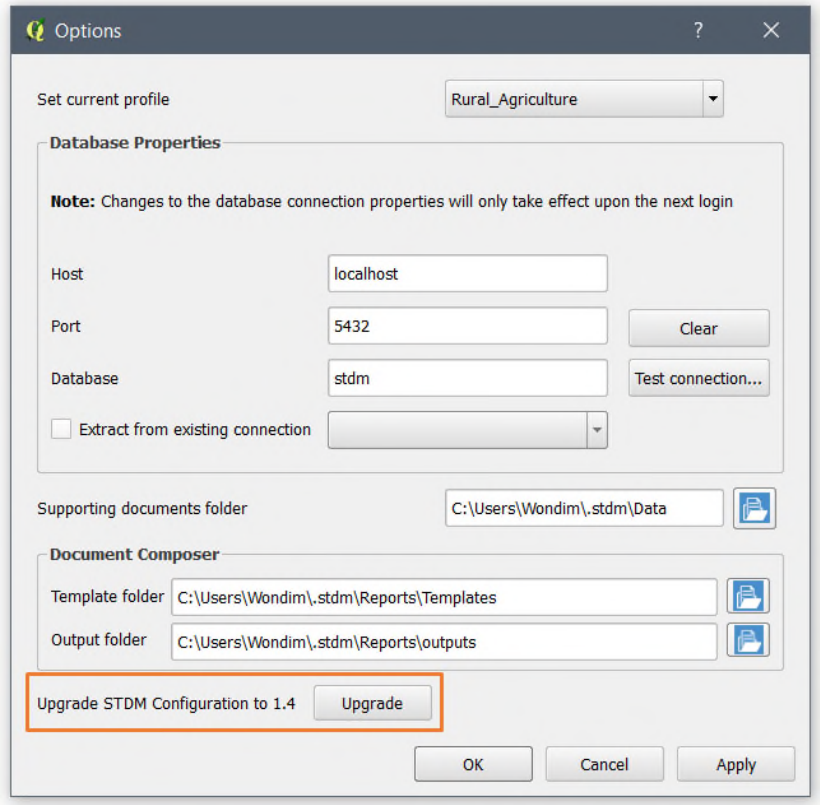
If the automatic upgrade failed, you can still make the upgrade from the Options Module.

1. Open the Options module by looking for **Options** under Admin Settings menu located in STDM Toolbar or STDM menu.

Click on **Options** menu.



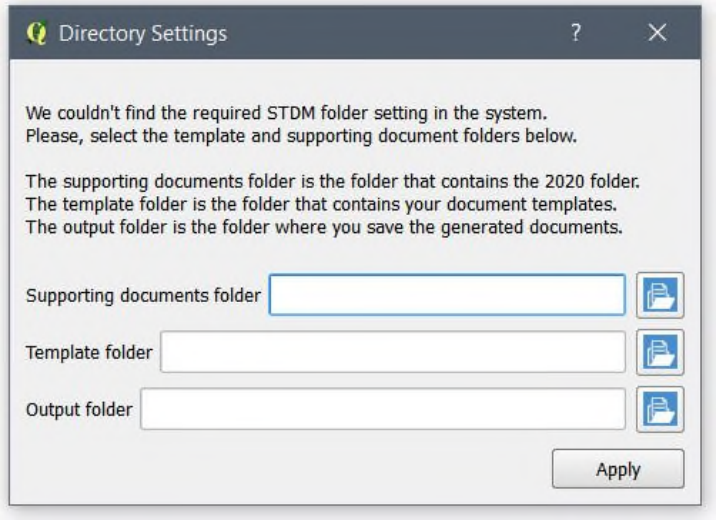
2. Once the **Options** module opens, go to the bottom of the module and locate **Upgrade STDM Configuration to 1.4** with the **Upgrade** button as highlighted below.



3. Click on the **Upgrade** button.

In case you have uninstalled QGIS with its registry using third party uninstallers, STDM might lose all the directory settings.

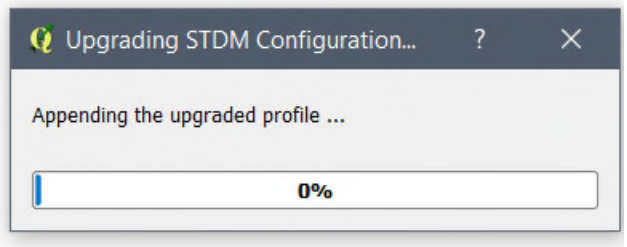
In such a case, you will see a dialog requiring you to select the supporting document, template and output folders. Click on the folder browse button ( ) to select all the required folders (see the image below).



Note: Closing the Directory Settings dialog without selecting and applying the settings will lead to the cancellation of the migration process. This will lead to the temporary loss of access to the existing profile, data, and templates.

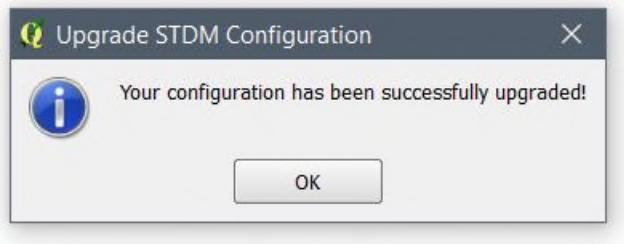
If you do not see the dialog, it means, your directory setting is not removed from your system.

This leads to the starting of the upgrade process. You will see a progress dialog as shown below.



It is not recommended to interrupt the upgrade process as the process involves your data. To reduce the risk of interruption, the progress bar cannot be closed by clicking on the close button; this also prevents QGIS from being close.

Once the process is complete, you will see a success message as shown below.



You will then be able to see your configuration with the records in STDM.

Note: Once you make a successful upgrade, you will no longer be able to upgrade an old configuration.

Failed STDM Installation

STDM Installation could fail due to various reasons such as infected Computer, incomplete uninstallation of the old version, etc. For solutions, check the following sub-topics.

Failure to Install after Uninstalling Previous Versions

The failure could happen when the previous version is not properly removed. Follow the steps below to remove the previous version.

1. Backup the STDM database located in **PostgreSQL server**. If you could not back up your database, **do no**t uninstall the PostgreSQL.

2. Go to Start Menu or Start Screen and type **programs and features**, and launch **Programs and Features** tool and uninstall the following;

- PostgreSQL 9.4 or older versions - if you have backed up your database or do not need your existing database.
- QGIS Wien (2.8.3) for STDM or older versions
- PostGIS 2.1.7 or older versions - if you have backed up your database or do not need your existing database.

2. After the above software packages are uninstalled, go to **C:/Program Files** and delete the following directories in case they still exist.

- QGIS Wien (2.8.3) for STDM
- PostgreSQL - if you have backed up your database or do not need your existing database and unsinstalled PostgreSQL

3. If you have backed up your database or do not need your existing database and unsinstalled PostgreSQL, remove the **postgres** user.

To remove the **postgres** user, go to **Start Menu** or **Start Screen** and type **cmd**, on **Command Prompt** right click on it and **Run as Administrator**.

On the command prompt window type the command below and press the **Enter** key on your keyboard.

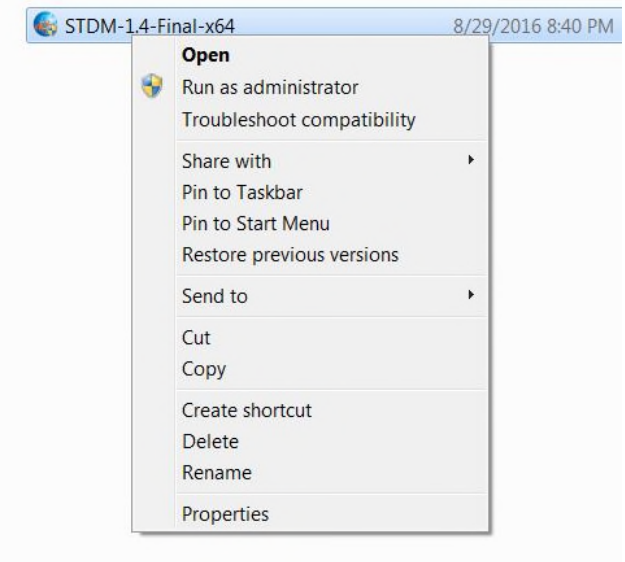
net user postgres /delete

Failure to Install on Windows 7

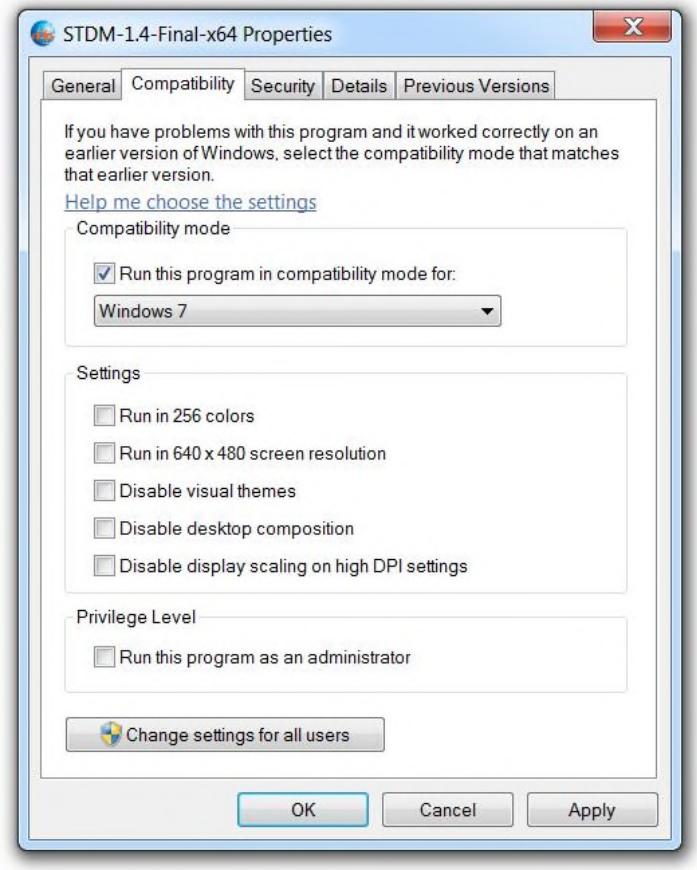
This issue happens when you try to install STDM Bundled Installer on Windows 7 without Service Pack 1. The installer suggests to install upgrade to Service Pack 1.

To install STDM in compatibility mode, follow the steps below.

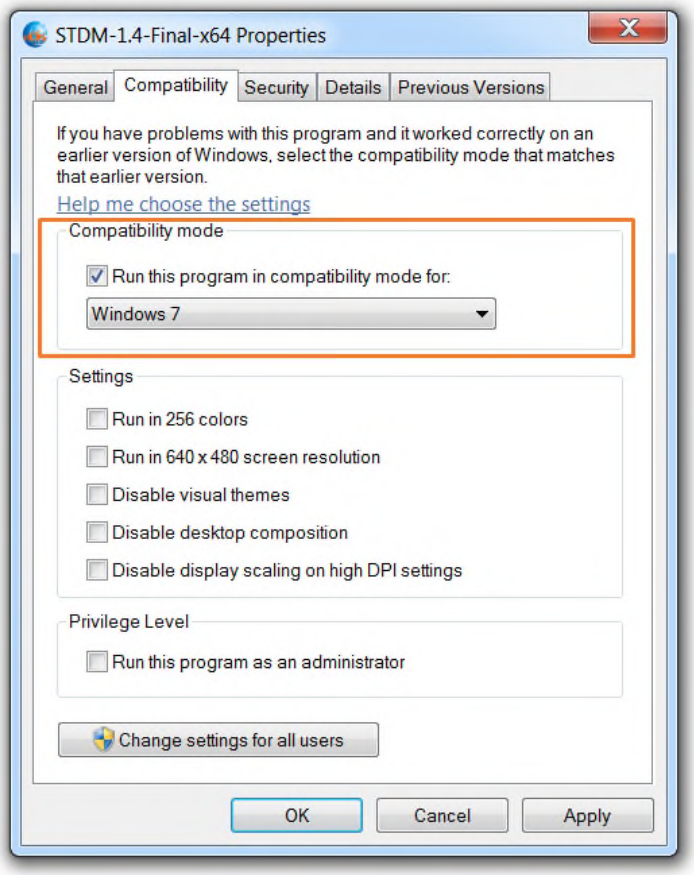
1. **Right-click** on the installer and click on **Properties** item in the **Context** menu (see the image below).



2. Click on **Compatibility** tab as shown in the image below.



3. Inside the **Compatibility mode** box, check on the checkbox, **Run this program in compatibility mod for:** and select **Windows 7** as shown below**.**



4. Locate the buttons at the bottom. Click on the **Apply** button and then click on the **Ok** button.

5. Double click on the STDM bundled Installer to start the installation. It should now start installing normally as discussed in the topic, Using Bundled STDM Installer.

Failure to Install on Windows Server

The failure could happen because of Windows Server password complexity requirement specified here.

Thus, to solve this issue from happening, when setting **postgres** user password, follow the requirements below, which is specified by Microsoft.

1. Passwords must not contain the user's entire **samAccountName** (Account Name) value or entire **displayName** (Full Name) value. Both checks are not case sensitive:

- The **samAccountName** is checked in its entirety only to determine whether it is part of the password. If the **samAccountName** is less than three characters long, this check is skipped.
- The **displayName** is parsed for delimiters: commas, periods, dashes or hyphens, underscores, spaces, pound signs, and tabs. If any of these delimiters are found, the

displayName is split and all parsed sections (tokens) are confirmed not to be included in the password. Tokens that are less than three characters in length are ignored, and substrings of the tokens are not checked. For example, the name "Erin M. Hagens" is split into three tokens: "Erin," "M," and "Hagens." Because the second token is only one character long, it is ignored. Therefore, this user could not have a password that included either "erin" or "hagens" as a substring anywhere in the password.

2. Passwords must contain characters from three of the following five categories:

- Uppercase characters of European languages (A through Z, with diacritic marks, Greek and Cyrillic characters)
- Lowercase characters of European languages (a through z, sharp-s, with diacritic marks, Greek and Cyrillic characters)
- Base 10 digits (0 through 9)
- Non-alpha-numeric characters: ~!@#$%^&*_-+=`|\(){}[]:;"'<>,.?/
- Any Unicode character that is categorized as an alphabetic character but is not uppercase or lowercase. This includes Unicode characters from Asian languages.

Getting Started

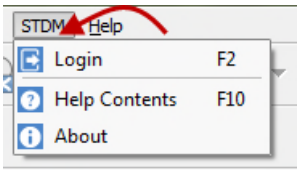
User Interface

The user Interface for STDM is embedded within QGIS Main Window. To access STDM, QGIS Main window must be opened first.

STDM appears as follows in the QGIS Main Window.

Default view

1. STDM menu has few menu items or buttons when you are not logged in. When you click on the menu from the QGIS Menu bar, the following menu items appears.



You can also see the STDM toolbar inside QGIS Toolbars area as shown below.

Login - Prompts you to connect to the database and access full STDM items. username and password is required to connect.

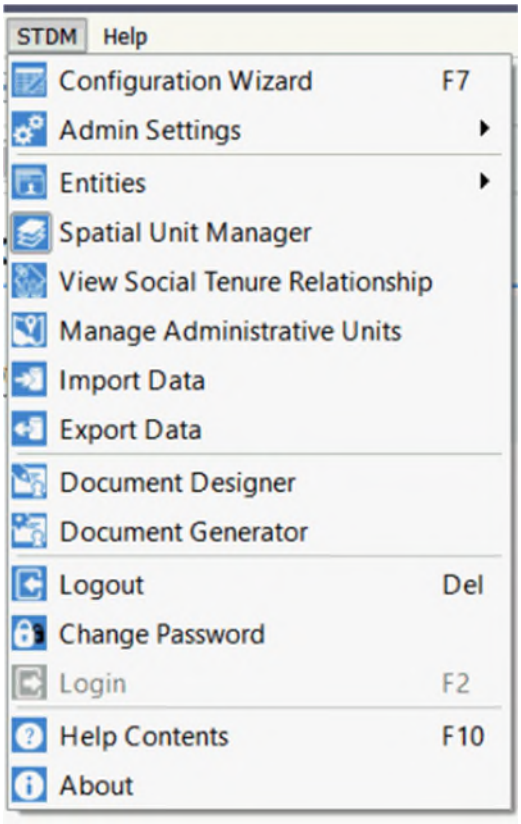
Help Contents - Provides access to STDM user manual.

About - Brings up the about us text.

Full view

Login credentials are required to access full menu items especially if you are the administrator. . Read more about Login here

STDM Menu Items



STDM Toolbar Buttons

Configuration Wizard - Brings up the configuration wizard that allows you set paths used by STDM and create and customize profiles with entities, columns, lookups and values, and define Social Tenure Relationship, which can be later used to add related data. To launch the Configuration Wizard, you can also use the keyboard shortcut - F7.

Admin Settings: Content Authorization - allows you to grant access such as Create, View, Edit, Delete to other STDM functions.

Admin Settings: Manage Users-Roles - Brings up a dialog for you to create users and roles for accessing various STDM functionalities.

A**dmin Settings: Options** - Brings up a dialog that enables you to change the current/active profile, modify database properties, modify STDM folders, and upgrade STDM configuration manually.

Entities Menu - The entities menu is composed of entity tables with buttons of add, edit, and delete. You can add a new record using the add button and select and edit data using the form. It

also enables you to access the New Social Tenure Relationship wizard to define the relationship between party and a spatial unit.

Manage Administrative Units - Brings up the dialog that enables you to define geographic zones and administrative areas as per the project scope.

Access to these administrative areas is provided in the forms using foreign keys definitions.

Import Data - The wizard allows you to import maps or attribute data into specific module/ table in STDM database.

Export Data - The wizard allows you to export data from STDM database into several output formats.

Document Designer - Brings up the QGIS Composer window with STDM toolbar items to allow you create document templates to be used when generating reporting and certificate formats.

Document Generator - Provides a dialog that allows you to generate report specific module reports from the designed templates.

View Social Tenure Relationship - Opens a window that allows you to define and view defined social tenure relations in the database.

Toggle Spatial Unit Editing mode - Allows you to toggle the current STDM later editing state on and off.

Spatial Unit Manager - Activates or deactivates the docked STDM spatial unit manager

Logout - Closes the current session and returns you to minimal view.

Change Password - Enables you to change the password of the current user in the current session.

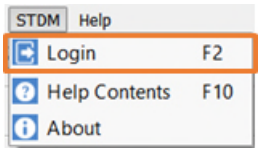
Logging into STDM

Note: *Make sure QGIS is started and running while STDM is visible in QGIS interface tool bar.*

To start QGIS, look for this Icon and double click to run it. If you are using the custom build, downloaded from STDM website, click on the QGIS Desktop icon to start.

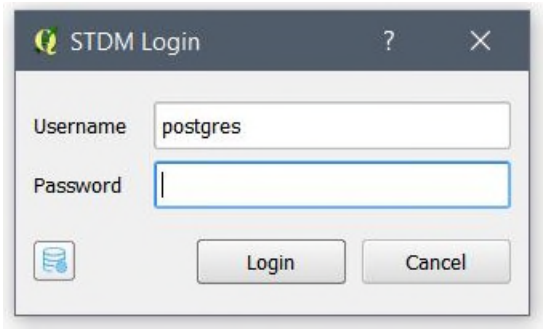
1. Click the login menu located under the STDM Menu or the login button located under the STDM toolbar, as highlighted below.

Login menu:



Login button:

A login dialog will pop up. You are required to provide login credentials using the default user (postgres) created during installation of the software.

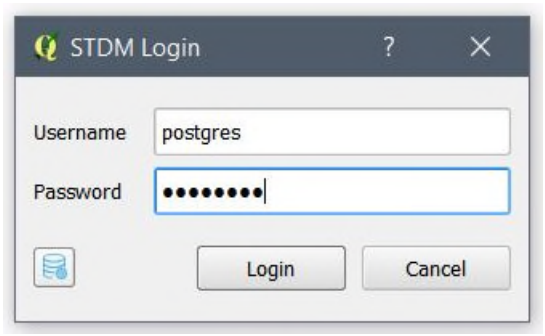


a. Username: The *default username is **postgres** without quotes.* An administrator can change the user name later.

b. Password: Provide the password used when installing STDM using the Bundled Installer.

If you have installed the required software separately, use the password that you used to login to PostgreSQL database server.

Note: If you are intending to use STDM in a network environment, request the system administrator for username and passwords.



2. Then, click on **Login** button or hit the Enter button on the keyboard.

The cancel button closes the login dialog and stops the login process.

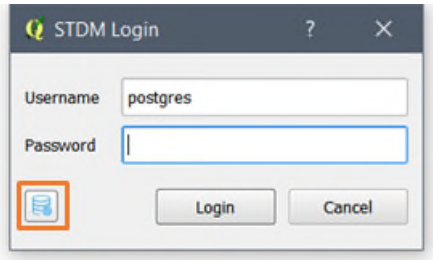
3.When successfully logged in, you will see the full STDM toolbar as shown below.

Logging into a Different Database and Server

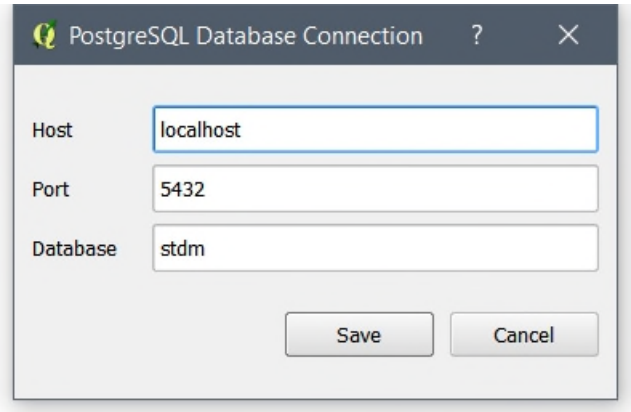
In addition to logging in to the default STDM database as shown above, you can always change the database settings to login to a different database. This is also possible in the Options module after login as discussed in the Options topic.

To change database properties, follow the steps below.

1. Click on the database icon located in the login dialog as highlighted below.



2. A PostgreSQL Database Connection dialog pops up as shown below.



The PostgreSQL Database Connection loads with the currently used properties.

a. **Host** refers to the location of a computer that has hosted the database server (PostgreSQL). If the database server is installed in your own computer, you have to enter localhost as shown above. However, when PostereSQL that holds the database is installed in an office network, the IP address will be different from localhost. It could be a number like 192.168.0.23 or any other number with such format as specified by the system administrator. This is relevant when STDM is installed for governmental or non-governmental organizations with a centralized database server.

b. **Port** refers to an endpoint of communication for the database server (postgreSQL). To access the database from STDM, we need to know its port. The most common port values for PostgreSQL are **5432, 5433,** or any other port as specified during installation.

c. **Database** refers to a storage location in which the entire data of STDM is stored. By default, during installation, it is set as **stdm**. You can enter any other database that you want to connect to after installation using PostgreSQL administration software called pgAdmin III. If you want to use your own database, make sure the PostGIS extension is installed and added to the database that STDM uses. Otherwise, STDM cannot run.

3. After making changes to the database properties, click on the **Save** button.

If you do not want your changes to be saved, press the Cancel button. Clicking on both buttons results in the closing of the dialog.

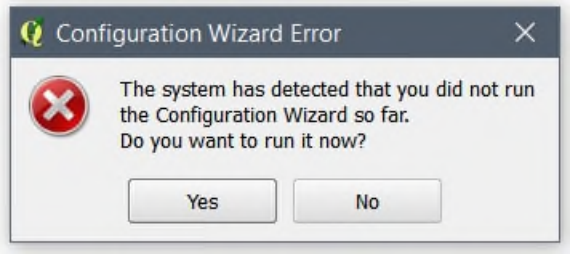
4. You can now login to the new database that you have specified.

First Time Login

When you login to STDM for the first time you will see the following.

1. A request to agree with STDM Terms and Conditions.

2. A request to run the Configuration Wizard with a dialog shown below.



The Configuration Wizard enables you to set STDM used folders, create profiles, create database tables for entities, columns, lookup tables, and Social Tenure Relationship that are required by most STDM modules. The Configuration Wizard is discussed under Creating and Customizing STDM Profiles topic starting with Getting Started with the Configuration Wizard topic.

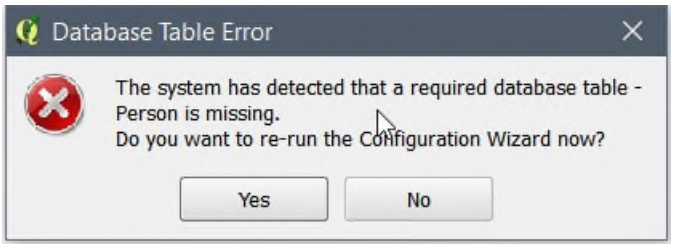
You can also use the default profiles of STDM. In this case, you just need to click on the **Next** button of the Configuration Wizard until you reach the last page of the wizard. Then click on the Finish button to create the database tables and save the settings.

It is recommended to click on the **Yes** button that will start the Configuration Wizard.

If you choose not the run the Configuration Wizard by clicking on the **No** button, you cannot access most of the modules as they rely on the database tables in STDM.

Note: This is not applicable for users migrating from older versions of STDM.

3. If you have no database table for a module you are trying to open, a Database Table Error that looks like the one below is shown. The missing table specified depends on the module you are trying to launch.



To fix this, you can click on the **Yes** button to start the Configuration Wizard.

Logging out of STDM

To log out of the QGIS wizard, you must be logged in. Click the logout button  . This immediately logs you out of the STDM system and the STDM command buttons disappears.

From here the log in button will be available for a later login.

Working with Sample Data

The sample data is provided during the STDM installation. It is saved in **C:/Users/your-user/.stdm/SampleData** folder. Replace **your-user** with the currently logged in PC User. The sample data is used for examples in this documentation.

This sample data contains several forms of data;

1. Georeferenced map data (basemap/Raster data)

2. Persons data in *csv format (in excel sheets).

3. Shapefiles (Vector data)

4. GPX files (GPS points data)

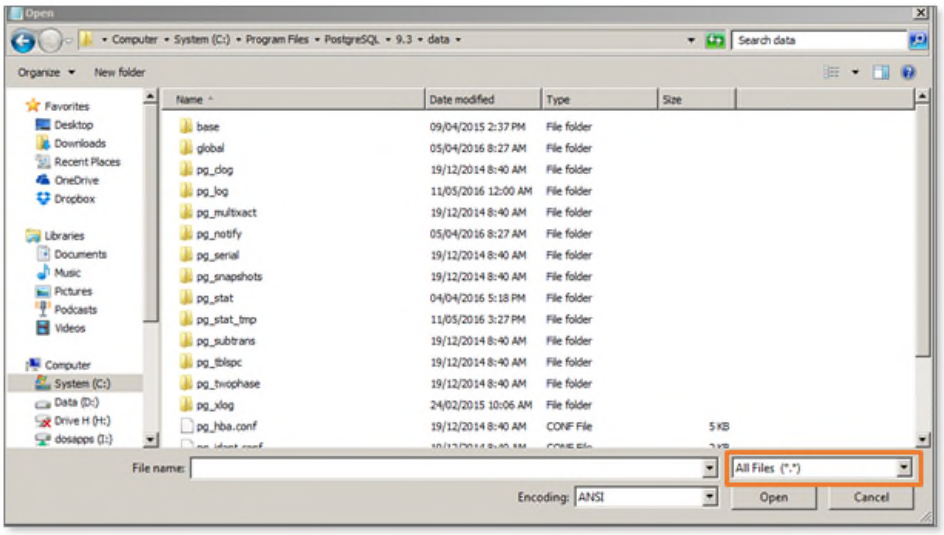
To use the sample data, make sure QGIS is started and running while STDM is visible in QGIS interface tool bar.

Resetting ‘postgres’ Password in Local Server

Note: This will only work if the user has access to the localhost machine, otherwise the password cannot be reset for a remote server running PostgreSQL.

Synopsis: The steps below will temporarily disable password authentication which will then enable you to set a new password before finally re-enabling password authentication.

1. Browse to the location of the PostgreSQL installation i.e. **C:\Program Files\PostgreSQL\9.x\data** and locate the file named **pg_hba.conf**. Open this file using any text editor such as Notepad or preferably, Notepad ++ (click here to download). If you are using Notepad, make sure you have chosen **All Files** in the file type selection as shown below:



2. Once the file is open, scroll to the bottom of the file and locate the following lines:

```
# TYPE  DATABASE        USER            ADDRESS                 METHOD
# IPv4 local connections:
host    all             all             127.0.0.1/32            md5
# IPv6 local connections:
host    all             all             ::1/128                 md5
```

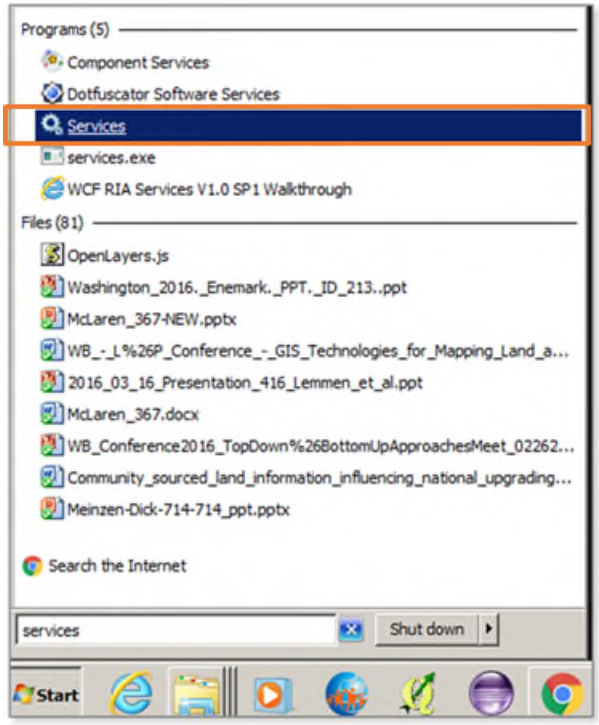
3. Change the *md5* text (as highlighted in red above) to *trust*. The updated text should now look like as shown below. Save changes in the file.

---

x refers to the minor version number of PostgreSQL i.e. 9.1, 9.2, 9.3, 9.4 or 9.5

```
# TYPE  DATABASE        USER            ADDRESS                 METHOD
# IPv4 local connections:
host    all             all             127.0.0.1/32            trust
# IPv6 local connections:
host    all             all             ::1/128                 trust
```

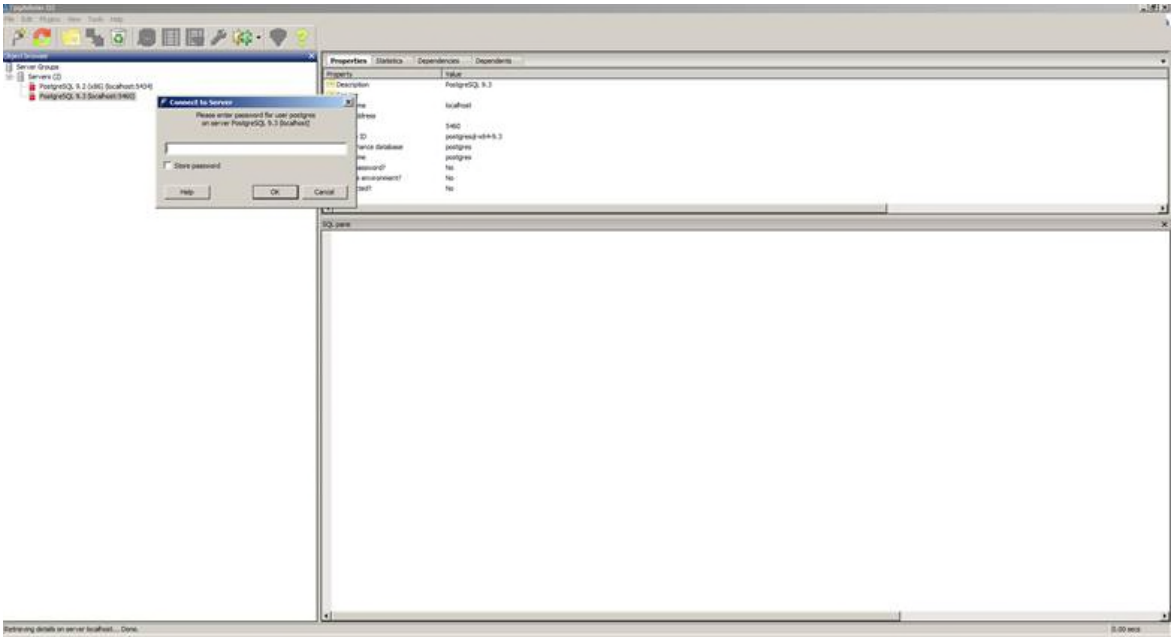
4. In order for the new changes to take effect, the PostgreSQL Windows service needs to be restarted. To load the window showing all services running in the computer, click Start then type 'services' in the search textbox. In the resulting list of matching items, click Services as shown below:



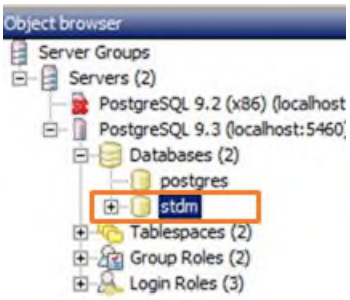
5. In the Services window, locate the PostgreSQL service which is usually named postgresql-x64-9.x- PostgreSQL Server 9.x. Right click and select *Restart* so that the new changes can be applied.

6. Click Start > PostgreSQL 9.x > pgAdmin III to start the PostgreSQL database manager. Double click on the node, named ***PostgreSQL 9.x (localhost:54xx)***, under *Servers* group; a password

window will appear. Since we have disabled the need for a password, click on the **Ok** button and the **postgres** account will be logged in.



7. Once logged in, click on the **Database** node then select any database under it.



8. The next step is to run a query that sets the new passwords for the postgres user account. With the database node selected (for example, **stdm** in the step above), click on the 'Execute arbitrary SQL queries' icon  in the toolbar.

   In the resulting SQL Editor window, type the following command:

   ALTER USER postgres with password 'new-password';

In place of **new-password**, enter your desired password.

Do not forget to enclose the new password in single quotes.

While still in the SQL Editor window, click the 'Execute query'  icon in the toolbar. The query should run successfully with no errors.

9. Close the SQL Editor, choose No when requested to save changes.

10. Close pgAdmin III.

11. We need to re-enable password authentication. This is done by restoring the initial authentication settings. In this case, repeat step 1 above to open **pg_hba.conf**.

12. Scroll to the bottom and replace the following section with the original text i.e. the new text should read:

```
# TYPE  DATABASE    USER        ADDRESS           METHOD
# IPv4 local connections:
host    all         all         127.0.0.1/32      md5

# IPv6 local connections:

host    all         all         ::1/128           md5
```

Save changes in the file.

13. Follow steps 4. and 5. above to restart the service.

14. Restart QGIS and try login into STDM using the following credentials:

Username: **postgres**

Password: ***[new password set in step 8. above]***

Creating and Customizing Data Profiles

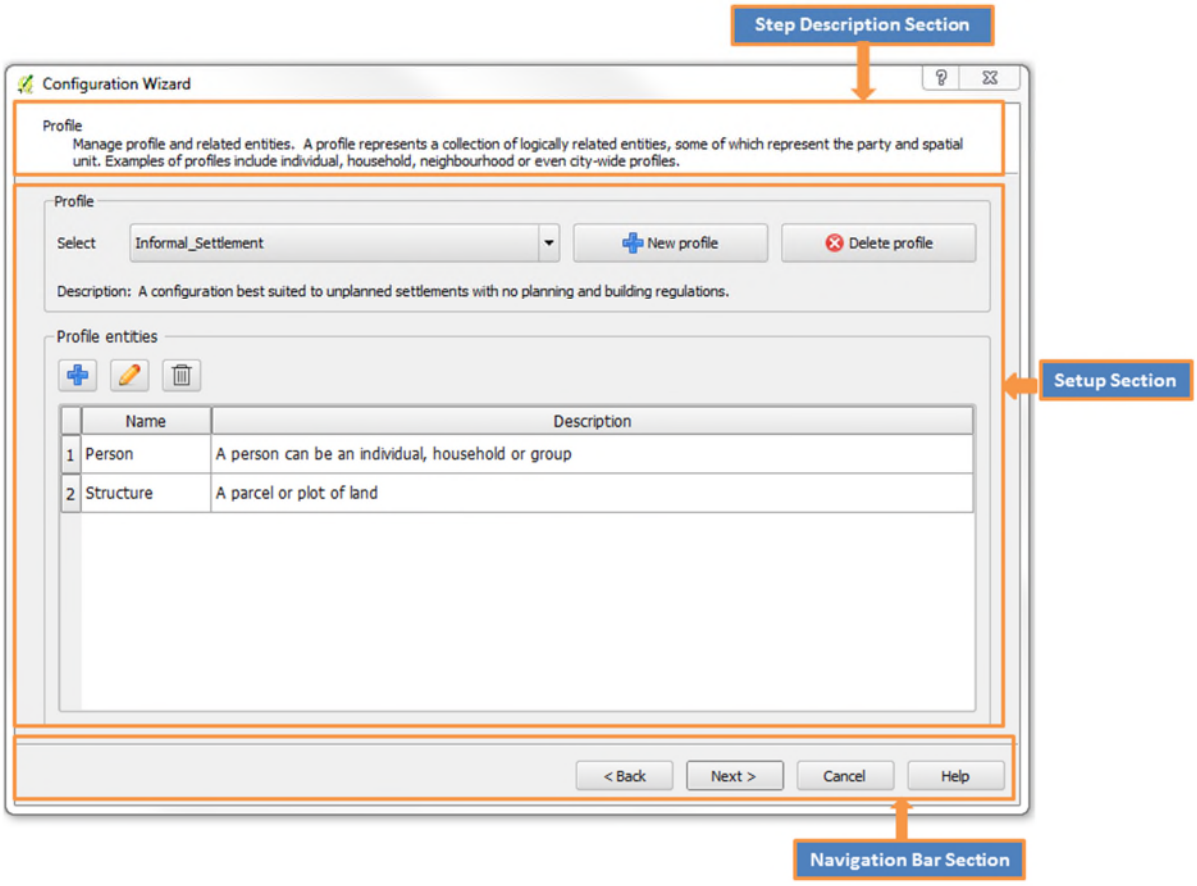
Getting Started with the Configuration Wizard

Creation and management of profiles is done through the profile configuration wizard. The wizard has several pages that allow you to configure and manage your data profiles.

To access the wizard, click the Configuration Wizard icon on the STDM plugin toolbar.

Each configuration process on the wizard is represented by a single page with an interface that is divided into three sections;

- Upper section - Step/page description
- Middle section - Profile setup section
- Bottom section - Navigation section



To access a step on the wizard, use the buttons on the navigation bar.

Navigation buttons

Back button - Allows you to navigate backward through the wizard steps. The button takes you one step backward from your current step. This button remains disabled, if you are in the first page of wizard.

Next button - Allows you to navigate forward through the wizard steps. The button takes you one step forward from your current step. This button remains disabled, if you are in the last page of the wizard.

Cancel button - Used to terminate the configuration process and exit the wizard dialog.

Finish button - This button will appear when you get to the final step of the wizard. The button allows you to save your profile configuration settings into the database.

Close button - Allows you to close and exit the wizard.

Help button - Used to access the help manual.

Creating and Saving of settings

Every time you open the configuration wizard, it will read and load previously saved configuration settings from a file called **configuration.stc**. The configuration wizard will now be in an *edit mode.* In this mode you can create, edit or delete items - profiles, entities, columns or lookups.

Note: It is important to know, during edit mode any changes (create, edit or delete) you do on the wizard will NOT be saved in the database or in the configuration file until the Finish button is clicked at the last step of the configuration wizard.

In total STDM wizard has five steps, each step represents a different configuration section for the profile. The following section of the document will show details of each step.

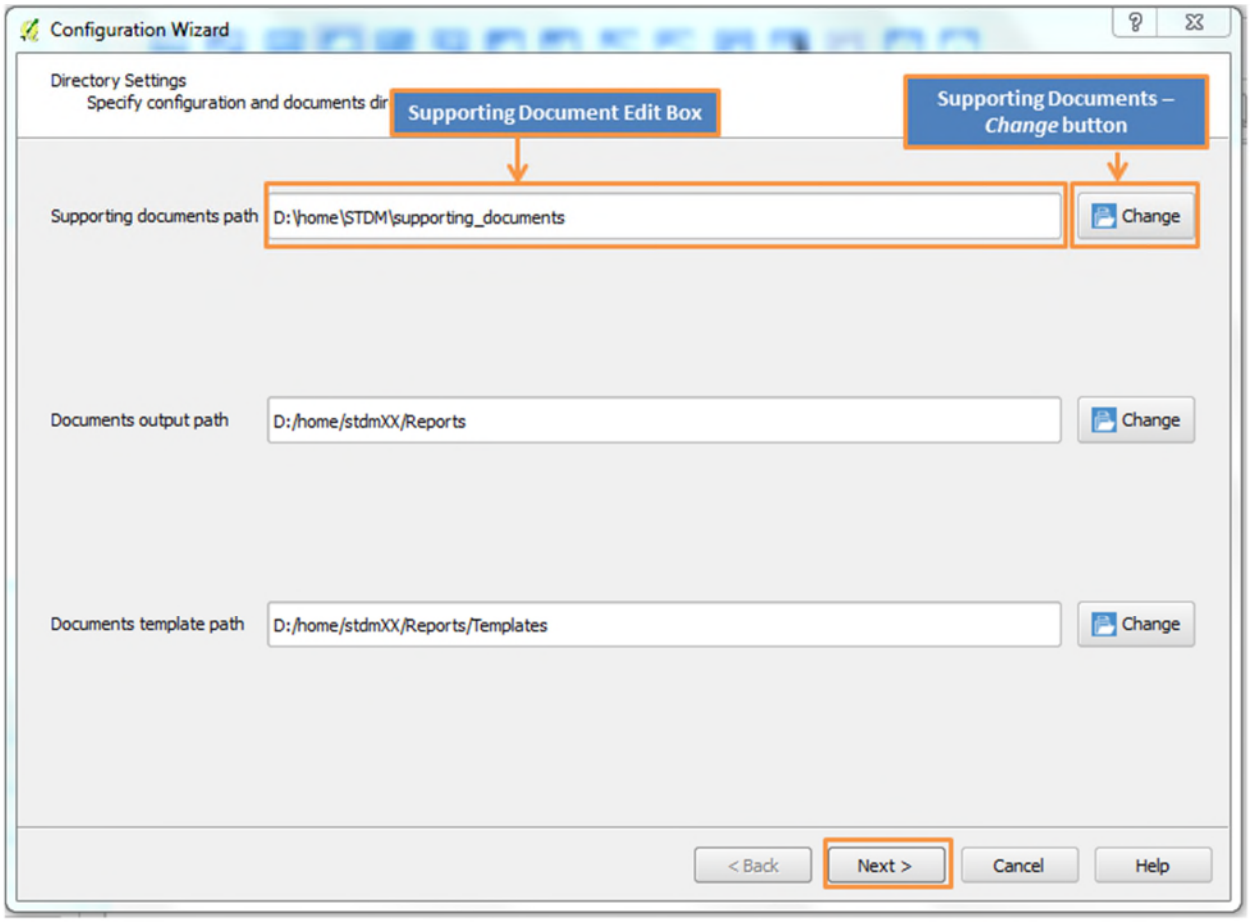
Configuring Directory Settings

Modifying Supporting Document Path

Supporting document path is the location for storing documents that supports the Social Tenure Relationship. Examples of supporting documents are scanned certificates, pictures in different formats (PNG, JPG or JPEG) or even PDF documents. To modify the default supporting document path follow the steps below.

1. Click the Configuration wizard icon on the STDM plugin menu to open the Configuration Wizard window.

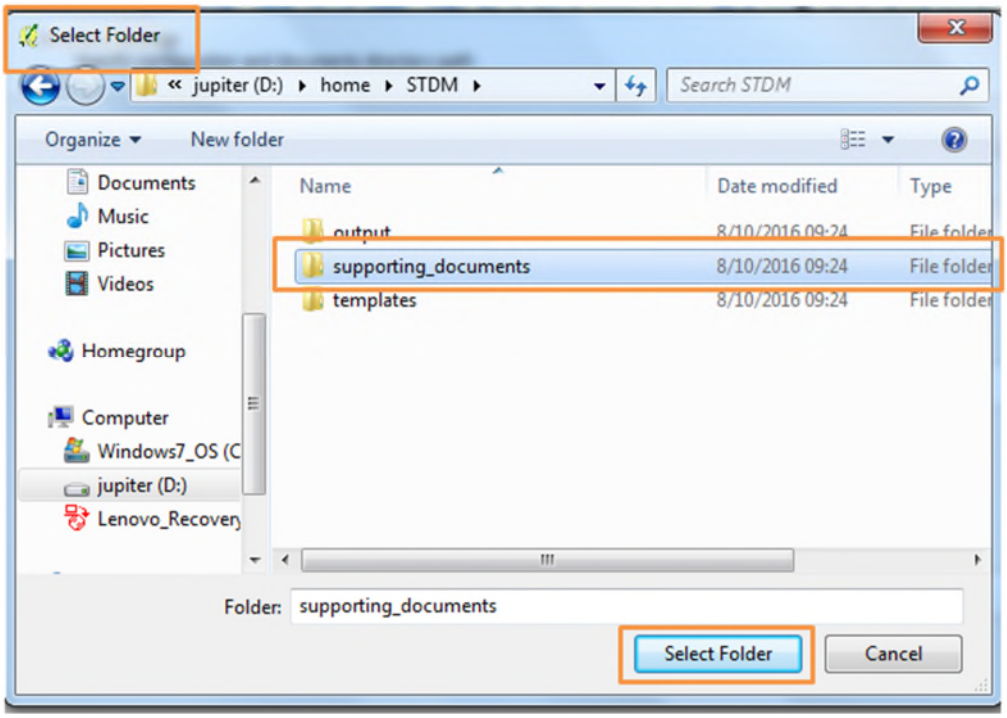
2. On the **Directory Settings** page of the Configuration Wizard, click the **Change** button next to the **Supporting Documents Edit** Box.



3. A file Select folder dialog will open allowing you to choose a new location for saving your files.

4. Locate the folder you would like to use for storing Supporting Documents.

5. Click **Select Folder** button to set new location.



6. The new folder path should now show on the **Supporting Document Edit** Box.

7. You can configure the rest of the directory settings **(Output and Template)** paths or click **Next** to proceed with saving the modification.

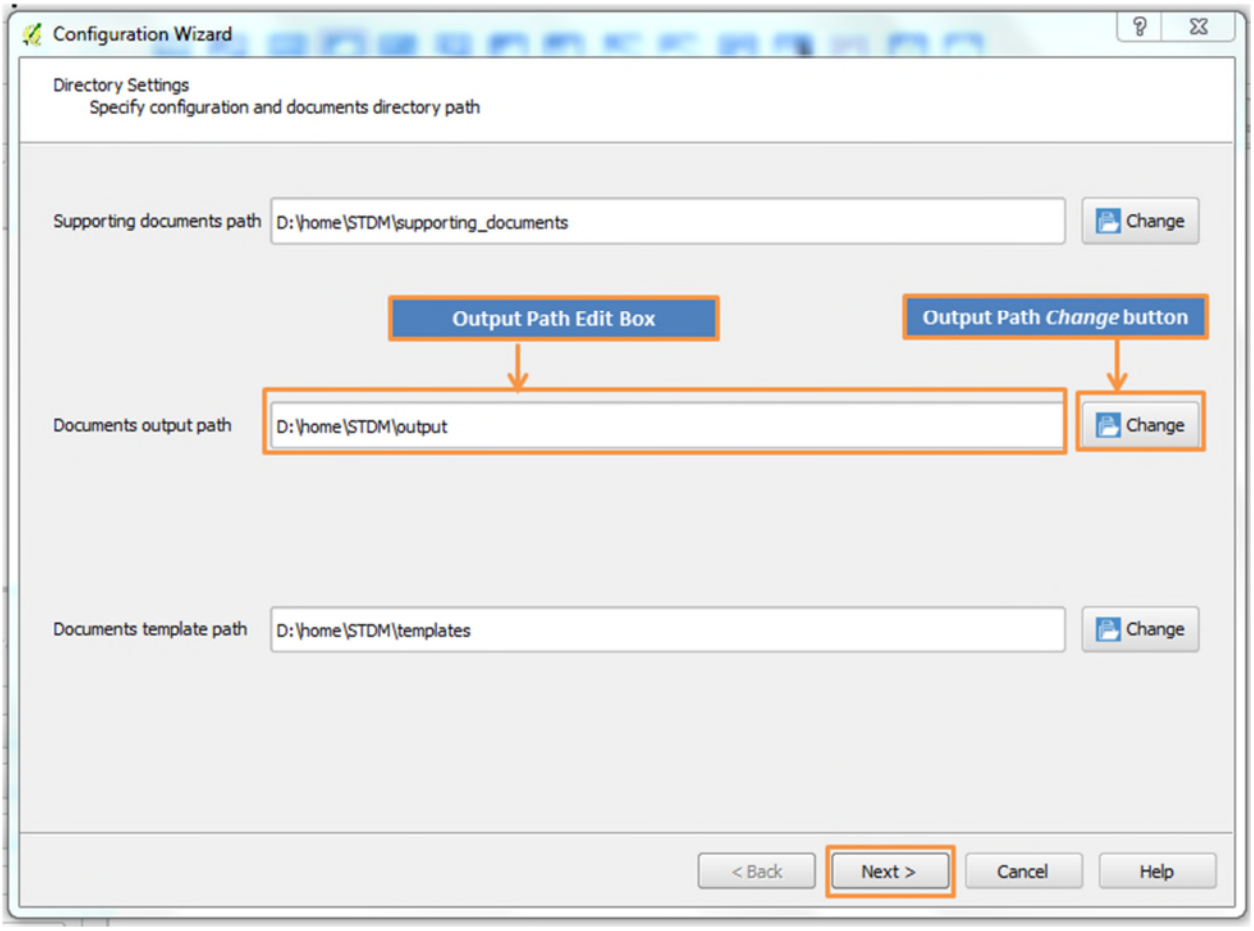
Modifying Documents Output Path

Output path is the storage location for documents that a generated when you generate documents using the STDM Document Generator. Generated documents can be of different formats, but the most commonly used formats are PNG, JPG, JPEG or PDF.

To modify this path on the configuration wizard, follow the steps below.

1. Click the Configuration wizard icon on the STDM plugin menu to open the Configuration Wizard window.

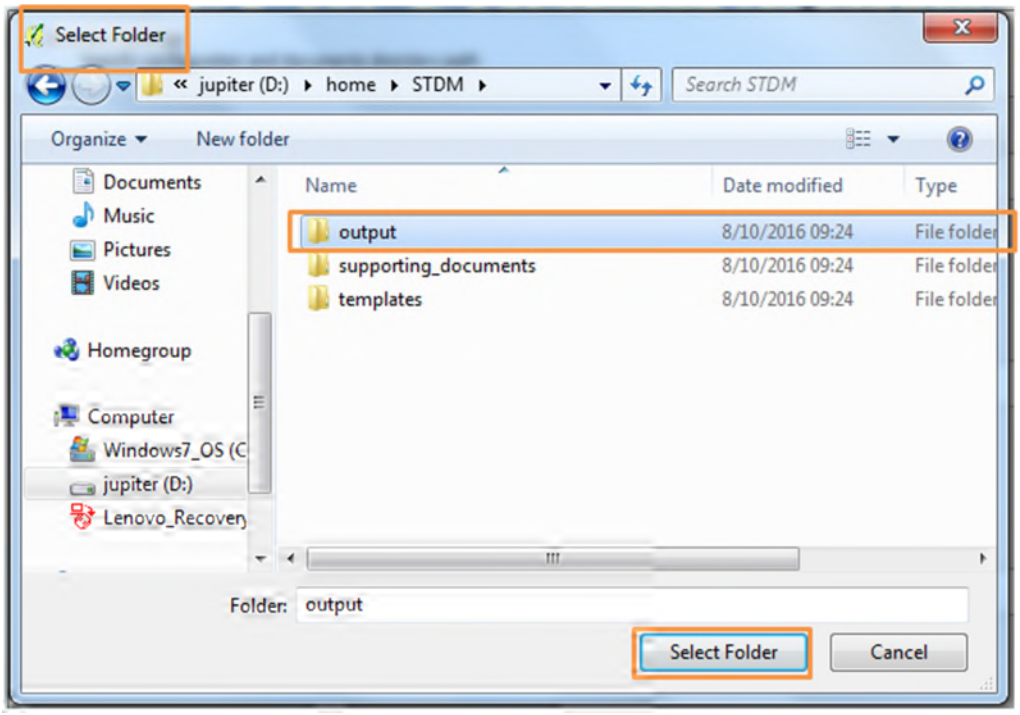
2. On the *Directory Settings* page of the Configuration Wizard, click the *Change* button next to the *Output Path Edit Box*.



3. A file Select folder dialog will open allowing you to choose a new location for saving your files.

4. Locate the folder you would like to use for storing Supporting documents.

5. Click **Select Folder** button to set new location.



6. The new folder path should now show on the **Output Document Edit** Box.

7. You can configure the rest of the directory settings **(Supporting Documents and Template)** paths or click **Next** to proceed with saving the modification.

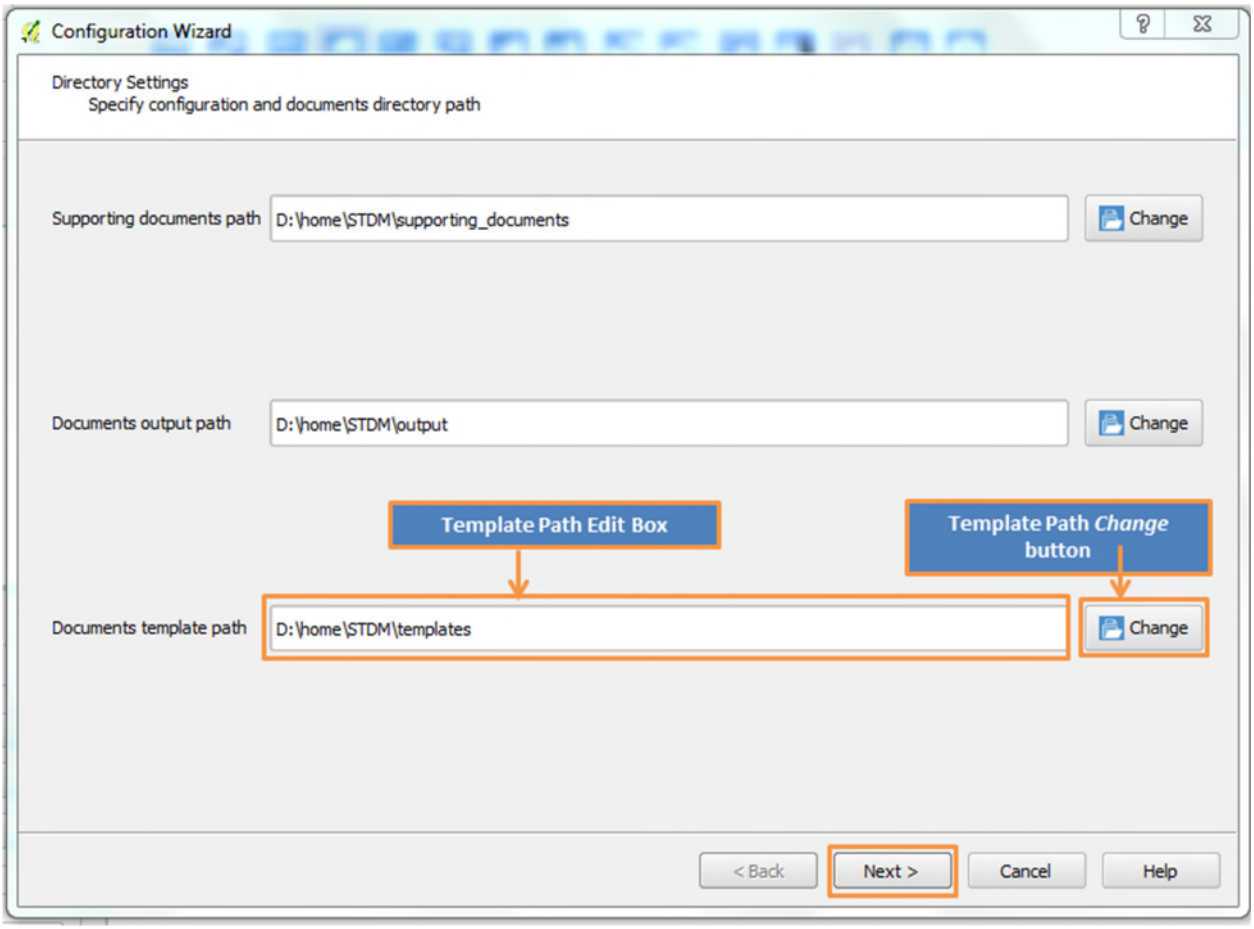
Modifying Template Path

Template is a type of document that enables you to generate documents such as certificate, reports, letters, etc. In STDM, you create a template using the Document Designer. Once you design and save the templates, they are automatically stored in **Template path**.

To modify the default **Template Path** follow the steps below.

1. Click the Configuration wizard icon on the STDM plugin menu to open the Configuration Wizard window.

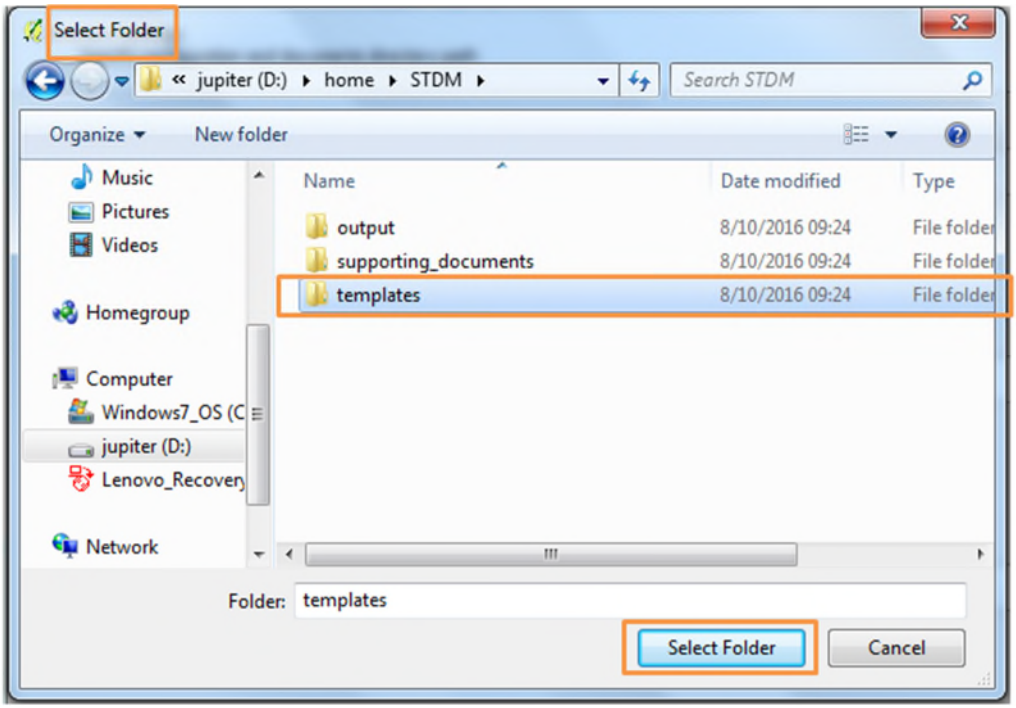
2. On the **Directory Settings** page of the Configuration Wizard, click the **Change** button next to the **Template Path Edit Box**.



3. A file Select folder dialog will open allowing you to choose a new location for saving your files.

4. Locate the folder you would like to use for **Template Documents**.

5. Click **Select Folder** button to set new location.



6. The new folder path should now show on the **Template Document Edit Box**.

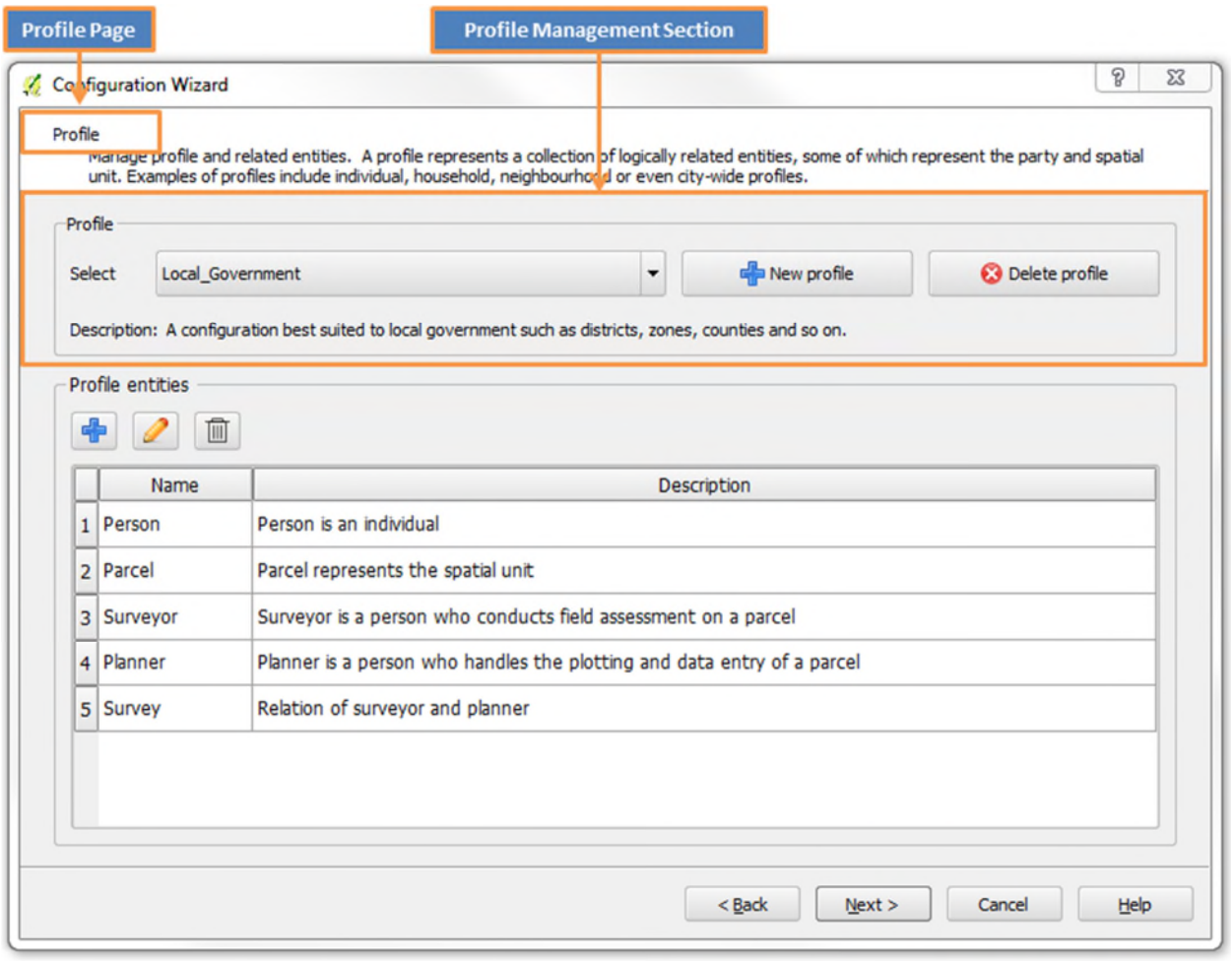
7. You can configure the rest of the directory settings **(Output or Supporting Documents)** paths or click *Next* to proceed with saving the modification.

Configuring Profiles

Creating Profiles

A profile represents a collection of logically related entities, some of which represent the party and spatial unit. STDM ships with three pre-configured sample profiles, this are;

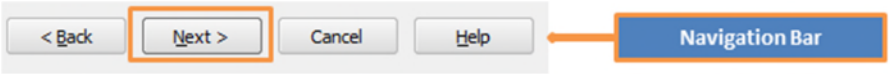
Informal Settlement, Local government and Rural Agriculture.



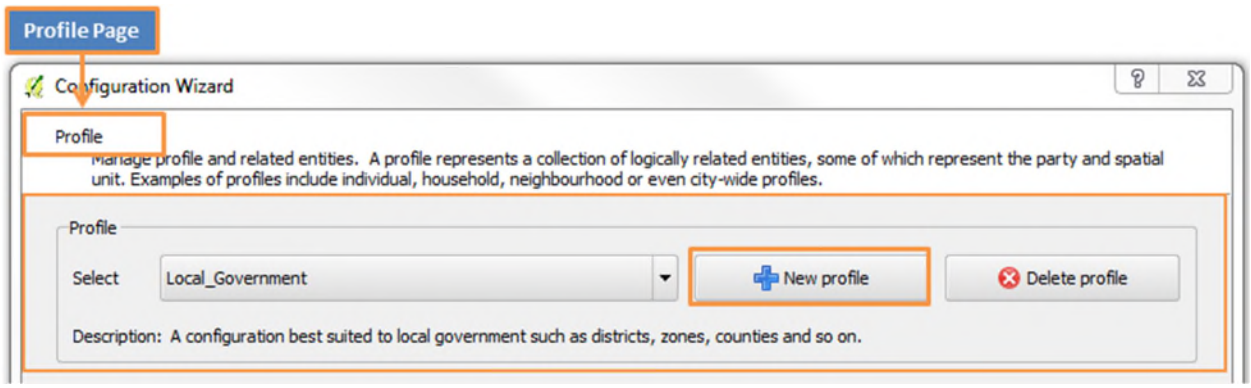
To create a new profile, follow the steps below.

1. Click the *Configuration Wizard* icon on the STDM plugin menu to open the **Configuration Wizard** window.

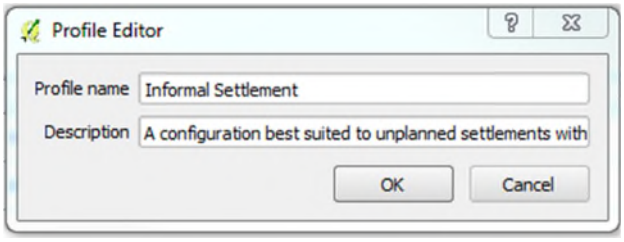
2. When **the Configuration Wizard** window opens, click the **Next** button on the wizard Navigation bar.



3. When you get to the **Profile** page, click the **New Profile** button on the **Profile Management Section**.



4. A **Profile Editor** window will open for you to enter details of the new profile.



5. On the **Profile Editor** window, enter the following details.

- **Profile name - This is a mandatory field that represents the name of the profile you want to create. For example, Local Government.**
- **Description - A brief narrative of what your profile represents.**

6. When you are done, click *OK* button to save your work and close the **Profile Editor** window. If you wish to close the **Profile Editor** without saving any details, click the **Cancel** button.

7. If the profile was saved correctly it should appear on the **Profile** *Select* dropdown.

Note: The **Profile Editor** window will not allow you to save without entering the **Profile name**.

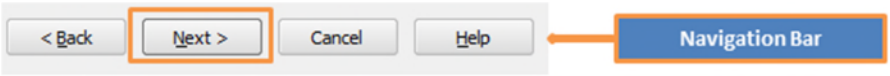
Customising Profiles

With the new version of STDM, you can customize your existing profiles at any time. The process of adding, editing or deleting items related to the profile is what is known as profile customisation. Once you save your customisation, this changes will reflect both logically on the profile and also at the database level.

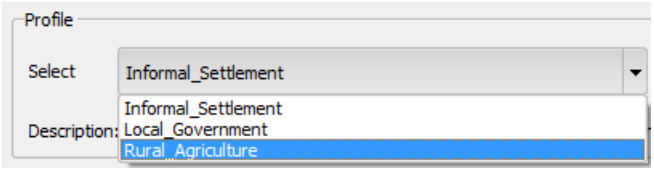
To customize your profile follow the steps and the links below.

1. Click the **Configuration Wizard** icon on the STDM plugin menu to open the **Configuration Wizard** window.

2. When the **Configuration Wizard** window opens, click the *Next* button on the wizard Navigation bar.



3. When you get to the *Profile* page, click the *Profile Select dropdown* button on the *Profile Management Section*.



4. Select the profile you would like to customize. Once selected, contents related to that entity are loaded and displayed in various pages of the configuration wizard.

5. To perform customisation of various items follow any of the links below.

a. Customize profile by adding entities - Creating Entities.

b. Customize profile by editing entities - Editing Entities

c. Customize profile by deleting entities - Deleting Entities

d. Customize profile by creating Lookups - Creating Lookups

e. Customize profile by editing Lookups - Editing Lookups

f. Customize profile by deleting Lookups - Deleting Lookups

g. Customize profile by enabling many parties to a single spatial unit - Setting One or More Parties per Spatial Unit

6. When you are done with any of the customisation, click **Next** on the *Navigation Bar* to access the last Page and save your changes.

Important Notes: Customizing of Social Tenure Relationship is NOT allowed once it has been defined and saved in the database.

Deleting Profiles

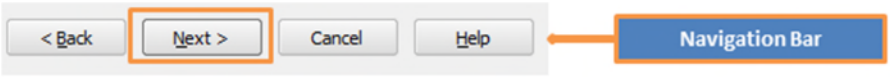
Deleting profiles involves removing all the items that represents a profile both logically and physically on the database. Logically these items include, **Entities, Lookups, Lookup Values** and **Social Tenure Relationship** definitions. At the database level, these items are represented as **Tables** and **Views**.

Great care should be taken before deleting a profile as it is a non-reversible process. Once a profile is deleted you cannot access the profile and data stored on the profile tables.

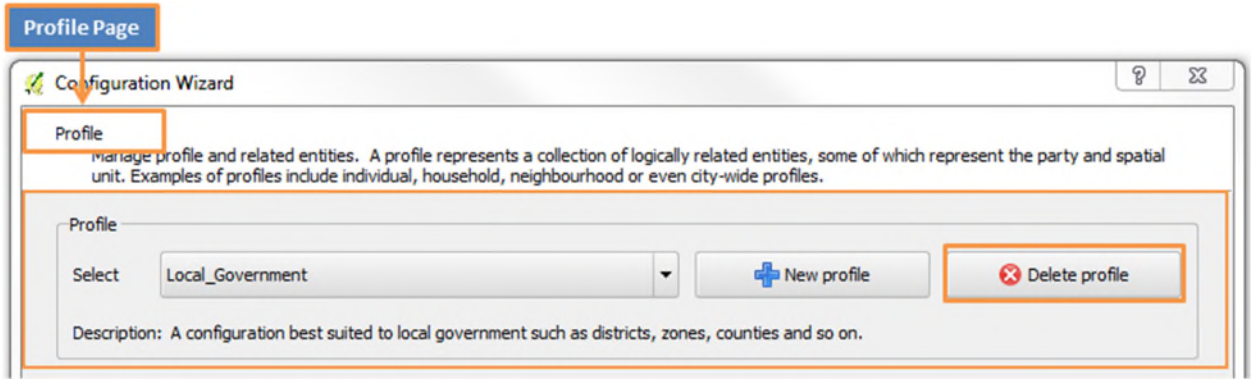
To delete a profile, follow the steps below.

1. Click the **Configuration Wizard** icon on the STDM plugin menu to open the **Configuration Wizard** window.

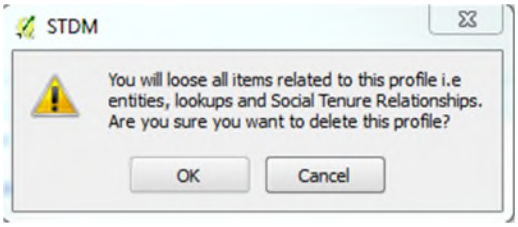
2. When the *Configuration Wizard* window opens, click the **Next** button on the wizard Navigation bar.



3. When you get to the **Profile** page, click the **Delete Profile** button on the **Profile Management Section**.



4. A warning dialog window will popup reminding you of the consequences.



5. If you wish to delete and close the warning dialog window, click the **Ok** button. However, to abort the delete process and close the warning dialog window, click the **Cancel** button.

6. If the profile was deleted, it will be removed from the list in the **Select Profile** drop down.

Configuring Entities

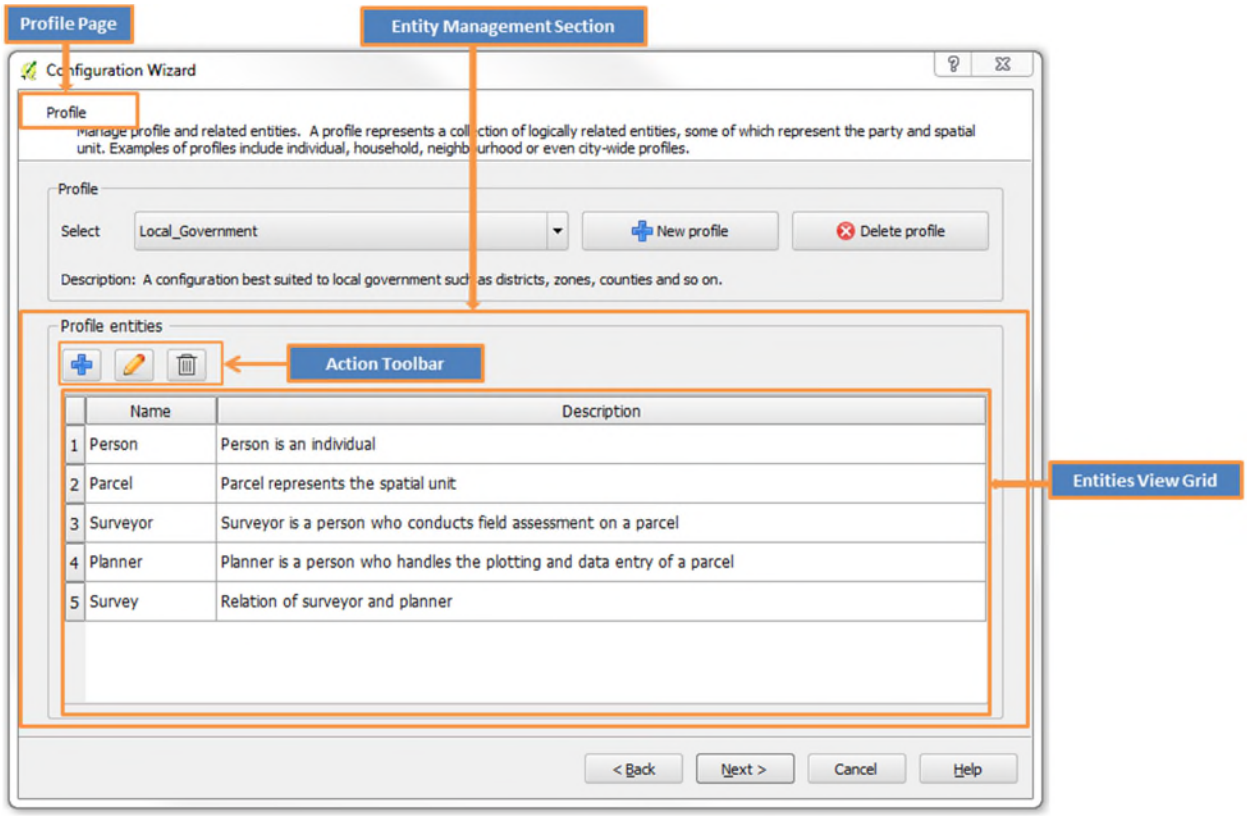
Creating Entities

An entity represents a unit of storage within a profile. It represents a real-world object that can easily be identified e.g. person, farmer, plot or structure. In the profile, these real-world objects are logically represented as entities, while at the database level, they are represented as tables or table views.

To create a new entity, follow the steps below.

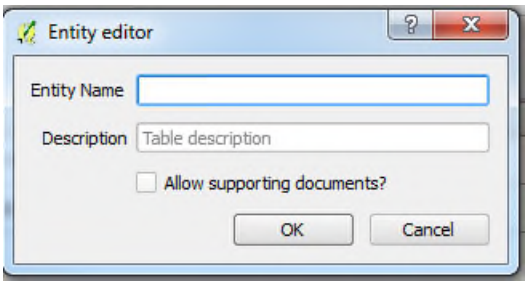
1. Click the **Configuration Wizard** icon on the STDM plugin menu to open the **Configuration Wizard** window.

2. When the **Configuration Wizard** window opens, click the *Next* button on the wizard **Navigation Bar (once)** to access the **Profile** Page.



3. On the **Entity Management Section**, click the **Add** button on the **Action Tool bar**.

4. An **Entity Editor** window will open.



5. Enter all the required fields to describe your entity.

- **Entity Name** - Mandatory field for your entity name. A profile cannot have two entities sharing the same name; the name you choose for your entity should be unique in your current profile.
- **Description** - Brief narrative of what the entity represents in your current profile.

- ***Allow supporting documents*** - Check this option if your entity will have supporting documents functionality.

6. To save and close the entity editor window, click the **Ok** button. If everything was entered correctly and no errors were found, the new entity should appear on the *Grid* on the entity section. But if you want to abort and exit the creation of the new entity, click the *Cancel* button.

Important Notes:

Note 1: Entity name is a mandatory field, you cannot save an entity without entering an entity name.

Note 2: System will pop an error if you attempt to save an entity with a name that already exist on the current profile.

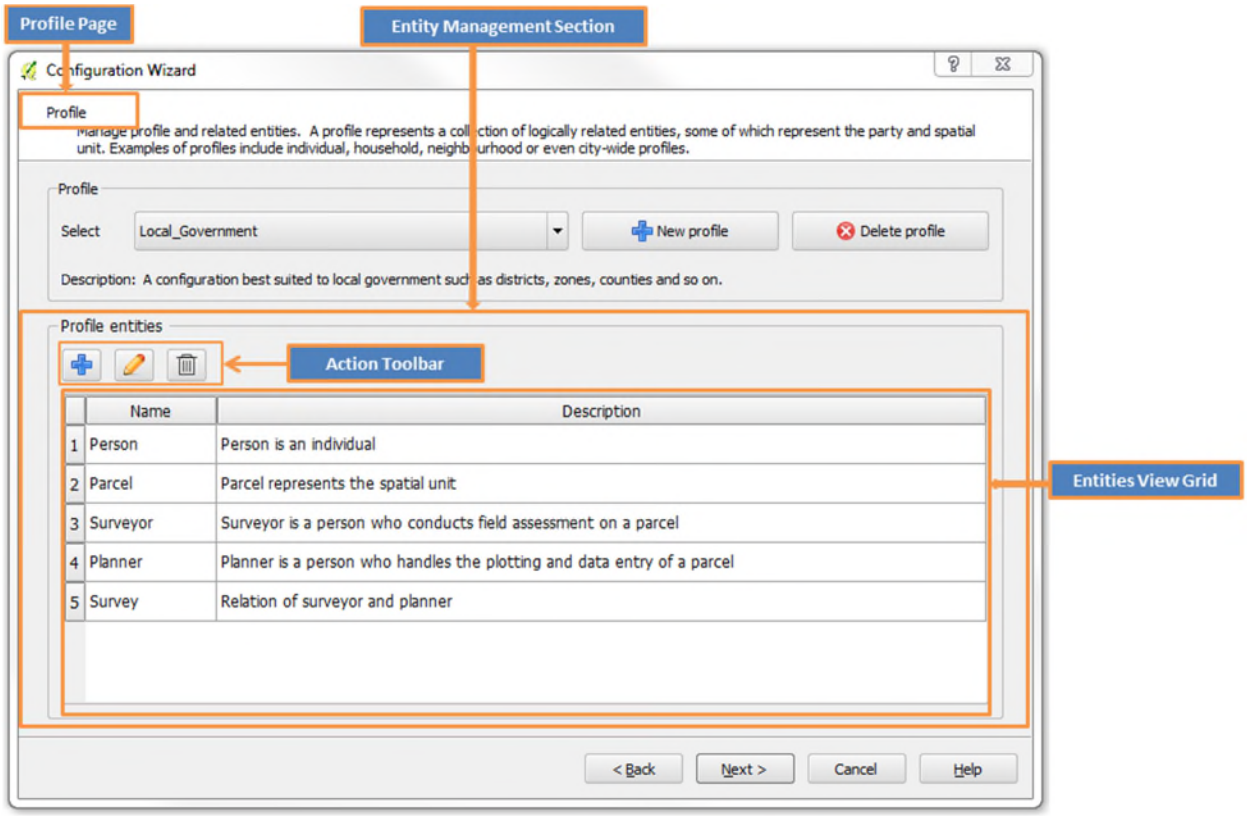
Editing Entities

Editing an entity process allows you to change properties of an existing entity. You might be forced to edit an entity in cases where you might have misspelled or entered a wrong name or description for your entity.

To edit an entity, follow the steps below.

1. Click the **Configuration Wizard** icon on the STDM plugin menu to open the **Configuration Wizard** window.

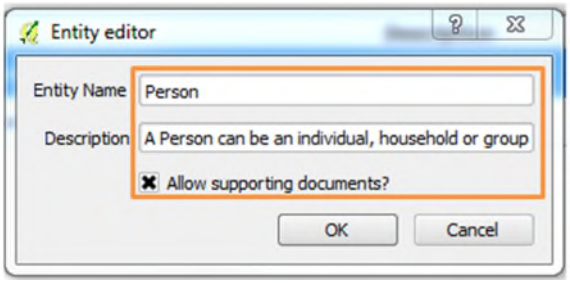
2. When the **Configuration Wizard** window opens, click the *Next* button on the wizard **Navigation Bar (once)** to access the **Profile Page**.



3. On the Entities View Grid, click to select an Entity you wish to edit. The selected entity should now be highlighted with a different colour to indicate selection.

4. On the Action Tool bar, click the Edit button.

5. **Entity Editor dialog** window will open with fields (Name, Description and Supporting documents check box) pre-populated with details of the selected entity.



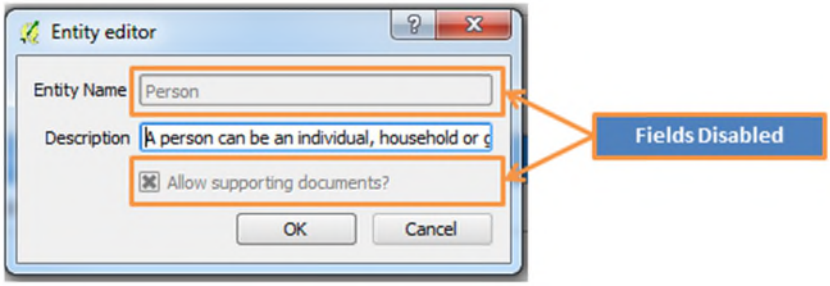
6. Make your changes

7. To save and close the **Entity Editor**, click the **O***k* button. If you wish to cancel your changes and close the Editor window, click the *Cancel* button.

8. If you saved your work, the new changes should now show on the *Entities View Grid*.

Important Notes

Note 1: If the entity has already been saved in the database from the previous configuration sessions, the system will not allow you to edit the *Entity Name* or change *Supporting document* check box fields. When the *Entity Editor* window opens the two fields will be disabled. The only property you will be able to edit is the *Description.* However, if this is a new entity then all the fields *(Entity Name, Description* and *Supporting documents* check box) are eligible for editing.



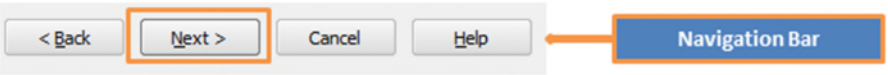
Deleting Entities

As part of entity management, *Configuration Wizard* allows you to delete existing entities.

To delete existing entities, follow the steps below.

1. Click the *Configuration Wizard* icon on the STDM plugin menu to open the *Configuration Wizard* window.

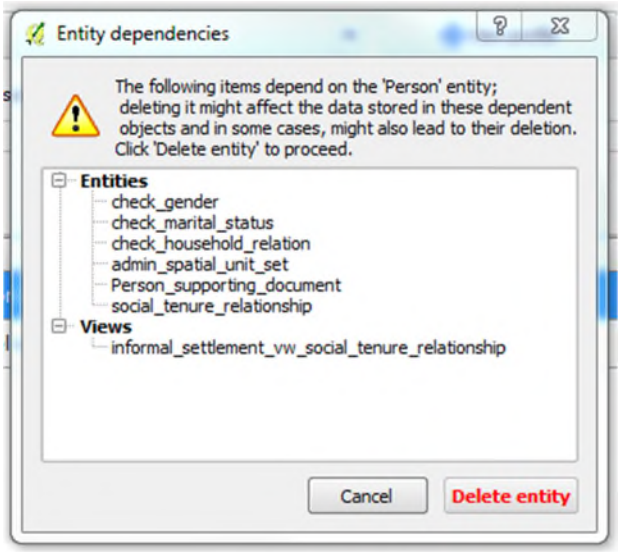
2. When the *Configuration Wizard* window opens, click the **Next** button on the wizard *Navigation Bar* (**once**) to access the *Profile Page*.



3. On the Entities View Grid, click to select an entity you wish to edit. The selected entity should now be highlighted with a different colour to indicate selection.

4. On the *Action Toolbar*, click the Delete button.

3. If there are other items in the profile referencing this entity, an **Entity Dependency** warning dialog will popup to show you the items.



4. Read the warning message on the *Entity Dependency* window carefully. If you are sure you want to delete the entity and close the dialog window, click the *Delete entity* button. However, if you wish to abort the delete process and close the dialog, click the *Cancel* button.

5. If you clicked the *Delete entity* button on the *Entity dependency* dialog window, the deleted entity will be removed from the *Entity View Grid* in the wizard.

Important Notes

Note 1: *Entity Dependencies* dialog will NOT show if the entity you are deleting has no items referencing it. Clicking *Delete* button on the *Entity View Grid* will remove the selected entity without any warning.

Customizing Entities

Creating Columns

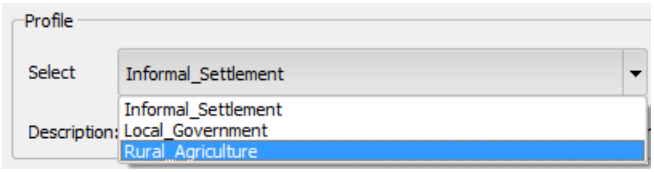
Columns are the properties of an entity. Columns are the actual locations where data is stored in a database - think of columns as pigeon holes that hold data values. Each column in an entity must be represented by a unique name and must have a *data type* that defines which type of data will be stored in that column. Example of columns for a *Person Entity* would be *first_name*, *last_name*, *gender or date_of_birth* etc.

To create a column on an entity, follow the steps below.

1. Click the *Configuration Wizard* icon on the *STDM Plugin Menu* to open the *Configuration Wizard* window.

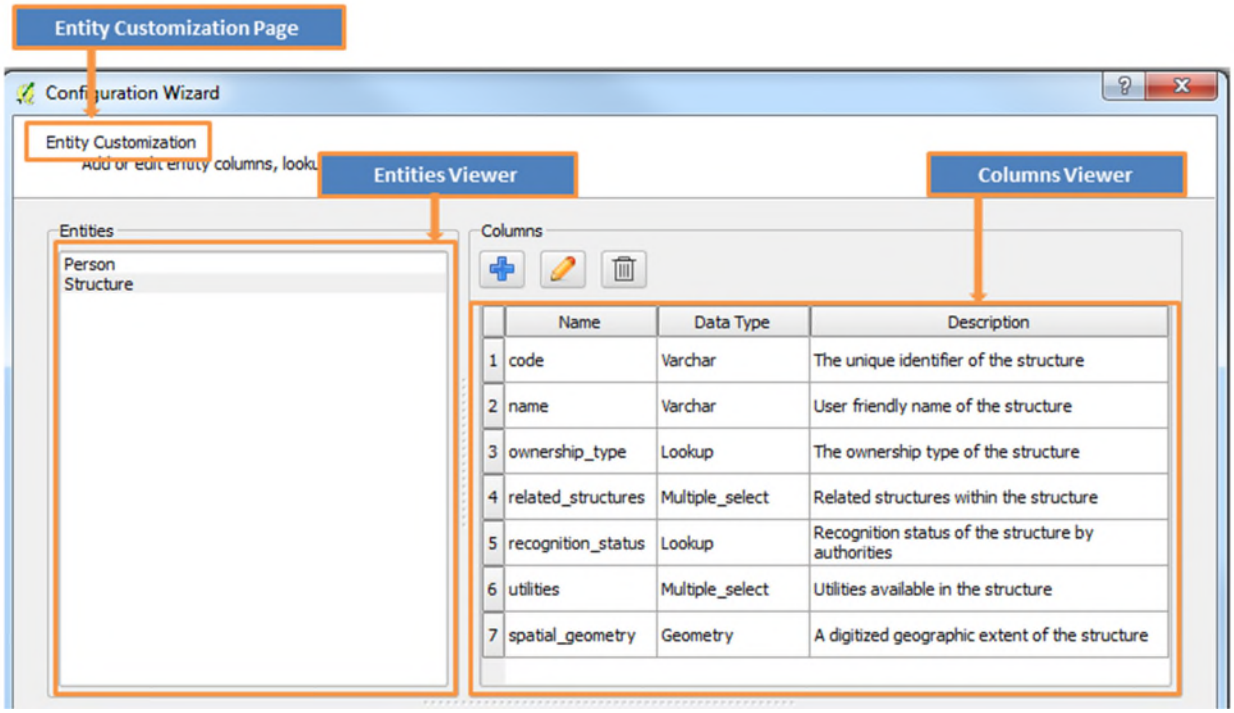
2. When the *Configuration Wizard* window opens, click the *Next* button on the wizard *Navigation Bar* (**once**) to access the *Profile Page.*

3. From *Profile Select* drop down, choose a *Profile* you want to customize.

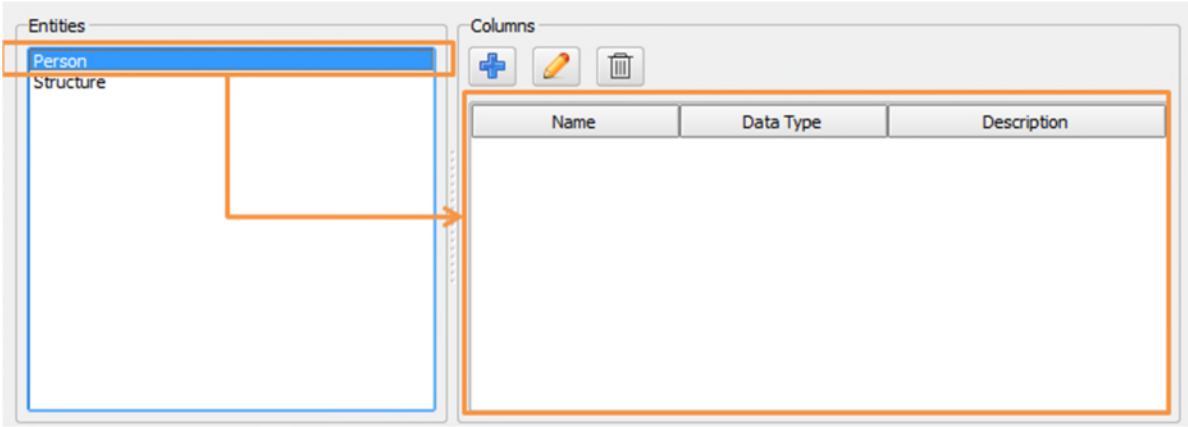


4. All the related entities, lookups and lookup values for the selected profile should load onto various pages of the wizard.

5. Click *Next* button on the *Navigation Bar* to access the *Entity Customisation* page.



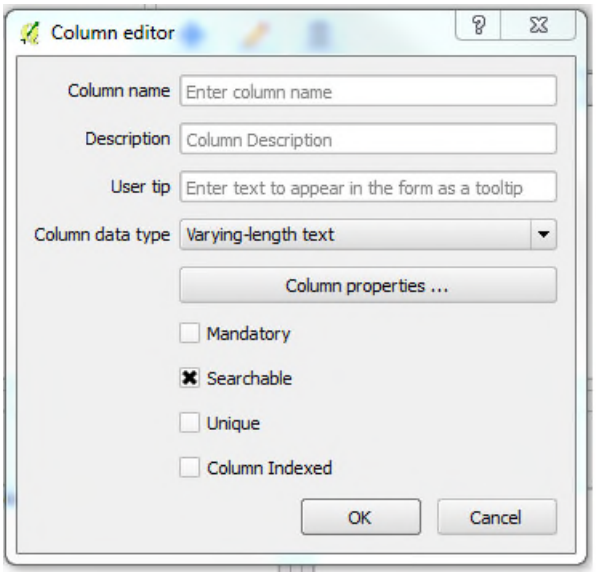
6. On the *Entities Viewer*, click to select an entity to customize. The selected entity should now have a highlighted color indicating selection.



7. If you selected a new entity the *Columns Viewer* section should be empty.

8. On the *Columns Viewer* section, click the *Add* button on the *Action Toolbar*.

9. A *Column Editor* window should now open to enable you create a new column.



10. Enter the following details for your column

a. Column name - Name used to define a single property on an entity. For example, on an entity *Person* you can have a property named *first_person.*

Important things to remember when entering a Column name;

1. Column name should only be in lower case.
2. Spaces are NOT allowed in a Column name. All spaces you enter will automatically be replaced with an underscore (_) character.

3. This field is mandatory, you cannot create a column without it.

The following are STDM reserved keywords; you cannot use them as column names.

- *id*
- *documents*
- *spatial_unit*
- *supporting_document*
- *social_tenure*
- *social_tenure_relationship*
- *Geometry*

b. Description - Long string text that explains the meaning of the column in an entity. Field is optional; you can create a column without it.

c. User tip - Short text that appears next to this column on the data entry form for this entity, guides the users on what to enter on this column.

This field is optional; you can create a column without it.

d. Column data type - Defines the type of value that should be stored in this column in the database. Every column **MUST** define a data type property. STDM supports twelve different data types to choose from depending on the value you want to store in your column. Understanding Column Data Types page explains in-depth the meaning of each supported data type.

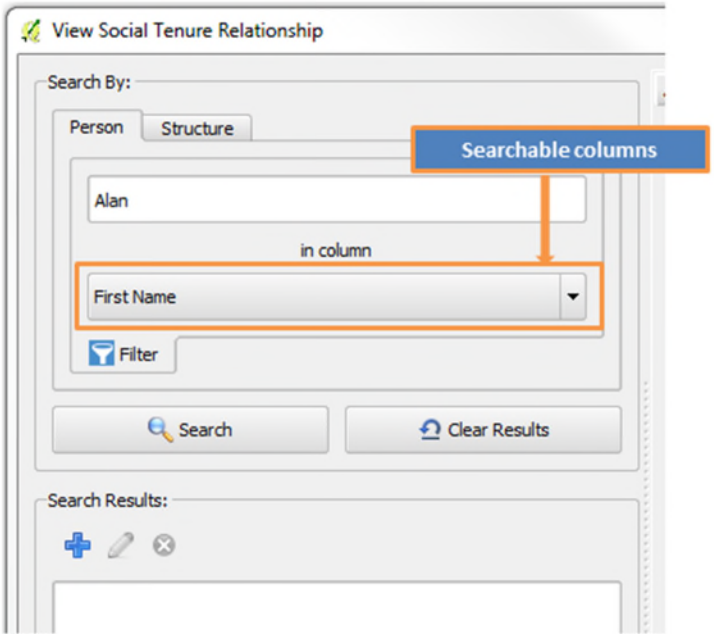
This field is mandatory; you cannot create a column without it.

c. Columns property button - It opens a window to enter default values for the column depending on the selected data type. Setting of these properties is mandatory for the following data types;

- *Geometry*
- *Related Entity*
- *Single Select Lookup*
- *Multiple Select Looku*p

d. Mandatory check box - This makes the column a mandatory field when been entered on the data form.

e. Searchable check box - Columns marked a searchable will be used as a possible field when searching for an entity in various data browsing windows e.g. the *View Social Tenure Relationship window.*

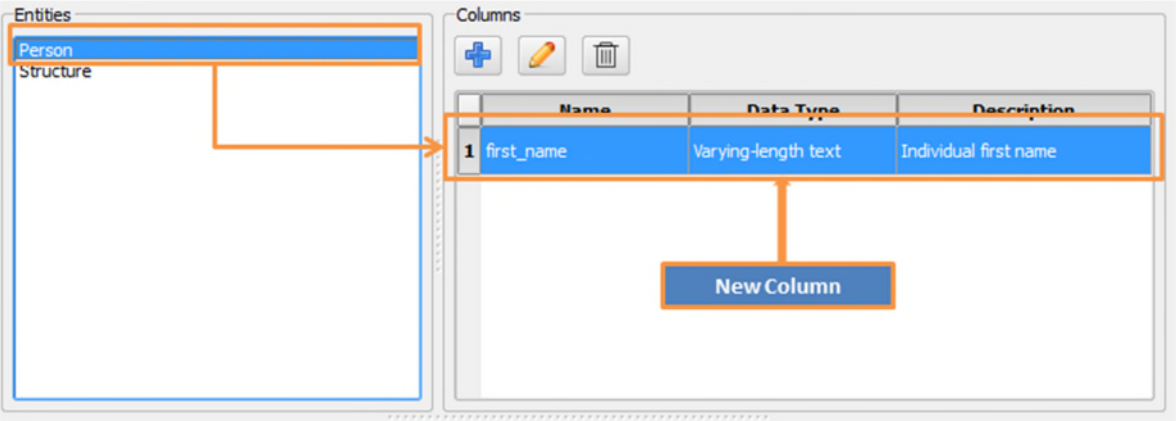


f. Unique check box - When enabled, this box guarantees uniqueness for a record in an entity. No two records in an entity with the same values for the column are allowed.

g. Column Index check box - This allows an index to be created in the database based on the column. Indexing guarantees speedy results when searching for a record in a database.

11. Once you've entered the required fields for the column, click the *OK* button to save the column and close the *Column Editor* window. However, if you wish to abort your column creation process, click the *Cancel* button.

12. If you saved your column successfully it should now appear on your *Columns Viewer* section.



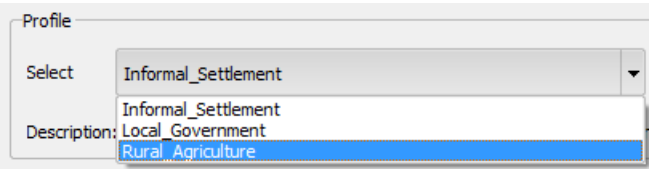
Editing Columns

To edit a column, follow the steps below.

1. Click the *Configuration Wizard* icon on the *STDM Plugin Menu* to open the *Configuration Wizard* window.

2. When the *Configuration Wizard* window opens, click the *Next* button on the wizard *Navigation Bar* (**once**) to access the *Profile Page*.

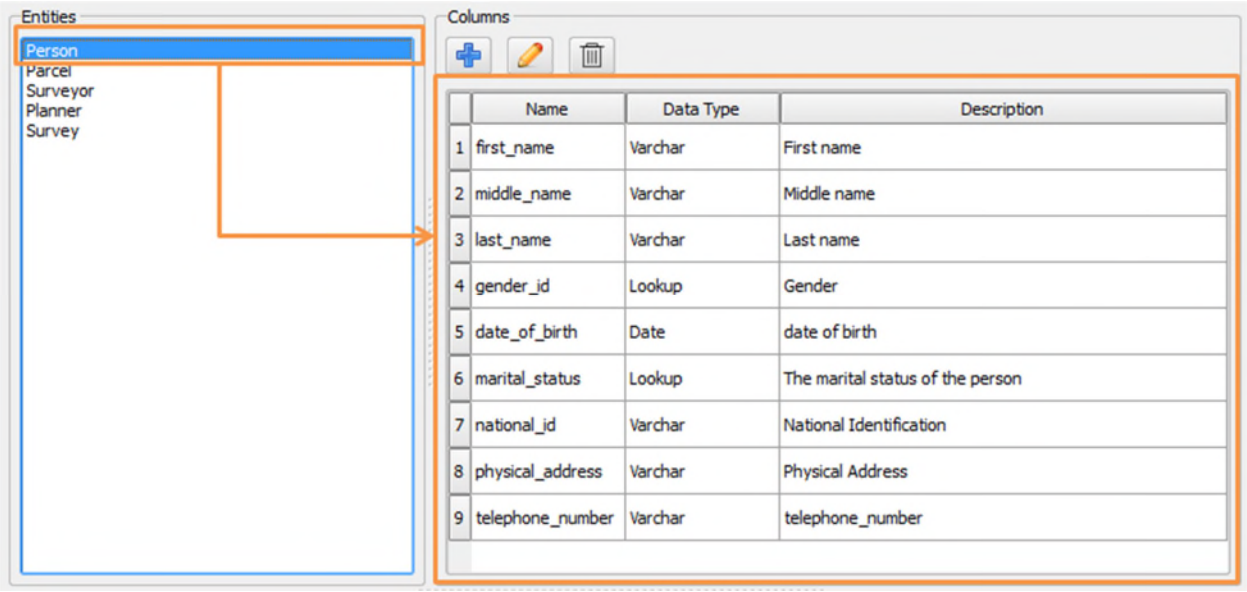
3. From *Profile Select* drop down, choose a *Profile* you want to customize.



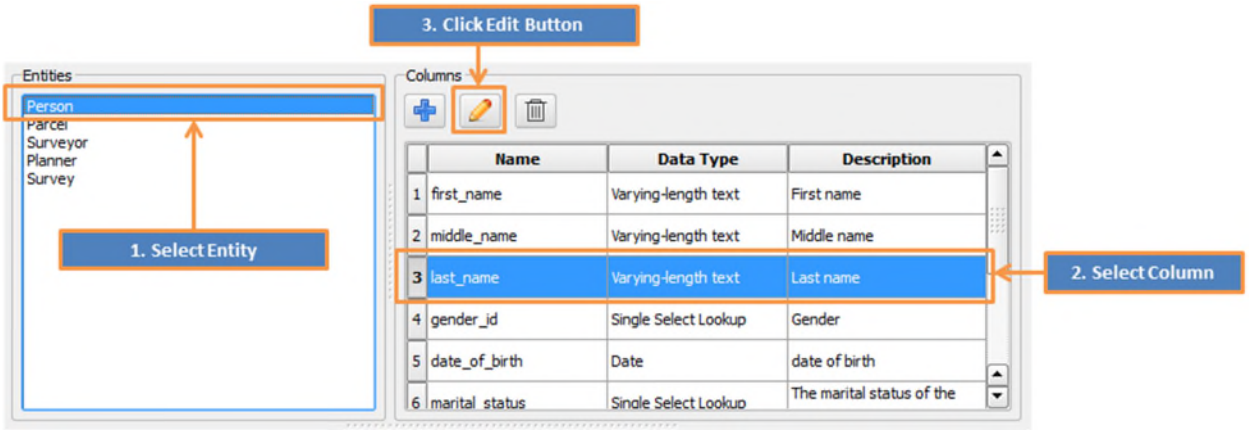
4. All the related entities, lookups and lookup values for the selected profile should load onto various pages of the wizard.

5. Click *Next* button on the *Navigation Bar* to access the *Entity Customisation* page.

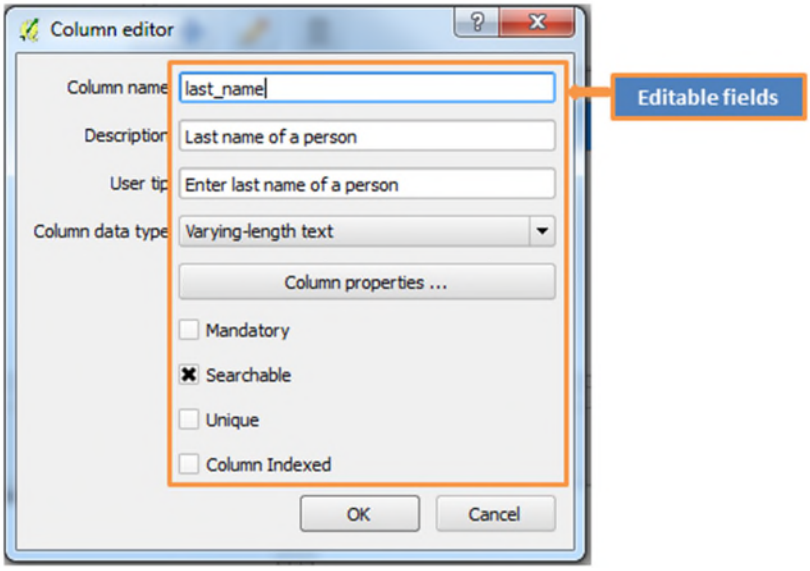
6. On the **Entities Viewer**, click to select an entity to customize. The selected entity should now have a highlighted color indicating selection. On the **Columns Viewer** a list of all columns that belong to this entity will be displayed.



7. On the *Columns Viewer*, click to select the column you wish to edit, then click the **Edit** button.



8. The *Column Editor* should open with fields pre-populated with details of the selected column.



9. Make you relevant changes.

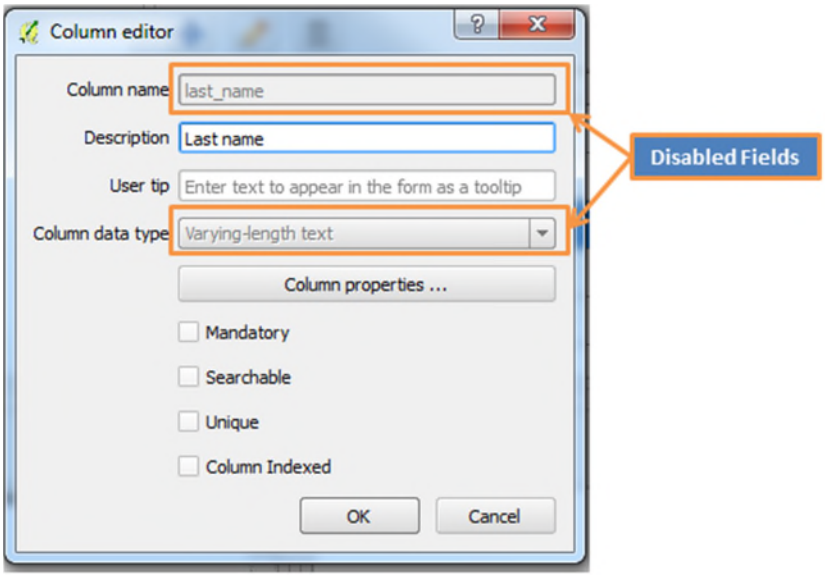
10. Once you are done, click the *OK* button to save the edits and close the **Column Editor**. To abort the editing process and close the **Column editor**, click the **Cancel** button.

11. If the editing and saving was successful, new changes should now reflect on the **Columns Viewer** on the *Entity Customization Page* of the wizard.

Important Notes:

Note 1: If a column you intend to edit has already been saved in the database from a previous configuration process, you will NOT be able to edit the following fields;

- Column name
- Column data type
- Column properties



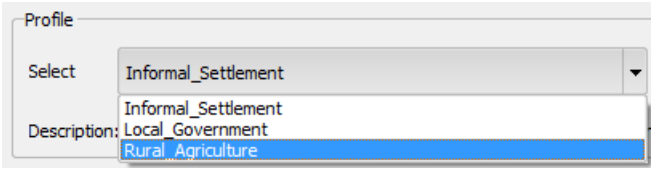
Deleting Columns

To remove a column from an entity, follow the steps below.

1. Click the *Configuration Wizard* icon on the *STDM Plugin Menu* to open the *Configuration Wizard* window.

2. When the *Configuration Wizard* window opens, click the *Next* button on the wizard *Navigation Bar* (**once**) to access the *Profile Page*.

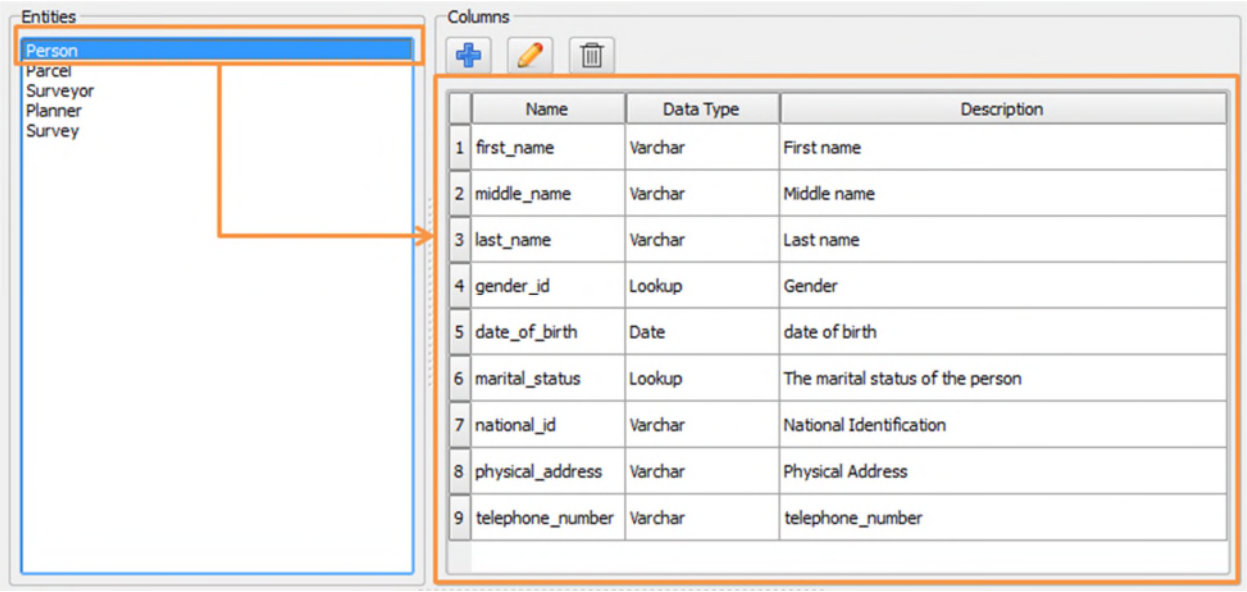
3. From *Profile Select* drop down, choose a *Profile* you want to customize.



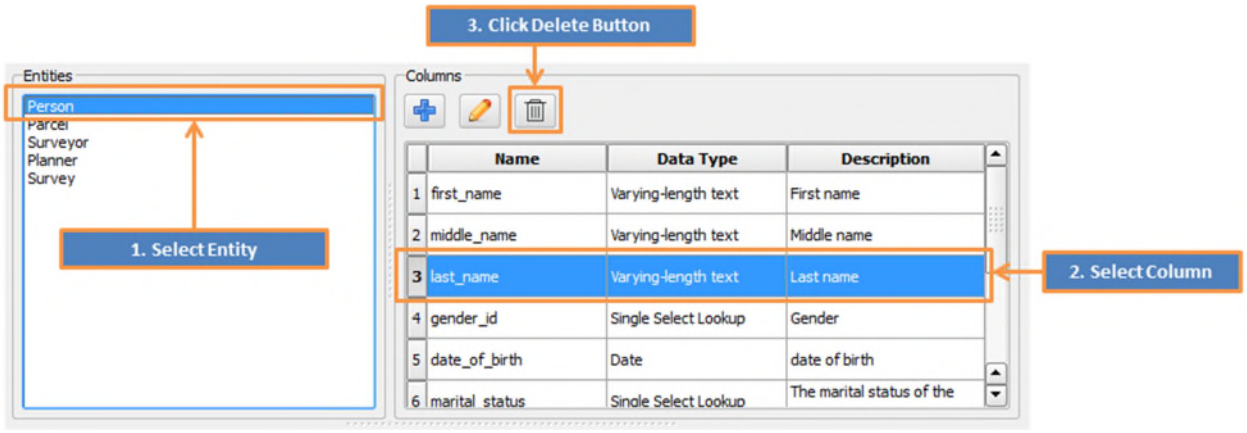
4. All the related entities, lookups and lookup values for the selected profile should load onto various pages of the wizard.

5. Click *Next* button on the *Navigation Bar* to access the *Entity Customization* page.

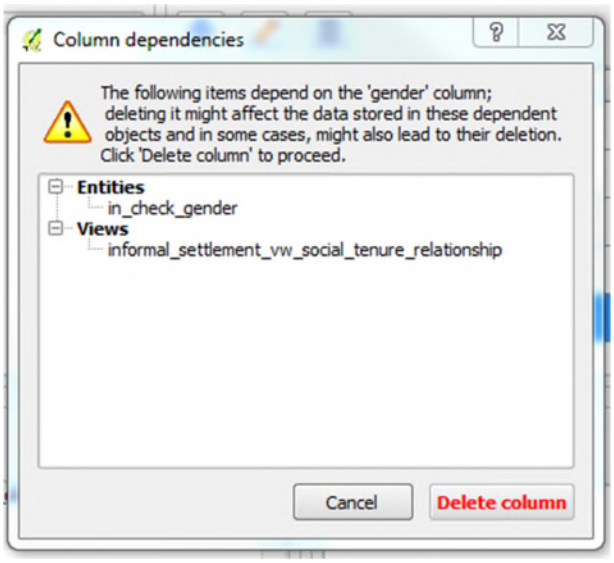
6. On the *Entities Viewer*, click to select an entity to remove a column from. The selected entity should now have a highlighted color indicating selection. On the *Columns Viewer* a list of all columns that belong to this entity will be displayed.



7. On the *Columns Viewer*, click to select the column you wish to edit, then click the *Delete* button.



8. If a column has dependencies, a Column Dependencies warning window will open. This window shows you which entities and database views depend on the column you want to delete. This window will warn you of the implications of deleting the column. Read carefully before proceeding.



9. If you wish to remove the column from the entity completely and close the *Column Dependency* dialog, click the *Delete column* button. However, to abort the delete process, click the *Cancel* button.

10. If the delete is successful, the column should be removed from the *Columns Viewer* on the wizard.

Important Notes

Note 1: Column Dependency dialog is not shown if the column you are deleting is not used by other entities or views.

Note 2: Once you delete a column, data stored in the column will be lost permanently.

Re-ordering Columns

In a newly created profile, it is possible to re-arrange the order on which they appear on the **Columns Viewer**.

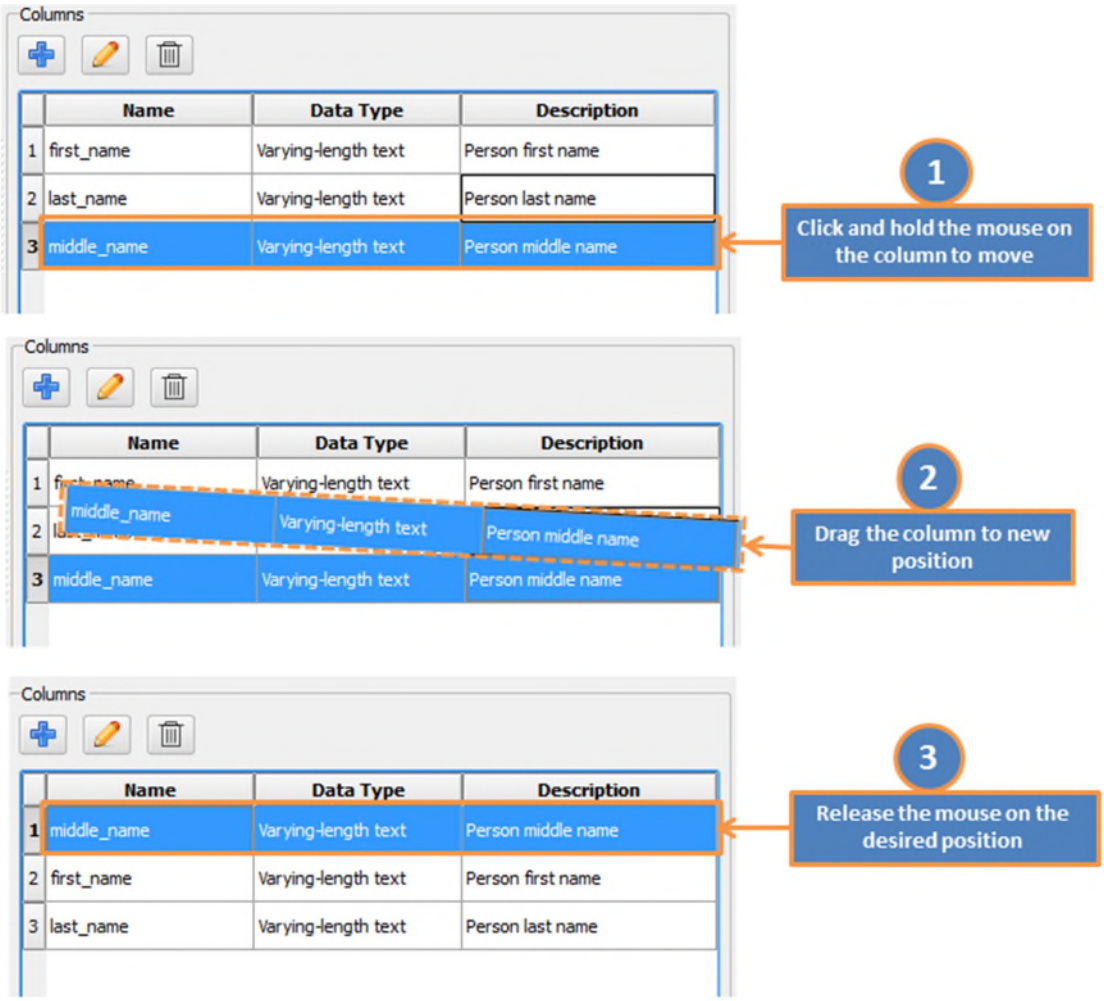
To re-order the columns on the *Columns Viewer*, follow the steps below.

1. Create columns on an *Entity* as illustrated in Creating Columns section.

2. On the *Columns Viewer* click and hold the mouse (left mouse button) on the column you wish to move.

3. Now drag the column to a different position on the list of columns.

4. Release the mouse on the new position.

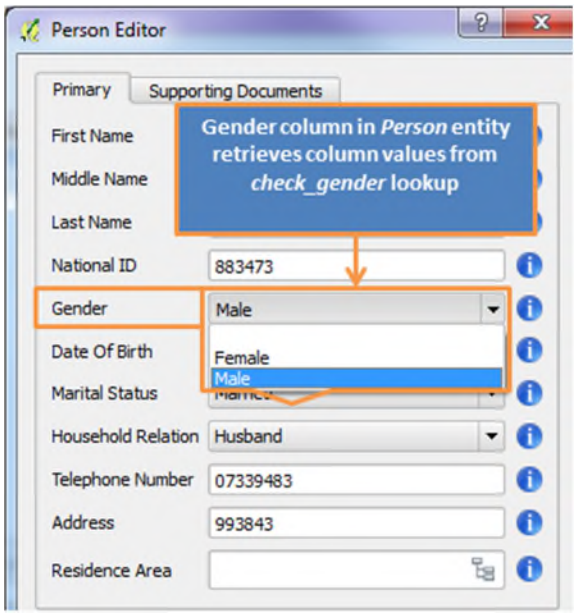


5. Your column should now be in a new position.

Configuring Lookups

Creating Lookups

Lookups are special entities used to store values that rarely change. The values from the lookups are used by other entities with columns of type Single Select Lookup and Multiple Select to quickly retrieve values when entering data. For example, when creating a person entity, the column gender which has **Single Select Lookup** as the data type, will have a drop down widget that retrieves values from a lookup entity *check_gender.*



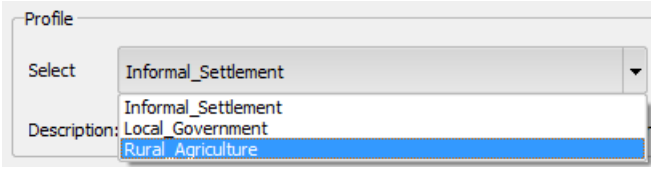
Each lookup entity **must** have a list of values - **lookup values**, the following section shows you how to create a lookup and related lookup values.

To create a lookup entity, follow the steps below.

1. Click the *Configuration Wizard* icon on the *STDM Plugin Menu* to open the *Configuration Wizard* window.

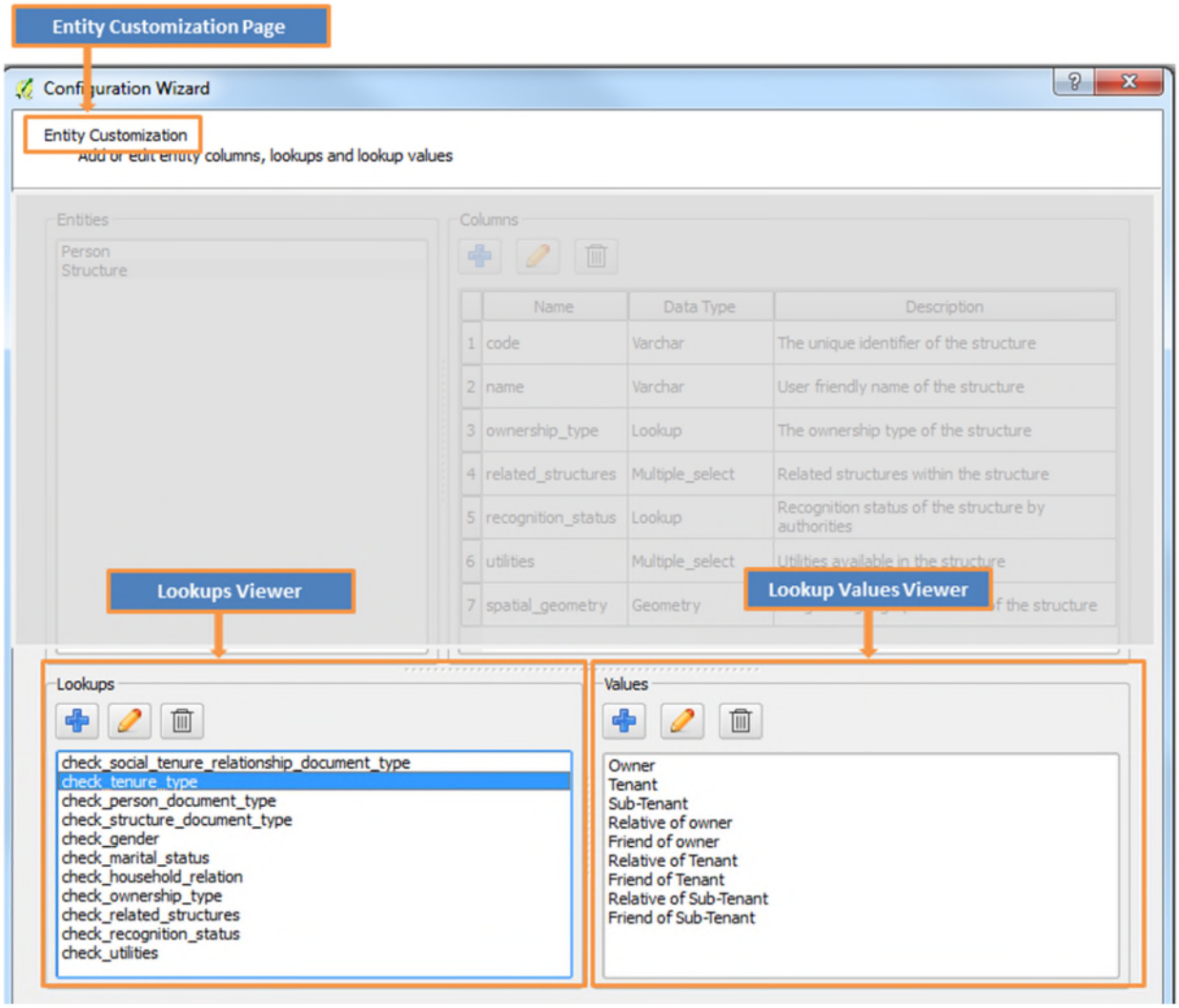
2. When the *Configuration Wizard* window opens, click the *Next* button on the wizard *Navigation Bar* (**once**) to access the *Profile Page*.

3. From *Profile Select* drop down, choose a *Profile* you want to customize.

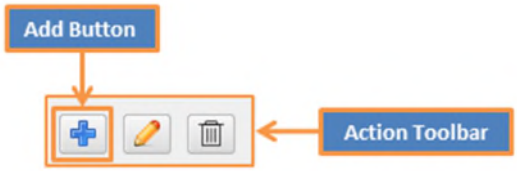


4. All the related entities, lookups and lookup values for the selected profile should load onto various pages of the wizard.

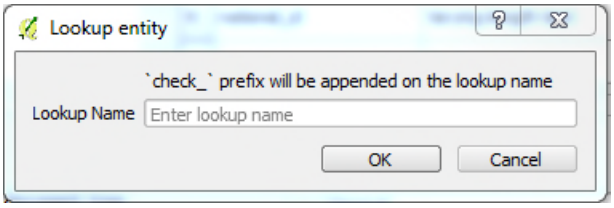
5. Click *Next* button on the *Navigation Bar* to access the *Entity Customisation* page.



6. On the *Lookups Viewer* section, click the *Add* button on the *Action Toolbar*.



7. A *Lookup Entity* window will open with a single field to enter a lookup name.



8. Enter the lookup name on the field provided.

Things to remember when entering a lookup name;

- Lookup names are all in lower case letters.
- Spaces within a lookup name are not allowed. All spaces will automatically be converted to an underscore (_) character. For example, 'marital status' will be *'marital_status'*
- A prefix *'check_'* is appended on every lookup name. For example, if you create a lookup with name *'gender'*, the name will be saved as *'check_gender'.*

9. To save your lookup and close the *Lookup Editor*, click the *OK* button. To abort the creation process and close the Lookup Editor, click the *Cancel* button.

10. If creating and saving of lookup was successful, the new lookup will show on the *Lookups Viewer.*

11. Now you can proceed to *Creating Values* section to add values to this lookup.

Important Notes

Note 1: When you create a new profile, two lookup entities are created automatically, these are;

1. *check_social_tenure_relationship_document_type*

2. *check_tenure_type*

Note 2: You cannot proceed to the next step of the wizard if a lookup you have created has no values.

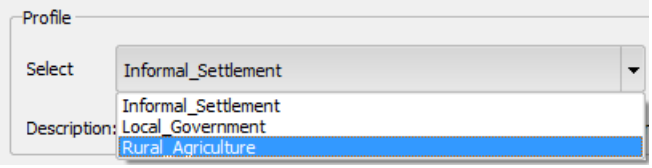
Editing Lookups

To edit the lookups, follow the steps below.

1. Click the *Configuration Wizard* icon on the *STDM Plugin Menu* to open the *Configuration Wizard* window.

2. When the *Configuration Wizard* window opens, click the *Next* button on the wizard *Navigation Bar* (**once**) to access the *Profile Page.*

3. From *Profile Select* drop down, choose a *Profile* you want to customize.

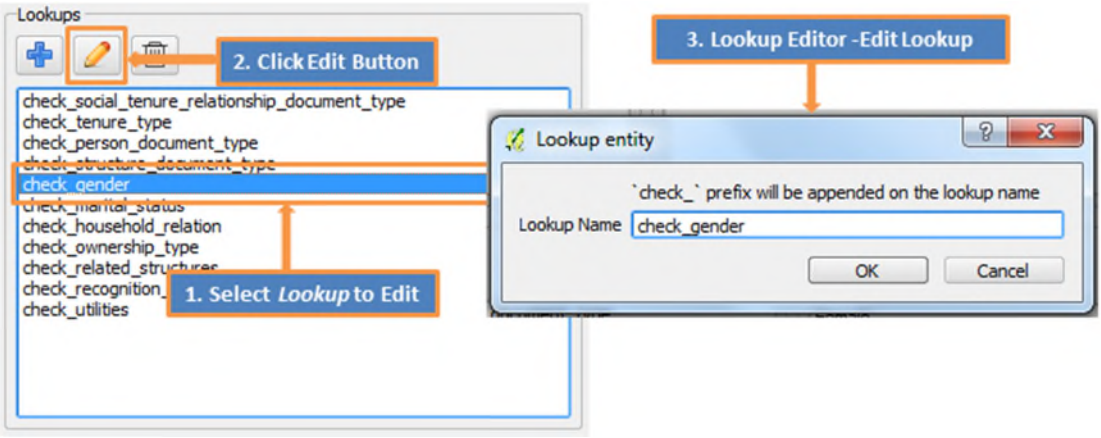


4. All the related entities, lookups and lookup values for the selected profile should load onto various pages of the wizard.

5. Click *Next* button on the *Navigation Bar* to access the *Entity Customisation* page.

6. On the *Lookups Viewer Section,* click to select a lookup you want to edit.

7. Once a lookup is selected, click the *Edit* button on the *Action Toolbar* of the *Lookups Viewer*.



8. *Lookup Editor* will open with the *Lookup Name* field pre-populated with the name of the selected lookup.

9. Edit the Lookup Name field.

10. To save your changes and close the *Lookup Editor,* click the *OK* button. To abort the edit action and close the editor, click the *Cancel* button.

11. If you saved your edits, changes should now reflect on the *Lookups Viewer*.

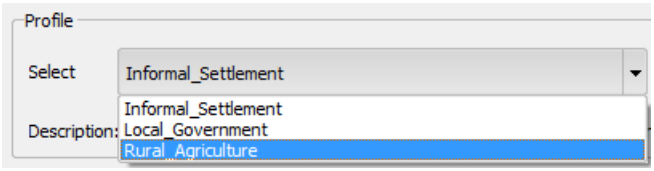
Deleting Lookups

To delete a lookup entity from a profile, follow the steps below.

1. Click the *Configuration Wizard* icon on the *STDM Plugin Menu* to open the *Configuration Wizard* window.

2. When the *Configuration Wizard* window opens, click the *Next* button on the wizard *Navigation Bar* (**once**) to access the *Profile* page.

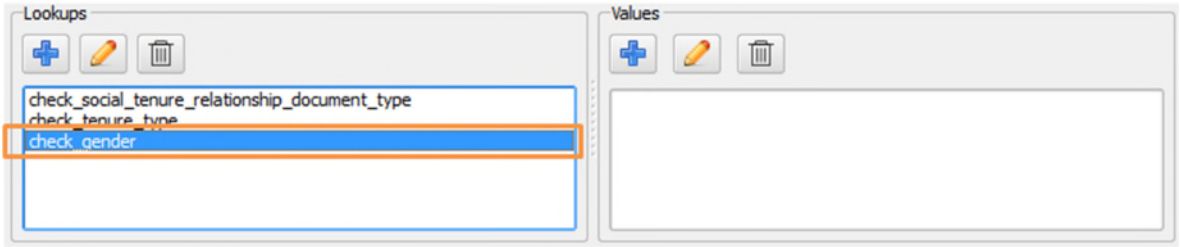
3. From *Profile Select* drop down, choose the *Profile* you want to customize.



4. All the related entities, lookups and lookup values for the selected profile should load on various pages of the wizard.

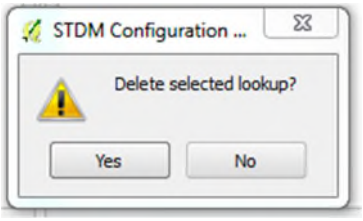
5. Click *Next* button on the *Navigation Bar* to access the *Entity Customisation* page.

6. On the *Lookups Viewer Section,* click to select a lookup you want to delete.



7. On the *Lookups Section*, click the *Delete* button on the *Action Toolbar*.

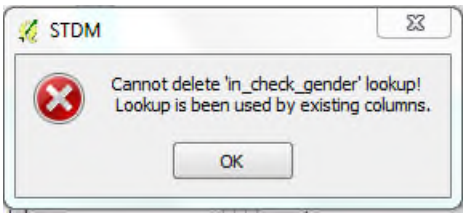
8. A warning window will popup to ask you to confirm the delete action.



9. If you click *Yes*, then the selected lookup will be deleted from the profile, however, if you click *No*, the warning window will close and nothing will happen.

Important Notes

Note 1: The system prohibits you from deleting a lookup that is been used by other entities, you will get an error message when you attempt to delete such a lookup.



Configuring Lookup Values

Creating Values

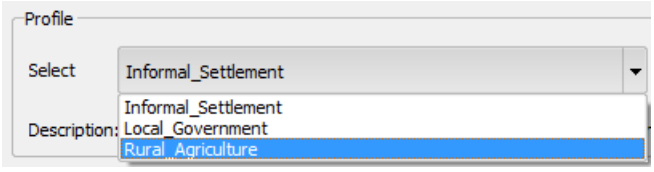
A lookup value represents the actual data that is stored in a lookup entity. For example, a lookup entity *check_gender*, values stored would be '*Female' and 'Male'.*

To create a lookup value, follow the steps below.

1. Click the *Configuration Wizard* icon on the *STDM Plugin Menu* to open the *Configuration Wizard* window.

2. When the *Configuration Wizard* window opens, click the *Next* button on the wizard *Navigation Bar* (**once**) to access the *Profile* page.

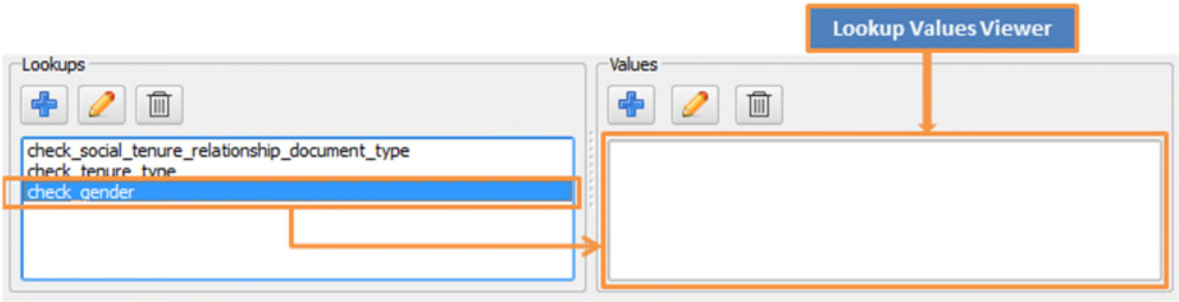
3. From *Profile Select* drop down, choose the *Profile* you want to customize.



4. All the related entities, lookups and lookup values for the selected profile should load on various pages of the wizard.

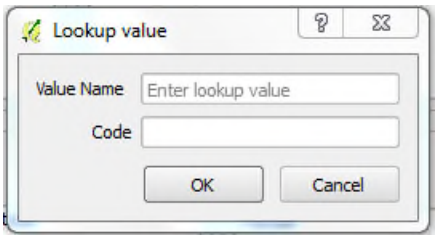
5. Click *Next* button on the *Navigation Bar* to access the *Entity Customisation* page.

6. On the *Lookups Viewer Section,* click to select a lookup you want to add values.



7. On the Values section, click the Add button on the Action Toolbar.

8. A Lookup Values Editor will open.



9. Enter your data on the following fields.

> **Value Name** - A mandatory field for value name, this field must be provided before saving the value. Example of a *Value Name* for a lookup *check_gender* would be '*Female'*
>
> **Code** - A short character string that can be used in place of a value name. For example, for value '*Female'* the code would be *'F'*, value '*Male'* code would be *'M'.*

10. When you are done entering the data, click OK button to save and close the editor window. But if you wish to abort the creation process, click the Cancel button.

11. If you saved your new value, it should now appear on the Lookup Values Viewer section.

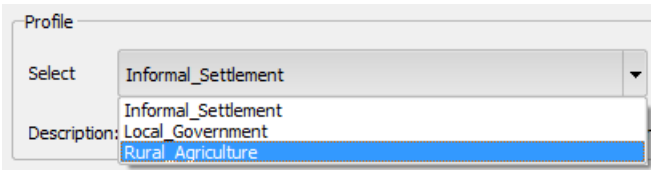
Editing Values

To edit a lookup value, follow the steps below.

1. Click the *Configuration Wizard* icon on the *STDM Plugin Menu* to open the *Configuration Wizard* window.

2. When the *Configuration Wizard* window opens, click the *Next* button on the wizard *Navigation Bar* (**once**) to access the *Profile* page.

3. From *Profile Select* drop down, choose the *Profile* you want to customize.



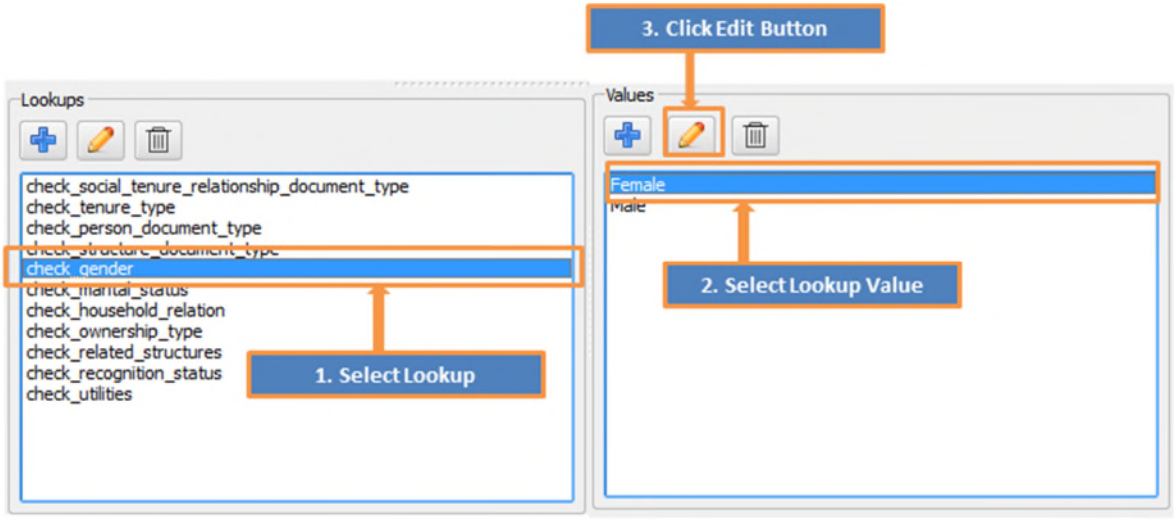
4. All the related entities, lookups and lookup values for the selected profile should load on various pages of the wizard.

5. Click *Next* button on the *Navigation Bar* to access the *Entity Customization* page.

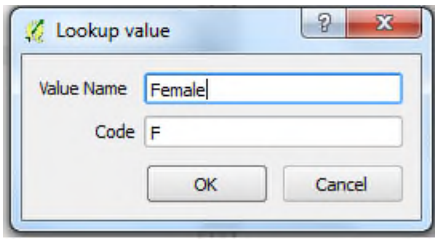
6. On the *Lookups Viewer Section,* click to select a lookup. If there are values already available for selected lookup, they will be displayed on the *Lookup Values Viewer*.

7. Select the lookup value you want to edit.

8. On the *Action Tool bar* of the *Lookup Values Viewer* section, click the *Edit* button.



9. The *Lookup Value Editor* will open with fields pre-populated with values from the selected lookup value.



10. Make your changes.

11. Once done, click *OK* button to save your edits and close the *Lookup Value Editor*. However, if you wish to abort the edit process and close the editor, click the *Cancel* button.

12. If you edited the *Value Name*, the changes should now reflect on the *Lookup Values Viewer*.

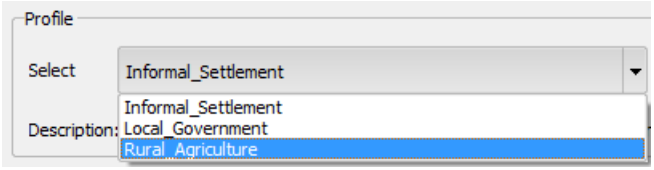
Deleting Values

To remove a lookup value from a lookup entity, follow the steps below.

1. Click the *Configuration Wizard* icon on the *STDM Plugin Menu* to open the *Configuration Wizard* window.

2. When the *Configuration Wizard* window opens, click the *Next* button on the wizard *Navigation Bar* (**once**) to access the *Profile* page.

3. From *Profile Select* drop down, choose the *Profile* you want to customize.



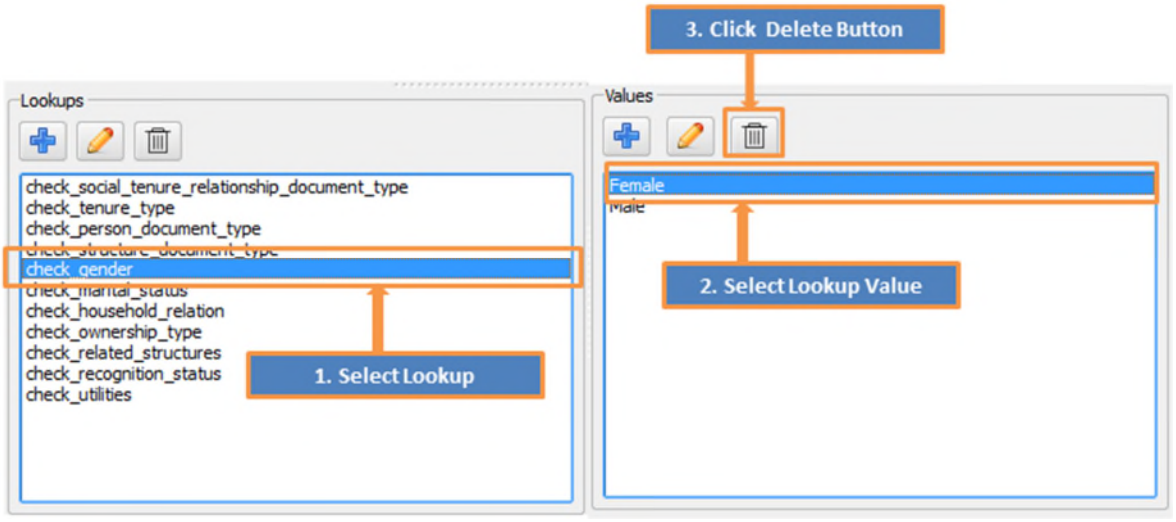
4. All the related entities, lookups and lookup values for the selected profile should load on various pages of the wizard.

5. Click *Next* button on the *Navigation Bar* to access the *Entity Customization* page.

6. On the *Lookups Viewer Section,* click to select a lookup. If there are lookup values already available for selected lookup, they will be displayed on the *Lookup Values Viewer*.

7. Select the lookup value you want to edit.

8. On the *Action Toolbar* of the *Lookup Values* Viewer section, click the *Delete* button.



9. The lookup value will immediately be removed from the list of values.

Re-odering Values

After creating lookup values for the first time on a *Lookup Entity*, it is possible to re-arrange the order on which they appear on the *Lookup Values Viewer*.

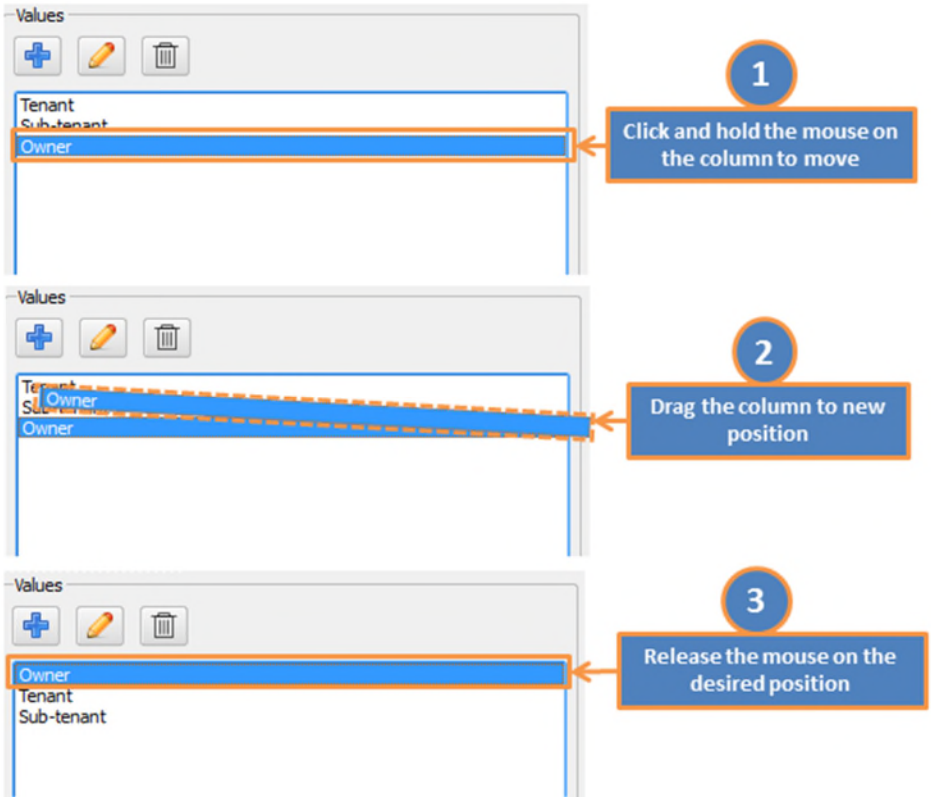
To re-order the *Values* on the *Lookup Values Viewer*, follow the steps below.

1. Create lookup values on a *Lookup* as illustrated in Creating Values section.

2. On the *Lookup Values Viewer* click and hold the mouse (left mouse button) on the value you wish to move.

3. Now drag the value to a different position on the list of values.

4. Release the mouse on the new position.



5. Your value should now be in a new position.

Defining Social Tenure Relationship Entities

Selecting Party and Spatial Unit Entity

Party entity in a social tenure relationship represents a person or organization that plays a role in rights transaction. An organization can be a company, municipality, state, tribe, farmer cooperation or even a community.

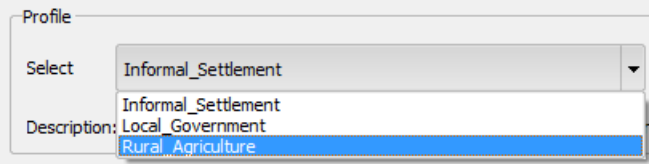
Spatial Unit entity in a social tenure relationship represents a single area (or multiple areas) of land and/or water. In STDM, it is a prerequisite for an entity representing a spatial unit to have at least one geometry column.

To select *Party* and *Spatial Unit* entities for *Social Tenure Relationship*, follow the steps below.

1. Click the *Configuration Wizard* icon on the *STDM Plugin Menu* to open the *Configuration Wizard* window.

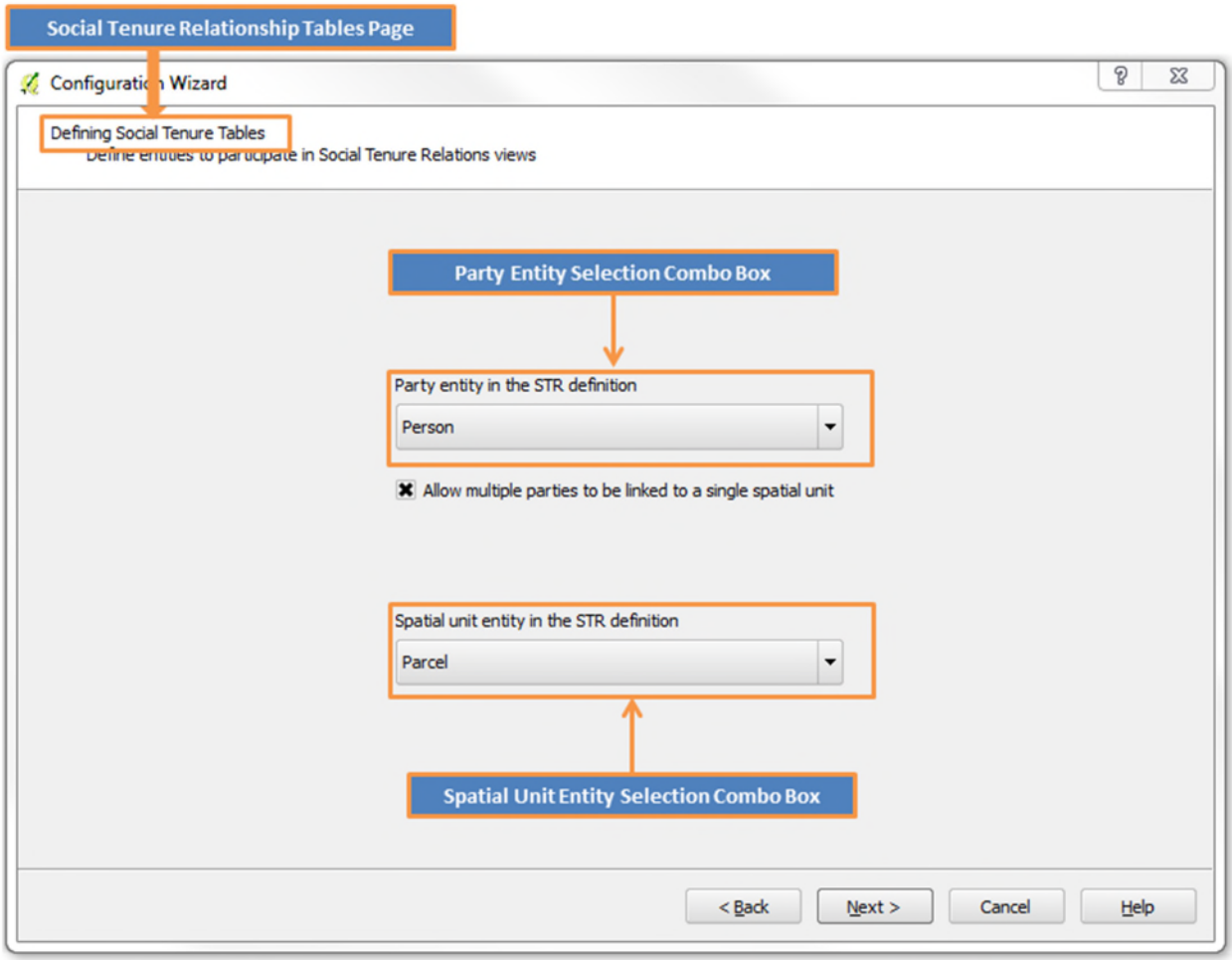
2. When the *Configuration Wizard* window opens, click the *Next* button on the wizard *Navigation Bar* (**once**) to access the *Profile* page.

3. From *Profile Select* drop down, choose the *Profile* you want to customize.



4. All the related *Entities*, *Lookups*, *Lookup values* and *Social Tenure Relationship* tables for the selected profile should load on various pages of the wizard.

5. Click *Next* button on the *Navigation Bar* (**twice**) to access the *Defining Social Tenure Relationship Tables* page.



6. To define the *Party* entity, click the *Party Entity Combo Box* to choose from the list of entities.

7. To define the *Spatial Unit* entity, click the *Spatial Unit Entity Combo Box* to choose from the drop down list. The entity you select for this option **MUST** have a *Geometry* column defined for it.

8. Once you make your selections, click the *Next* button to proceed to the last page of the wizard.

Important Notes.

Note 1: *Party* and *Spatial Unit* entities should not be the same.

Note 2: The *Spatial Unit* entity **MUST** at least have one Geometry column defined.

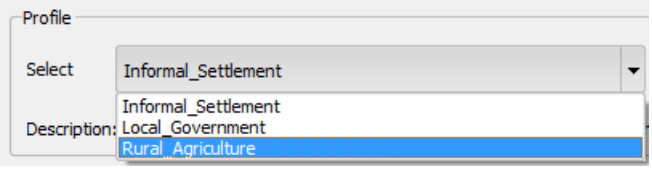
Setting One or More Parties per Spatial Unit

Ideally Social Tenure Relationship is defined by two entities - Party entity and a Spatial Unit entity. To allow multiple parties to share a single spatial unit, for example, different persons sharing land rights to a single plot, follow the steps below.

1. Click the *Configuration Wizard* icon on the *STDM Plugin Menu* to open the *Configuration Wizard* window.

2. When the *Configuration Wizard* window opens, click the *Next* button on the wizard *Navigation Bar* (**once**) to access the *Profile* page.

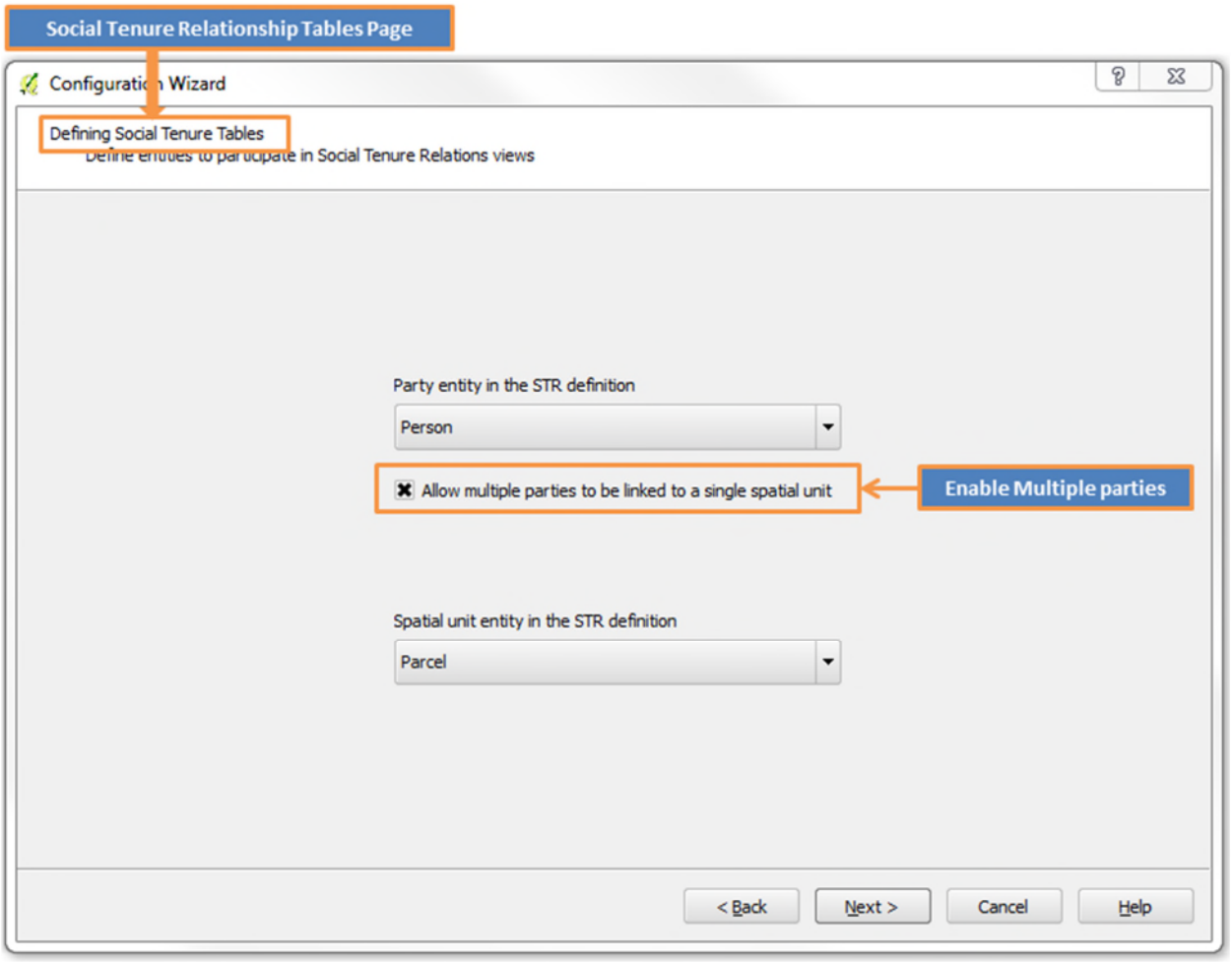
3. From *Profile Select* drop down, choose the *Profile* you want to customize.



4. All the related *Entities*, *Lookups*, *Lookup values* and *Social Tenure Relationship* tables for the selected profile should load on various pages of the wizard.

5. Click *Next* button on the *Navigation Bar* (**twice**) to access the *Defining Social Tenure Relationship Tables* page.

6. Click on the check box titled **Allow multiple parties to be linked to a single spatial unit** below the *Party Combo Box*



7. Once checked, click *Next* button to proceed.

Understanding Column Data Types

Data type is a categorization of data in an entity. An entity can store different types of data depending on the data type configured on each entity column. Integers, decimal values, strings, lookup values can be stored in one entity but separated by columns of different data types.

STDM supports twelve different data types for your columns i.e. Varying-length text, Unlimited-length text, Whole number, Decimal number, Date, Date and time, Geometry, Yes/No, Related Entity, Single Select Lookup, Administrative Spatial Unit, and Multiple Select Lookup.

Each of this data types are suited for different purpose and are configured differently. The following section will discuss in-depth about each of this data type and show you simple examples on their usage.

1. Varying-length text

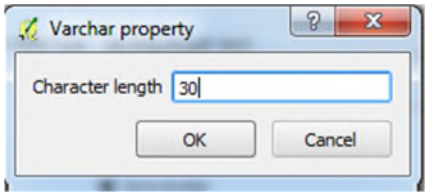
These are alpha-numeric character strings of length *n* (*n* should be less than 4000 characters). If you select this Varying-length text data type and you do not specify a length, STDM will set the column to have a default maximum of 30 characters.

Example:

Column Name	Value
first_name	*Alan*
middle_name	*Mathison*
last_name	*Turing*

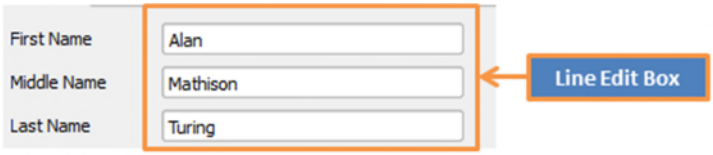
Properties to set:Understanding Column Data Types

Character length



Form widget:

Line Edit Box.



2. Unlimited-length text

This is an alpha-numeric character string of unlimited length.

Example:

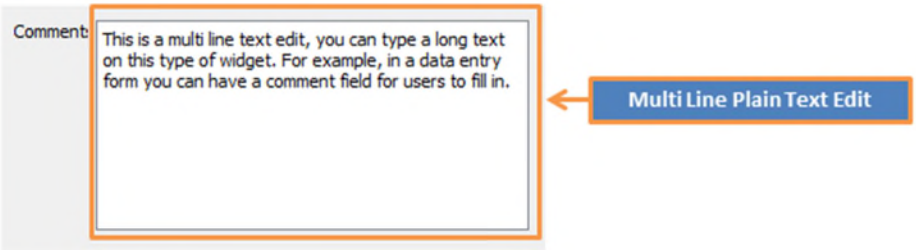
Column Name	Value
comment	*This is a multi line text edit, you can type a long text on ...*
notes	*Write some notes*

Properties to set:

None

Form widget:

Multiple Line Plain Text Edit Box.



3. Whole Number

This data type will store numeric characters only; no string characters are allowed on this field.

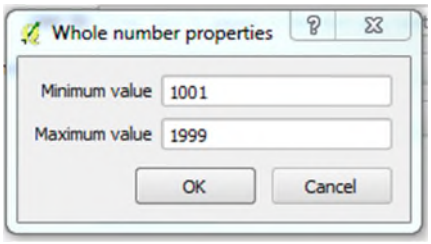
Example:

Column Name	Value
serial_number	*2521001*
plot_code	*10001*

Properties to set:

Minimum value

Maximum value



Form Widget:

Spin Edit Box.

4. Decimal Number

This data type will store real numbers with fixed precision and scale (decimal places).

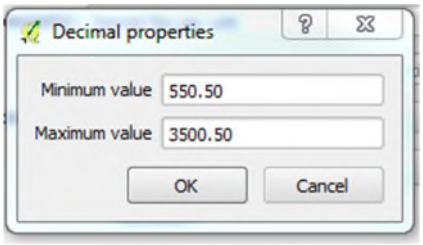
Example:

Column Name	Value

Area	*85.678*
value	*633.56*

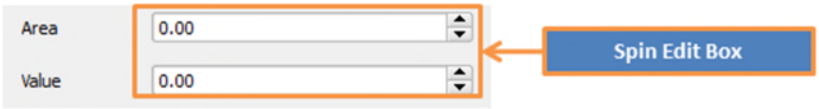
Properties to set:

- Minimum value
- Maximum value



Form widget:

Double Spin Box.



5. Date

Column with Date data type will store a date value.

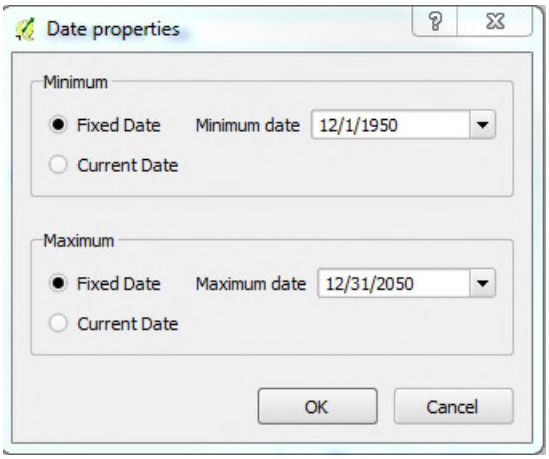
Example:

Column Name	Value
dob	*01/01/1980*
date_of_survey	*12/08/2015*

Properties to set:

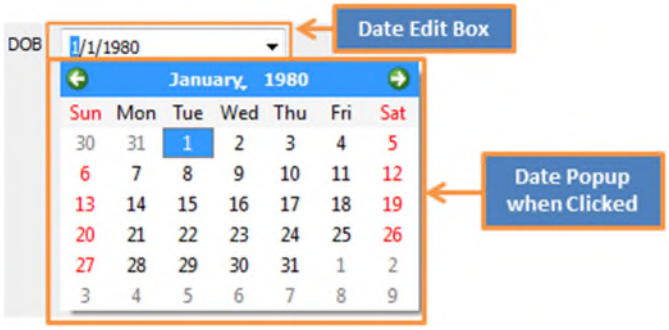
Minimum - Fixed or Current date; This puts a lower bound constraint for the minimum date value that can be entered on a column defined with a date data type.

Maximum - Fixed or Current date; This puts an upper bound constraint for the maximum date value that can be entered on a column defined with this data type.



Form widget:

Date Edit Box.



6. Date with time

Data type will be for columns that want to store date and time values.

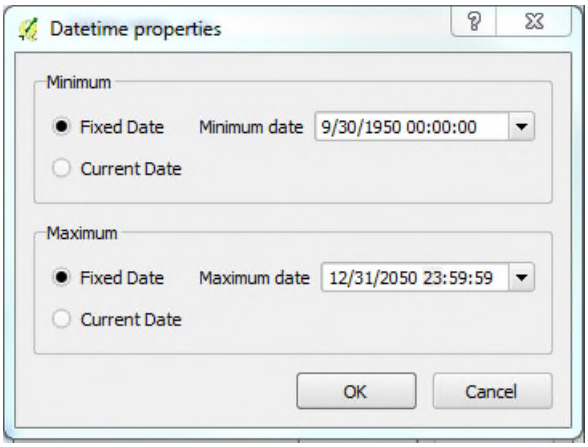
Example:

Column Name	Value
record_date	*01/01/1980 12:30:00*
log_time	*12/08/2015 01:14:05*

Properties to set:

Minimum - Fixed or Current date and time; This puts a lower bound constraint for the minimum date value that can be entered on a column defined with a date data type.

Maximum - Fixed or Current date and time; This puts an upper bound constraint for the maximum date value that can be entered on a column defined with this data type.



Form widget:

Date/Time Edit .

7. Geometry

This represents 2D vector types. Used for columns with spatial data

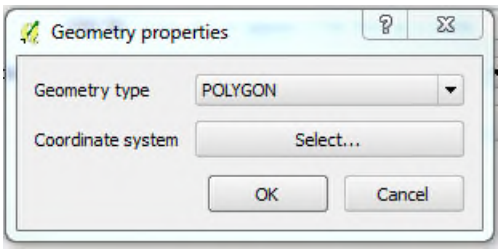
Example:

Column Name	**Value**
location	*geometry data*

Properties to Set:

a. Geometry Type - STDM ships with six different vector geometry types for selection, these are - *Point, Line, Polygon, Multipoint, Multiline and Multipolygon.*

b. Coordinate System - Choose this from QGIS Coordinate Reference System (CRS). It depends on the regional extent of the area you want to work in.



Form widget:

None.

8. Yes/No

This represents a boolean column which stores a single value from only two possible choices, e.g. *True or False, 1 or 0*

Example:

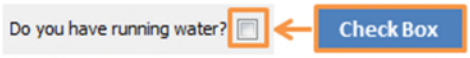
Column Name	Value
running water	*True*

Properties to set:

None

Form widget:

Check Box



9. Related Entity

The column with this data type will have a foreign key relationship with another column in a different Entity. Values in a column using Related Entity data type are picked from a Primary Entity, which acts as the master reference.

Example:

Column Name	Value
enumerator	*5*

respondent	*20*

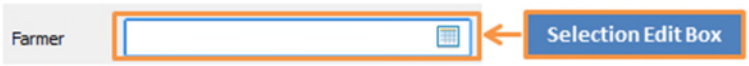
Properties to set:

Primary Entity - This is the Entity you want to create a relationship with. It is where you pull values from.

Primary Unique column - This is the column from the *Primary Entity.* We store this unique key in our *Related Entity* column to establish a link with the *Primary Entity.*

Display column - Columns to show on the selection form when fetching data from the *Primary Entity*.

Widget on form



10. Single Select Lookup

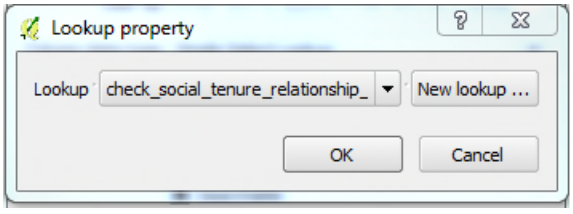
Data type allows you to pick single values from a *Lookup Entity* that is linked to the column.

Example:

Column Name	Value
marital_status	*Single*
gender	*Female*

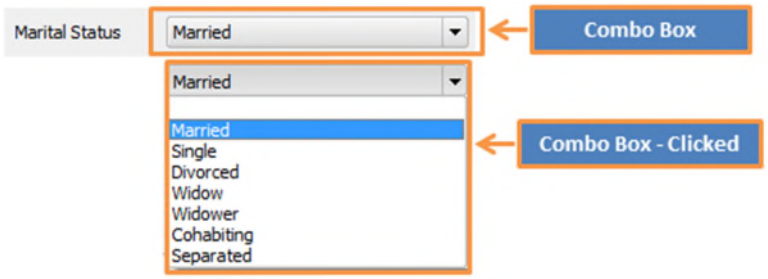
Properties to set:

Lookup - This is a Lookup Entity that is linked to a column. Data will be fetched from this lookup.



Widget on form:

Combo Box.



11. Administrative Spatial Unit

This data type creates a lookup column that fetches its data from the *Administrative Units Entity.* You are not required to setup the lookup relationship explicitly. Once you choose this data type for your column, STDM will automatically create a *Single Select Lookup* pointing to the *Administrative Units Entity* for you.

Properties to set:

None

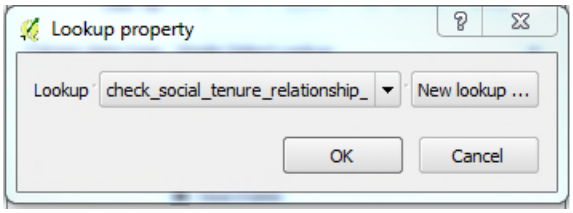
Widget on form:

12. Multiple Select Lookup

The data type allows you to create a multiple selection column. Multiple values for this column are fetched from the *Lookup Entity* that you setup on *Column Property* window.

Properties to set:

Lookup - This is the Lookup Entity used by the column to fetch multiple values.



Widget on form

List view with check Box.

Save Configuration to Database

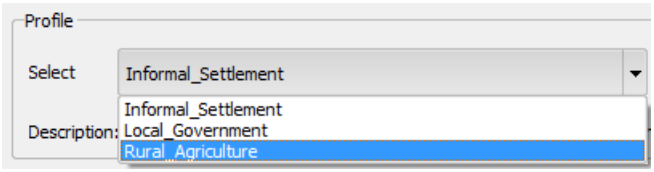
For all your profile customisation to be stored permanently they must be saved in the database. This process involves translating all profile Entities and Lookups that are created on the configuration wizard into physical database tables and database views in the STDM database.

To save your configuration changes to the database, follow the steps below.

1. Click the *Configuration Wizard* icon on the *STDM Plugin Menu* to open the *Configuration Wizard* window.

2. When the *Configuration Wizard* window opens, click the *Next* button on the wizard *Navigation Bar* (**once**) to access the *Profile* page.

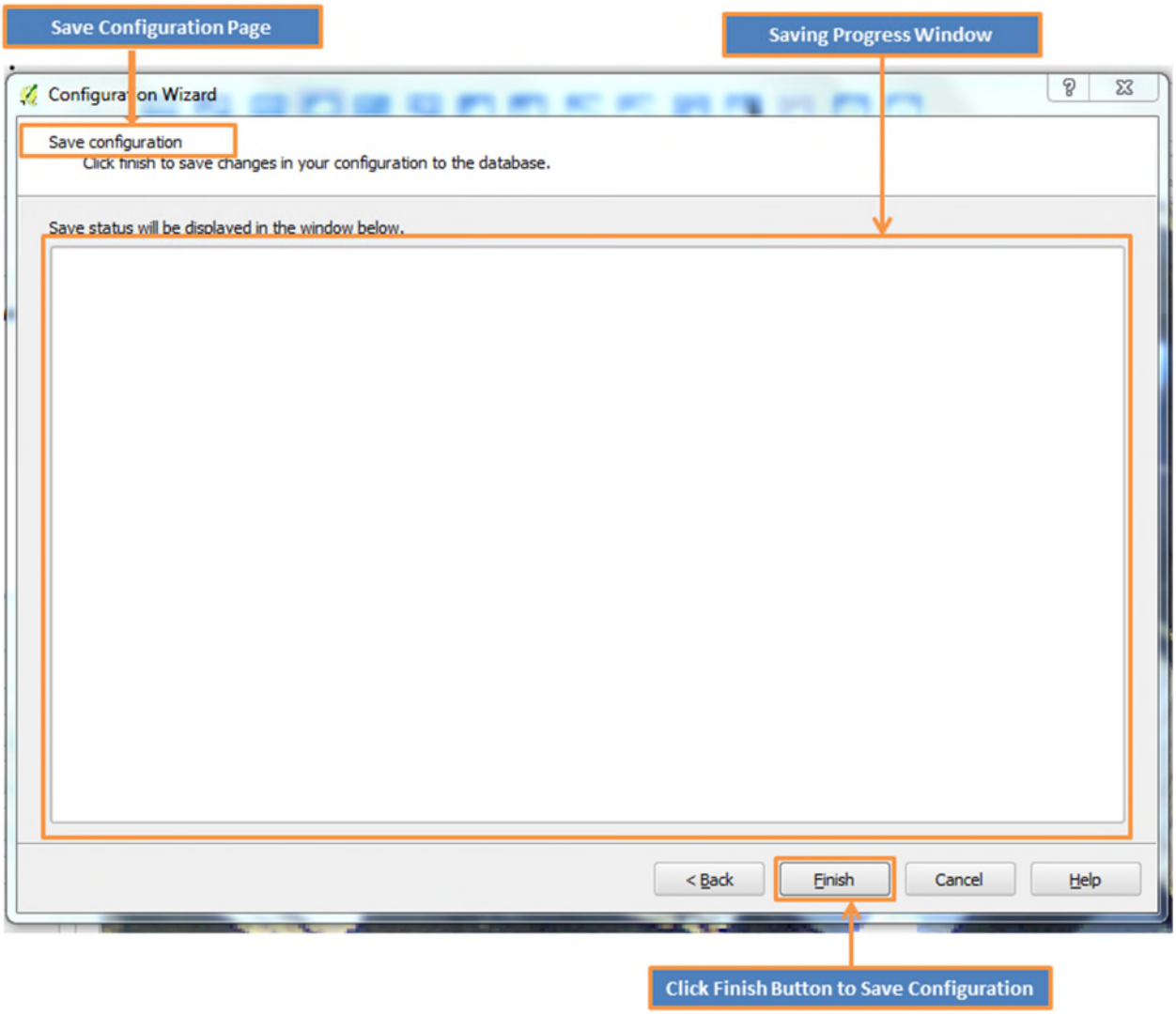
3. From *Profile Select* drop down, choose the *Profile* you want to customize.



4. All the related *Entities*, *Lookups*, *Lookup values* and *Social Tenure Relationship* tables for the selected profile should load on various pages of the wizard.

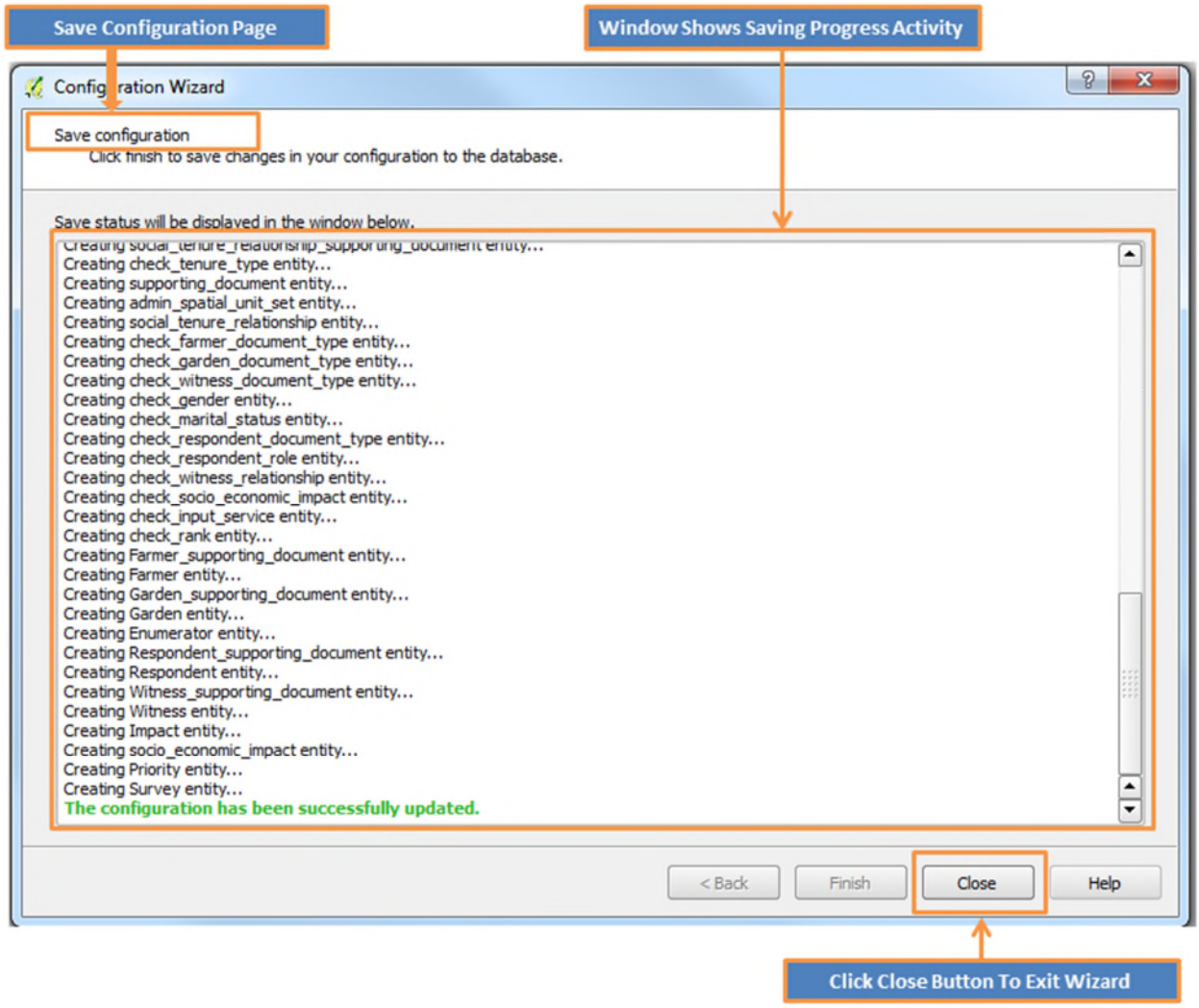
5. Perform any necessary customisation.

6. Click *Next* button on the *Navigation Bar* until you get to the *Save Configuration Page*.



7. To save your configuration, click the **Finish** button.

8. Saving progress activity will show on the *Saving Progress Window.*

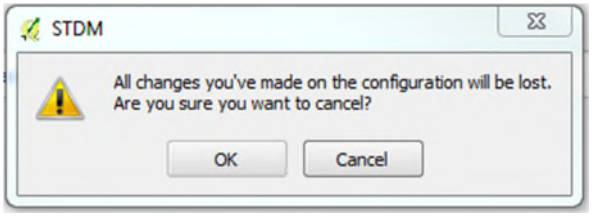


9. If saving is successful, click the *Close* button to exit the *Configuration Wizard window.*

Important Notes

Note 1: An error message will be shown in **red** font in the *Progress Activity* window if the Configuration Wizard encounters an error during the saving process.

Note 2: To prevent you from accidently losing your work (if you had done any changes on any profile), a warning message will popup when you click the *Cancel* button on the Navigation Bar of the *Configuration Wizard*.



Managing Entity Data

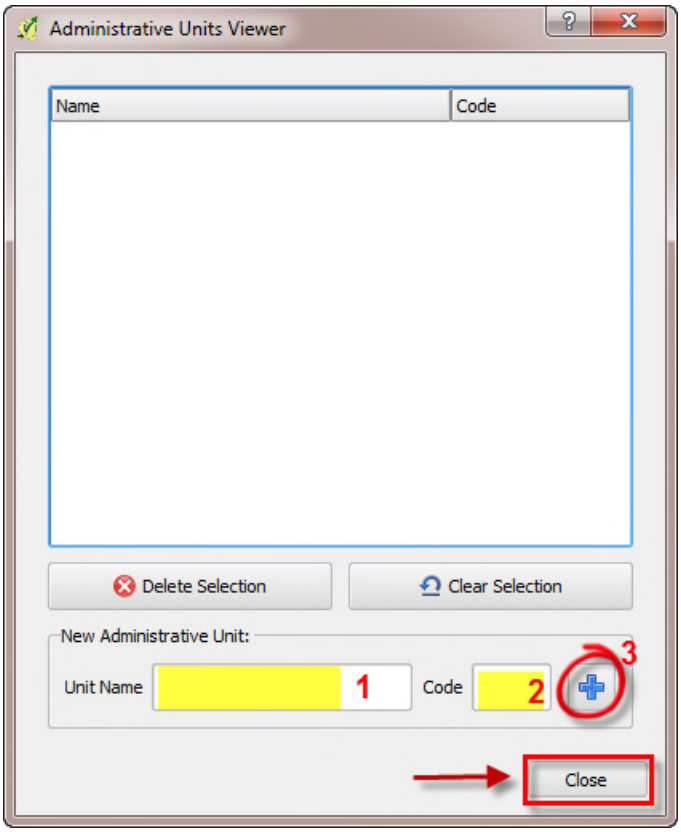
At the heart of STDM lies the flexibility to manage Tenure Data such as administrative units, entities, spatial data, and social tenure relationships. The following sub topics guide you on how to manage tenure data that leads to a successful implementation of a flexible Land Information System powered by STDM.

Managing administrative unit

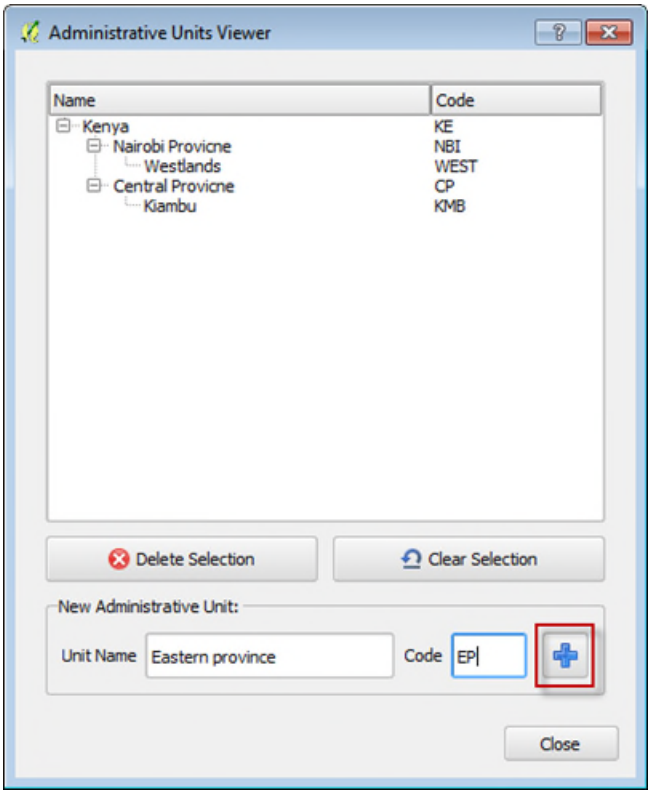
Administrative units are set up on a hierarchical/cascade structure. For example, from country to province, then district, division and location. This could also be explained as a form of a parent unit to a child unit relationship.

1. To access the administrative unit management, click on its  button on the tool bar shown in a red box below.

The administrative units viewer displays to enable adding new administrative units



A sample of Administrative units prepared is as below



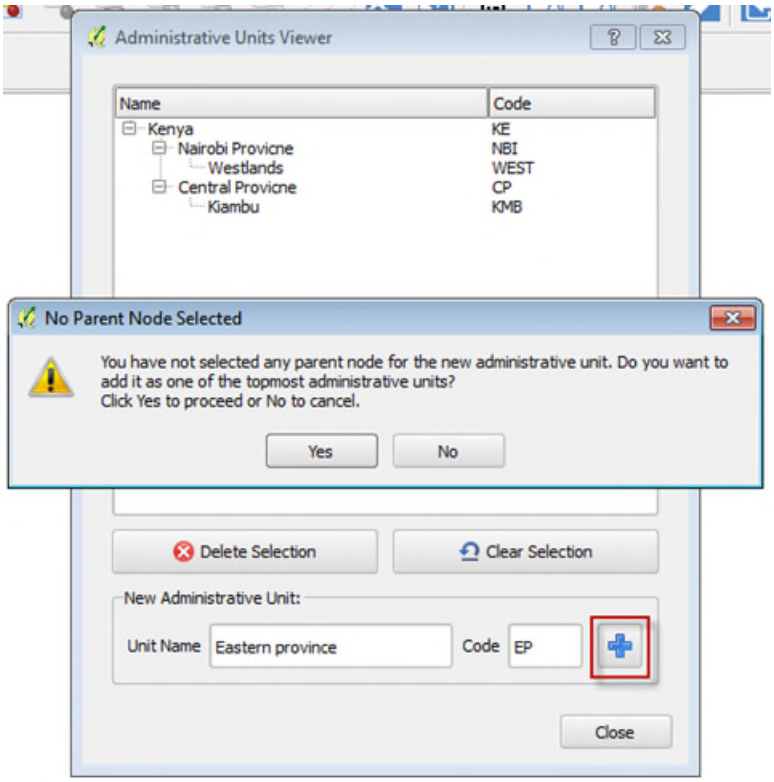
2. To set up a new administrative unit, type down its name and on the unit name field and its code on the code field.

The system sets a new unit as a parent unit if no existing unit is selected during a new unit creation.

If an already created unit is selected during creation of a new unit, the new unit will be the child unit and will appear below the selected unit.

3. If user intends to create a new parent unit when an already created unit is selected on the cascading view, click on the **'Clear Selection**, button on the management wizard to reset selection.

4. Next, click on the plus sign shown in a red box below to enter the new unit name and code.



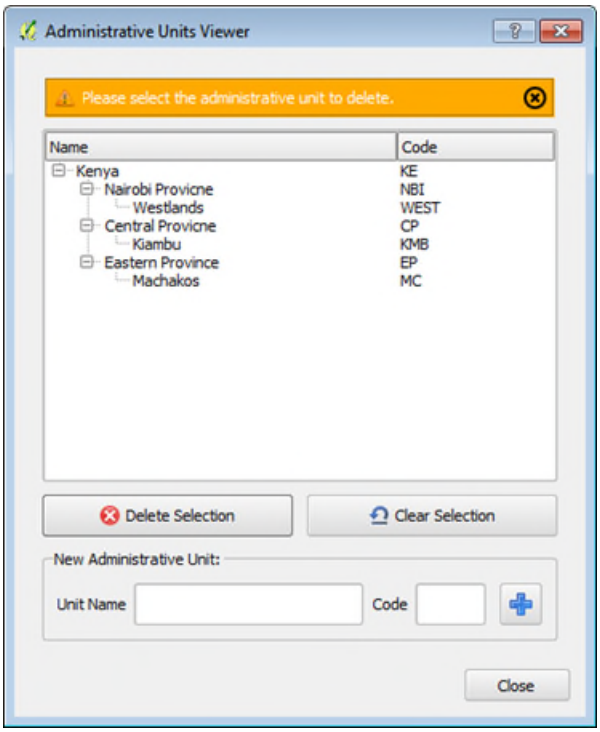
*An alert message appears showing that the current unit will be a parent unit. To proceed, click **Yes**.*

Deleting an Administrative Unit

The administrative units viewer also has the option of deleting a unit.

1. To do this select on an intended unit on the unit cascade and click on **delete** selection.

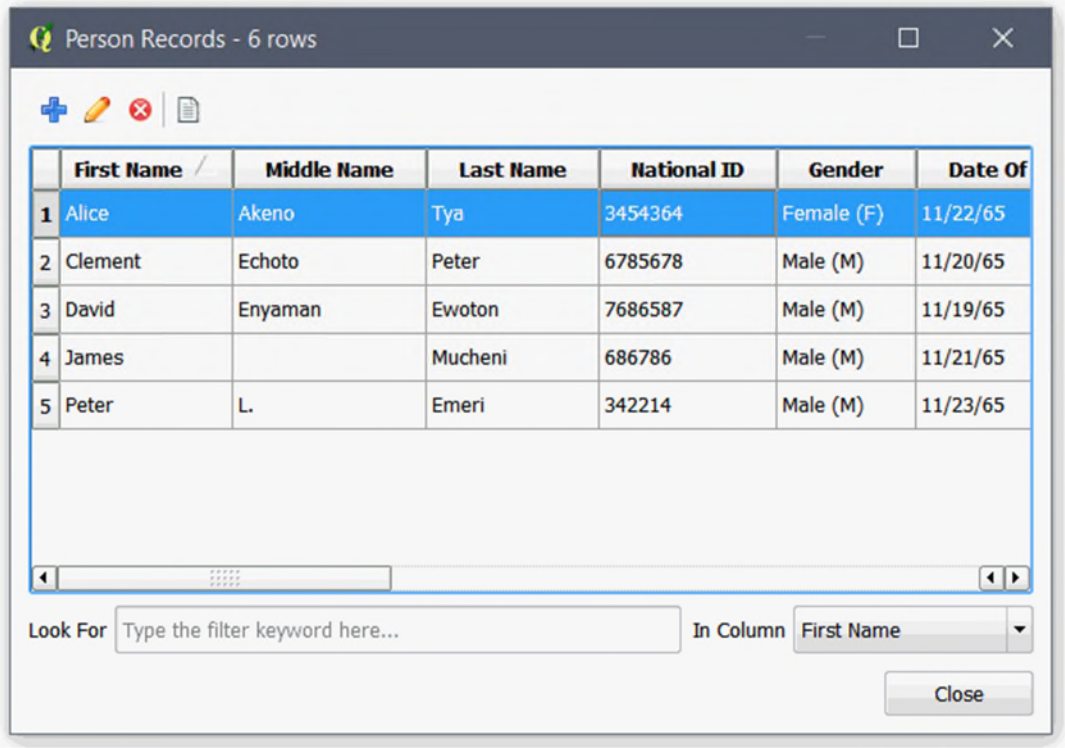
If the selected unit is a parent unit, the delete action will erase the unit and its children unit(s) below it.



Managing Entities

Entity, in STDM, refers to a database table in which a specific data is stored. Examples of entity in STDM include person, party, parcel, etc.

Each entity has an Entity Browser that loads any existing data from the database. The entity browser has buttons for adding, editing or deleting records (see the image below). You can also make searches based on searchable columns specified in the Configuration Wizard. An entity browser looks like the image below.



Entity Browser Tool buttons

- Add Records (Not available for spatial entities - to add a spatial record, you have to digitize a feature or import a record)

- Edit Record

- Delete Record

- View Document

Managing Entities refers to the process of adding, querying, editing and deleting records. The next sub-topics elaborate how to add, edit and delete records.

Note: The tool buttons at the top may vary depending on the entity.

Adding a Record

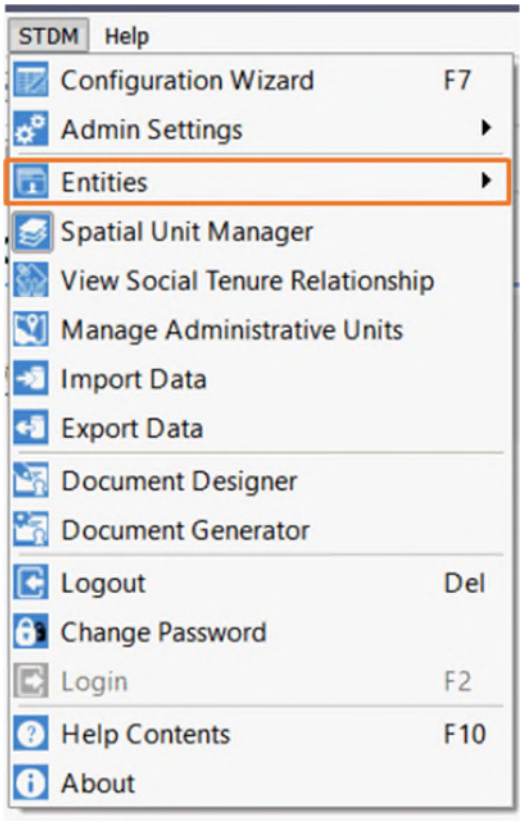
Adding a record from Entity browser is possible for non-spatial entities. As spatial entities have geometry, a geometry needs to be digitized and an attribute data needs to be appended with the geometry once the digitalization is finished. To add a spatial entity record, by digitalization read Digitizing in a Spatial Entity Layer topic.

To add a new record, follow the steps below.

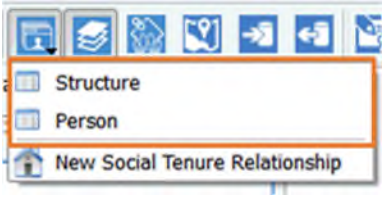
1. Go to the STDM Toolbar and click on Entities menu.

Or

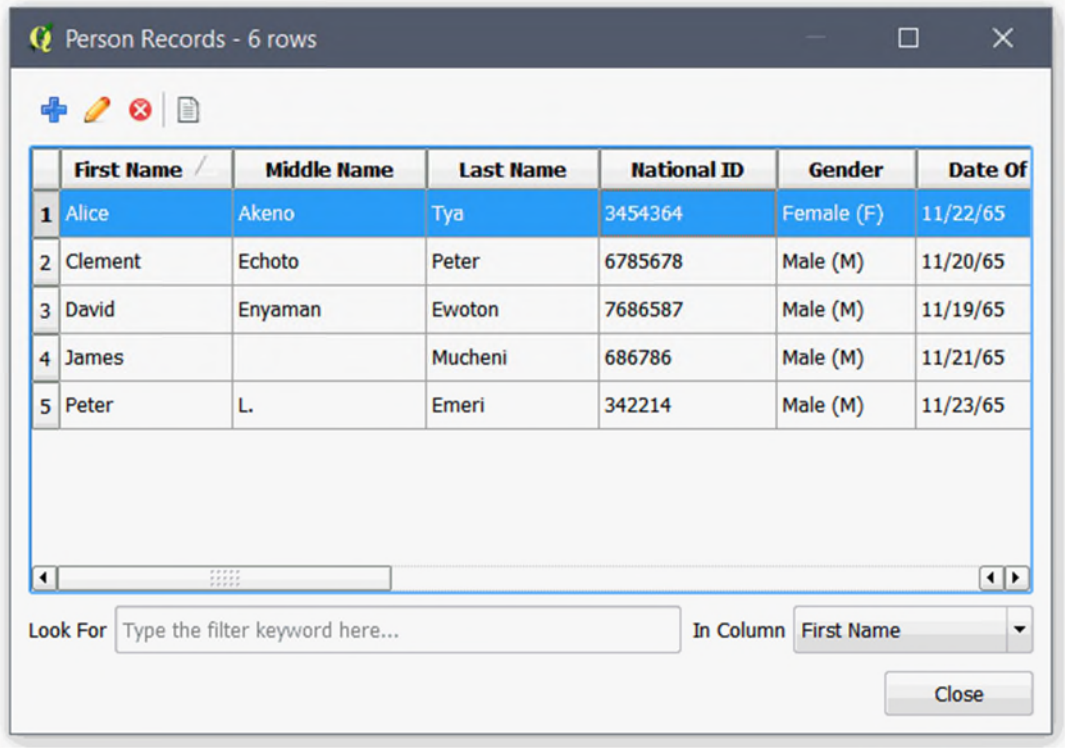
Click on STDM Menu located under QGIS Menu and click on the Entities sub-menu as show in the image below.



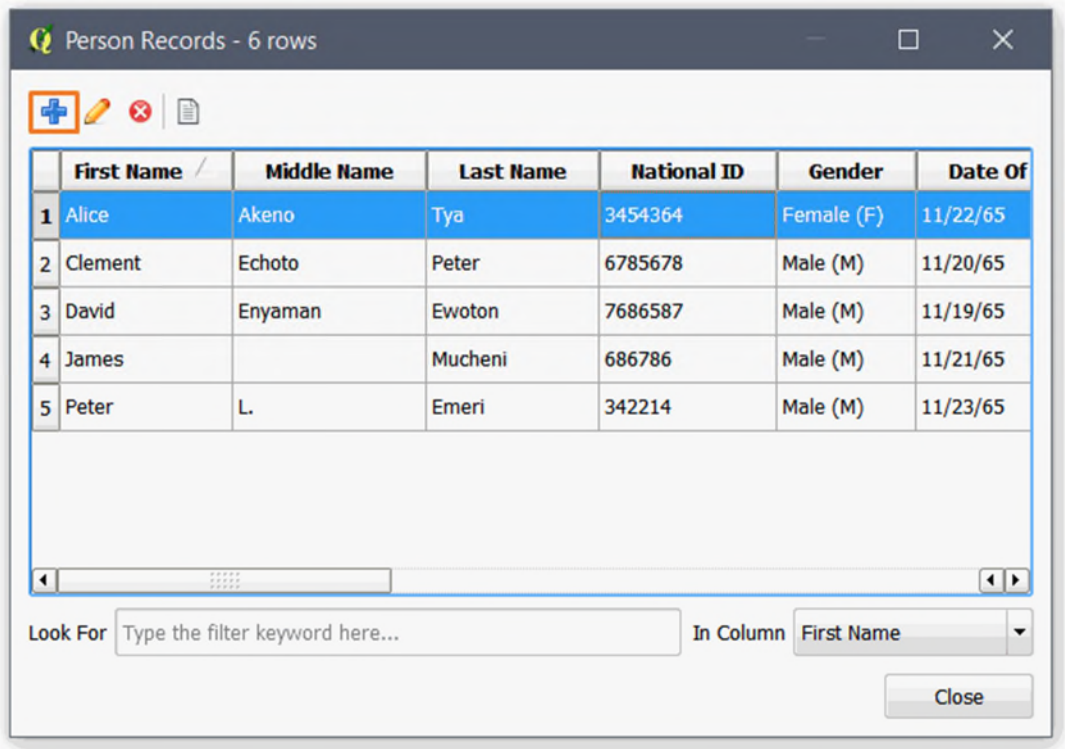
2. Open any Entity Browser you wish to view with the exception of New Social Tenure Relationship.



3. The Entity Browser of the entity you have selected loads a table similar to the one shown below. If you have not added any record, the table will be empty.

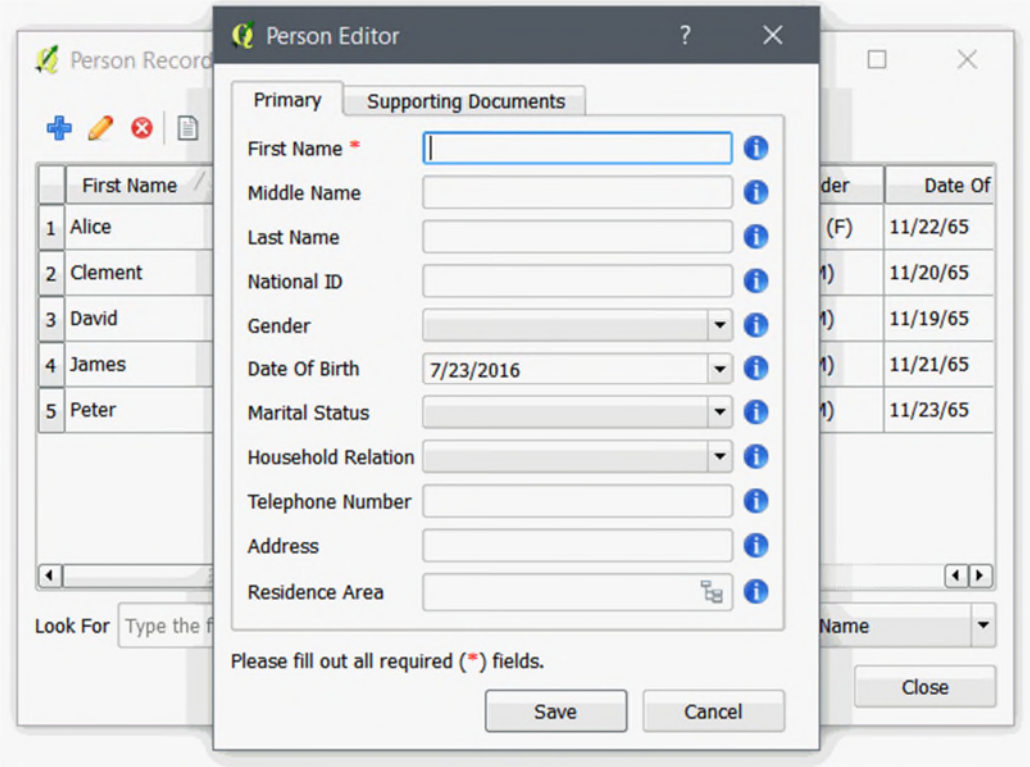


4. Click on Add button as shown in the picture below.

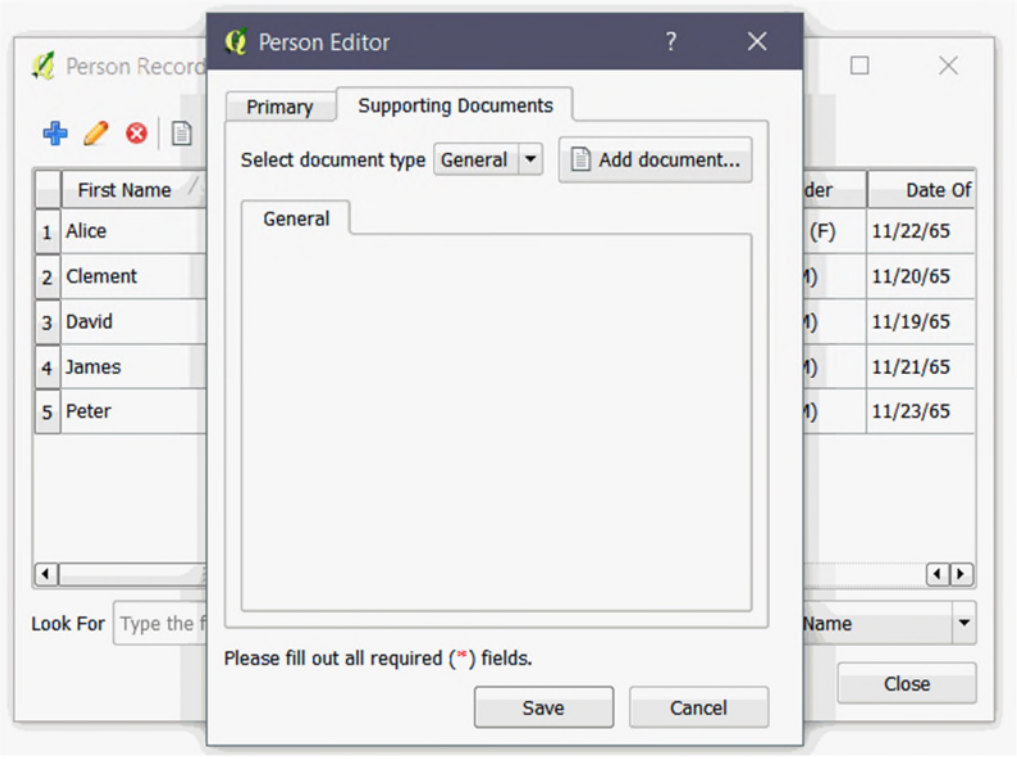


5. A pop-up dialog appears with a form (see the image below).

Primary Form Tab



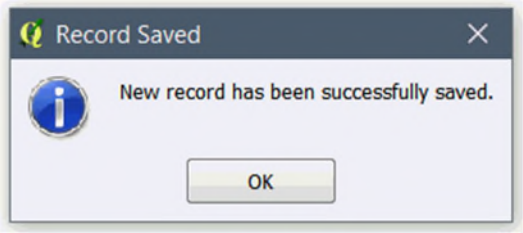
Supporting Documents Tab



6. Fill out the form under the Primary tab.

5. If the entity does not have supporting document option, click on the Save button. Otherwise, proceed to the topic Uploading Supporting Documents without saving.

If the form is properly entered, a success message pops up, as shown below.



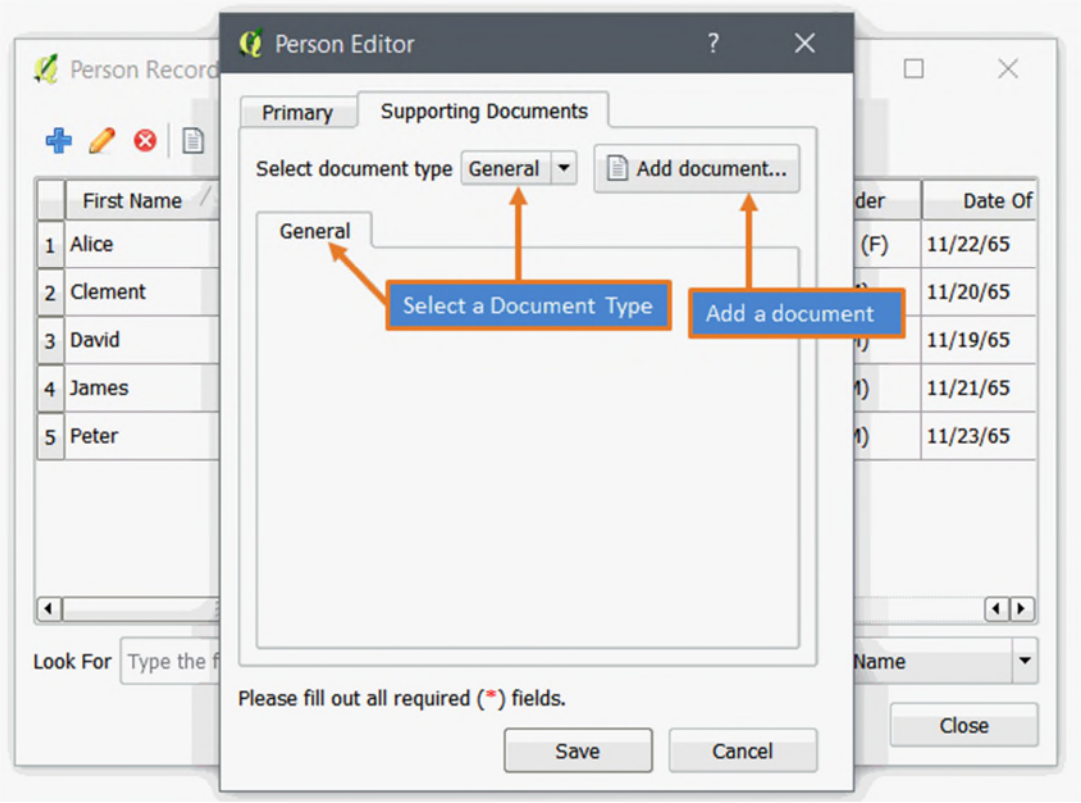
Uploading Supporting Documents

If an entity is supporting documents enabled, which can be activated in the Configuration Wizard Entities page, uploading supporting documents is possible.

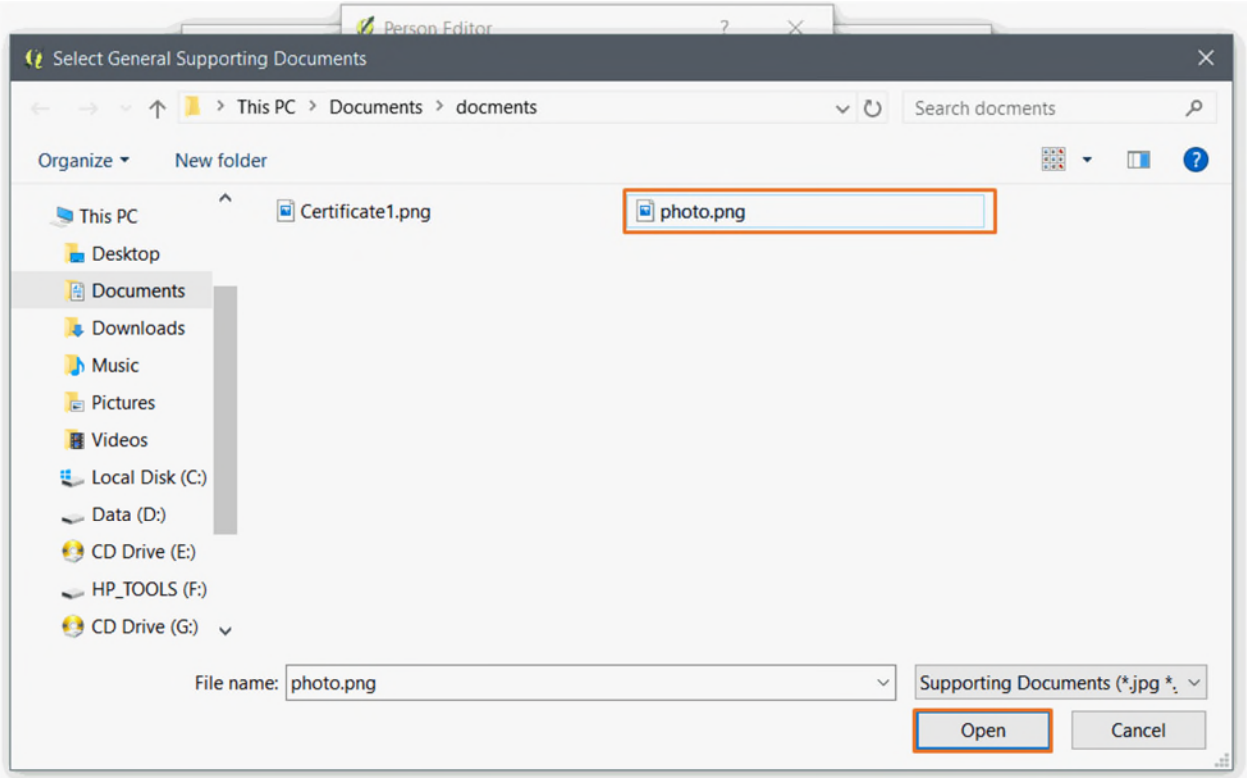
If you have more than one document type, a tab will be created. You can click on the tabs or the drop down menu to upload the documents.

To upload a supporting document, follow the sub-steps below.

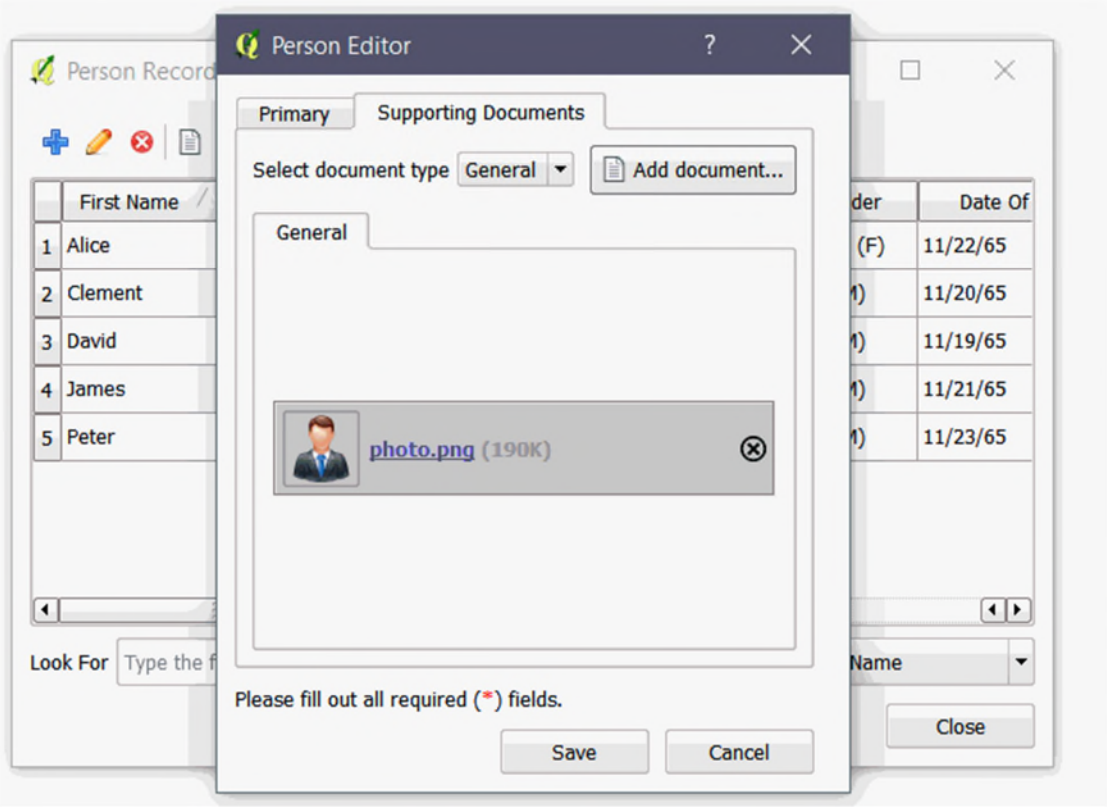
1. Choose on the document types by clicking on the tabs or the drop down menu. Then, click on the Add Supporting Document button as shown below.



2. Choose a file to be uploaded by looking for the files in your Windows Explorer and then click the **Open** button as shown below.

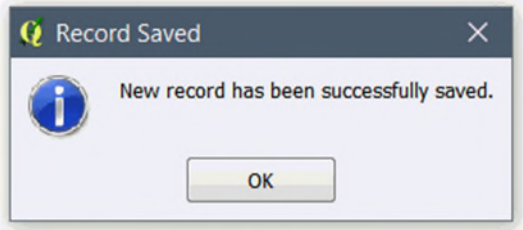


You will be able see the uploaded file added in the tab you have uploaded to, as shown below.



You can view the documents by clicking on the file name. If needed, you can remove the documents by clicking on the Remove icon (⊗) on each Document bars.

3. Click on the Save button. If the form is properly entered, a success message pops up, as shown below.



A new record will be added in the Entity Browser and you can see it added as a row.

Querying a Record

In addition to adding records, the Entity Browser enables you to search and find any data using filters. This capability makes it easy to find a record for information purpose, and to perform operations like editing, document viewing and deleting.

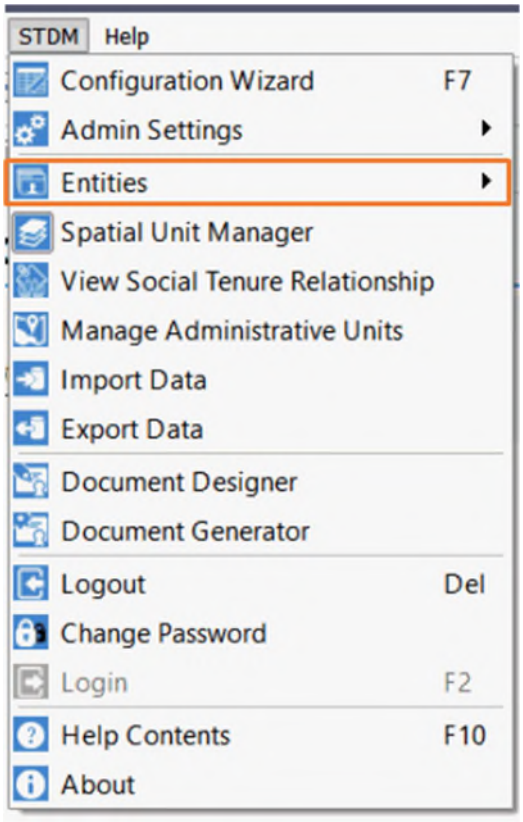
Searching

The steps below show how to search for data.

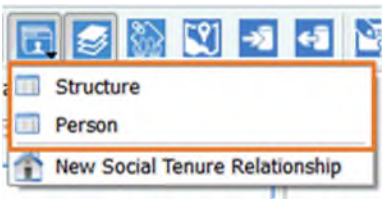
1. Go to the STDM Toolbar and click on Entities menu.

Or

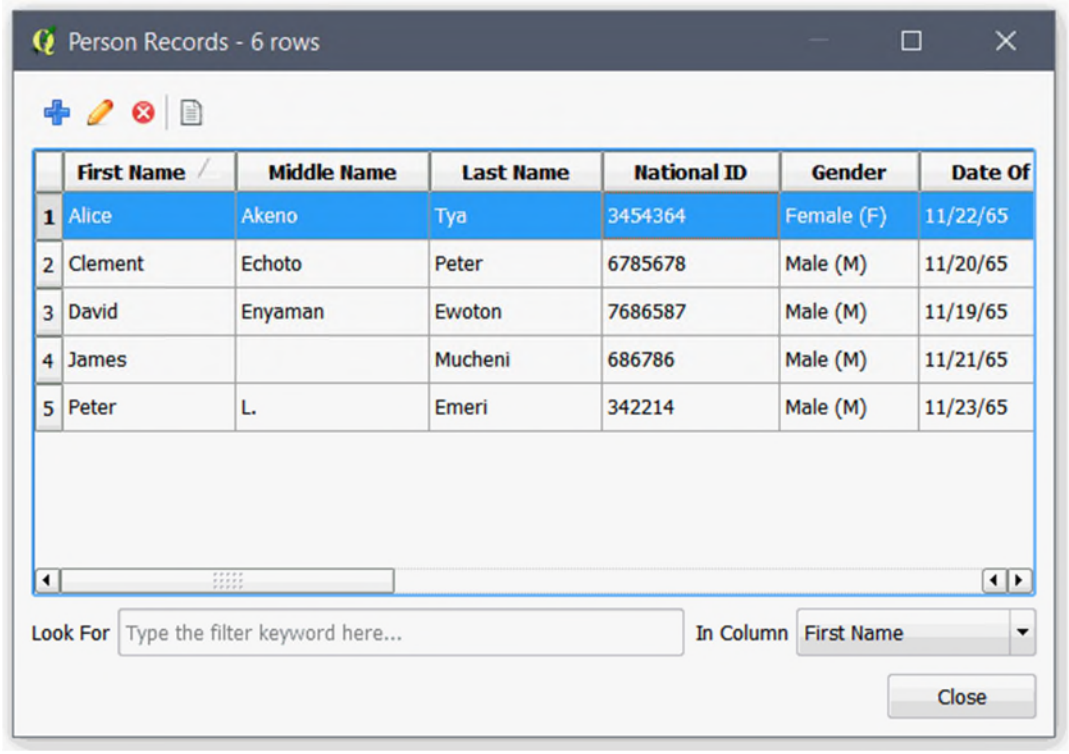
Click on STDM Menu located under QGIS Menu and click on the Entities sub-menu as show in the image below.



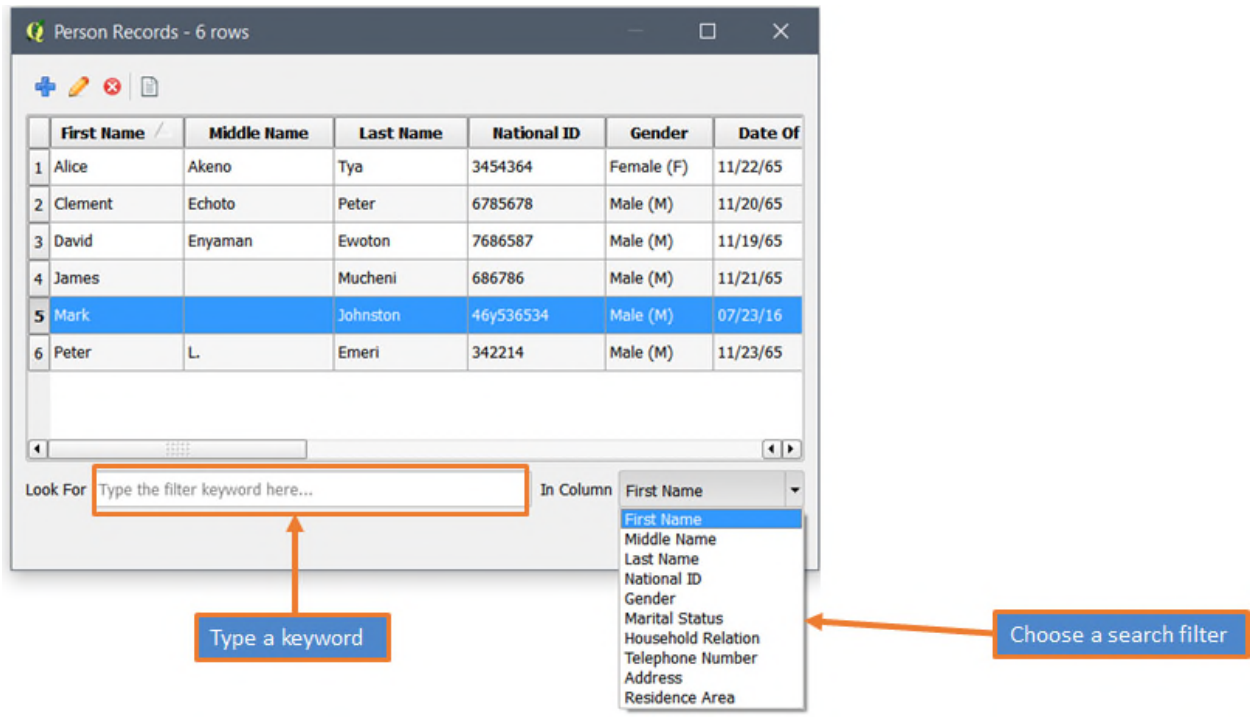
2. Open any Entity Browser you wish to view with the exception of New Social Tenure Relationship.



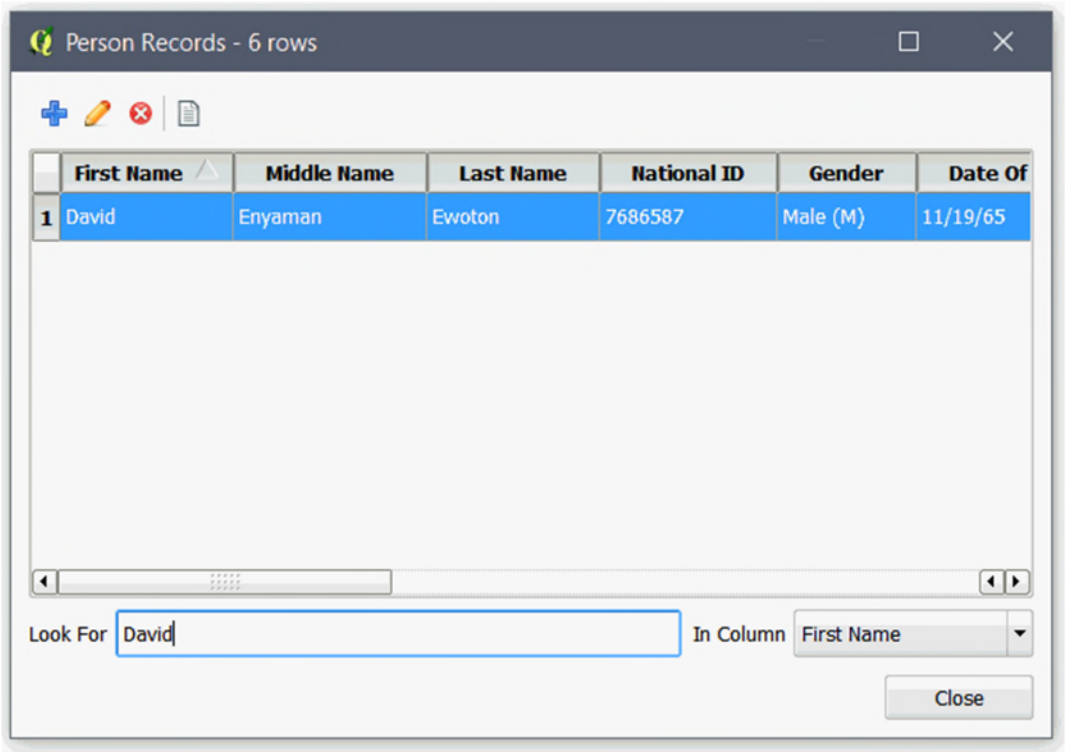
3. The Entity Browser of the entity you have selected loads similar to the one shown below. If you have not added any record, the table will be empty.



2. In the Entity Browser, select the filter and enter a keyword to search for records as shown in the image below.



3. Only the search result appears (see the image below). The filtered list will continue appearing until you clear the keyword.



Note: To perform further operations such as editing, and deleting a record, you must select the record.

Viewing a Supporting Document

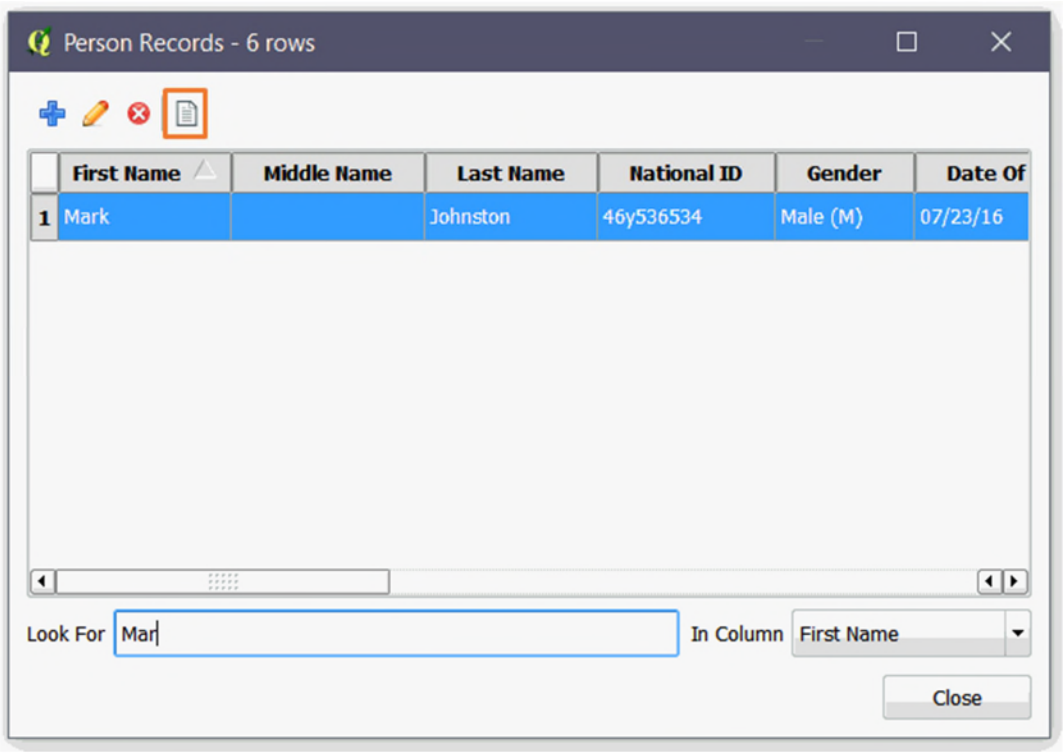
STDM provides a document viewer in which you can view supporting documents without going to the folder of the document, from within STDM.

To view a document, follow the steps below.

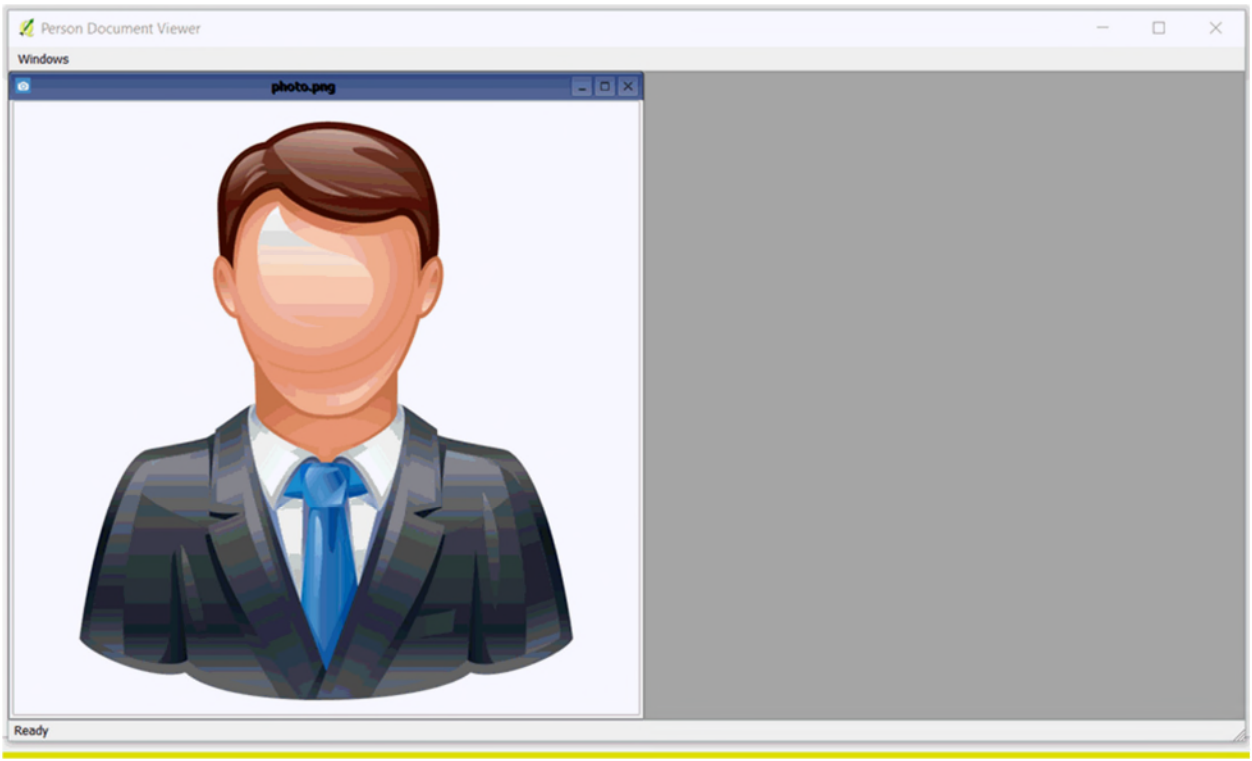
1. Search for a record from Entity Browser as explained in the preceding topic.

2. Select a record.

3. Click on the View Document icon as highlighted below.



3. You can view the uploaded document as shown below.



You can resize and maximize the image if necessary.

Editing a Record

Editing involves modifying the existing records using the form. You can modify any field you wish including supporting documents.

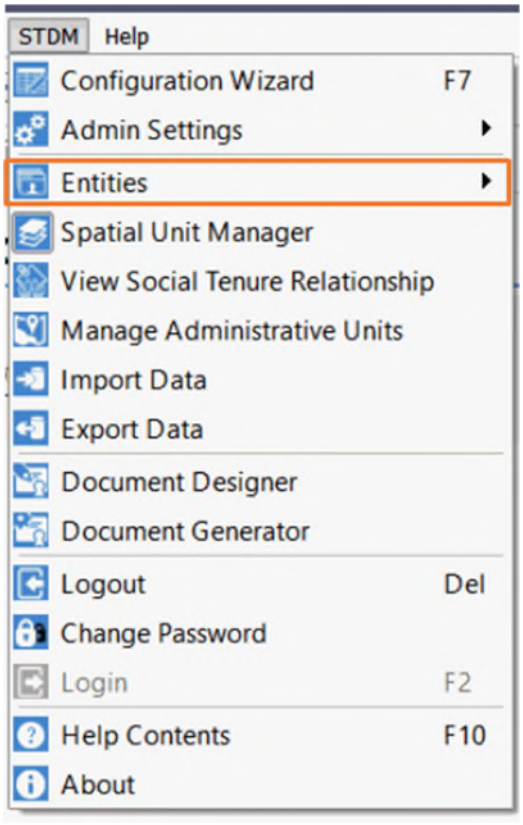
To edit a record, you need to first search for the record you wish to edit. The searching is especially useful when you have large number of records.

To edit a record, follow the steps below.

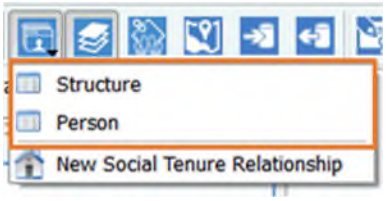
1. Go to the STDM Toolbar and click on Entities menu.

Or

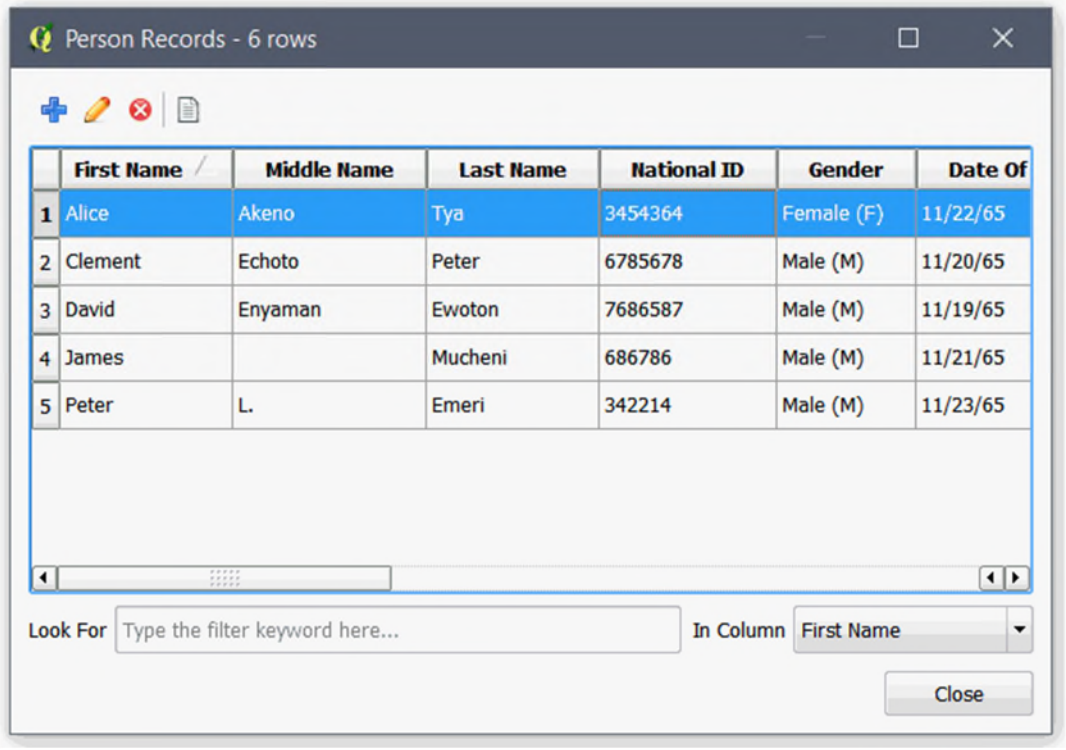
Click on STDM Menu located under QGIS Menu and click on the Entities sub-menu as shown in the image below.



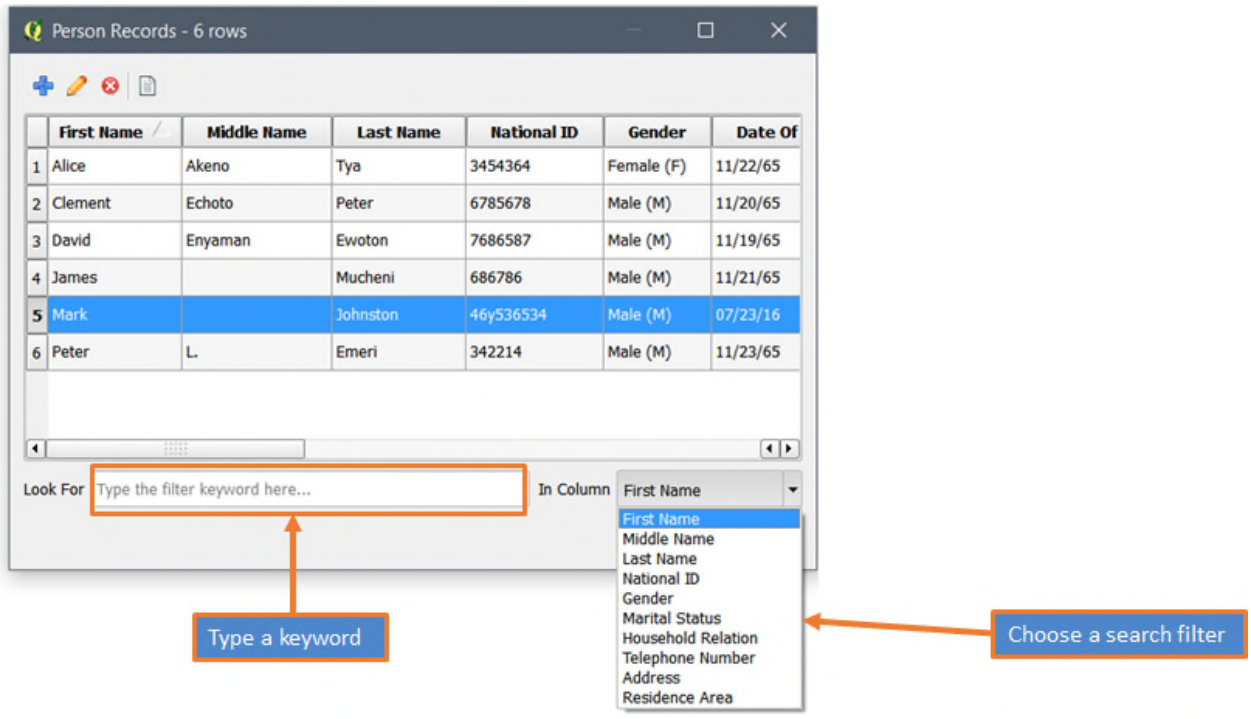
2. Open any Entity Browser you wish to view with the exception of New Social Tenure Relationship.



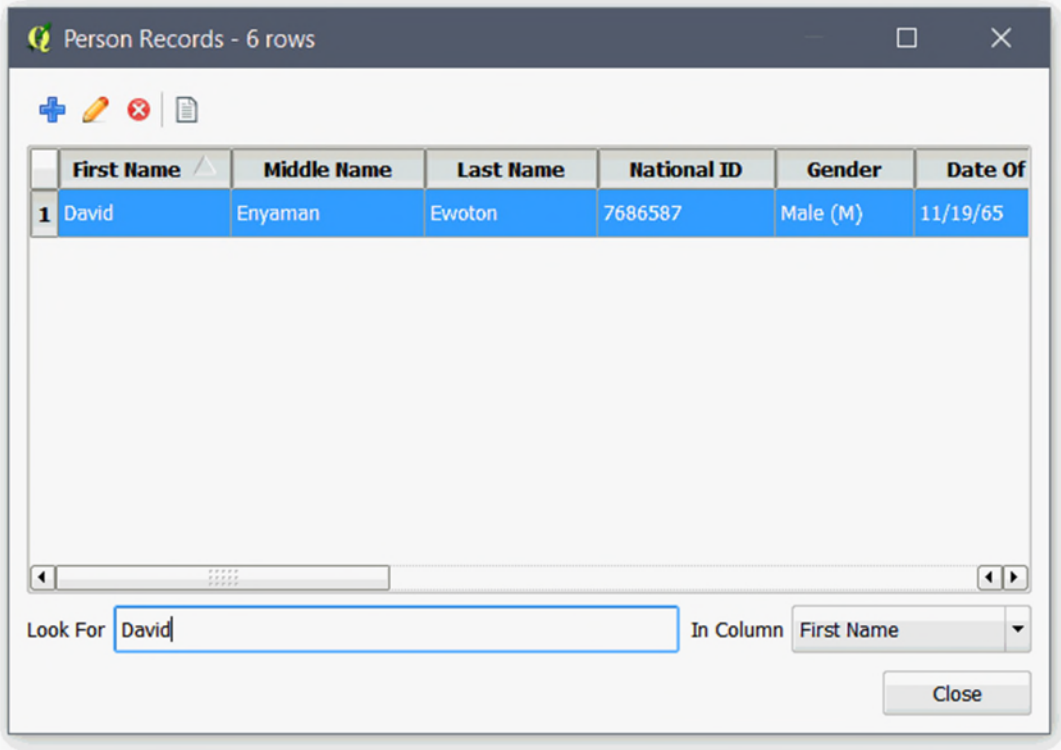
3. The Entity Browser of the entity you have selected loads similar to the one shown below.



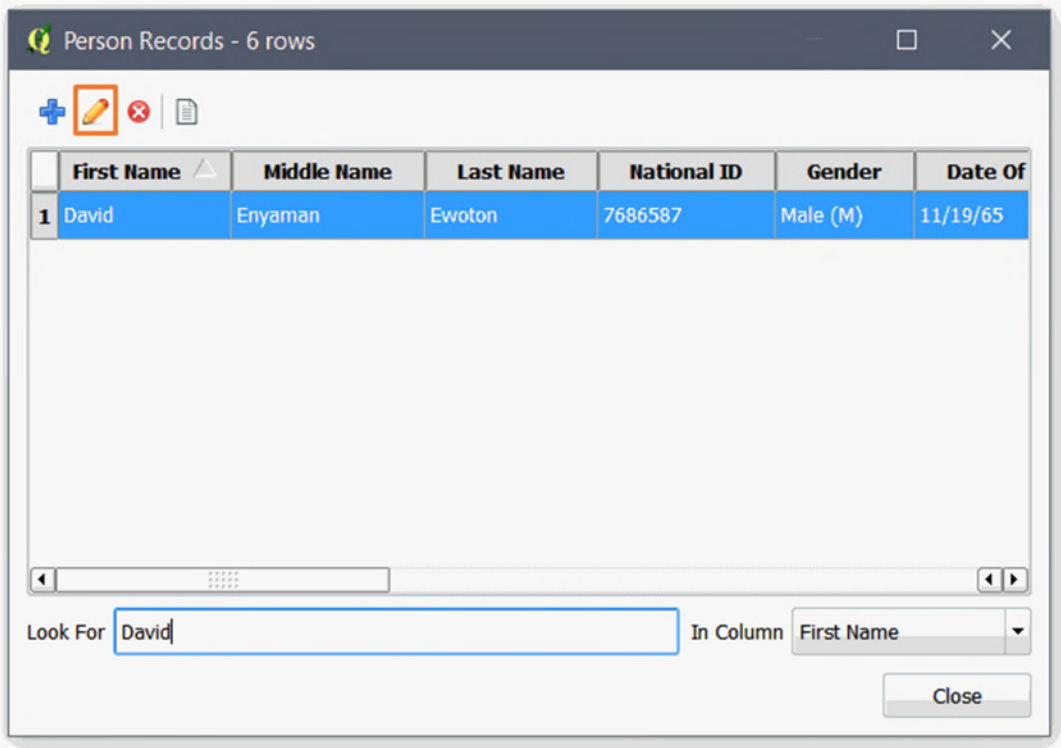
2. In the Entity Browser, select the filter and enter text to search for a record as shown in the image below.



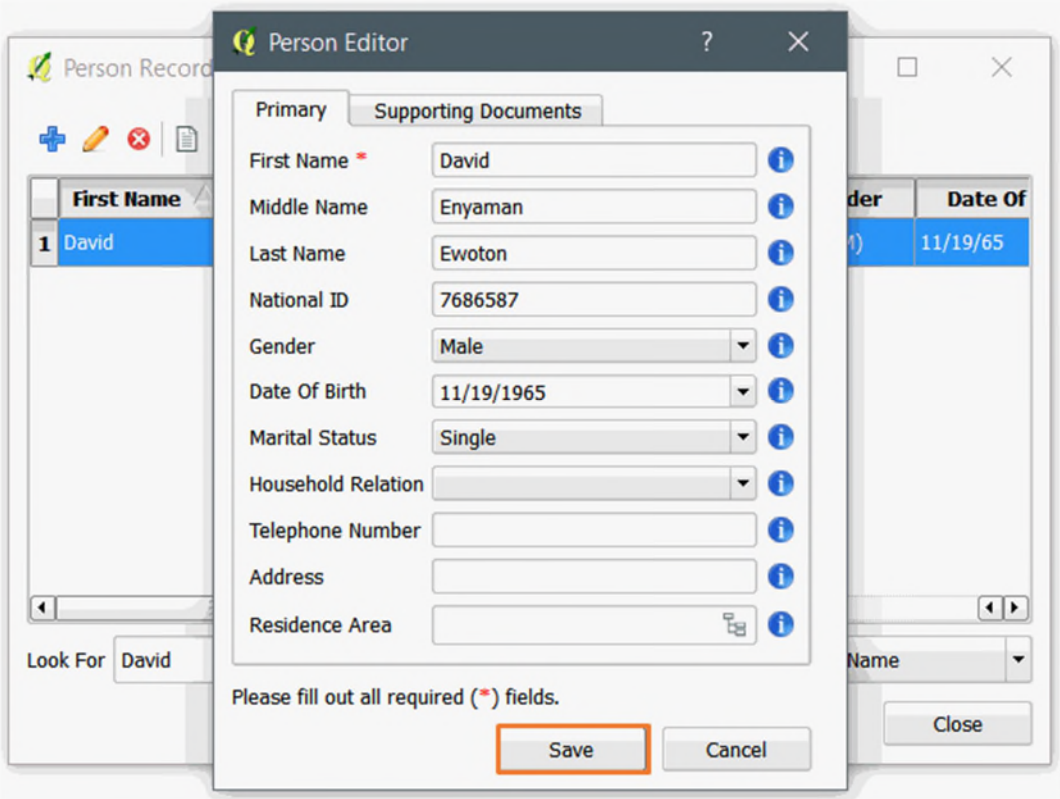
3. Only the search result appears (see the image below). The filtered list will appear until you clear the keyword.



2. As shown above, select a row/record you would like to edit and click on Edit button as shown in the picture below or double click on the row you would like to edit.

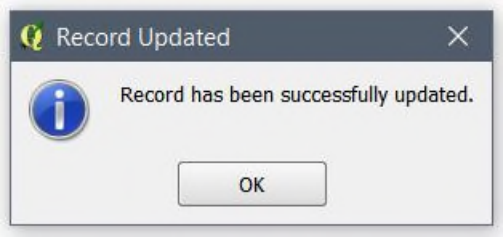


3. A pop-up dialog appears with a form as shown below.



4. The Editor form loads the data of the selected record. Modify the form and supporting documents and click on the Ok button.

A success message (see the image below) pops up if the form is filled correctly.



After a success message, the form hides and you can see the changes in Entity Browser.

Deleting a Record

You can completely delete a record and its associated supporting documents. Once, a record is deleted, it **cannot** be restored. Make sure that you do not need the record before deleting.

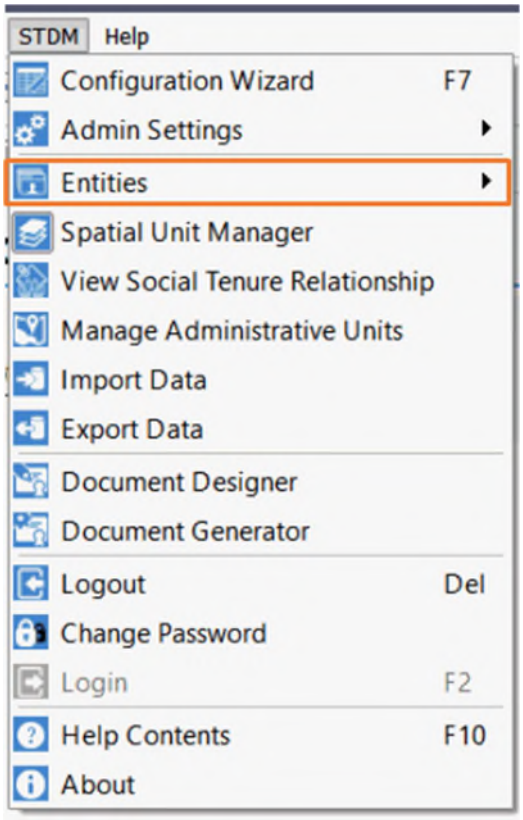
To delete a record, you need to first search for the record you wish to delete. The searching of the record is especially useful when you have large number of records.

To delete a record, follow the steps below.

1. Go to the STDM Toolbar and click on Entities menu.

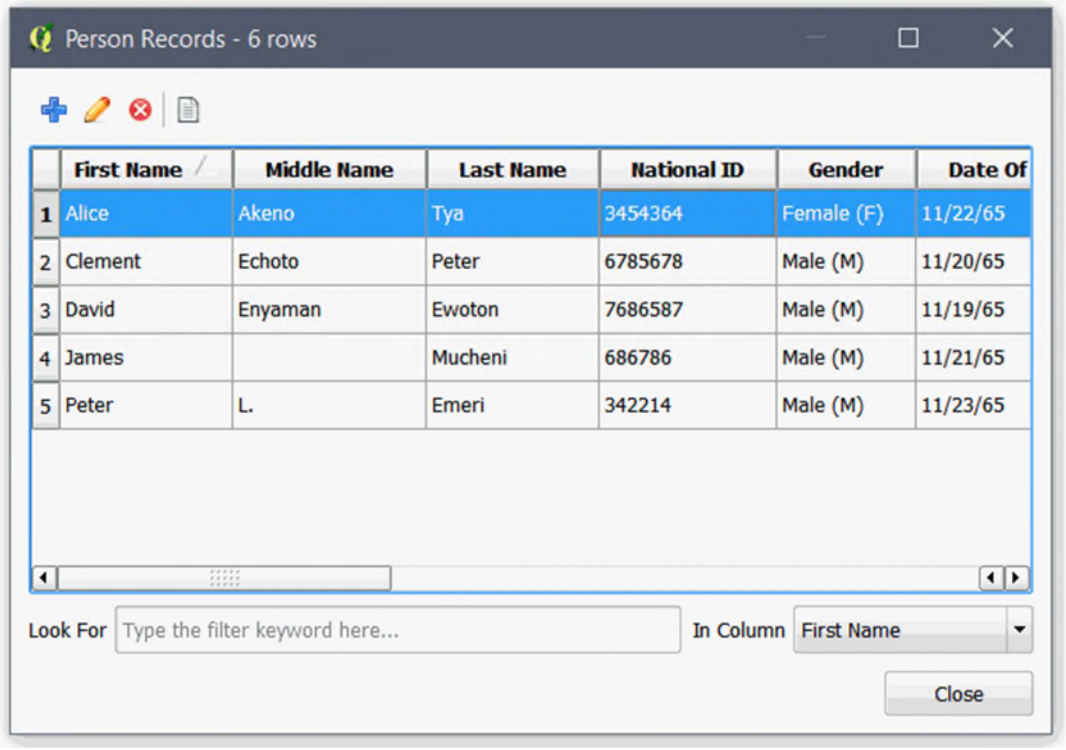
Or

Click on STDM Menu located under QGIS Menu and click on the Entities sub-menu as show in the image below.

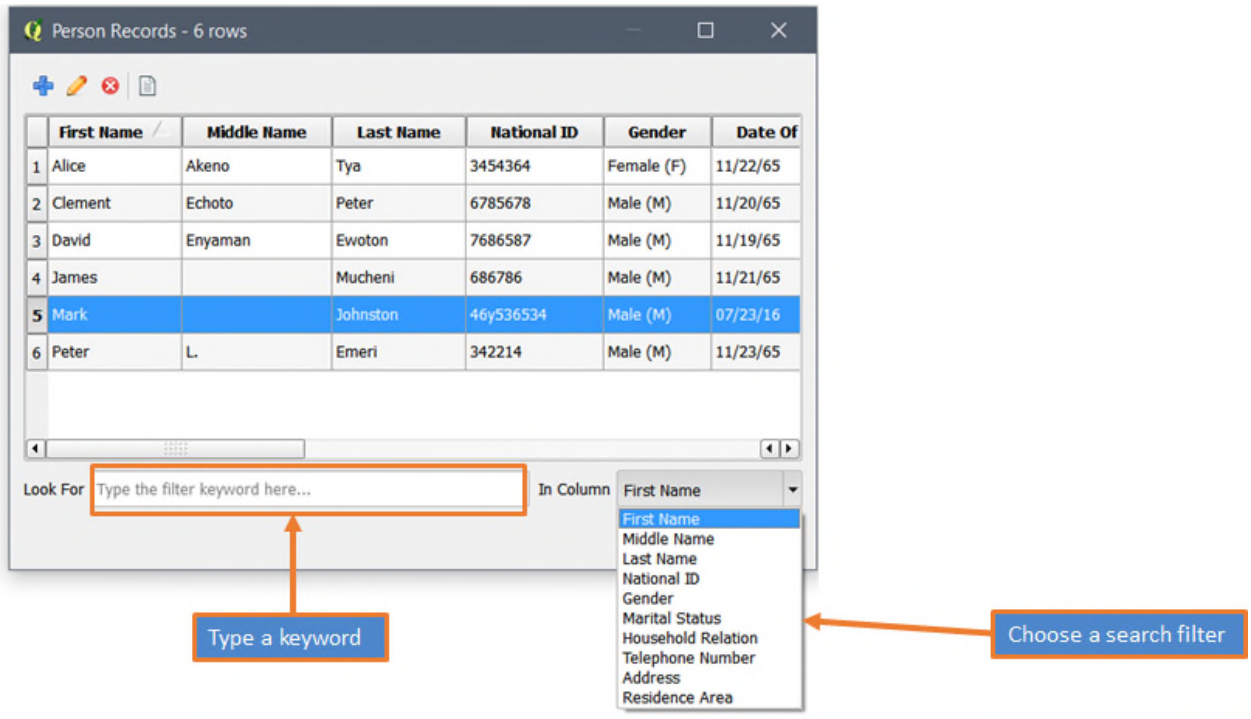


2. Open any Entity Browser you wish to view with the exception of New Social Tenure Relationship.

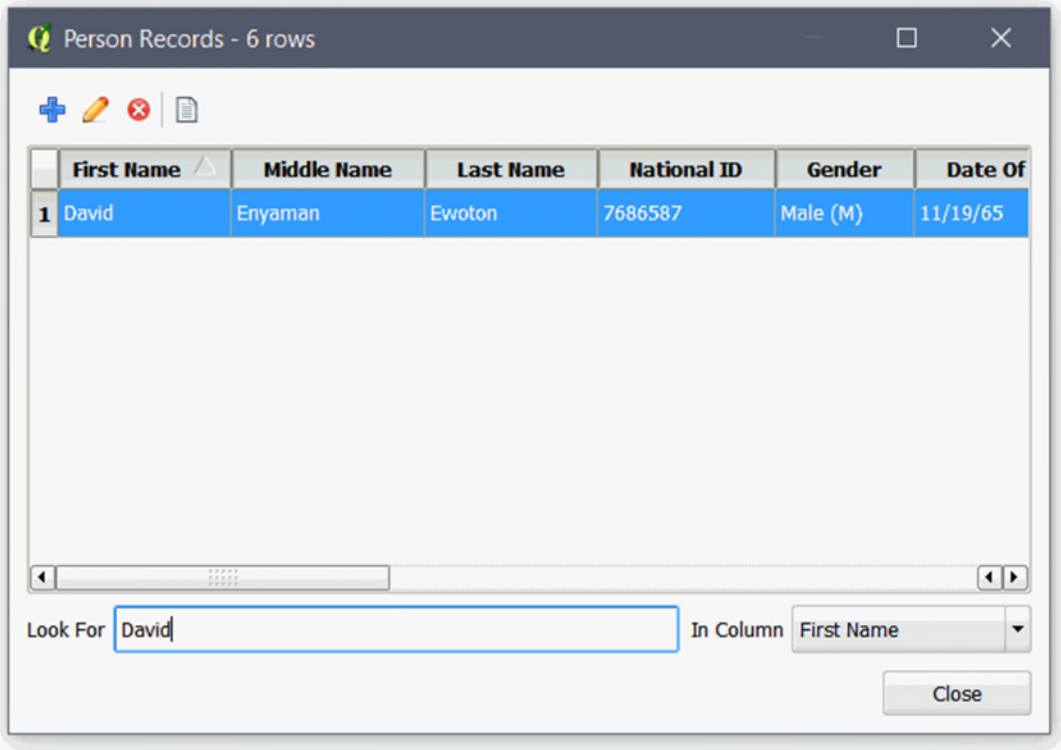
3. The Entity Browser of the entity you have selected loads similar to the one shown below.



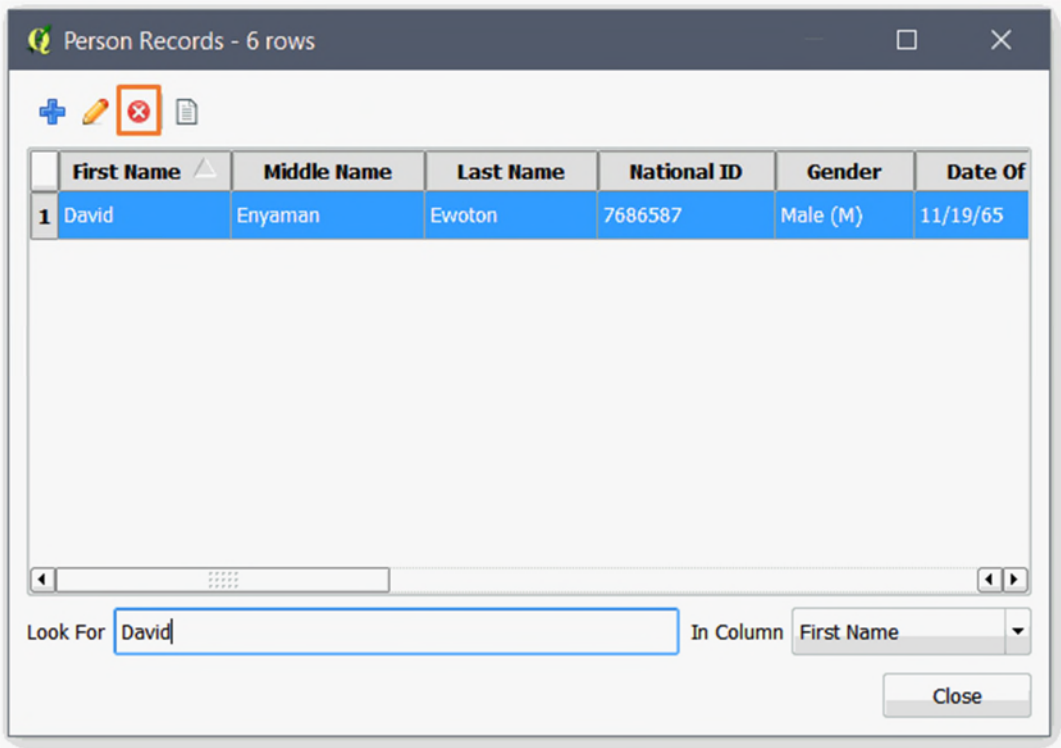
4. In the Entity Browser, select the filter and enter text to search for a record as shown in the image below.



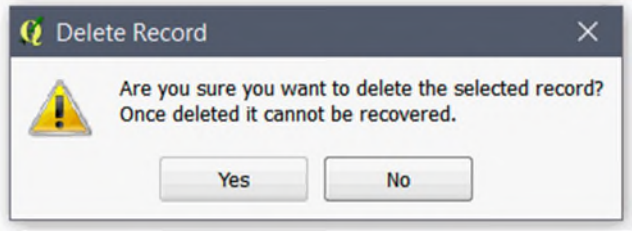
5. Only the search result appears (see the image below). The filtered list appears until you clear the keyword.



6. As shown above, select a row/record you would like to delete and click on the Delete button as shown in the picture below.



7. A warning dialog appears to warn you that once deleted, it cannot be recovered, as shown below.



8. If you click on the Yes button, the Record will be removed. If you click on the No button, the record will not be deleted.

Managing Spatial Data

As already discussed, STDM is a QGIS plugin that enables you to utilize all the great features of the most popular open-source geo-spatial software, QGIS. Consequently, you can use any QGIS features and also benefit from QGIS features that are customized for STDM. The customized QGIS features make it very easy to manage spatial data in STDM.

Spatial Entities can be created just like any other entity. A spatial entity is an entity with at least one geometry column as defined in the Configuration Wizard. A spatial entity should have at least one geometry column and an attribute data, that holds non-spatial data.

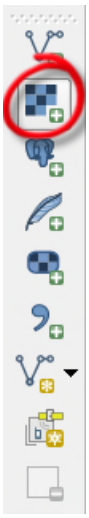
STDM supports point, line, polygon, multipoint, and multiline and multipolygon geometry.

In STDM, at least one spatial entity is required to be used as a spatial unit. A spatial unit is a spatial entity that participates in social tenure relationship. A spatial unit holds data of a parcel, structure, farmland, etc. You can also create other spatial entity holding different spatial data.

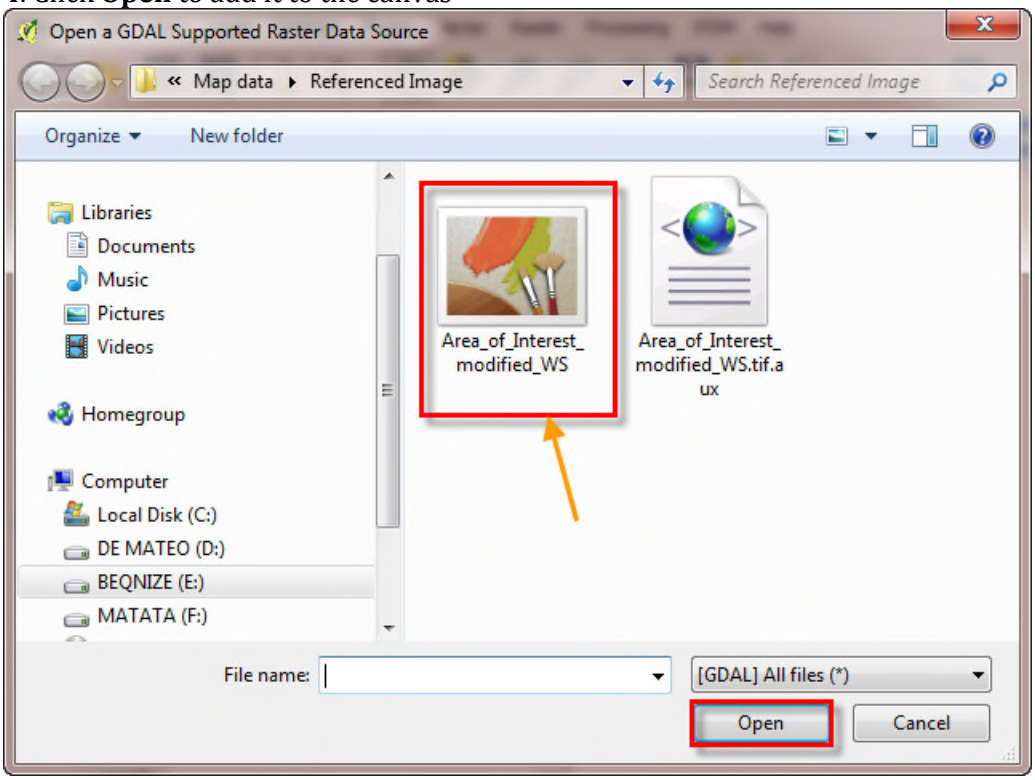
The following sub-sections enable you manage spatial data.

Adding Imagery data

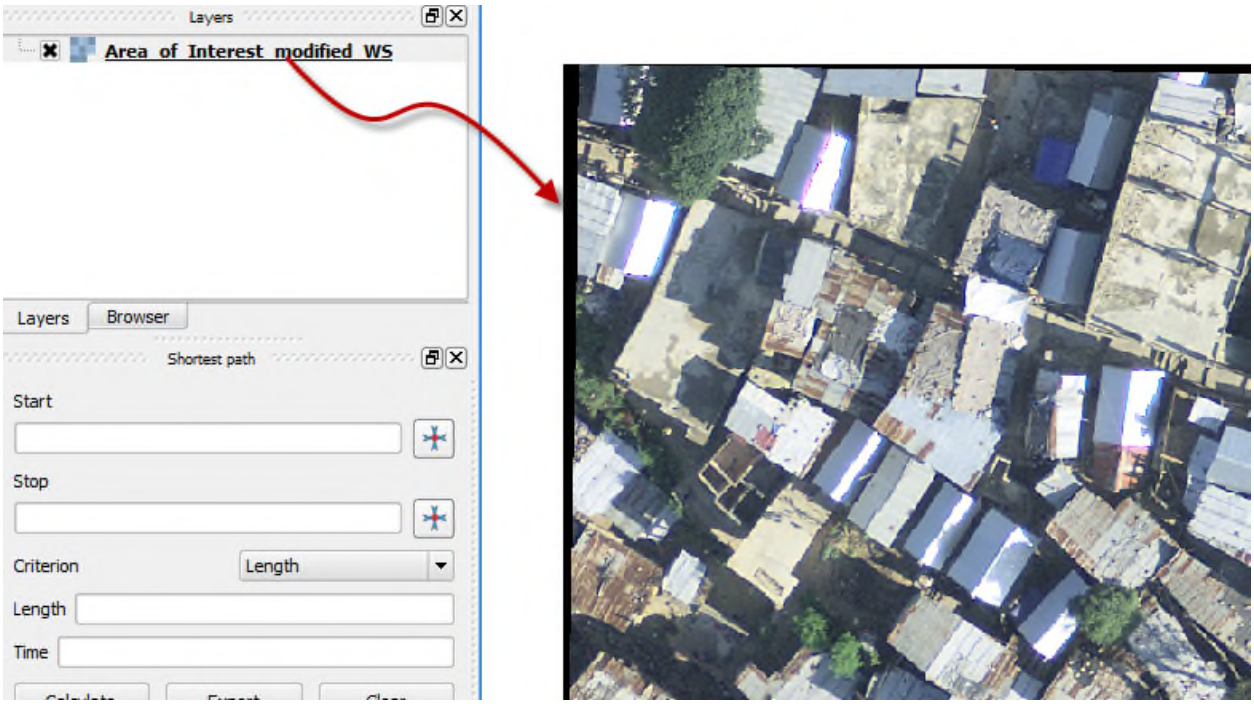
An imager data refers to a map image that could be a satellite image or scanned map with world real coordinates. The process and steps of Geo-referencing is explained in Geo-referencing a map image topic.



To add Imagery data to the Canvas, click **Add Raster Layer button** to add the imagery data into the canvas
2. Browse to where the imagery data source is
3. Select the imagery data.
4. Click **Open** to add it to the canvas



The Imagery data appears on the window as shown below.



Some of the tools that you can use to move the imagery data are;


This is used to Pan the map to a position you wish


This helps when you want to zoom in to a working area of interest


This helps the user to zoom out on the map

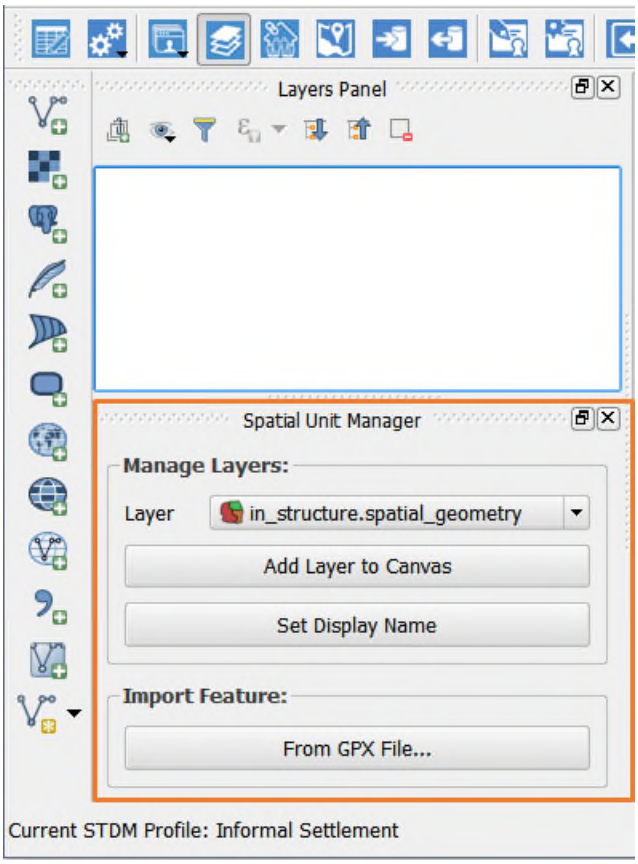
Adding a Spatial Entity Geometry

To visualize a spatial entity geometry, we have to add it into **QGIS Map Canvas**. The **QGIS Map Canvas is at the centre of QGIS interface in which added maps layers are displayed.**

To add spatial entity into the map canvas, we use Spatial Unit Manager

Follow the steps below.

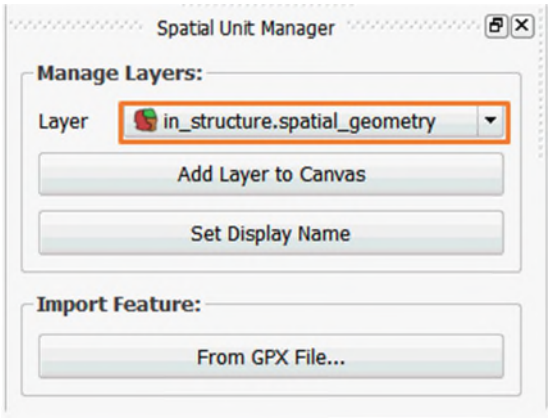
1. Enable the Spatial Unit Manager. By default, the Spatial Unit Manager is added to QGIS left side below the layers panel as shown in the image below.



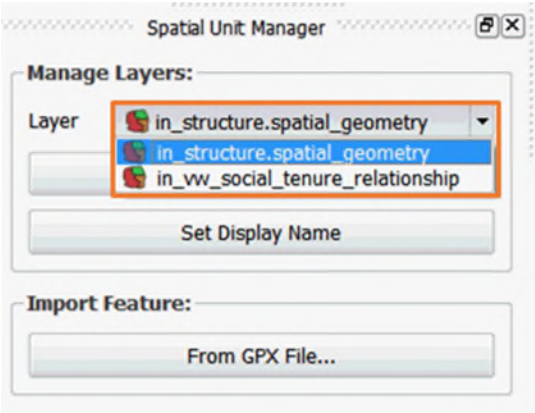
If it is not enabled, click on the Spatial Unit Manager button (see the image below) on the Spatial Unit Manager sub-menu under the STDM Menu to enable it.

Clicking on the button or the sub-menu enables the Spatial Unit Manager.

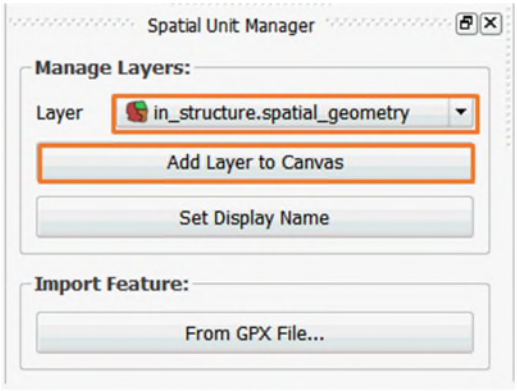
2. Select a spatial entity geometry. By default, the spatial unit geometry is the first in the Layers cobobox ash shown below.



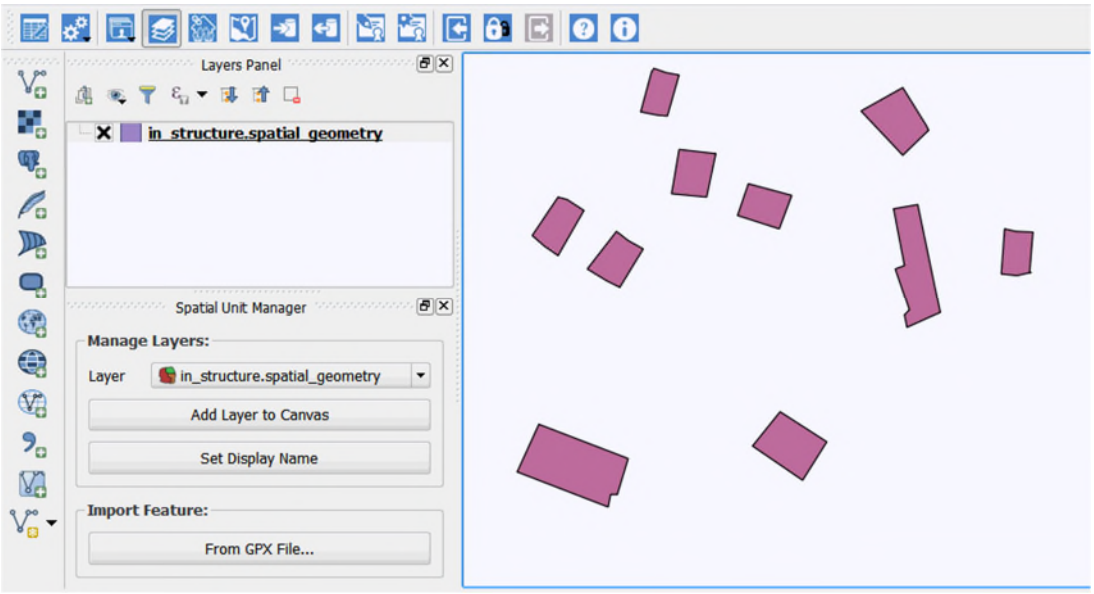
If you wish to add another entity geometry, click on the layers drop down as shown below.



3. Add the geometry you wish to QGIS Map Canvas and Layers Panel by clicking on Add Layer to Canvas as shown below.

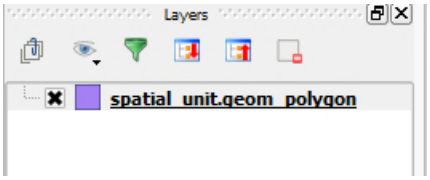


Once added you will be able to see your layer in the layers panel and the map canvas.



Renaming Spatial Entity Layer

Changing display name

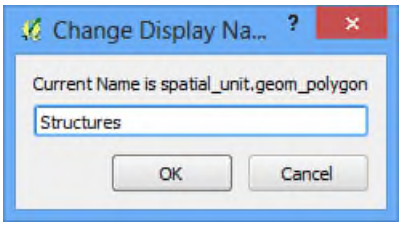


Supposing the added geometry layer is the one above.

The existing name of the layer loaded to the canvas is not very appealing. To set a friendly display name, ensure the layer is selected.

Click Set Display Name on the spatial unit manager.

Provide a friendly name on the change display name dialog.



Click **Ok** to change the name.

Note: this only applies to layer in STDM database only.

Digitizing in a Spatial Entity Layer

One way of adding a new record in a spatial entity such as spatial unit, is by digitizing a feature using a base map imagery. The other ways of adding a new record are by importing a spatial data and by importing a GPS data.

Ensure the Imagery or base map layer is added on QGIS map canvas. To add an imagery data, follow the steps on Adding Imagery data topic.

The following steps explains how to digitize a polygon that could be a plot, parcel, structure and any other area.

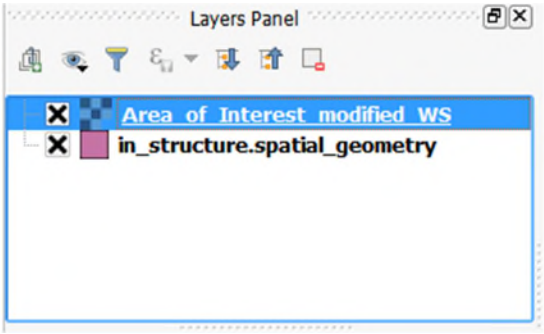
You can digitize line or point using similar steps.

1. Add an imagery data as explained ***in Adding Imagery data topic.***

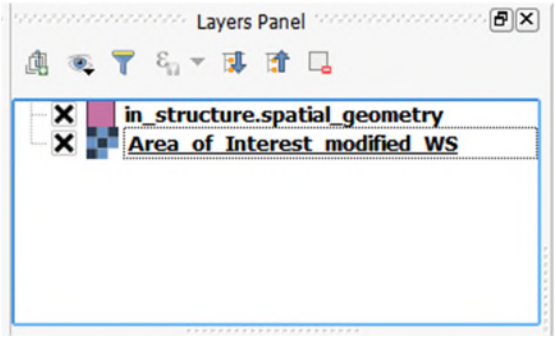
2. Then add a spatial entity layer in to QGIS Map Canvas that you wish the new polygon to be added to.

To add a spatial entity layer follow the steps in **Add a Spatial Entity Geometry** topic.

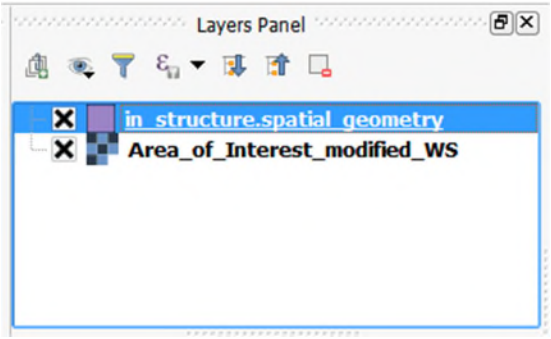
3. Once the layers are added you will see them listed as the image below. Make sure the spatial entity layer is above the imagery. Select and drag and drop to change their order.



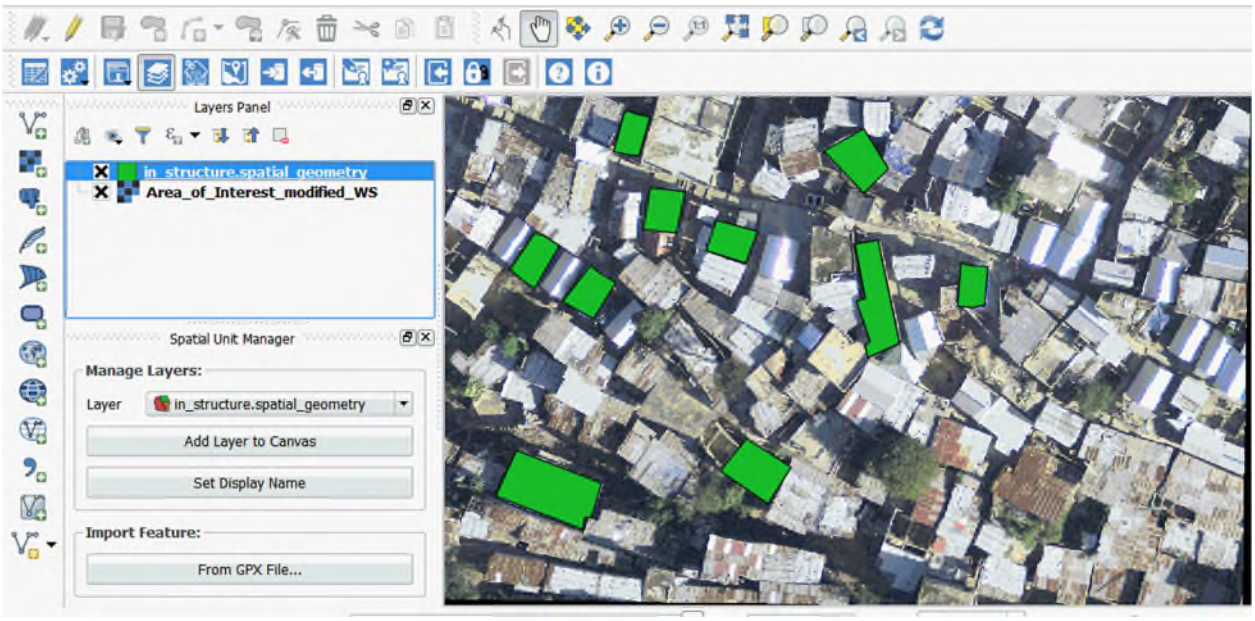
The correct order is the spatial entity layer at the top and the imagery below it, as shown in the image below. This is needed so that the spatial entity geometry is not hidden under the imagery.



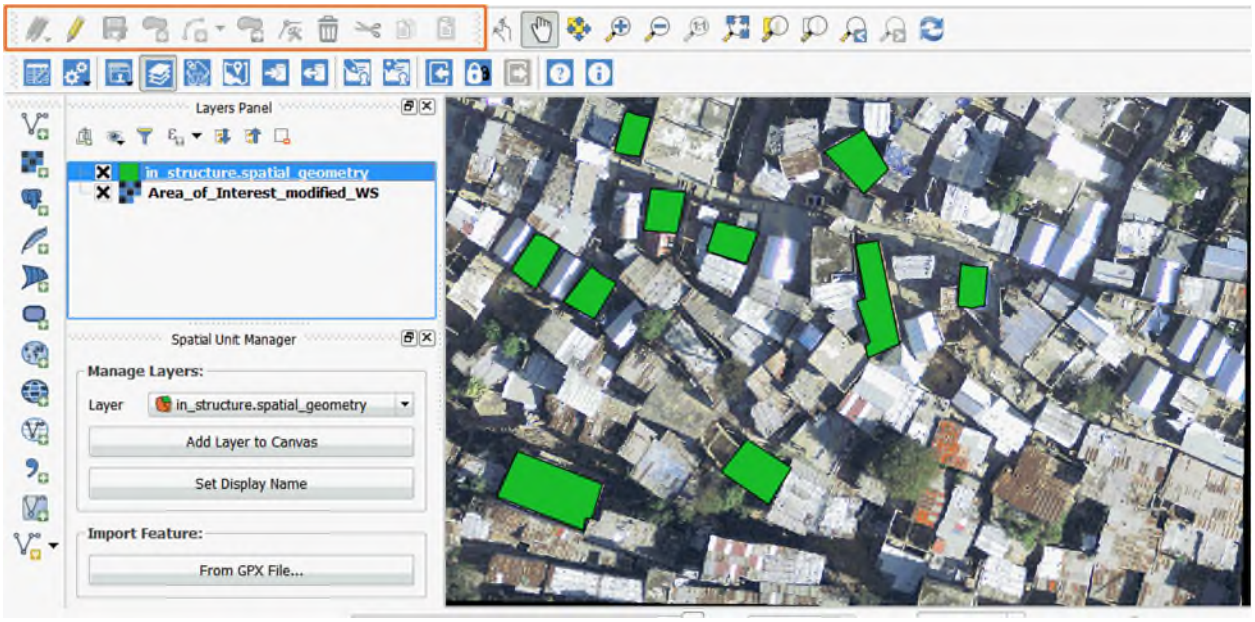
4. Select the spatial entity layer to digitize features into, as shown below.



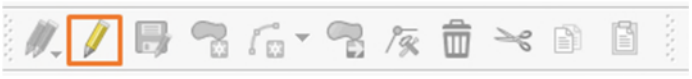
This results in the placement of the spatial entity geometry above the imagery as shown in the image below.



5. Locate the Digitizing tool of QGIS that is highlighted in the image below.



6. Click the **Toggle Editing tool** in the Digitizing Toolbar as highlighted below. This will turn your selected layer to edit mode.



7. The toggle Editing tool enables most of the digitizing tools. Select the Add feature tool as highlighted below.

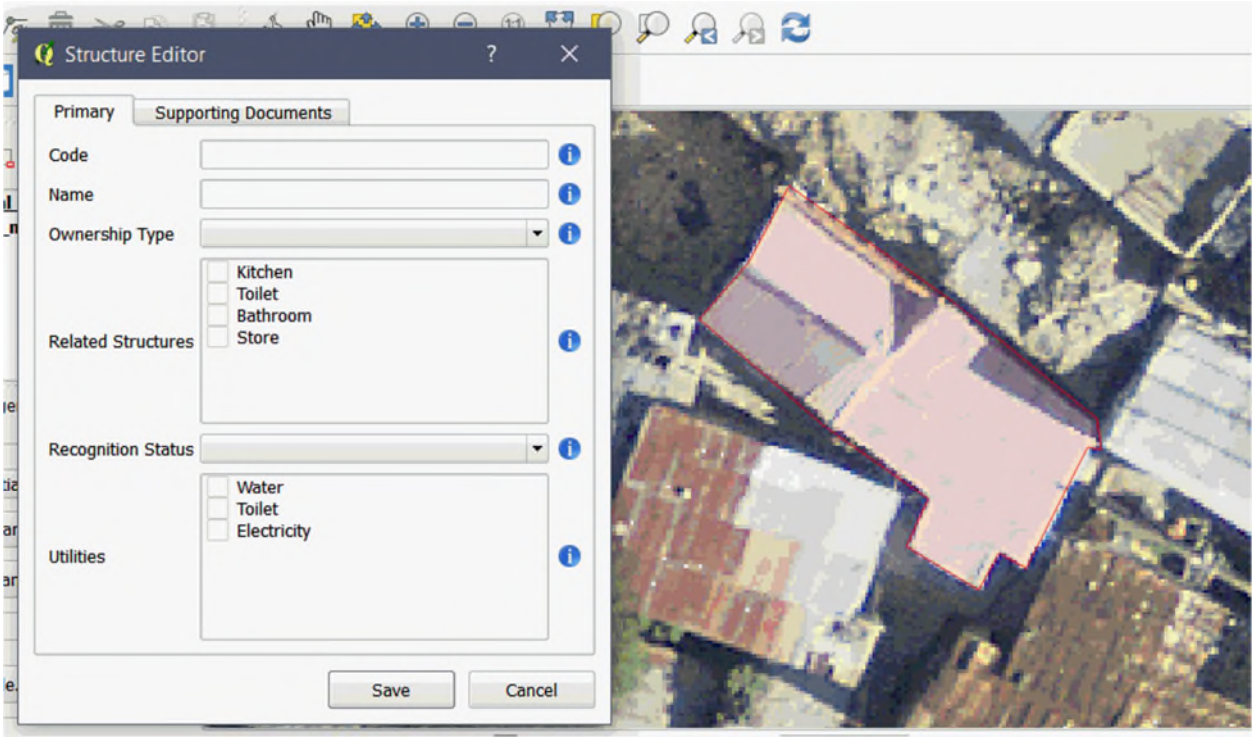
8. Find an area on top of which you would like to add a feature. This could be a demarcated plot, a house, etc.

9. Zoom close to the area you wish to digitize and start clicking on one of the corners of the area. Then, move your cursor to the next corner and click on the next corner.

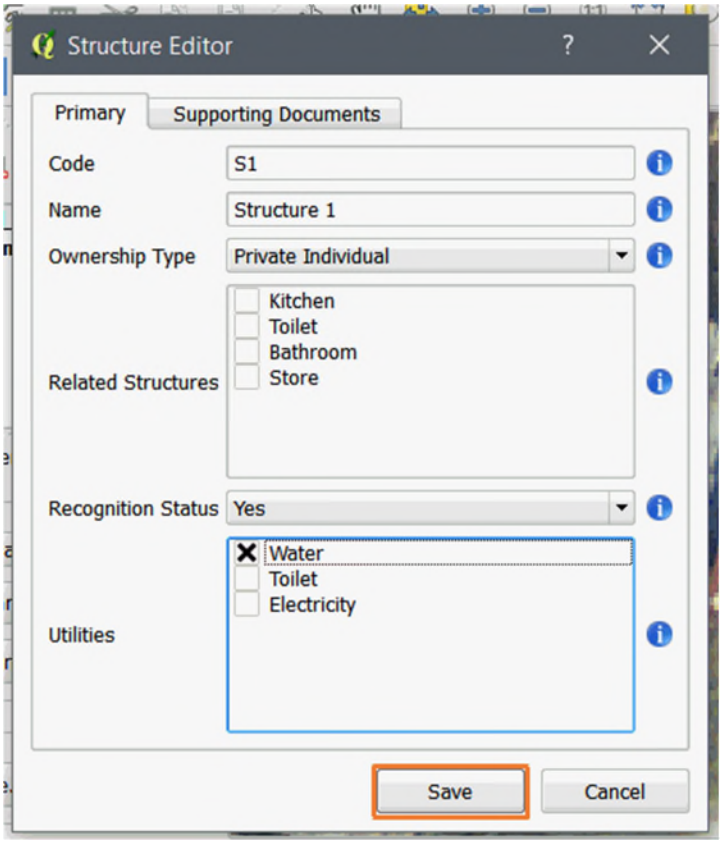
Do the same for all the corners in the area.

Once you are done clicking on all corners. Right-click on the area.

10. A spatial entity form pops up, allowing you to input attribute data on the feature as shown below.



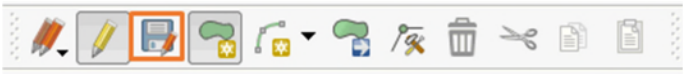
Fill out the form and click on the Save button as shown below.



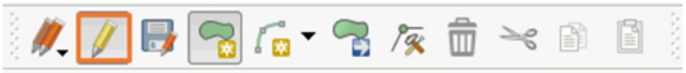
This will save the data temporarily until you click on the Save button in the digitizing toolbar. When saved, the digitized feature appears on the layer as shown below.

Continue adding more features. by repeating Steps 9 and 10.

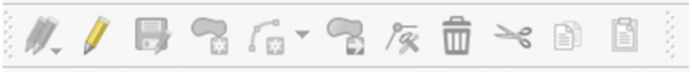
11. Save your work into STDM database. Your digitized features will only be added into the STDM database when you click on the Save button in the Digitizing toolbar as highlighted in the image below.



12. End your editing session by clicking on the Toggle editing tool as highlighted below.

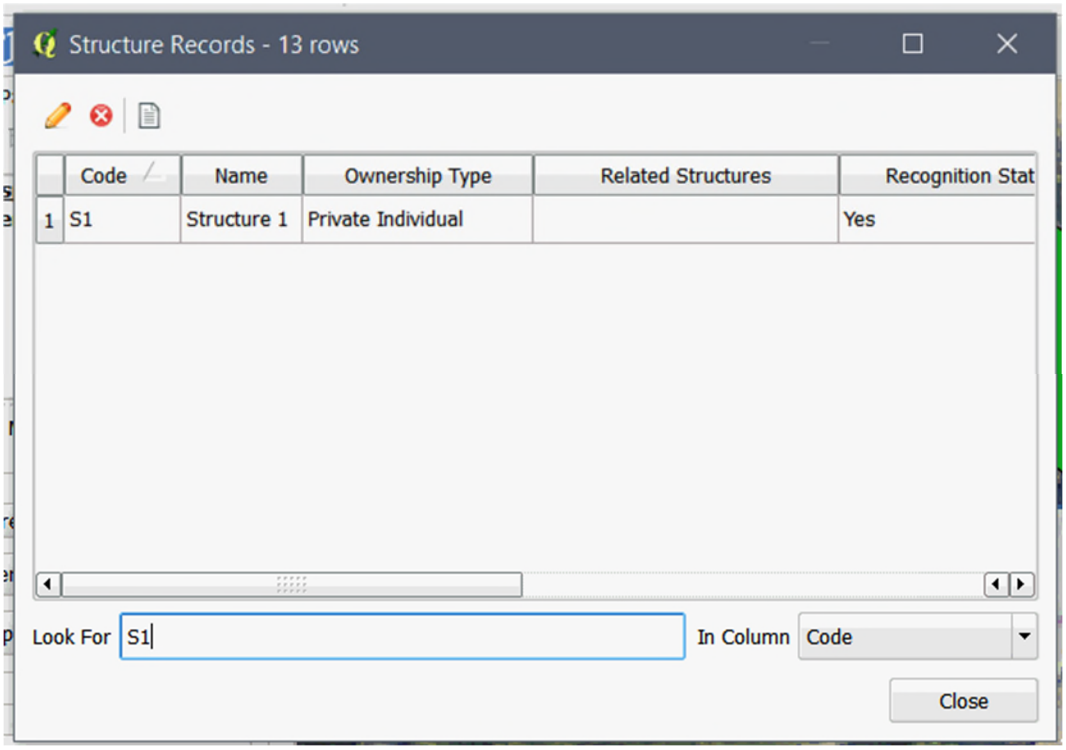


This will disable all tools as shown below.



Check your saved data by going to the Entities menu and by selecting the Spatial Entity Menu.

This opens your spatial entity Browser. Search for the latest record as shown below.



In the Entity browser, you can select the record and edit the attribute data.

Tips:

Undo a selection of a corner: To undo a selection of a corner while digitizing, press the Backspace button on your keyboard.

Undo feature creation: To undo a feature creation, that temporarily removes a feature from the layer, click on the Undo button on QGIS Edit Menu.

Redo feature creation: To redo a feature creation, that temporarily restores a feature from the layer, click on the Redo button on QGIS Edit Menu.

Cancel current digitized feature: Press the Escape (Esc) button on your keyboard to stop digitizing and cancel what you have started.

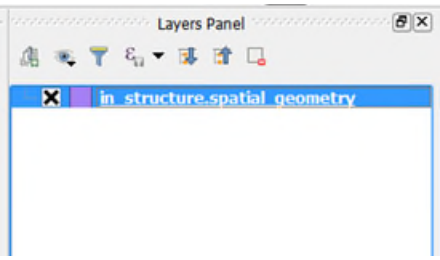
Importing GPS data

This functionality enables you upload a GPX files, downloaded from a GPS device into STDM spatial entity layer. The feature enables you to select coordinate pairs you want to be part of the feature to be added. Then you can add attribute information and save it the database.

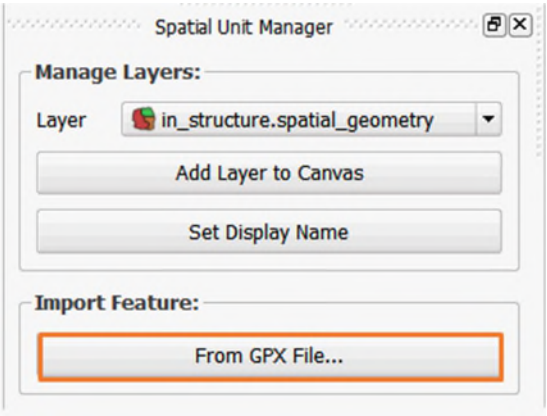
To create a feature using GPX points, follow the steps below.

1. Add a spatial entity layer into the map canvas using the steps under Adding a Spatial Entity Geometry topic.

2. Once the layer is added select the layer in the Layers panel as shown below.

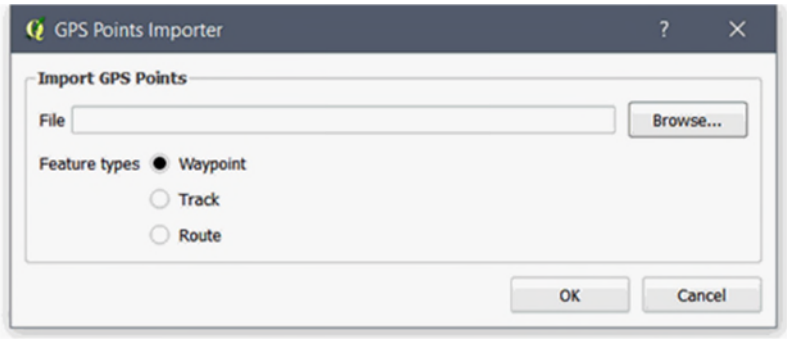


3. On the Spatial Unit Manager, click on the button From GPX File as shown in the image below.

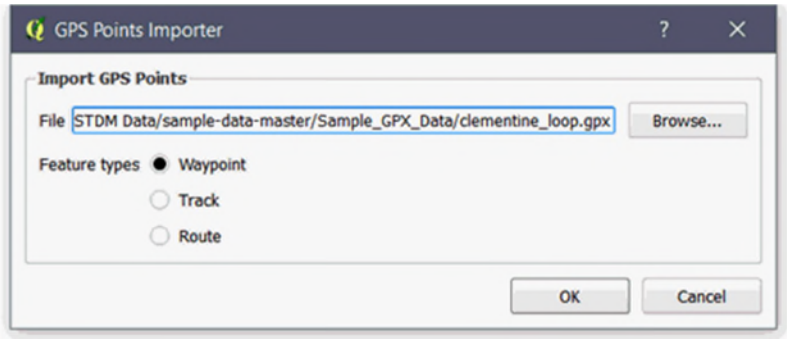


4. A window will pop up to allow you to choose a GPX file from your computer. The currently supported gpx formats are Waypoint, Tracks and Route.

Choose Waypoint under feature types. You can also choose other formats if you know that your gpx file has them.

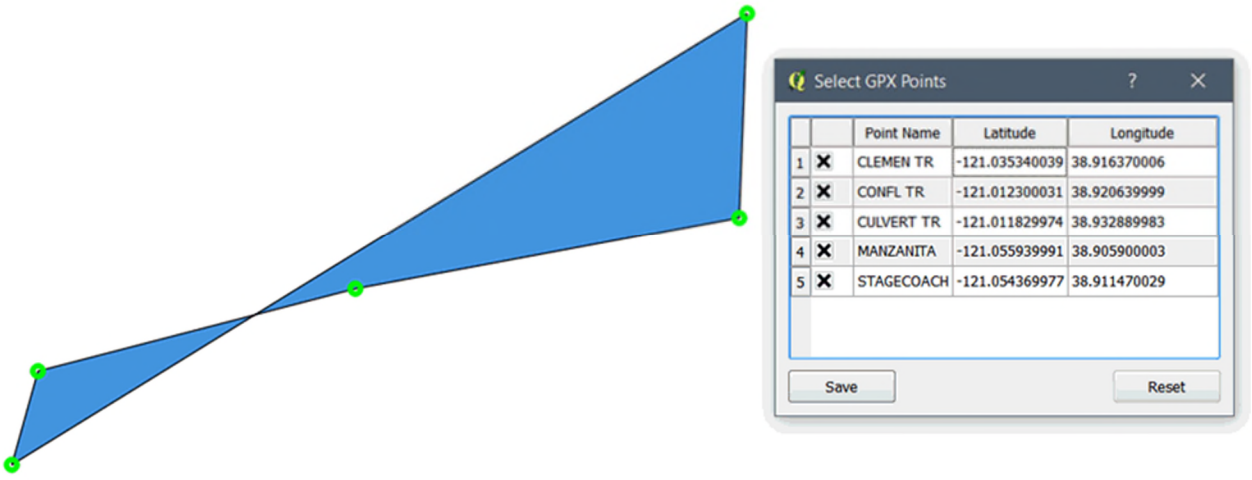


Browse to the location of the GPX file. For this document, the STDM Sample data gpx files are used. The sample data is located in .stdm folder under your user folder inside SampleData/Sample_GPX_Data folder.



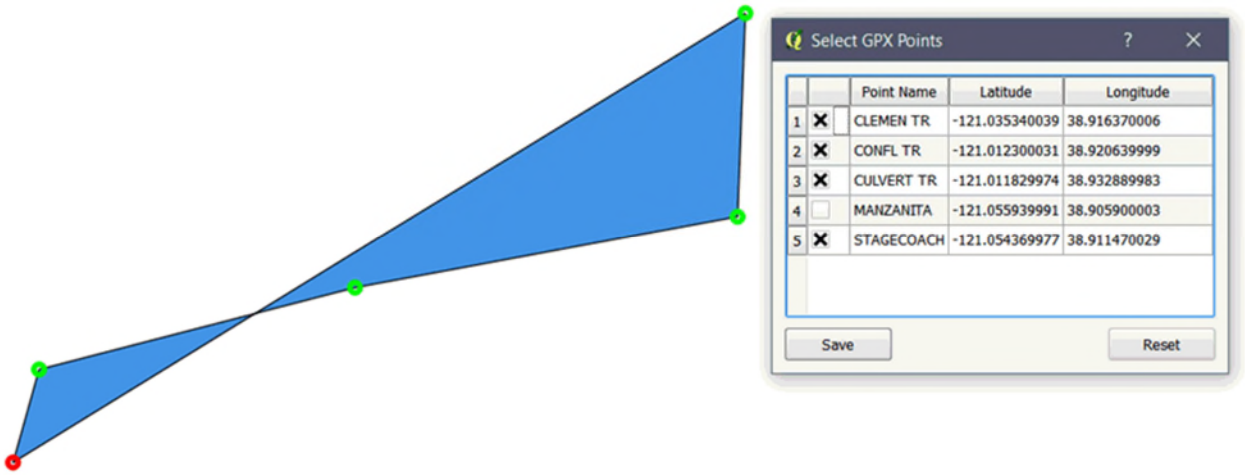
Click on the Ok button to import the points from the gpx file.

5. Once clicked, a GPX table is shown with all existing waypoints from the selected gpx file. In addition, it automatically adds a temporary layer with the points marked (see the image below).



The table enables you to choose points you would like to import. This is achieved by clicking on the checkbox shown on the first column of the table if it is not checked.

6. Remove points that are not needed or points that are wrongly recorded by removing the selection. To remove the selection, click on the checkboxes on first column.

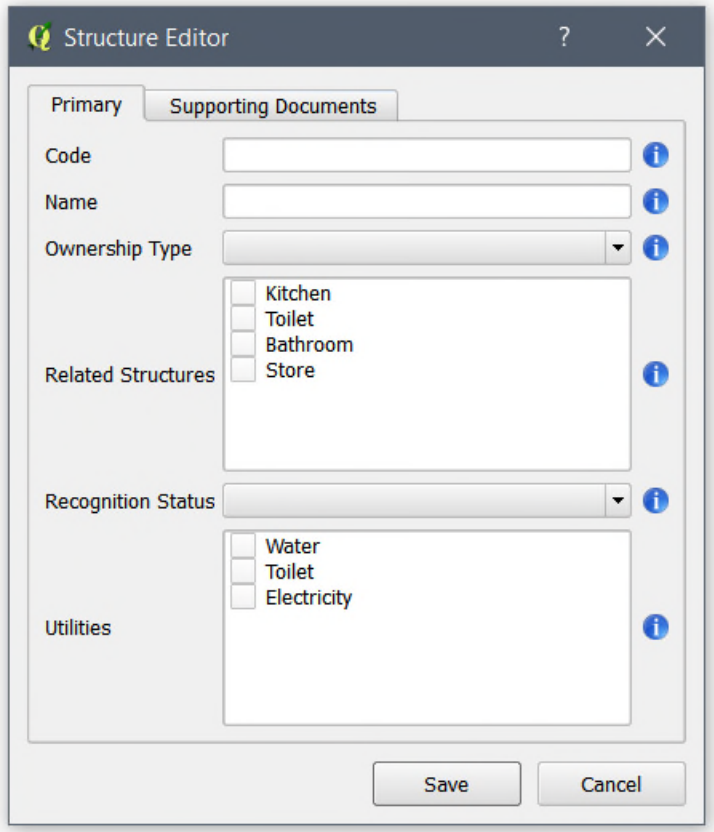


A removed point, from which the checkbox selection is removed, can be seen with a red round marker on the map. On the above figure, the bottom left corner marker is red in colour, indicating that it will not be included in the feature generated from the GPS points.

An included point, with a checkbox checked, can be seen with green round marker on the map, as shown in the figure above. This means that the points with a green round colour will be included in the feature created from the GPS points.

Once you finish choosing points, click on the Save button to temporarily save the feature.

7. The entity's form pops up to enable you save attribute data with the geometry as shown below.



Fill out the form with relevant information uploaded supporting documents if needed.

Click on the Save button to add the feature into the spatial entity with its attribute data added using the form.

You can check the result by viewing the added feature in the map canvas and its attribute data in the entity browser.

If the feature is a line, a line will be drawn when the user selects the corresponding vertexes comprising the line feature.

Similarly, for a point feature, only one point is selectable to import to STDM database.

Viewing Spatial Entity Geometry

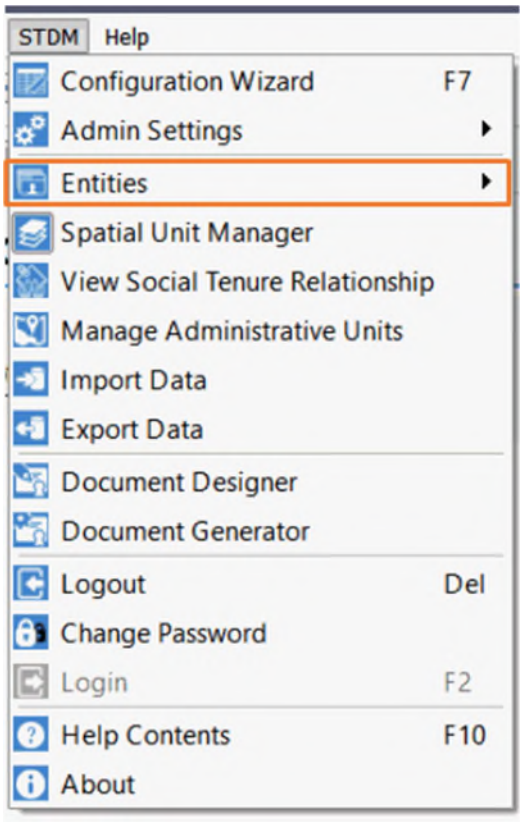
Once you have imported a spatial record or digitized it, you can view each added geometry using the map canvas. The Spatial Entity Browser is further customized to highlight and zoom into a record's feature that you have selected.

Follow the steps below to view the geometry of a selected record.

1. Go to the STDM Toolbar and click on Entities menu as shown below.

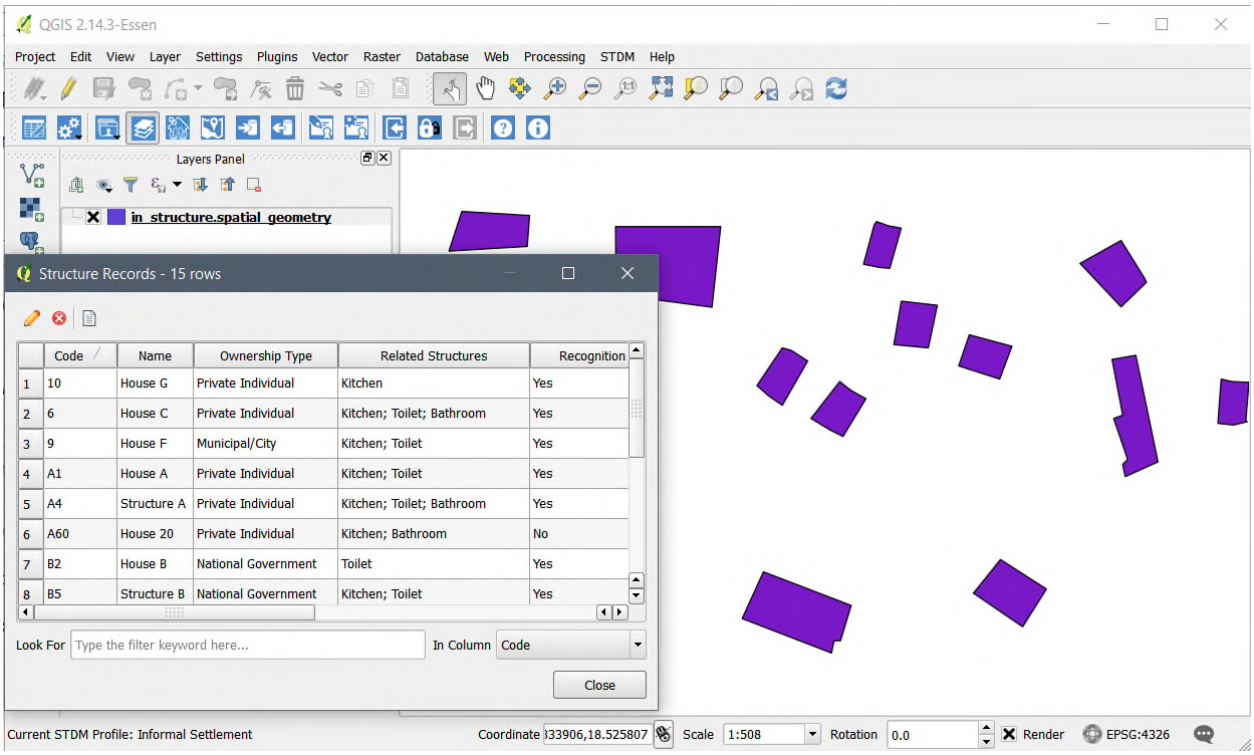
Or

Click on STDM Menu located under QGIS Menu and click on the Entities sub-menu as show in the image below.

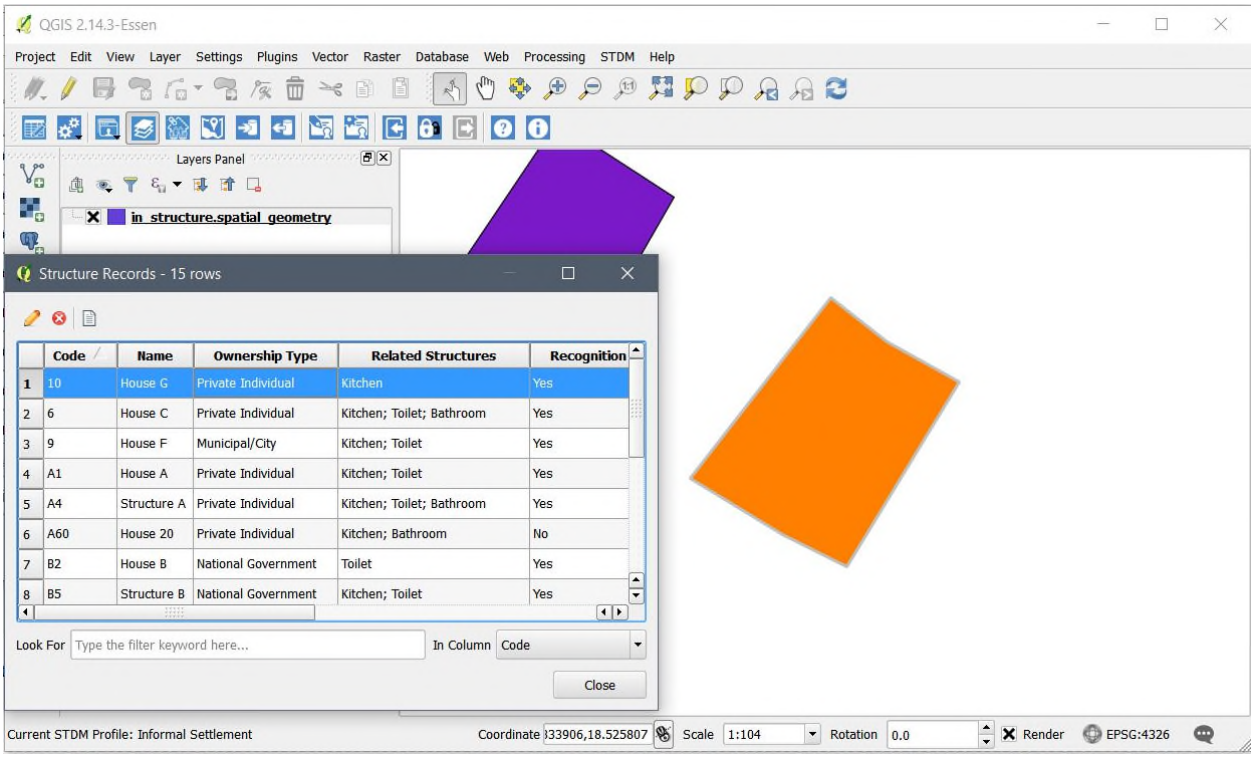


2. Open an Entity Browser of an entity with a geometry column.

3. A Spatial Entity Browser opens, positioned in the bottom left corner of QGIS unlike non-spatial entity browser. This is to allow better visibility to the map canvas.



4. Select a row to view a feature attached to a record as shown below.



When you select a row, its attached geometry appears in the map canvas as shown in the above image.

When you click on the Close button, the active layer gets removed from the map canvas.

Managing Social Tenure Relationship

'People – land' relationships can be expressed in terms of persons, group of people and institution (parties) having a right to parcel, garden, or structure (spatial units). In STDM, this right is called Social Tenure Relationship (STR).

The Social Tenure Relationship has its own table that stores each person's relationship to a spatial unit. Most importantly, it also gives you an option to choose the type of social tenure relationship between the person and the spatial unit. In addition, you can upload a supporting document that can be any document you think is useful for informational purpose and as evidence.

The STR table has two modules that are used to create, edit, and search STR.

Creating a Social Tenure Relationship

Creating a Social Tenure Relationship is carried out through a wizard called New Social Tenure Relationship.

The module enables you to do the following:

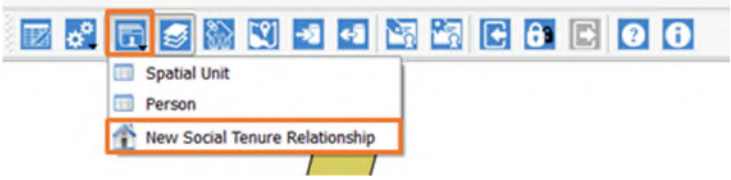
- Add a person or persons
- Add a spatial unit
- Choose a social tenure relationship type for each persons added
- Upload supporting document that is related to social tenure relationship

To create a social tenure relationship, follow the steps below.

1. Start the New Social Tenure Relationship Wizard.

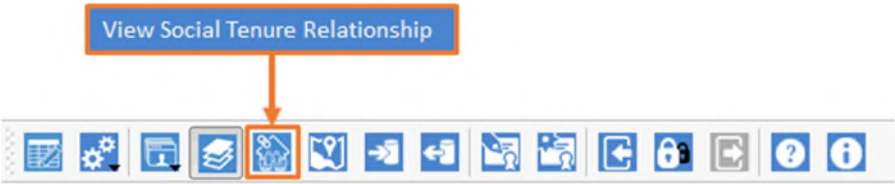
There are two ways of starting New Social Tenure Relationship Wizard.

Through Entities Menu by selecting New Social Tenure Relationship sub-menu.

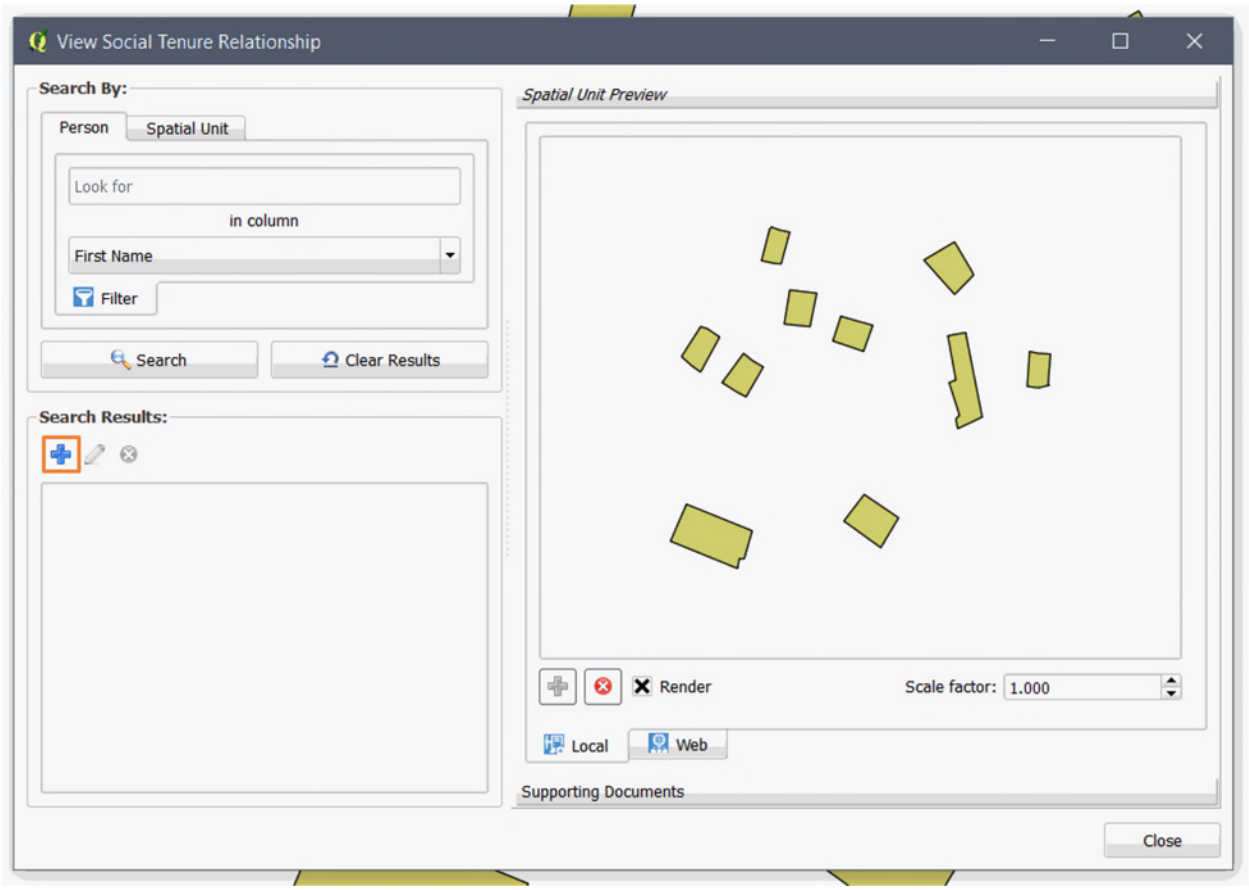


Or from View Social Tenure Relationship Module

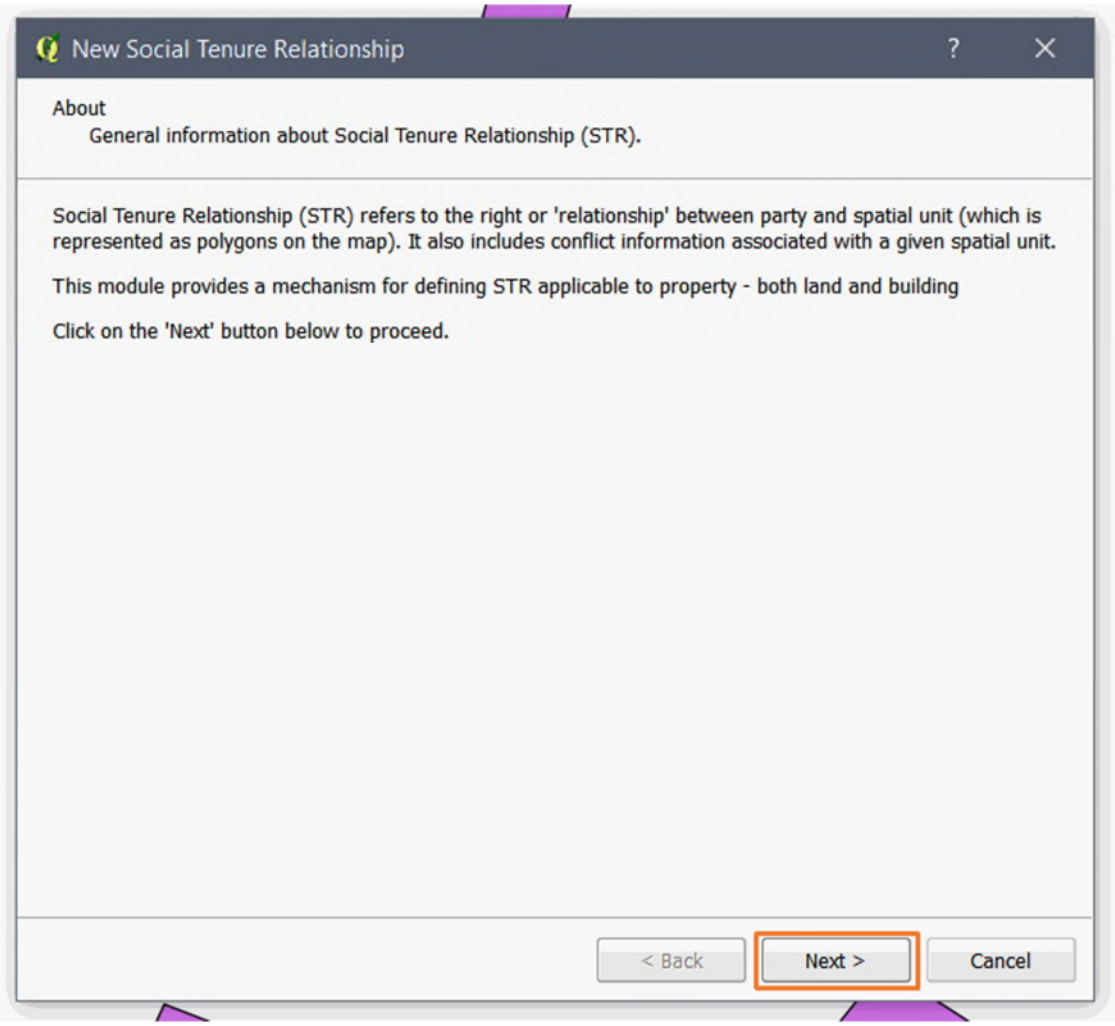
First click on View Social Tenure Relationship button on STDM toolbar.



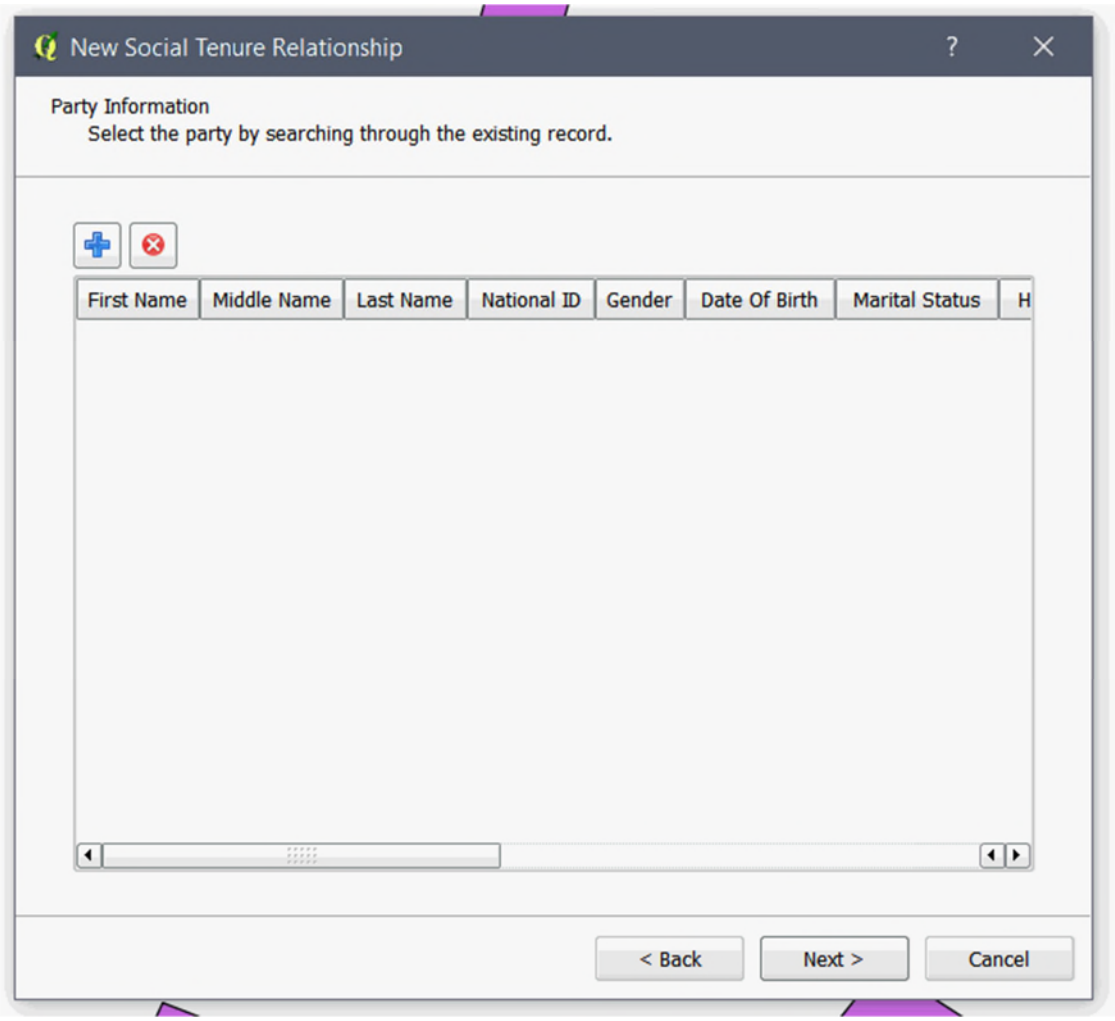
Then inside View Social Tenure Relationship, click on the add ( ) button, located inside Search Result.



2. You will see the module below. After reading the description, click the Next button to proceed.

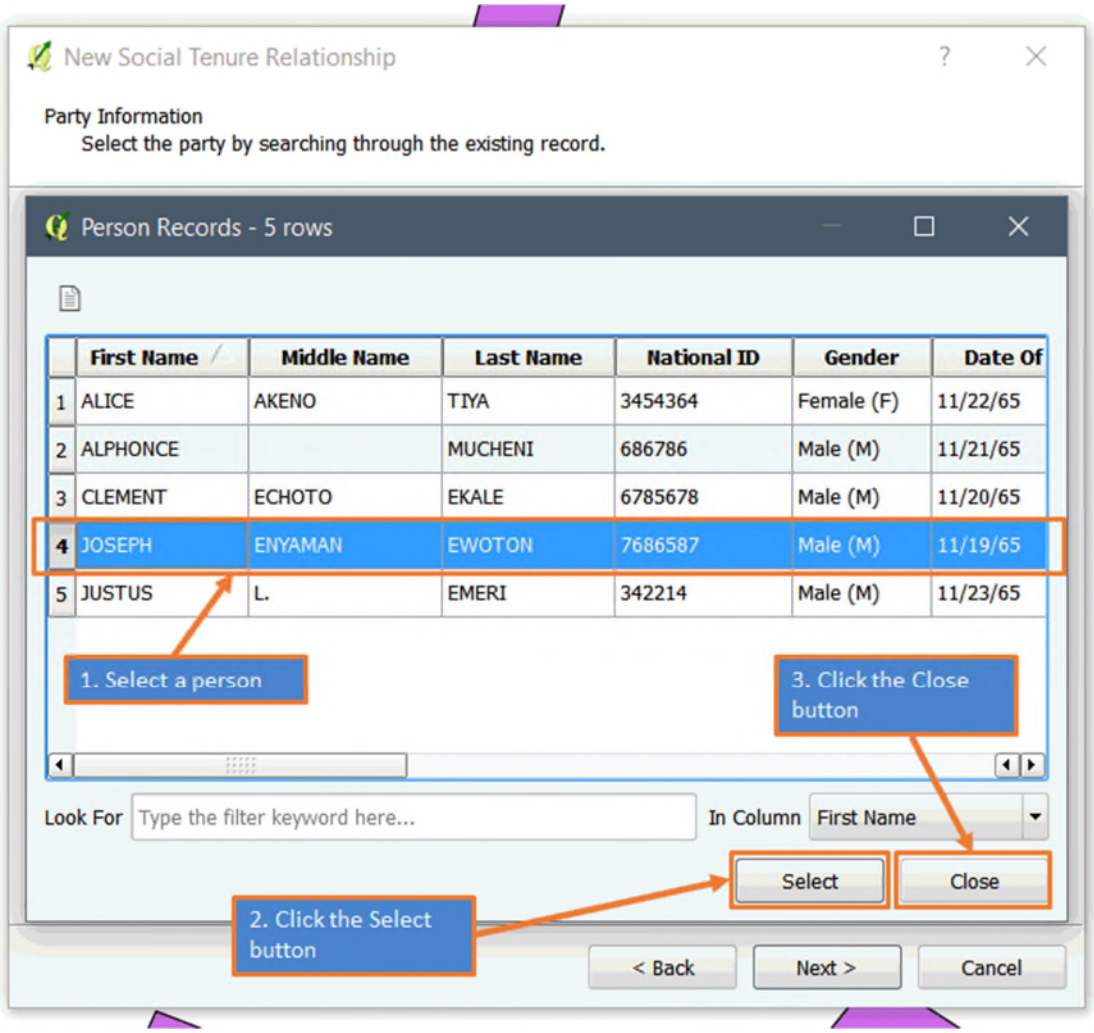


2. On Party Information page (see the image below), you can add the person to be linked to a spatial unit/structure/parcel. If you have allowed multiple parties for one spatial unit, you can add more than one person.



To add a person, click on the add button ( ) to open the Person Records.

3. Select a record that you would like to add. You can search for the person you would like to add. Then, select it and click on the **Select** button as shown below.



If you want to add multiple records that are not continuous, follow the sub-steps below.

*a. Press the **Control** (Ctrl) key on your keyboard*

*b. While still pressing the **Control** key, select another record you want to add.*

If you want to add multiple records between two rows, follow the sub-steps below.

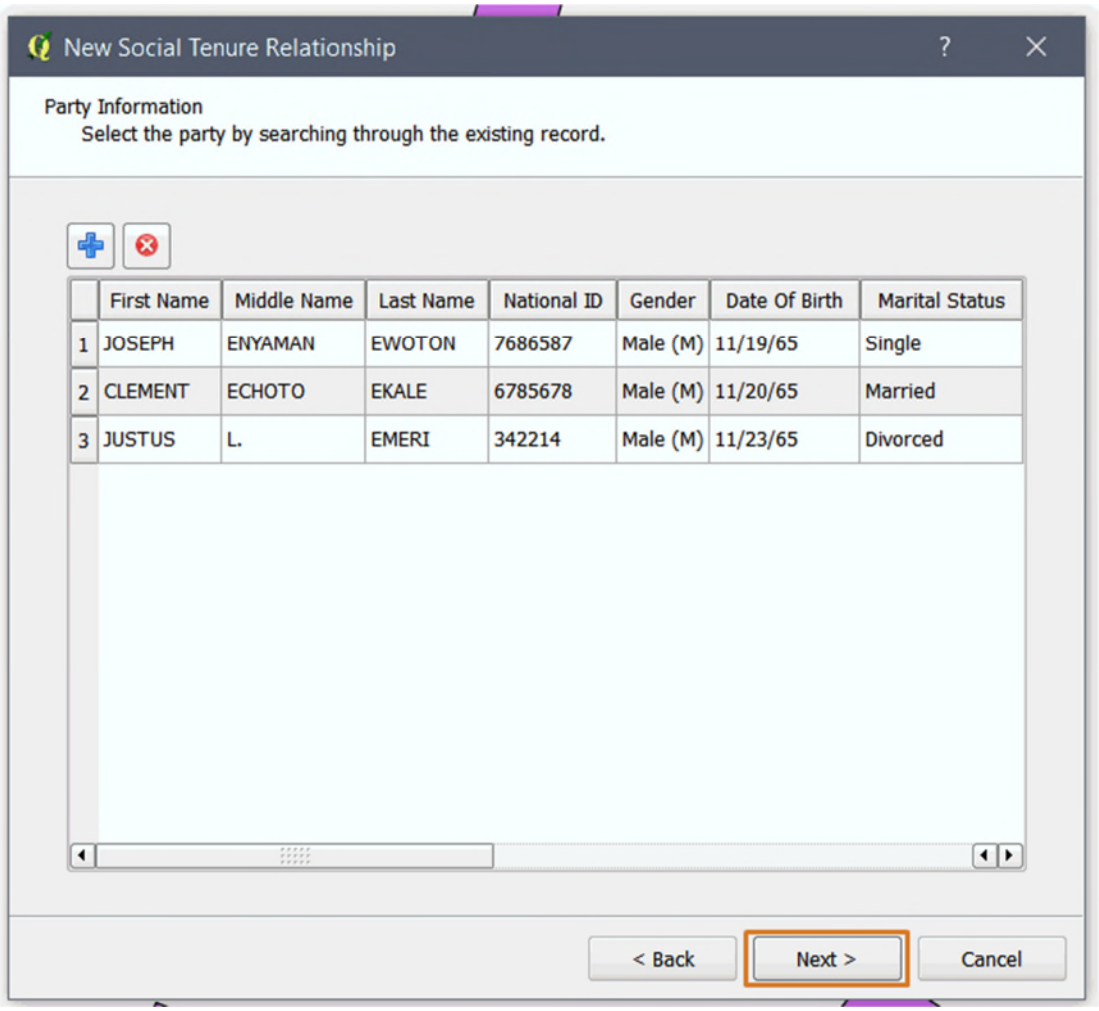
a. Select a record that will be the first selection in the range.

*b. Press the **Shift** key on your keyboard*

*c. While still pressing the **Shift** key, select the last row in the selection range*

When you finish selecting all records, click on the **Close** button as highlighted in the image above.

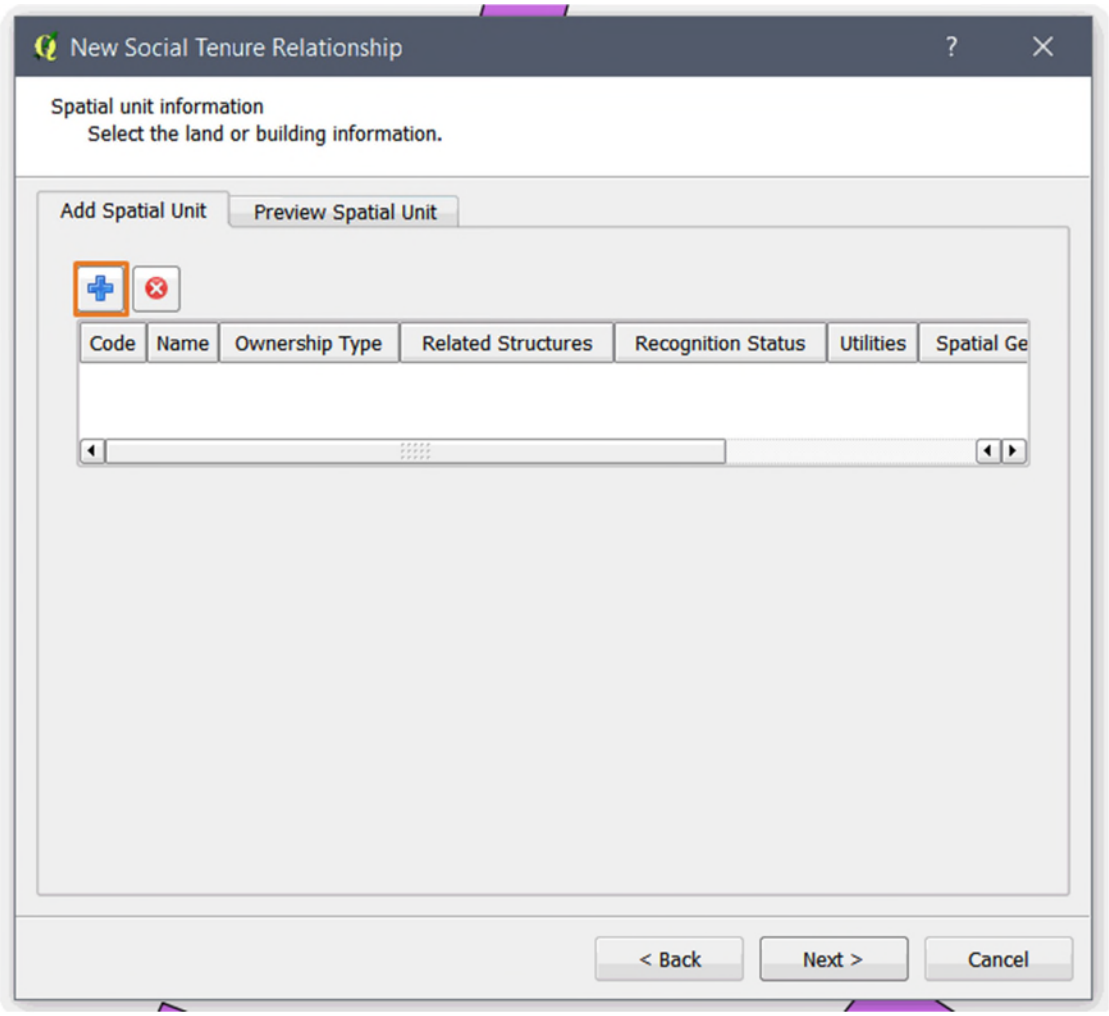
Once you click the close button, you will see all the selected records in the page as shown below.



You can remove records by selecting a record and by clicking on the remove button ( ).

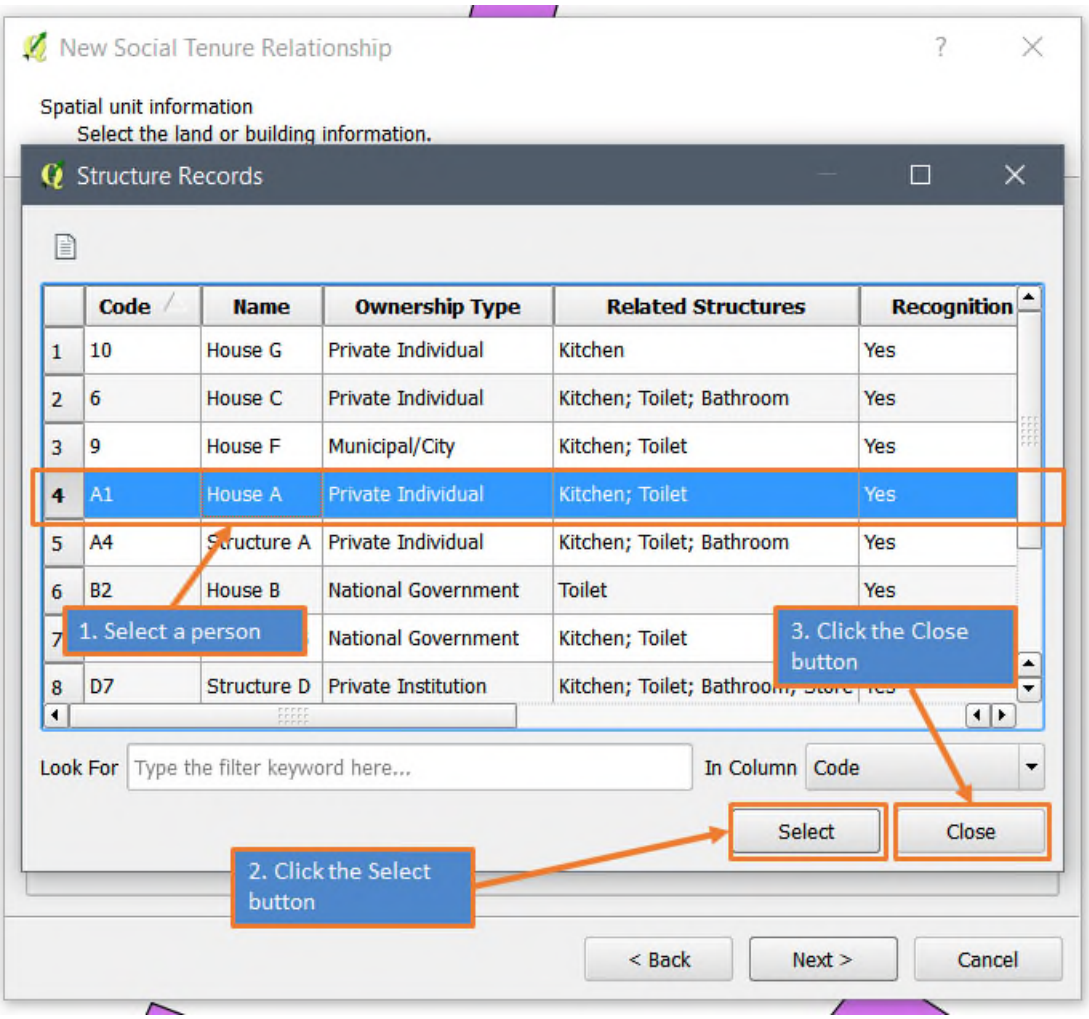
Click the **Next** button to proceed.

4. Once you have clicked the Next button in the Party Information page, you will see the Spatial Unit/ Structure page, where you have to select a spatial unit by clicking on the Add button ( ).

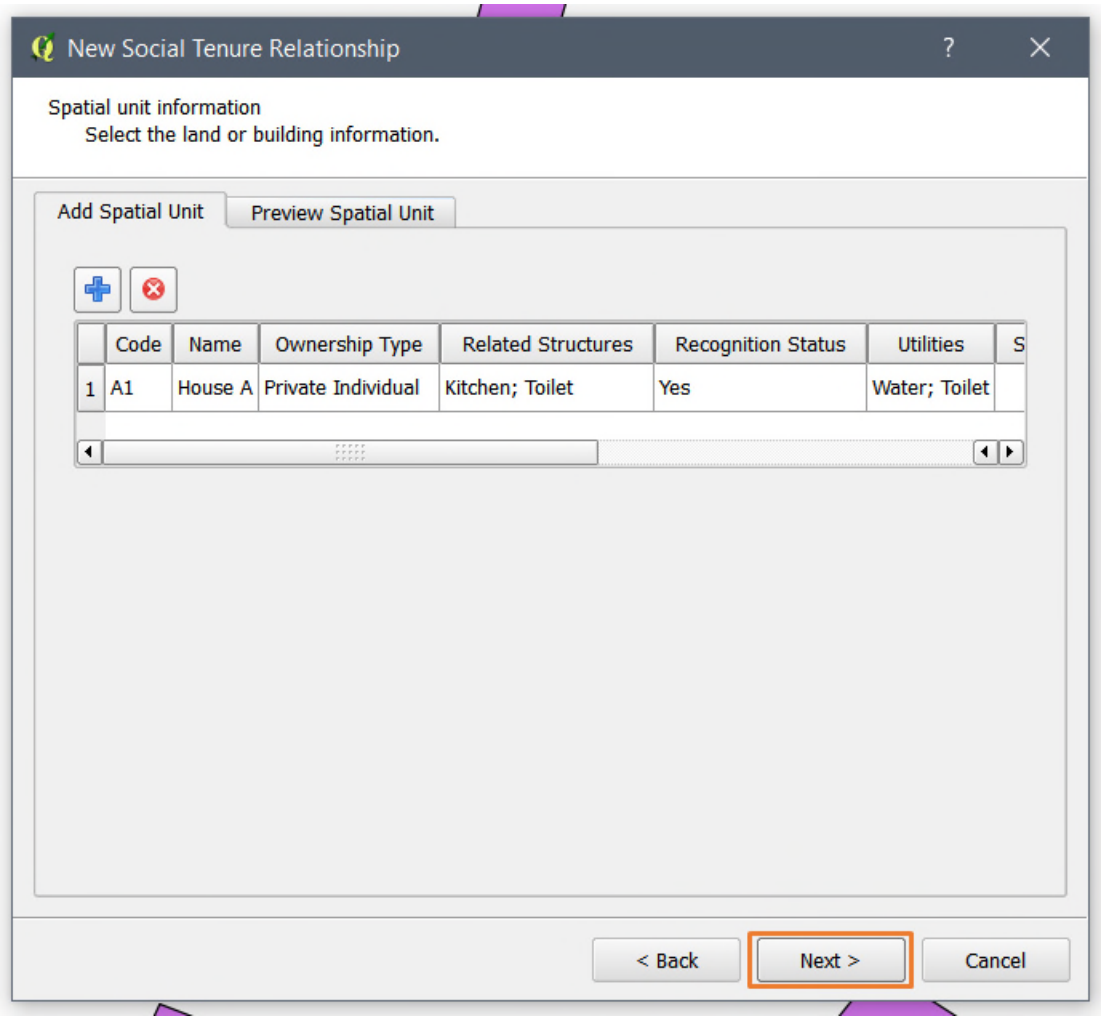


5. When you click on the Add button (), the Spatial unit/Structure Record Window appears to allow you select a spatial unit.

Select one spatial unit that should be linked to the parties/ persons you have selected as shown below. You can use the search tool to look for the spatial unit you would like to add. Then, click on the **Select** button and click on the **Close** button.



Once you have clicked the close button, you will see the selected records in the page as shown below.



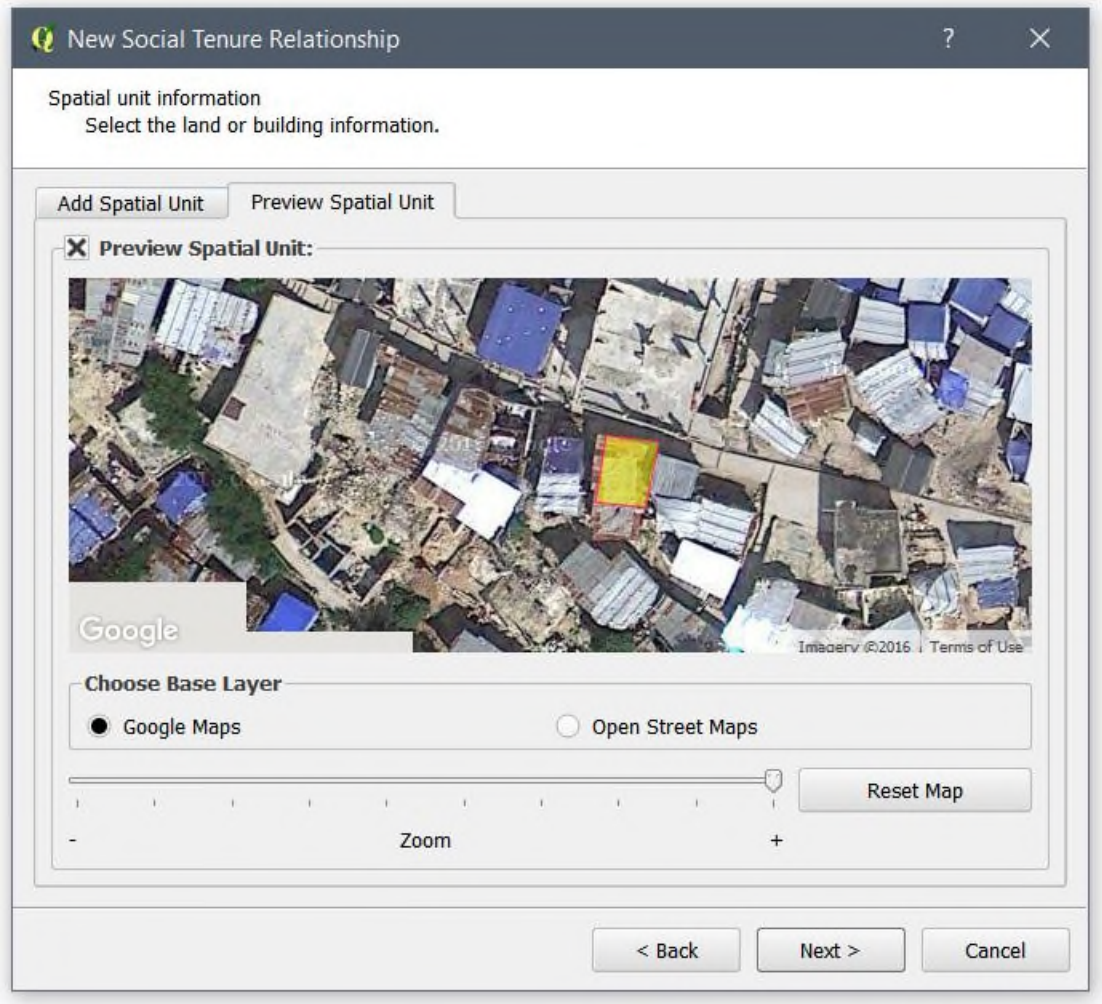
You can remove a record by selecting it and by clicking on the remove button ( ).

You can view the selected spatial unit in a web map. The base layers used are Google map and Open Street map. You can choose one of them.

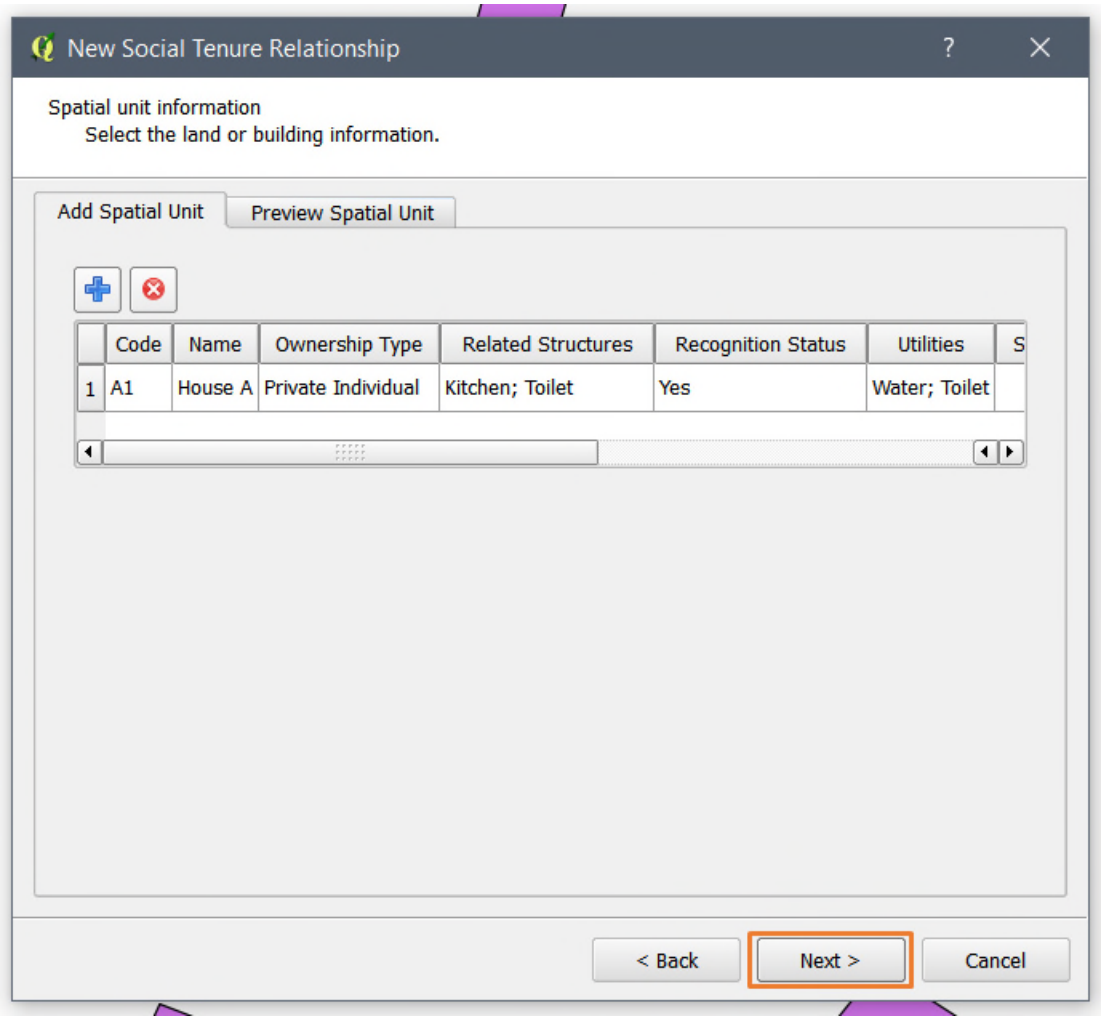
To enable spatial unit preview, open Preview Spatial Unit tab and click on the checkbox Preview Spatial Unit as shown below.

This enables you to view the spatial unit on top of a web map you have chosen.

Note: Web overlay may vary from the actual representation in the local map.

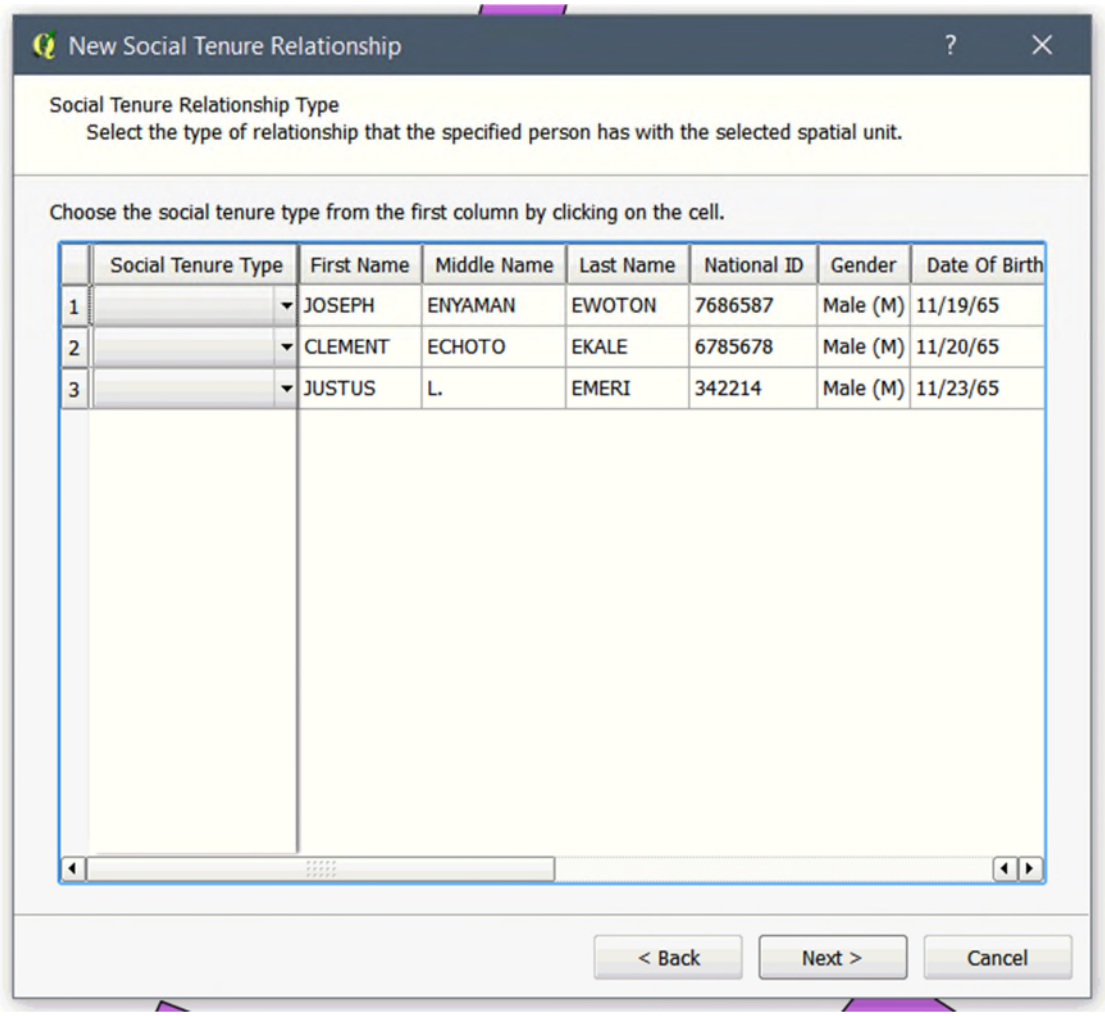


Click the Next button to proceed as highlighted below.

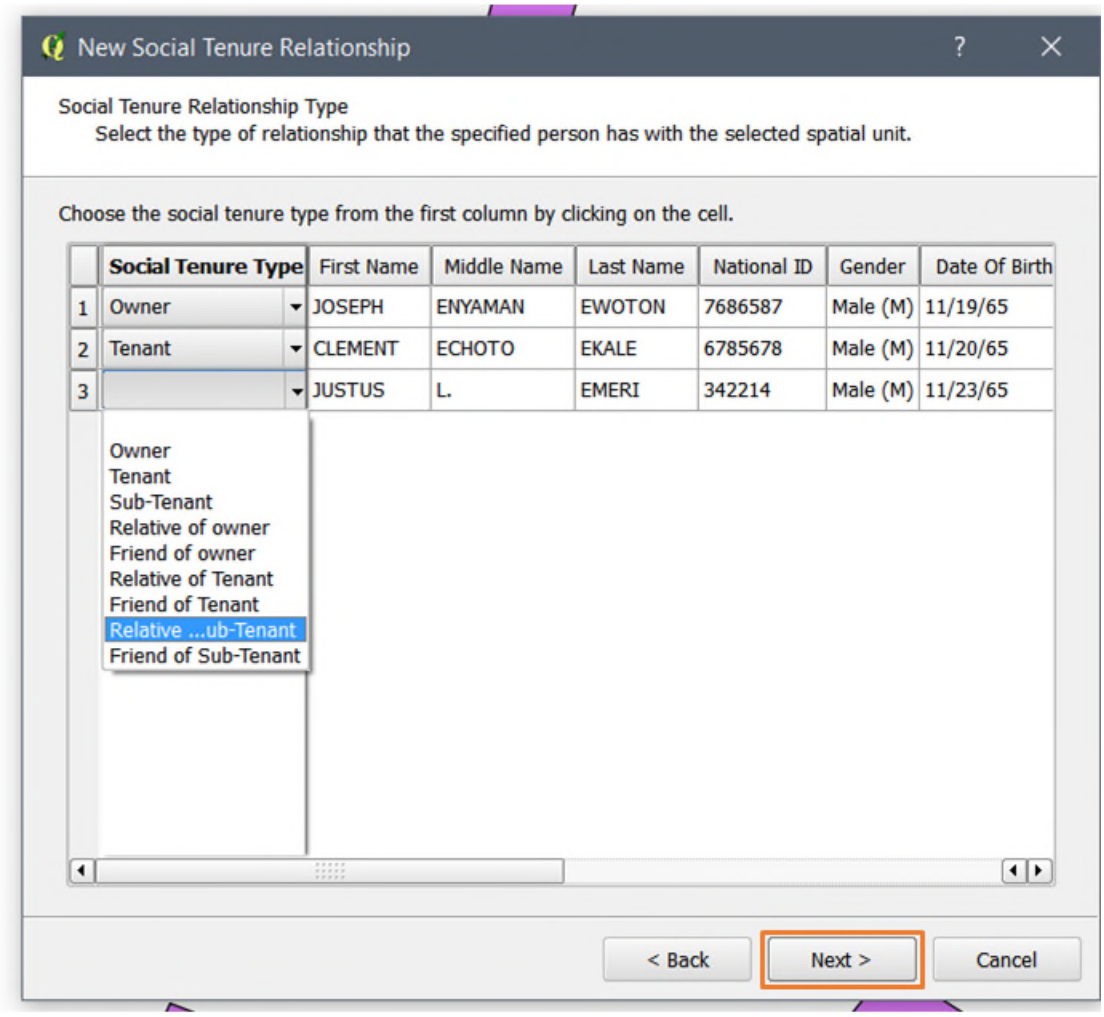


6. Once you click the **Next** button, you will see the Social Tenure Relationship Type page as shown below. This page loads a row for each party you have added in the Party Information page.

The first column is the most important part where you select the tenure type by looking at the **person** record next to it. The remaining columns of each row are used, so that you know for whom you are assigning the tenure type.

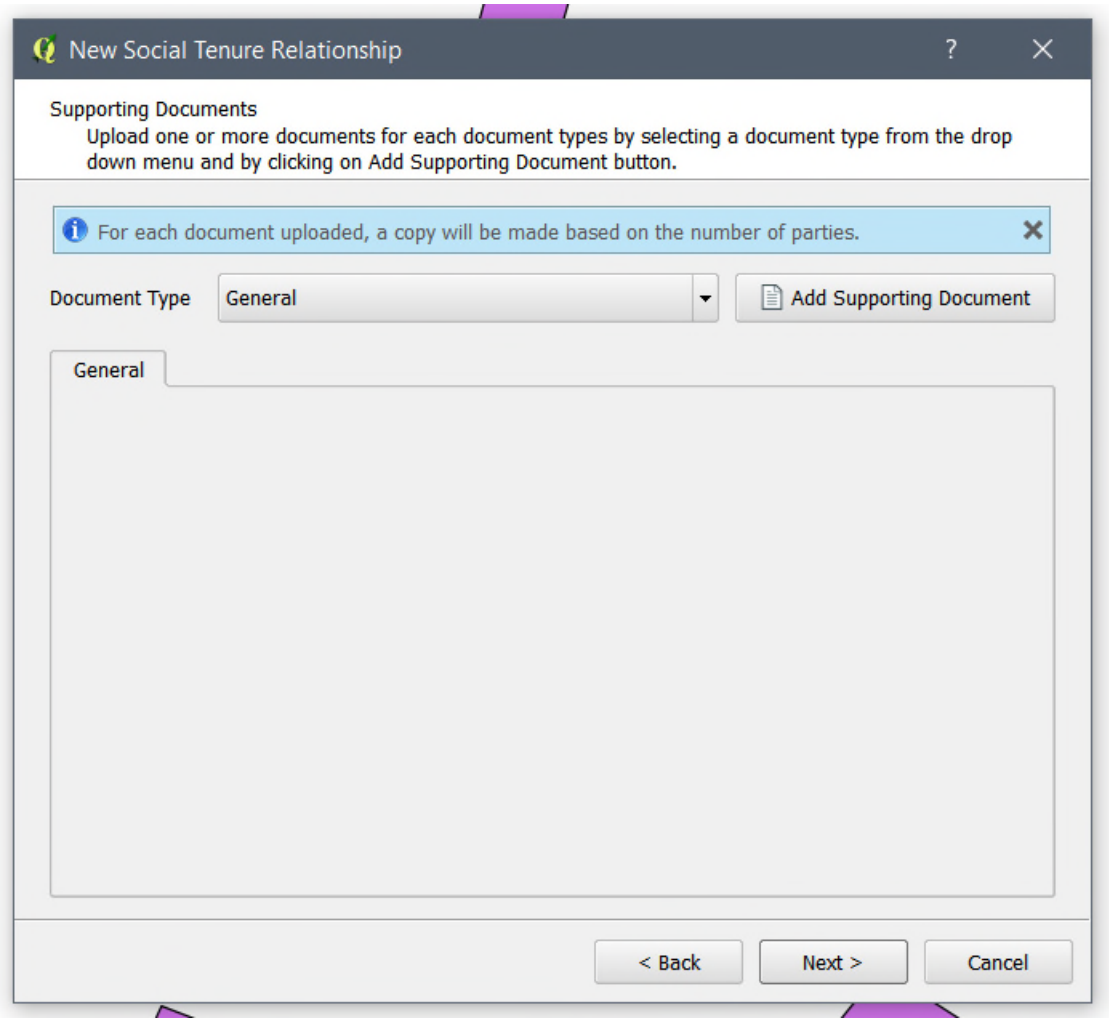


Select the tenure type by clicking on the drop down menu and choosing **tenure type** on the first column named **Social Tenure Type** for each row as shown below.



Click on the next button to proceed to the **Supporting Document** page.

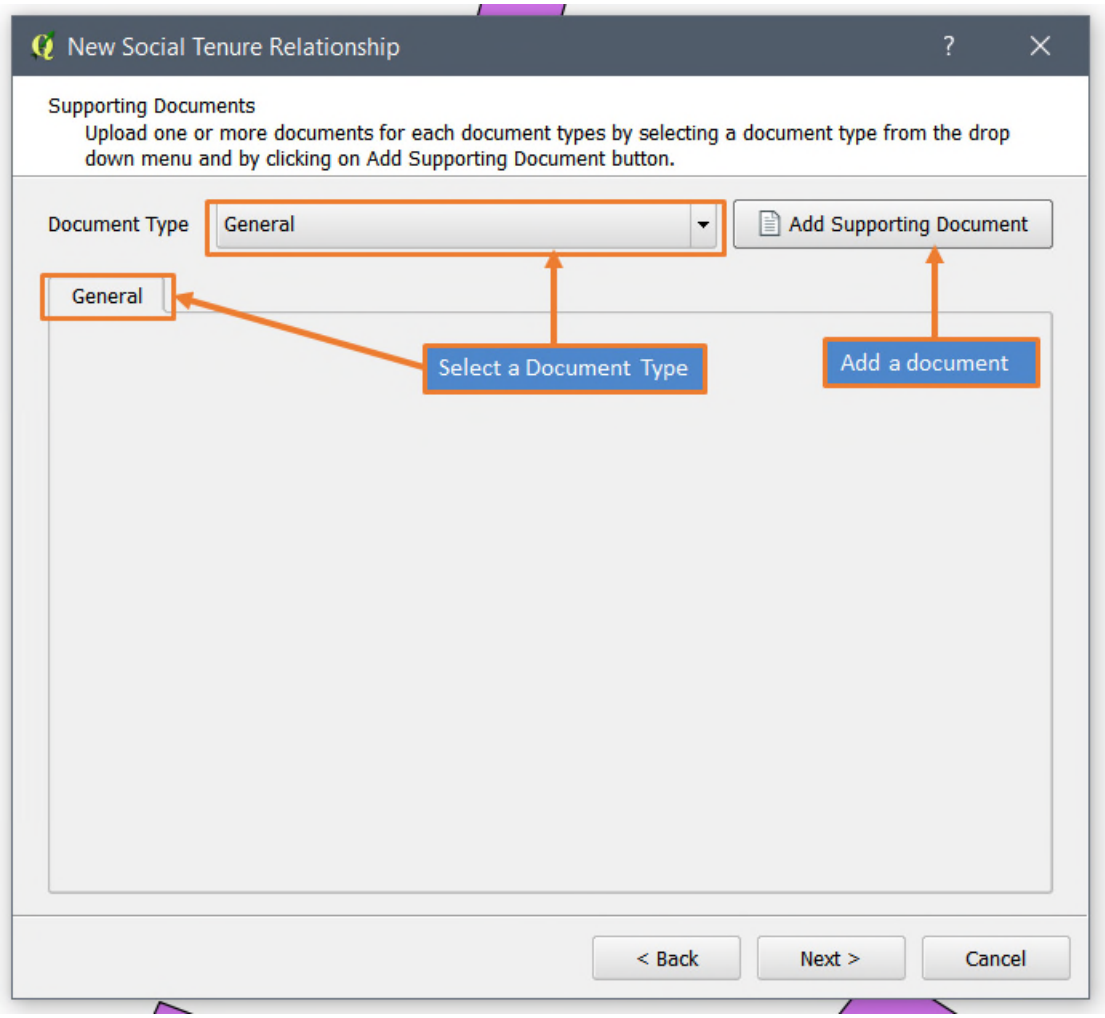
7. When you click the Next button, you will see the **Supporting Documents** page. The page enables you to upload supporting documents for each document type you have specified in the Configuration Wizard. This supporting document could be any relevant document that could be used as an evidence or information for the social tenure relationship.



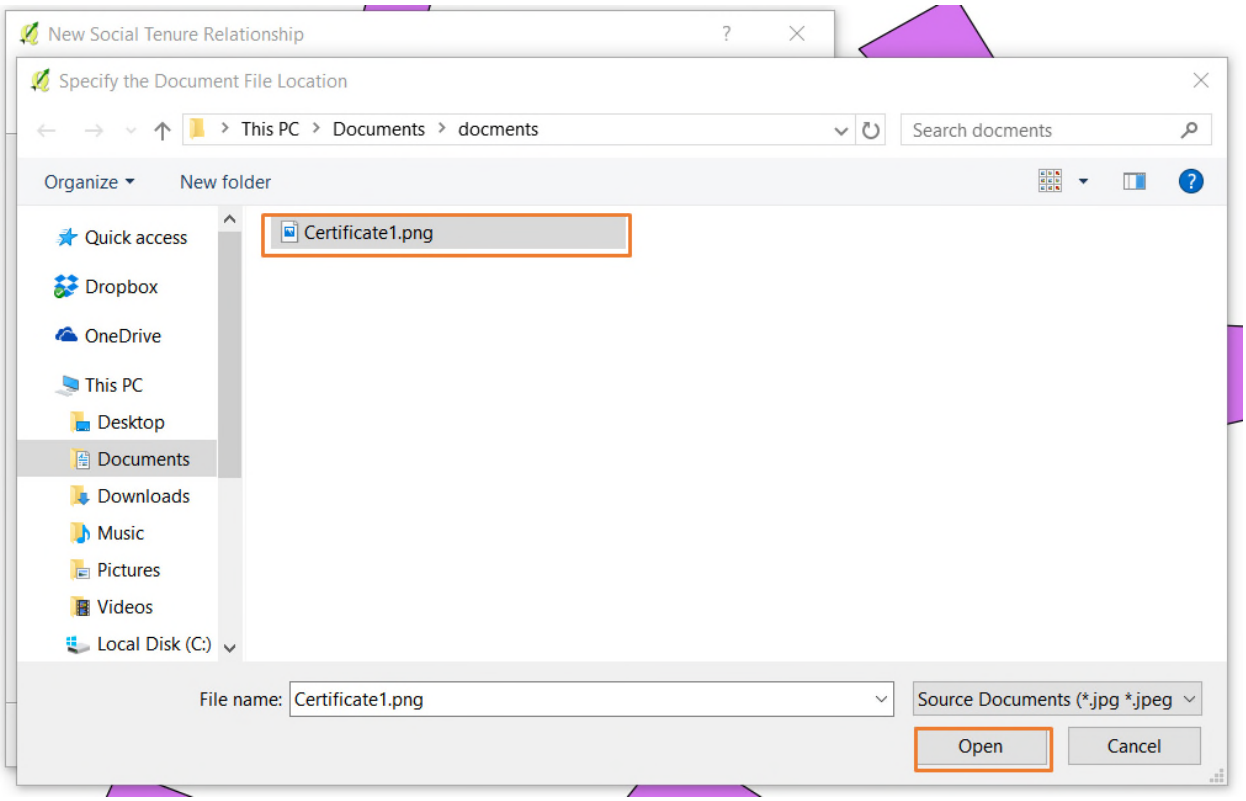
If you have added more than one party, you will see an information that specifies that a copy will be made for each documents you have uploaded as shown in the image above. This is to mean that when you upload one document, a unique copy will be created for each party. Thus, you can access each uploaded document from the social tenure relationship of each party. If only one party is linked to the spatial unit, you will not see this message. The uploaded document will only be accessible from the specified person or spatial unit.

If you have more than one document type, a tab will be created and you can click on the tabs or the drop down menu to upload the documents in to it.

8. To upload a supporting document, choose on the document type by clicking on the tabs or the drop down menu. Then, click on the **Add Supporting Document** button as shown below.

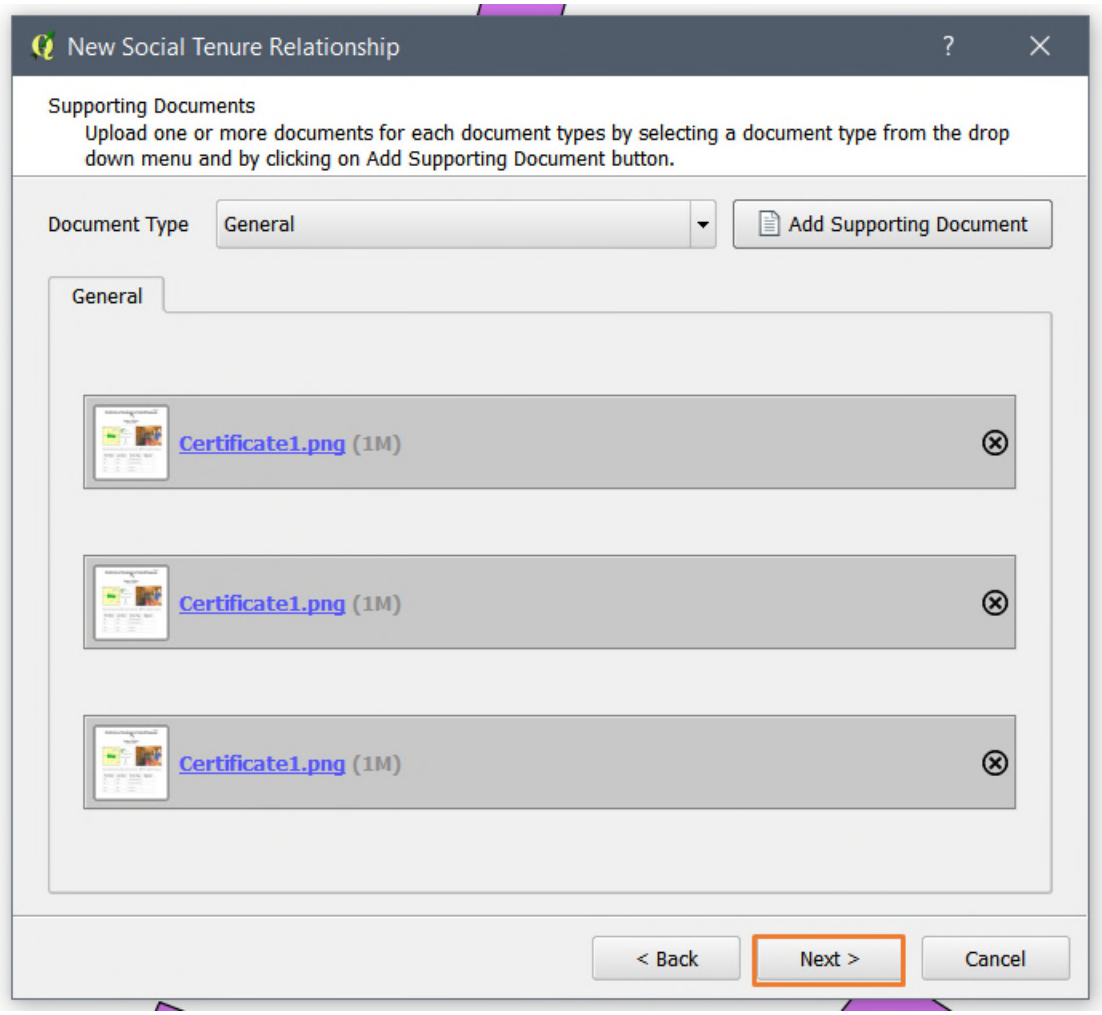


9. Choose a file to be uploaded by looking for the files in your Windows Explorer. Then, click on the Open button as shown below.



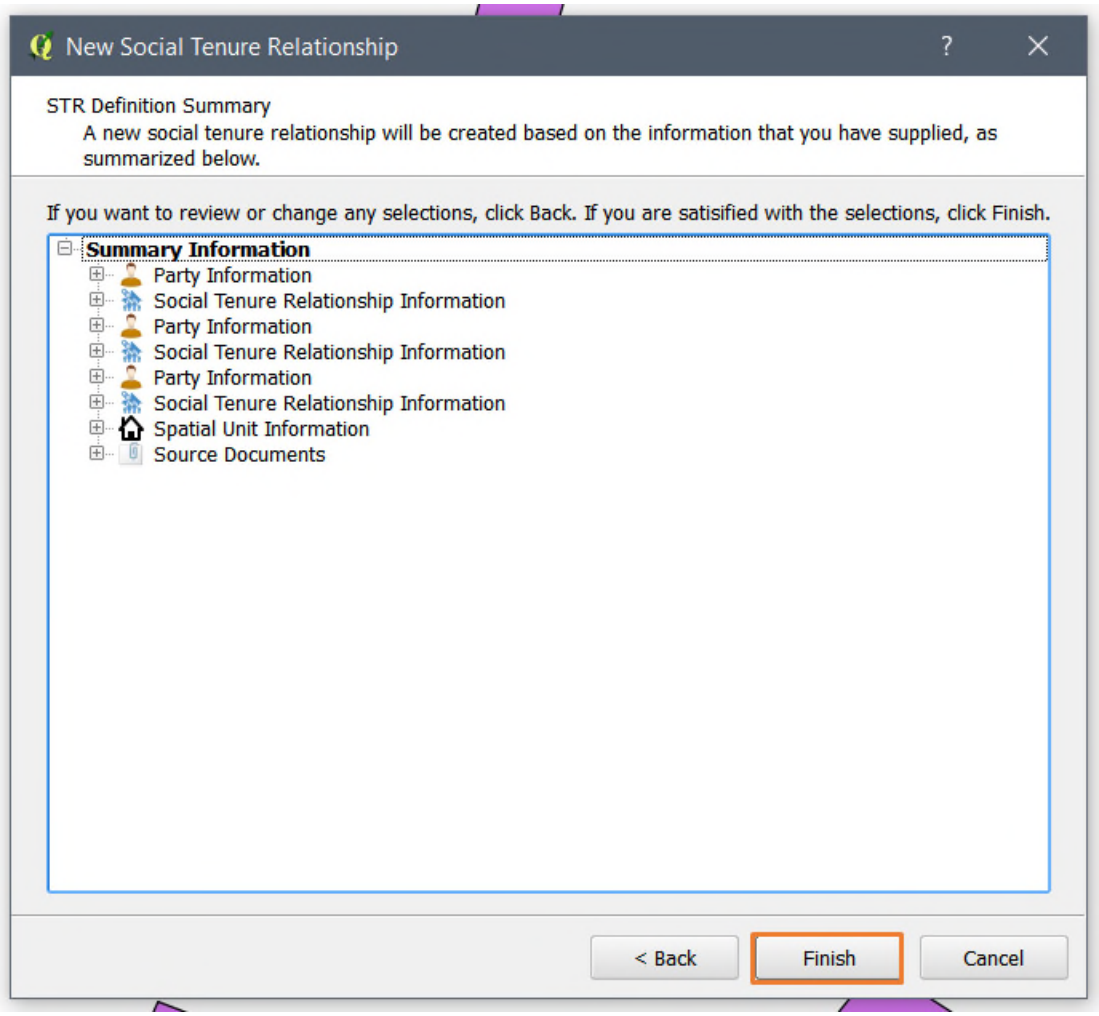
When you click the Open button. a copy of the same document will be created for each party as shown below.

You can view the documents by clicking on the file name. You can remove the documents by clicking on the Remove icon (⊗) on each document bar.



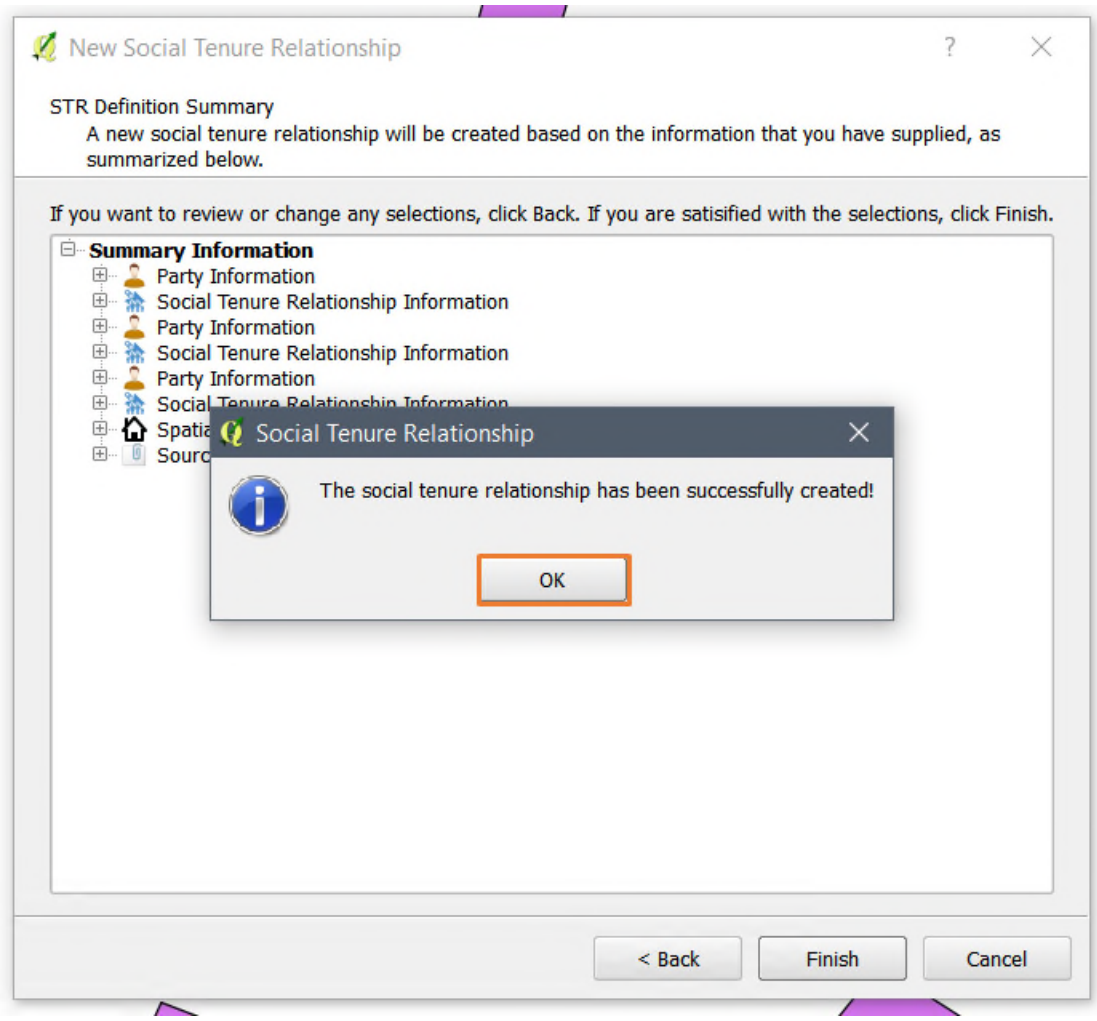
10. Click the next button to reach the STR Definition Summary page. Here, you will be able to see the summary of the social tenure relationship you are going to save to the database.

You can see more details of what you have chosen by clicking on the Plus icon (⊞) and you can also see less of these details by clicking on the Minus icon (⊟).



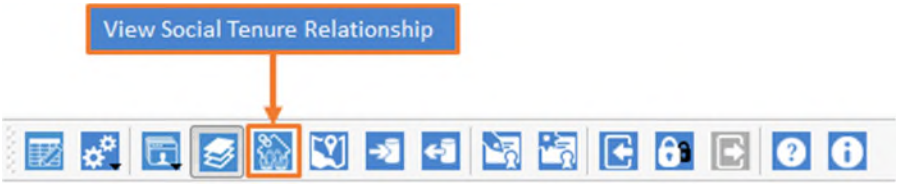
11. To save the social tenure relationship to the database, you have to click on the Finish button as highlighted in the image above.

Once you click on it, you will see a success message as shown in the image below. Click the **Ok** button as highlighted below, to close the New Social Tenure Relationship Window.

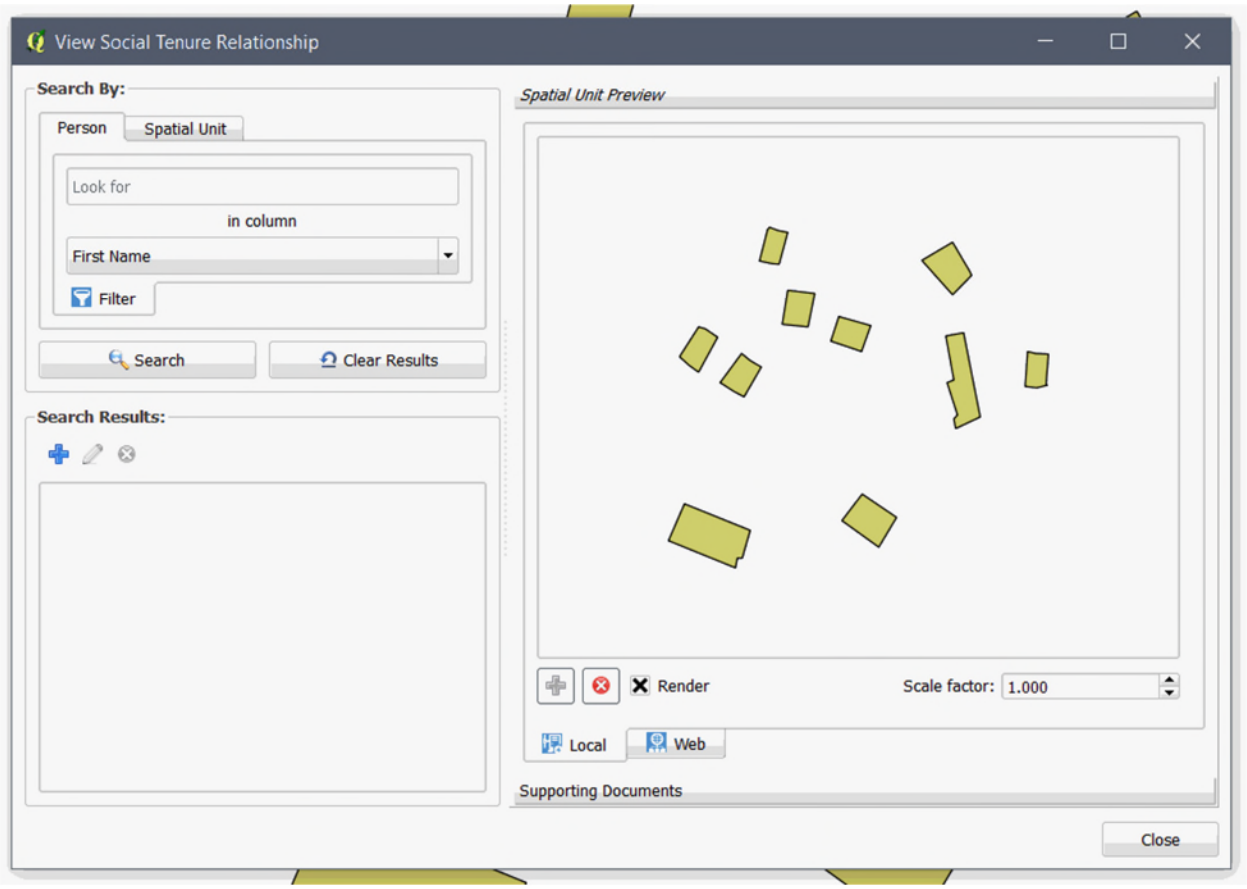


Querying/ Viewing Social Tenure Relationship

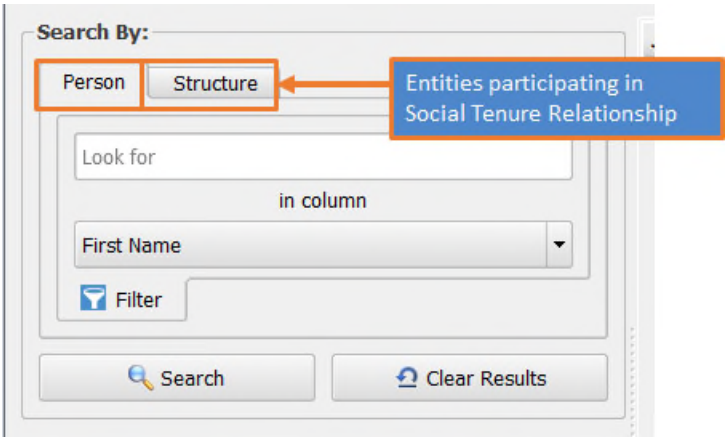
To view the social tenure relationship, click on the View Social Tenure Relationship button  from the STDM tool bar as shown below.



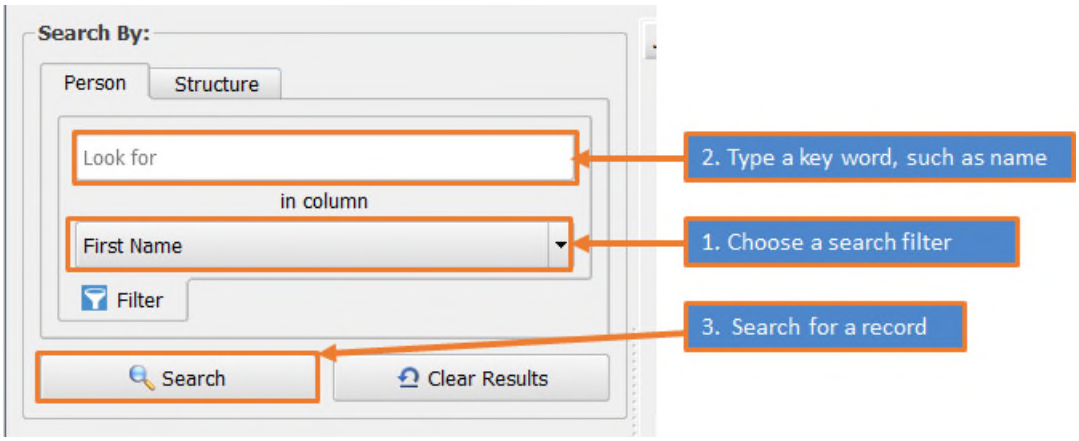
This should start the View Social Tenure Relationship module as shown below.



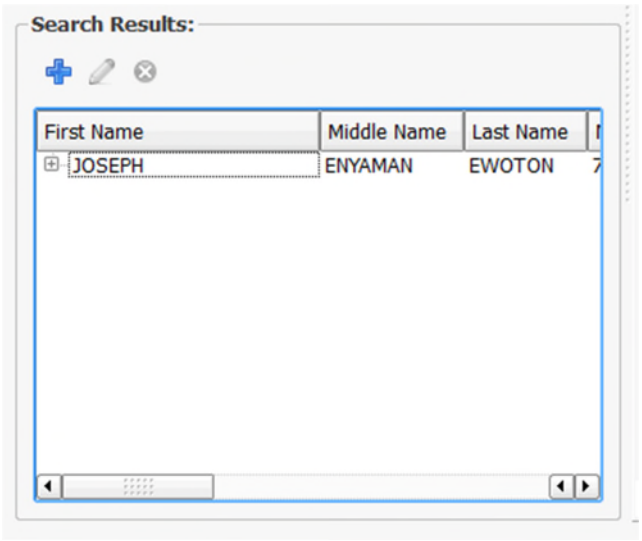
The entities that were selected as Social Tenure Relationship entities in the Configuration Wizard will appear as shown in the image below. Each tab has a search tool that enables you to search a record's social tenure relationship.



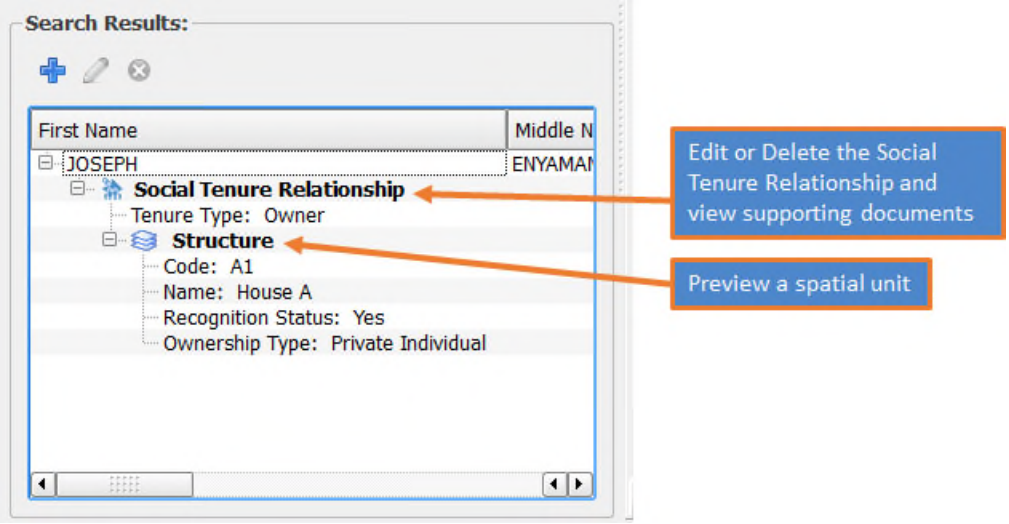
2. First select a filter that you will use to search a record and then type the keyword such as First Name of the person you are looking for. Then, click the Search button (see the image below).



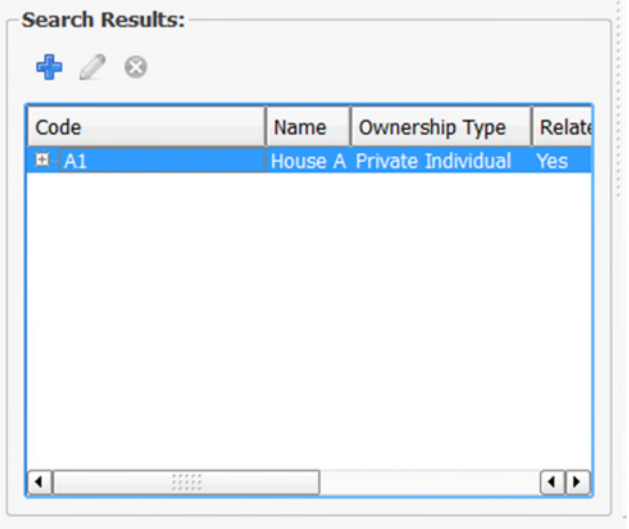
3. The search results appear on a panel as shown below.



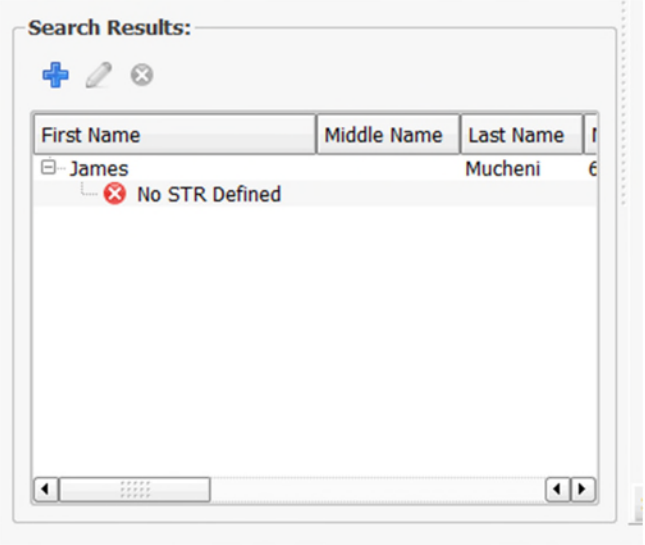
When you click on the plus icon (⊞) you will see all the social tenure relationship related information of the record.



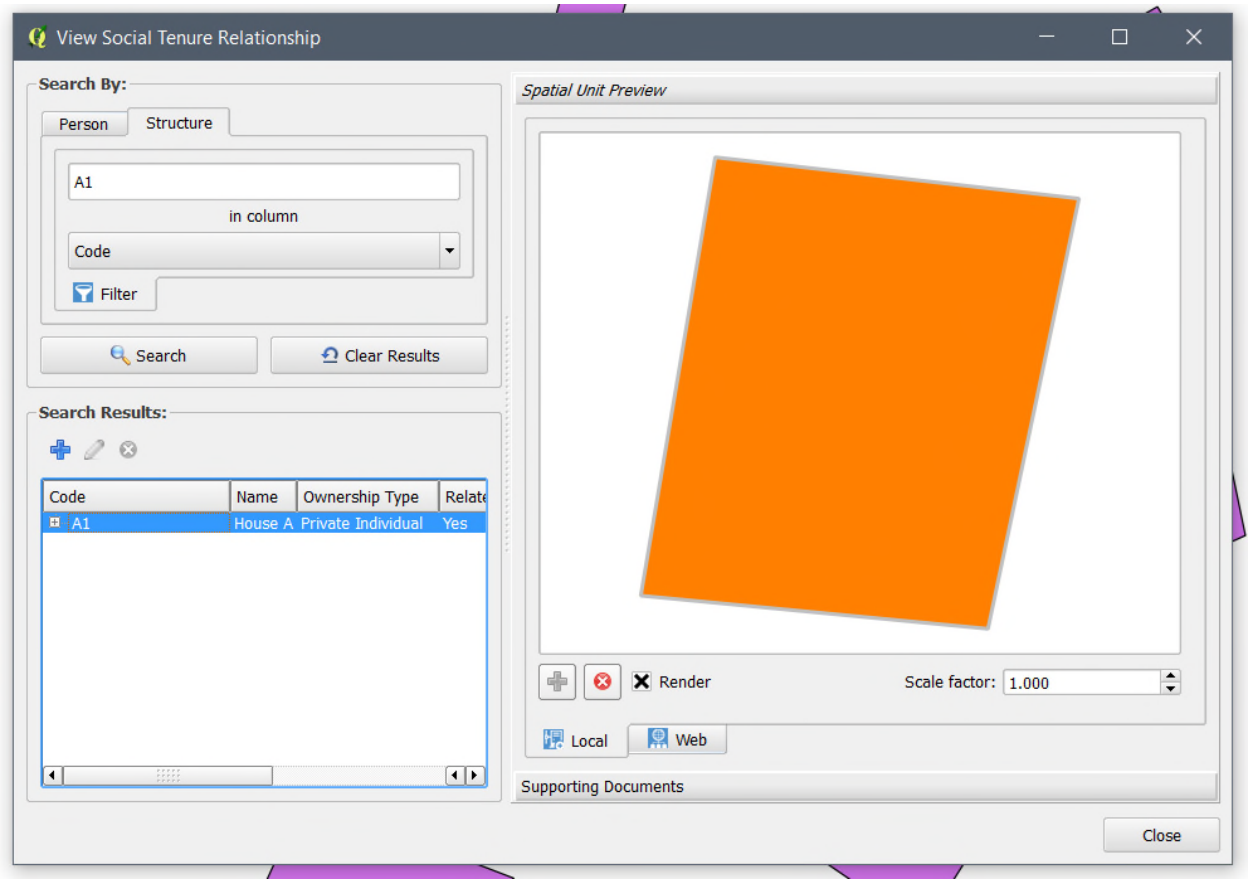
The search result for a Spatial Unit is shown below. When you expand it, you will see similar details as shown above.



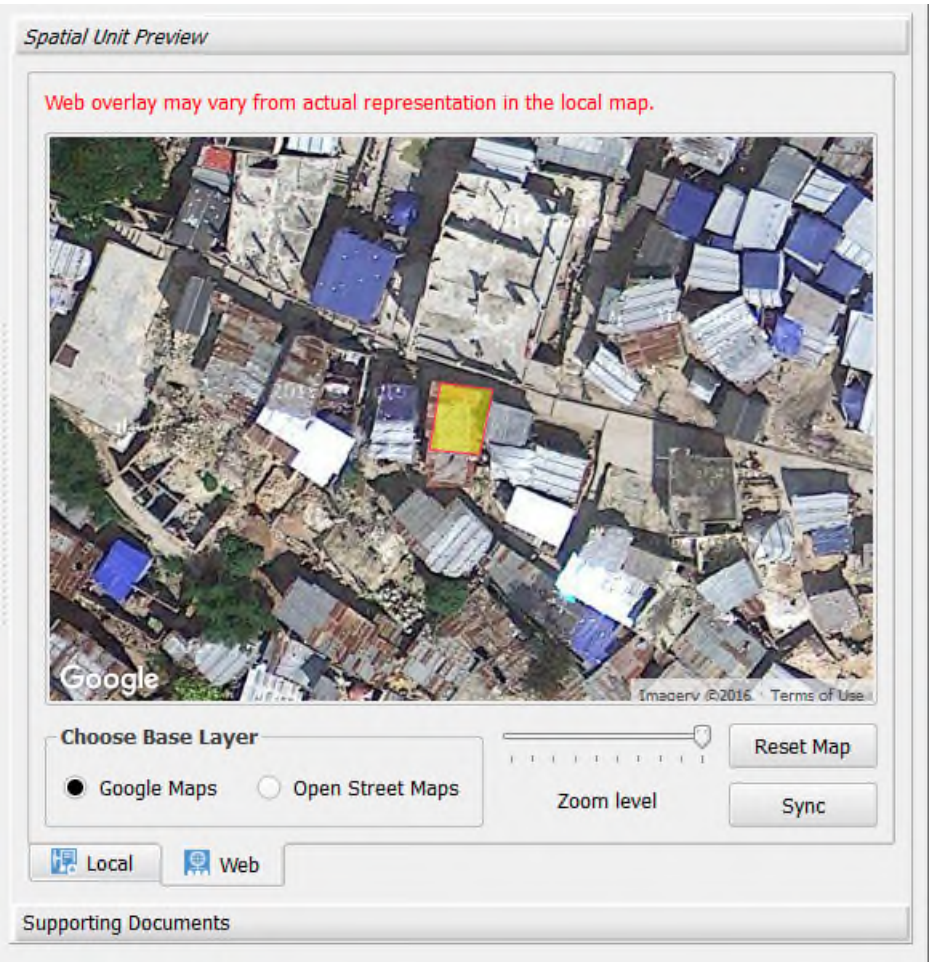
If no social tenure relationship is defined for the record you are searching for, a **No STR Defined** message is displayed as shown below.



4. When the first row is clicked, you can see the preview of the structure in the Spatial Unit Preview box as shown below. You can also preview the spatial unit in the party/ person search result page by clicking on the spatial unit/ structure.

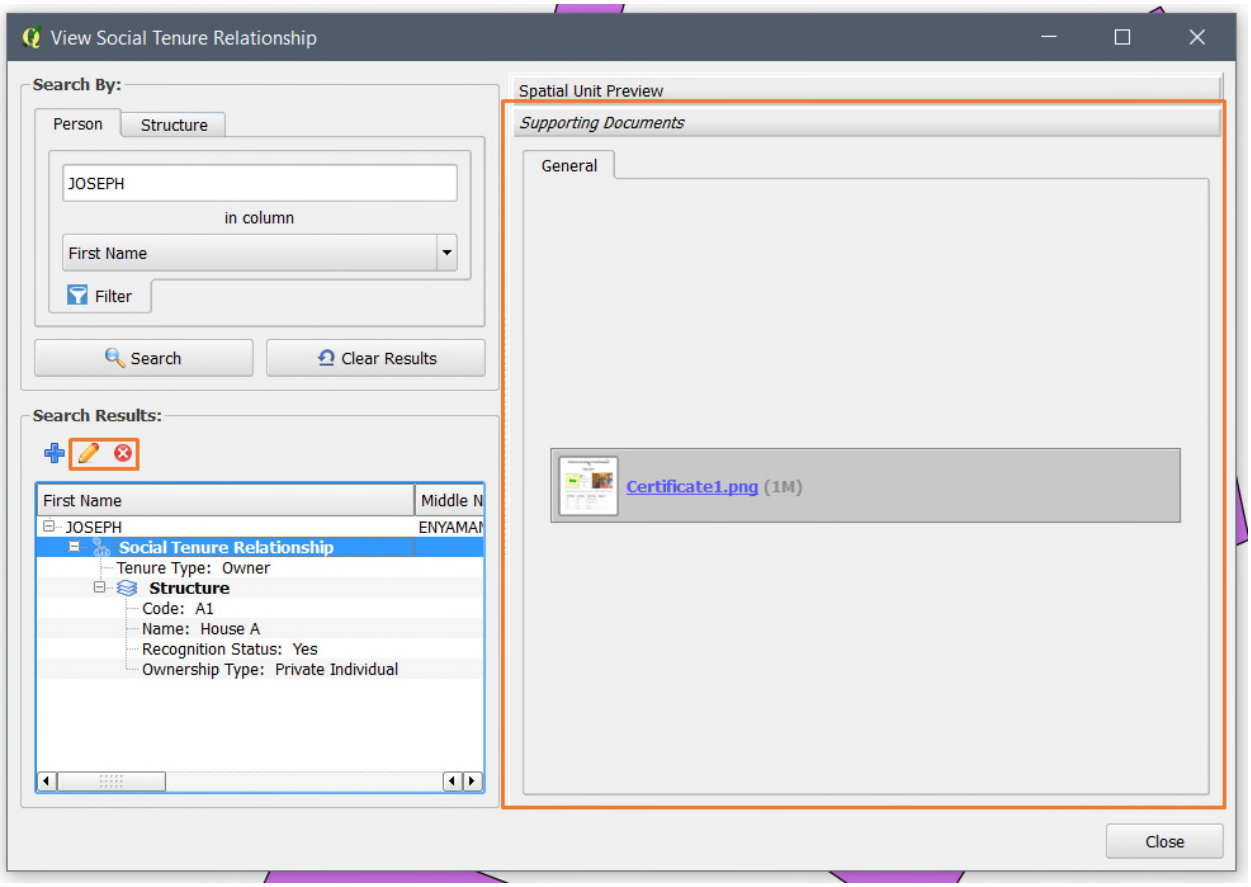


If your computer is connected to the Internet, you can also view it on a Google Map and Open Street Maps as a base layer, as shown below.

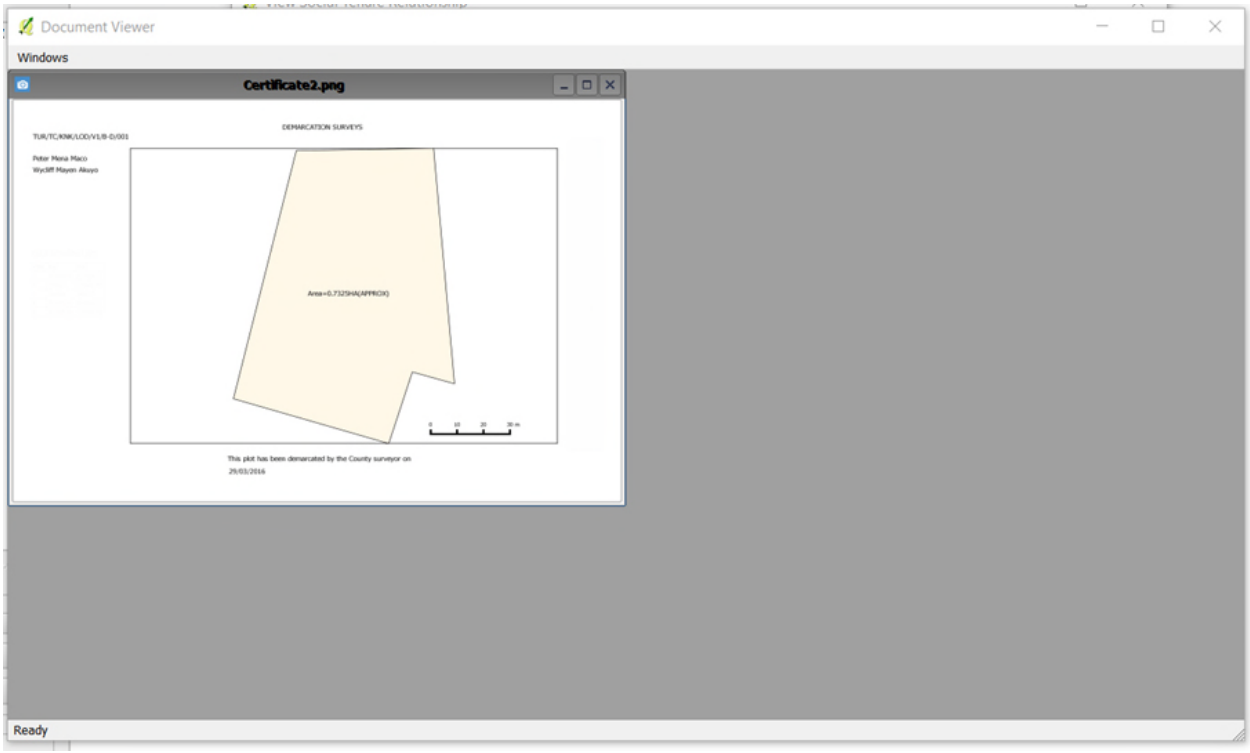


5. Clicking on the Social Tenure Relationship row will enable you to open the box for Supporting Documents

This also enables the buttons to edit and delete the social tenure relationship.

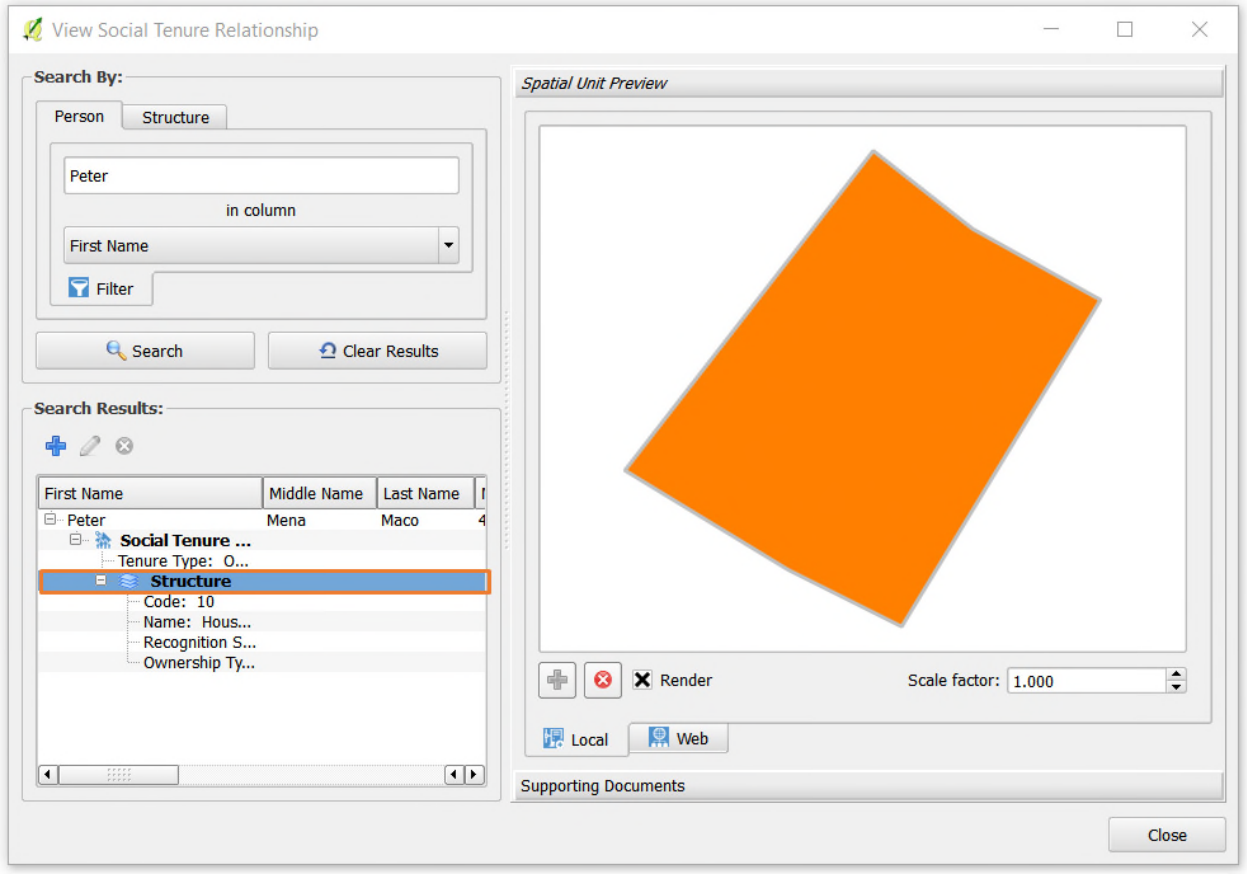


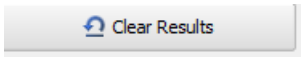
6. Click on the file name of the document to view the supporting document without going to the directory of the file, within STDM interface.



You can expand an image. You can see more than one image in the same window. Close it or minimize it when you are done viewing the document.

7. From the person record, you can view the spatial unit geometry, by clicking on the spatial unit row as shown below.



8. To clear search results, click on Clear Results button 

or make a new search.

9. Click the **Close button at the bottom** to hide the module.

Editing Social Tenure Relationship

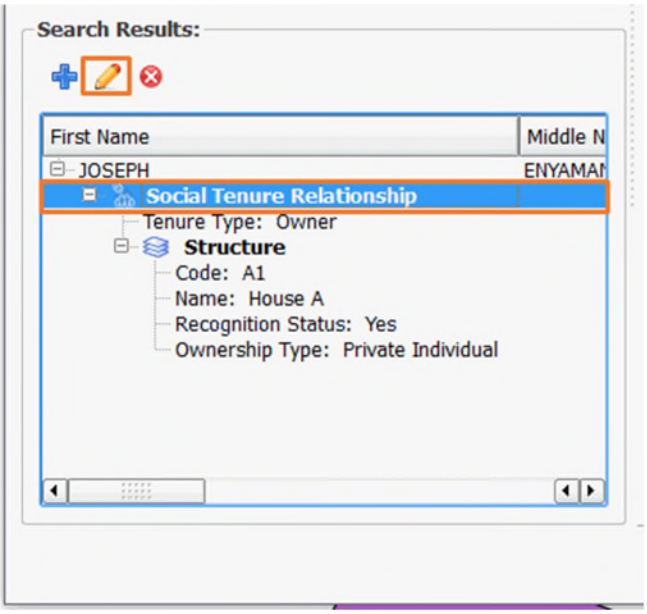
Editing a Social Tenure Relationship enables you to modify a social tenure relationship of a party as well as a spatial unit. This option will enable you to modify the party/ person, the spatial unit, the tenure type and the supporting documents uploaded for the social tenure relationship. Adding multiple records is not possible while editing because each social tenure relationship corresponds to one party. Replacing party and spatial unit, however, is possible.

The **Edit Social Tenure Relationship** enables you to edit a social tenure relationship. It is similar to the New Social Tenure Relationship wizard. The edit module opens with all social tenure relationship information loaded into it so that you can modify it.

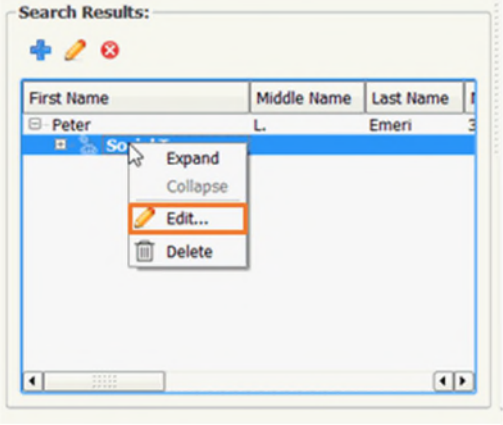
To edit a social tenure relationship record, follow the steps below.

1. To start Editing Social Tenure Relationship Wizard, we need to first make a Query using View Social Tenure Relationship as explained in Querying/ Viewing Social Tenure Relationship topic.

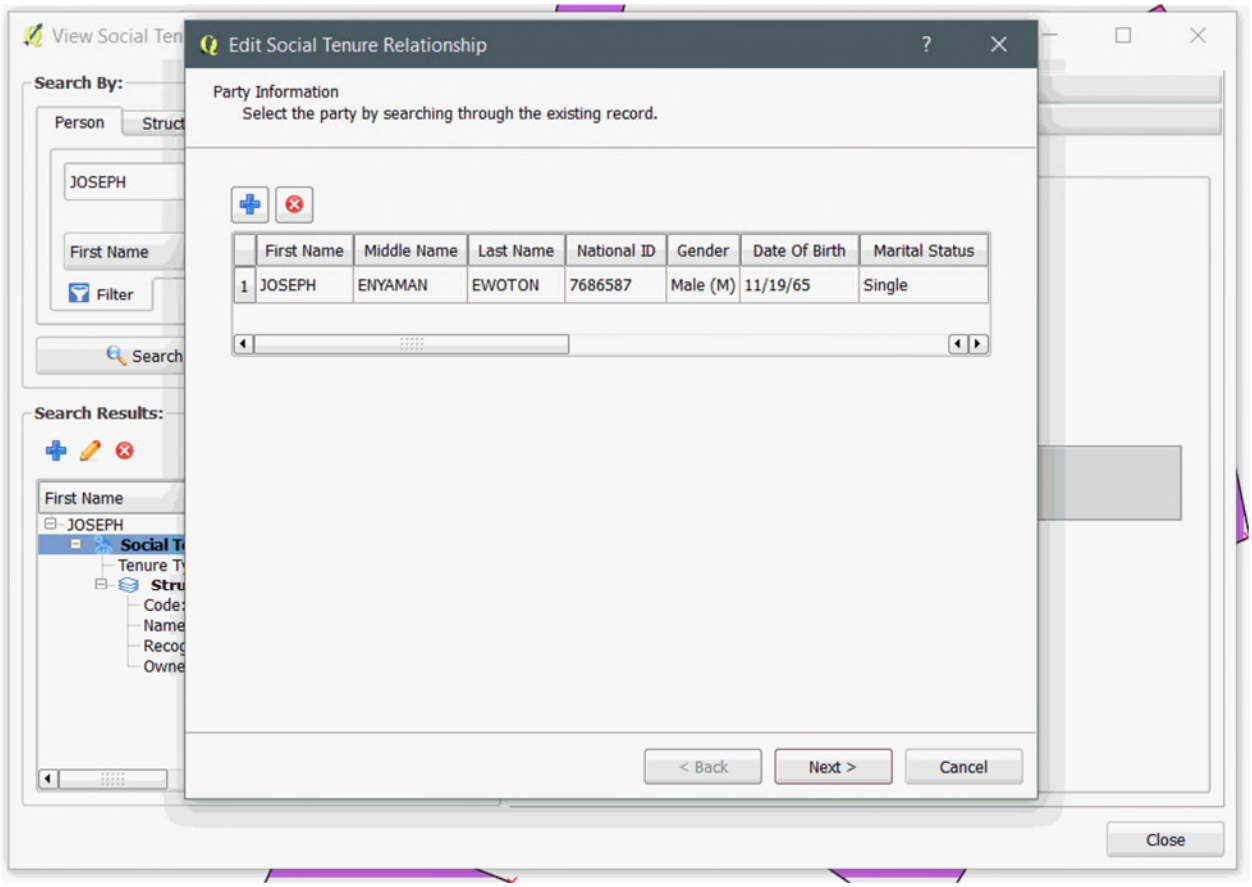
2. A record that has a social tenure relationship displays a result similar to the image below. Click on the Social Tenure Relationship row to enable the Edit button that is located above the search result.



Alternatively, right-click on the Social Tenure Relationship row to open the context menu as shown in the image below.



3. When you click the Edit button or menu (), you will be able to see the Edit Social Tenure relationship wizard as shown below.



Editing a Social Tenure relationship is similar to creating a Social Tenure Relationship. The major difference is that you can only have one party/ person as each social tenure relationship corresponds to one person. It is the same for spatial unit.

As a result, when you try to add another party on top of the existing one, the existing record will be replaced by the newly selected one. The same applies in the spatial unit page.

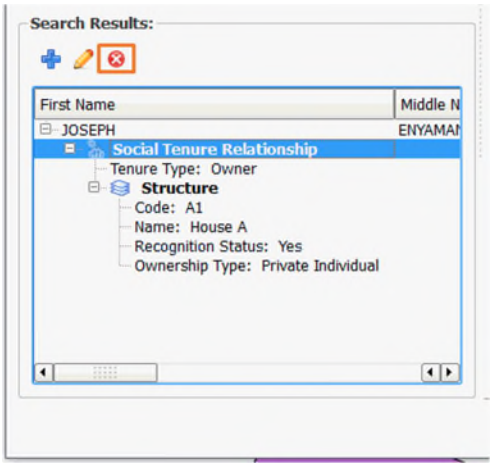
Deleting a Social Tenure Relationship

Deleting a social tenure relationship will lead to the removal of the link between a party and a spatial unit. In addition, any supporting document will be removed from the database and STDM documents storage location.

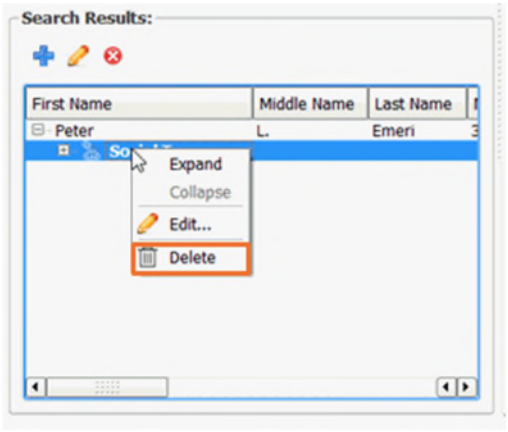
To delete a social tenure relationship record, follow the steps below.

1. Make a Query using View Social Tenure Relationship as explained in Querying/ Viewing Social Tenure Relationship topic.

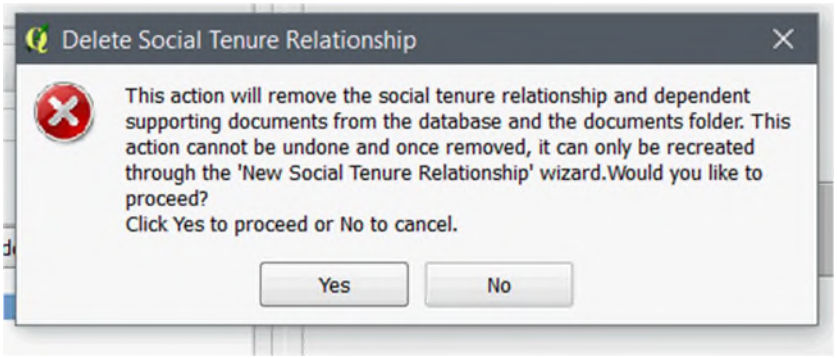
2. A record that has a social tenure relationship displays a result similar to the image below. Click on the Social Tenure Relationship row to enable the **Delete** button that is located above the search result. Then, click on the **Delete** button ( ).



Alternatively, right-click on the **Social Tenure Relationship** row to open the context menu as shown in the image below and click on the **Delete** menu.



3. A dialog, illustrated below, appears when you click on the delete button or menu.



4. After reading the message, click on the **Yes** button, if you still want to delete the social tenure relationship. If you do not want to delete the social tenure relationship, click on the **No** button.

Designing and Generating Documents

Designing a Document Template

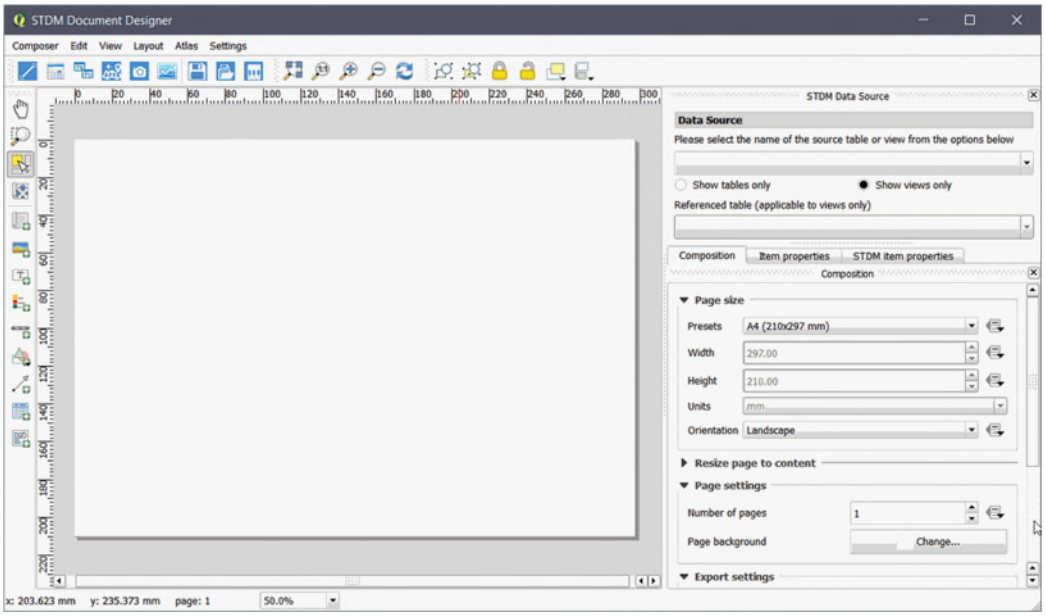
Document Designer is an STDM module that enables you to design a template so that you can generate documents based on STDM database automatically. Document Designer is built on top of QGIS Print Composer. This enables Document Designer be able to use different features and tools of the Print Composer. Using Document Designer, you can create templates that can be used for title deeds, certificates, letters, parcel maps, statistical reports and so on. Once a document template is designed, you can generate documents for one or more records using Document Generator as explained in Generating Documents Using Templates topic.

Note: when designing a template, make sure you are creating it for the correct profile and entity. If you create a template while logged into one profile and later try to generate a document while logged into another STDM profile, the template file will not be visible.

Getting Started with Document Designer

To Start the Document Designer, click on its button on the STDM toolbar as shown below.

When you click on the **Document Designer** button, the **Document Designer** module loads as shown in the image below.



The designer will start with an empty white page where you can add different items to create a template.

Tools of Document Designer

The following sub-topics explain the different components of the **Document Designer**. These tools could be toolbars and panels that are created either by STDM or QGIS.

STDM Document Designer Toolbar

The **Document Designer toolbar** is located at the top of Document Designer. The figure below shows the toolbar.

The tools allow you to perform several tasks. Functionalities of the tools are explained below.

 - Line - initializes the drawing of lines in the template

 - Data Label - initializes the drawing of labels that uses STDM database table column.

 - Attribute Table - used to add attribute table in the temple.

 - Map - Enables you to add map on the document template which should be linked to a spatial unit table.

 - Photo - enables you to initialize the drawing of a photo box in the template.

 - Chart - enables you to initialize the drawing a chart box in the template.

 - Save Template - enables you to save the template.

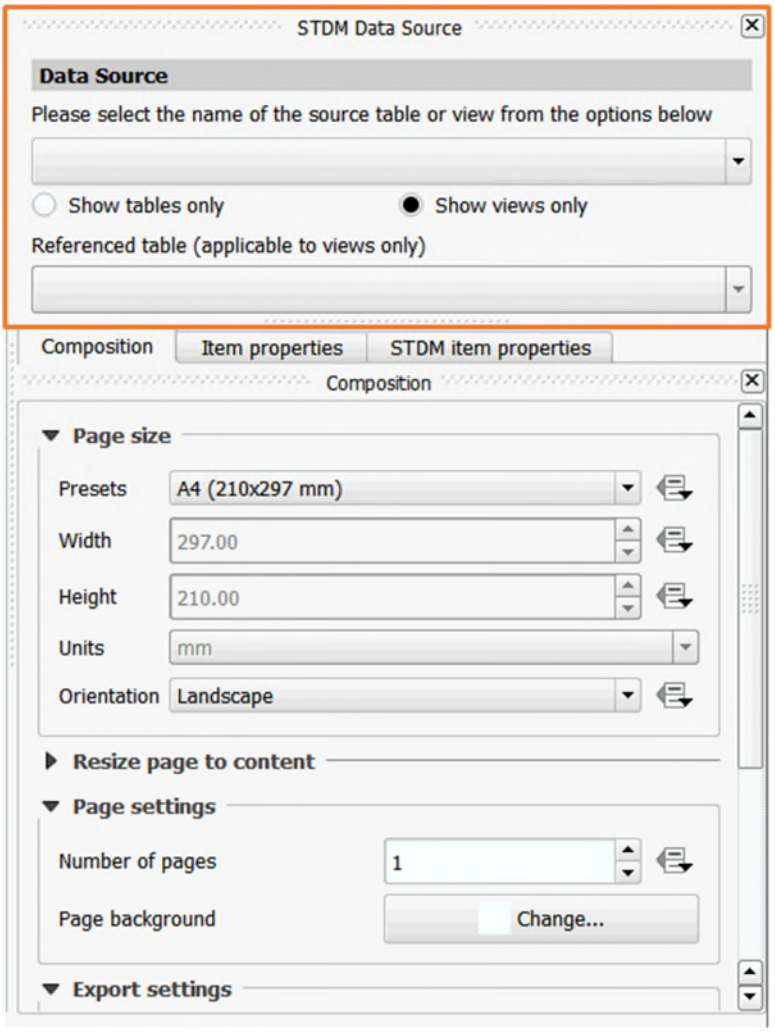
 - Open Template - opens a template list from which you can choose a template folder.

 - Manage Document Templates - opens a tool that can edit (rename) and delete a selected template file.

STDM Data Source

This panel enables you to select a table that will be the source for data label, map, attribute table, photo, and chart.

The panel is located in the right side of Document Designer as highlighted in the image below.

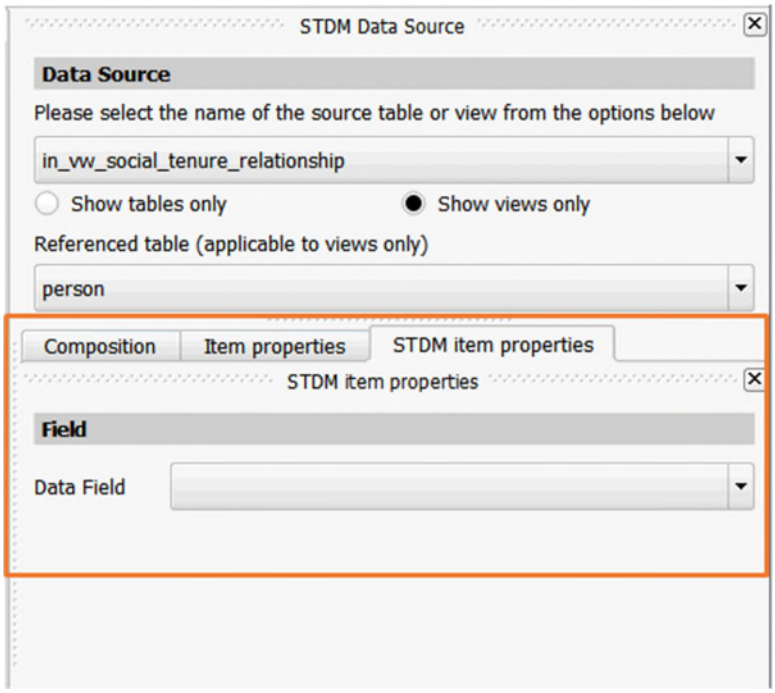


STDM Item Properties

The STDM item properties enable you to choose a column that will be used by template items such as data label and photo.

The panel has a drop down menu from which you can choose a column for a given template item.

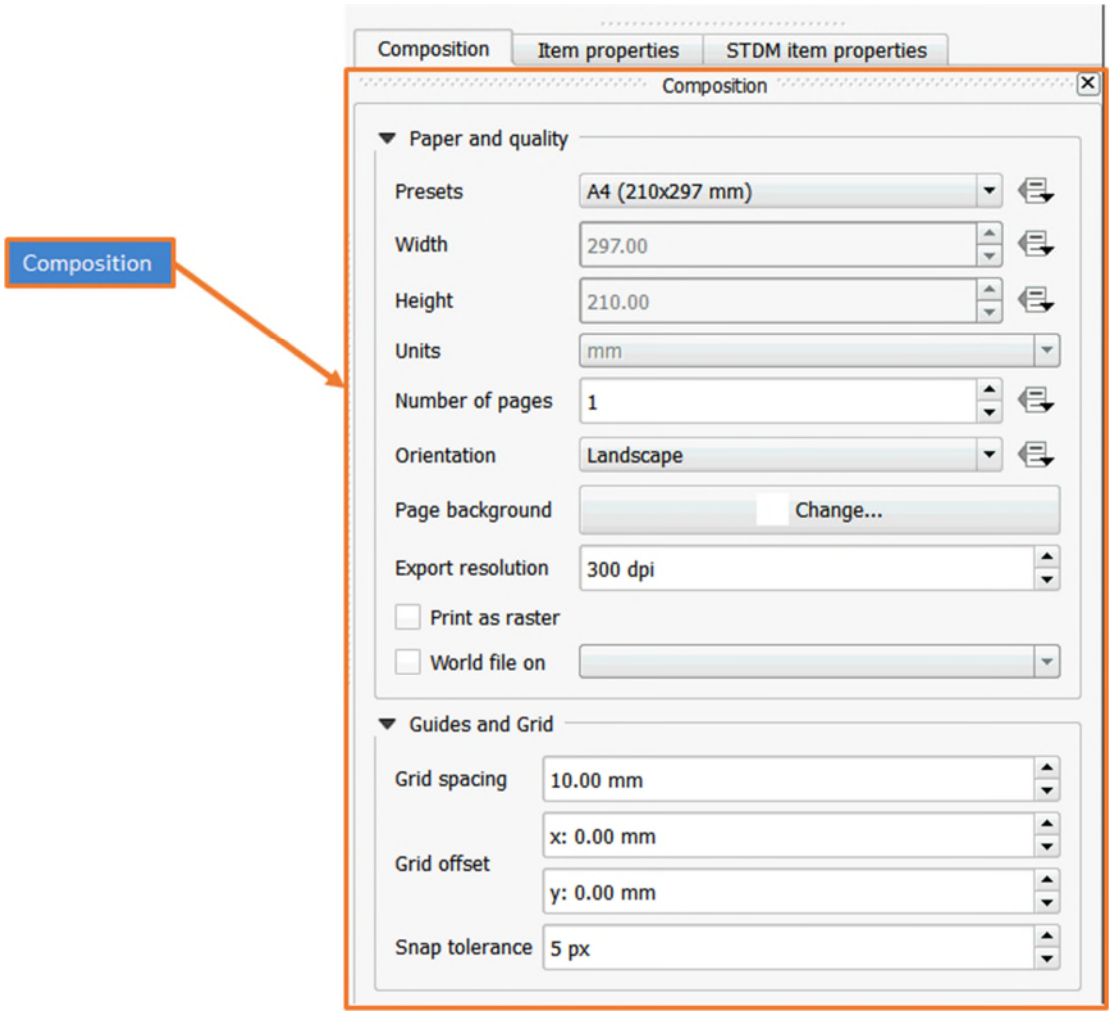
The **STDM item properties** panel is located in the right side of the STDM Document Designer. The image below illustrates the panel.



Composition

Composition enables you to customize the page layout, size, quality and grids. It is also located in the right side of Print Composer.

See the image below.

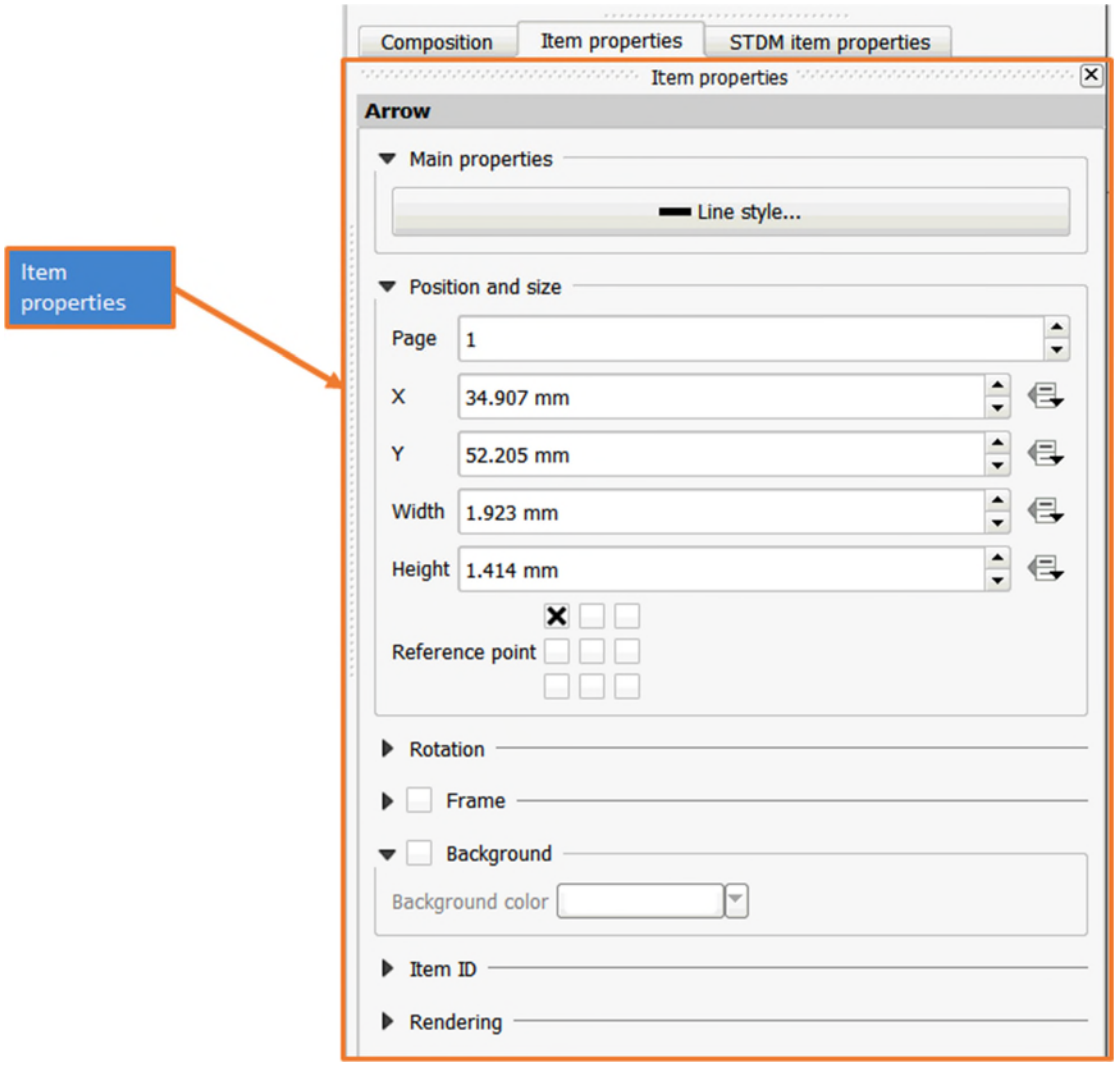


Item Properties

Item properties tab enable you to modify each item on the template with several options such as adding text, alignment, font size and color, margin and so on.

This is useful in modifying the appearance of an item.

The image below shows the **Item properties** panel.

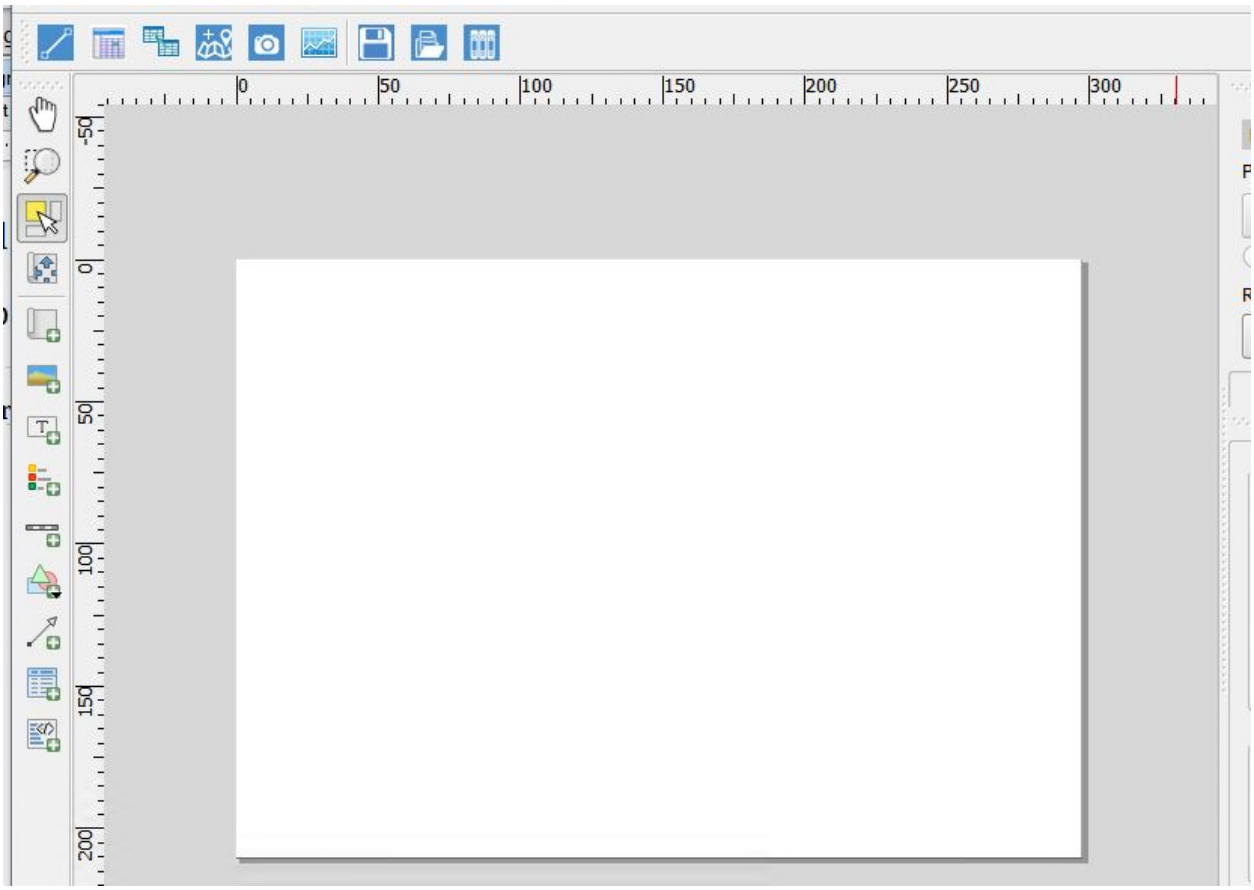


Composer Item Toolbar

Composer Item toolbar has tools that enable you to add items such as label, image, legend, scale bar, shapes and arrows. In addition, controls for selection, pan and zoom are also found in this toolbar.

Customizing a Template Page

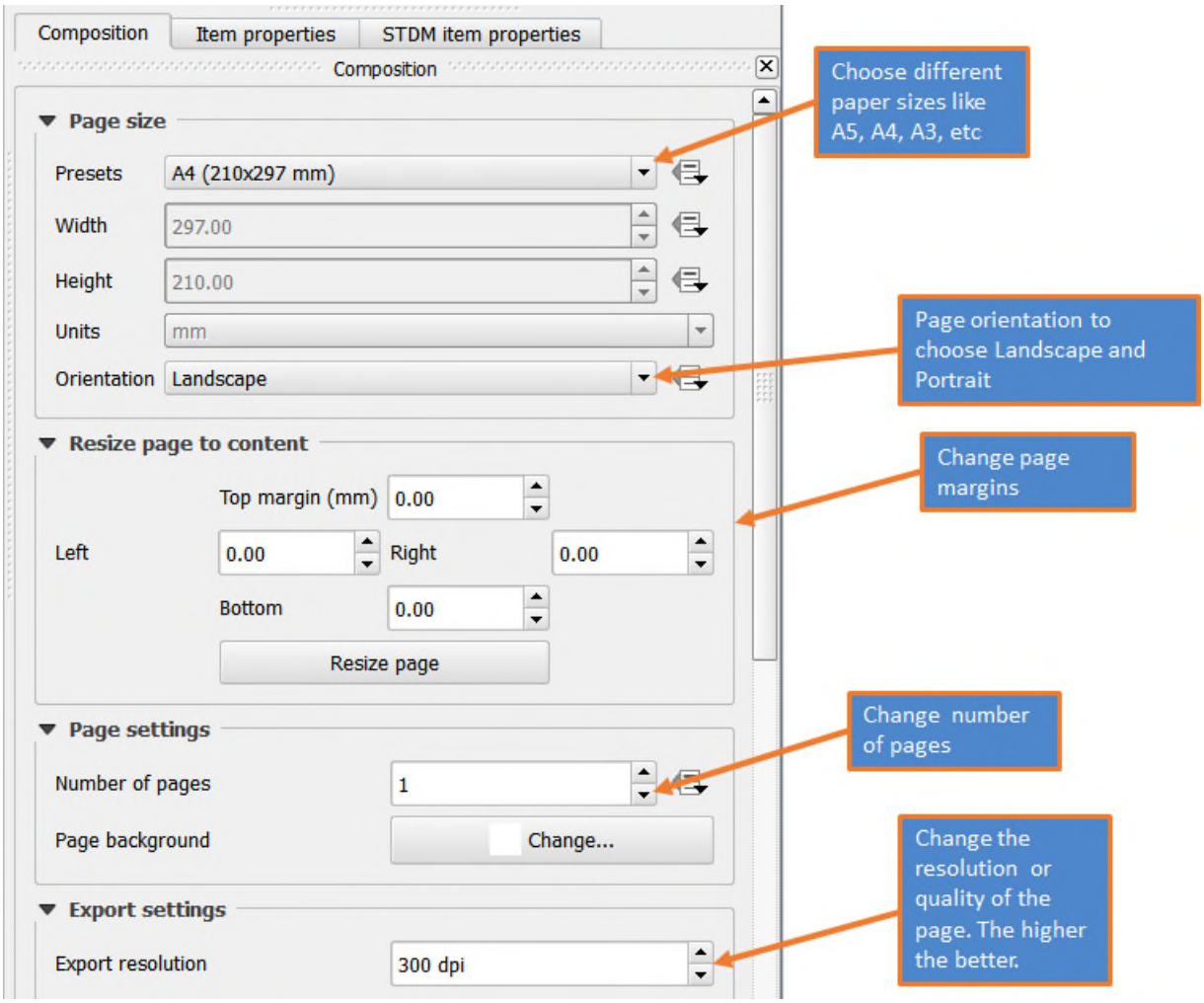
The template page refers to the white box located below the STDM Document Designer toolbar (see the image below).



The **Document Designer** by default opens with one page having a landscape page layout.

However, you can modify the page properties using the composer panel located in the right side of the page.

The composer panel's options are illustrated below.



Once you have finished modifying the page, you can add items on the page as explained in Adding Items into a Template topic.

Adding Items into a Template

The Document Designer enables you to add almost anything you may need in your template. You can add items that use STDM database as a source and your own custom inputs such as logos, photos, text, title, backgrounds, etc that might make the generated certificate attractive and complete.

Before starting to design, it is good to carry out the following.

- Create a template design on paper or on Microsoft Word Document. This will help you know what you need to add in the template.

- Identify the data source to be used. To know the data source, you can view your record through Entity Browser.

- Have a record already added into the database to test your template.

- Identify your profile social tenure relationship view. Each profile has **profile_name_vw_social_tenure_relationship**. Replace **profile_name** with the actual name of the profile in your STDM configuration. This is necessary when you choose a data source while adding items. **Whenever, a social tenure relationship is created, a record of the party and spatial unit is added in profile_name_vw_social_tenure_relationship view.**

Static Item

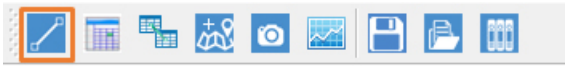
Static items refer to items in the template that do not change. They do not pull content from the STDM database. Static content include line, image, label, shapes, etc.

Adding a Line

A line could be used as a separator, signature line, etc. It has no linkage with the STDM database.

To add a line, follow the steps below.

1. Click on the **Add Line** button located in STDM Document Designer Toolbar, as highlighted below.



2. Click at one point in the template page and drag the cursor. When you are satisfied with the light and position of the link, release it.

While dragging it, you can see a red line and a cursor that looks like the plus (+) sign.

When you release the cursor, a black line will be created, as shown below.

3. Adjust the line. The default line that is created may not suit your needs. If that is the case, you can modify the line by changing the size, orientation, colour and style.

Follow the steps below to adjust the line.

A. Change the size of line:

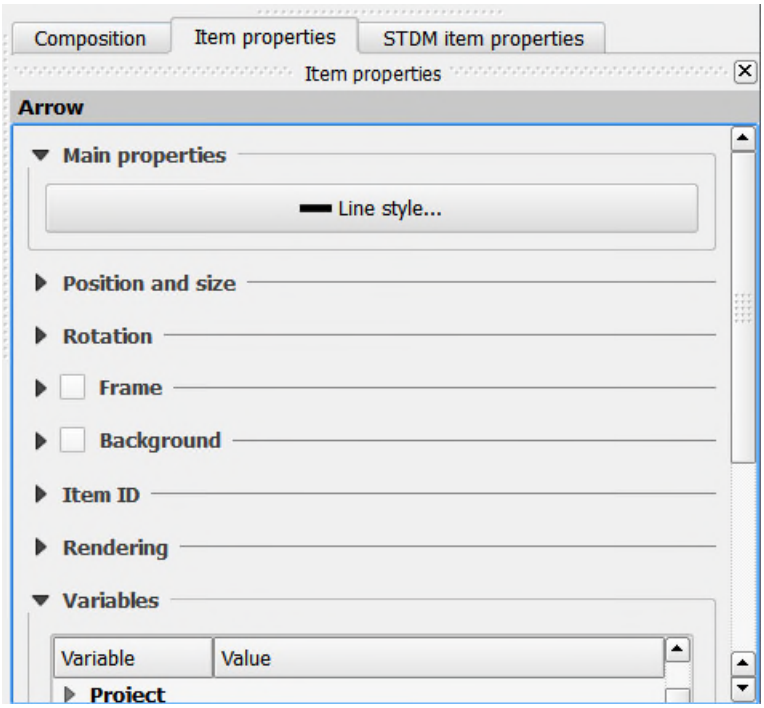
a. Select the line

b. Hover your cursor on top of the boundary of the line.

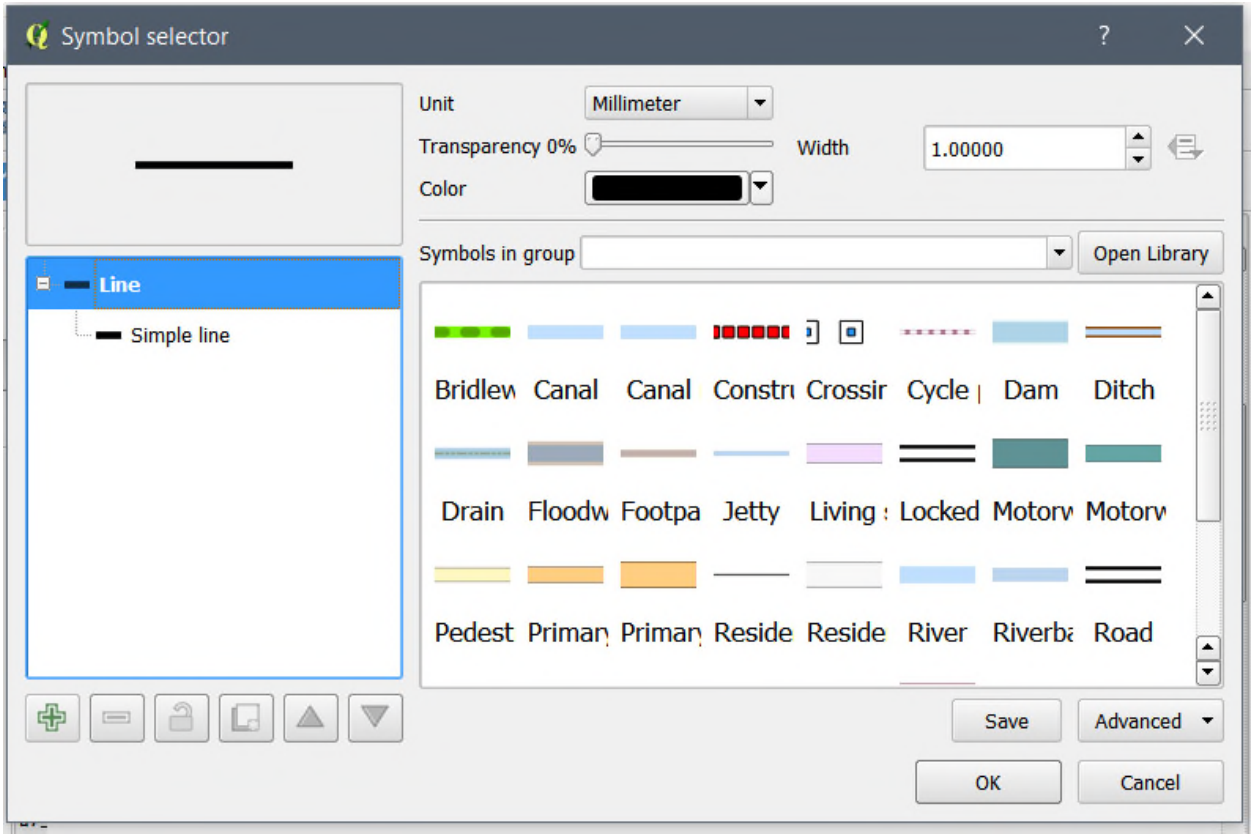
c. When you see a two directional arrow (see the image below), click on it and move it outwards to increase its size or inwards to reduce its size.

B. Changing the style of the line

a. Click on Item Properties tab as shown below.



b. Click on **Line style** button under Main properties box to launch Symbol selector as shown below.



Unit and Width: Choose a unit and set width under Width using the up and down arrow or by entering a number.

Transparency: Change the transparency of the line using the slider.

Line Symbols: Change line symbols by choosing from the symbols in the box or by opening the library.

You can do more changes to the line using options under the item properties.

Add Image

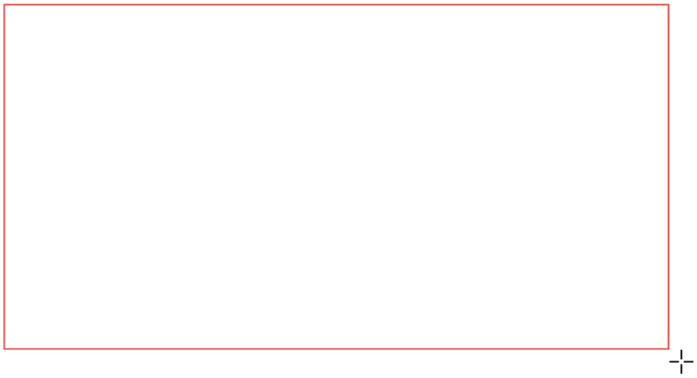
You can add any external image such as logos, backgrounds, etc into the template.

Follow the steps below to add images.

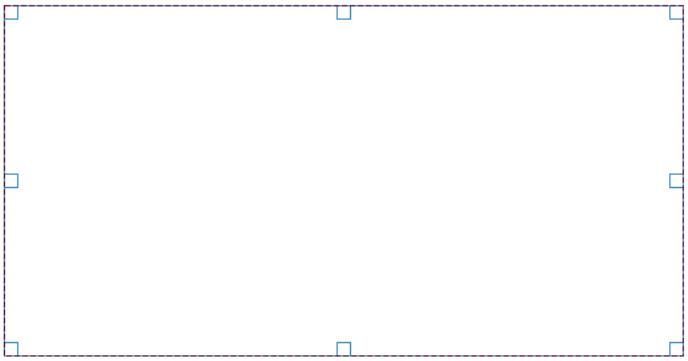
1. Click on the **Add Image** button located in Composer Item toolbar (see the image below).

2. Start creating an image box by clicking on one point that will be its top left corner. Then start dragging the cursor to the bottom right direction to expand its size.

While dragging it, you can see a red box and a cursor that looks like the plus (+) sign.



When you release it, a box like the image below will be created.



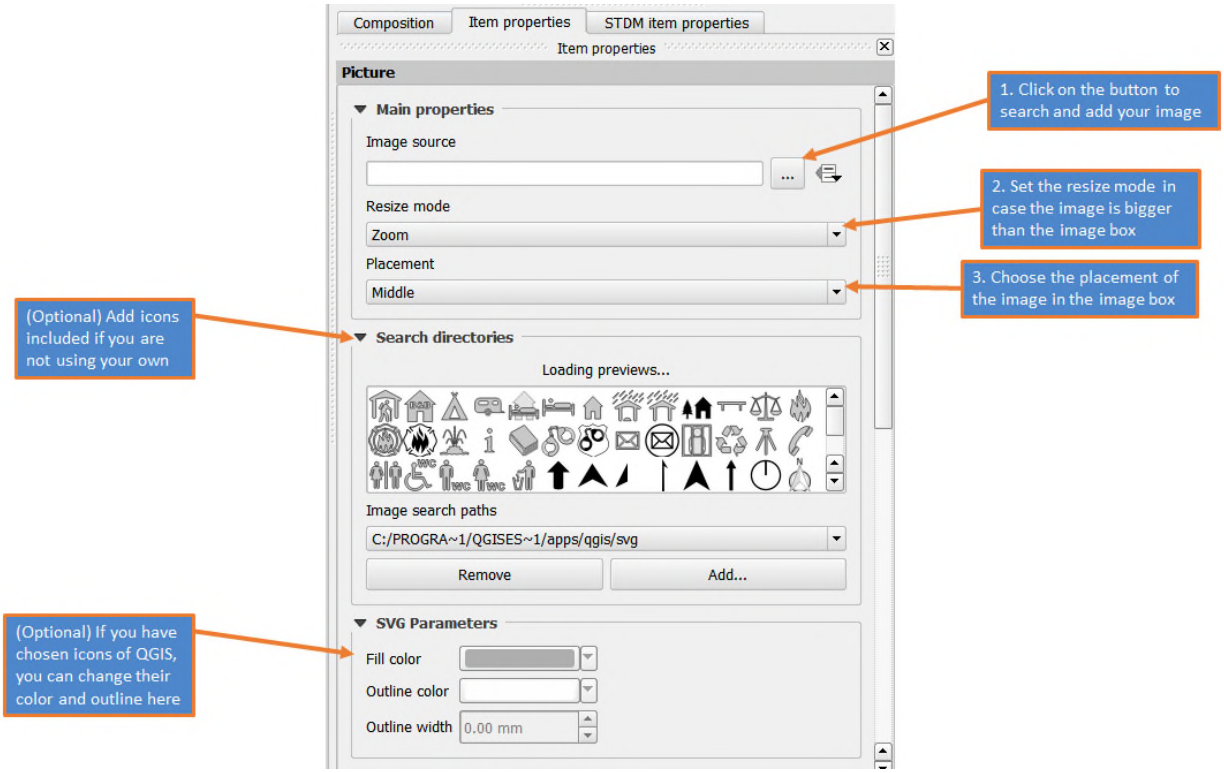
You can always resize the image box by pressing its corners and moving your cursor.

3. There are two options of adding image. You can add an image by browsing a file by clicking on the indicated button on step 1 or by expanding Search Directories menu and selecting one of the images provided by QGIS.

You can set the resize mode of the image in case the image is bigger than the image box.

You can change the placement of the image inside the image box as shown in step 3 of the image. Middle is recommended.

If you are using icons provided by QGIS, you can change their body and outline colour, and the outline width.



You can scroll down in item properties and change the image orientation and position.

Adding a Label

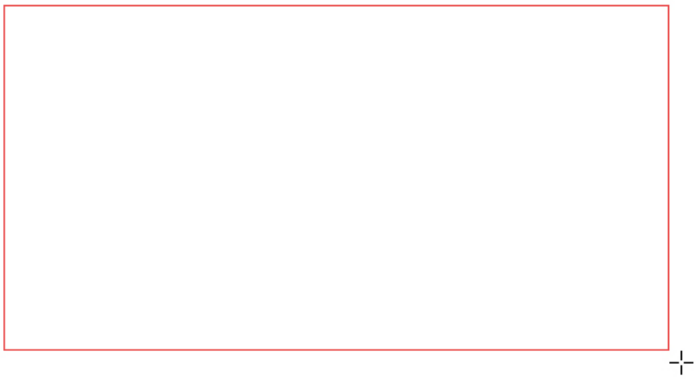
A label here refers to a simple text that could be a title, paragraph, or just a word. This type of label is different from the data label as the text must be manually entered. This is useful when you want to add static contents that will not change. The Add new label tool enables you to add the text box. You then have to type your text and customize it using Item properties.

Follow the steps below to add a label.

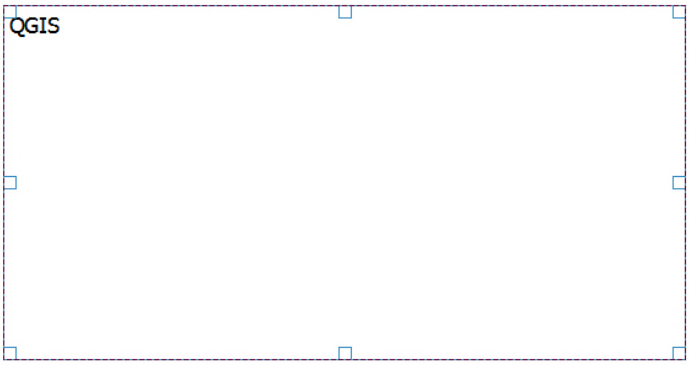
1. Click on the **Add New Label** button located in Composer Item toolbar (see the image below).

2. Start creating a text box by clicking on one point in the template page that will be its top left corner of the label. Then, start dragging the cursor to the bottom right direction to expand its size.

While dragging it, you will see a red box and a cursor that looks like the plus (+) sign.



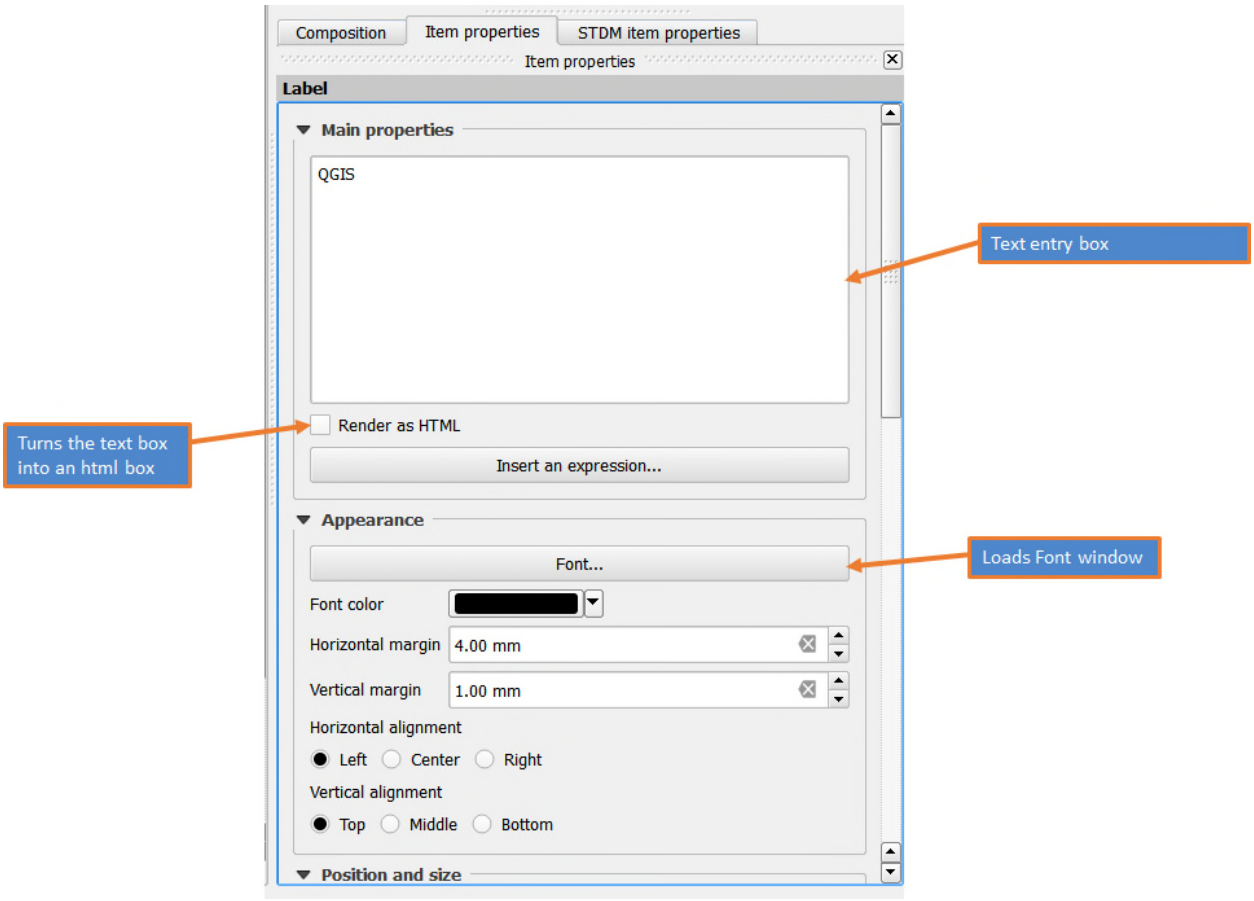
When you release the cursor, a box similar to the image below will be created.



The text box could be one line or multiple lines. You can always resize it by pressing its corners and moving the cursor outwards or inwards.

As you can see, the text QGIS is added in the text by default. You can then remove it and replace it with any text you want to add.

3. Add a text and customize it using Item Properties as shown below.



Main Properties

Under main properties, you can add the text in the white text entry box.

You can also convert the text box into an HTML page where you can add HTML tags to style your text. To enable HTML you need to check the option **Render as HTML**.

Note: This requires basic knowledge of HTML

For instance, if you type the following in the white text entry box

QGIS

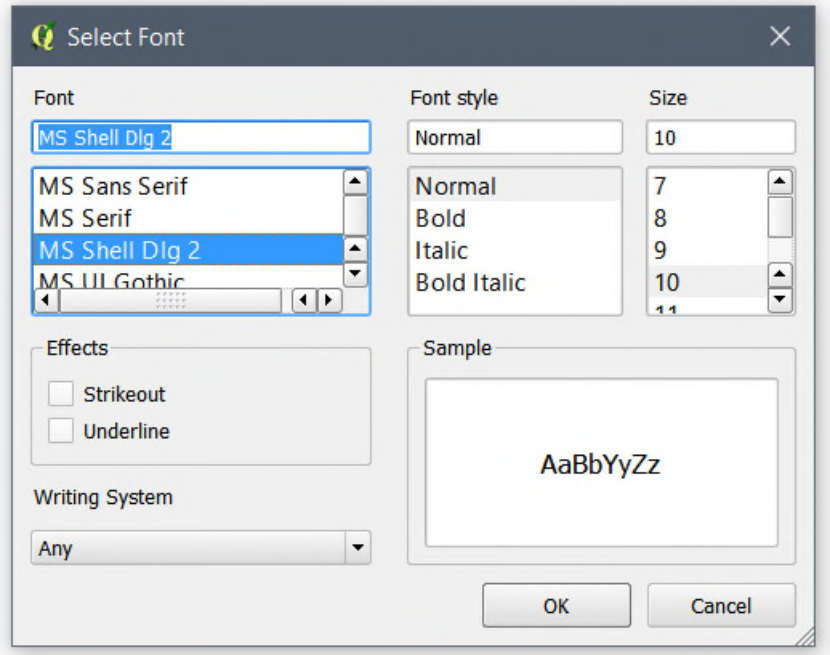
You will see the text turned to bold in the template page.

Appearance

In the appearance box, you can modify the font and position of the text such as margin and alignments.

To change the font, click on the **Font...** button as indicated in the above image. You will then get the image below.

Modify the font properties and click on the Ok button.



Data Driven Items

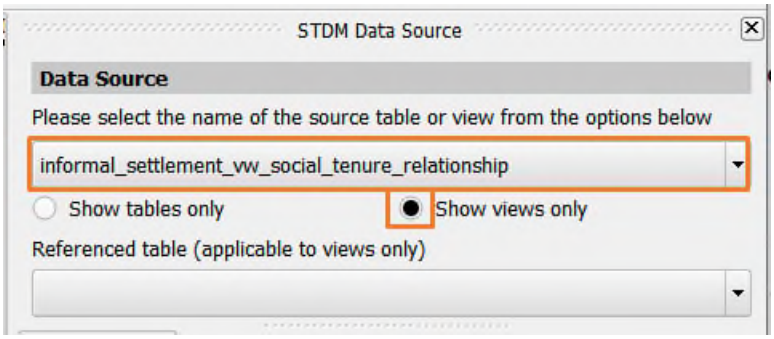
Data driven item refers to template items that pulls their content from STDM database. The items such as data label, map, legend, photo, attribute table, and chart are data driven.

Adding a Data Label

A data label refers to a label or a text whose value is populated from the STDM database. The source (table and column) of the data label must be specified while designing the template. Thus, when a document is later generated using a template, the data label will be populated / filled by a value from the selected record's column value.

To add a data Label in Document Designer template, follow the steps below.

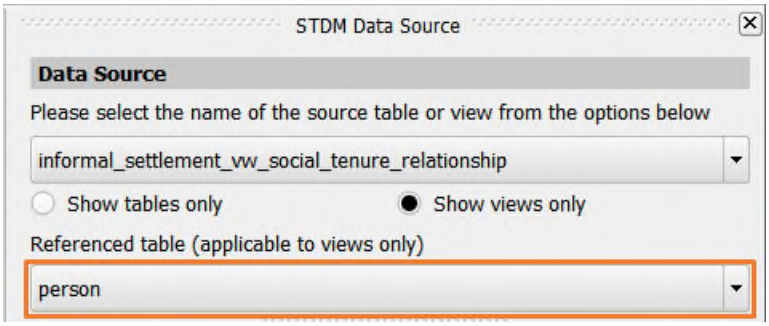
1. Select a data source by choosing a table or a view as shown below.



Note: Only the current profile tables and all views in STDM database load.

Note: Make sure you have selected a view of the current profile. STDM generated views starts with the profile name. Thus, choose a view that starts with the current profile name.

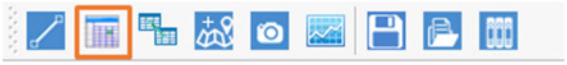
2. Select a referenced table. This is only applicable for view data source (see the image below). A referenced table refers to a table that the template will be working for. In other words, the reference table forces the template to only work for a certain entity. This is useful when Generating a document.



For this demonstration, the Person table is used as a referenced table but you can choose any other based on your needs.

Note: The above two steps are mandatory for views and the first step is mandatory for a table data sources.

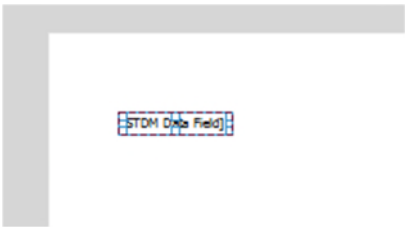
3. Click on the **Data Label** button located in STDM Document Designer toolbar (see the image below). This enables you to draw a data label in the template.



4. Click at one point in the template page and drag the cursor. Release the cursor in the area you wish to add the label box.

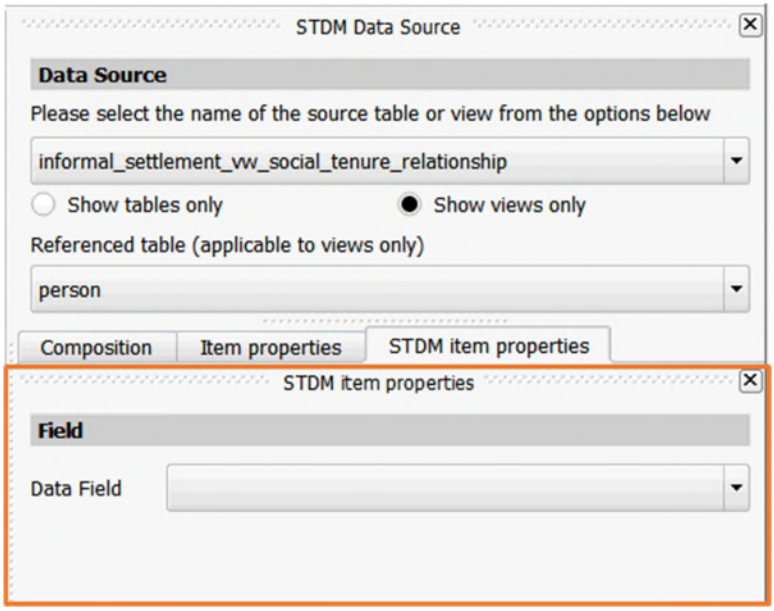
While dragging it, you can see a red box and a cursor that looks like the plus (+) sign.

When you release it, a box labelled [**STDM Data Field]** will be created, as shown below.



This box **[STDM Data Field]** will be replaced by a value that comes from the database.

5. While the box is selected, open the STDM item properties to choose the column, the Data Label will use. The Data Field / column will populate the data label when a document is generated using the template.



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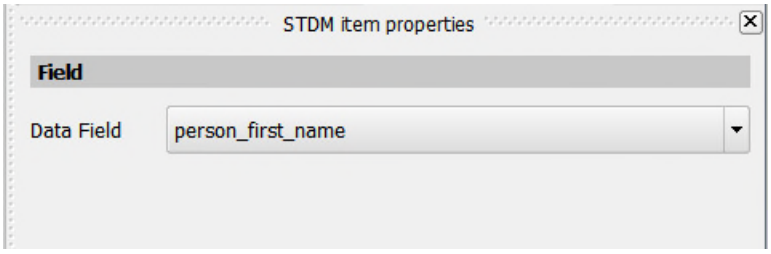
Choose the column you want the Data Label to use. For instance, for a person, you can choose the person_first_name column as shown below.



When you select a data field, the Data label text will change from **[STDM Data Field]** to the table name you have chosen. See the image below.

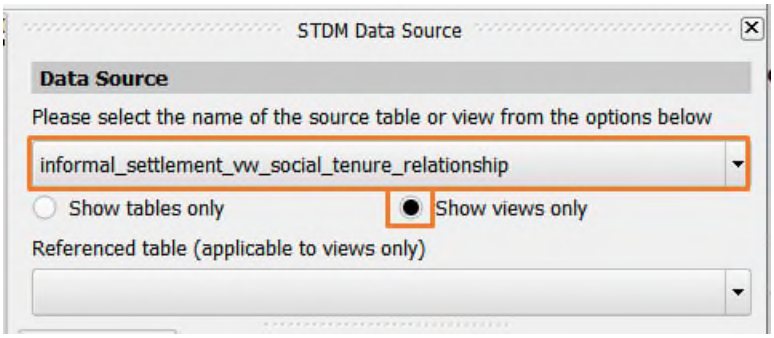
6. Repeat step 4 and 5 to add items from the same view. If you wish to add a data label from another table, start from step 1.

Adding Map

In STDM, each spatial unit record has a geometry that can be seen in the map canvas. In addition, whenever a new social tenure relationship is created, a row is also added in **profile_name_vw_social_tenure_relationship** view. This view also adds the geometry of the spatial unit linked with a party.

To add a map into the template, follow the steps below.

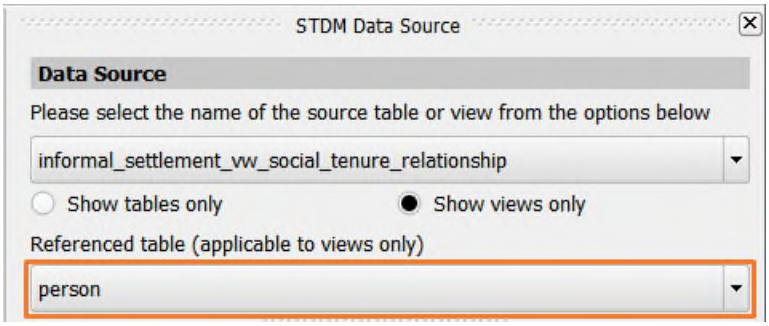
1. Select a data source by choosing a table or a view as shown below.



Note: Only the current profile tables and all views in STDM database load.

Note: When choosing a view, make sure you have chosen the view that is created using current profile tables. You can identify that by looking at the profile name at the beginning of view name.

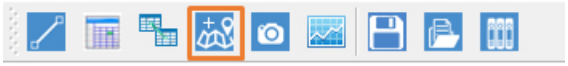
2. Select a referenced table, if you choose a view in the data sources as shown above (see the image below). A referenced table refers to a table that the template will be working for. In other words, the reference table forces the template to only work for a certain entity. This is useful when generating a document.



For this demonstration, the Person table is used as a referenced table but you can choose any other based on your needs.

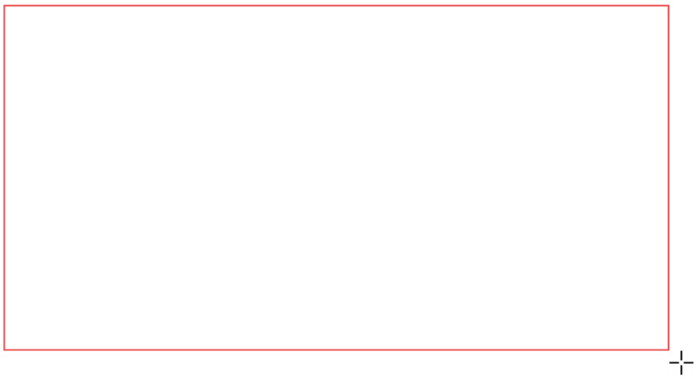
Note: The above two steps are mandatory for views and the first step is mandatory for table data sources.

3. Click on the **Add Map** button located in STDM Document Designer toolbar (see the image below). This enables you to the draw a data label in the template.

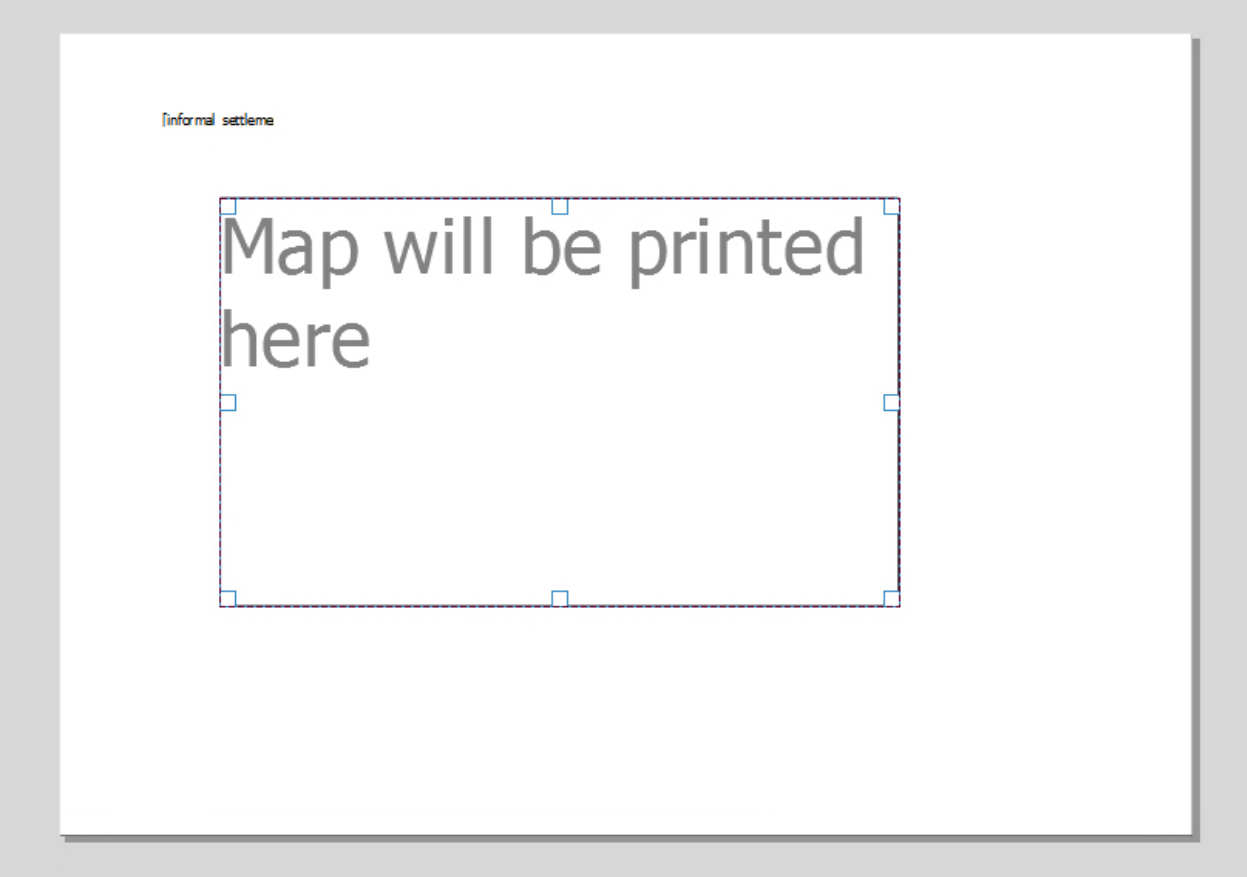


4. Start creating a map box by clicking on one point that will be its top left corner. Then start dragging the cursor to the bottom right direction to expand its size.

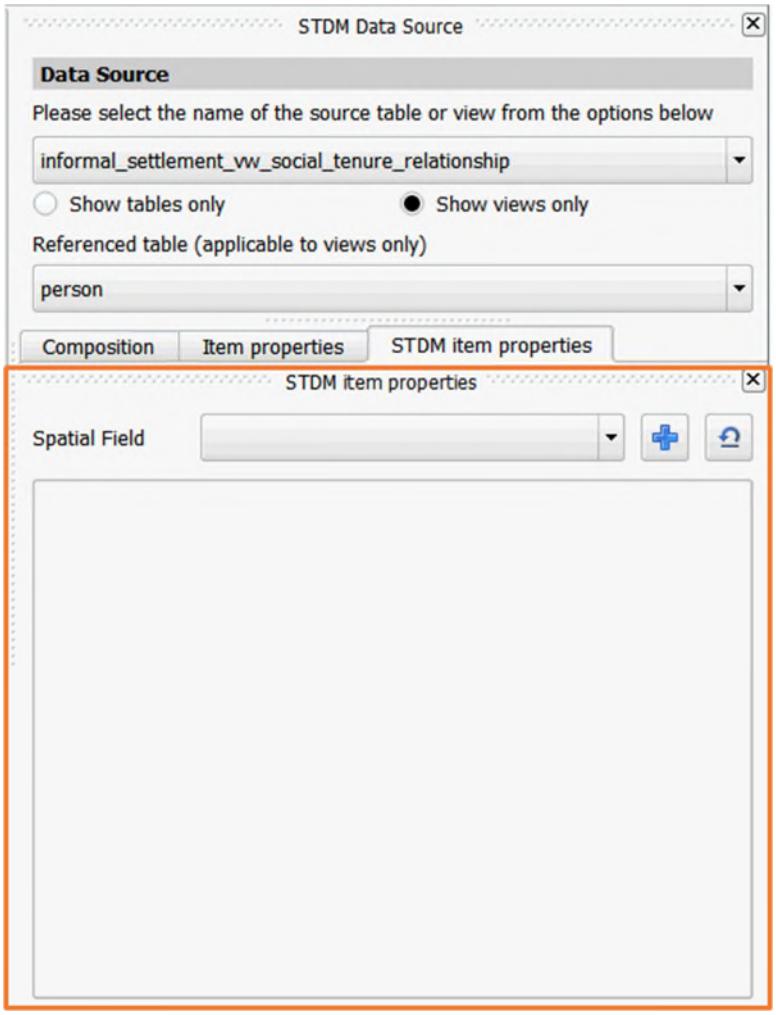
While dragging it, you will see a red box and a cursor that looks like the plus (+) sign.



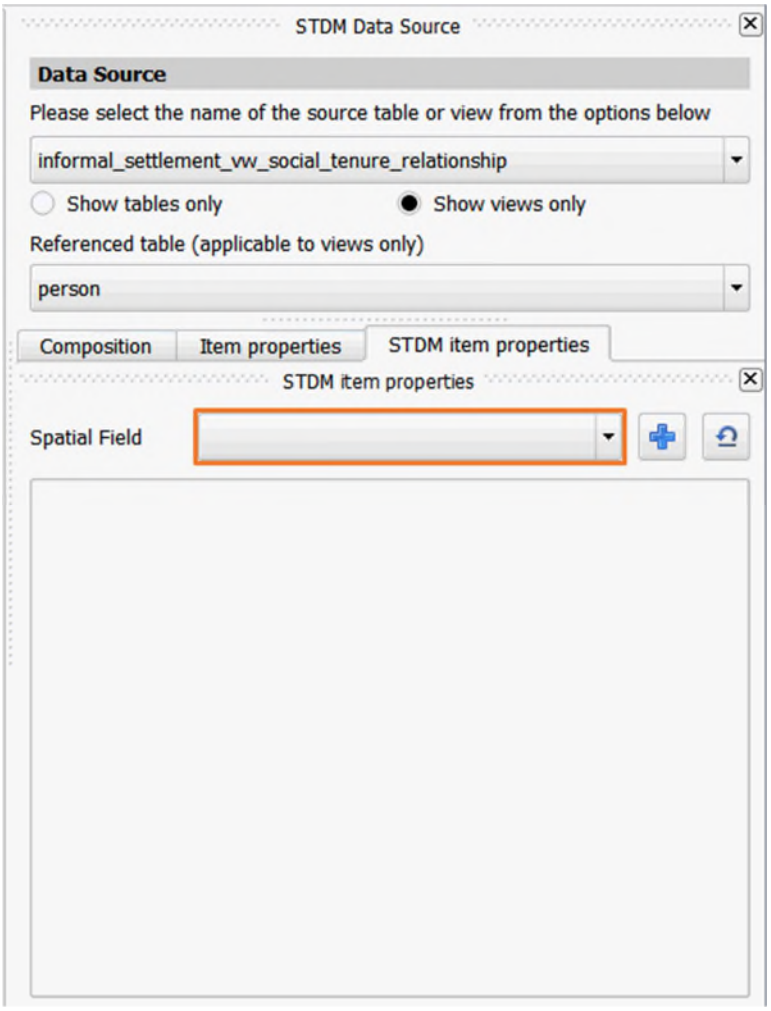
When you release it, a box like the one below will be created.



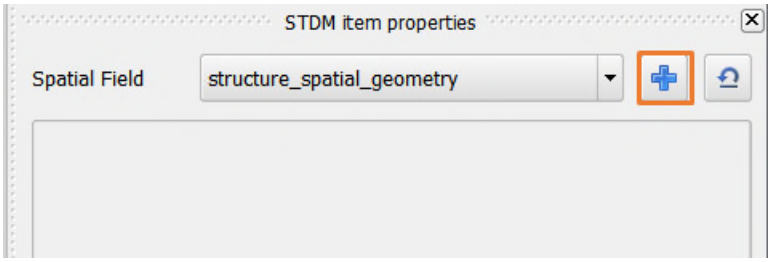
5. Make sure you have selected the map as shown in the above image and open the STDM item properties tab as shown below.



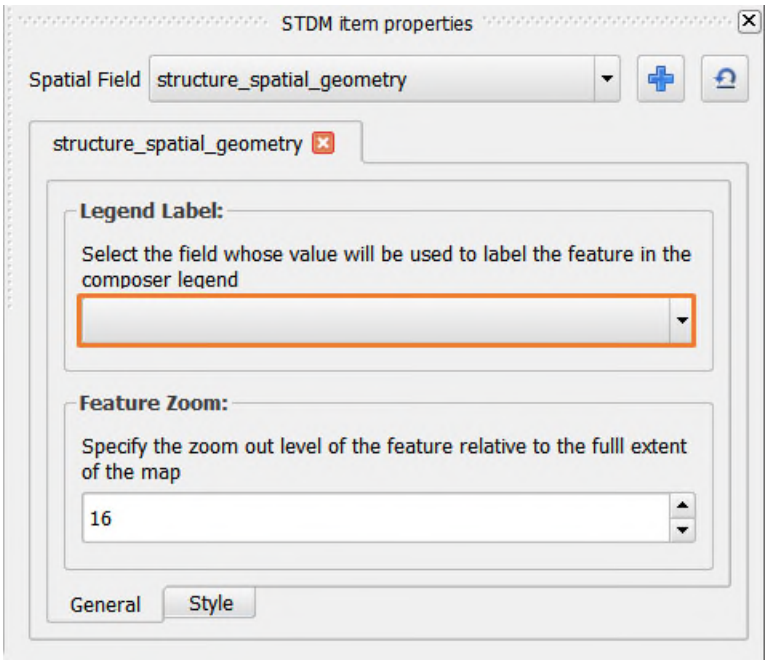
6. Select the spatial Field. The spatial field refers to the column holding a geometry. Choose a geometry column from the drop down menu as shown below.



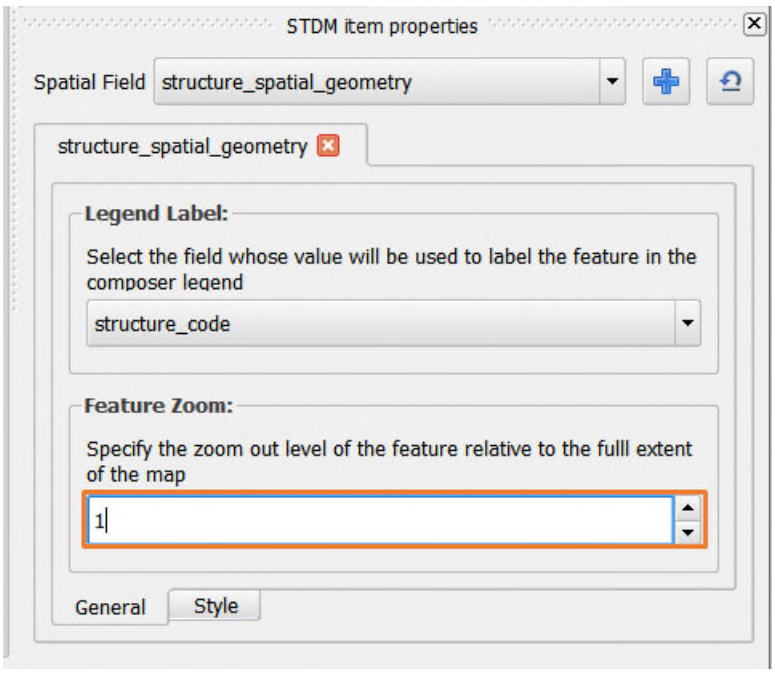
7. Once you have selected the geometry field, click on the Add Button (➕) next to the drop down menu, as highlighted below.



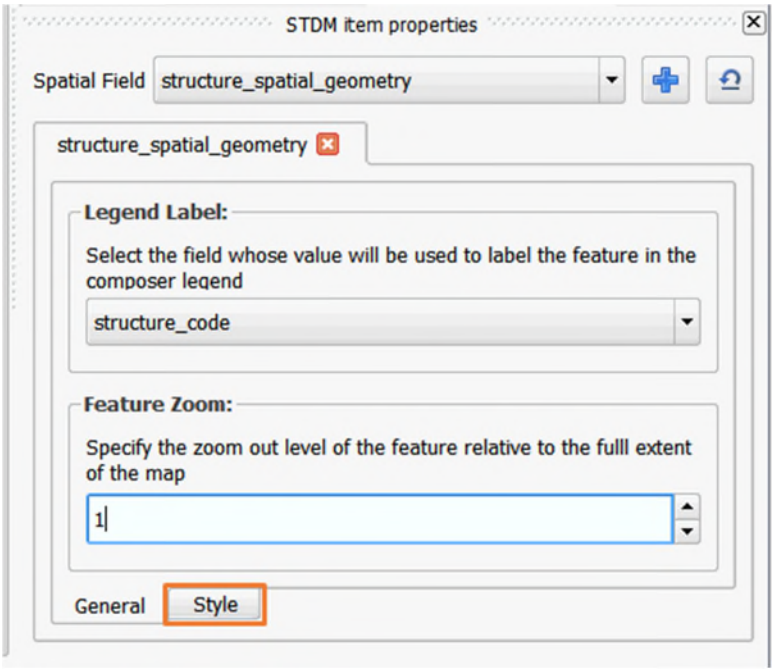
8. Choose the column that will be used as a label for the legend in the highlighted drop down menu below. Legend label refers to a column that will be used to label the geometry. For instance, if the map is for a spatial unit entity, its label field could be its name or code.



9. Change the Feature Zoom. The Feature Zoom refers to the zoom level of features as compared to the map area. If the value is 1, it means, the feature will fill the entire map area. If the value is 16, it zooms out the feature and reduce the feature coverage in the map. For spatial units, zoom level 1 or 2 is recommended to fill most part of the map (see the image below).

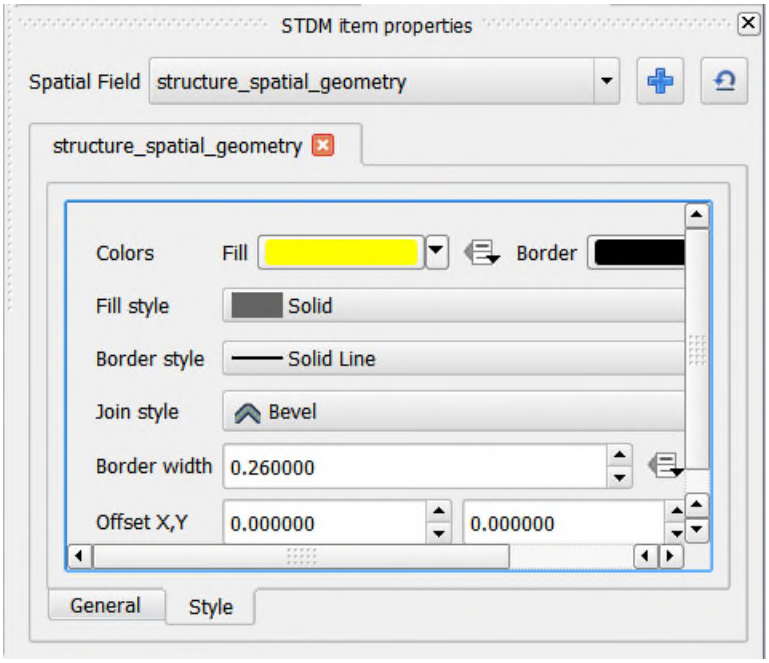


10. Click on the Style tab at the bottom to modify the style of the map (see the image below).



11. If the default style does not suit you, modify the style. The style tab looks like the image below.

All the settings below modify the appearance of the feature.



Adding a Legend

A legend shows colour and symbol used in a map and its representing field. Accordingly, we need to add a map first before creating a legend.

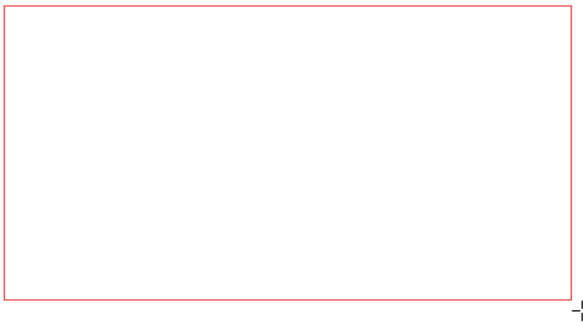
To create a legend, follow the steps below.

1. Add a map as explained in Adding a Map topic.

2. Click on the **Add a new legend** button located in Composer Item toolbar (see the image below).

3. Start creating a legend box by clicking on one point in the template page that will be its top left corner of the legend. Then start dragging the cursor to the bottom right direction to expand its size.

While dragging it, you will see a red box and a cursor that looks like the plus (+) sign.

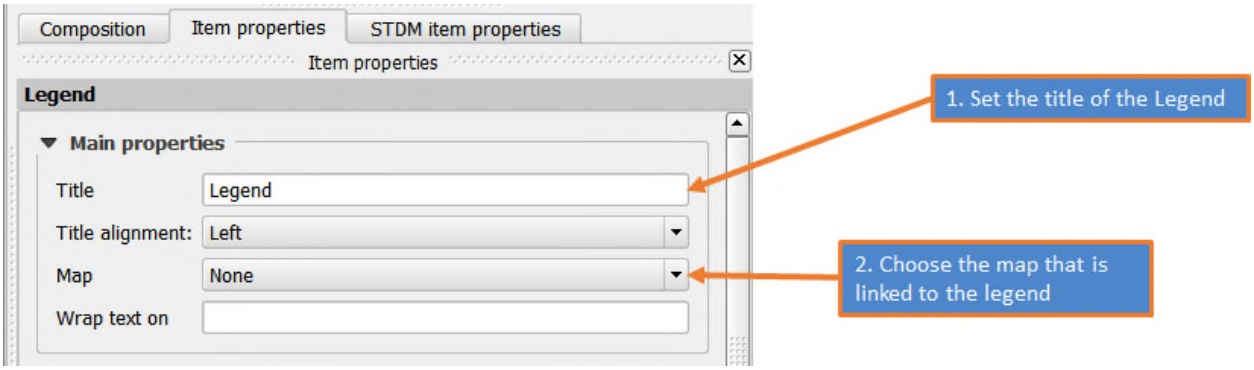


When you release it, a box like the image below will be created.

You can always resize the legend box by pressing its corners and moving your cursor outwards or inwards.

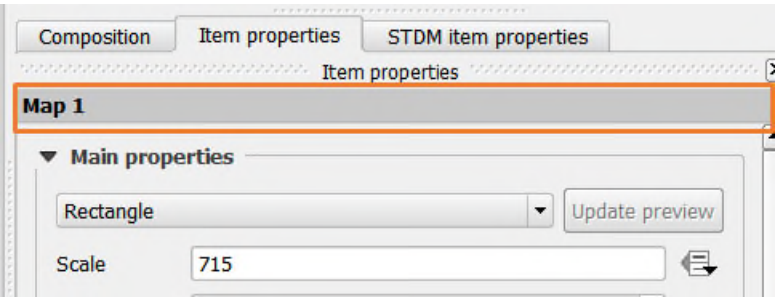
4. Set the legend options in Item Properties (see the image below).

The most important option in the Item Properties is the selection of the map that will be linked to the legend.



If you only have one map, clicking on the drop down, will enable you to see Map 0. Thus, you have to choose Map 0. If you have more than one map, you have to know with which map you are linking

the legend. To identify the map's name, click on the map and go to **Item Properties** tab. At the beginning of the tab, you will see the map's name (see the image below).



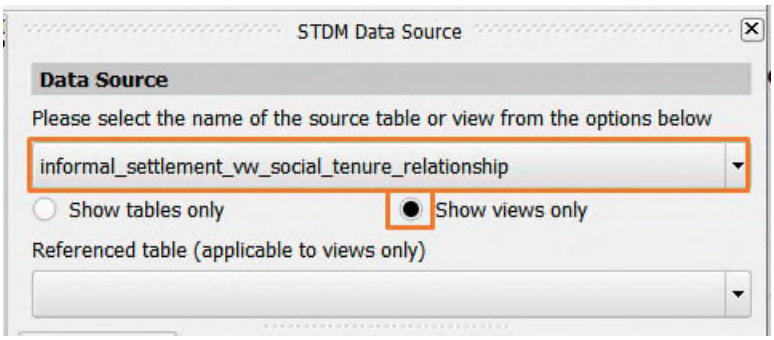
As the above image shows, the map's name is **Map 1**.

Adding Photo

Photo could be any image that is uploaded as a supporting document in the entity editor/ form and the new social tenure relationship wizard. This feature is very useful when you wish to attach documents or photos inside a generated document.

To add photo, follow the steps below.

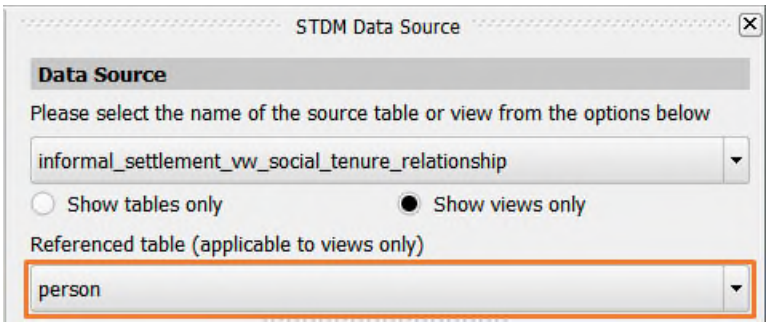
1. Select a data source by choosing a table or a view as shown below.



Note: Only the current profile tables and all views in STDM database load.

Note: When choosing a view, make sure you have chosen the view that is created using current profile tables. You can identify that by looking at the profile name at the beginning of view name.

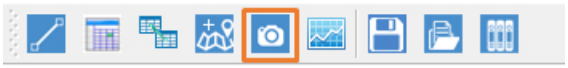
2. Select a referenced table if you have chosen a view in the data sources as shown above (see the image below). A referenced table refers to a table that the template will be working for. In other words, the reference table forces the template to only work for a certain entity. This is useful when Generating a document.



For this demonstration, the Person table is used as a referenced table but you can choose any other based on your needs.

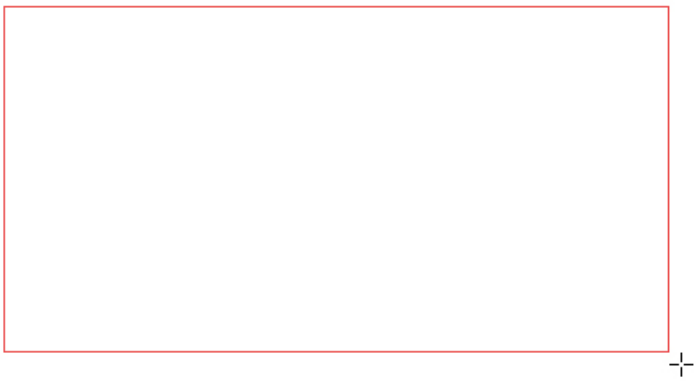
Note: The above two steps are mandatory for views and the first step is mandatory for table data sources.

3. Click on the **Add Photo** button located in STDM Document Designer toolbar (see the image below).



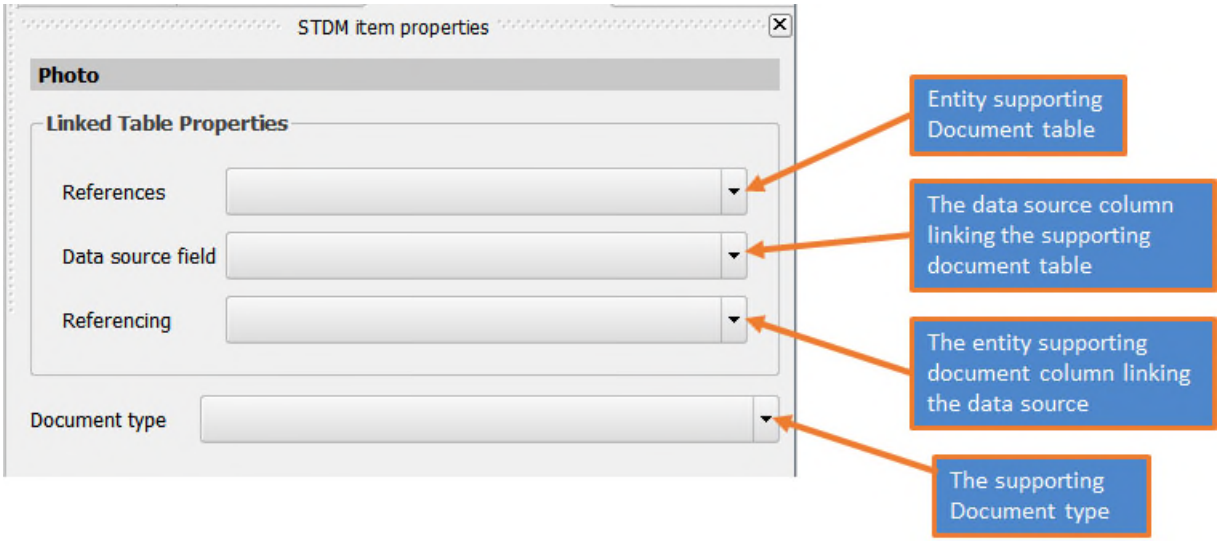
4. Start creating a photo box by clicking on one point in the template page that will be its top left corner of the photo. Then start dragging the cursor to the bottom right direction to expand its size.

While dragging it, you can see a red box and a cursor that looks like the plus (+) sign.



When you release it, a box like the one below will be created.

5. Make sure you have selected the photo box as shown in the above image and open the STDM item properties tab as shown below.



References refers to an entity supporting document table name that contains the reference of a supporting document uploaded to an entity. An entity supporting document table is created by STDM with the following format.

profile_prefix_entity_name_supporting_document.

For instance, a Social Tenure Relationship supporting document looks like

lo_social_tenure_relationship_supporting_document.

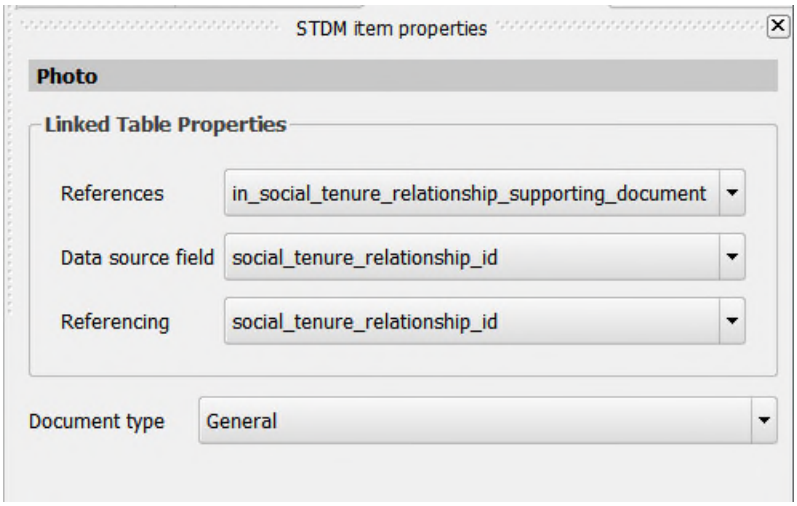
lo refers to the profile prefix of Local Government profile.

Data source field refers to a data source column that is also included in the entity supporting document table.

Referencing refers to the entity supporting column linking the data source, which has similarity with Data source field in its function here.

Document type refers to the supporting document type that you have specified in the Configuration Wizard. The default document type is General. If you add more document types for a given entity, you find them listed in the **Document type** drop down menu.

Make your selection similar to the one shown in the image below.



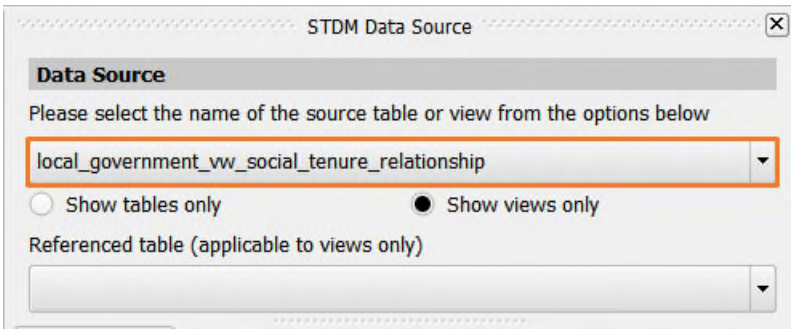
For instance, the above selections will enable you to properly add documents used for social tenure relationship. If you want to use a supporting document of another entity, look for your entity name in place of social_tenure_relationship.

Adding Attribute Table

Attribute table refers to a table that holds non-spatial data. Attribute table can be used for a single row record or aggregate data. It is created from a specific database table or view.

To create an attribute table, follow the steps below.

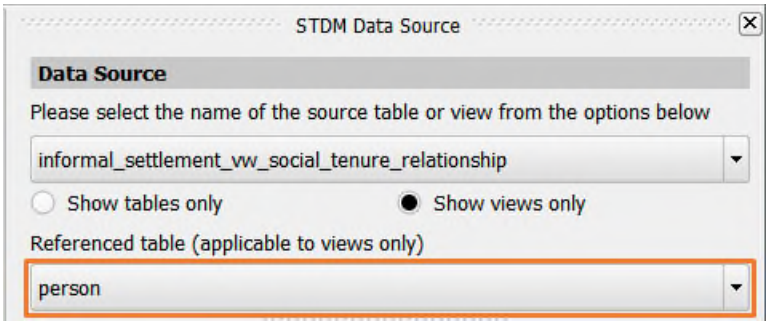
1. Select a data source by choosing a table or a view as shown below.



Note: Only the current profile tables and all views in STDM database load.

Note: When choosing a view, make sure you have chosen the view that is created using current profile tables. You can identify that by looking at the profile name at the beginning of view name.

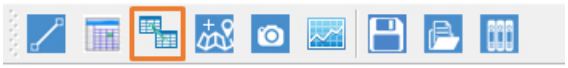
2. Select a referenced table if you have chosen a view in the data sources (see the image below). A referenced table refers to a table that the template will be working for. In other words, the reference table forces the template to only work for a certain entity. This is useful when Generating a document.



For this demonstration, the Person table is used as a referenced table but you can choose any other based on your needs.

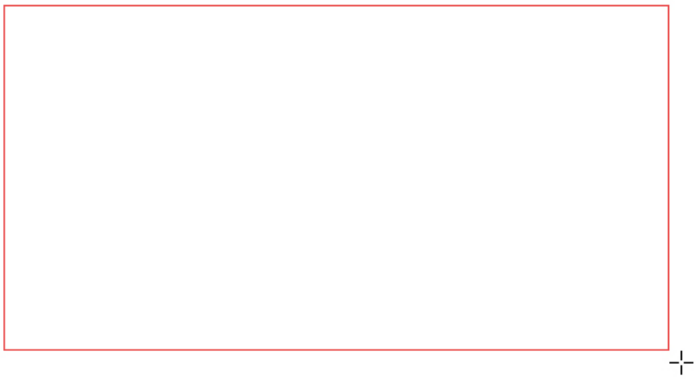
Note: The above two steps are mandatory for views and the first step is mandatory for table data sources.

3. Click on the **Add attribute table** button located in STDM Document Designer toolbar (see the image below).



4. Start creating a table box by clicking on one point in the template page that will be its top left corner of the table. Then start dragging the cursor to the bottom right direction to expand its size.

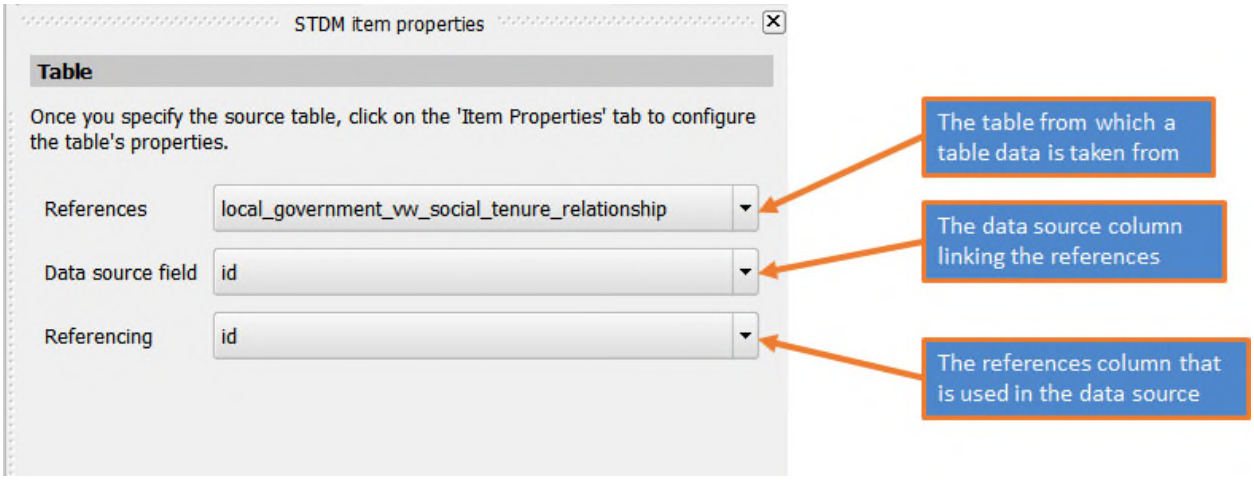
While dragging it, you can see a red box and a cursor that looks like the plus (+) sign.



When you release it, a sample table is created (see the image below). This table changes based on your selection in **STDM item properties.**

id	Code	Area	Value	Parcel Type	Landuse	Special Landuse	Dispute
25	tesfdsf	0	0	2	0	2	0
26	add	0	0	0	2	0	0
27	add	0	0	0	0	0	0
28	rem	0	0	0	0	0	0
29	add2	0	0	0	0	0	0

5. **Make sure you have selected the table box as shown in the above image. Proceed to open the STDM item properties tab as shown below.**



References refers to any table that is used as a data source of the table. Here you will find all tables and views of the current profile. Choose a table that you want the table data to be based on.

Data source field refers to a data source column that is used to link the reference with the data source table.

Referencing refers to the references table column linking the data source, which has similarity with Data source field in its function here.

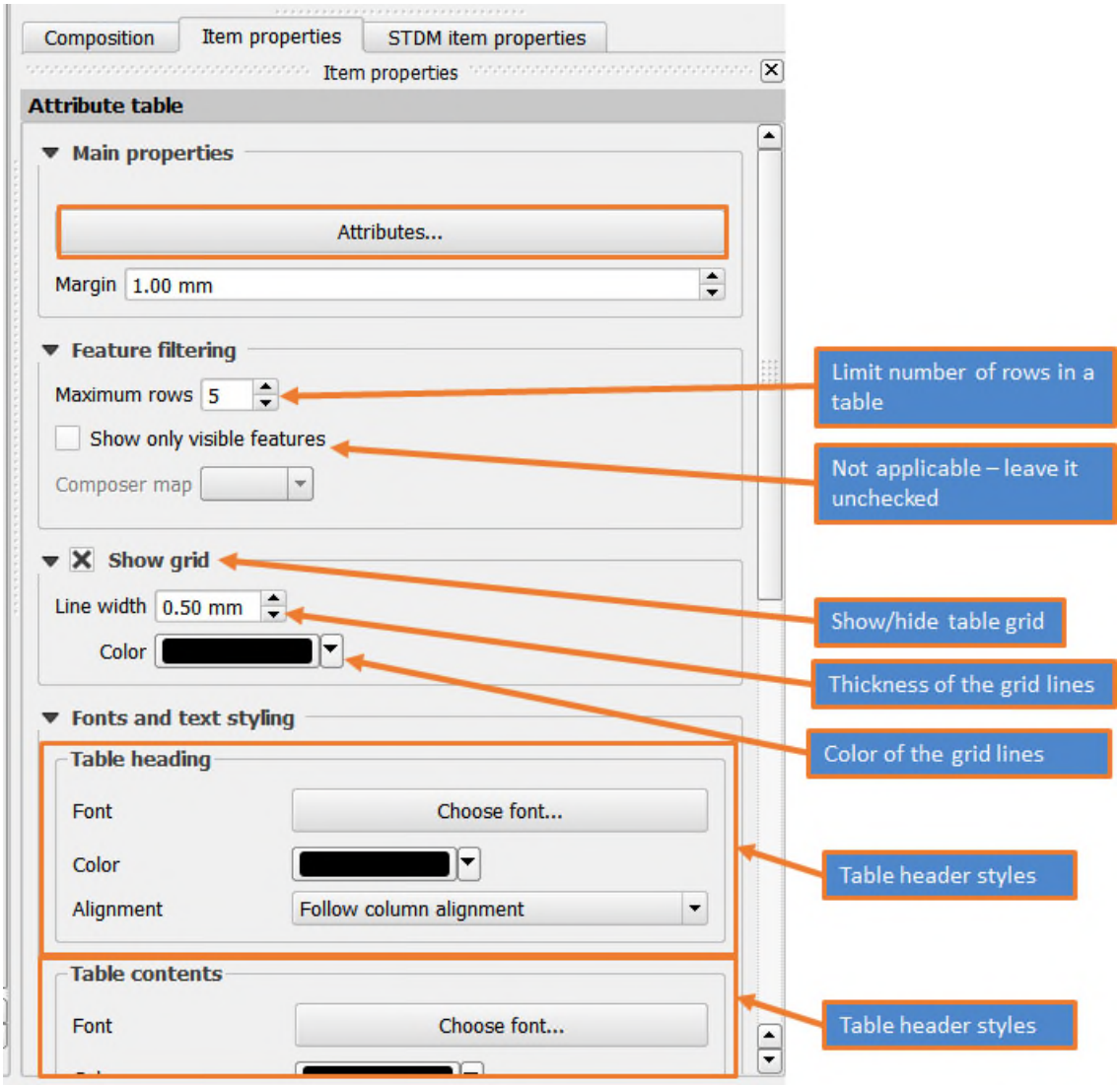
6. The attribute table is created based on the data source and properties you have set. See an unformatted attribute table below.

social_tenure_relationship_id	social_tenure_relationship_tenure_type	id	person_first_name	person_middle_name	person_last_name	person_gender_id	person_date_of_birth	person_marital_status	person_national_id	person_physical_address	person_tel
1	Ownership	1	Alice	Akeno	Tye	Female		Married	3454364		071151600
	Leasehold	3	James		Mucheni	Male		Married	686786		072151660
3	Leasehold	2	Clement	Echoto	Peter	Male		Married	6785678		071101600
4	Communal	5	Peter	L.	Emeri	Male		Divorced	342214		071441600

The rest of the steps show how you can format the table.

7. Style and format the attribute table. The table is formatted and styled using Item properties tab, as shown below.

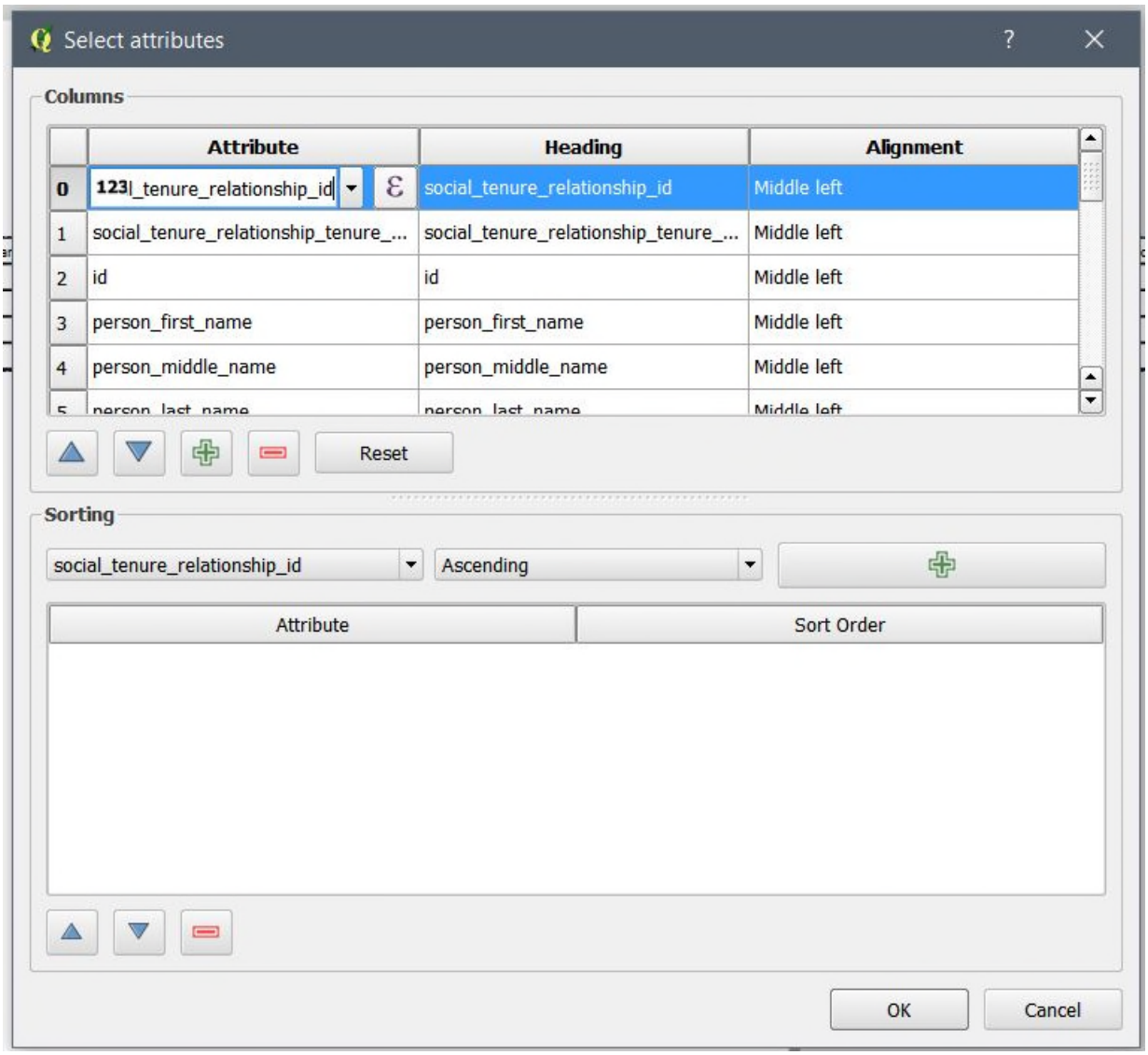
See the descriptions on the image below.



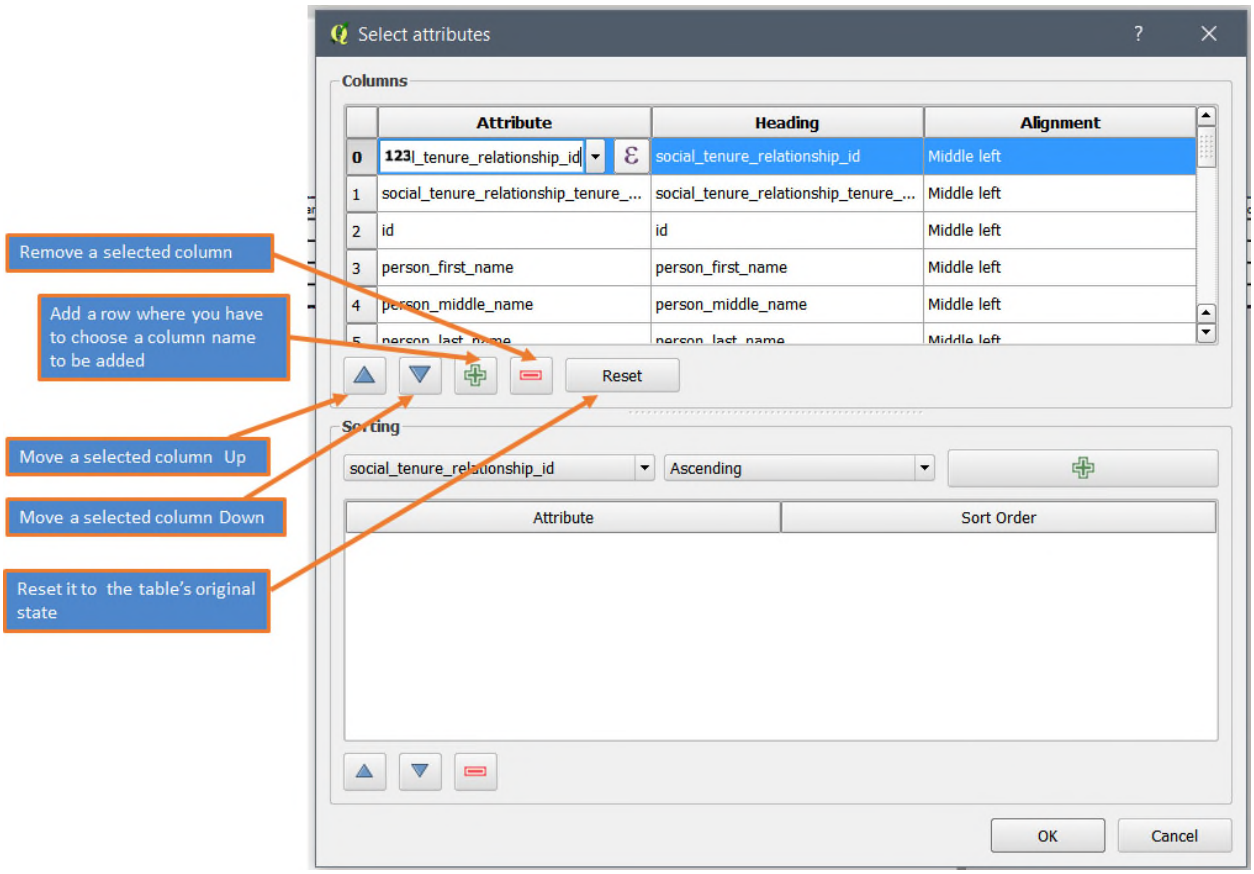
To make style changes, refer to the above image on the **Item properties** and scroll down to make more changes.

To format the attribute table, click on the **Attributes...** button that is highlighted in the above image of the Item properties.

When you click on **Attributes...** button, you will see the following window.



The buttons of **Attributes** dialog is explained below.

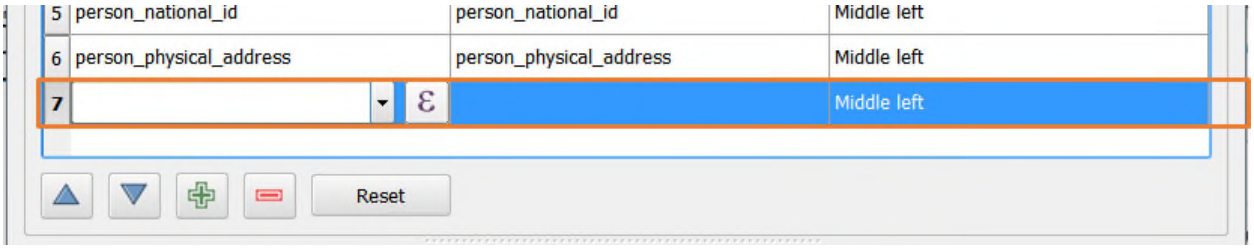


a. Adding a column

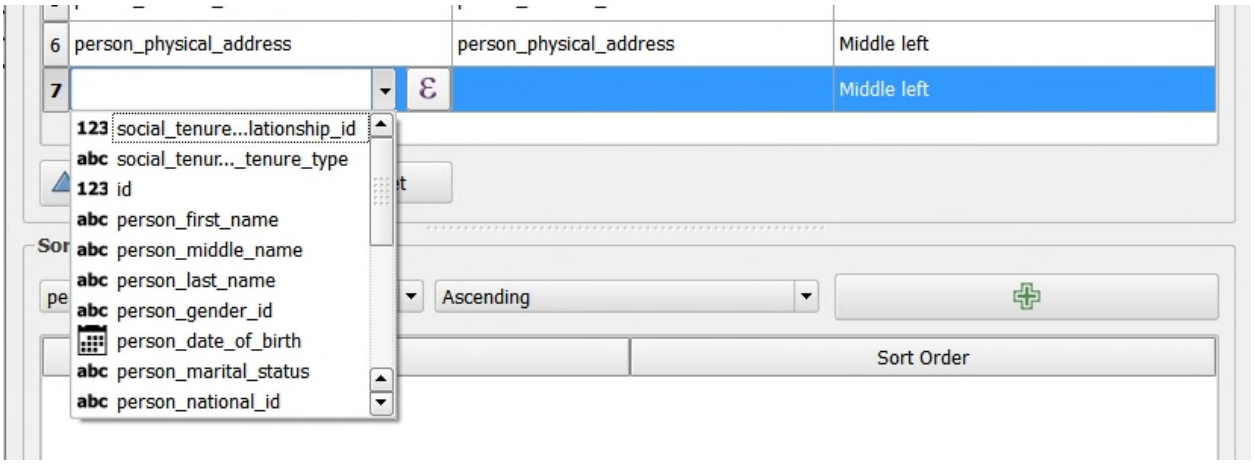
By default, all the columns in a table are loaded. You may need to remove unwanted columns to create your final table.

If you accidentally remove columns that you might require, you can add them using the add button as shown in the above image.

An empty newly added column looks like the image shown below.



You then have to choose the column by clicking on and choosing columns from a drop down menu as shown below.



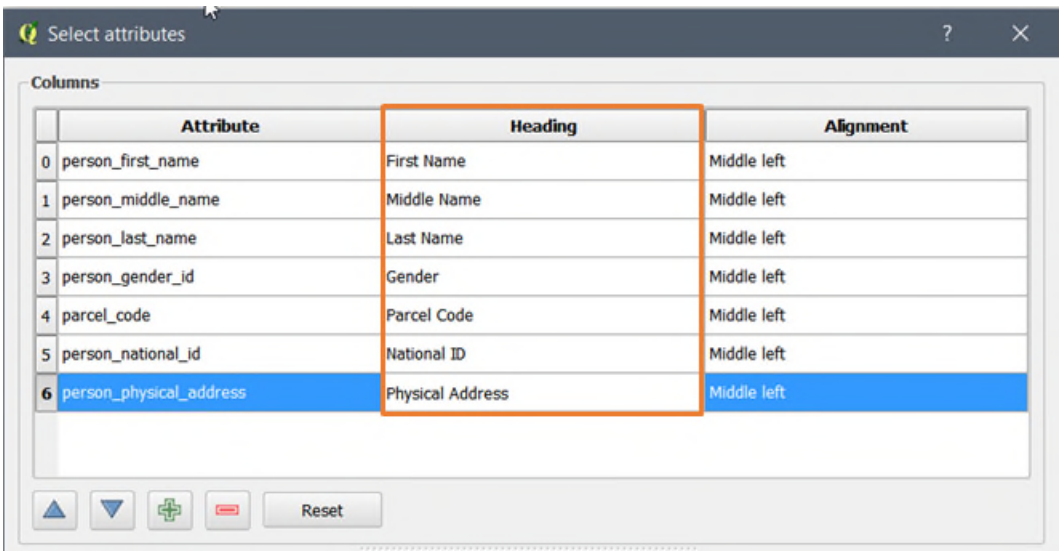
b. Removing columns that are not needed

To remove a column select on a row and click on the Remove button.

b. Formatting the column names

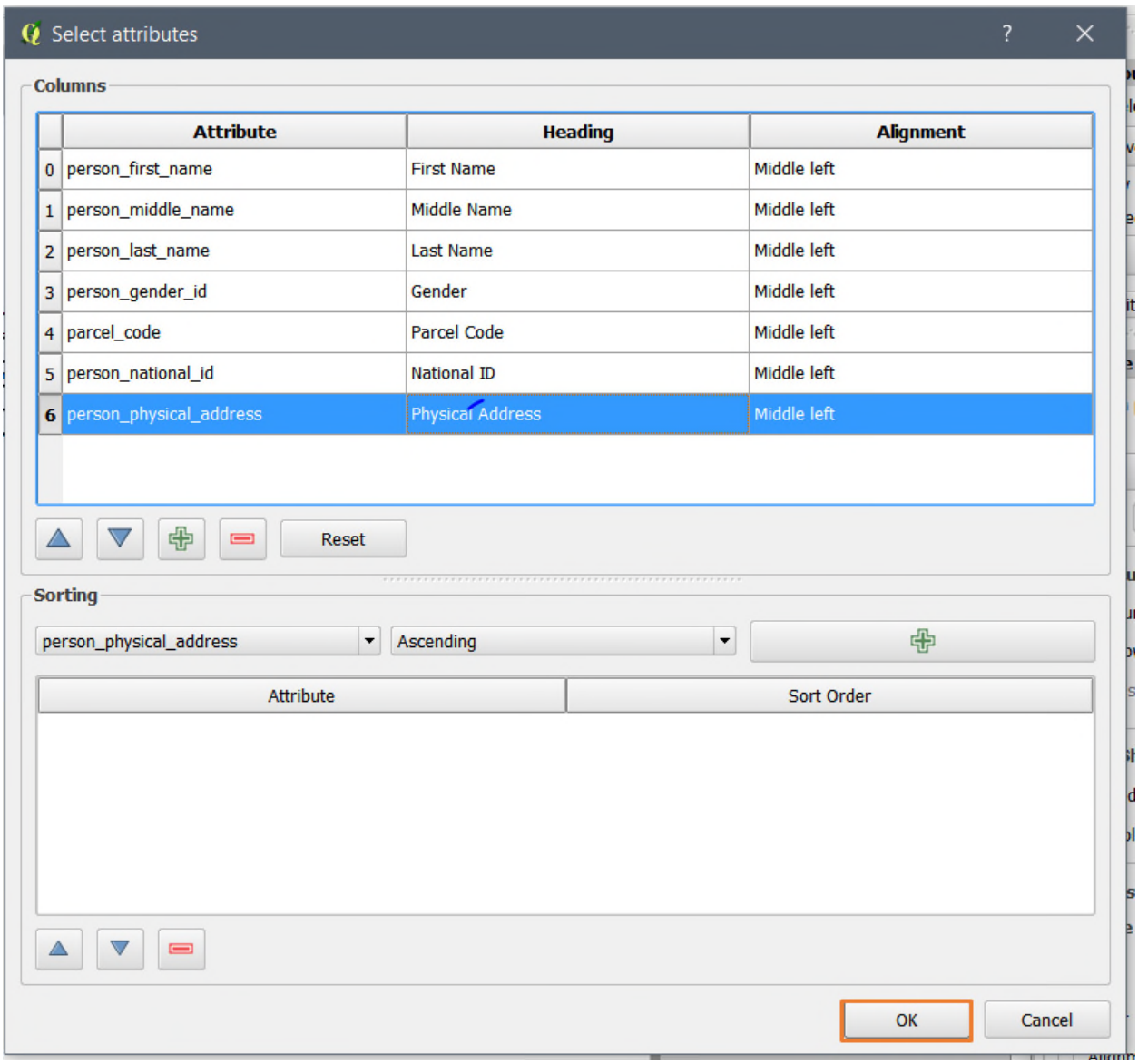
Columns of STDM database or any other database have an underscore instead of spaces and lower cases instead of title cases. This may not be desirable in the generated document.

The appearance of the column can be changed in the Attributes dialog by manually typing preferred heading of the column under the Heading as highlighted in the image below.



c. Change alignment of columns by choosing your preferred alignment under the Alignment column.

8. Once you are done, click on the **Ok** button of the attributes dialog to save and close the dialog. See the image below.



9. Once you click on the **Ok** button, the table gets updated. The image below shows the final table customized on the bases of above steps.

First Name	Middle Name	Last Name	Gender	Parcel Code	National ID	Physical Address
Alice	Akeno	Tya	Female	1	3454364	
James		Mucheni	Male	1	686786	
Clement	Echoto	Peter	Male	1	6785678	
Peter	L.	Emeri	Male	1	342214	

Note: Currently, due to a bug in QGIS Print Composer, the formatting will be lost if you open the template again.

Thus, it is advised to format the table before saving the template for the last time.

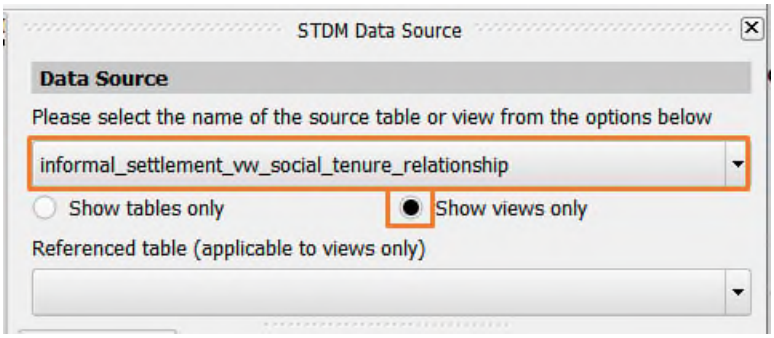
Adding a Chart

You can add charts whose data is derived from the STDM database. Currently, only vertical bar graphs are supported. More chart types will be added in the next major release.

The charts are best suited for an aggregate data. This requires the creation of more views linked to the default view that comes with STDM. The steps below will enable you understand how to create a basic view. The steps in creating an advanced chart are the same as below but you need to add more views that are linked to the default view.

To add charts that use STDM database, follow the steps below.

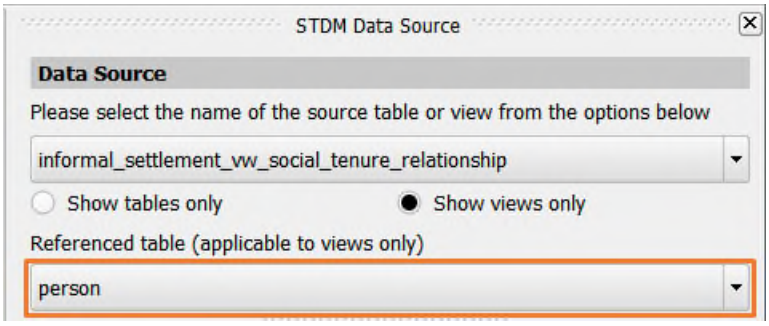
1. Select a data source by choosing a table or a view as shown below.



Note: Only the current profile tables and all views in STDM database will load.

Note: When choosing a view, make sure you have chosen the view that is created using current profile tables. You can identify that by looking at the profile name at the beginning of view name.

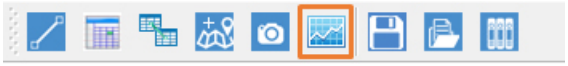
2. Select a referenced table if you have chosen a view in the data sources as shown above (see the image below). A referenced table refers to a table that the template will be working for. In other words, the reference table forces the template to only work for a certain entity. This is useful when Generating a document. When we choose the referenced table, it means we are forcing the template only work for the selected reference table.



For this demonstration, the Person table is used as a referenced table but you can choose any other based on your needs.

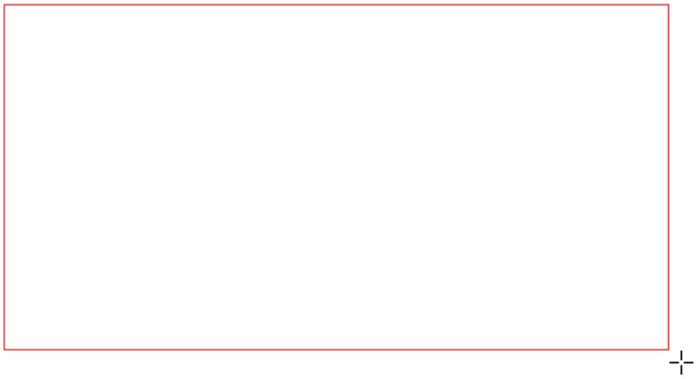
Note: The above two steps are mandatory for views and the first step is mandatory for table data sources.

3. Click on the **Add Photo** button located in STDM Document Designer toolbar (see the image below). This enables you to add an image that is uploaded into STDM.

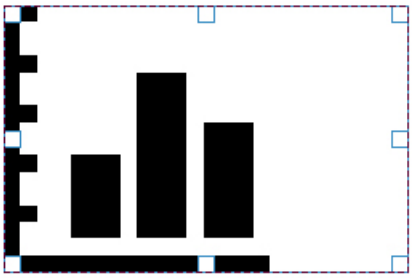


4. Start creating a chart box by clicking on one point in the template page that will be its top left corner of the chart. Then start dragging the cursor to the bottom right direction to expand its size.

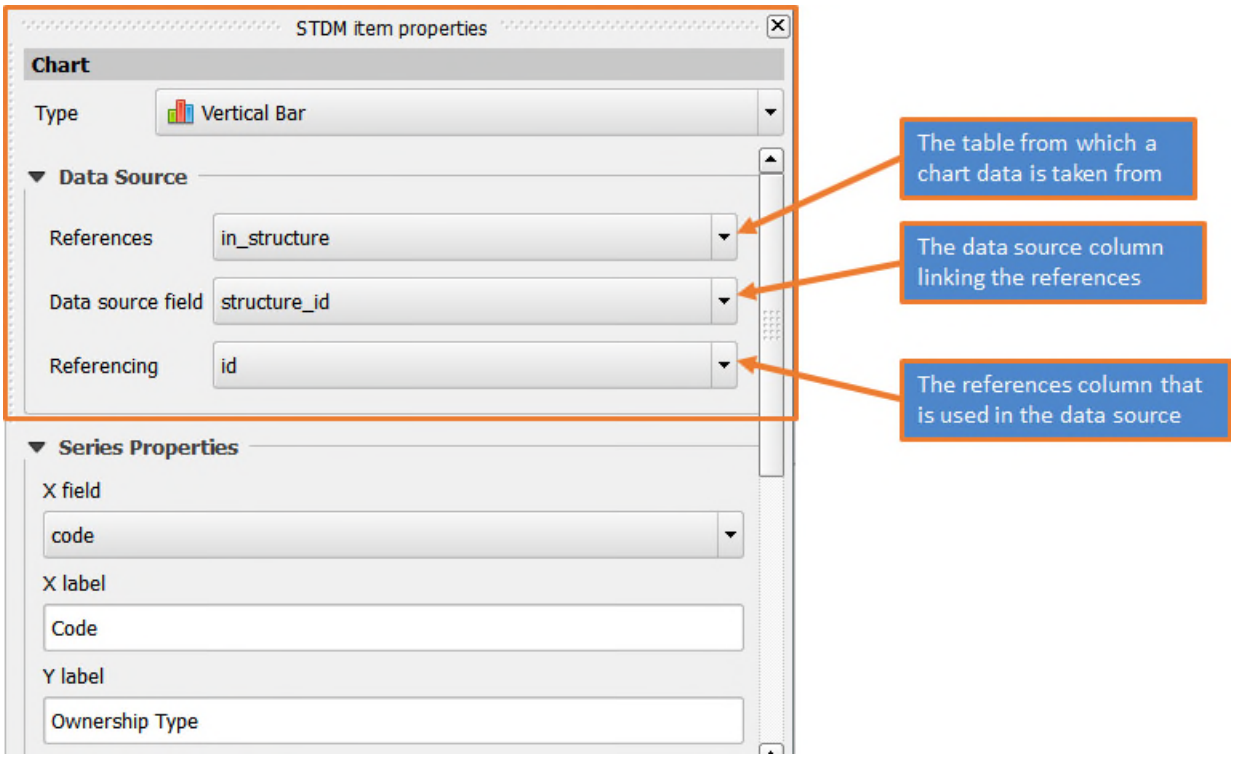
While dragging it, you can see a red box and a cursor that looks like the plus (+) sign.



When you release it, a box like the image below will be created.



5. Make sure you have selected the chart box as shown in the above image and open the **STDM item properties** tab. You will see the following.

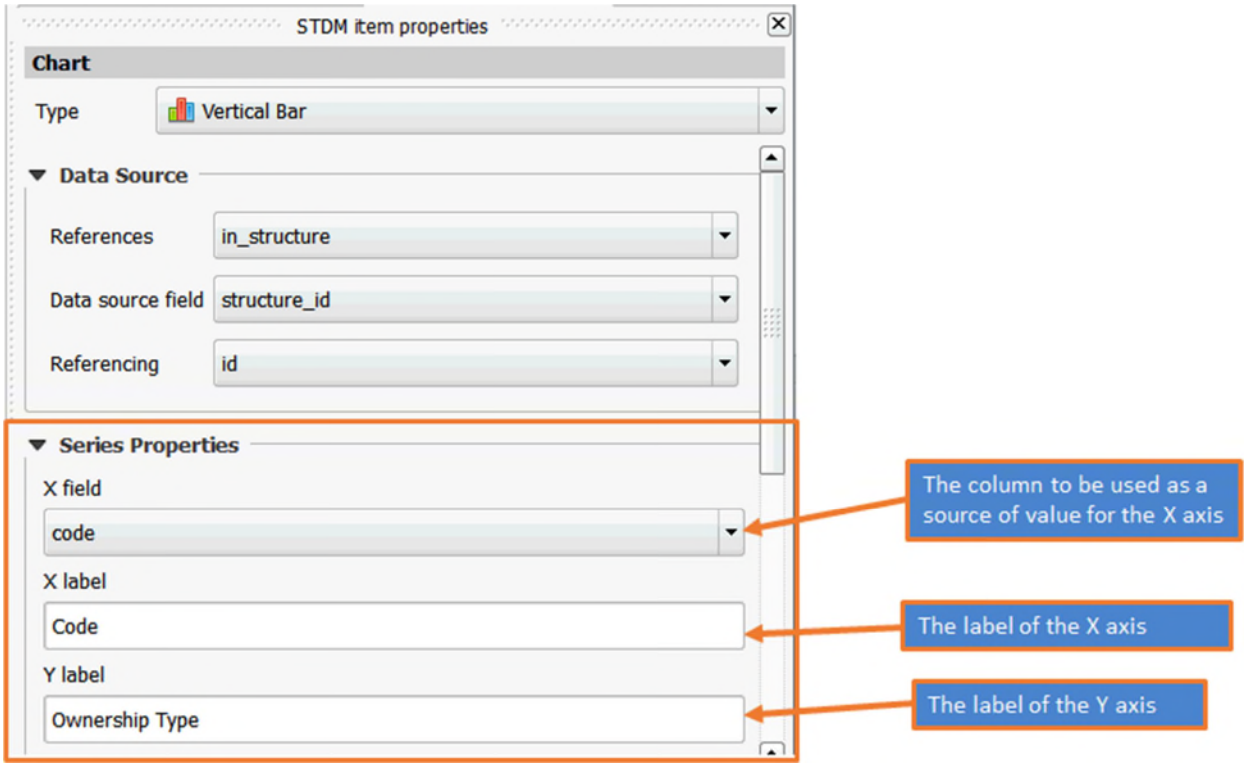


References refers to any table that is used as a data source of the chart. You will find all tables and views of the current profile. Choose a table that you want the chart data to be based on.

Data source field refers to a data source column that is used to link the reference with the data source table.

Referencing refers to the references table column linking the data source, which has similarity with Data source field in its function here.

6. Choose Series Properties, which refers to the X axis field and the Y axis label in the chart.



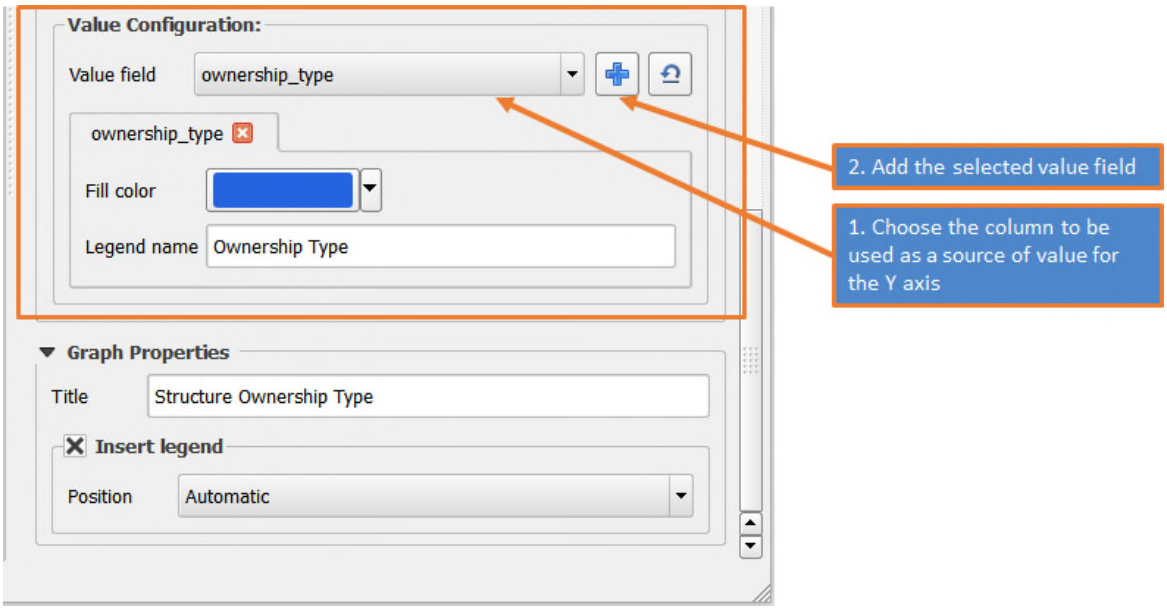
X Field refers to the column to be used as a source of data for the X- axis.

X label refers to the label of the X-axis.

Y label refers to the label of the Y-axis.

Proceed to choose the Y-axis field in the next box explained in the next step.

7. Choose the value field (Y-axis value source column), legend name, and chart colour.

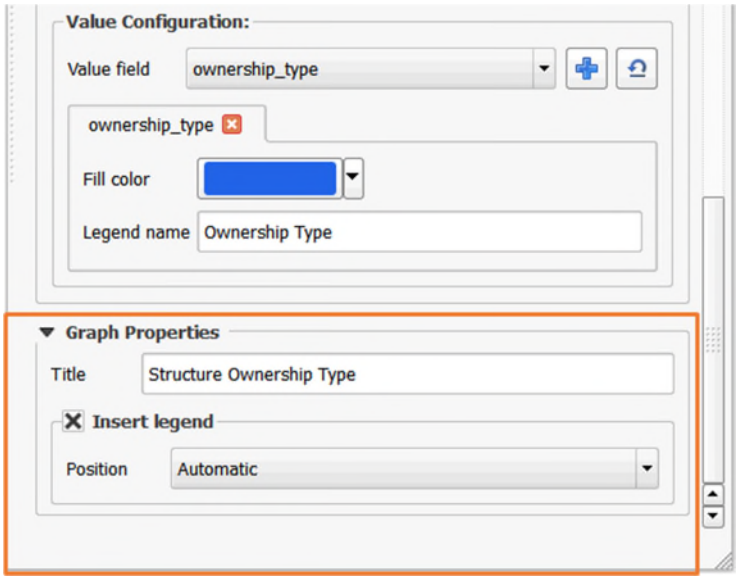


Value field refers to the Y-axis value. The selected column in this case is ownership_type but you can choose any other column you wish.

Fill colour refers to the colour of the bar in the chart. Click on the blue box and choose other colours if you would like to change it.

Legend name refers to the title of the legend box. Normally, this refers to the Y-axis value/ the Value field.

8. Choose the graph properties by adding title of the chart, and by enabling and setting the position of the legend. See the image below.



If you do not check Insert legend checkbox, the legend will not be shown in the generated document.

The default position of the legend is **Automatic**, which means, it will be placed anywhere in the chart area where there is a space. This is recommended to avoid overlapping of the legend with the chart bars. You can also choose other positions by clicking on the drop down menu.

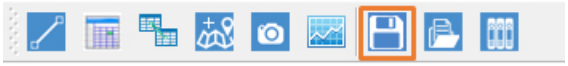
Managing a Template

After adding different items into the template as discussed in Adding Items into a Template topic, you have to save it so that you can use it to generate a document.

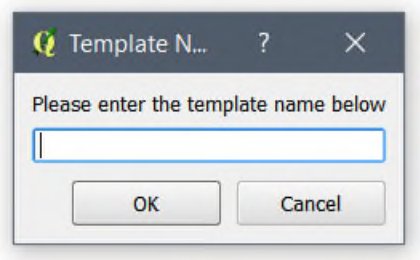
Saving a Template

To save a file follow the steps below.

1. Click on the Save button located in STDM Document Designer Toolbar, as highlighted below.



2. A popup appears. Type a file name of the template and press the Ok button.

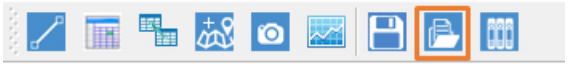


The file is saved in the template folder as specified in the Configuration Wizard or Options.

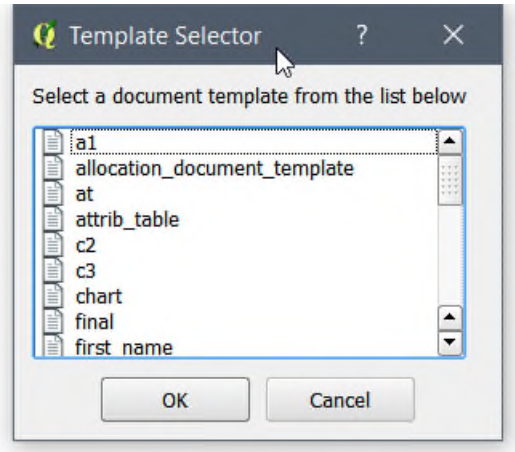
Opening a Template

To open a template file, follow the steps below.

1. Click on the Open Document Template button located in STDM Document Designer Toolbar, as highlighted below.



2. A dialog opens with the list of existing templates (see the image blow). Choose the template you would like to open and click on the Ok button.



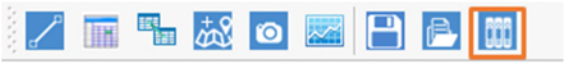
The template loads in a new Document Designer window.

Editing File Name and Deleting a Template

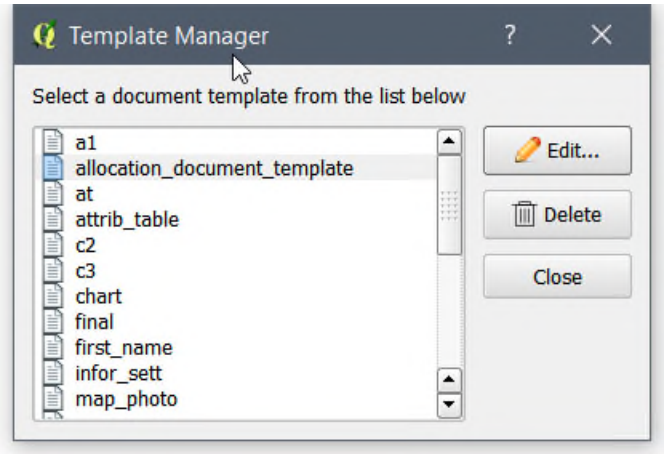
Editing of template file names and deleting of template is done in the same dialog.

To edit a file name, follow the steps below.

1. Click on the Manage Document Template button located in STDM Document Designer Toolbar, as highlighted below.

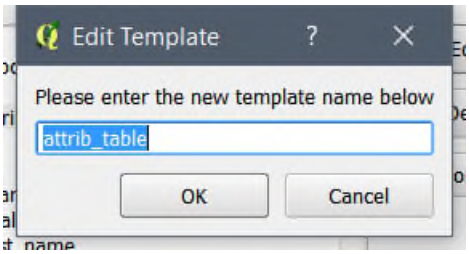


2. Template Manager opens up as shown below.



3. Select on one of the templates listed in the white box.

4. If you want to change the file name, click on the Edit button. This will load the selected template name in an editable box (see the image below).



Then, modify the name and press the Ok button to change the file name.

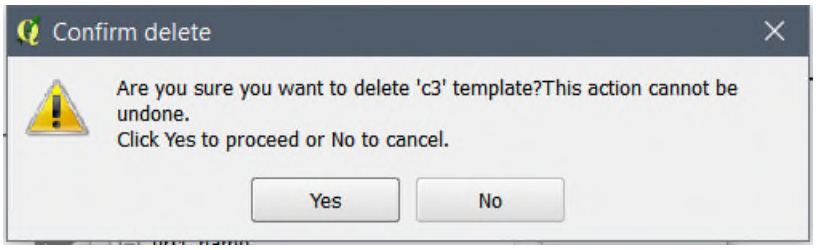
Follow the steps below to delete a template file.

1. Open the Template manager

2. Select a template you want to delete.

3. Click on the delete button on the right side of the Template Manager.

4. A popup appears warning you not to delete the template (see the image below).



If you still want to delete the file, click on the Yes button. If you are not sure, click on the No button.

Tips and Workarounds

While using **the Document Designer** you might face issues that could prevent you from using Document Designer. These issues are because of the limited flexibility of QGIS Print Composer on which the Document Designer is based on. This limitation will be resolved in QGIS 3.0.

These issues can be resolved through tips and workarounds that are listed below.

1. Do not generate a document using a template that is open in Document Designer. This will block you from adding any more items into the template. To fix the issue, close and open the Document Designer and open the template.

2. The attribute table formatting will be lost when re-opening a saved template. This is a QGIS Print Composer known issue. Thus, it is recommended to add the formatting of the attribute table before saving the template for the last time to avoid re-formatting it.

Learn More about QGIS Print Composer

As already discussed, Document Designer is built on top of QGIS Print Composer. Thus, learning more about QGIS Print Composer will help you understand Document Designer.

Visit the Print Composer documentation page by clicking on the link below.

QGIS User Manual - Print Composer

Generating Documents Using Templates

Generating a report is an important component in STDM that is pivotal for the dissemination of information on land. This information will be used in various ways like making informed decisions, good management of resources, security of tenure, etc.

Once you have created a template using Document Designer, you can use Document Generator to generate documents in file formats such PDF and different image formats.

The generation of documents is based on entities and database views that are used as a data source to design the template.

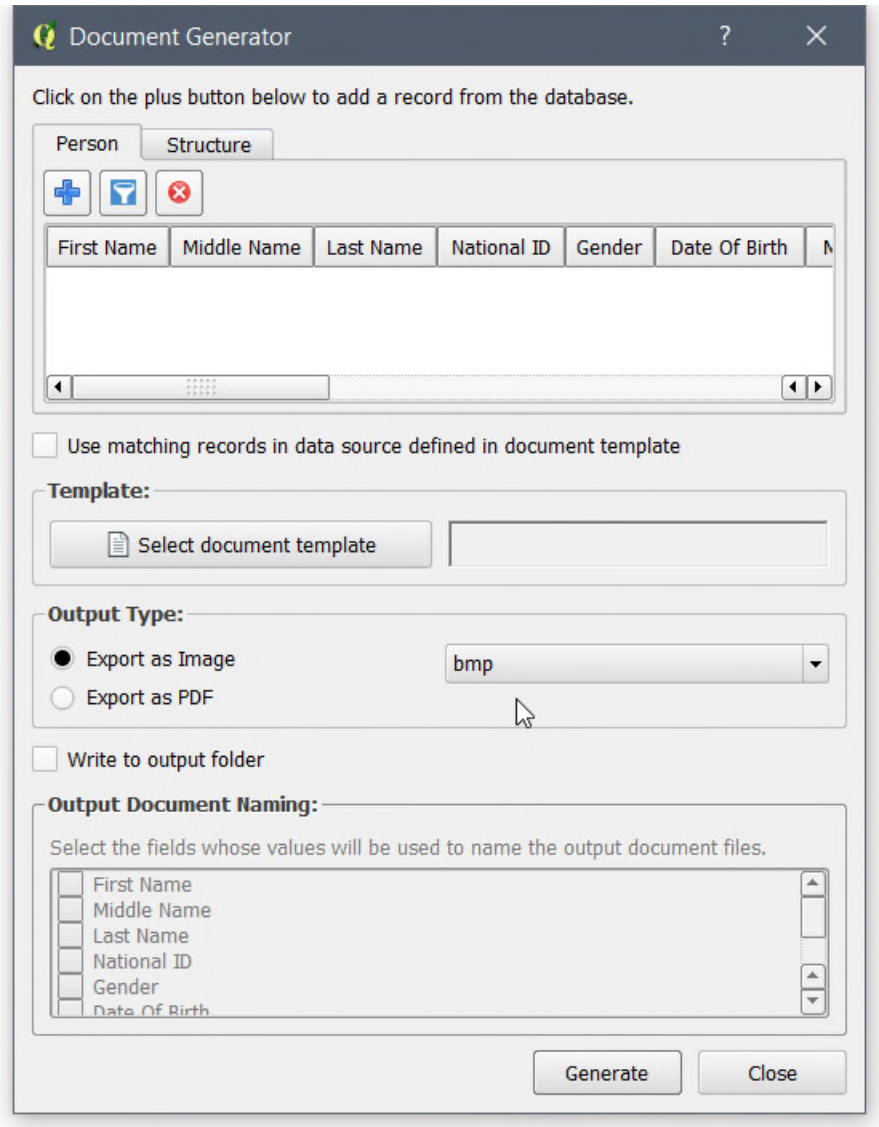
You can generate documents for selected records. This is mainly applicable when you want to generate documents such as certificates of ownership, title deeds, allocation document for a party or a spatial unit. In addition, you can even generate a letter based on a record entry in STDM. For instance, in a local government setting, a letter template can be designed that will be used for a confirmation of survey on a parcel that can then be used for approval. For this purpose, you can use the Survey and related entities as a data source in local government profile included in STDM 1.4 installation. The letter could have information that shows a survey date, the applicant, the surveyor and the location with a field for signatures.

You can also generate documents that are used for reporting purposes. The document templates could be designed from a database view created from custom queries that provide aggregate information. Aggregate views are not created in STDM by default as user requirements vary. Currently, only social tenure relation view is created. Using aggregate views, you can create templates that use charts.

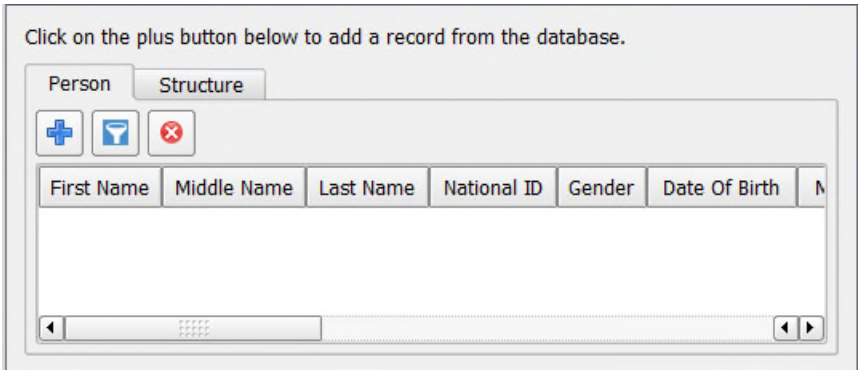
To generate a report based on the designed template follow the steps below.

1. On the STDM toolbar, select **Document Generator** button.

The Document Generator module loads as shown below.



The top part of the dialog has tabs that represents all the core entities (see the image below). If you add a new entity in the Configuration Wizard, a new tab will be added automatically.

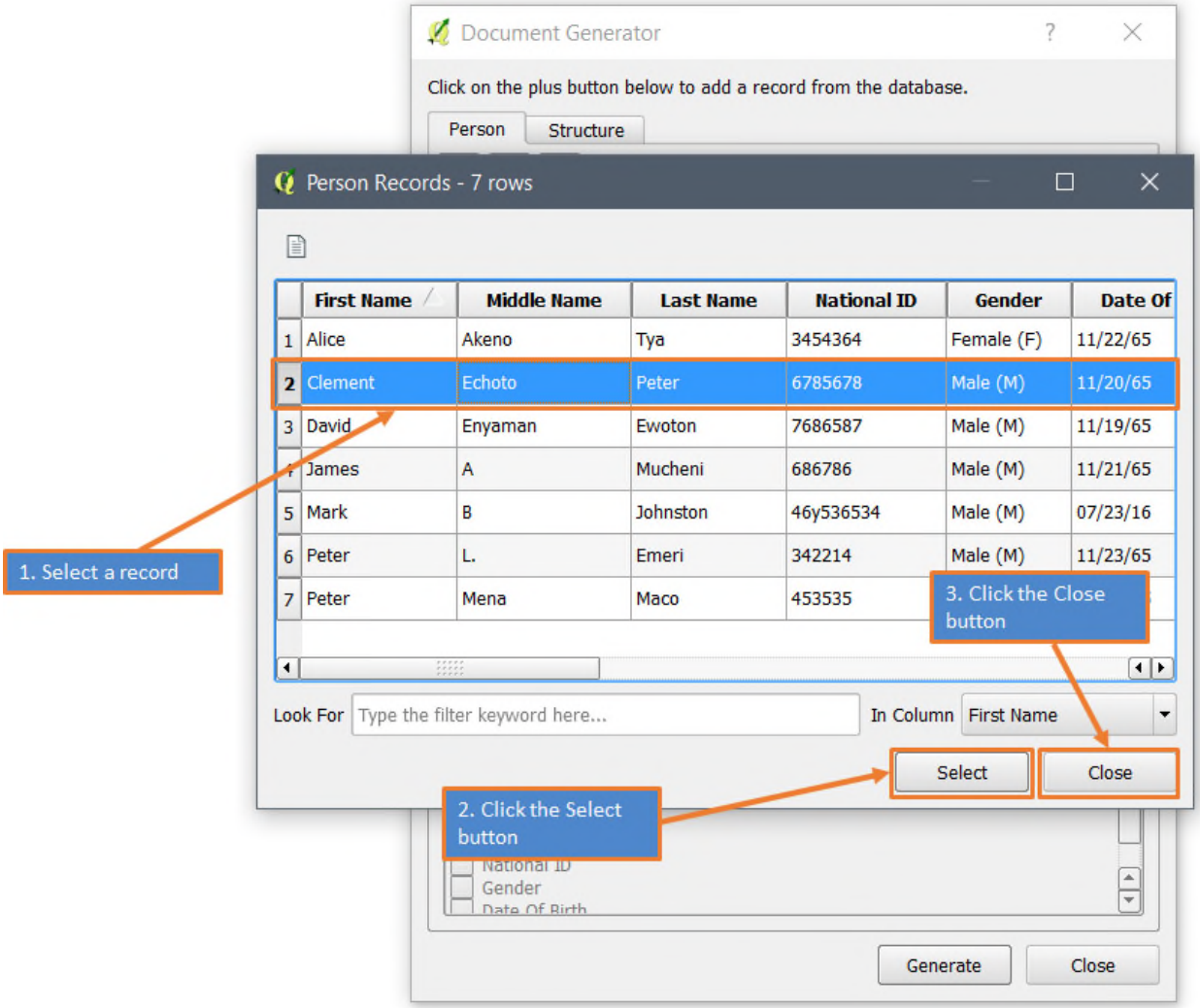


2. If you are generating a document using aggregate data, proceed to step 4.

On the top part of the entity tab, click on the Add button (➕) to add a record whose details you wish to appear in the generated document.

The **Entity Browser** appears so that you can select a record of the entity.

3. Select a record using the Entity Browser dialog as shown below.



In case you have large records, you can first make a search as discussed in [Querying a Record topic](#).

If you want to add multiple records that are not continuous, follow the sub-steps below.

a. Press the **Control** (Ctrl) key on your keyboard

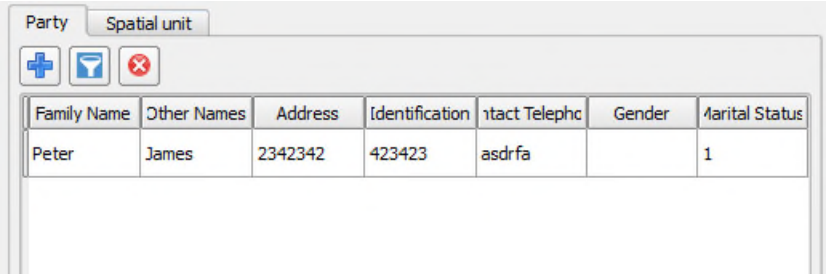
b. While still pressing the **Control** key, select records you want to add.

If you want to add multiple records between two rows, follow the sub-steps below

a. Select a record that will be the first selection in the range.

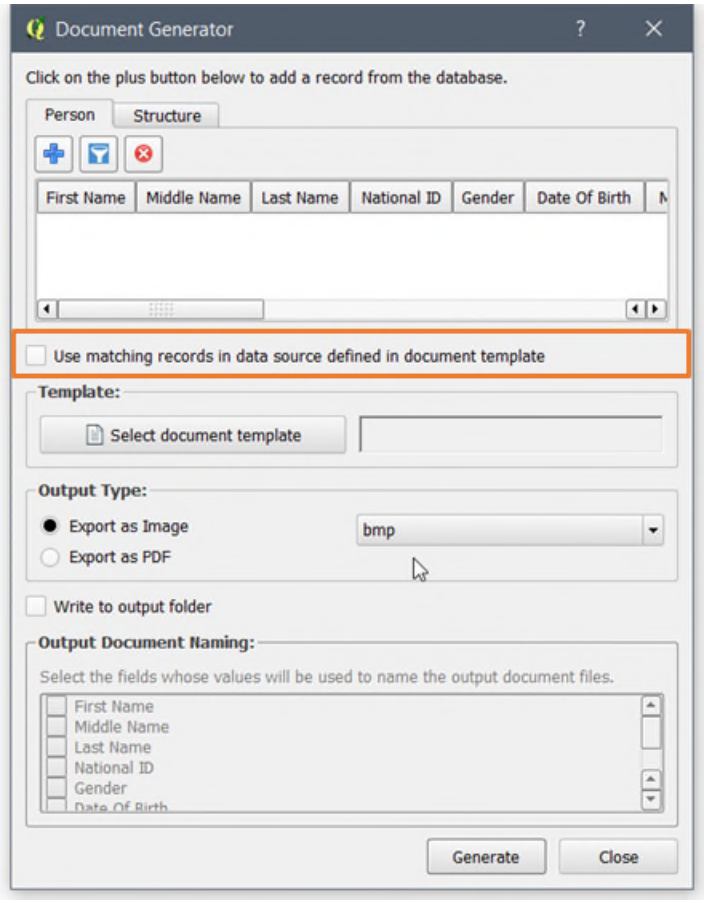
b. Press the **Shift** key on your keyboard

c. While still pressing the Shift key, select the last row in the selection range



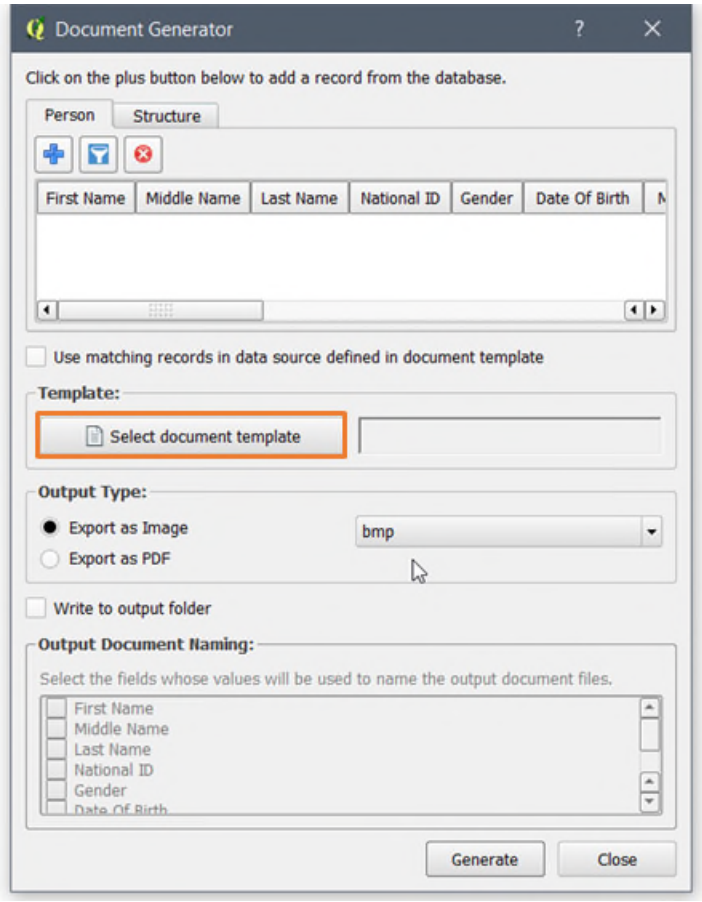
If you want to remove records that are already added, select it and click on the remove icon ( ).

4. If you are using templates that are designed for aggregate data reporting, check on the option (highlighted below).

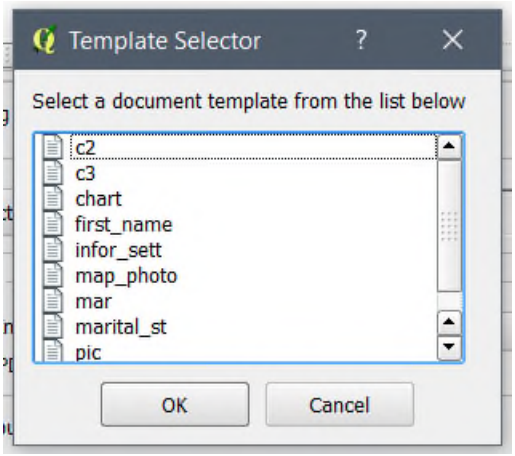


6. Select a document template that you want your generated document to be based on.

To select a document template, click on Select document template button as highlighted below.



A template selector appears showing all templates designed for the current entity.

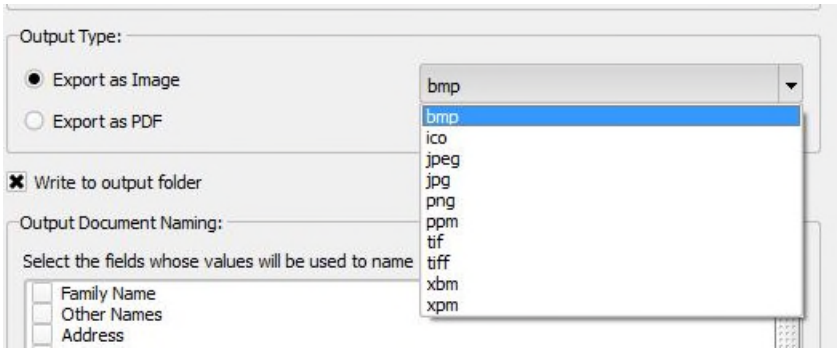


Click on the template you want to use and click on the Ok button.

Note: Only matching templates to the selected entity load. For instance, a template that used Person as a Referenced table in STDM Data Source of document designer will not be visible when you want to generate documents by selecting a Structure record.

7. Choose the output format of the generated document. You can choose several **image formats** or a **PDF** Format as shown below.

If you have chosen the Export as Image radio button, the image format drop down menu becomes active. You can then select an image format that you want (as shown below).



8. Set the saving location and the file name of the document.

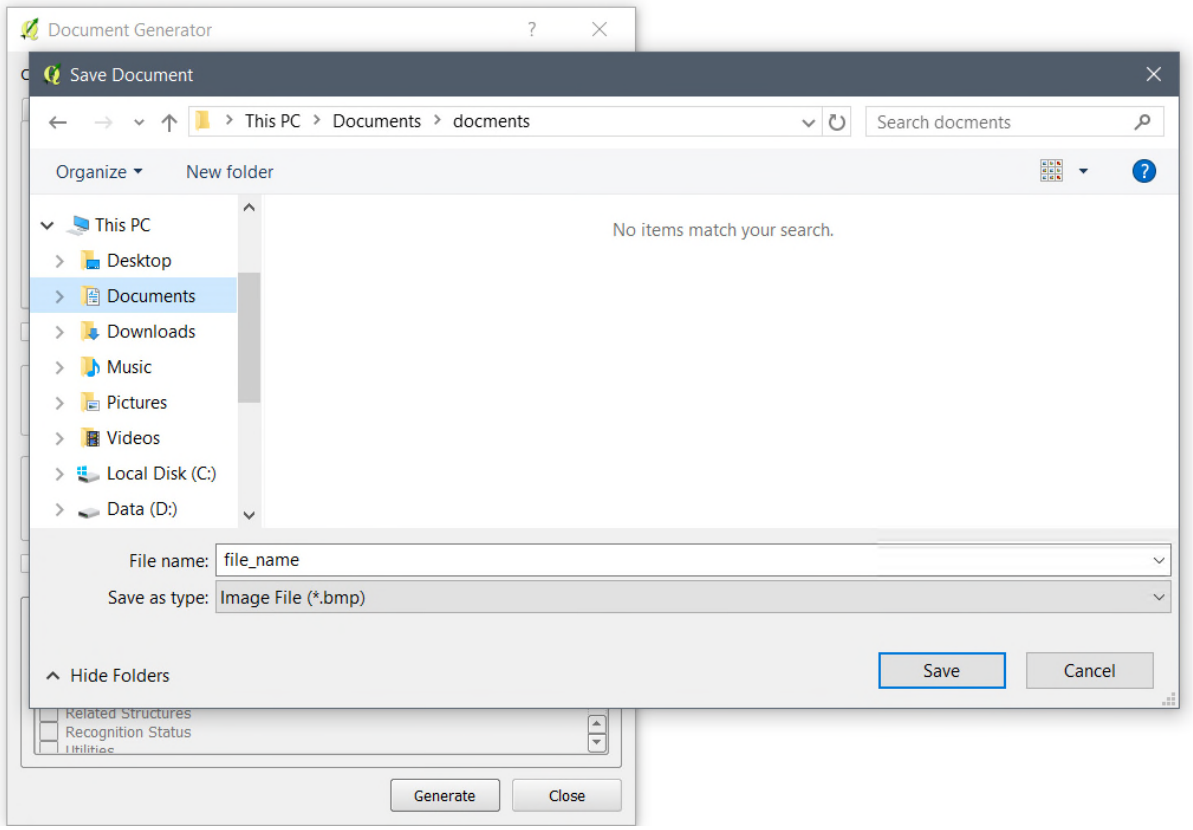
You can save the generated document either in a location that you have chosen or in the output folder as specified in the Configuration Wizard or Options.

A. Saving in preferred location

If you wish to save it in a location that you have chosen, make sure Write to output folder options is unchecked.

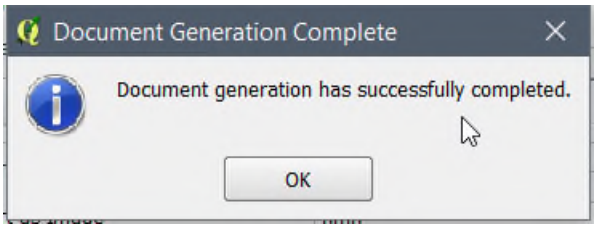
Click on the **Generate** button.

A Windows Explorer pops up so that you choose the file name and location of the document to be generated (as shown below).



After choosing the folder and file name, click the Save button.

If the record selected is found in the table that the template used, you will view a message that shows that the generation was successful as shown below.



Click on the Ok button.

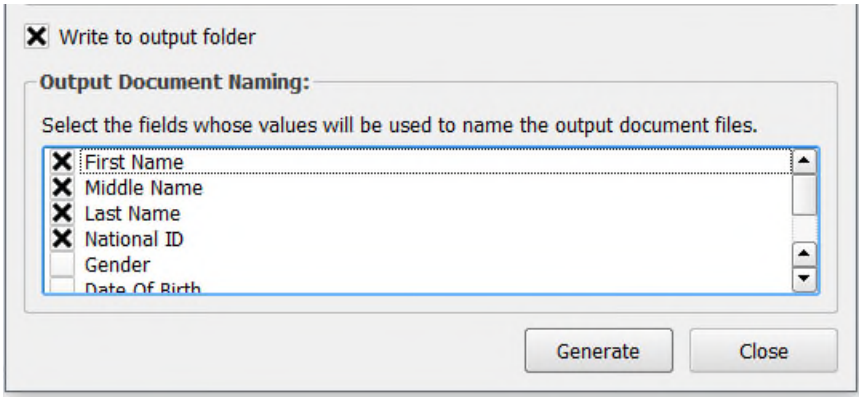
The document has been successfully generated. You can browse to the saved location to see the document.

B. Saving in the Output Folder

If you want to use the output folder, check on the "**Write to output folder**" checkbox as shown in the image below.

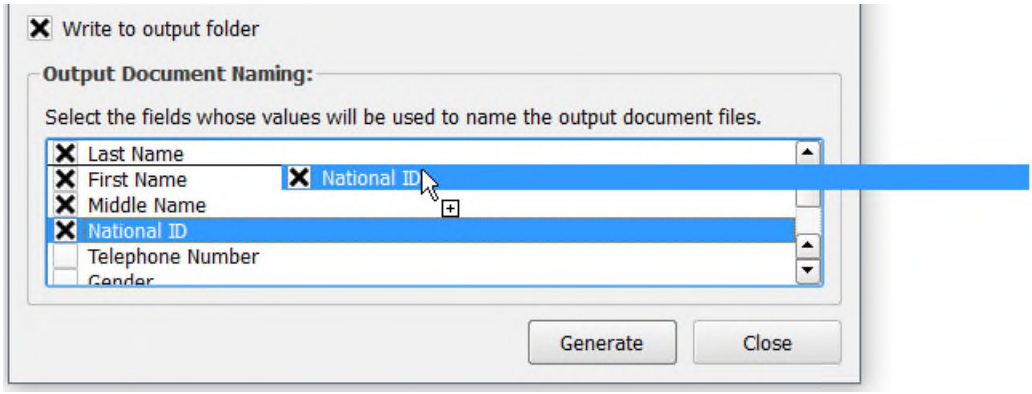
The box Output Document Naming gets active so that you can also choose and sort the values to be used in the document file name.

Check on the checkbox in front of the column that you want the file name to draw values from.



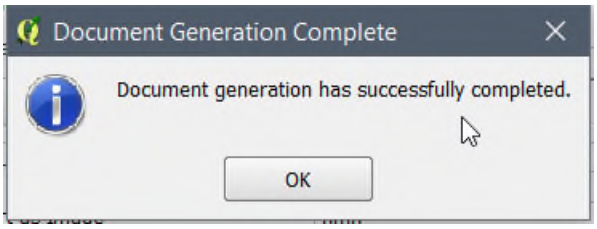
If necessary, sort the order of columns by selecting, dragging and dropping them to the position you want them to be.

For instance, the image below shows that National ID is about to be placed before **Last Name**.



Then, click on the Generate button.

If the record selected is found in the table that the template used, you will see a success message that shows that the generation was successful.



Click on the Ok button.

The document has been successfully generated. You can browse the output path to see the generated document.

Managing data Import and Export

Formatting Spreadsheet Data

We can import data contained in a CSV (Comma Separated Value) file format created in Microsoft Excel and similar products. The following sub-topics enable you to format your data so as to easily import it into STDM database without an error.

Adding a Date into a Cell

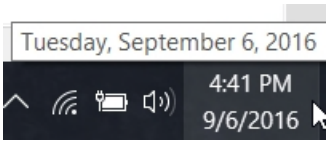
Importing a CSV file with a date data could fail with an incompatible format in the CSV file and the database. Thus, to properly import data, the date format in the CSV file should be the same as the STDM database.

The STDM database uses the same format as your computer date format.

To know your computer date format, follow the steps below.

1. Look at the Taskbar date format.

2. Hover on the date to know which one is the date, month and year (see the image below).



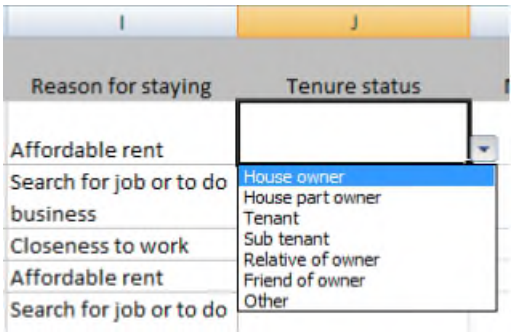
The image above shows the date format is **m/d/yyyy.** In other words, month number, date number, and the year separated by forward slash. The format could differ from computer to computer based on your system language. The above date format is based on US English language.

Accordingly, the date to be entered in the spreadsheet/CSV file should be in the same format.

For instance, if the original data has a format of 23/05/2013, it should be formatted to 5/23/2013 in the CSV file so that STDM can accept it.

Note: If you are importing it into a Server, contact the system administrator to identify the correct date format.

Creating Lookups in Microsoft Excel

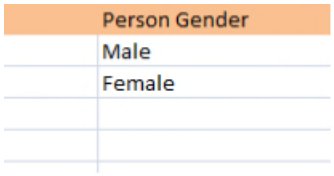


Drop-down list makes data entry easier in Excel and restricts data recording to that in the list.

This eliminates typing error as well as saving on time. A drop-down list can be in column or row format.

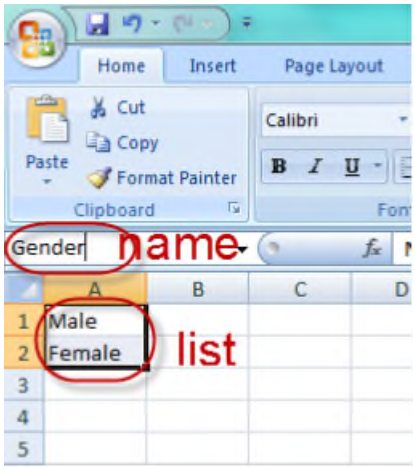
Steps to follow when creating a list in Excel column:

- Define the entries for the list in the order you want it to appear e.g. [Male, Female}
- Type the list in the given cells without having a blank cell in-between.



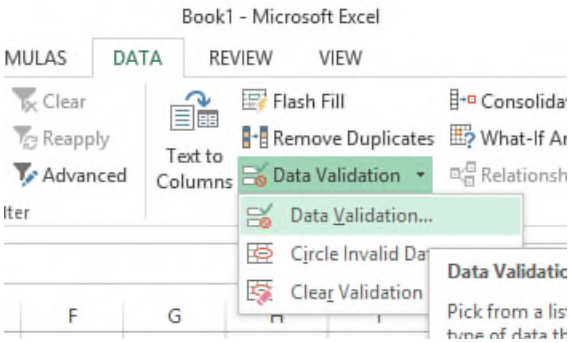
The list may be in the same or different worksheets.

- For a list in a different worksheet, type the **list** on that worksheet and define a **name** for it.

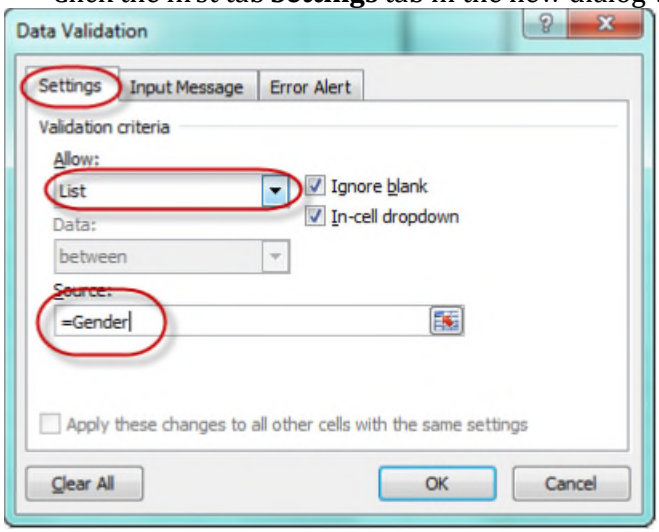


Adding the List to a Cell

- On the working sheet, select the cell you want.
- On the **Data** menu, click **Data Validation.**



- Click the first tab **Settings** tab in the new dialog window.



In the **Allow** drop-down box select **List**

Specify the source of the list;

- If the list is in the current worksheet, enter a reference (range) to your list in the S**ource** box
- If the list is in another worksheet, enter the name that you defined for the list in the **Source** box.

In both cases, make sure that the reference or name is preceded by an equal sign (=).

To specify whether the cell can be left blank, select or clear the **Ignore blank** check box

Removing Drop-down List

- Select the cell within the list
- Click the **Data** menu and then click **Data Validation**.
- In the **Data validation** dialog box that pops up
- Click the **Setting** tab and then click **Clear All** button at the bottom of the dialog.

For more information, go to:

- http://www.spreadsheets.about.com/od/excelformatting/How_to_Use_Excel_Formatting_Features_Format_Excel_Spreadsheets.htm

Capitalizing Cell Text

The example uses random cells numbers.

To extract and capitalize the first name from the name collection, use the following function:
=IFERROR (PROPER (LEFT (A2, (FIND (" ", TRIM (A2))-1))),"")
To extract and capitalize the last name from the name collection, use the following function:
=IFERROR (PROPER (RIGHT (A2, (LEN (TRIM (A2))-FIND (" ", TRIM (A2))))),"")
To extract and capitalize sex information if defined as MALE, FEMALE, M or F in the Sex collection, uses the following function:
=IF(D2="MALE",PROPER(D2),IF(D2="M","Male",IF(D2="F","Female",IF(D2="FEMALE",PROPER(D2)))))

To check if an integer cell is defined or set as a blank text if specified as zero:

=IF (F2>0, F2,"")

To set an option cell as a blank text it's specified as NA:

=IF (W2="NA","", PROPER (W2))

For more help, visit

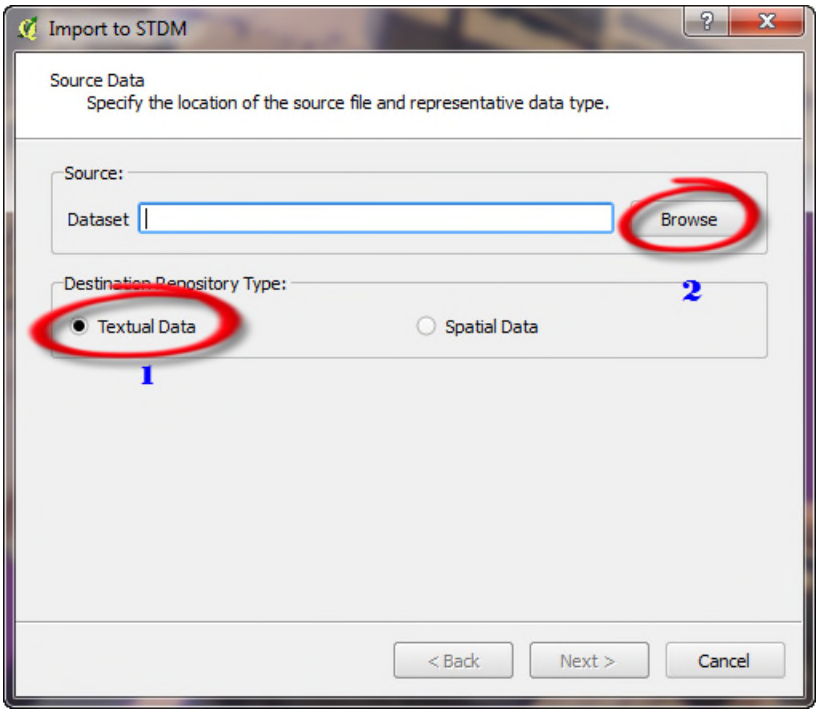
https://support.office.com/en-us/excel

Importing Attribute Data

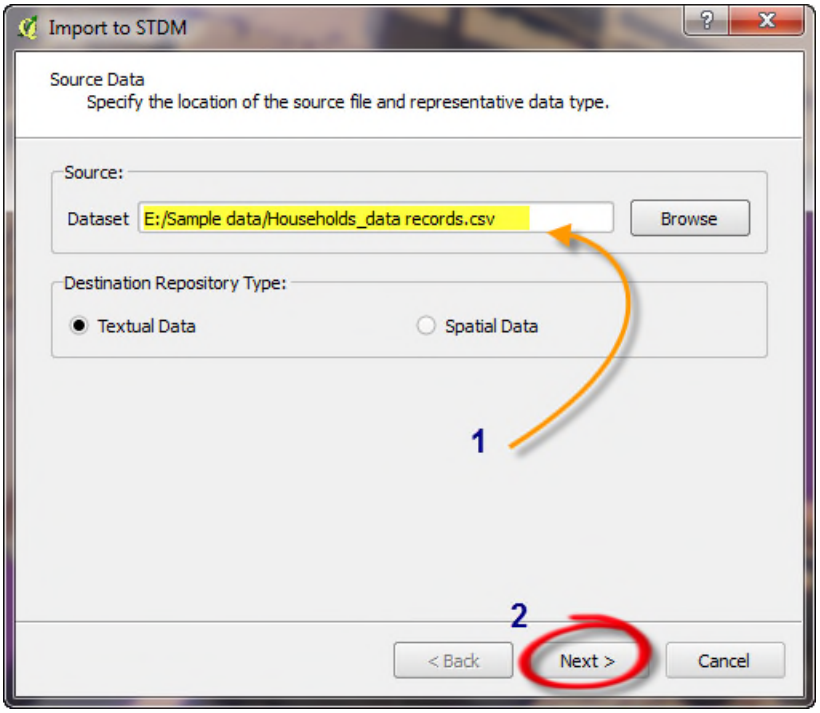
Attribute data here refers to the non-spatial data imported into the STDM database. Attribute data for instance may refer to Party Records. The process of data import is similar for all modules.

Before importing, make sure that you are logged in, QGIS is running and STDM tool bar is active.

1. Click on the **Import Data button** on the STDM tool bar as shown below.

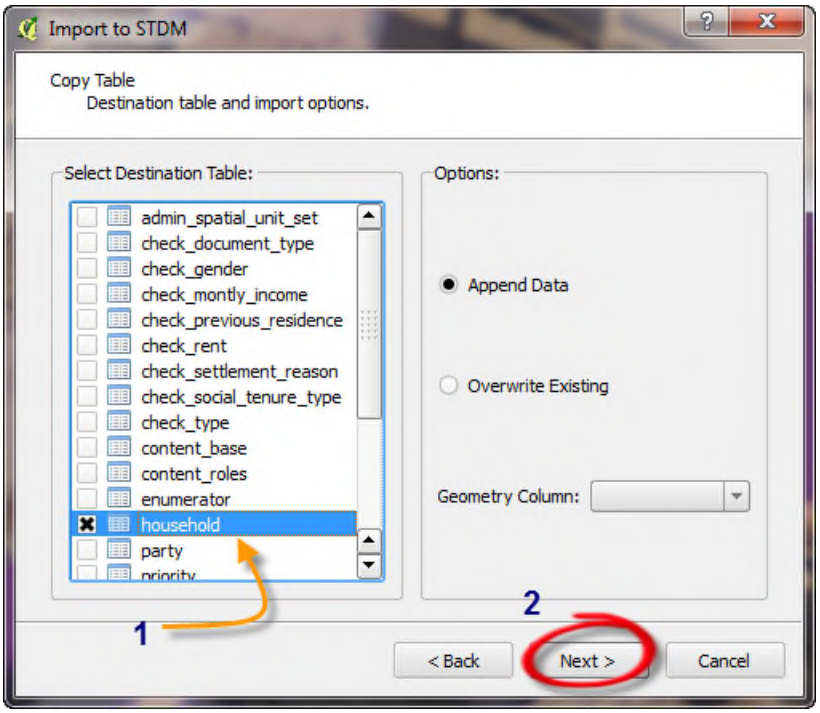


2. Browse to the location of file (excel file) in the directory

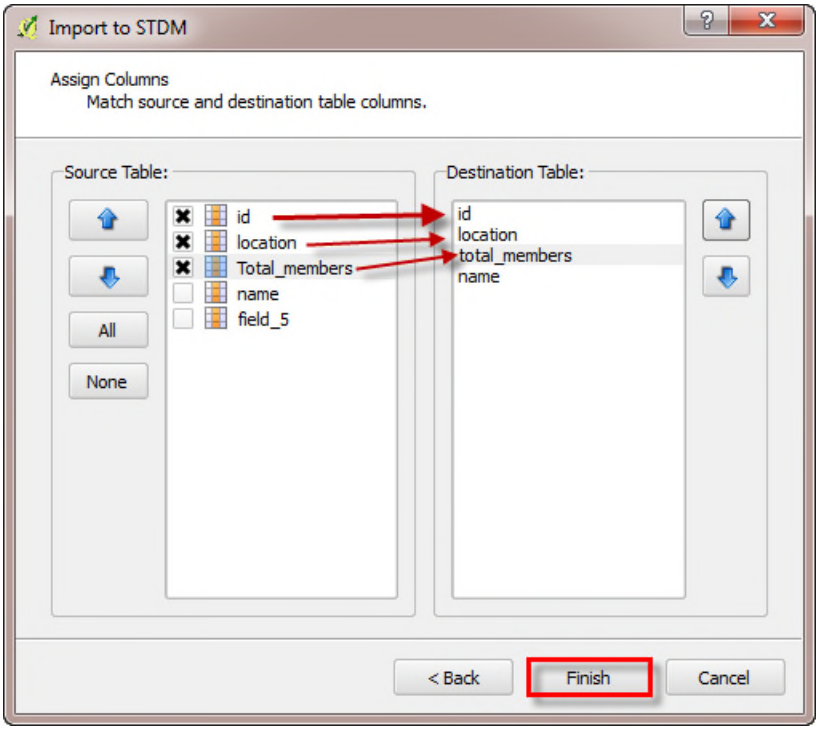


3.Click Next

3. Select the destination table

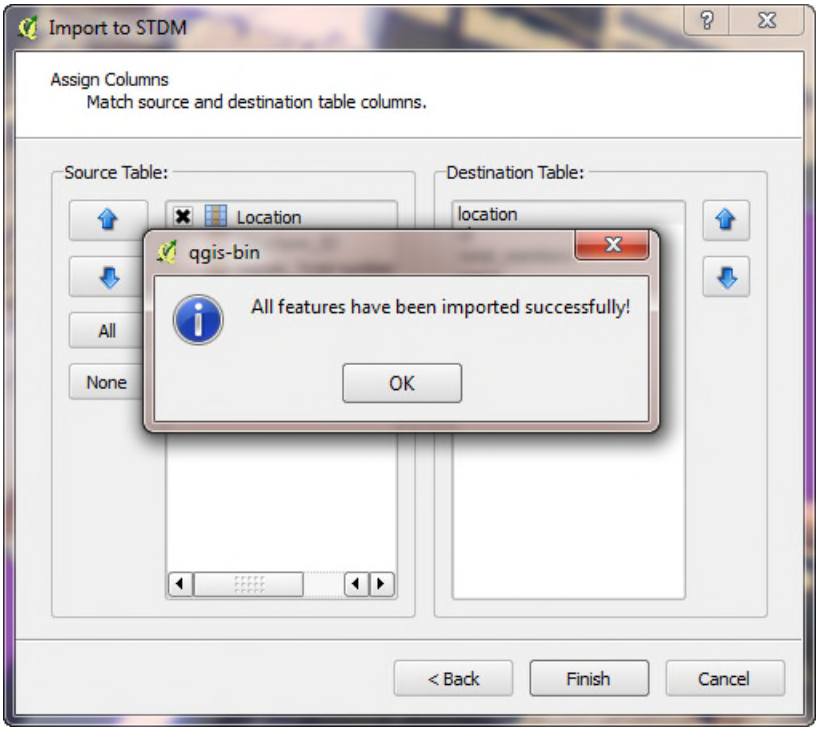


5. Perform source column to destination column matching for the required field



 These are navigation arrows that allows you to match the columns in the two panels

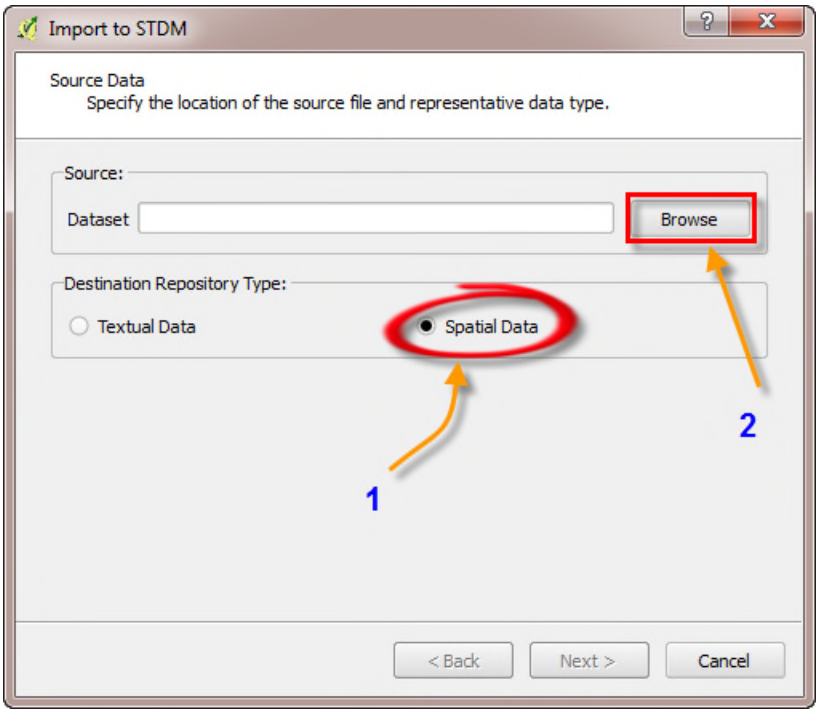
6. Click Finish to import the data.



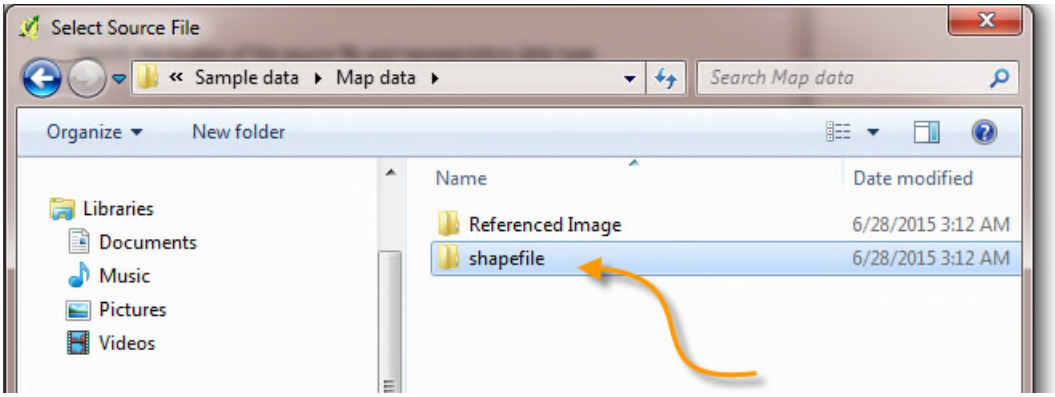
Importing Spatial Data

Spatial Units can be imported into the STDM database from a shapefile, autoCAD or comma separated values.

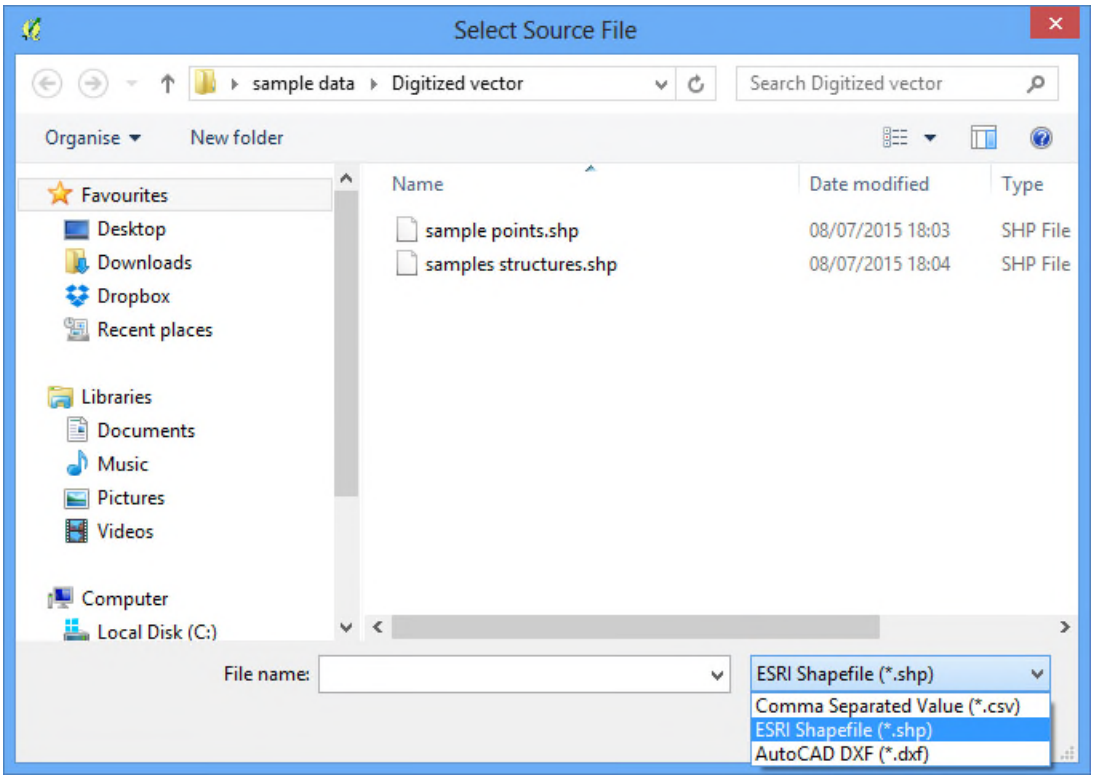
1. To import, click on the Import Data button ( ) located in STDM toolbar.
A dialog box appears allowing you to browse to the source folder of the data to be imported.
2. Check the **Spatial data** circle to enable/activate it.
3. Browse to the folder where the shape files (spatial data) is stored.



4. Go to the **Sample data** folder⇒**Map Data**⇒and select **shape files** and open the shape files

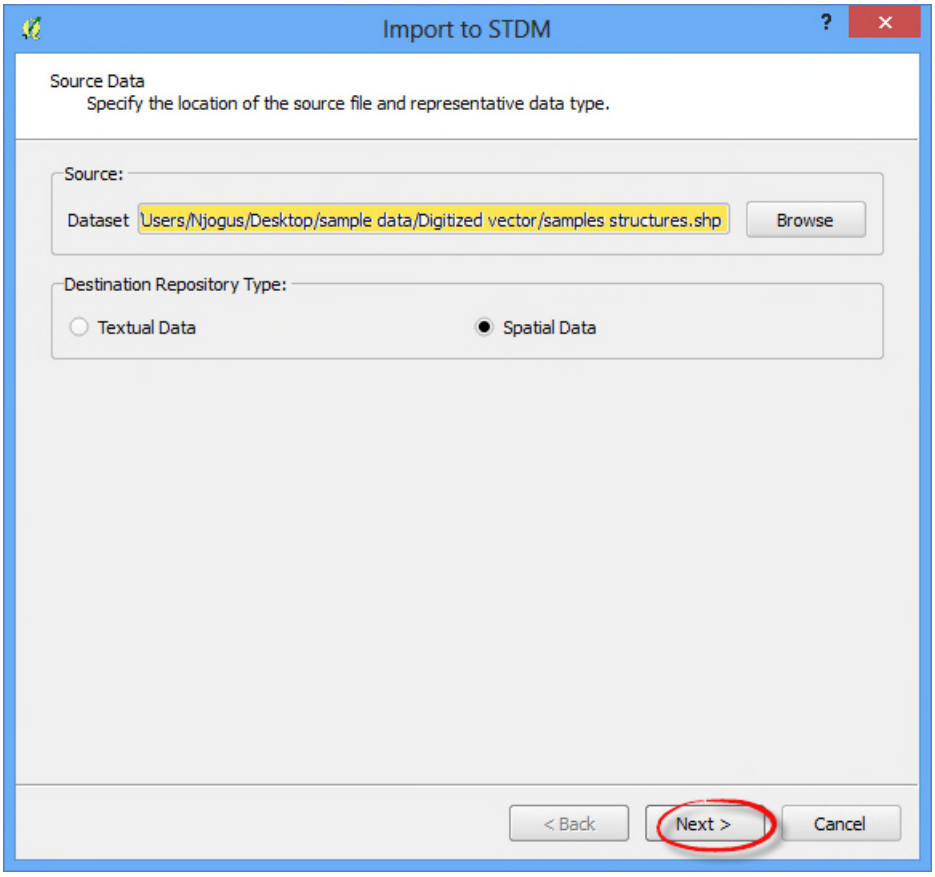


If nothing is displaying on the opened folder, make sure that the file format is in **ESRI Shapefile (*.shp)** *as shown below;*



5. Select the file and Click **Open**

6. Click **Next** to continue

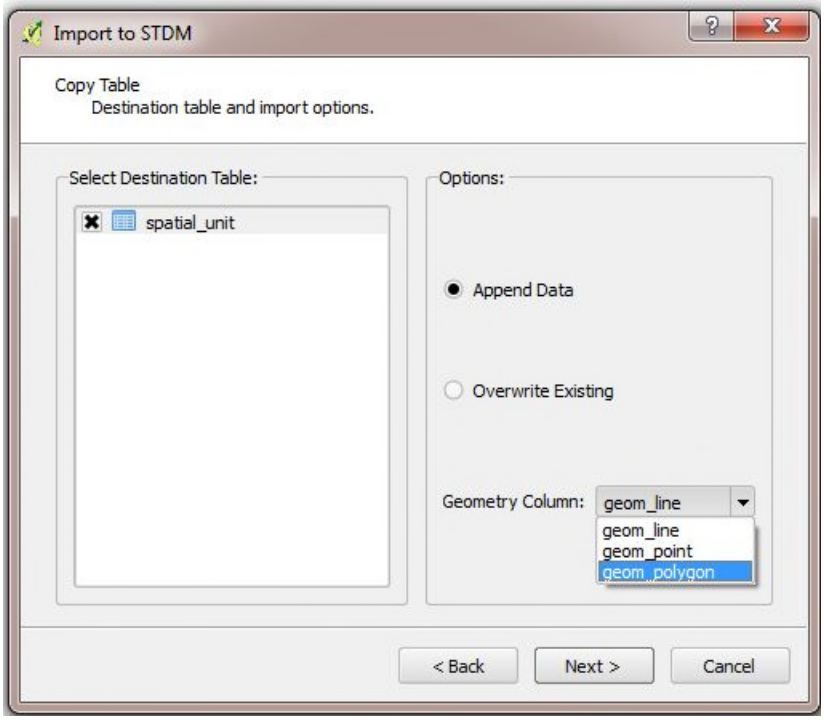


A dialog box appears allowing you to specify the **destination table** and the **Geometry** of the data being imported.

7. Select the destination table of the data by checking/enabling the **Spatial_unit.**

8. In the Geometry Column, a drop down list allows you to choose the data type of you data. Select **Polygon**

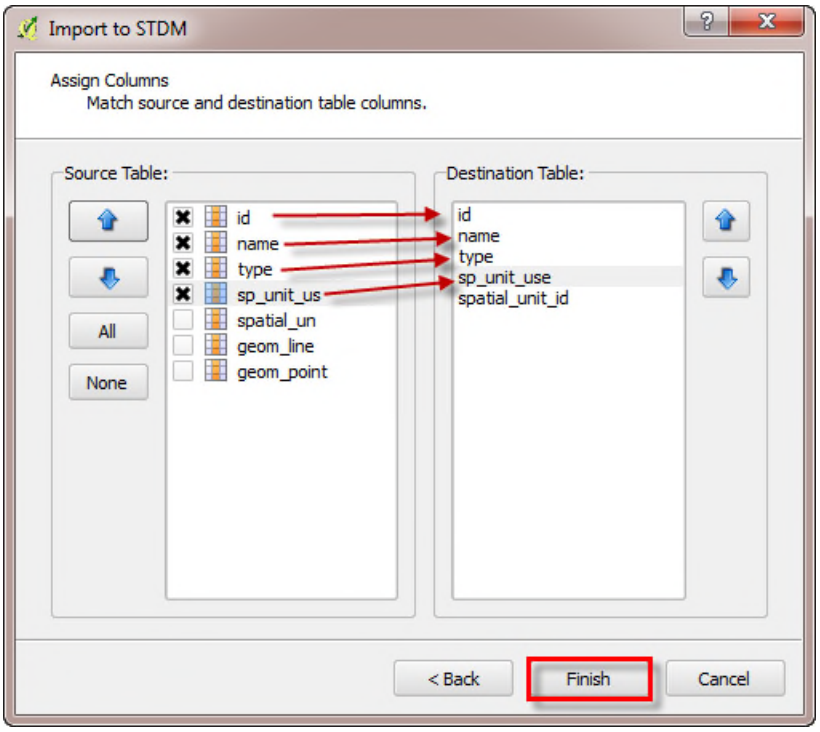
9. Click **Next** to continue



A dialog box appears allowing you to match source and destination table column. Use the "UP" and "DOWN" buttons to match the columns.

Note: Do not select 'id' field on the destination table. This is created by default

10. Click ***Finish***



The spatial units have now been imported into the STDM database.
A notification will pop up showing you that the data has been imported successfully

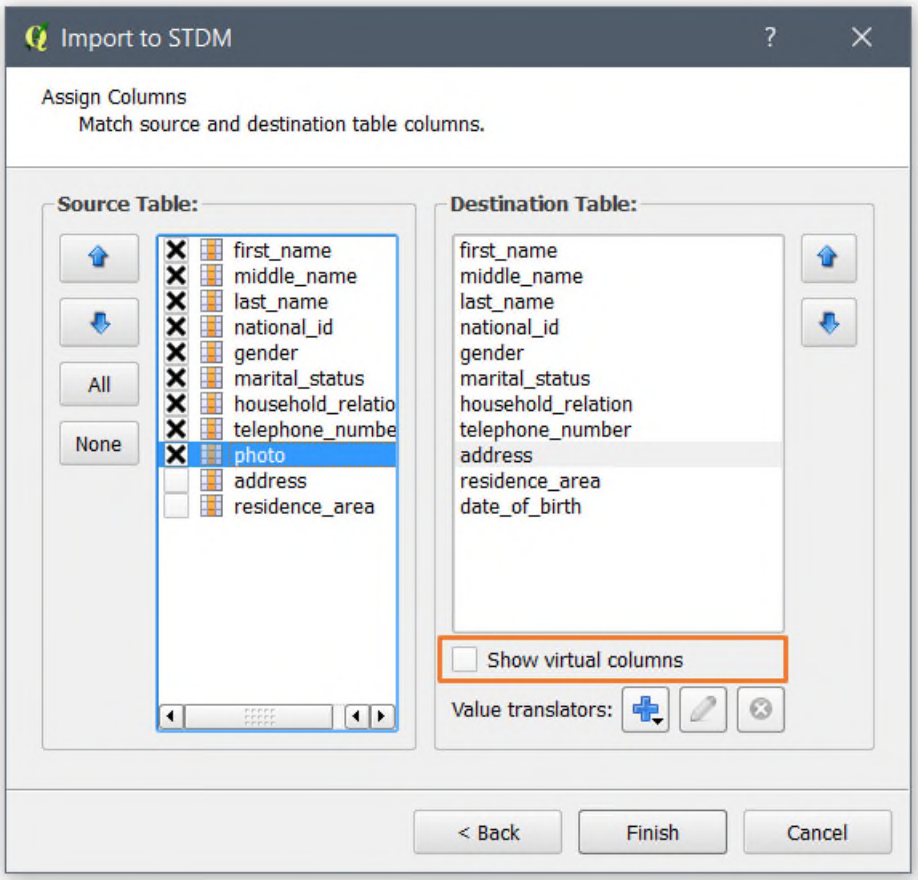
Importing Supporting Documents

While importing spatial and attribute data, we can also import supporting documents added for each record. To import the supporting documents, on the csv file, you need to add the path or the file name of the files to be imported for each records in the csv file, as shown in the image below.

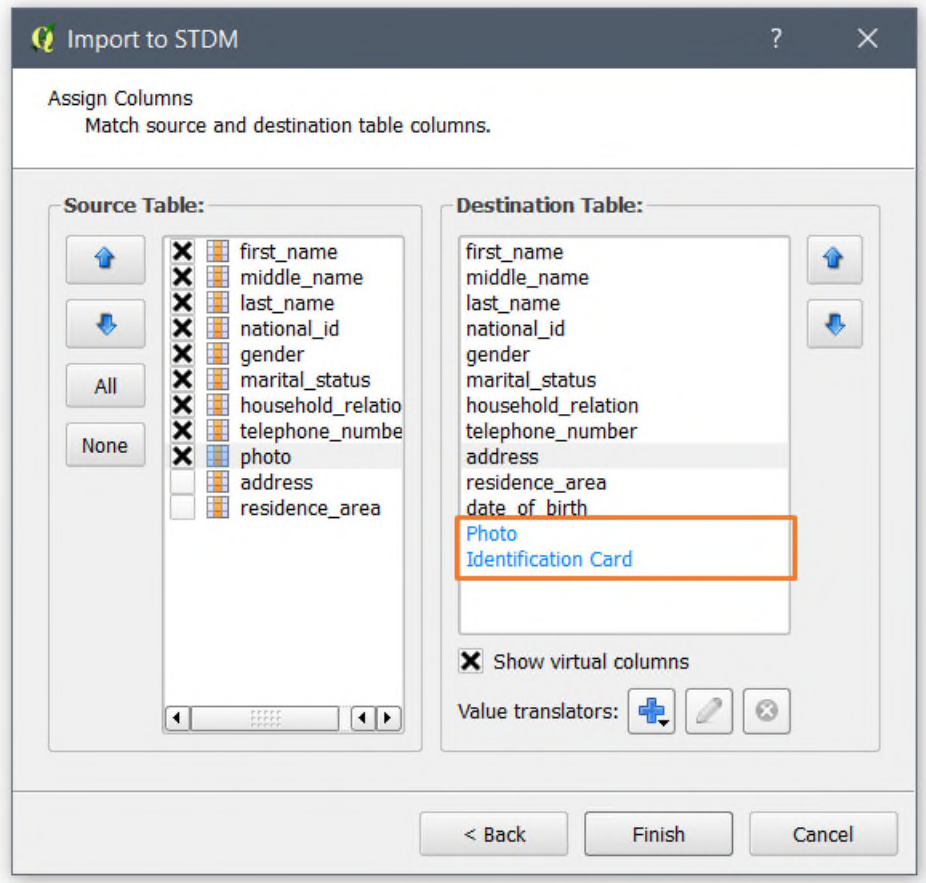
F	G	H	I	J	K
marital_st	household	residence_	telephone_numbe	address	photo
1	1	0	711516003		1.png
1	1	0	711016005		2.png
1	1	0	721516607		3.png
2	0	0	710516044		4.png
3	0	0	714416007		6.png

Once you have saved your csv file. Follow the steps of importing attribute data as shown in Importing Attribute Data topic up to step 5. Then, follow the steps below.

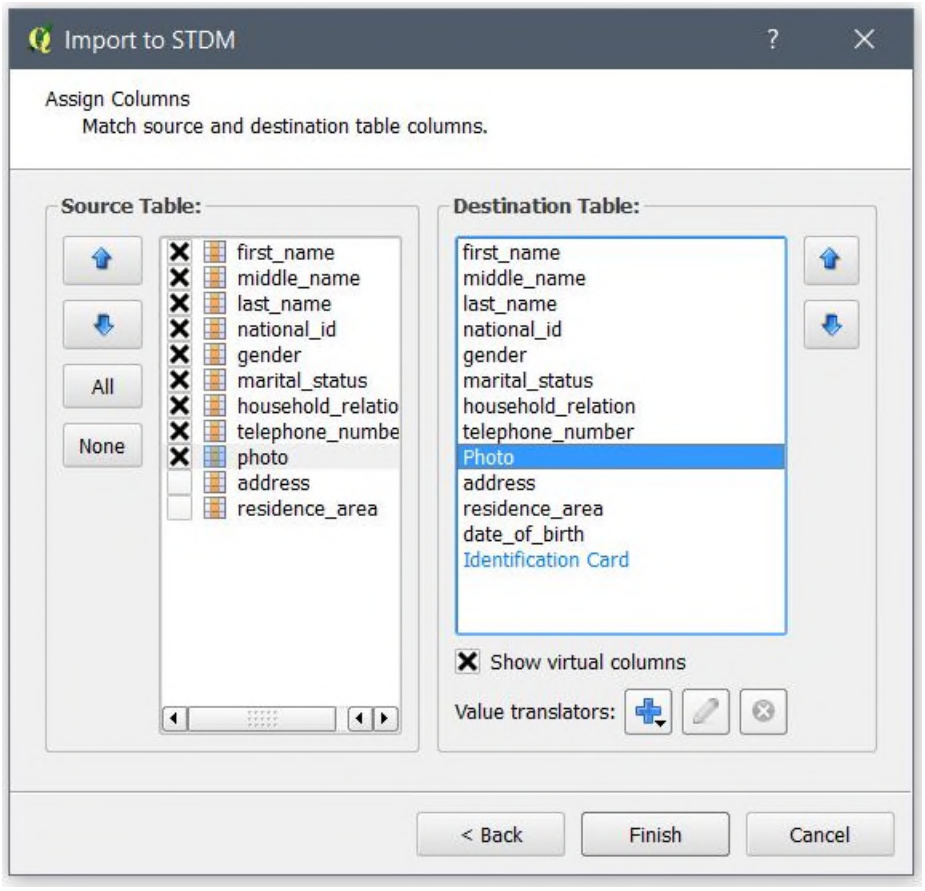
1. Select on **Show virtual tables** checkbox as shown below.



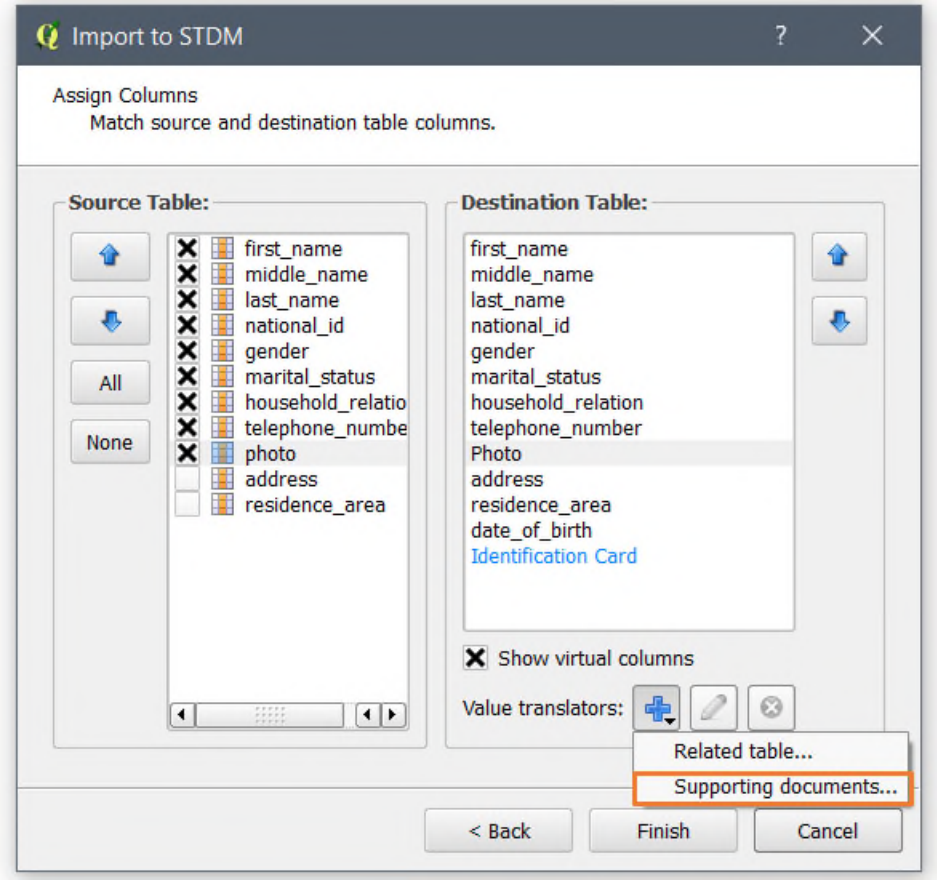
2. When **Show virtual columns** is checked, the selected entity's supporting document types load as shown below.



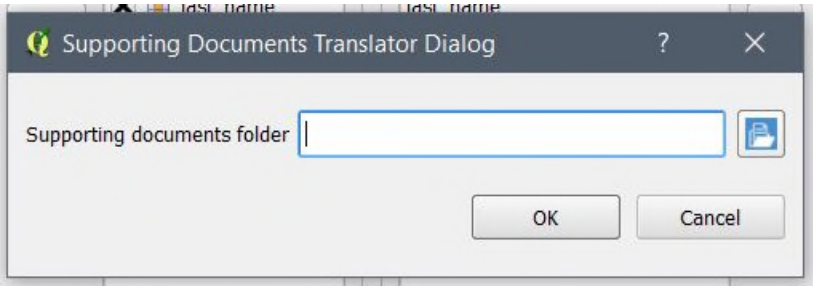
3. Align the supporting document type in which you want to insert a supporting document. In our case it is **Photo document type**. Move **Photo** up to be in-line with photo of the source table (see the image below). In addition, align other columns of the source and destination table.



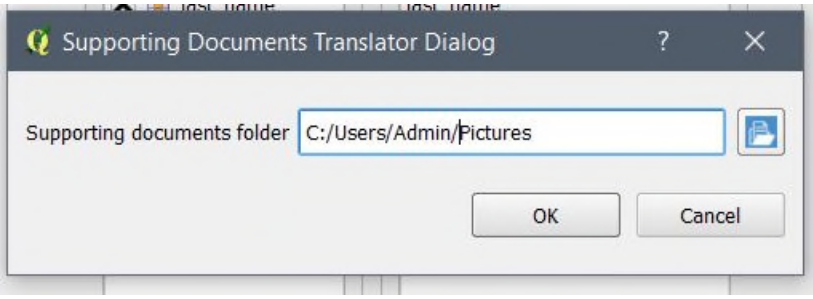
4. Click on the Add ( ) button located below **Show virtual columns** checkbox to see the **Supporting documents** menu as show below.



5. Choose the **Supporting documents** menu to open a popup for choosing the file path of the supporting documents to be imported.



6. Click on the folder icon next to the white box to browse for the folder and when you reach where you would like to import the data, click on the Select button. Once selected, you will see the path added as shown below.



Click on the **Ok** button to save the path.

7. Then click on the **Finish** button. A success message is shown if you have specified the folder of the documents and if you have properly aligned the other columns.

Importing Data to Foreign Key Fields

You can now import data to a foreign key column in the destination table using the **Value Translation** framework; one implementation of this framework is the related table translator.

In order to implement this translator, the source table must contain at least one column that refers to a unique value in a related table such as a household code that a person belongs to. During the translation process, the system will attempt to lookup this value and extract a corresponding value (ideally, the value of the foreign key column) and use this value in the primary reference table.

Example: Say we have a person CSV file that we would like to import to the person table in the STDM database; the source data contains a household code column that refers to the household in which the person belongs to. Through the related table translator, we are able to link each person's row to the corresponding household that he/she belongs to using the household code.

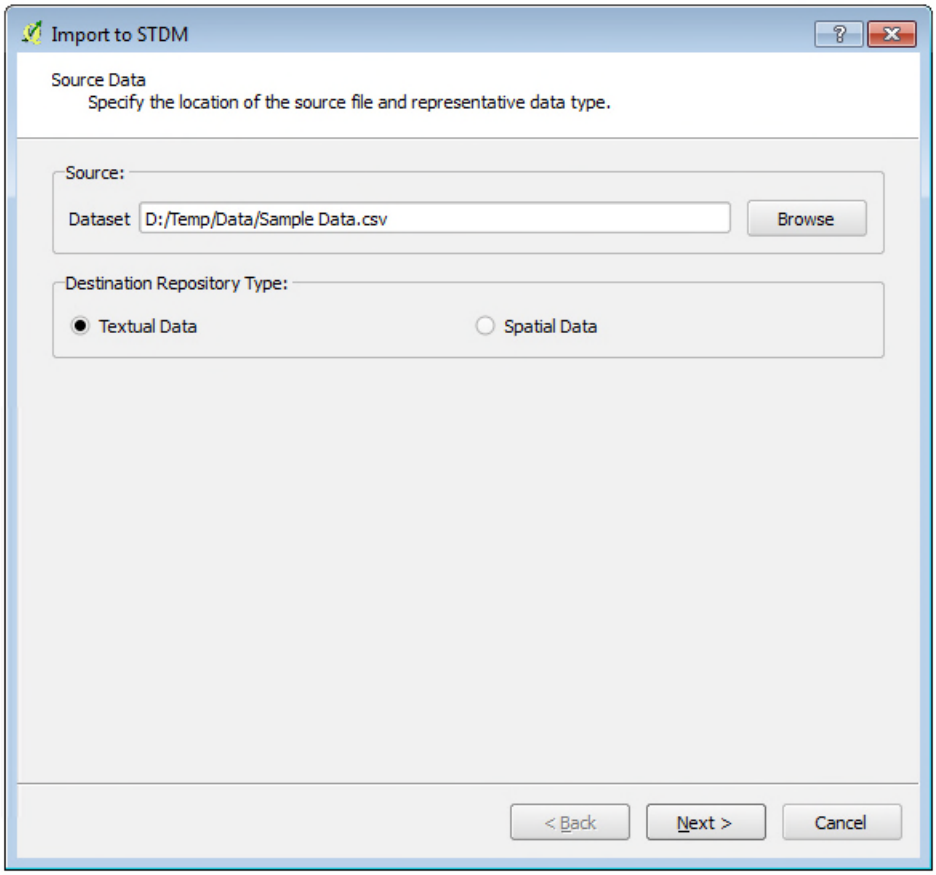
Illustration:

Surname	Other Names	Household Code
Gitau	John	TY67OP
Gachoka	Agnes	NJ89A
Adhiambo	Laureen	TY67OP
Kimani	Anthony	NJ89A

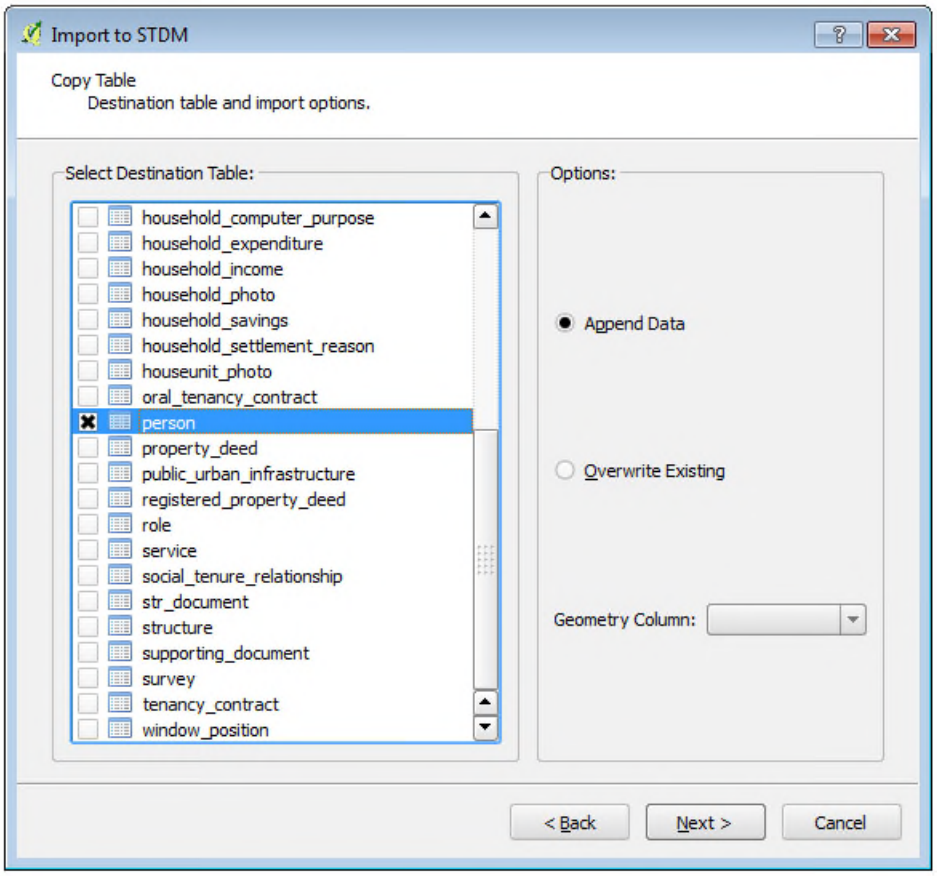
Table 1: Person data in CSV format

To import this data:

1. Click on the import icon to load the import data window.

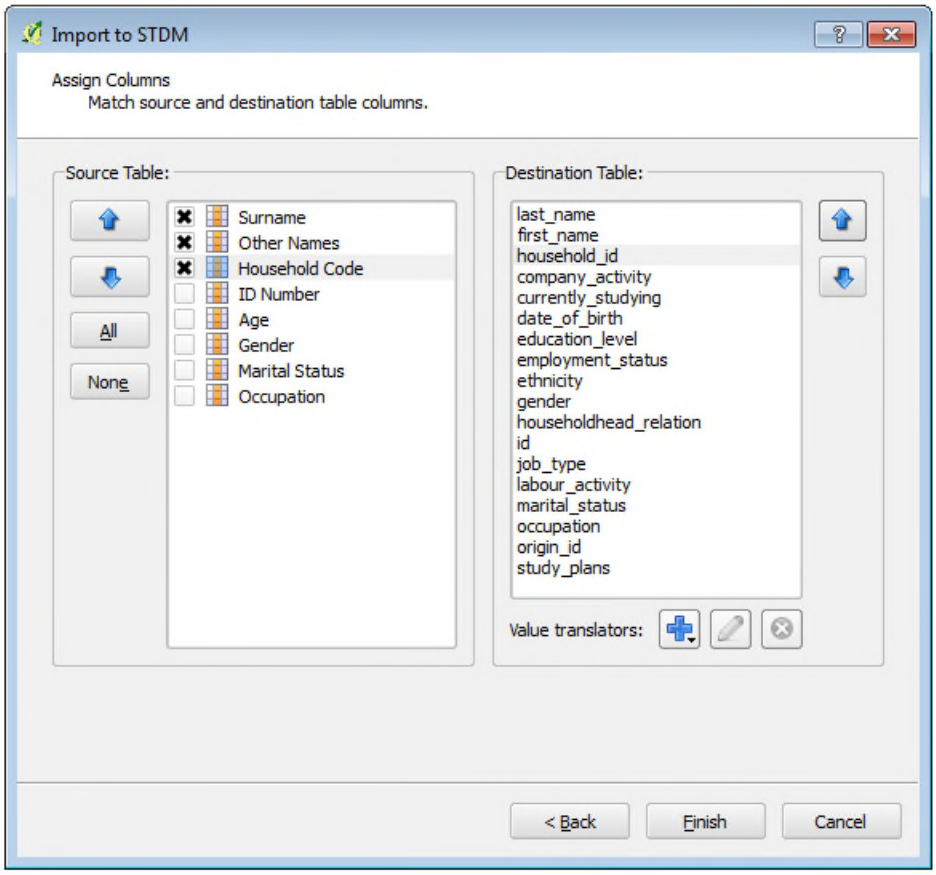


2. Specify the data source and select the table type i.e. spatial or textual.
3. Click **Next** to select the destination table. In this case, our destination table is **person**.

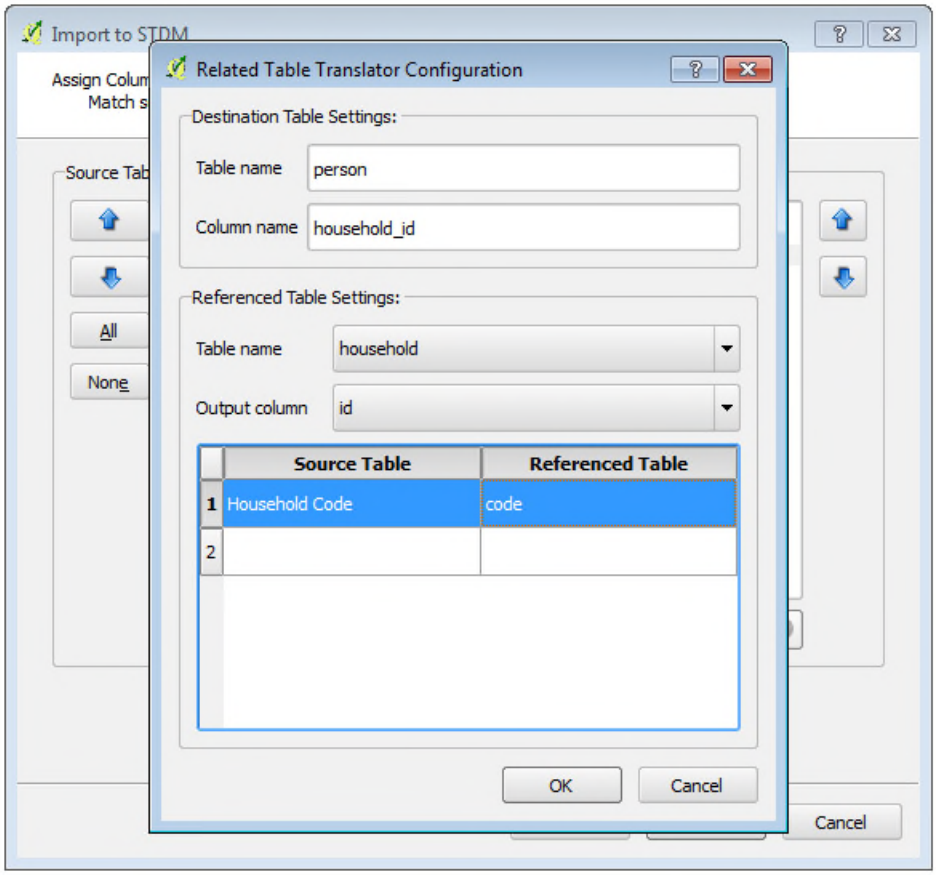


4. Click **Next** to load the column matching page. Based on the data provided, we shall match the columns as follows:

Source Table Columns	**Destination Table Column**
Surname	last_name
Other Names	first_name
Household Code	Household_id



5. We now need to specify how the system should handle and use value from the *Household Code* column to link it to the *household* table through the **household_id** column in the **person** table. To do this, click on the **household_id** column to select it then click on the plus sign at the bottom next to the *Value translators* label. Select **Related Table…** option to load the dialog for specifying how the data will be linked.
6. In the **Related Table Translator Configuration** dialog, the destination table settings are fixed as they are based on the import configuration that we specified prior to loading the translator dialog. Our focus will be on the *Referenced Table Settings* – **in this case, we want to instruct the system that the *household_id* column in the *person* table should be linked to *id* column in the *household* table. However, we need to further instruct the system that it needs to link this data by using the value from the *Household Code* column in the CSV file and lookup it up in the *code* column in the *household* table.** Hence, the dialog settings will be as follows:

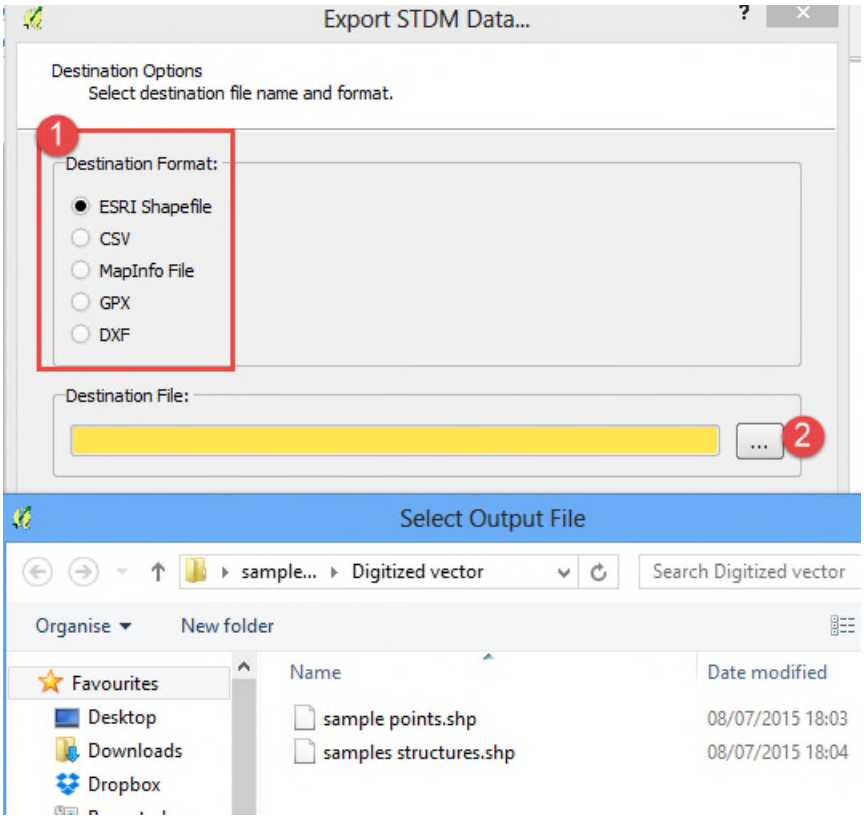


7. Click OK to save these settings.
8. Click on Finish to start the import process. STDM will now lookup the household id using the household code and insert it into the **household_id** column in the **person** table.

Export Data from the STDM

1. Select  Export Data command item from the menu.

2. An export STDM Data pops up allowing you to choose the **destination file** and **format**.



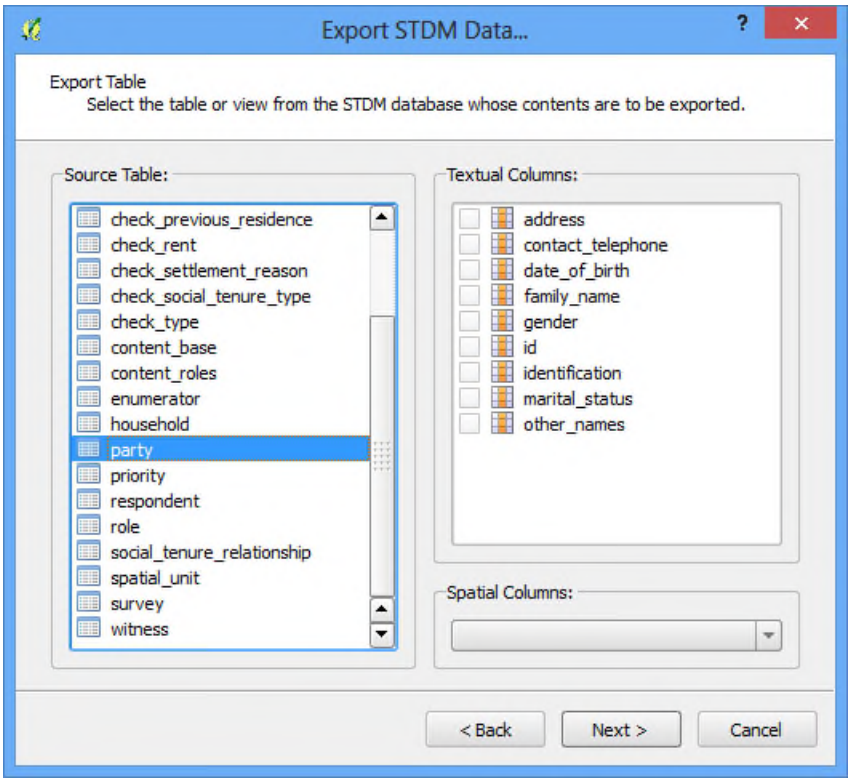
3. Select the destination format from the list.

4.Browse to save location of the file (Destination File)

4. Enter a name for the file to be created.

5. Click **Save** on the file save dialog

6. Click **Next** to proceed.



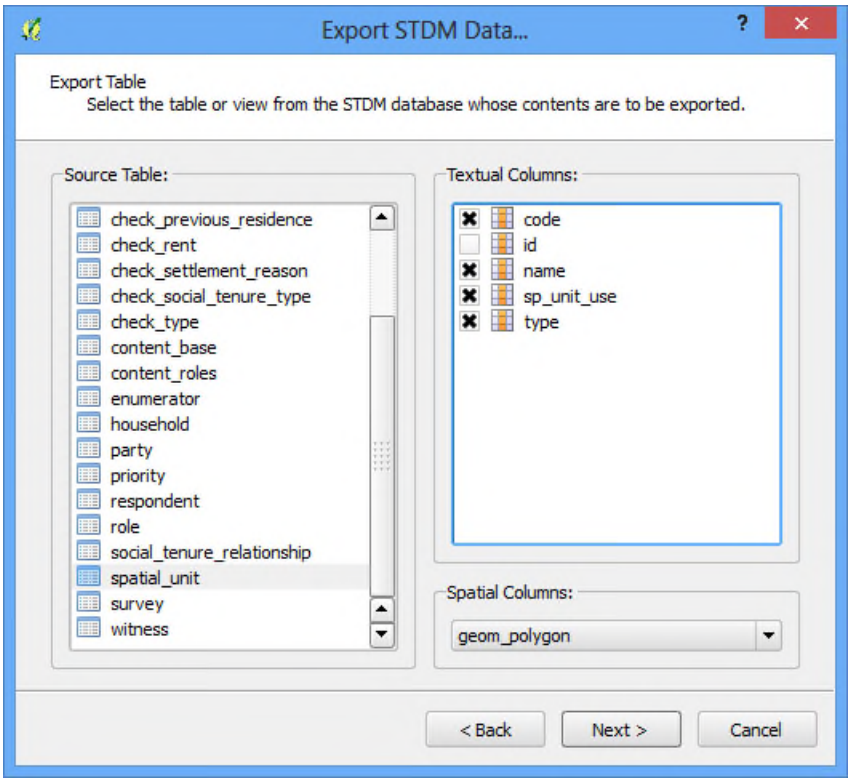
7. Select from the left **Source table,** table data to be exported

8.Check by marking the **textual columns** you wish to be exported on the right. Click the **Next** button to proceed.

9. Likewise, when exporting spatial data, select it in the data **source table** and select the required fields(**Textual columns** in the right side) that will appear on the final generated file.

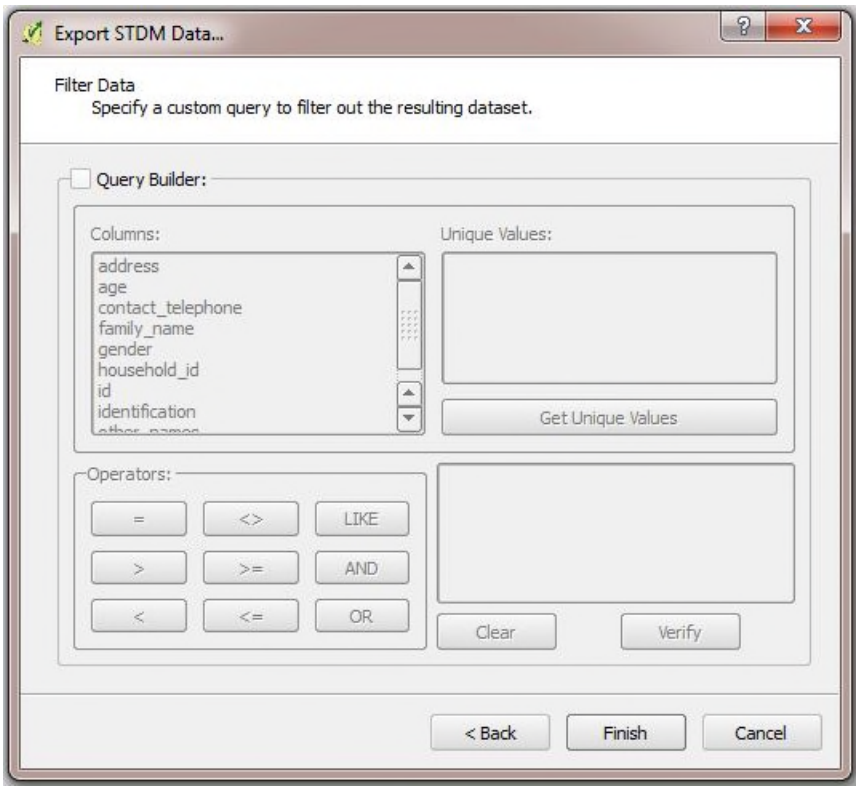
If the data source table has geometry columns, the geometry column to be exported need to be selected

10. Click **Next**



*If specific queries need to be implemented on the resultant data, they can be specified using the **Query Builder** in the next page as shown below.*

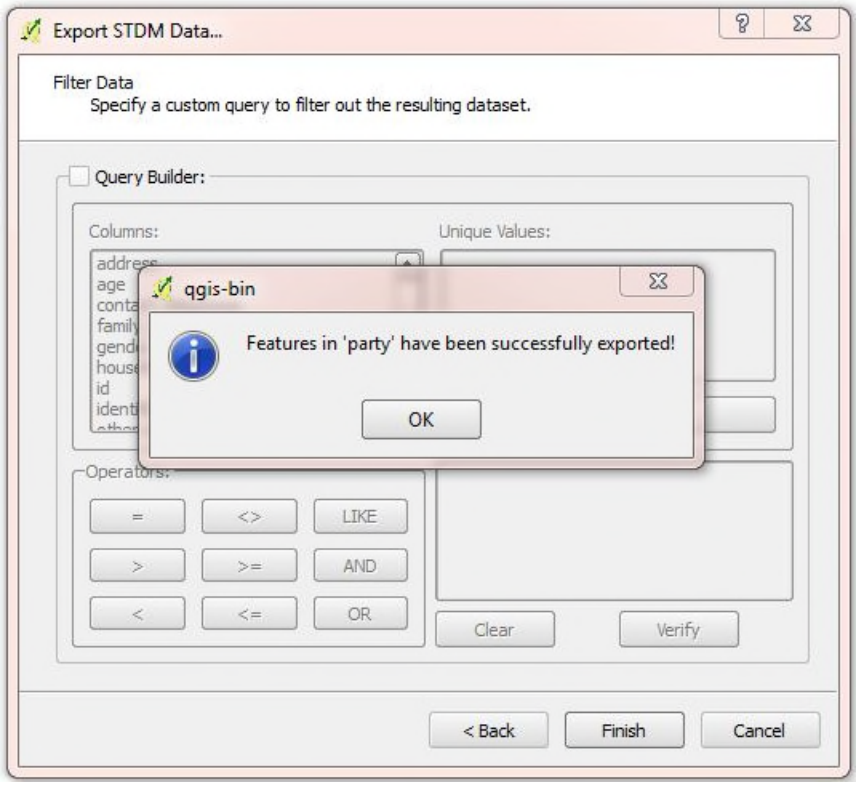
*If no queries are required, clear the **Query Builder** check box.*



11. Click **Finish**.

A message box will prompt the response when the action is completed. dismiss the dialog.

Browse to the location of the file to see the results. If you are not satisfied with the result, the process can be repeated with new options.



12. Click **OK** to finish the process

Settings

Managing User and Roles

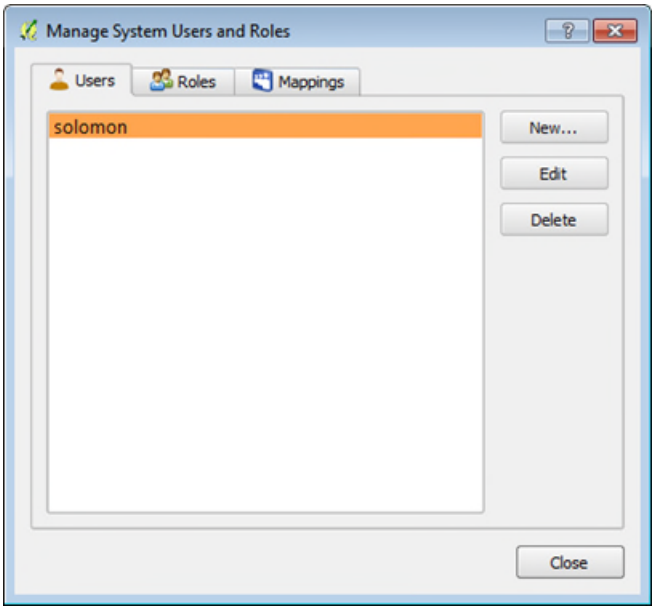
User Management

To manage user roles and administrative settings, follow the steps below.

1. Click on the admin settings button shown in a red box.

2. From the drop down contents, click on the item named **manage user roles.**

The dialog below appears. Here, you can manage users by creating, editing and deleting them.



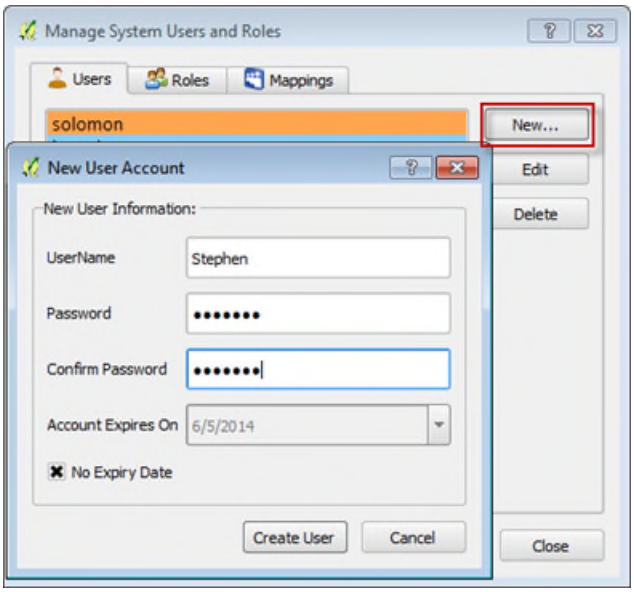
A user is person authorized to manage and manipulate content set up on the configuration wizard.

The data management dialog will appear with the default user created. However, more users can set up new accounts for content management.

Create a User

To create a new user, follow the steps below.

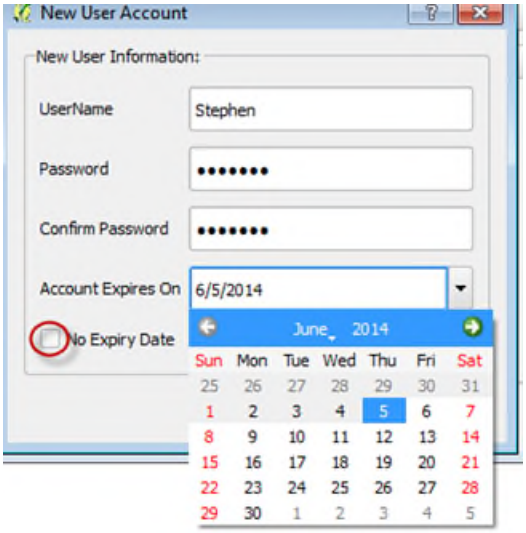
1. Click on the New button to input the required information.



On the new user dialog, input the user name and create a password to login with.

The new user created can be given a timeline after which the user account created will expire.

By clearing the No Expiry Date check box , the expiry date set up will be deactivated.



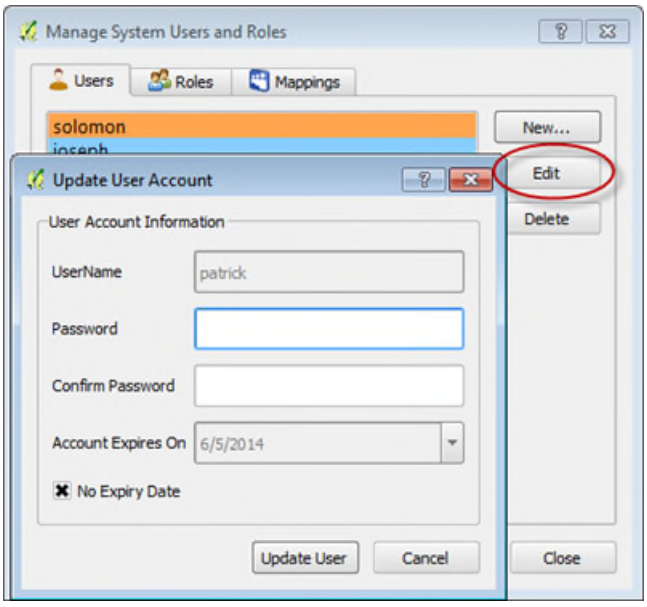
2. Click on the date button and set up an expiry date for which the new user account will be active.

3. Once done, click on the **Create user** button on the dialog to create the new user.

Edit a User

The user management dialog also has a user editing option.

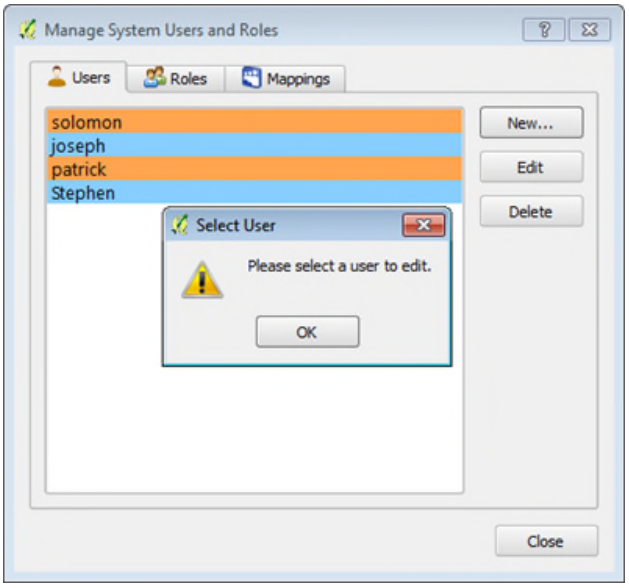
1. To edit an already created account, select the user to be edited then click on the edit button.



On the user update dialog, user can make any changes required.

2. Once done, click on the **update** user button to effect the changes.

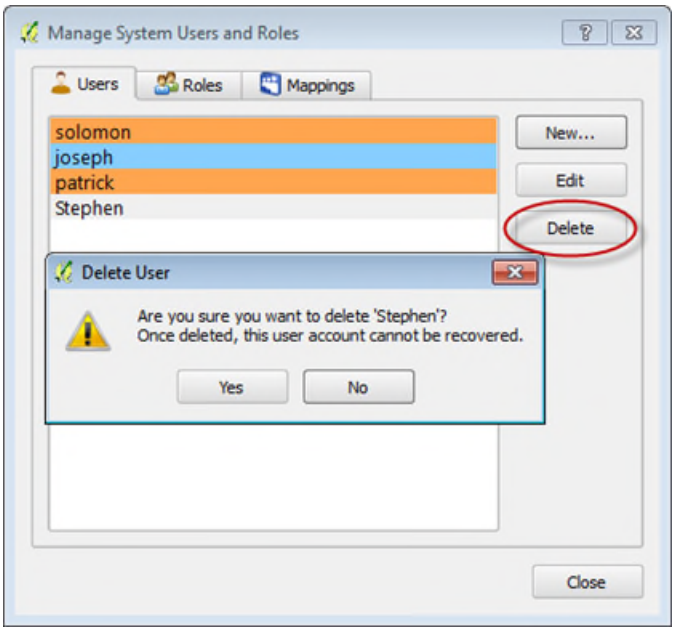
If user clicks on the edit button before selecting an account, a warning dialog appears.



3. Click on **OK** button and select a user account to edit.

Delete a User

The user management dialog also has the option to delete an account



1. First select which user account to be deleted

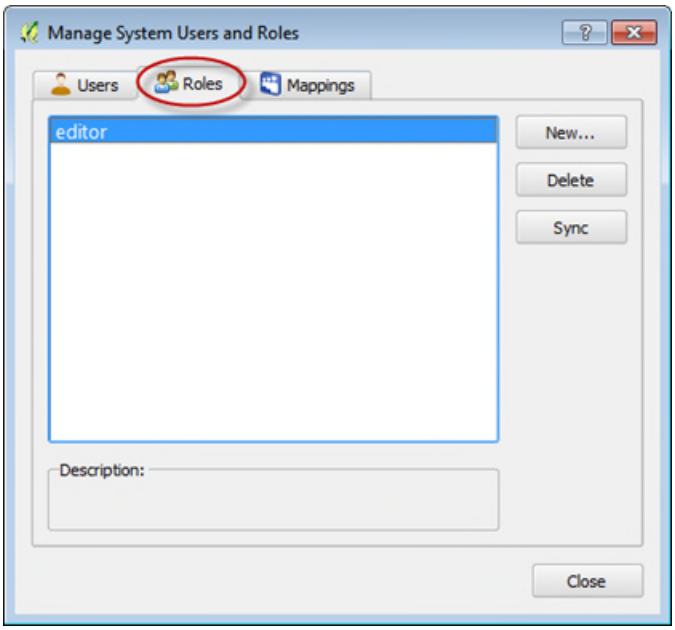
2. Click the **delete** button.

A delete user warning appears, user can confirm the delete action by clicking on the 'yes' button to proceed. This will erase the account from the user list and any roles.

Role Management

A role is an entity that can own database objects and have database privileges; a role can be considered a "user", a "group", or both depending on how it is used.

To manage roles on the management dialog, click on the **roles** button circled in red below.

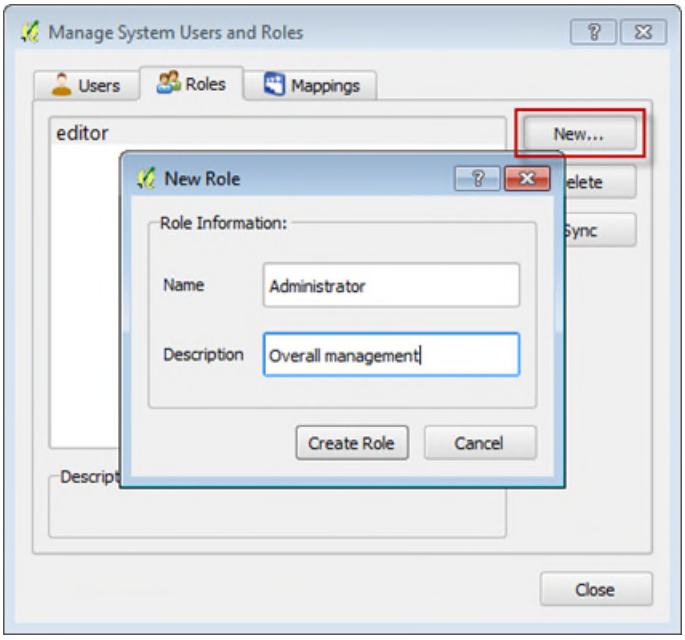


Default roles created will launch on the dialog. User has an option to create new roles for the users.

Create a Role

To set up a new role, follow the steps below.

1. Click on the '**new**' button on the dialog.



2. On the new role dialog, input the name of the role and its description.

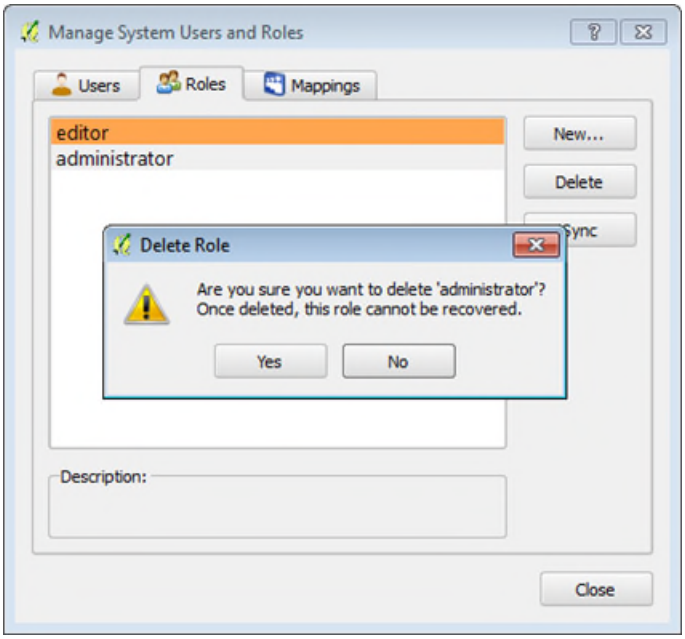
3. Next click on **Create Role** for the new role to be created.

Delete Role

The role management dialog also has a delete option to delete a created role.

1. User first **selects** a role to delete

2. Click on the **delete button** to erase the role.



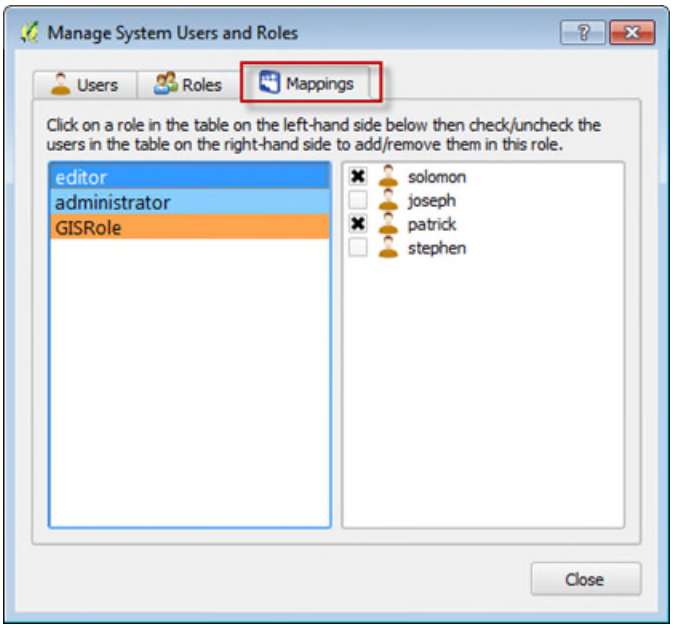
A warning dialog appears and on this action and the user is required to confirm the delete action.

3. Click '**yes**' if you wish to proceed with the action.

User Mappings

It is at this point that the user authorizes who has access to the content.

Various roles created are assigned to various users for management and execution.



1. Click on the **mappings button** at the top of the management dialog for grouping.

The roles will appear on the left side of the dialog and the users will appear on the right.

2. Select a role to assign users by clicking on it, **next check** or **uncheck** the box against a user to assign that role to that user.

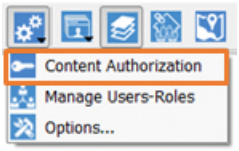
Do this for all the roles so that no roles are left unassigned.

Content Authorization

This is the point where various roles are assigned their content. Each role is given certain content to be executed by the user assigned to that role

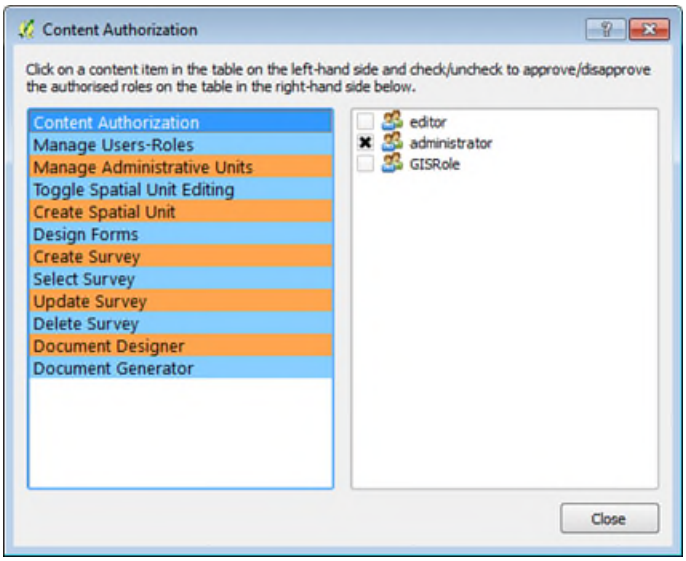
1. To achieve content authorization, click on the **admin settings** button on the STDM toolbar

2. Select **content authorization**.



The dialog below will appear and it is on this wizard that the user assigns the content to roles.

3. To do this, user clicks on a content item on the left side of the dialog and assigns it to a role on the right side of the dialog by checking or unchecking the box against the role depending on whether the user is approving or disproving the assignment.



A role can be assigned multiple content depending on the nature of the content and the role description. Once all content is assigned its role, click on the close button.

Options

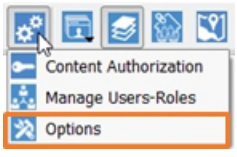
The Options Module enables you to change the current/active profile, which enables you to change profiles without logging out.

In addition, you can modify the database connection setting of STDM that enable you to switch to a different database.

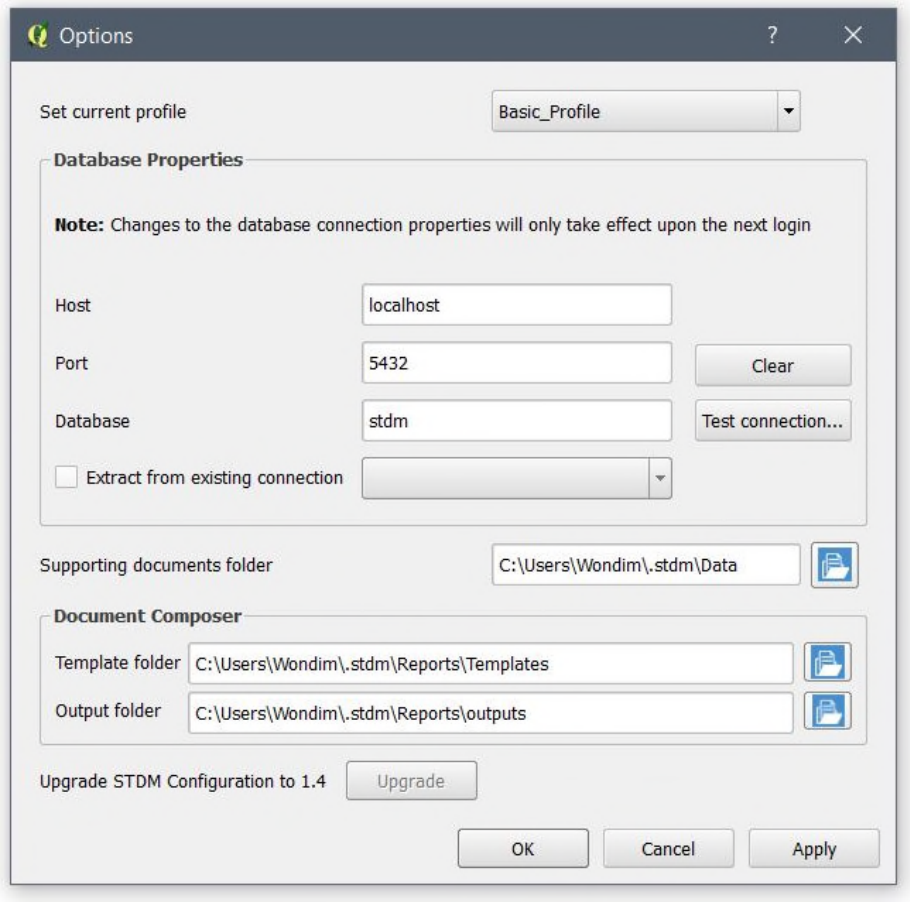
You can also modify directories used by STDM.

To open options Module, look for Options under Admin Settings menu located in STDM Toolbar or STDM menu.

Click on **Options** menu.



The Options module loads.



The sub-topics discuss each features of the Options module.

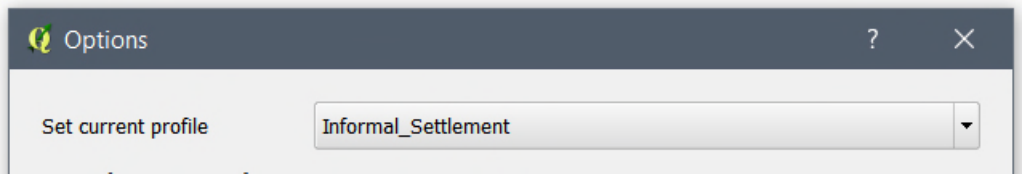
Changing the Current Profile

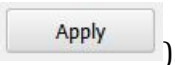
As you can easily create profiles in the Configuration Wizard, switching between profiles is achieved in just two clicks. These profiles are created and customized by the Configuration Wizard. Once you create a new profile, you can then switch to it.

To change the current profile, follow the steps below.

1. Open the Options module as explained in Options topic.

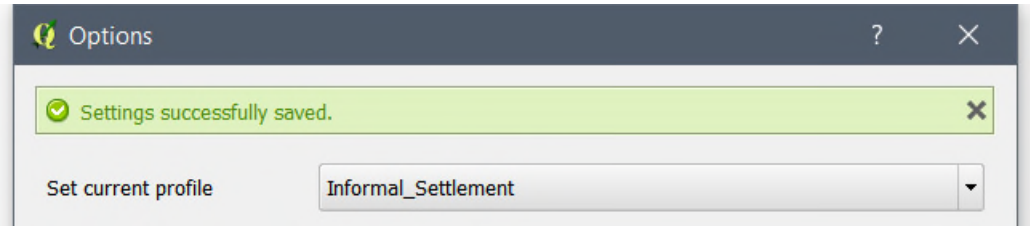
2. At the top of the Options module, click on the drop down menu labelled **Set current profile**. It holds list of profiles in your Configuration.



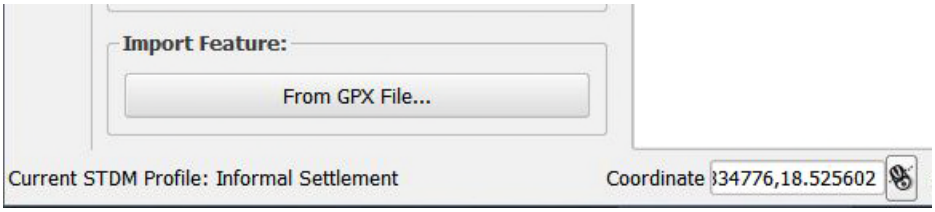
3. At the bottom of the module, click on the **Apply** button (

).

This will lead to a success message as shown below.



You can also see the changed profile in QGIS status bar as shown below.



Changing the current profile leads to the following.

- Removal of the STDM layers
- Change of Entity Menu items by the newly loaded profile entities.
- Change of the Current STDM Profile text in QGIS status bar.
- Change of tables participating in social tenure relationship.
- Change of list of tables that are accessed throughout STDM.
- All STDM modules reload to capture the newly loaded profile and database tables.

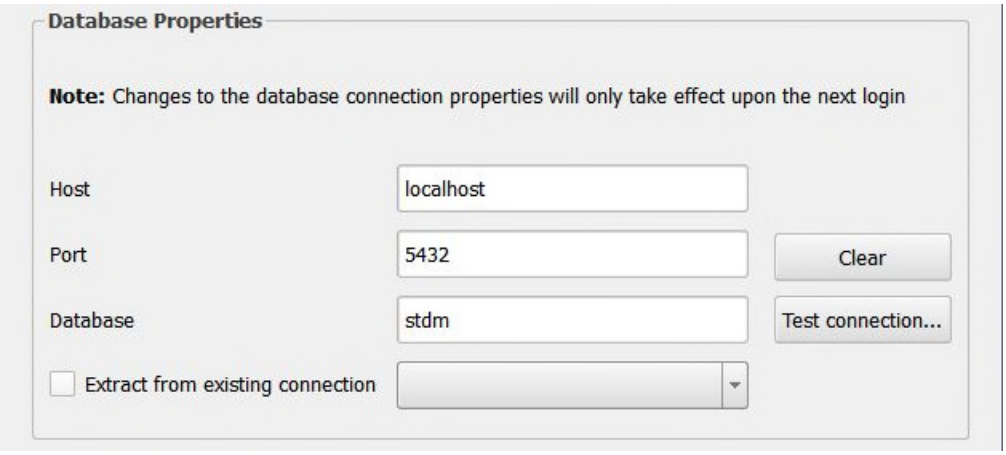
Modifying Database Connection Settings

The **Options** module enables you to modify your current STDM database connection settings. This setting change requires logging out of STDM for the change to be applied.

You can change the database server host, port and database connected.

To change the database connection, follow the steps below.

1. You can type the values in the **Database Properties** box as shown below.



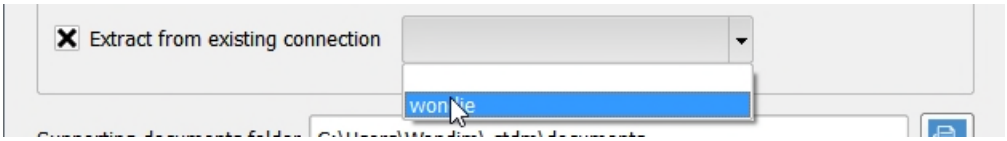
a. **Host refers to** the location of a computer that has hosted the database server (PostgreSQL). If the database server is installed in your own computer, you have to enter localhost as shown above. However, when PostereSQL that holds the database is installed in an office network, the IP address will be different from localhost. It could be a number like 192.168.0.23 or any other number with such format as specified by the system administrator. This is relevant when STDM is installed for governmental or non-governmental organizations with a centralized database server.

b. **Port** refers to an endpoint of communication for the database server (postgreSQL). To access the database from STDM, we need to know its port. The most common port values for PostgreSQL are **5432, 5433, or any other port as specified during installation.**

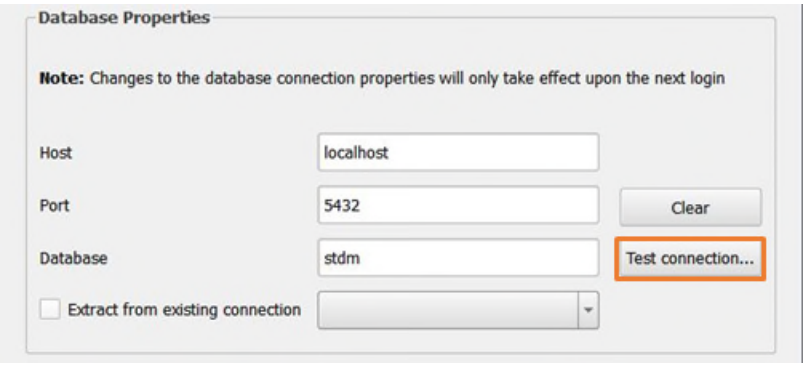
c. **Database** refers to a data storage location in which the entire data of STDM is stored. By default, during installation, it is set as **stdm**. You can enter any other database that you want to connect to after installation using PostgreSQL administration software called pgAdmin III. If you want to use your own database, make sure the PostGIS extension is installed and added to the database that STDM uses. Otherwise, STDM cannot run.

2. If you have already saved a database connection in QGIS's DB Manager, you can extract it by checking on **Extract from existing connection** option.

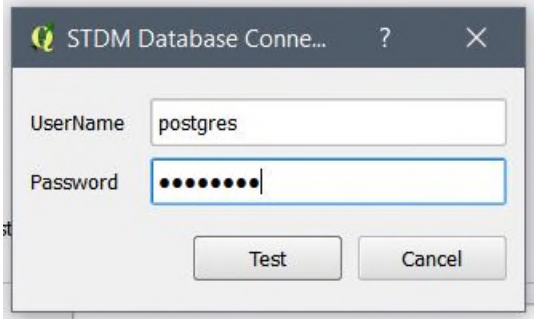
The drop down next to the checkbox gets enabled and if you have a saved connection. Click on the drop down menu and select one item (see the image below).



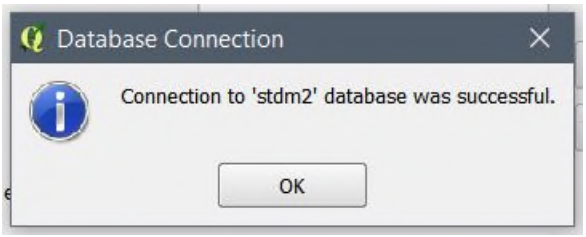
3. You can also test the connection setting that you have added by clicking on the **Test connection...** button as highlighted below.



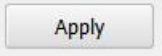
When you click on Test connection... button, a popup appears where you have to enter your database username and password (see the image below).



Then, click on the **Test** button to check if the database properties you have filled are valid. If the connection is successful, a success message is shown (see the image below).

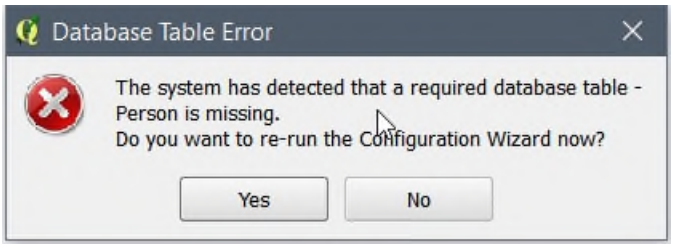


A successful connection means that you can change your database connection with no errors.

Once you have modified the connection setting, click on the Apply button ().

Logout of STDM for the changes in the database connection to be applied.

If you are connecting to a new database or a database that does not have the latest configuration, run the Configuration Wizard to create STDM database. Failure to do this will mean no access to most modules of STDM. In this case, when you try to access STDM modules you will see an error message similar to the one shown in the image below.

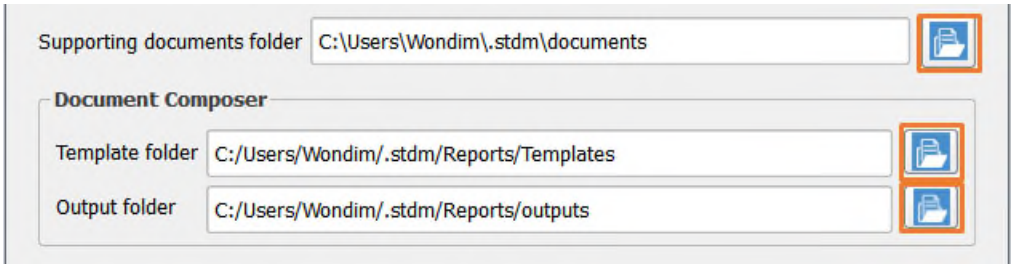


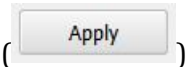
Modifying STDM Folders

The **Options** module enables you to modify folders used by STDM.

You can change the supporting document folder, template folder and the output folder.

To modify the paths, you just have to click on the folder icon on each path as shown below and select a folder.



Once you have modified the folders, click on the Apply button (

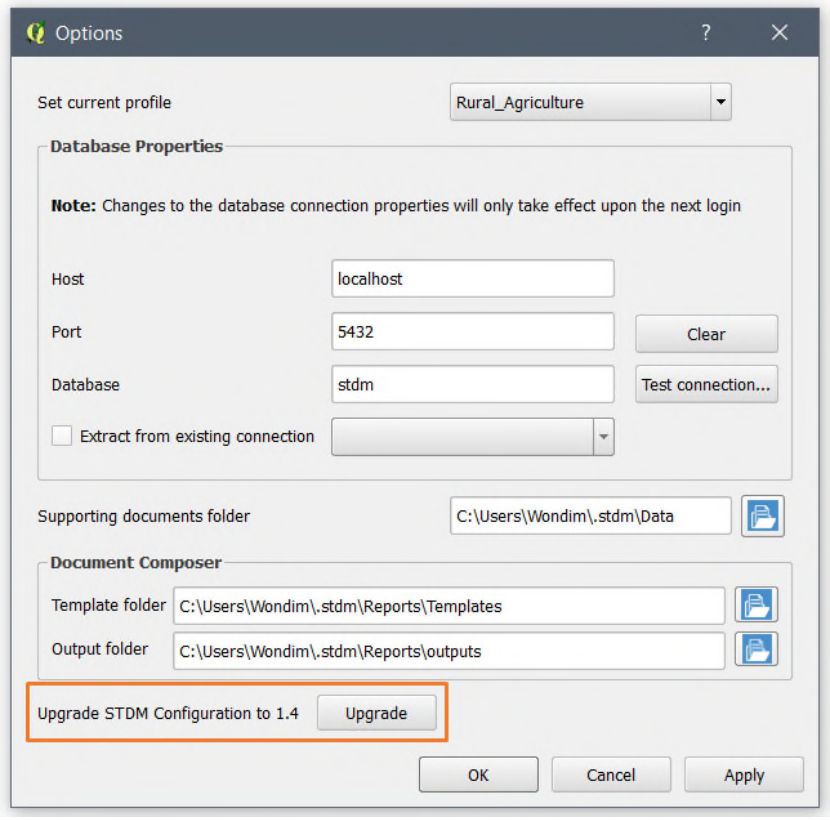
).

This will result in the reloading of all STDM modules to pick the changes in STDM folders.

Upgrading Old Configuration

If you miss the upgrading of the configuration, you can still make the upgrade from the Options Module. The migration process is discussed in greater detail in Migration from Previous Version topic.

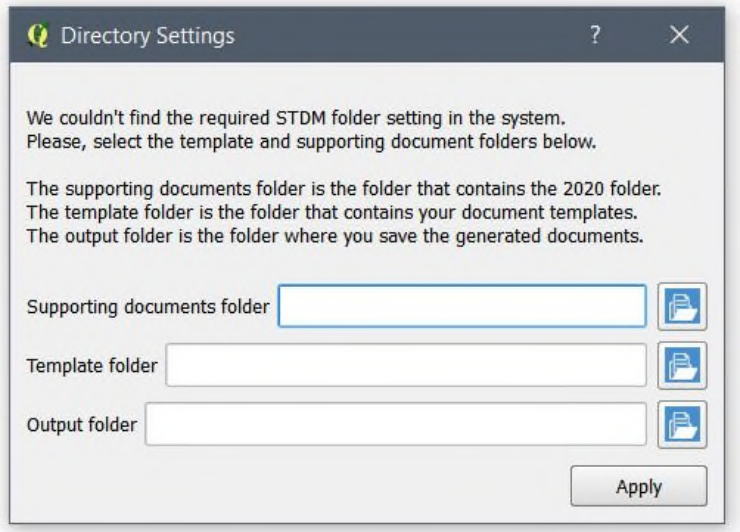
1. In the **Options** module, go to the bottom of the module and locate **Upgrade STDM Configuration to 1.4** with the **Upgrade** button as highlighted below.



2. Click on the **Upgrade** button.

In case you have uninstalled QGIS with its registry using third party uninstallers , STDM might lose all the directory settings.

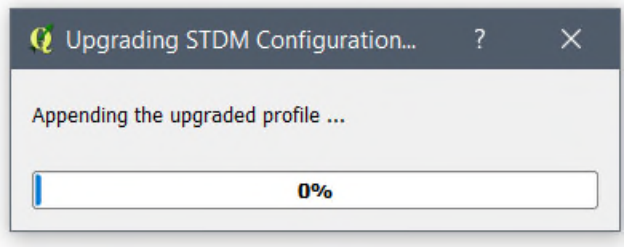
In such case, you will see a dialog requiring you to select the supporting document, template and output folders. Click on the folder browse button ( ) to select all the required folders (see the image below).



Note: Closing the **Directory Settings** dialog without selecting and applying the settings will lead to the cancellation of the migration process. This will lead to the temporary loss of access to the existing profile, data, and templates.

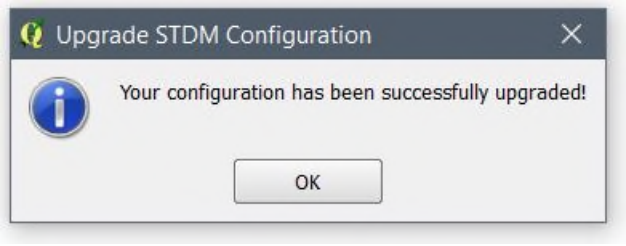
If you did not see the dialog, it means, your directory setting is not removed from your system.

This leads to the starting of the upgrade process. You will see a progress dialog as shown below.



It is not recommended to interrupt the upgrade process as the process involves your data. To reduce the risk of interruption, the progress bar cannot be closed by clicking on the close button. This also prevents QGIS from being closed.

Once the process is complete, you will see a success message as shown below.



Then, you will be able to see your configuration with the records in STDM.

Note: Once you make a successful upgrade, you will no longer be able to upgrade an old configuration.

Annex A: Working with Spatial data in QGIS

Working with GPS

It is advisable to use GPS device in the open field to avoid obstruction from buildings and trees, which hinder visibility of satellites when collecting data. Working with GPS in an obstructive environment reduces the accuracy of the final data. Depending on the GPS device, a GPS receiver must be locked to signals from at least 3- 4 satellites to be able to calculate the position. The higher the signal strength in terms of satellite signals the higher the accuracy/reliability.

Before using GPS

Global Positioning System (GPS) refers to a satellite-based navigation system constituting a constellation of 24 satellites and their ground stations.
The use of GPS circles around precise positioning of objects and people including scientific studies for the purpose of obtaining useful information relative to their geographic locations.
When using GPS, the GPS device needs to communicate with the satellite at real time to give the positions.
This is why it is advisable to use GPS device in the open field to avoid obstruction from building and trees hinder visibility of satellites and ultimately reduces the accuracy of the final data.

What to know when using GPS in the field

While using GPS in the field it is important to take note of the following.
What affects the accuracy of the data?

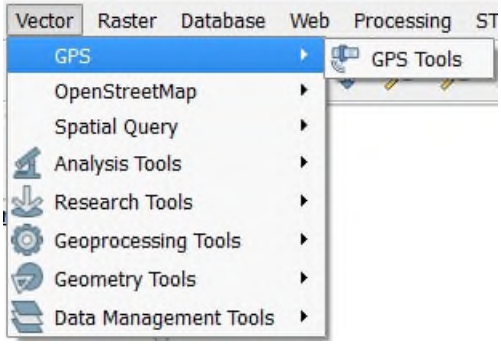
- Objects such as buildings, mountains, tall trees, etc. have a reflection effect to transmitted signal which may cause delay to the received signal thereby introducing errors.
- The above mentioned objects also have an obstruction effect, which blocks the signals and reduces the number of available satellites.
- The amount of humidity or density of the clouds in the atmosphere also affects the signal strength. It can slow down the signal as it passes through them which affect the overall accuracy of the obtained position.

Working with Garmin GPS data

Refer to Garmin website www.garmin.com for detailed description on how to capture data using Garmini GPS.
Having collected field data using the GPS, office work remains important to put the collected data to usable format.
Garmin by defaults stores its data in World Geodetic System (WGS 84).
This becomes easy to use as it can be overlaid to Google maps and other global maps or images.
To learn how to download using STDM gps module, go to importing gps data

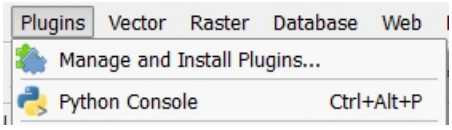
Downloading GPS Data from QGIS

To download a GPS data from a GPS;
1. Connect the GPS to your computer (i.e. using USB cable)
2. Ensure the device is visible in your computer
3. Start QGIS normally
4. Launch the GPS **plug-in** from QGIS, Vector **> GPS > GPS Tools**



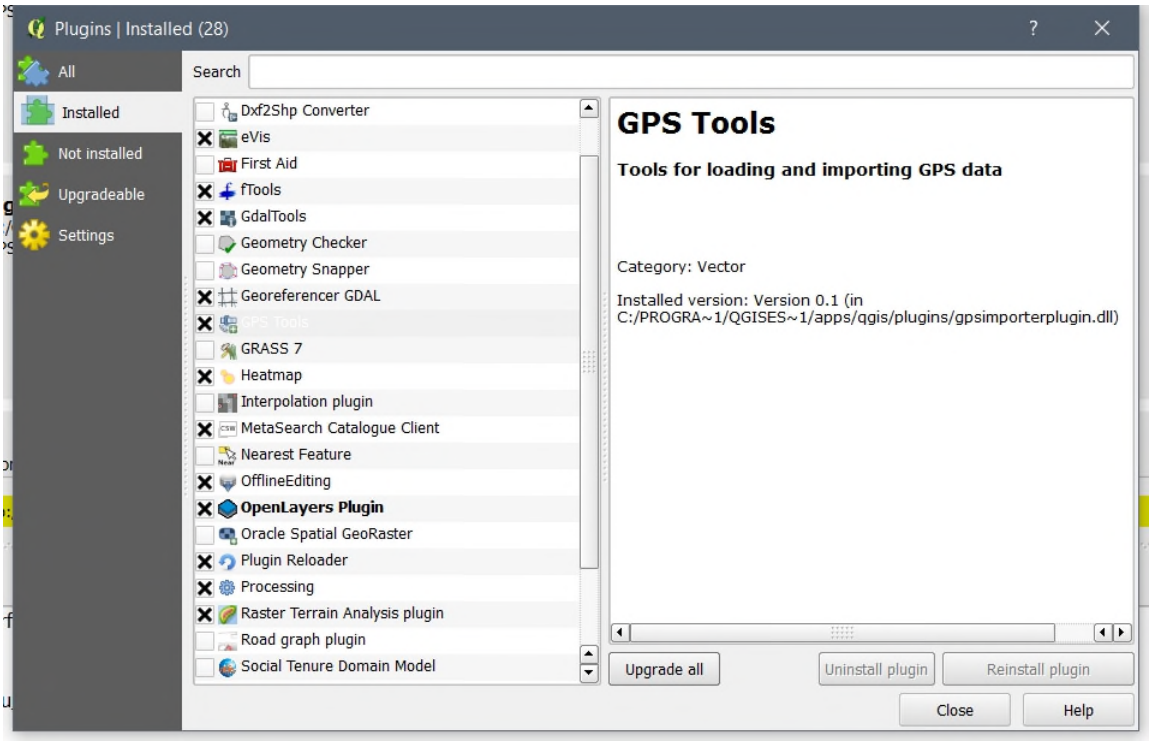
If the GPS sub-menu is not visible under the Vector Menu, it means the plugin is not enabled. To enable the plugin, follow the sub-steps below.

a. Click on the Plugins Menu in QGIS Menu as show below.



b. Click on **Manage and Install Plugins...** sub menu.

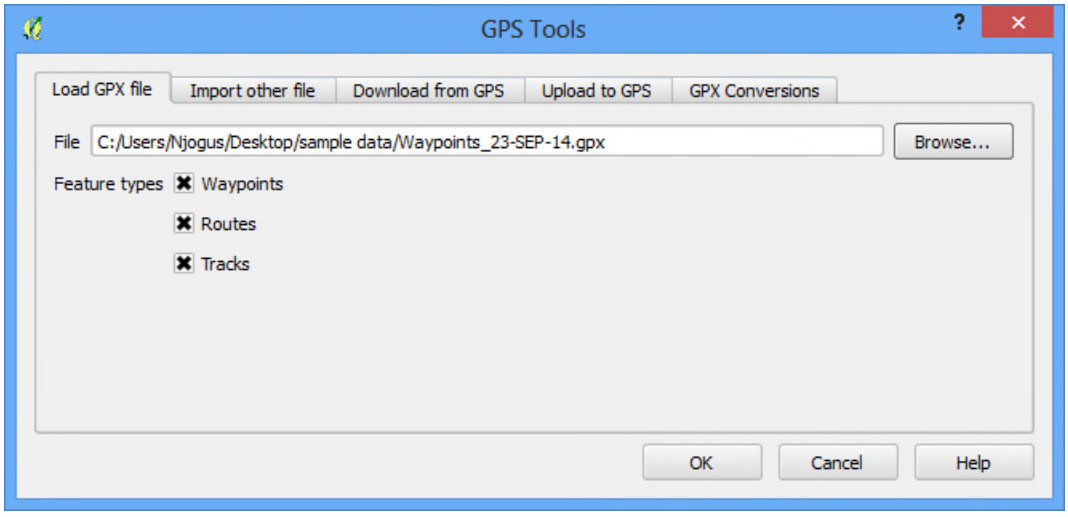
c. Click on **Installed** on the left side as shown in the image below. Then look for GPS Tool in the list of plugins.



*d. When you find the **GPS Tool** enable the plugin by clicking on the **checkbox** in front of the label **GPS Tool**.*

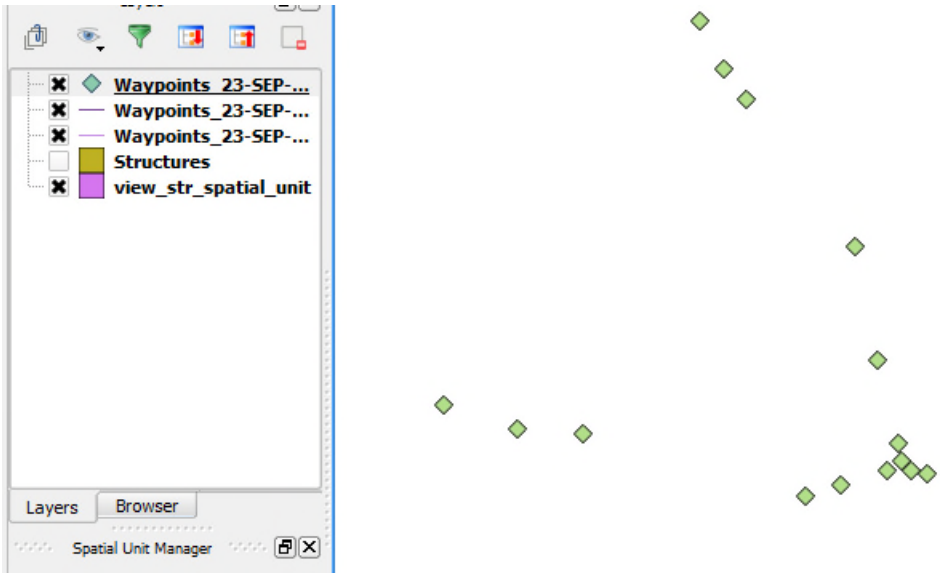
e. Click on the Close button at the bottom of the **Plugins** module.

A new dialog box appears that allows you to browse to the location of field data from the Gps.



5. Select on first tab ***load GPX file***

6. Browse to the location of GPS data and Click **OK**.



The loaded data should appear as scattered points depending on what was captured.

7. Locate the Waypoints layerwith a point icon in QGIS Layers Panel. In our example, the Waypoint with a point feature is the first layer. Right-click on it.

8. Select **Save as** in the shortcut panel and enter the details as required.

9. Specify the format, coordinate system for the new layer. If you do not specify the format, the source layer CRS original will be used.

Note: *For above data, the coordinate system used was:* ***WGS 84***

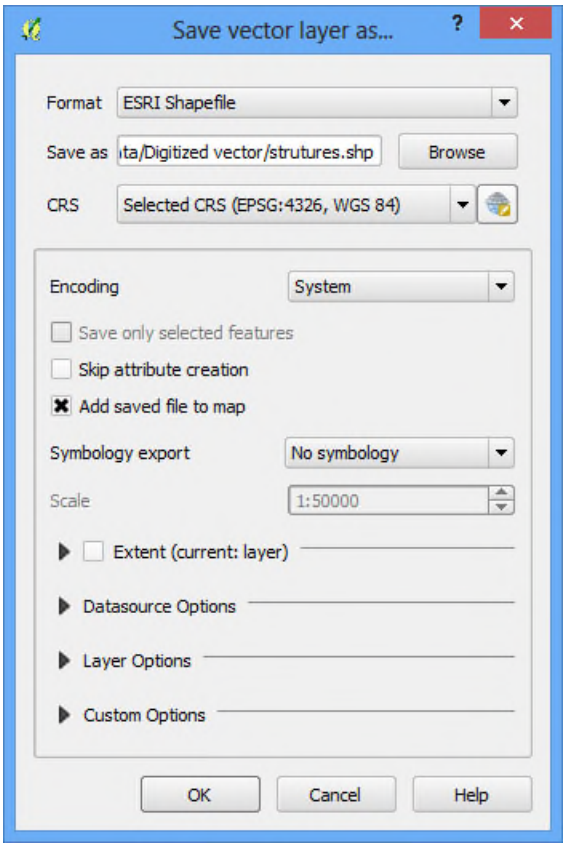
For the format, ***ESRI Shape file*** *format is preferred because it is supported by many GIS software.*

Do not check the ***Skip attribute creation*** *check box.*

10. Provide the output path.

11. Click to check Add saved file to map

12. Click on the **Ok**.



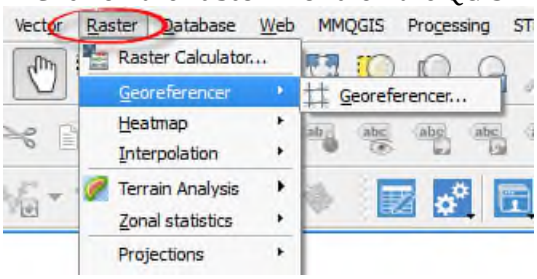
A new layer will be created and added to the QGIS map canvas.

Geo-referencing

Geo-referencing is the process of introducing world real coordinates on to a raw image so that the final product is a spatially enabled map that can give location of features in the two-dimensional space.

Steps:

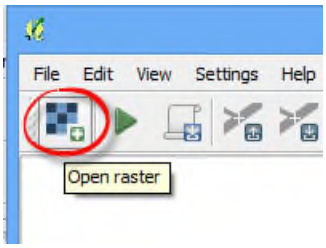
1. Click on the **raster menu** on the QGIS interface.



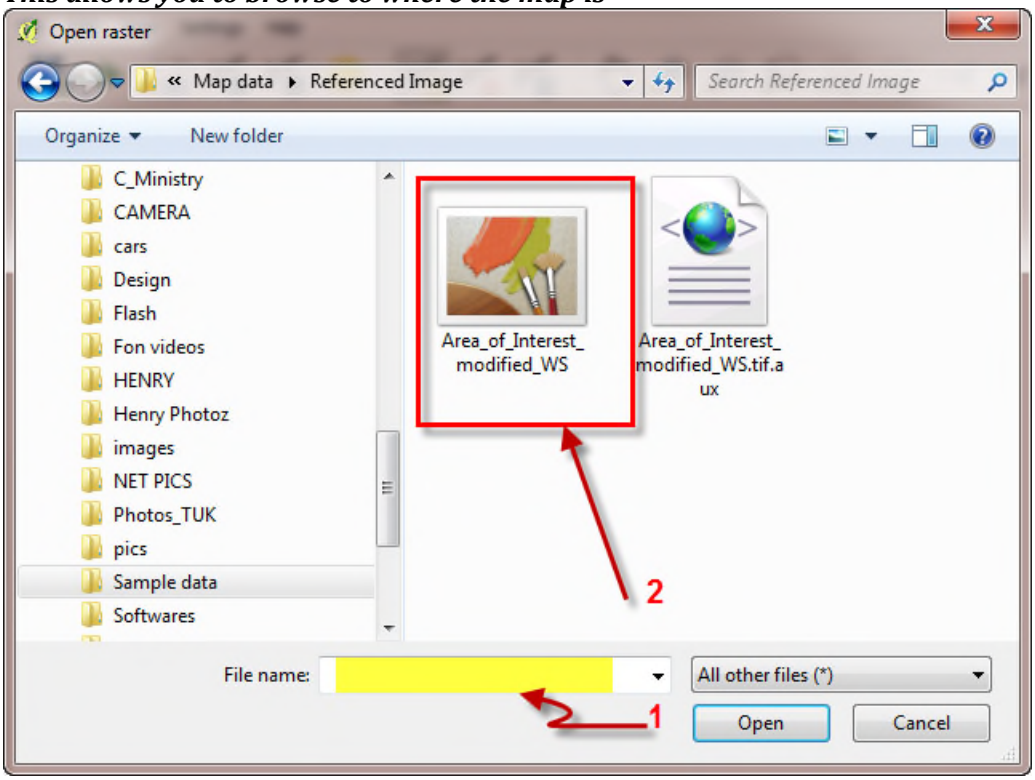
2. On the drop down content click **georeferencer** > **georeferencer.** Dialog box will appear.

A pop up will appear allowing you to load a raster image

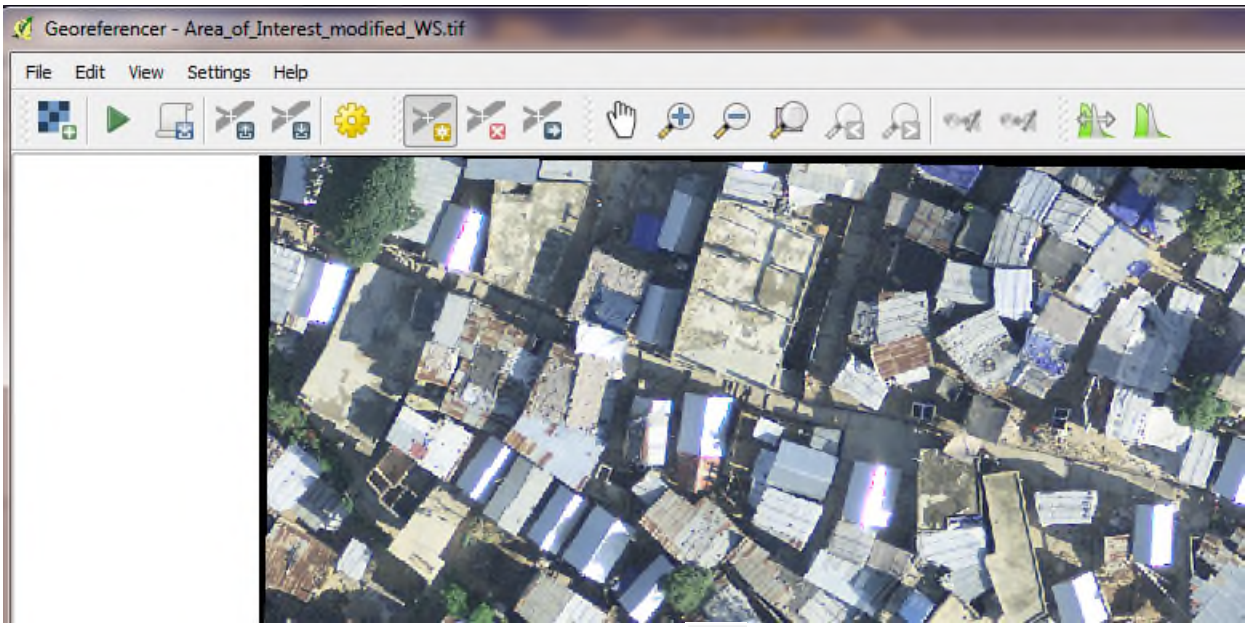
3. Click as below to load the image



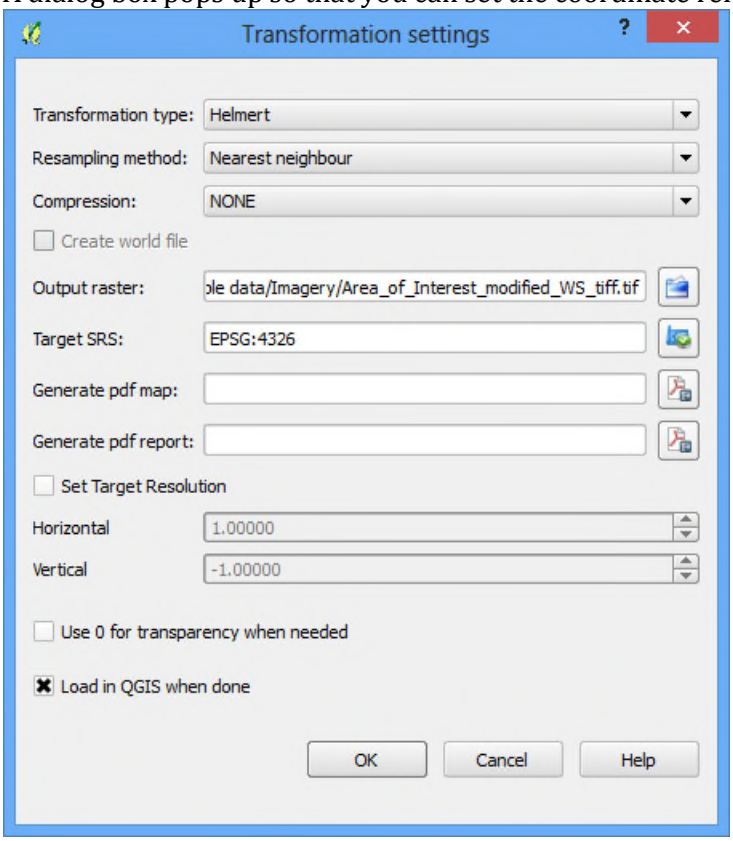
This allows you to browse to where the map is



4. Select the File name you wish to georeference (Many Image formats are supported)
5.Click **Open** to load the map.
Raster Data is loaded on the QGIS interface.



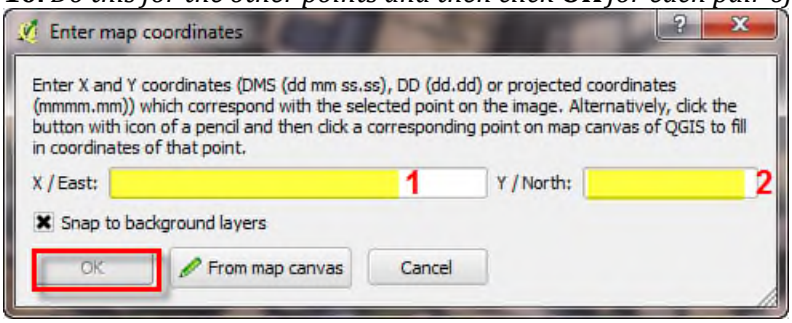
6. To set properties of georeferencing> Click the icon  (transformation settings).
A dialog box pops up so that you can set the coordinate reference system.



Identify at least two points with well-known points on the map that you will use to georeference with.
Assign at least two ground control points(GCPs) to enable the georeferencing.

Note: Set the Transformation type as Helmert and Resampling method as Nearest neighbour so as not to change the colour code of pixel.
In the output raster, give the georeferenced image a name. Then, select the reference system to be used in Target SRS.
7. Check the Load in QGIS when done checkbox.
8. Select then click **OK**.

9. With identified points on the map and with their coordinates, Use the Add point  button to add control points on the map.
Once you click at any point on the map, the popup below shows up allowing you to enter the coordinates of that point.
10. *Do this for the other points and then click* **OK** *for each pair of points entered.*



11. Click the icon  (Run) to have all the point loaded.

12. Then **close** the georeferencer dialog box.

13. Load the geo-referenced image using the icon  (open raster) in the QGIS interface view for viewing the geo-referenced image.

Note*:* This is one of way of entering the coordinates during the geo-referencing.

Glossary

A

Attribute Data: Attribute Data - refers to a textual data that is appended to a spatial data.

D

Database: Database is a collection of information that is organized so that it can easily be accessed, managed, and updated. STDM uses relational Database software called PostgeSQL that provides the database for STDM.

Dialog: Dialog refers to a popup window that holds a feature of STDM or a message.

E

Entity: Entity, in STDM, refers to a distinct database table in which a specific data is stored. Examples of entities in STDM include person, parcel, etc.

Entity Browser: Entity Browser refers to a table like module of STDM in which all records of an entity are loaded from the database table of the entity.

F

Feature: Feature mainly refers to a single record that is composed of attribute information and spatial geometry. Feature could be a functionality of a system.

G

Geo-referencing: Geo-referencing - is the process of introducing world real coordinates on to a raw image so that the final product is a spatially enabled map that can give location of features in the two-dimension space.

Geometry: Geometry refers to a digital geographical extent or position a physical structure. The most common geometry in STDM is spatial unit that could be parcel, structure, house, and garden.

GIS: Geographic Information System. GIS is a computer system for capturing, storing, checking, and displaying data related to positions on Earth's surface.

GLTN: Global Land Tool Network. The Global Land Tool Network (GLTN) is an alliance of global regional and national partners contributing to poverty alleviation through land reform, improved land management and security of tenure particularly through the development and dissemination of pro-poor and gender-sensitive land tools.

GPS: Geographic Positioning System. GPS is a global navigation satellite system (GNSS) that provides location and time information in all weather conditions, anywhere on or near the Earth.

GPX: GPX - refers to the file format that holds coordinates of any physical structure in a GPS Device. The GPX file needs to be uploaded to STDM using The GPS tool.

L

Line: Line - refers to a digital geographical bounder of a physical structure that doesn't have a close ending. This could be road and river.

Lookup Table: Lookup Table - refers to a table that is composed of frequently used lists such as tenure type, document type and any other list that you create. The lookup tables are created in the Configuration Wizard and are composed of lookup values that are the list of items and their corresponding codes. For instance, the gender lookup table has Male and Female Values. The code is an optional field which could be M for Male and F for Female. The lookups can be used as a drop down list in STD Forms that makes adding and editing records easy.

M

Module: Module refers to an STDM window that has one or more functionality.

P

Party: Party - is a general term that refers to a person, individual, household, organization, institution or any other entity for which a spatial unit can be assigned with a relationship that is determined by social tenure type.

Point: Point refers to a digital geographic position of any physical structure that is represented by a single point. A point data could represent towns, villages, and any other small structure.

Polygon: Polygon refers to a digital geographic boundary of any physical structure that is represented by a completely enclosed physical structure.

PostGIS: PostGIS is a free and open-source plugin of PostgeSQL, that gives PostgreSQL a spatial capability.

PostgreSQL: PostgreSQL is an open source relational database management system that stores data in an organized manner.

Profile: Profile refers to an STDM profile that is composed of entities, columns, lookups, and setting that is used to generate database tables that will be used by different modules of STDM.

Q

QGIS: QGIS (Quantum GIS) is a free and open-source Geographical Information System Software. QGIS is the software the hosts STDM. QGIS provides many features related to spatial data. STDM has extended and customized QGIS to fit STDM users' needs.

Querying: Querying refers to the process of searching for data in a database.

R

Record: Record refers to a single row in a database table.

S

Shapefile (shp): Shapefile (shp) is a popular geospatial file format that stores vector data such as points, lines, polygons, multipoints, multilines, and multipolygons. The extension of a shapefile is .shp.

Spatial: Spatial refers anything related to space. The word spatial is used thought STDM to refer to any data or element that has digital absolute geographical location.

Spatial Unit: Spatial Unit - refers to an area of land or water that is associated with people with a certain right as specified by a concerned body. A spatial unit is spatial entity with a distinct geographical coordinates. A spatial unit is linked to a party through Social Tenure Relationship Wizard. Spatial unit could be parcel, garden, structure, etc.

SQL: Structured Query Language. SQL is a programming language used to communicate with database servers such as PostgreSQL Server.

STDM: Social Tenure Domain Model

STR: Social Tenure Relationship

T

Table: Table - refers to a storage location. In STDM you can create a table by simply creating an entity in STDM Configuration Wizard.

V

View: View refers a database table that stores queries and display data as a table. In STDM, the default view starts with vw prefix.

W

WGS84: The World Geodetic System 1984. WGS84 is a datum featuring coordinates that change with time. WGS84 is defined and maintained by the United States National Geospatial-Intelligence Agency (NGA).

Wizard: Wizard refers to a window that has multiple pages, in which you can go from one page to another by clicking the next and back buttons. STDM has few wizard type modules, such as the Configuration Wizard, the New Social Tenure relationship, the Import Wizard, and the Export Wizard.

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