

Mapping Urban Ecosystems in KUMU



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Why use KUMU for Urban Ecosystem Mapping?

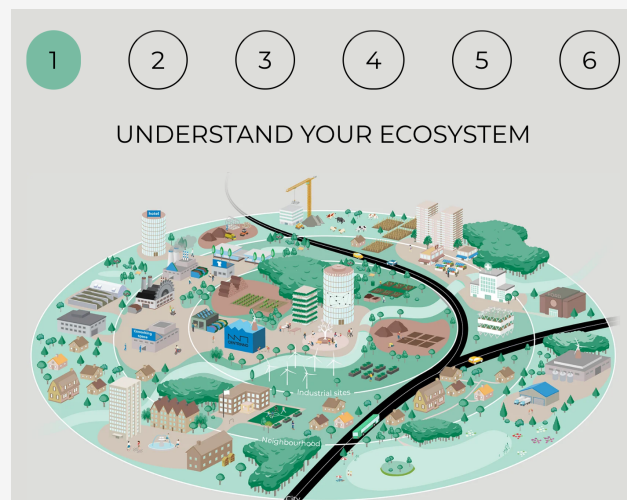
KUMU is an open-source tool to map systems. It allows you to map stakeholders and relationships between them. But you can also use it to visualize material flows between locations or organization or any other types of data that would otherwise sit in a spreadsheet. Being unpaid, accessible and flexible, KUMU is a great tool to display stakeholder maps or networks and communicate synergies in **circular ecosystems**. One of KUMU's main advantages is the option to show stakeholders or material flow networks on a spatial map and flexibly design beautiful maps with custom icons, images and styles - something that other open mapping platforms do not allow.

In short, using KUMU for mapping urban (stakeholder) ecosystems is great for organizations who want to show their innovation networks, build a community, visualize skills, resources and assets within a network or simply need a way to show stakeholders on a map. There are a few caveats to remember before getting started:

- (1) It takes some **time** to get used to the platform
- (2) Free maps won't allow you to protect private data completely (see Box 1)

How to use this guidebook

This guidebook should allow you to navigate KUMU successfully and create your urban ecosystem map. We wrote this guide to support you in the **Step 2 of the CENTRINNO Cartography - Mapping Your Circular (Innovation) Ecosystem**. You do not need to follow all steps but make sure you take a look at our [website](#) to see if any of these steps make sense to you. If at any point, you feel stuck, go take a look at the full [KUMU Help Doc](#) which has answers to almost any question you might have. You can also join the [Kumunity](#) - an active slack channel where users will share questions and answers about KUMU.

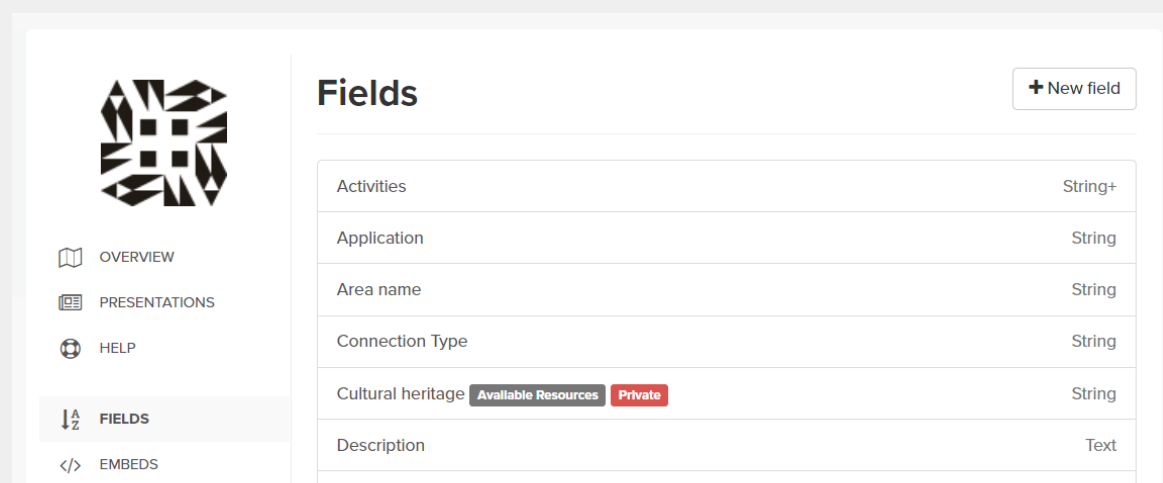


Box 1: Privacy options for KUMU

Understanding privacy and consent

When creating a KUMU map in which stakeholders are being displayed, **privacy** should be one of your primary concerns. You might collect sensitive data about individuals which need to respect the [EU GDPR guidelines](#) - this also applies to one-person businesses which could be traced back to individuals.

There are two ways to deal with privacy. (1) You can decide to pay for a **private** project per month, which allows your map to be hidden from the public **unless you share it**. By default, a KUMU project will be public, meaning that with the right link, external parties will be able to see the information in your maps and views, together with certain data fields. We recommend that even before paying, it is important to turn all data fields which you would not want to be shared publicly, to private. This can be done in the 'Fields' tab: <https://docs.kumu.io/guides/fields.html> .



(2) You can also make sure you just ask for consent from individuals to publish their data on the map. A consent form template for this purpose can be downloaded [here](#). Make sure to adjust it to specify the use of the map!

Getting started with KUMU

Step 1: Setting up your KUMU spreadsheet

KUMU creates maps and data visualizations of information stored in a **spreadsheet-format**, such as google sheets or excel spreadsheets. For example, you can upload a spreadsheet with locations, descriptions and other information from local organizations and automatically show them on a geo map. You can also let KUMU access a Google Sheet linked to your KUMU map and automatically update your map as you add data into the sheet. In this guide, we will show you **how to set up a Google Sheet** with all information you want to collect about local stakeholders that can be readable by KUMU. You can also directly add this information into KUMU but we will not cover this option here since working with a Google Sheet makes it easier to organize and maintain your map updated. For more information on this topic, please visit: <https://docs.kumu.io/guides/import.html>

What you will need

- Duplicated [KUMU Stakeholder Template](#) spreadsheet, downloadable from the CENTRINNO Cartography under “Start Mapping” Step 3.

Step-by-Step

1. Getting to know your spreadsheet
2. Customizing your data entry spreadsheet
3. Filling data into your spreadsheet

1.1. Getting to know your spreadsheet

You can think of your spreadsheet as the **back-end** of your KUMU map. Here, you add data to your map and store all your information. You will see three fundamental sheets in your template: 'Elements', 'Connections' and 'Data entry sheet (ignore)'. These three sub-sheets need to be included **at all times**. KUMU maps will take the stakeholder's information from the elements sheet, and data on connections between stakeholders or materials, from the connections sheet.

You will only need to use the 'Data entry sheet (ignore)' to fill in the information on stakeholders. All information you fill in here is automatically transferred to the '**Elements**'; sheet which is structured in a format that KUMU can read. In turn, KUMU will *ignore* the Data entry sheet because of the "**(ignore)**" in the title of the sheet. Let us explore the Data entry sheet in more detail. You will find a number of predefined columns with information we recommend to collect from local stakeholders. **Please keep the position of the columns the same** and do not shuffle them around.

The last sheet in the template is called '**Connections**'. In this sheet, you can ask KUMU to draw a line between two points on your map. For example, you can define which stakeholders are or should be connected to each other. Do not change the headers of the rows - otherwise KUMU cannot read the sheet anymore.

Name	ID	Stakeholder type	Sector	Description	Photo	Logo	Website Link	Location (real)	Location (anonymized)	Knowledge & Expertise
	1									
	2									

Find the Stakeholder Mapping template [here](#) under Step 3 and copy it to Google Sheets

1.2. Customizing your Data Entry Spreadsheet

In the template, we have provided a range of columns with recommended data you might want to collect from your stakeholders, such as local makers, organizations, producers, innovators or initiatives. Only two columns are highly necessary and cannot be customised. In these **content-strict columns** data must match the dropdown options completely to **(1)** allow automatic KUMU styling options to work flawlessly, and **(2)** to make sure the elements sheet handles stakeholders who do not consent to their information being shared, correctly. Secondly, there is the **'ID'** column which does not have a drop-down, which needs to be filled in so that every stakeholder has a different number attached to it.

Next to content-strict columns, there are a range of **content-recommended columns**. These include business names, addresses, descriptions and business activities and a section called **"resource inventory"**. Within the resource inventory, we ask stakeholders for (1) input resources, such as knowledge & skills and materials and (2) output resources, such as waste materials and products. This information will be necessary to identify potential synergies for resource exchanges between organizations. There is some room to add custom information to these columns, as long as general KUMU rules are taken into account, meaning **'|' separators** are used to distinguish multiple entries in the same column. Finally, the **'Location'** column requires at least a street or more ideally, latitude-longitude coordinates for the stakeholder's location. Here it is **important** to confirm that the stakeholder has its consent status set to " - if this is not the case, a more generic location can be filled in the **'Location (anonymized)'** column.

If you want to add other information, you can do so at the very right of the spreadsheet under "custom columns". These Content-Custom Columns do not contain a drop-down option such as 'Tags' or 'Description' and are **not content-restricted**. It is important to make sure that the 'Elements' sheet copies all these custom columns in, so check whether the right references exist within the Elements sheet - to the column entries in your custom columns as listed in the 'Data entry sheet (ignore)'. Here is a list of potential other questions you might want to ask your stakeholders:

- Waste amount
- Current waste treatment options
- Space available for sharing with others
- Current circular economy challenges
- Existing circular economy collaborations
- Rental contract length (interesting to showcase the disappearance of producers or creatives)

1.3. Filling data into your spreadsheet

If you are happy with all the columns in your spreadsheet, it is time to add data to it. That means, you need to get out to collect data on your stakeholders and fill the information into your spreadsheet.

Depending on the goals for your map, you can be **more or less ambitious** in your data collection. Let us assume all you want is to visualize your stakeholders' names, basic public information and maybe a few more things that you can find with desk research. If this is the case, you can probably just start filling in the information yourself without actually reaching out to the businesses. Especially if you want to use your map internally only, this might be all you do.

However, the real **value** does come from mapping not only names of businesses or organizations but learning more about their resources, skills, challenges, needs or other information. Remember, we want to build an active circular community - you will probably want to build a network of people and businesses to spark new ideas, synergies or collaborations.

There are a few ways CENTRINNO Fab City Hubs have collected information on stakeholders' resources. Some have followed a rough interview guideline during an informal conversation with their stakeholders. Others have sent out a more structured survey or filled out the survey together with their stakeholders. A **survey template** and **interview guideline** are also available on the CENTRINNO Cartography.

Once you have collected the data, you can fill it into your spreadsheet. If you have done a qualitative interview, you might need to transform the answers into a readable format in your spreadsheet. As an example, take a look at this extract:

Question	Your stakeholder's answer	Your entry into KUMU
Tell us what you do?	<i>We have been fixing up old bicycles and reselling them since 1970. Recently, we have also started to train ourselves in the repair of electric bikes.</i>	Select the knowledge & skills tags that best describe the answer. Add new categories if the drop-down does not reflect your answer. repair of consumer goods ▾
Tell us what you	<i>We are creating furniture</i>	Select the knowledge & skills tags

do?	<i>from locally grown wood. We focus a lot on making long-lasting goods that endure a lifetime</i>	that best describe the answer. Add new categories if the drop-down does not reflect your answer. design of long-lasting goods ▾
-----	--	--

Tips, tricks and data quirks

1. Make sure that **column names** in the sheet are all different (so be careful when adding your own custom columns)
2. Make sure that there are entries for every row in the 'Label' column (**No blank spaces** for this column in the '**Data entry sheet (ignore)**')
3. If you add new categories to your drop-downs (e.g. new lists of skills, resources or other predefined answer options, adjust the lists in the last sheet of the spreadsheet called "Lists (ignore)"
4. If you have stakeholders who want to stay **anonymized**, you need to manually add a new location under "Location (anonymized)". You can just go on Google Maps and pick a random location on a street, park or lake. Get creative
5. If people have **not given consent for public sharing**, their true location won't be imported into KUMU, automatically. We have done this to protect the privacy of your stakeholders! If you still like to see their true location (for example on a **private** KUMU map that no one else but you sees. In this case, select the Consent Option "Private Use Only" - this will show ALL data. **So only use this option if your KUMU is EXCLUSIVELY used by you internally and you have set up a private (paid) KUMU project.**

Step 2: Linking your spreadsheet to KUMU

After your stakeholder data has been inserted into the Google Sheet format, it is now time to create a data bridge between your KUMU and the sheets. This is a very smooth way to fill in the KUMU data table, which will update automatically when you change data in the sheet (sometimes a reload of both is required).

What you will need

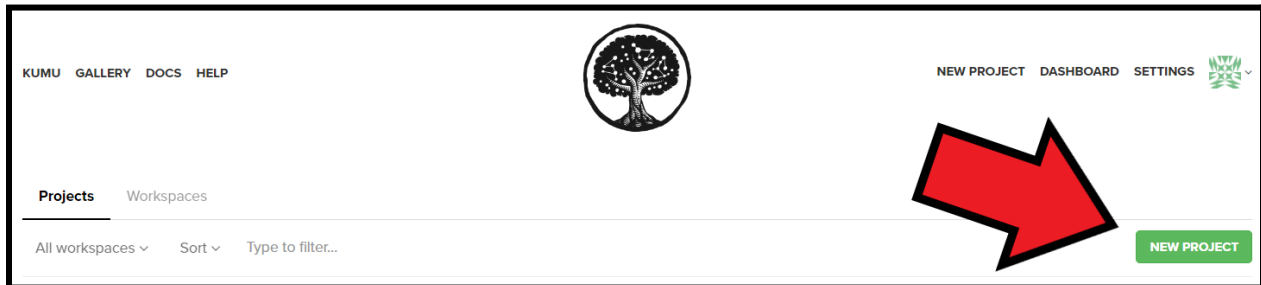
- The link to your Stakeholder Spreadsheet file which contains the Elements, Connections and Data entry sheets
- A KUMU account

Step-by-Step

1. Setting up the KUMU project and a new map
2. Linking your spreadsheet to KUMU
3. Adding coworkers as collaborators on the project

2.1. Setting up your KUMU project and a new map

To start a new project, go to your KUMU account's **dashboard** and press the 'New Project' button.



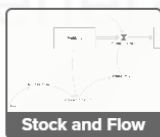
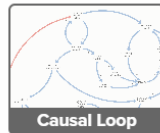
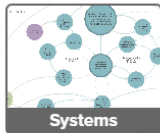
You are then prompted to give your project a name and description. It also asks you to select between a free public project or a paid private project. **This is important!** We have a short checklist to help you decide whether you need a private or public project, depending on how you want to use your map:

Your goal	Which project?
We want to create a map of stakeholders that is publicly shared. But we will ask each stakeholder whether it is okay to share their information on this map.	Public
We want to create a map of stakeholders that we just use internally . We want to collect all kinds of data, such as names, addresses, contact information, resources	Private
We want to create a map of stakeholders with only public information (business names and locations). Most businesses are not individuals.	Public or private. Make sure to notify one-person businesses or anonymize one-person businesses

Once you select a private or public project, you are asked to pick a template. As our stakeholder sheet is based on location-based stakeholders, we recommend using [‘Geographic’ format](#)

Give this map a name

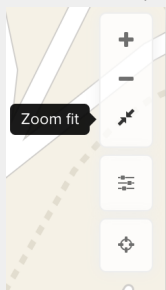
Pick a template



Help! My map is somewhere in the middle of the ocean!

One of the most frustrating challenges for new KUMU users is that sometimes their maps zoom into a random location in the world. Why does this happen and what can you do?

First of all, try to click the “Zoom to Fit” Button on the right of your map.

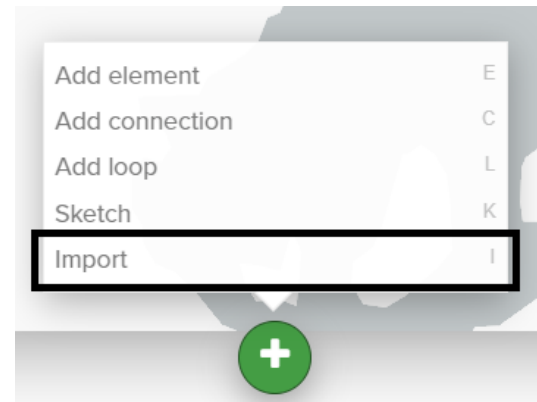


If that does not work, you probably have stakeholders in your map which do not have a location or wrong location coordinates. There are two ways to fix this: you can either manually find the element which lacks a location and give it one. Or add the following line in the advanced editor to filter out all elements which do not have a location:

```
@settings {
  template: geo;
  ignore: element["Location"=" "];
}
```

2.2. Linking your spreadsheet to KUMU


This is the moment where your list of stakeholders in your spreadsheet will come to live! To connect your spreadsheet with KUMU, you press the big green button in the bottom of your KUMU map and select **Import**.




You can now link copy your Google Sheet link into the respective field and select “Import Spreadsheet”


Remember to check if you have a private or public sheet which needs to be connected: there are different options for this one. Our recommendation would be to go for a private sheet (in light of consent). After inserting your link, press the Import Spreadsheet button. If your Sheet was a private one, you will get a **pop-up** to **link** your Google Account to the KUMU services, for which KUMU will require some additional access. **Make sure that you and the team are okay with these types of permissions** (they will be necessary to read your sheet data) - and accept the terms if so.


Your sheet should now be linked! You can test if everything is working by entering data into your google sheet and checking the KUMU data table afterwards! At the bottom of your KUMU table it should now say: **‘This map is linked to a remote data source’**.

 Before importing data, make sure you've [read the import docs](#)

Import XLSX or CSV file 

No file chosen

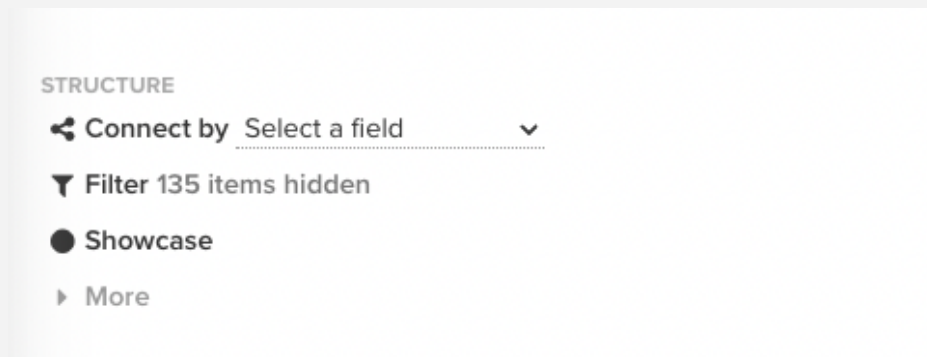
Link map to public Google Sheet 

Link map to private Google Sheet 

Clearing old data from existing maps

Sometimes it happens that you want to add new data to an existing KUMU map or you want to replace an old dataset in KUMU with a new one. If you find yourself in this situation, we recommend you **clear all existing elements and connections first**. Otherwise, KUMU will still show these elements on your map. To clear an outdated map, you can follow these steps

- Press **'t'** on your keyboard and select "Filter": If there are any filters or unchecked boxes, remove these.



- Press **'a'** on your keyboard to select all elements and connections (there will be a popup on the left side of your screen, and then simply press **'delete'** on your keyboard to remove them from the map.
- Clear the trash by clicking on the three small stripes in the top-left corner and navigate to TRASH. Here you can destroy all elements. **Make sure you have back-ups of the data before deleting!**

2.3. Adding your coworkers as collaborators on the project

It is possible to edit a map with multiple people or contributors. For teams, this is a great option to work on KUMU together. To add team members to a project, click the ☰ button on the top left to open the project settings. There, you find a Members section. Your team members must also have a KUMU account with a username. You can add contributors by searching for their username or email. For more information on collaboration, check out this link: <https://docs.kumu.io/overview/collaboration>



Members

Hint: drag and drop members to change roles

Managers

Contributors

Observers

Step 3: Designing your stakeholder map in KUMU

Once your data has been connected to the KUMU platform, it is time to create maps and designs to show your stakeholders and material flows as well as possible. You can think about your Google Sheet behind KUMU as the data entry platform. KUMU itself will allow you to create beautiful maps that let you filter, search and visualize your community based on any column you want, such as type of stakeholders for example.

What you will need

- A KUMU map
- The KUMU basic & advanced editor (under map settings)

Step-by-Step

1. Using our pre-made map design
2. Making the perfect stakeholder side panel
3. Learning how to change your map design with the Basic Editors
4. Diving Deeper into the Advanced Editor
5. Possible bugs & quirks

3.1. Using our pre-made map design

After you have linked your spreadsheet, you have the option to design your maps by choosing different colors, icons or adding controls that allow you or your audience to filter, search or classify stakeholders by any information you have stored about them.

Luckily, there are endless possibilities for you to get creative! If you want to customize your map, check out the next step 3.2. But if you would rather take a short-cut, you can use our blueprint that will come with a pre-selection of icons, colors, filters and legends.

For this option, press 't' on your keyboard, switch to the advanced editor and copy-paste the following code into the code window. **Replace the entire text!** You can also download the JSON file for KUMU [here](#) under Step 3.

Box 3 - KUMU Design Code

```
@controls {
  bottom {
    filter {
      target: element;
      by: "element type";
      as: buttons;
      placeholder: "Filter by type of stakeholder";
      multiple: true;
      default: show-all;
    }
  }

  top {
    filter {
      target: element;
      by: "infrastructure, tools & machines";
      as: dropdown;
      placeholder: "Find traditional & innovative tools & equipment!";
      multiple: true;
      default: show-all;
    }
  }
}

@settings {
  template: geo;
  theme: light;
  renderer: canvas;
  element-size: 18;
  element-text-align: bottom;
  font-size: 16;
  scale-max: 5;
  scale-min: 0.0007;
```

```

}

/* Creative Industries */
element["element type"="Creative industries"] {
  color: #c4484b;
  border-width: 1.5;
  border-color: white;
  icon: palette;
  icon-color: white;
  image-url: url();
}

/* Industrial manufacturing */
element["element type"="Industrial manufacturing"] {
  color: #fc9100;
  border-width: 1.5;
  border-color: white;
  icon: industry;
  icon-color: white;
}

/* Retail & trade */
element["element type"="Retail & Trade"] {
  color: #467eb7;
  border-width: 1.5;
  border-color: white;
  icon: store;
  icon-color: white;
}

/* Resource recovery */
element["element type"="Resource Recovery"] {
  color: #ff6161;
  border-width: 1.5;
  border-color: white;
  icon: recycle;
  icon-color: white;
}

/* Urban farmers and food growers */
element["element type"="Urban farming"] {
  color: #40a079;
  border-width: 1.5;
  border-color: white;
  icon: seedling;
  icon-color: white;
}

/* Community spaces */
element["element type"="Community spaces"] {
  color: #ffc000;
  border-width: 1.5;
  border-color: white;
  icon: landmark;
  icon-color: white;
}

```

```

/* Governance */
element["element type"="Governance"] {
  color: #456871;
  border-width: 1.5;
  border-color: white;
  icon: gavel;
  icon-color: white;
}

/* Education */
element["element type"="education"] {
  color: #f19089;
  border-width: 1.5;
  border-color: white;
  icon: graduation-cap;
  icon-color: white;
}

/* Other stakeholders */
element["element type"="Other"] {
  color: #c2b3b2;
  border-width: 1.5;
  border-color: white;
  icon: users;
  icon-color: white;
}

/* New & old crafts */
element["element type"="New & old crafts"] {
  color: #183052;
  border-width: 1.5;
  border-color: white;
  icon: hammer;
  icon-color: white;
}

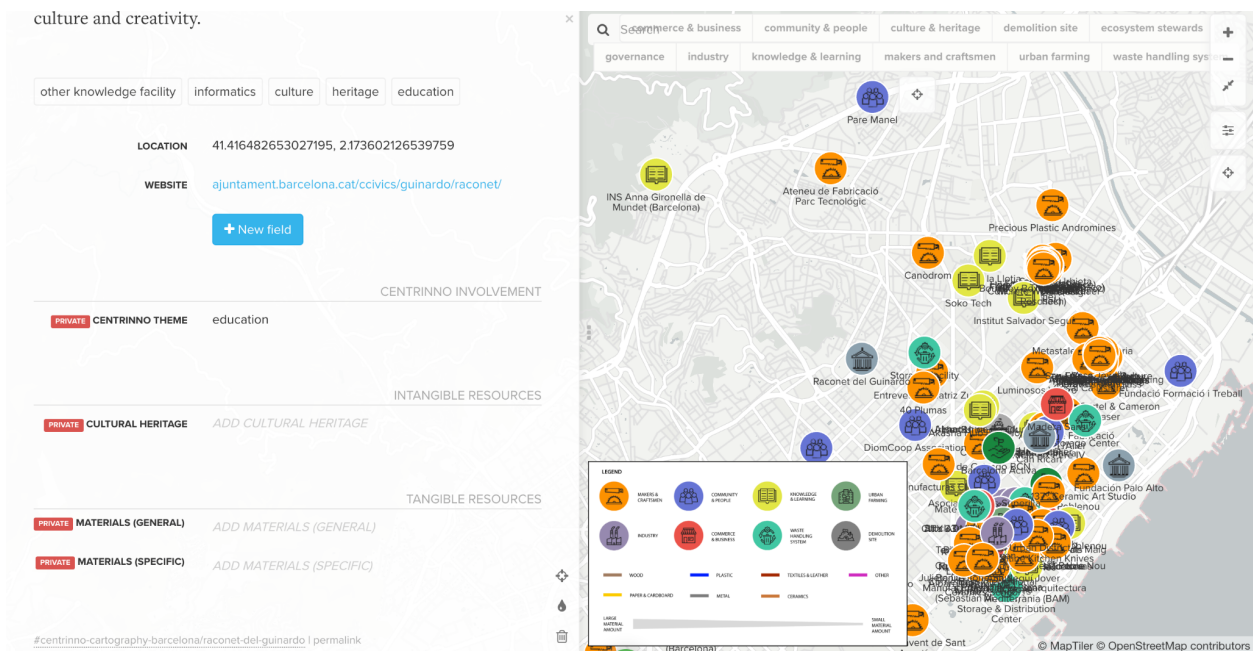
/* Environmental initiatives */
element["element type"="Environmental initiatives"] {
  color: #bbb157;
  border-width: 1.5;
  border-color: white;
  icon: tree;
  icon-color: white;
}

/* Research & innovation */
element["element type"="Research & innovation"] {
  color: #da6d41;
  border-width: 1.5;
  border-color: white;
  icon-color: white;
  icon: lightbulb;
}

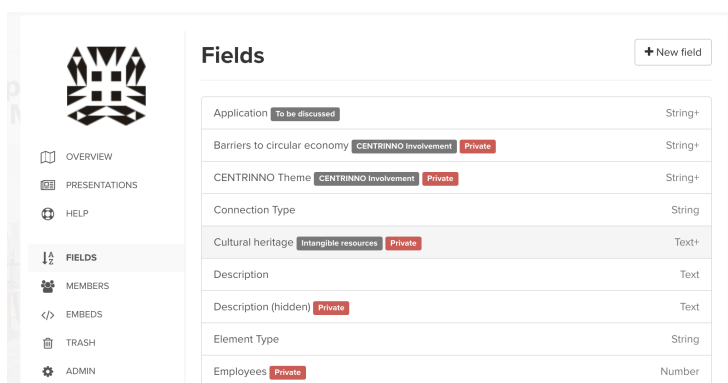
```

3.2. Making the perfect stakeholder sidebar

Your spreadsheet has lots of columns with information about your stakeholders. KUMU shows these columns in a sidebar for each element (in our case for each stakeholder) on your map. One of the first things you can do in KUMU is to organize these side panels. Some fields you might want to hide from the public view, while others you might want to group. For example, you have all these fields around resources your stakeholder has and you want to visually distinguish this information from the general information. Below, you see a screenshot of a sidebar for a woodworker mapped in Barcelona. You can see the categories (here: tangible resources, intangible resources) they have chosen to structure the sidebar better.



To group fields in KUMU, you need to navigate to the “Fields” panel via the menu icon on your top left ☰.



Once there, you see a list of fields which are equivalent to all the columns in your spreadsheet. Click on one of the fields and scroll down. There you will find an Advanced Settings section. In this section, you can define a category that you want to assign this field to. As an example, all waste-related columns could be placed under the category “Waste Resources”. If you want the label of a field to be different from your spreadsheet, you can also adjust this here.

Users must choose from the list above

Advanced Settings

Category

Label
Labels can be used to override the name used in the profile, while keeping the field name itself short and selector friendly.

Expression
Add an expression to make this a computed field.

Privacy Only allow contributors to see this field

Import Automatically guess field type based on imported data

Sorting Sort values alphabetically

Clustering Allow users to cluster by this field

[Delete this field](#)

Privacy can also be adjusted for each field that you do not want others to see publicly.

3.3. Learning how to change your map design in the Basic Editor

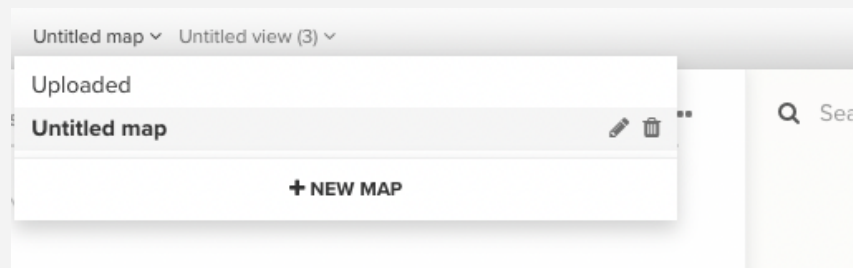
There are two ways to edit your map: For the very ambitious, you can use the **Advanced Editor** which works with a basic coding language (that also non-coders can use). The rest can change the design of the map in the **Basic Editor**. For simple tasks, the basic editor will suffice - most tasks will not require any extra explanation within this document. Instead, refer to:

<https://docs.kumu.io/overview/view-editors.html>

Because there are so many ways to design your map in KUMU, we have just given brief descriptions for the most common actions you might want to do. We listed both options for Advanced and Basic Editor. Try both to get more confidence!

Difference between Maps and Views

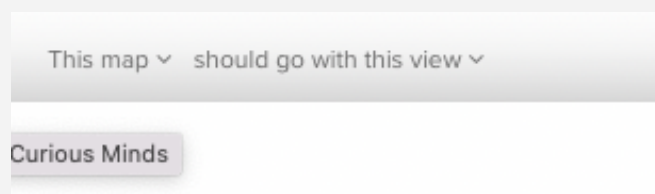
In the top bar of your KUMU project, you have two drop-down options, named **maps** and **views**. A 'map' is linked to **one** data source, such as your spreadsheet.



Just remember, for every new spreadsheet you have, you would create a new map.

Views are different. Views are just the set of design rules, controls or filters we apply to a map. As a metaphor, your map is your doll and the view is the set of clothes you put onto the doll. Now, the tricky thing is that you can have several maps (dolls) in your KUMU project. And when you select a "view", KUMU will automatically put the set of clothes for the map you selected.

Sometimes, you create a specific view which only really makes sense for one map. Or in our analogy, you created an outfit only for one doll. So if you want to visualize this view, make sure you select the right map first. It can get a little confusing the more maps you have in one project. So make sure to **name** your maps and projects well.



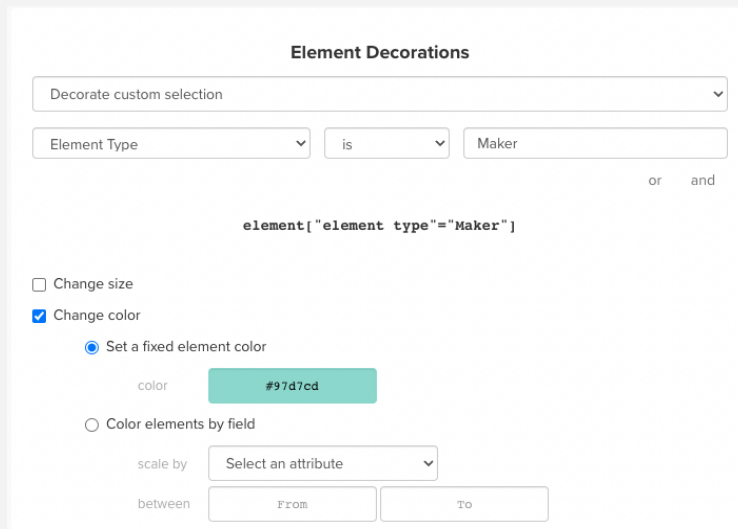
Designing elements, icons and images

I want to give my stakeholders a different color

Each stakeholder in your map is called an element. Let's say you have three stakeholder types in your map: makers, restaurants and doctors. You would like to distinguish these stakeholders on the map by a different color so that people can easily read your map.

Basic Editor

6. Press "t" on your keyboard to open the editor
7. Select "Decorate Elements"
8. Select "Decorate a custom selection"
9. Select the field by which you want to change the color. *For example, Element Type= Makers*
10. Select "change color"



Advanced Editor

1. Press "t" on your keyboard to open the editor
2. Switch to Advanced Editor
3. Open a new code block and copy this code

```
Unset
element["element type"="Makers"] {
  color: #97d7cd;
}
```

4. If you want to color your stakeholders by their element type, just replace "Maker" with any of your chosen stakeholders.
5. Replace the color code with your own choice
6. Press "Save Changes"

I want to add icons or images to my stakeholders based on their type

Basic Editor

7. Press “t” on your keyboard to open the editor
8. Select “Decorate Elements”
9. Select “Decorate a custom selection”
10. Upload an image from your computer or add an image URL.
11. If you want icons, you can also add icons from the free [Fontawesome](#) icon library. But you will need the advanced editor for that

Element Decorations

Decorate custom selection ▼

Element Type ▼ is ▼ Maker input field

or and

`element["element type"="Maker"]`

Change size

Change color

Change shape

Add image

image url [upload image](#)

Add bullseye

Add shadow

Legend

If you would like to include this decoration in the legend, please add a label to include below:

Advanced Editor

1. Press “t” on your keyboard to open the editor
2. Switch to Advanced Editor
3. Open a new code block.
4. You can copy the following code and then adjust it.

Unset

```
/* Construction & building trades */
element["activity"="Construction trades"] {
  color: #DAA520;
  icon: hammer;
  icon-color: white;
}
```

5. Let us look at the **second** line first. This is a “selector”. It basically says: select all elements that have been marked as construction trades in the spreadsheet column , called “activity”
6. Now, behind this select, you can add all kinds of design rules. Quite simple. Between the brackets { }, you add icons, images, icon color in the same format. To get the icon right, go to [fontawesome](#), find a free icon and copy the icon name
7. You can change the color of the background by simply replacing the color code
8. In the first line, you can optionally add a **legend** name for the element

I want to hide some stakeholders in one of my views

Sometimes, you want to create map views that do not show the full set of your stakeholders. For example, many of the CENTRINNO Fab City pilots have created maps that show stakeholders around a specific topic, such as wood, textiles, built environment or food. To create a view only with some stakeholders, you can use the **Filter Function** in KUMU:

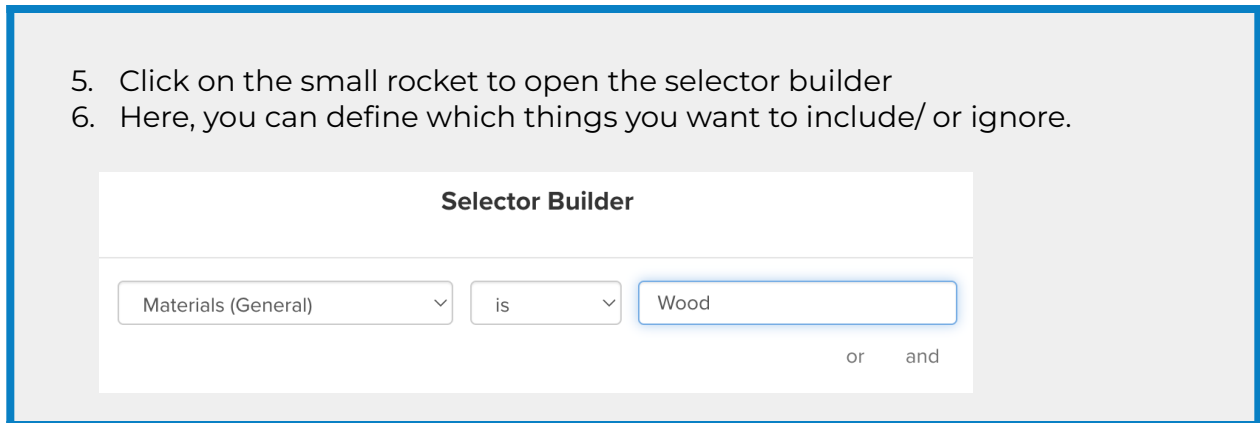
Basic Editor

1. Press “t” on your keyboard to open the editor
2. Select “Filter”
3. If you want to hide specific stakeholders based on their type, just use the checkboxes.
4. If you want to hide stakeholders based on another rule, you can use the “Also include” and “Ignore” Function.

Also include *(in addition to what's checked above)*



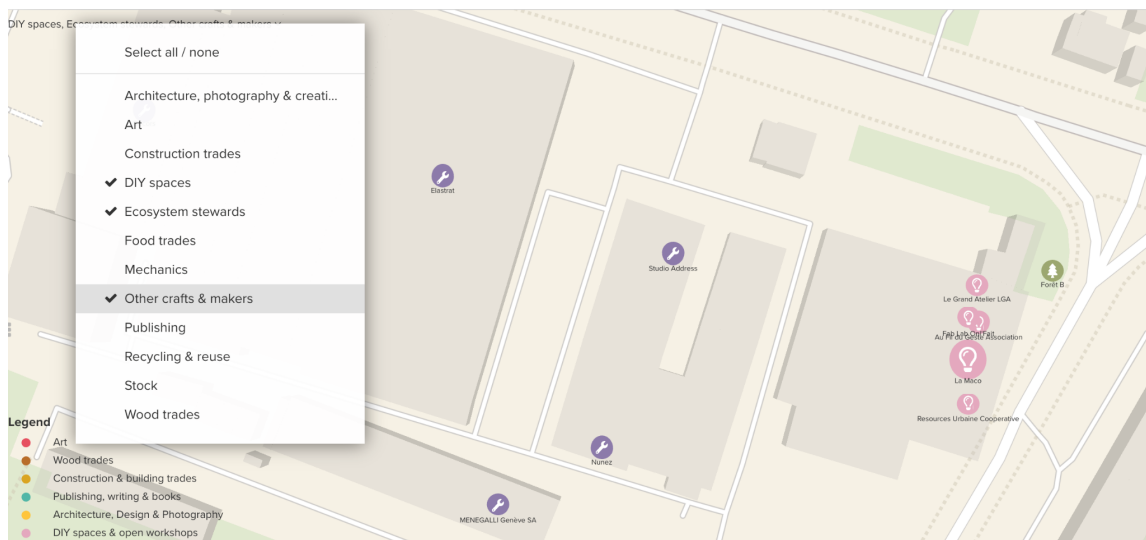
5. Click on the small rocket to open the selector builder
6. Here, you can define which things you want to include/ or ignore.



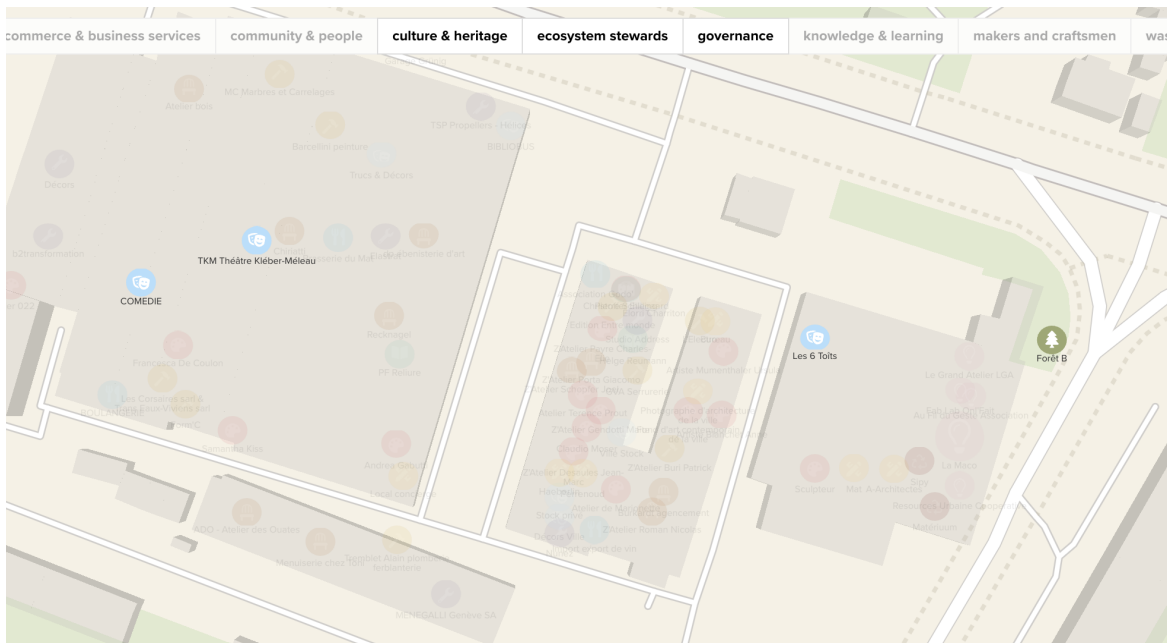
Designing controls

First of all, what are controls? Controls are little buttons on your map that allow you or your map visitors to interact with your map. In KUMU, there are three types of main controls.

- **Filters:** Filters temporarily allow you to hide certain elements. You can do this via a dropdown, buttons or labels. Everything that is not selected will disappear.



- **Showcases:** Showcases are very similar, if not equal, to filters. But instead of hiding the unselected elements, it will simply fade them out.



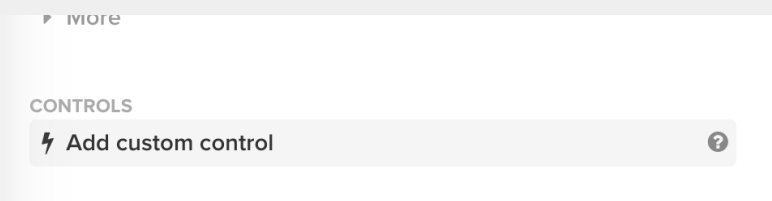
- **Clusters** (only for non-spatial maps): Clusters connect all elements based on a common field. As an example, you can connect all wood workers, metal workers etc.

I want to create a dropdown list based on element types

Maybe the simplest control is to create a drop-down list that lets you filter your map and thus, highlight different elements.

Basic Editor

1. Press “t” on your keyboard to open the editor and select “Add custom control”



2. Select the type of controls you would like



3.3. Diving Deeper - The Advanced Editor

The advanced editor is very useful to know better. It will help you to customize your map and edit the map more flexibly. While it can be quite overwhelming for non-coders to see so many codes, it is easy once you understand the basics. First of all, let us define the three main types of “**code blocks**” that you need:

1. **@setting:** A typical @settings code for a KUMU map contains information about the basic default view settings like layout, template, render quality, and more. Here is a common settings block.

```
Unset
@settings {
  template: geo;
  renderer: canvas;
  scale-max: 4;
  theme: light;
}
```

2. **@controls:** In contrast, the @controls tab allows you to customize how people interact with your maps. You can create filters, showcases, add legends and more.

```
Unset
@controls{
  bottom-left {
    legend {
      title: " ";
    }
  }
}
```

3. **Selectors:** You notice, the two code blocks settings and controls have an @-sign in front. They give KUMU special instructions on how to behave. But the most common way to edit in the KUMU Advanced Editor is by a **selector**. Selectors are important elements within the KUMU syntax that pick all the elements that we want to apply certain designs, colors and images to. In their simplest form, this is what selectors look like. You can simply replace the **Field** with any column header in your spreadsheet and “Values” with the answer you want to select.

```
Unset
element["Field"="Values"]
```

A few code blocks you might like

Using the @settings section to filter elements

Within the settings tab, different elements and connections from the data table or sheet can be filtered, so a map will only display those elements under 'include:' - and within this selection different elements can still be ignored/filtered out through the 'ignore:'

```
@settings {
  template: geo;
  include: element["label"=" "], element["label"=" "],
  connection;
  ignore: element["label"=" "];
}
```

Using the @settings section to set the overall font and element size

```
@settings {
  template: geo;
  connection-size: 2;
  element-size: 35;
  font-size: 16;
}
```

Scaling connections based on size in data

KUMU allows for a large number of decoration options, of which one is connection scaling. Here is one example of how to scale your connections in the map based on the total volume of material going through them:

```
connection {
  scale: scale(volume (tons)", 1, 10);
}
```

Changing item colors and borders

There are plenty of options to customize (decorate) the looks of your different elements in the KUMU views:

<https://docs.kumu.io/guides/data-driven-decorations.html> .

Often used are borders, images and element-shapes or colors. There are a number of settings which can be added below the @settings block, as listed here:

Borders

```
element["="] {
  border-width: 2;
  border-color: white;
}
```

Images

```
element["="] {
  border-width: 2;
  border-color: white;
  image-url: url(https://insert\_image\_name.png);
  image-size: contain;
}
```

Shapes

```
element["="] {
  border-width: 2;
  border-color: white;
  image-url: url(https://insert\_image\_name.png);
  shape: triangle;
}
```

Colors

```
element["="] {
  border-width: 2;
  border-color: white;
  image-url: url(https://insert\_image\_name.png);
  shape: triangle;
  color: #d93e4a;
}
```

Element size

```
element["="]{
  size: 3;
}
```

Step 4: Sharing your maps - creating and editing presentations

To display your mapping to your audience in a story-like fashion, KUMU has multiple options available. For one, there is the option to create presentations in which a mixture of maps and accompanying text can be supplied. For a second option, maps can be directly embedded in a website.

What you will need

- A KUMU project

Step-by-Step

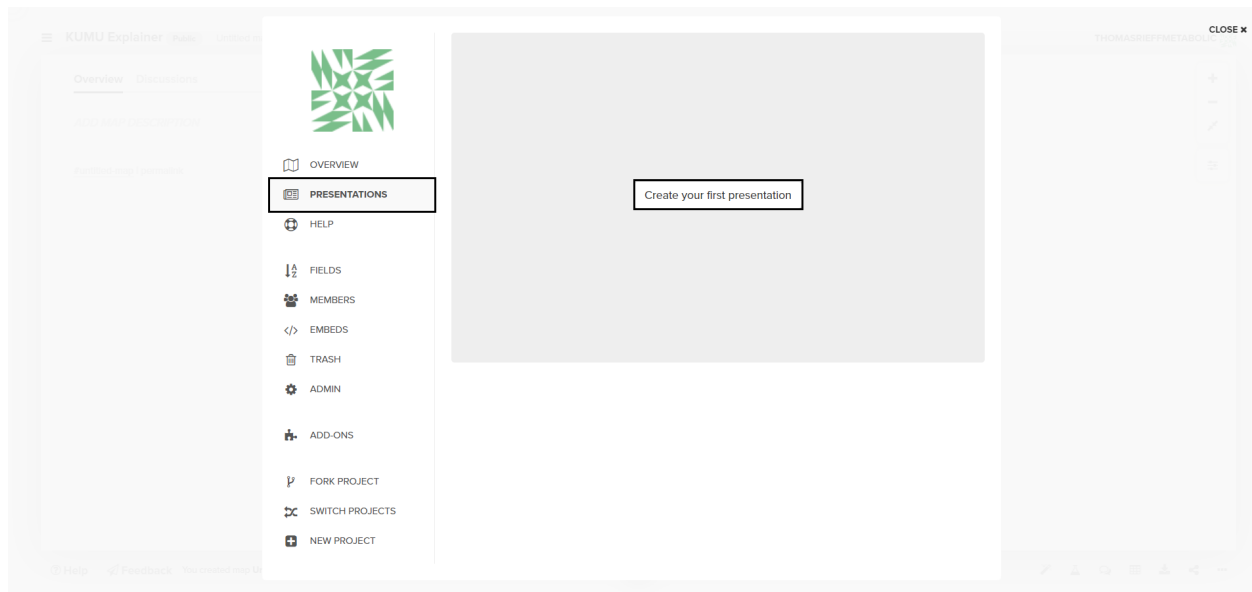
1. Creating Presentations
2. Embedding Presentations and Maps on external websites

4.1. Creating Presentations

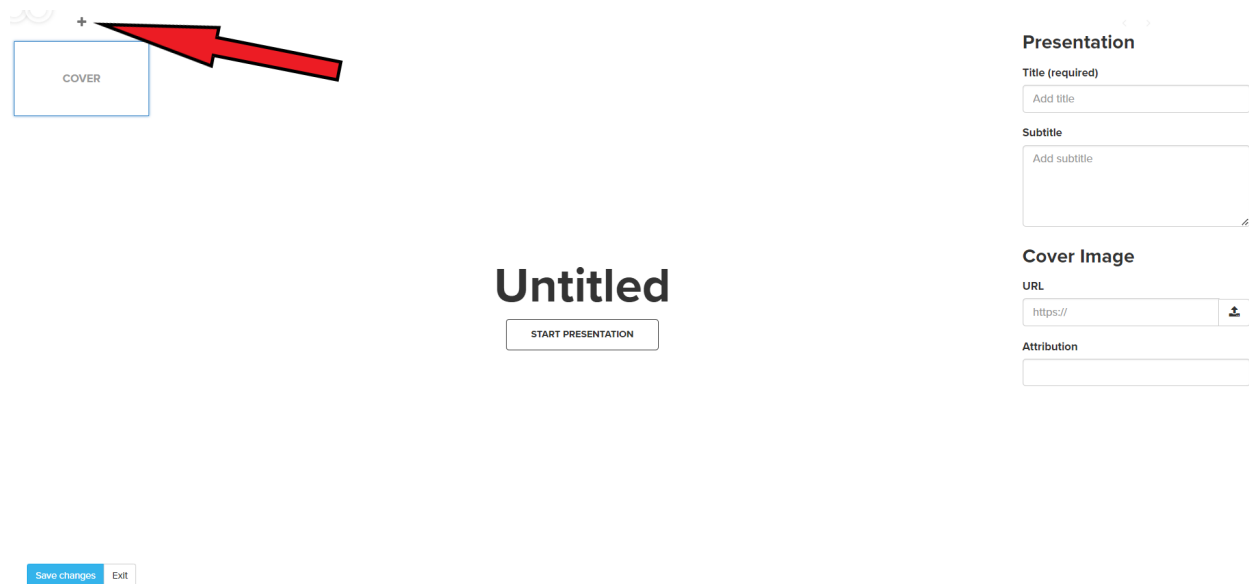
Once you have created a map with some interesting sub-views, you can create a presentation around these views to give them their unique story and walk your viewers through your map. Presentations are very similar to a slide deck or powerpoint presentation. Apart from your interactive maps, you can also add images or text to support the narrative of your map. For inspirations from other CENTRINNO Fab City Pilots, check out [Barcelona's](#) wood potential presentation or [Iceland's](#) Weaving the Circle presentation. You can find the option to create the presentation by clicking on the KUMU overview tab:



The overview will look as follows:



By clicking on 'Presentations' and then 'Create your first presentation', a new presentation will be created in which you can display different maps and views. Your first slide will look as follows:



Remember to add a title to your presentation in the top right of the overview - after which we can start adding either a picture to this slide through an upload (URL/button) or add a new slide in the top-left of the screen. Within the new side, we can choose the map/view we want to display (top left buttons above the map) - we can also choose what kind of slide we want to display (top right underneath 'Slide #1'). If you need more information on the styling and tuning of your presentation, there are in-depth options available on this link: <https://docs.kumu.io/guides/presentations>.

Presentation tips and tricks

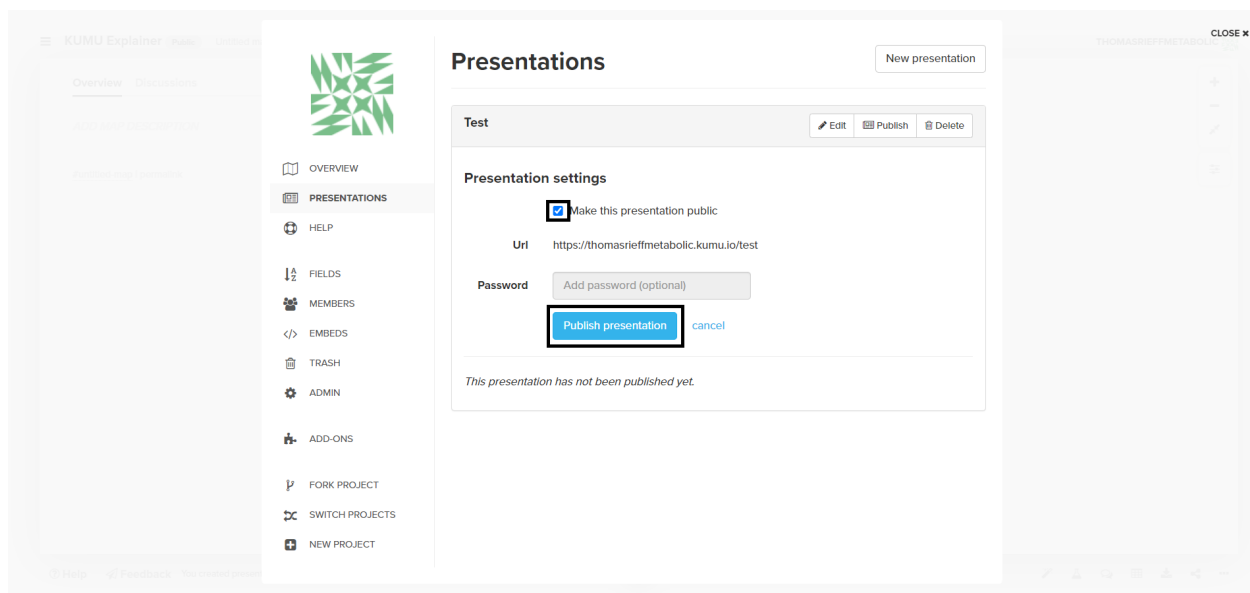
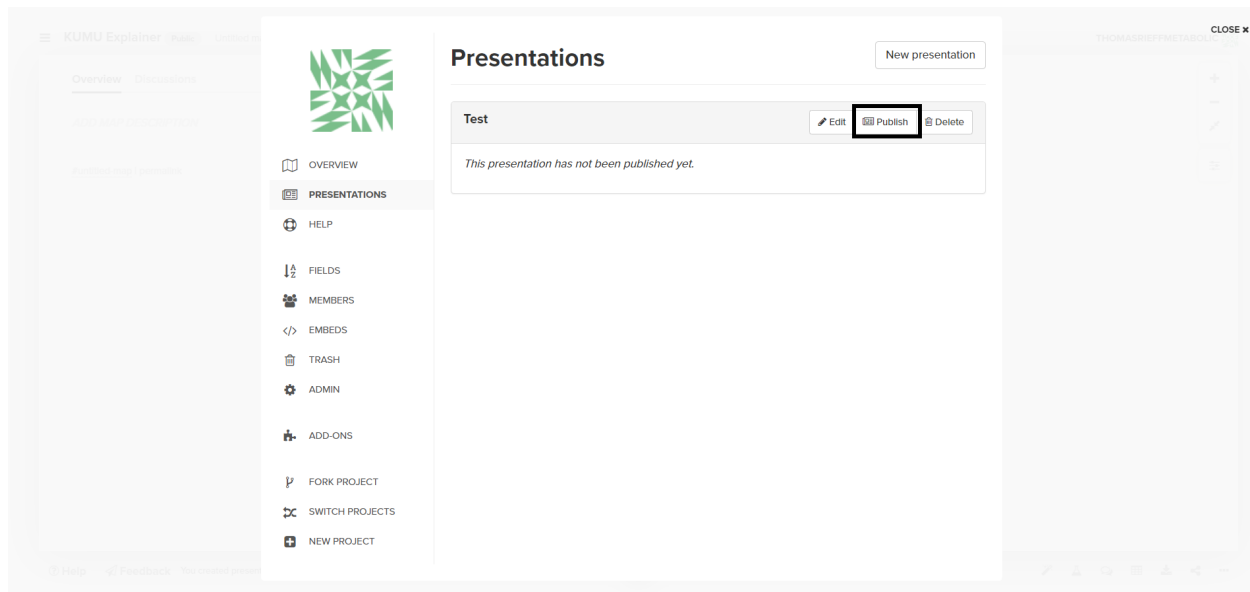
- If you want to upload a picture within a block of text, you need an image URL. Now, sometimes you don't have that but only a file on your drive. Here is a little hack as a work-around: First, create a temporary **image slide**. Then, you can choose to upload an image from your drive. In the side panel, KUMU will generate a URL link that you can copy. Now, go back to the text block where you want the image and type the code **![alt](insert URL)**. Where it says "insert URL", paste the copied URL code. You can then delete the temporary image slide.
- If you want to only show part of your full map on a slide, you must first create a new filtered **view**. You cannot do this in the presentation editor but only in the normal map view. Think about which views you want and build them first and save them as separate views. For more information on creating views, read [KUMU's help doc](#).

4.2. Embedding maps and presentations externally

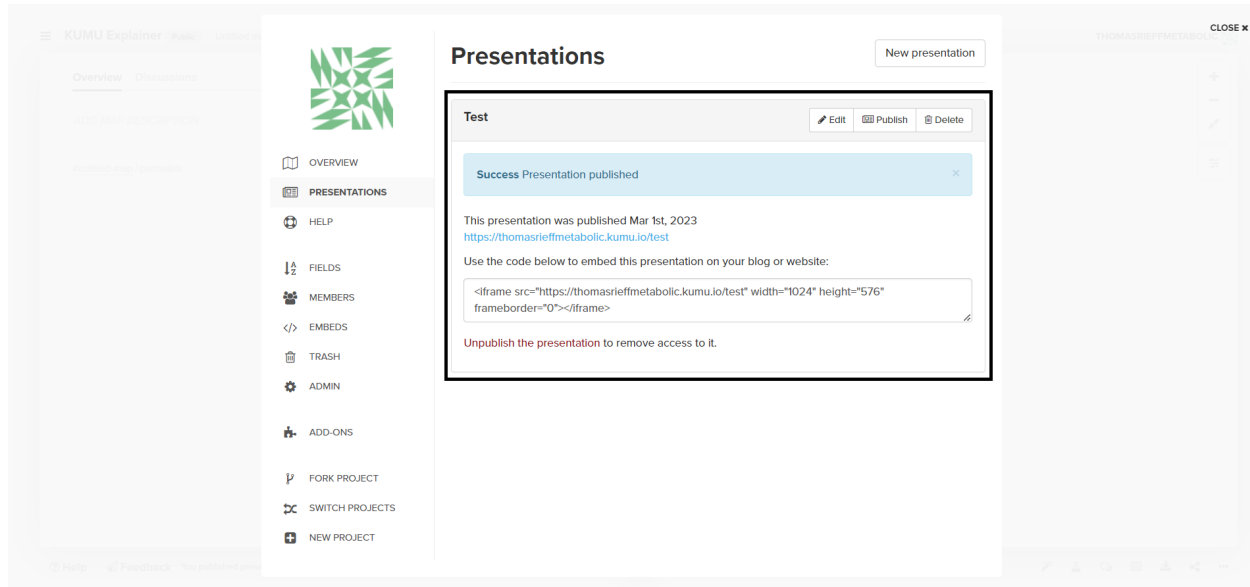
KUMU maps and presentations can be embedded in other webpages, for which you can also refer to the following link:

<https://docs.kumu.io/guides/share-and-embed.html>

After finishing your presentation, click the 'publish' button to create a simple embed for external sharing and websites. You can choose between creating a private or public presentation. Public presentations are visible for anyone on the website where the embed is stored, or through the presentation-specific link. Private presentations require a custom password to be accessed.



When you click the publish button, and the publish is successful, you will see the following screen:



The link in blue will directly lead to the presentation. If you'd prefer to embed the presentation on a website, then the code/iframe can be used.

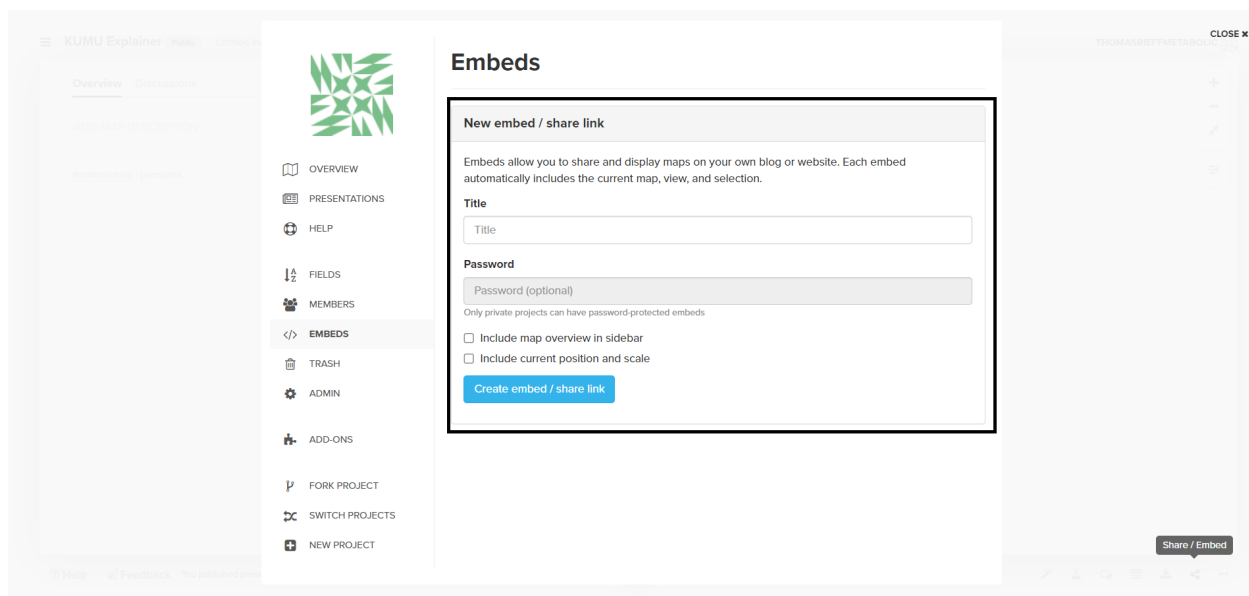
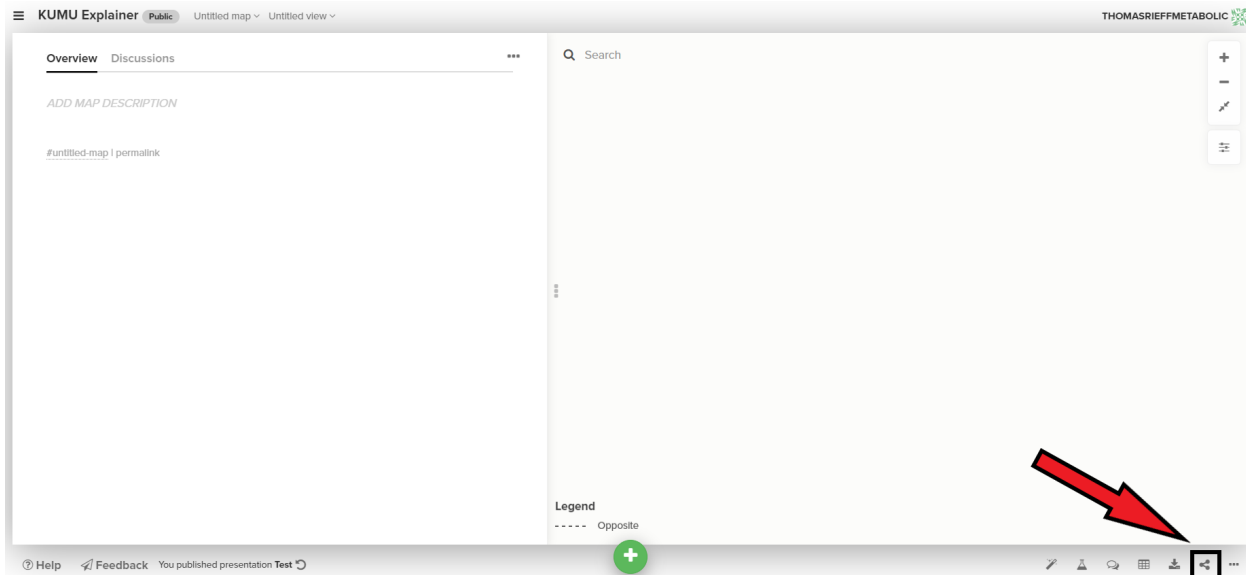
It is important to know that embeds in webpages will not always update automatically: this means that presentations might have to be republished and re-embedded when changes are made.

Linking the specific guide towards presentation embedding:

<https://docs.kumu.io/guides/presentations.html#embed-a-presentation>

Embedding a single map

Sometimes, you might want to share only one map view from various views, without creating a full slide deck. To embed a single map in a website, the share/embed button can be clicked. This leads to the following screen, where the same options apply as for the presentations - either public or private - for private a password will be required.



Resources, help and inspiration

Resource	What can you find?
KUMU help doc	KUMU has an incredible amount of resources to get started with the platform! This specific guide is just a starting point for you to use KUMU for Urban Ecosystem Mapping. Any further questions will be answered in KUMU's videos and help docs
KUMUNITY	The KUMUNITY is an active community of KUMU users on Slack. In case you encounter a problem with your maps which cannot be solved in the help doc, the KUMUNITY is very responsive and will help you out.
KUMU maps library	You can find hundreds of mapping applications on the KUMU
CENTRINNO KUMUs	As part of the CENTRINNO project, nine Fab City Hubs have used KUMU to map their urban ecosystems, creating interesting and diverse cartographies of their stakeholders and resources. Check out all case studies on our website centrinno-cartography.org

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