Introduction to Mobile Data Collection

Using KoboToolbox

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Section 01: Introduction to KOBOTOOLBOX

Objectives: To ensure that participants are well-equipped to use mobile data collection tools effectively and efficiently, resulting in high-quality data for analysis and decision-making.

- ✓ Understanding the Technology
- ✓ Data Collection Methodology
- ✓ Operational Skills
- ✓ Data Management
- ✓ Quality Assurance
- ✓ Analysis and Reporting
- ✓ Fieldwork Preparedness
- ✓ Feedback and Improvement

1.0 Basics of Kobotoolbox

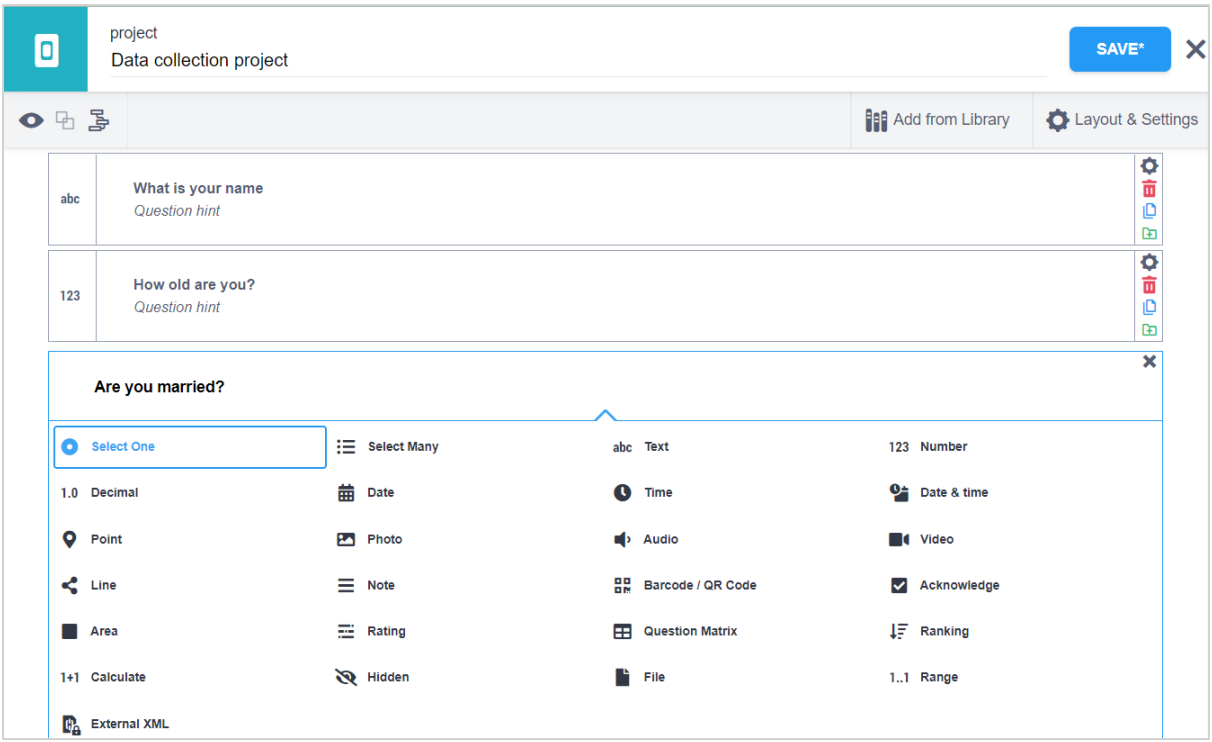
KoboToolbox is an innovative open-source platform for collecting, managing, and visualizing data. It is the mostly widely used data tool for social impact initiatives across the globe.

KoboToolbox makes it easy to develop forms for data collection. It also has features for managing projects, visualizing data, and building complex forms. This article provides a quick overview of a few KoboToolbox basics**.**

Developing forms

1.1 Developing forms

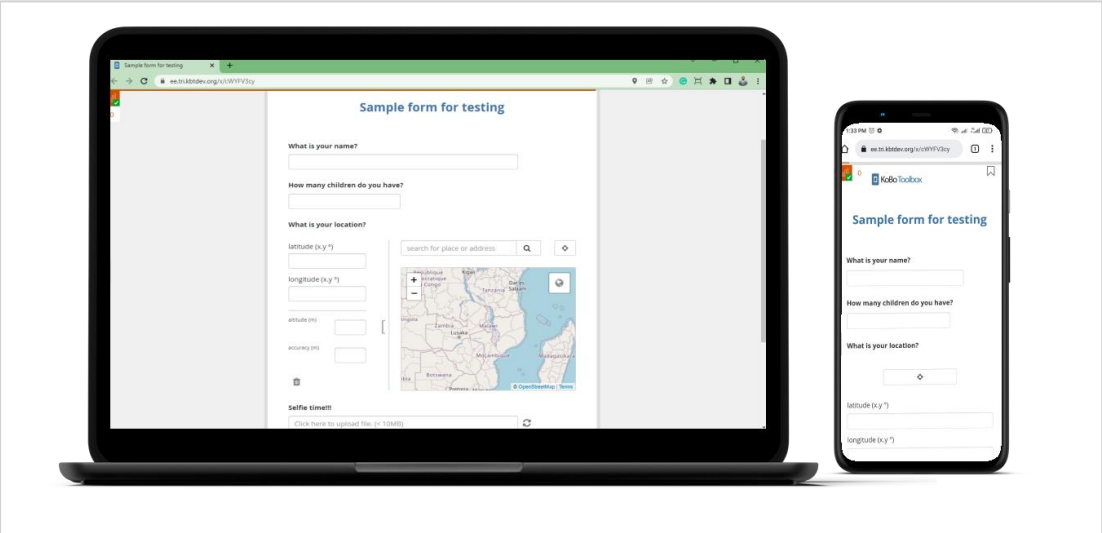
With KoboToolbox's powerful and intuitive Formbuilder, you can build forms with different question types, advanced form logic, and XLSForm.



- **Question types:** Choose from over 25 qualitative and quantitative question types, including text, multiple choice, media, and GPS.
- **Form logic:** Use skip logic, calculations, and validations for high quality data.
- **XLSForm:** To create more complex forms, use XLSForm in Excel or Google Sheets, upload to KoboToolbox, and edit directly in the KoboToolbox Formbuilder.
- **Translations:** Easily add translations of your forms in hundreds of different languages.

1.2 Collecting data

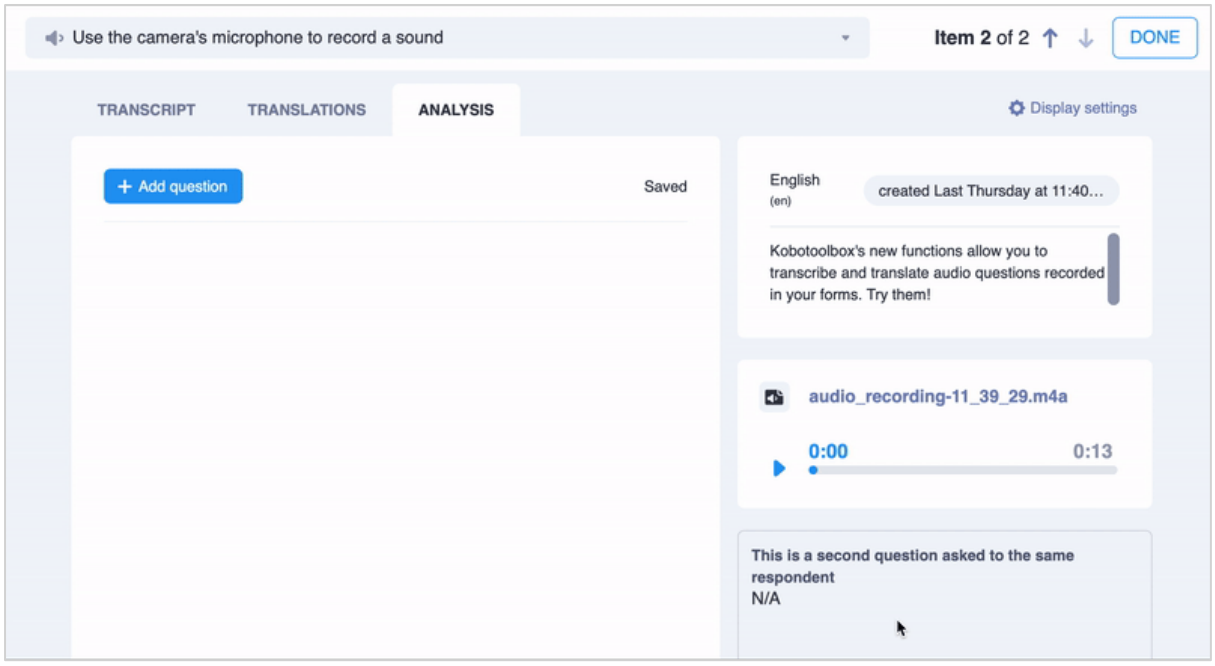
Collect data offline or online on any device with web forms and the KoboCollect app.



- KoboCollect: Use the KoboCollect Android app to collect data on mobile devices. You can easily add forms from your KoboToolbox account to KoboCollect and transfer data collected to KoboToolbox. Download the KoboCollect app for free from Google Play.
- Web forms: KoboToolbox uses the open source software Enketo web forms. Web forms can be used in any browser on mobile devices, laptops, or desktops.

1.3 Reviewing and analysing data

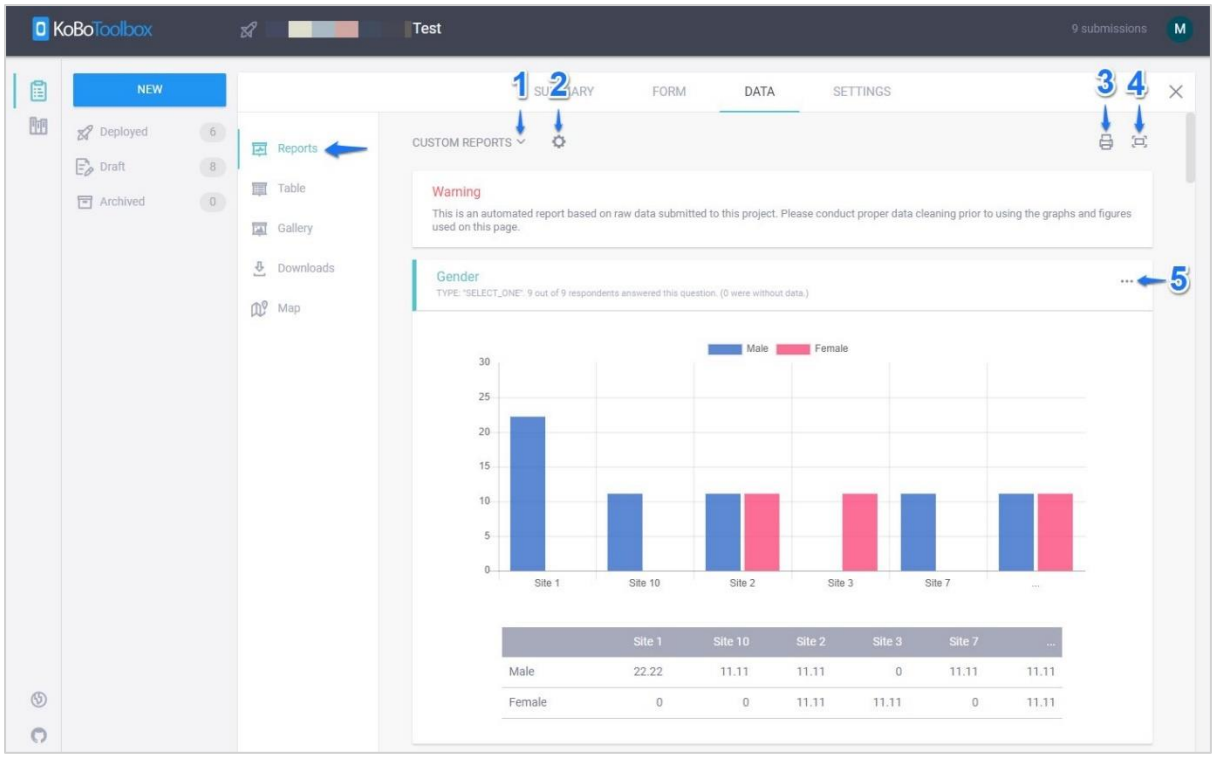
With KoboToolbox, you can ensure data quality and generate insights with flexible table views and qualitative data features.



- Table views: Customize views, display data in multiple languages, and validate submissions in real time.
- Automated transcription and translation: Use automated transcription and translation features for qualitative data.
- Qualitative analysis: Use the qualitative analysis features to identify themes and patterns in audio responses.

1.4 Visualizing and downloading data

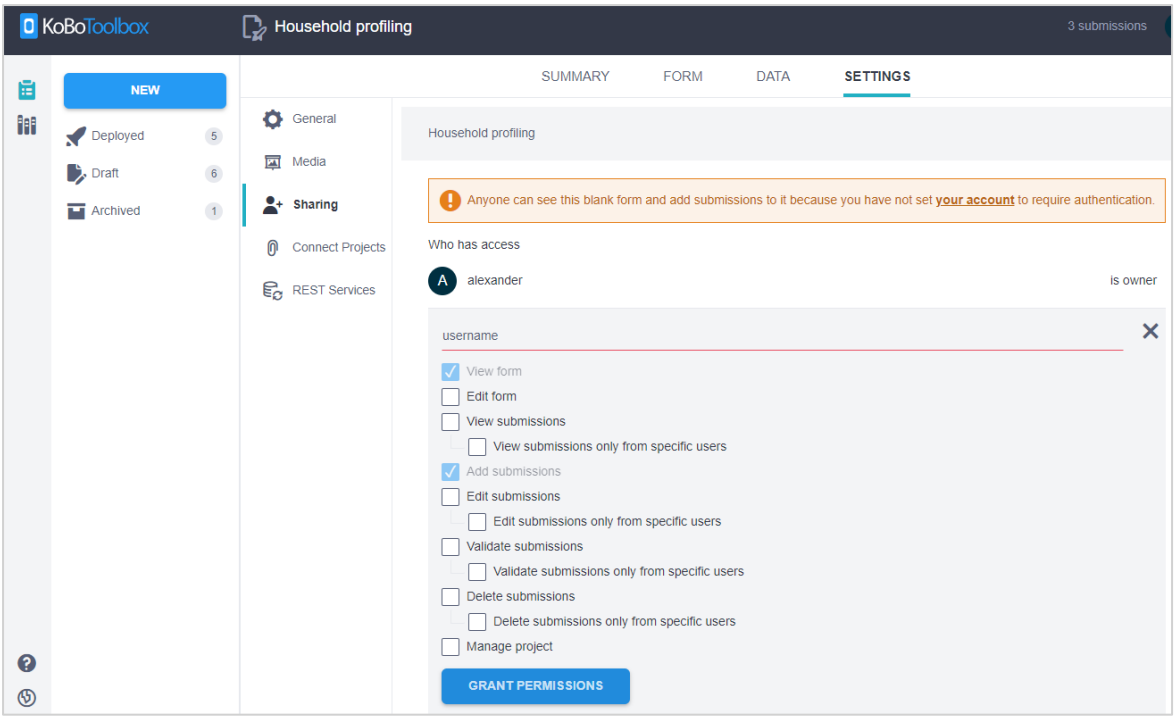
KoboToolbox makes it easy to identify and share insights with reports, data visualization, and download options.



- Custom reports: Visualize data with custom reports and interactive maps.
- Download data: Download and export data in multiple formats, including XLS, CSV, KML, ZIP, and GeoJSON.

1.5 Managing projects and teams

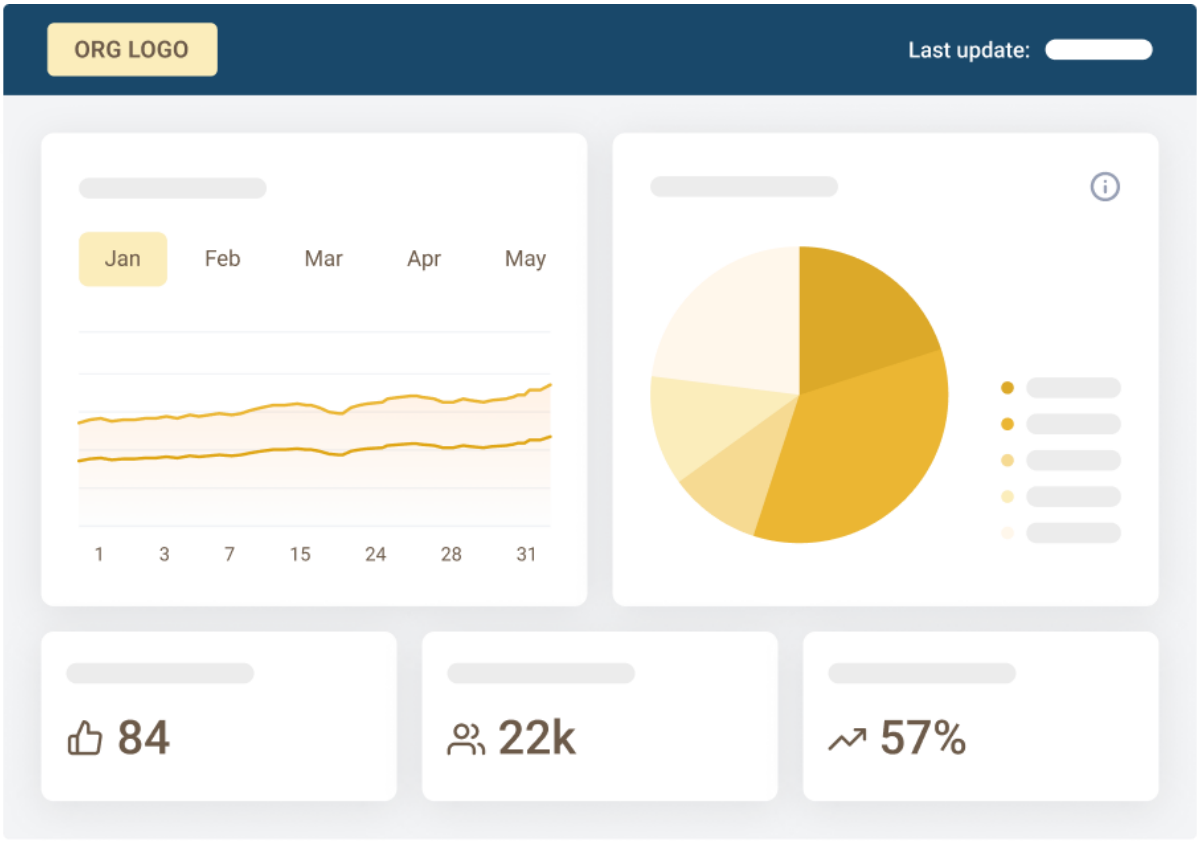
Easily manage one survey or hundreds with KoboToolbox's project management features, including project summaries, permissions, and case management.



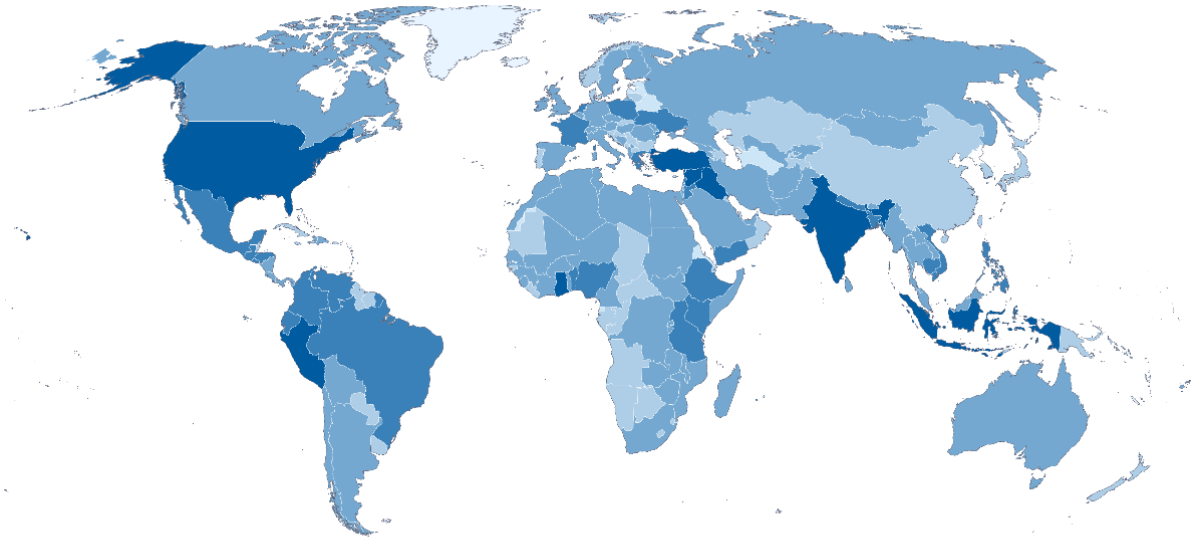
- Project summaries: Monitor submissions, view team members, and track form details.
- Permissions: Share projects with team members using row-level permissions.
- Case management: Link projects using dynamic data attachments to collect and manage longitudinal data.

1.5 Connecting KoboToolbox with other platforms

Connect project data across different platforms and integrate your KoboToolbox data with other software such as Excel and Power BI.



- Synchronous exports: Share data across different applications without downloading any files using synchronous exports.
- REST services: Connect your project to external programs using REST services.
- KoboToolbox API: Use the application programming interface (API) to build interactive dashboards and visualize data with other software.



KoboToolbox users in 2022 by location

1.6 Why KoboToolbox is unique

KoboToolbox is hosted and maintained by the international nonprofit organization Kobo. Our mission is to empower individuals and organizations around the world with high quality data collection tools for creating data-driven social impact.

Supporting global impact

KoboToolbox is the most widely used data collection tool for humanitarian action, development, peacebuilding, human rights, environmental protection, and other social impact initiatives.

Section 2: Account Creation & Navigating the interface

What you will learn:

- How to create an account in Kobo Toolbox
- Familiarizing with the interface

The first step for all users when getting started with KoboToolbox is to create an account. This section will guide you through the steps for creating an account and signing in to your account.

How to access KoboToolbox

There are three ways to access KoboToolbox:

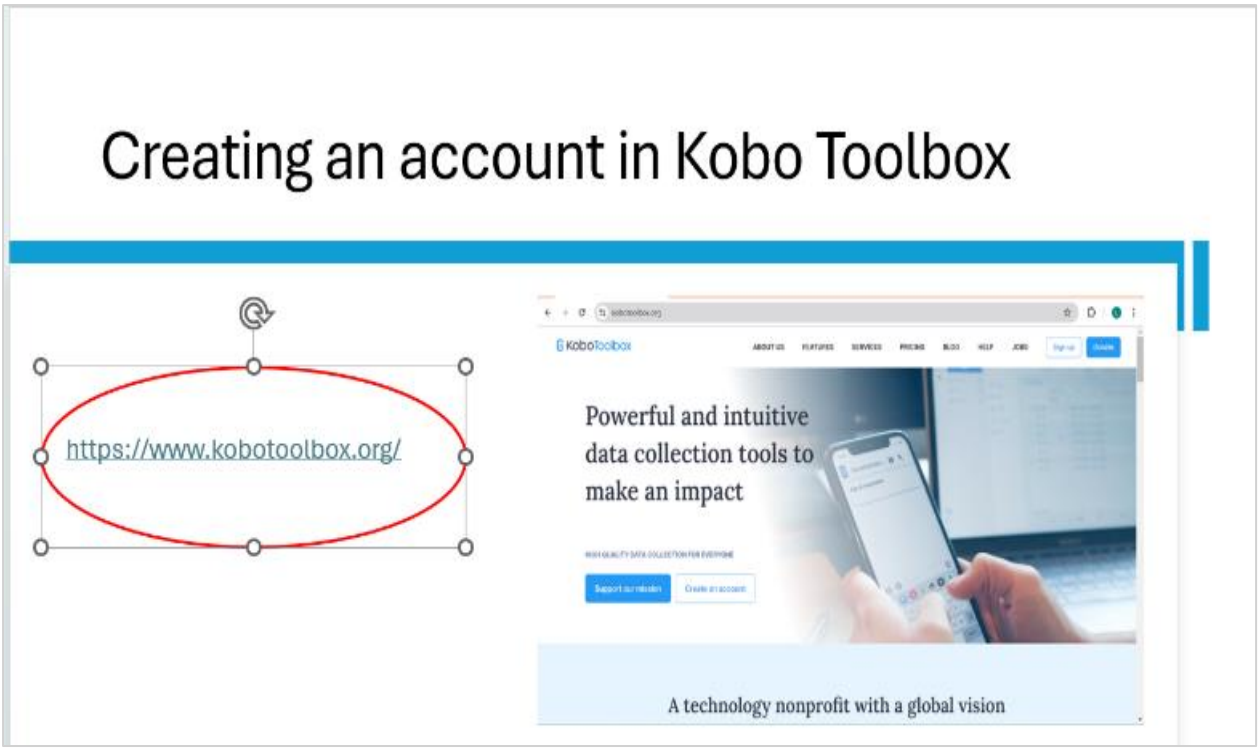
1. **Public servers:** Most users access KoboToolbox using one of the public servers listed on the Sign up page. The Global KoboToolbox Server is used by the majority of our users. The European Union KoboToolbox Server is hosted in Ireland and is used by organizations that require or prefer data hosting in the European Union (EU).
2. **Private servers:** Many large organizations have their own private KoboToolbox server. If your organization has a private server, you can access your account via your organization's server URL.
3. **Install KoboToolbox on your own server:** Advanced users can install KoboToolbox on their own server (or on a local computer or device) using Docker. For more details on how to install your own instance of KoboToolbox, visit our kobo-install repository on GitHub.

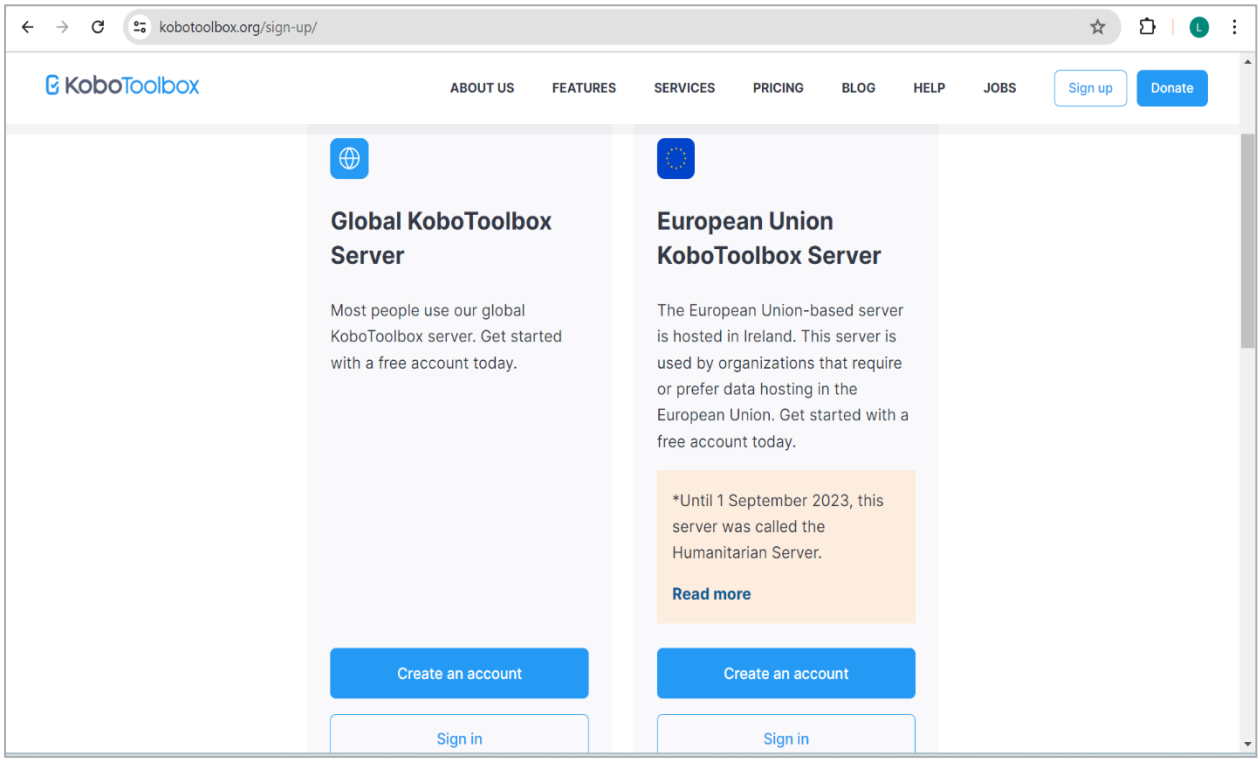
Creating an account

- To create a new account on KoboToolbox, go to the KoboToolbox Home page and click SIGN UP on the menu. This will take you to the Sign in or create an account page of the website.

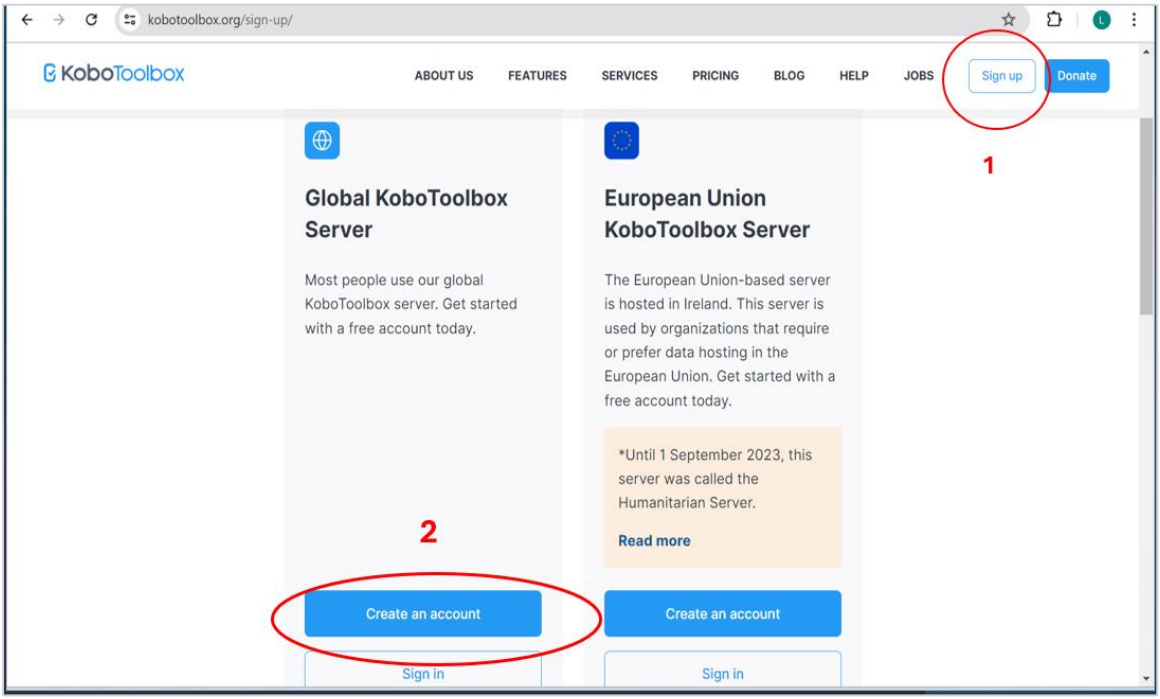
Step 2.1: Go to: www.kobotoolbox.org

The following page should be displayed

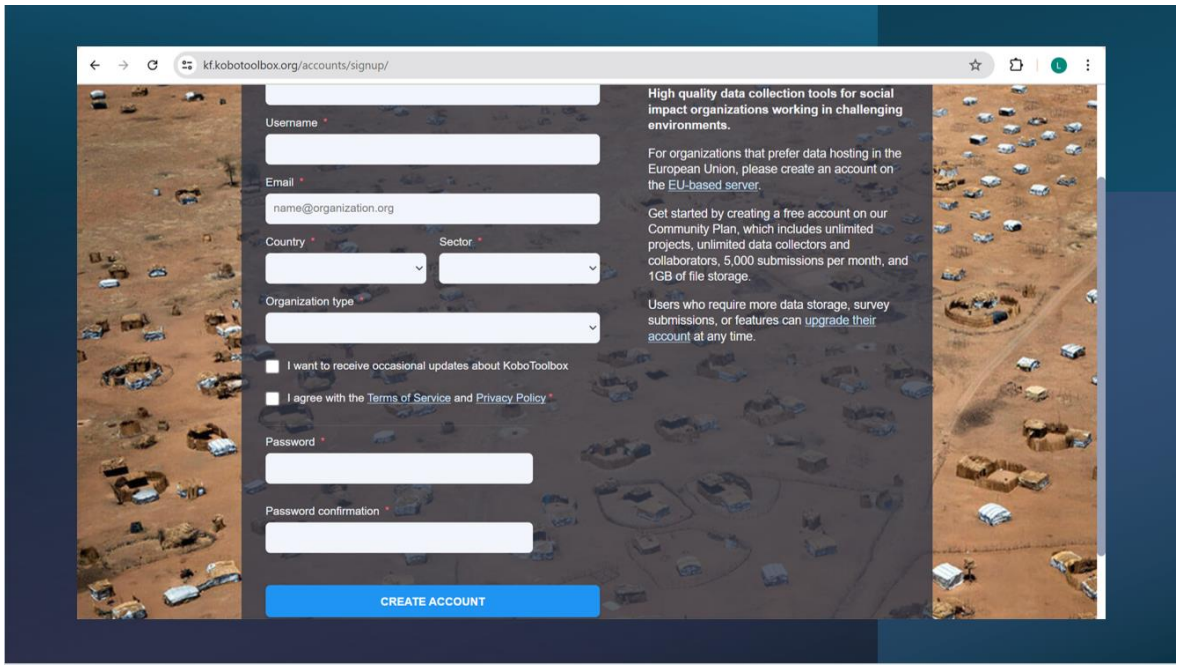

Creating an account in Kobo Toolbox
https://www.kobotoolbox.org/
KoboToolbox
Powerful and intuitive data collection tools to make an impact
A technology nonprofit with a global vision


kobotoolbox.org/sign-up/
KoboToolbox
ABOUT US
FEATURES
SERVICES
PRICING
BLOG
HELP
JOBS
Sign up
Donate
Global KoboToolbox Server
Most people use our global KoboToolbox server. Get started with a free account today.
Create an account
Sign in
European Union KoboToolbox Server
The European Union-based server is hosted in Ireland. This server is used by organizations that require or prefer data hosting in the European Union. Get started with a free account today.
*Until 1 September 2023, this server was called the Humanitarian Server.
Read more
Create an account
Sign in

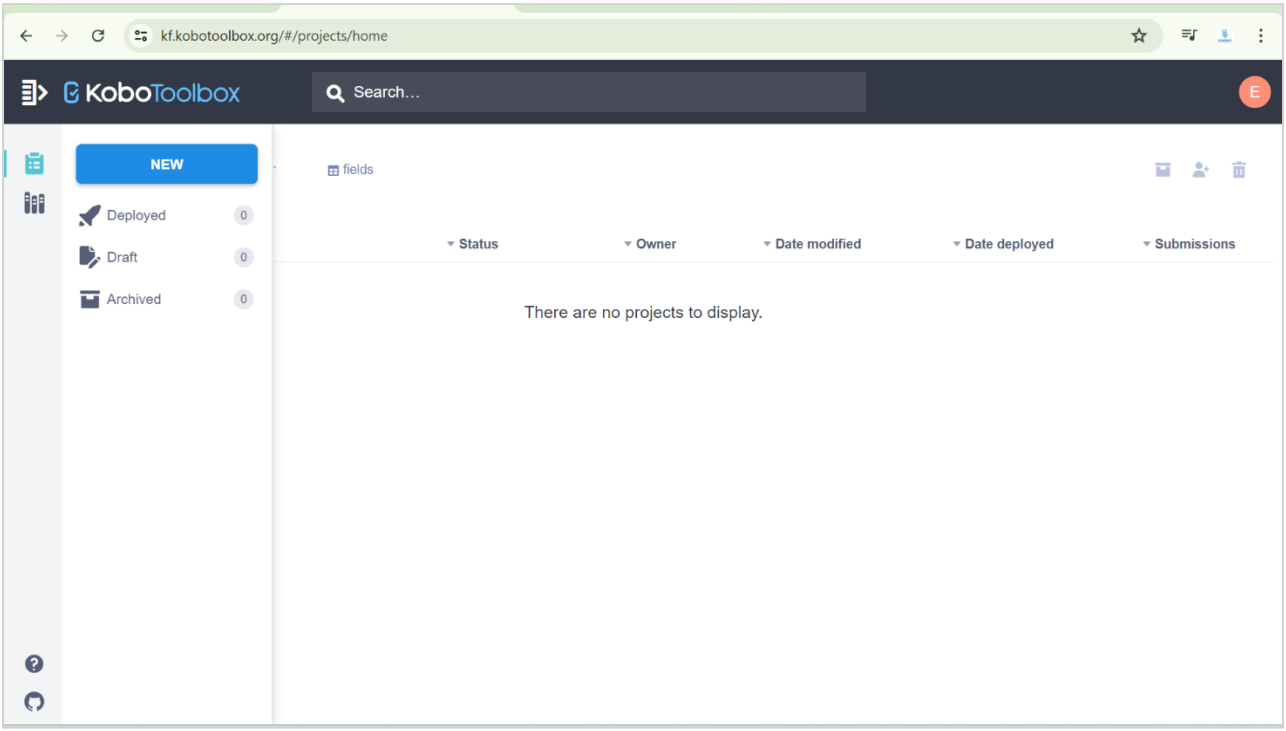
Step 2.2: Select **Sign up** and then click on **Create account** under Global Kobotoolbox Server



Step 2.3: A form should appear as seen below



Step 2.4: The following page will be displayed



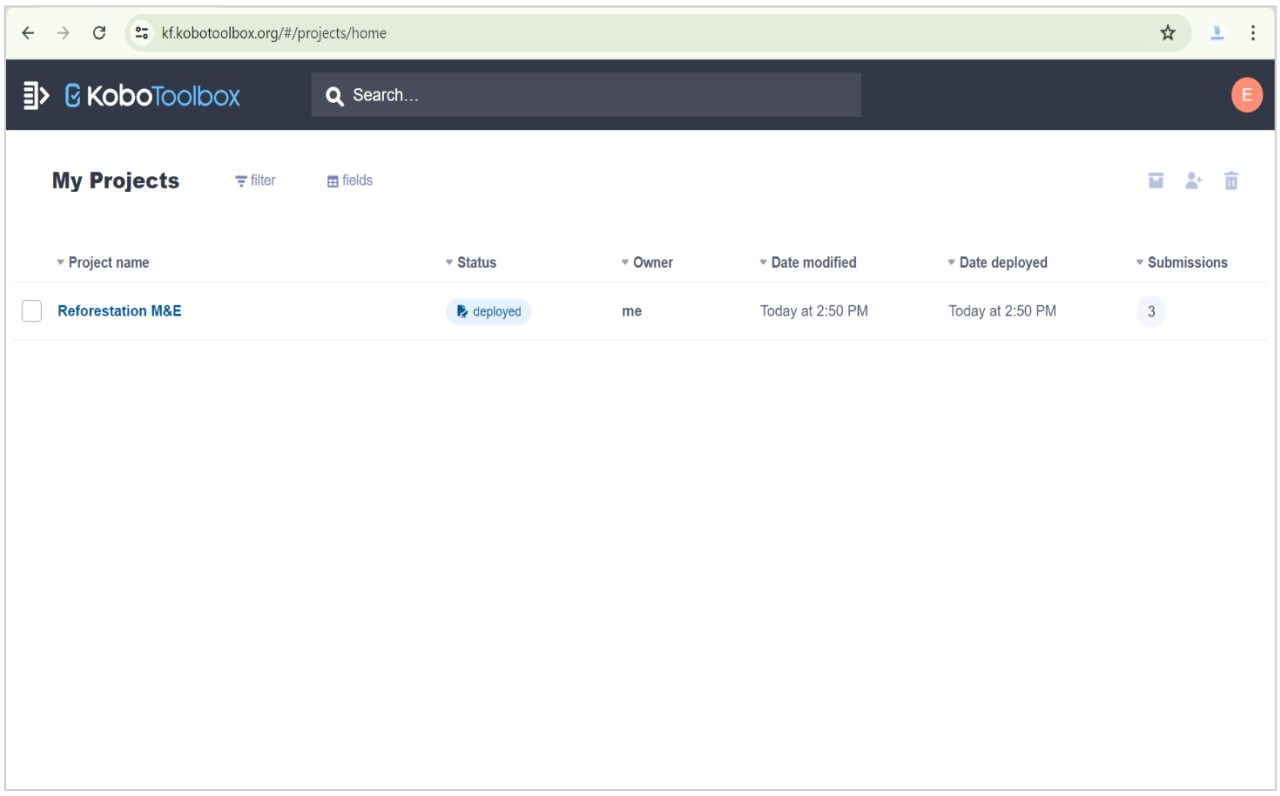
Congratulations! If you are here, we are ready to explore the KoboToolbox interface.

Section 3: The KoboToolbox interface

In this section you will be familiarized with the KoboToolbox Interface and its elements. As you progress through this module you will have the opportunity to get a deeper understanding of the platform.

The interface is user-friendly, designed to help users create forms, collect data, and analyse results efficiently.

By default, when you log in to your KoboToolbox account, you will be taken to the Projects screen.

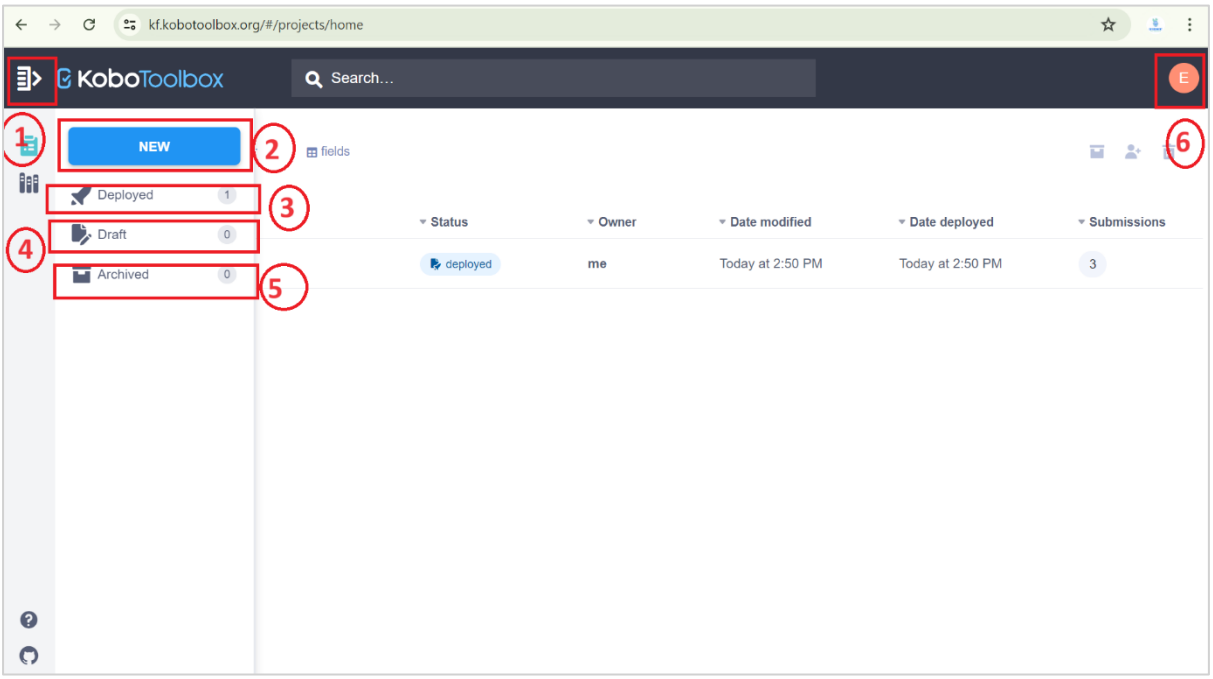


Here's an overview of the main components of the KoboToolbox interface:

1. Dashboard

The dashboard is the home screen that provides an overview of your projects and activities. Key features include:

- Projects List: Displays all your projects with options to create new projects, open existing ones, and view project details.
- Quick Actions: Buttons for common tasks like creating new forms, uploading existing forms, and accessing the library of templates.

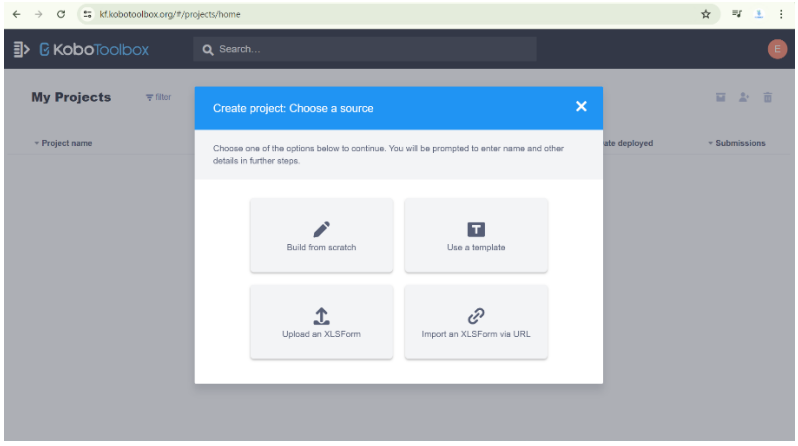


1. This panel displays the project options.
2. Allows the creation of a new form
3. Displays forms which have been deployed
4. Displays forms which are in draft (incomplete and not yet deployed)
5. Archived (No longer in use)

2. Form Builder

The form builder is where you design your surveys or data collection forms. Features include:

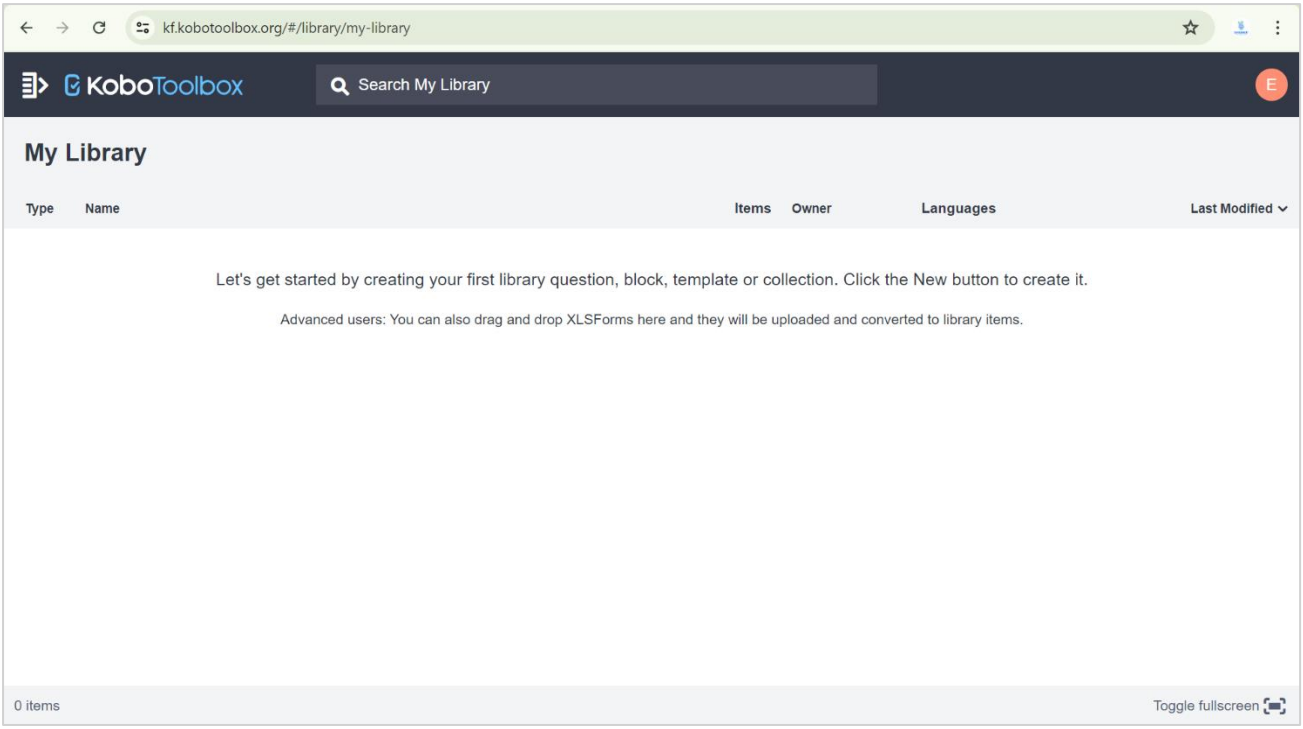
- Drag-and-Drop Interface: Easily add different types of questions (e.g., text, multiple choice, numerical).
- Question Settings: Customize each question with labels, hints, constraints, and default values.
- Preview Mode: See how the form will look on different devices before deploying it.



3. Library

The library allows users to save and reuse questions and groups of questions. This is useful for standardizing data collection across multiple forms.

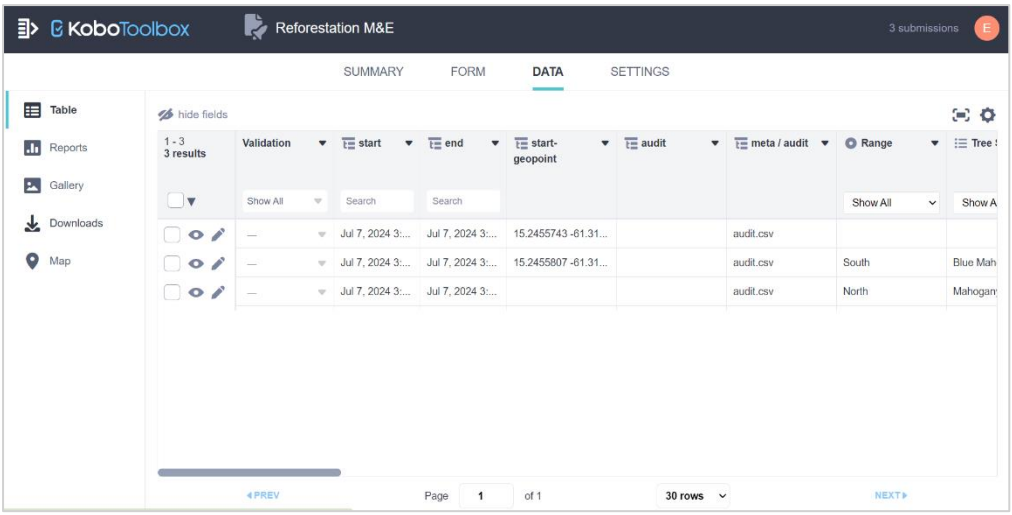
- Templates: Access and import pre-built templates for common data collection scenarios.
- Saved Questions: Store frequently used questions for easy access.



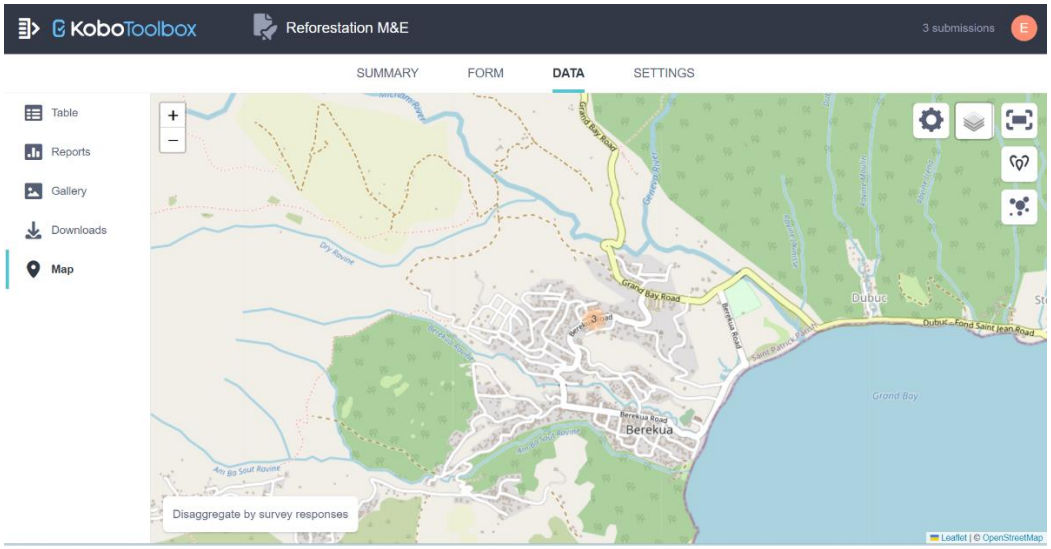
5. Data Management

Once data is collected, KoboToolbox offers tools for managing and analysing it:

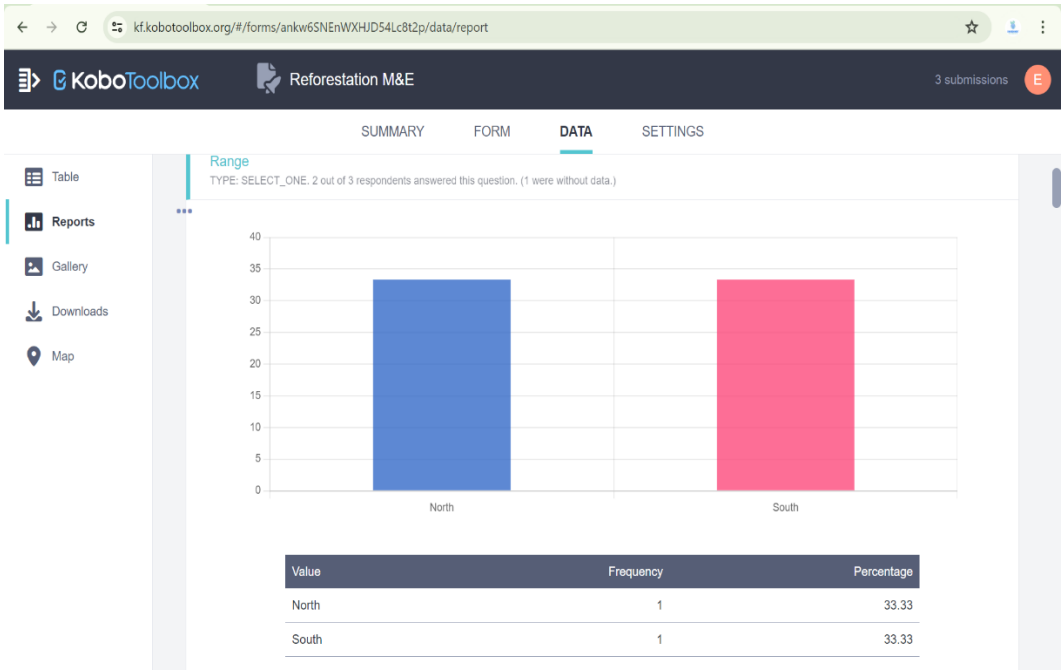
- Data Table: View submitted data in a table format, filter and sort entries, and perform batch actions.



- Map View: Visualize geospatial data on a map, which is useful for location-based surveys.



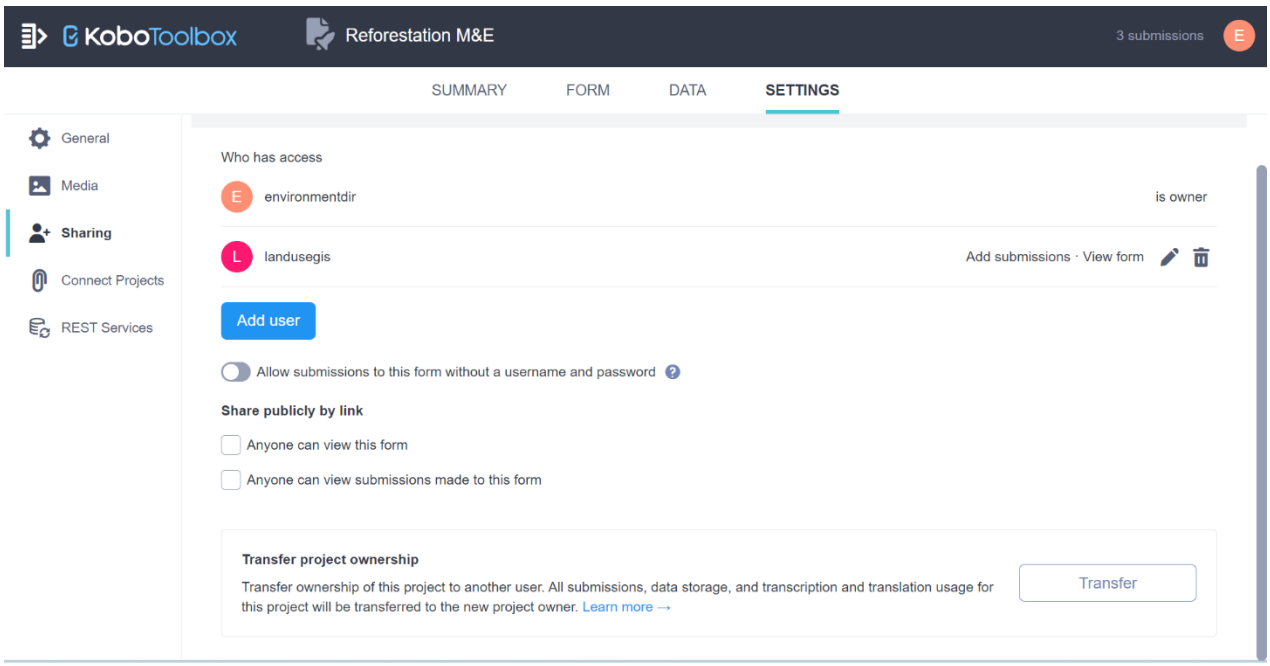
- Reports: Generate basic reports and summaries of your data, including charts and graphs.



6. Settings and Permissions

KoboToolbox allows you to configure settings and permissions for your projects:

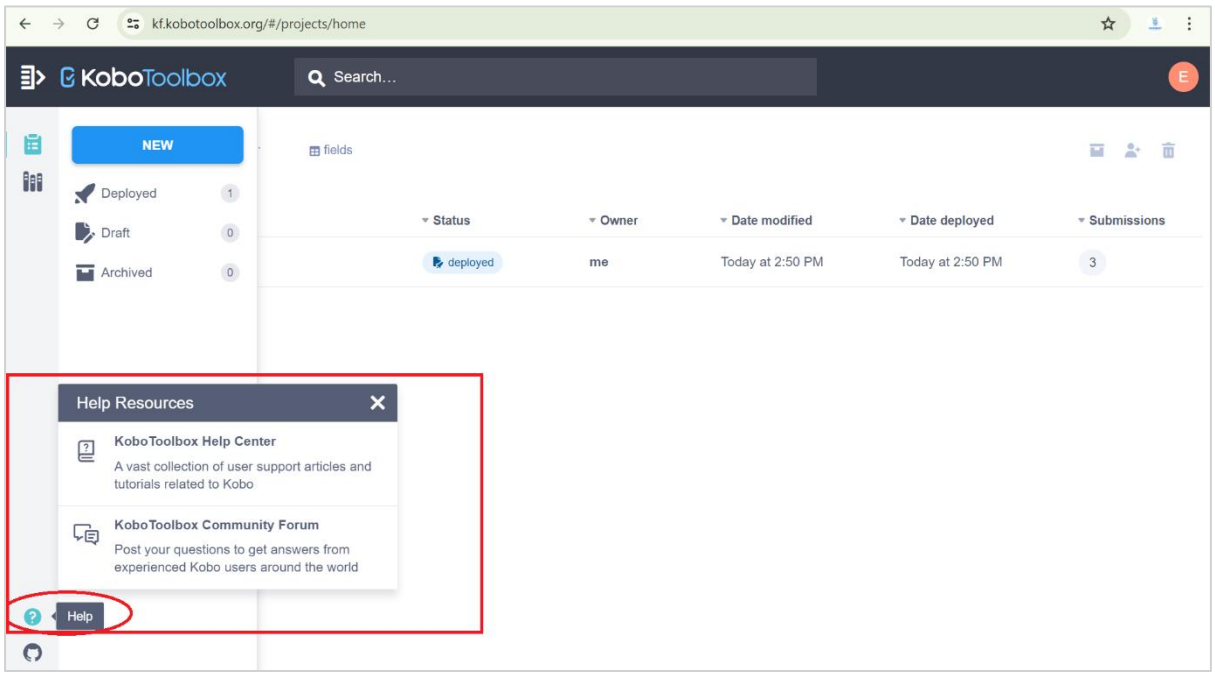
- User Management: Add collaborators to your project and set their permission levels (e.g., view-only, data entry, project admin).
- Project Settings: Adjust settings related to form deployment, data access, and notifications.



7. Support and Resources

The interface provides access to various support and resource materials:

- Help Centre: Access tutorials, user guides, and FAQs to help you get the most out of KoboToolbox.
- Community Forum: Connect with other KoboToolbox users to share tips, ask questions, and find solutions.



Section 4: Creating a new Form

In this section you will learn how to create a new form in KoboToolbox. You will also explore the various types of questions.

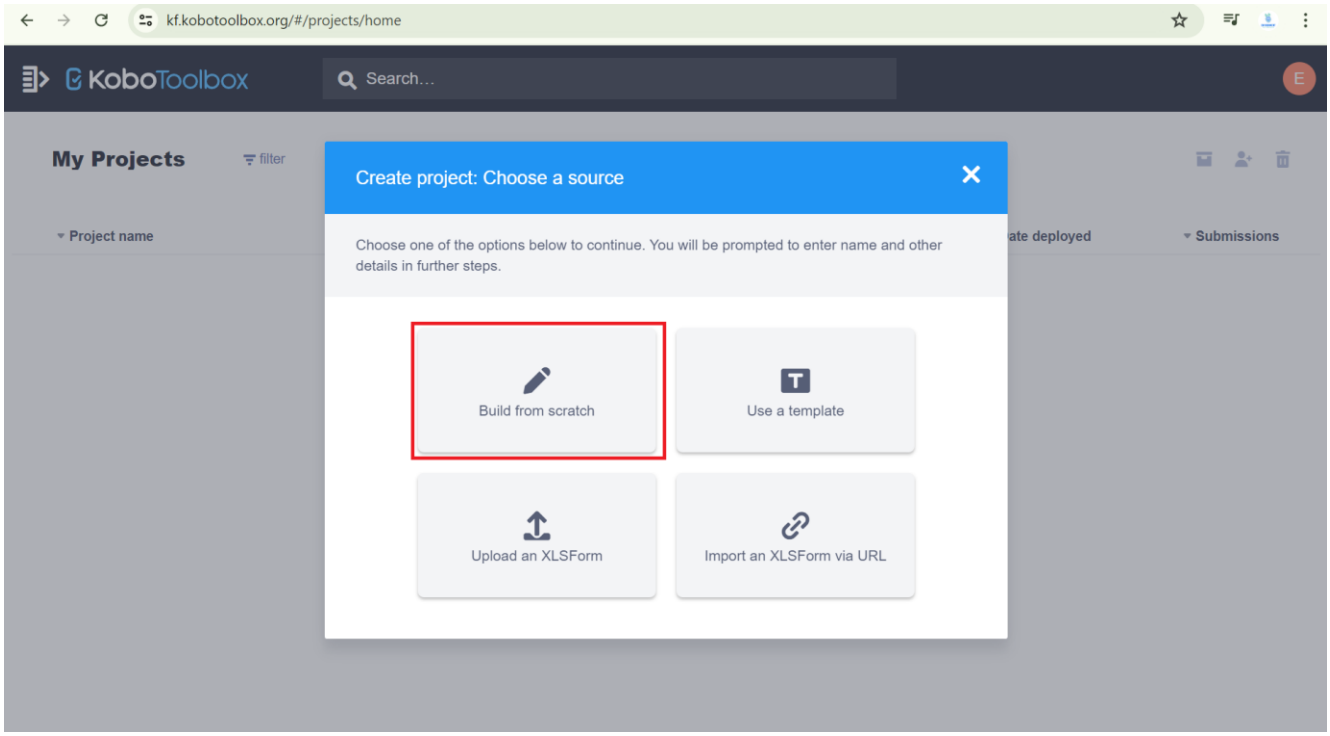
Step 4.1: To create a new form, click the **NEW** button in the Projects tab (the first screen after logging in to KoboToolbox).

You will be presented with 4 different options for creating your new form:

1. **Build from scratch:** Choose this option if you want to build your form using the formbuilder. After selecting this option, you will be required to input the project details, then click **CREATE PROJECT**.

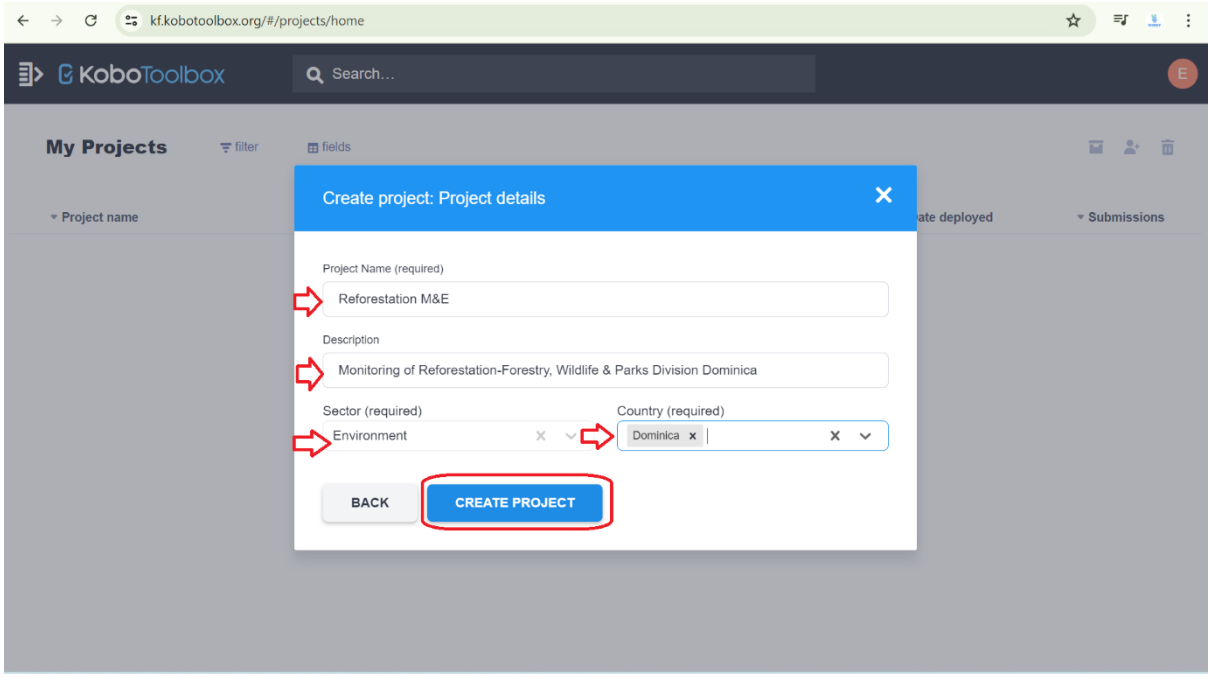
2. **Use a template:** Use this option if you already have a template in your Library and would like to build upon it using the formbuilder or deploy it as is.
3. **Upload an XLSForm:** Import an existing XLSForm.
4. **Import an XLSForm via URL:** Use this option to import an XLSForm file that is being hosted online, for example Google Sheets or Dropbox.

Step 4.2: Choose this option, you are going to build your form using the formbuilder. After selecting this option, you will be required to input the project details, then click **CREATE PROJECT**.



Step 4.3: Inputting the project details

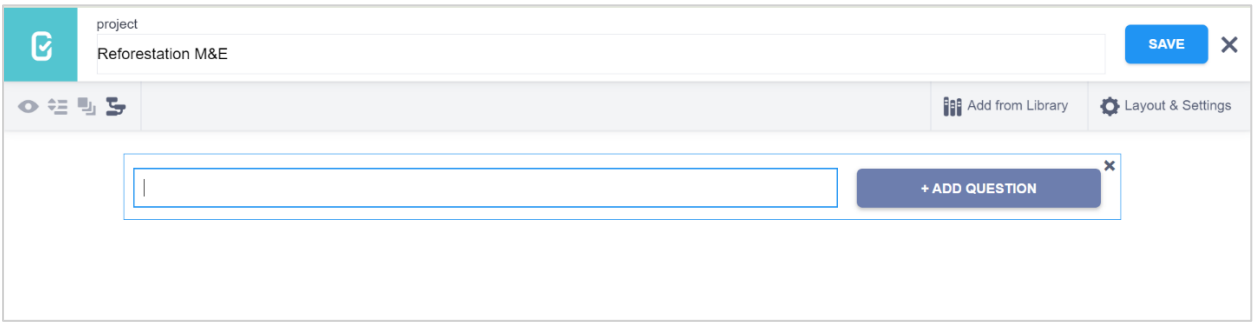
This step is mandatory, it also helps you to keep track of your projects.

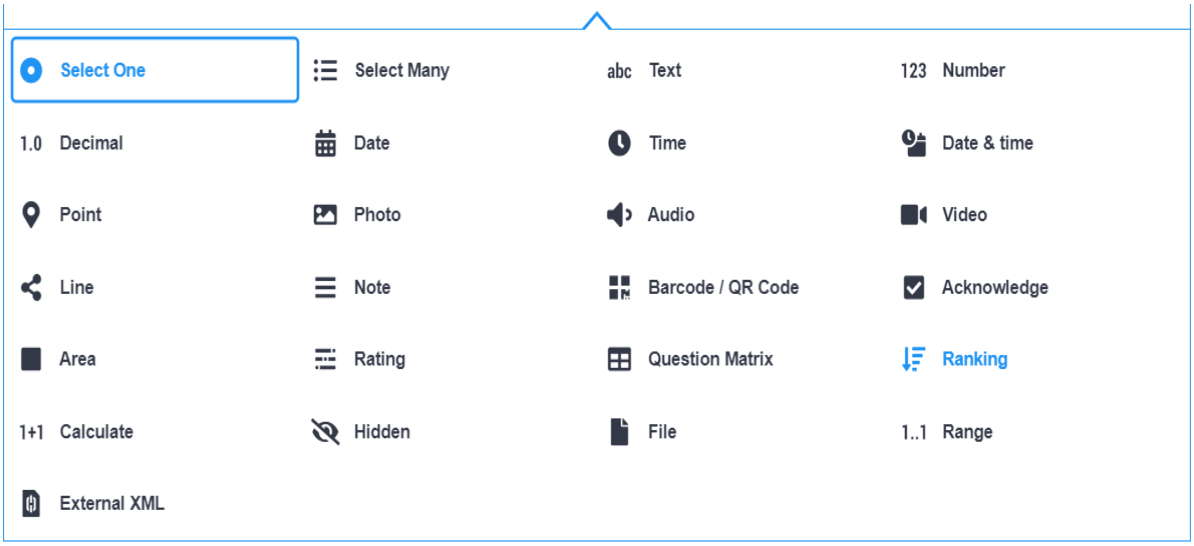


Step 4.4: Adding questions to a form

Questions in your form can be added at any point by clicking on the + button that is below every question. Type in the name of your question, click '**Add Question**'. Then, choose the type that's applicable to your question.

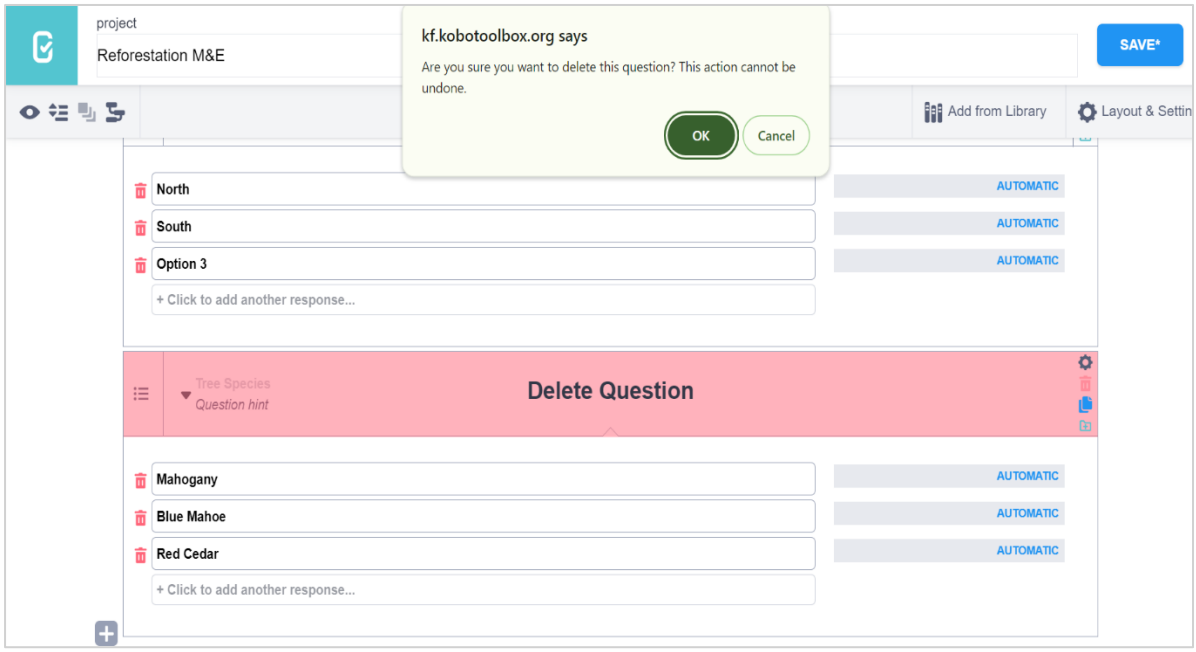
Overview of the form builder functions





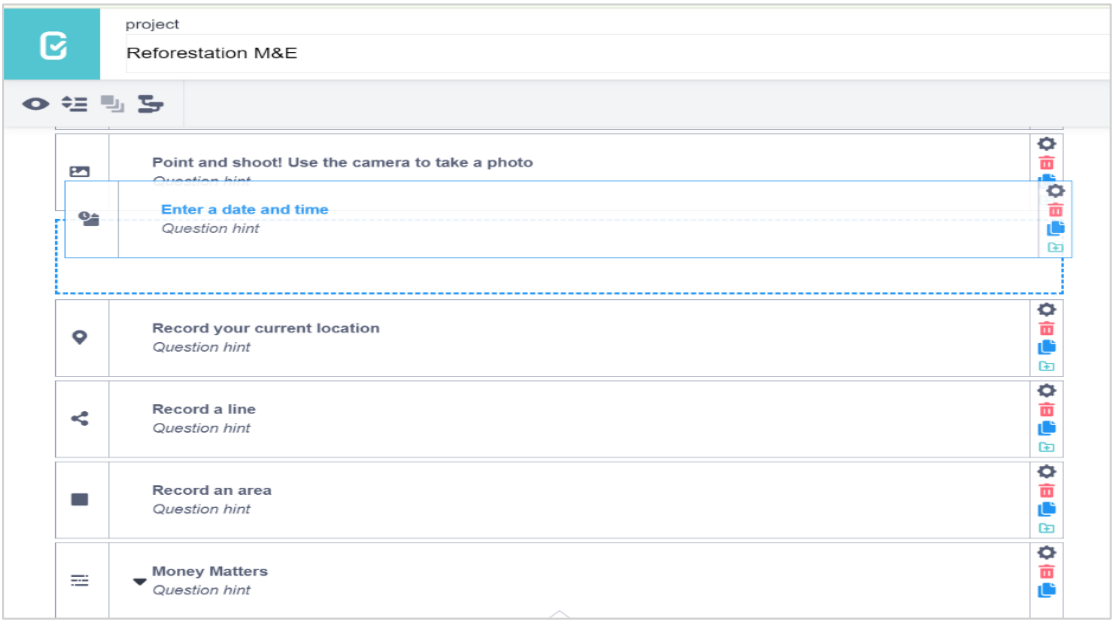
4.5 Deleting a Question

You can remove a question at any point by clicking on the red trash can. You'll be asked to confirm before it is permanently deleted from your form.



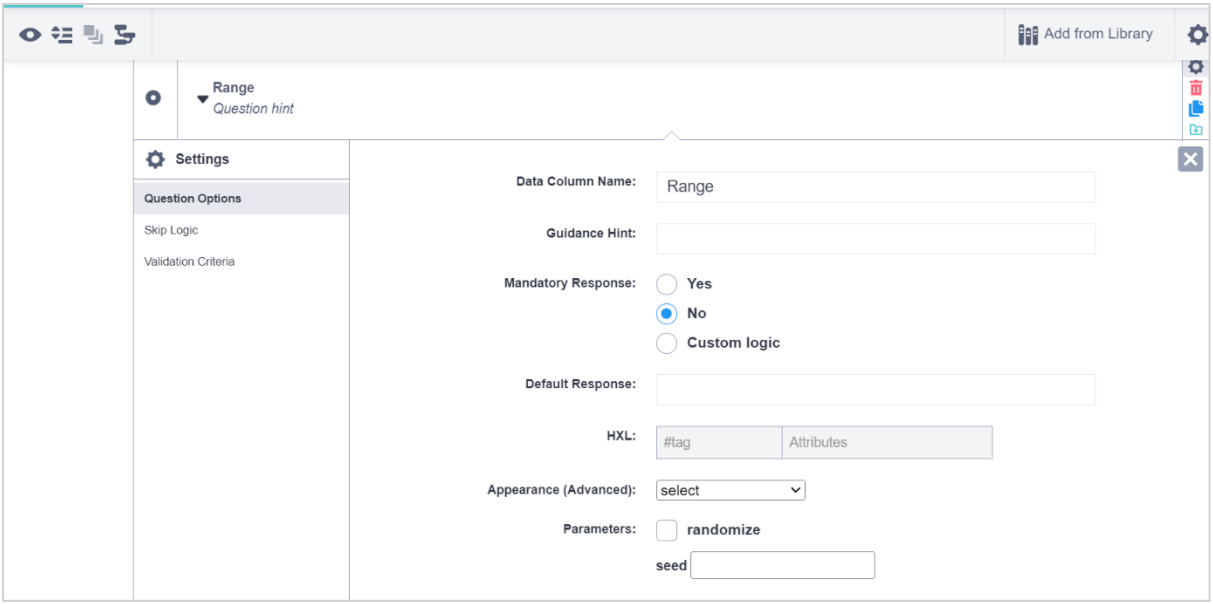
4.6 Changing the Order of Your Questions

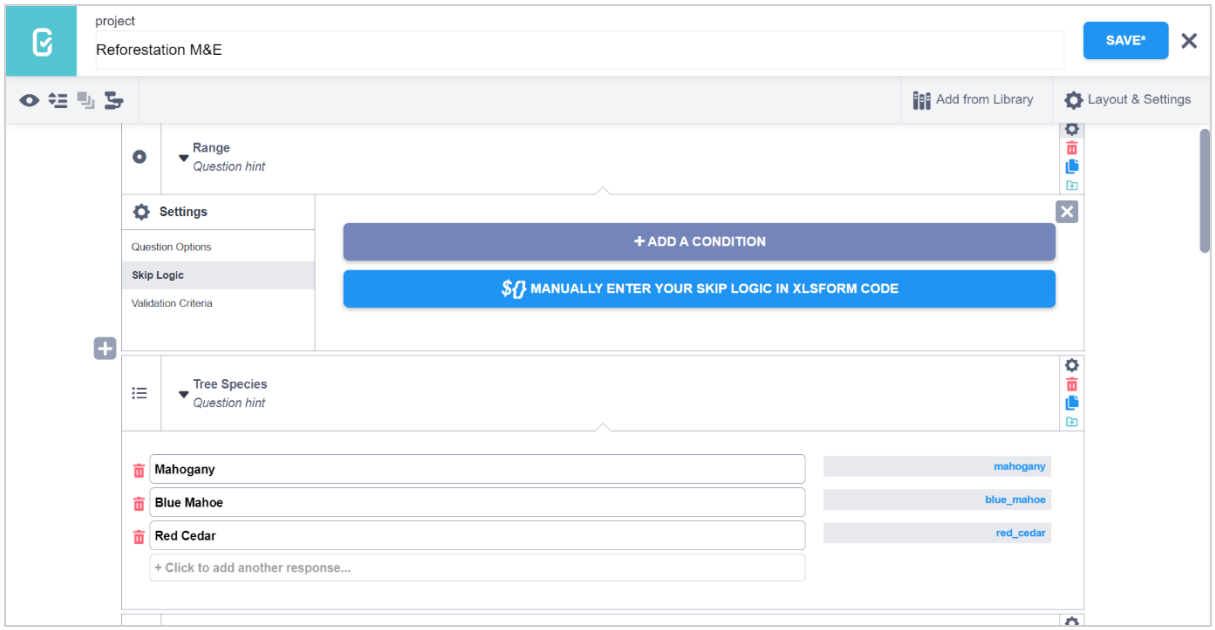
All your questions and groups can be moved to any position in the form. Just drag-and-drop it from its current position to where you want it to go, even at the very beginning or very end of the form.

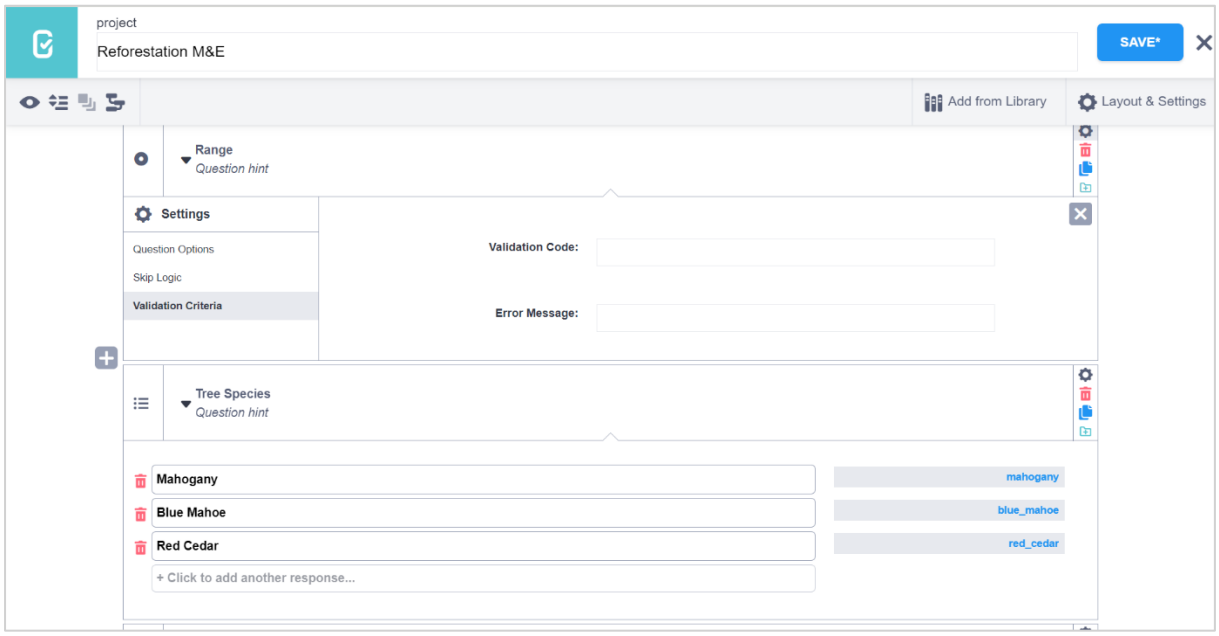


4.7 Changing Question Settings

To access advanced features for each question, click on the **Settings** in the top-right corner of the question. Here you can modify further details of the question, such as skip logic, validating responses, setting question hints, making a question required, etc.

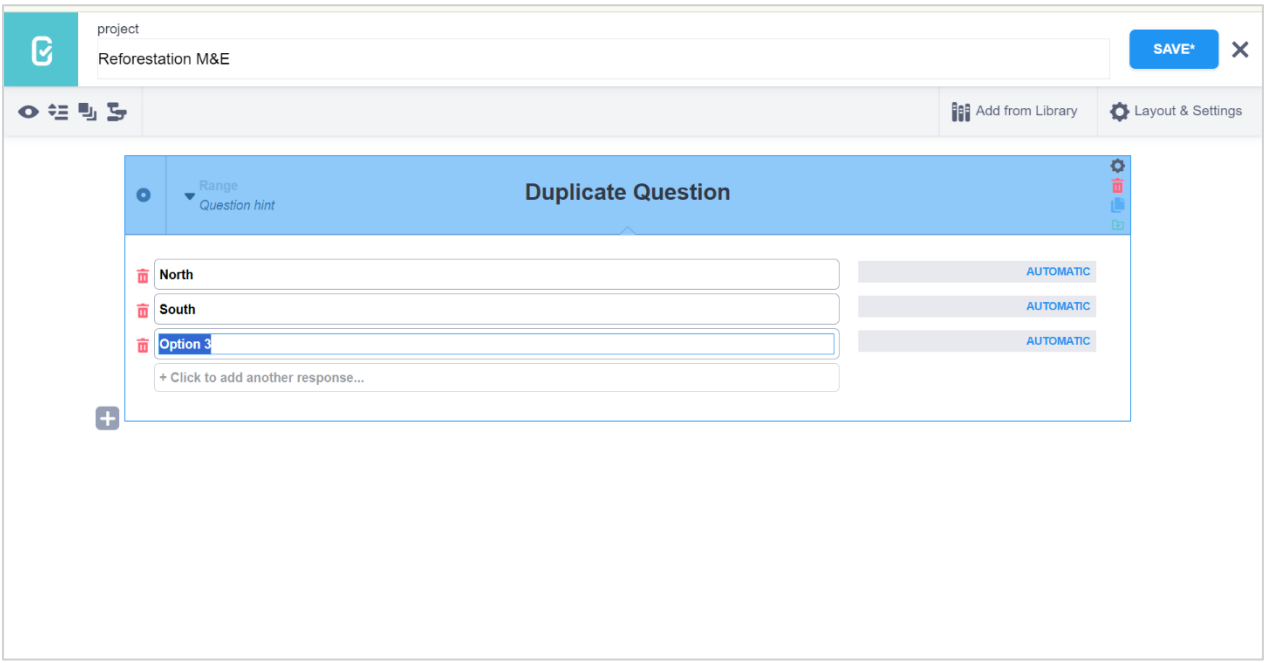



project
Reforestation M&E
SAVE*
Add from Library
Layout & Settings
Range
Question hint
Settings
Question Options
Skip Logic
Validation Criteria
+ ADD A CONDITION
MANUALLY ENTER YOUR SKIP LOGIC IN XLSFORM CODE
Tree Species
Question hint
Mahogany
Blue Mahoe
Red Cedar
+ Click to add another response...
mahogany
blue_mahoe
red_cedar


project
Reforestation M&E
SAVE*
Add from Library
Layout & Settings
Range
Question hint
Settings
Question Options
Skip Logic
Validation Criteria
Validation Code:
Error Message:
Tree Species
Question hint
Mahogany
Blue Mahoe
Red Cedar
+ Click to add another response...
mahogany
blue_mahoe
red_cedar

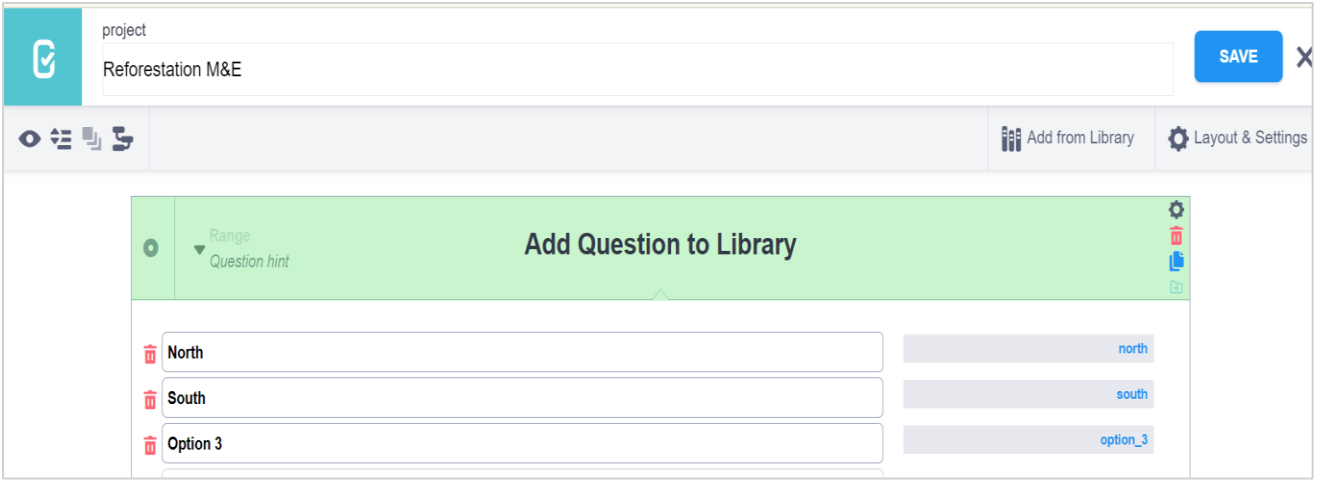
4.8 Duplicating a Question

You can duplicate a question at any point by clicking on 'Duplicate Question'. An exact copy of the question will appear just below the question which you have duplicated.

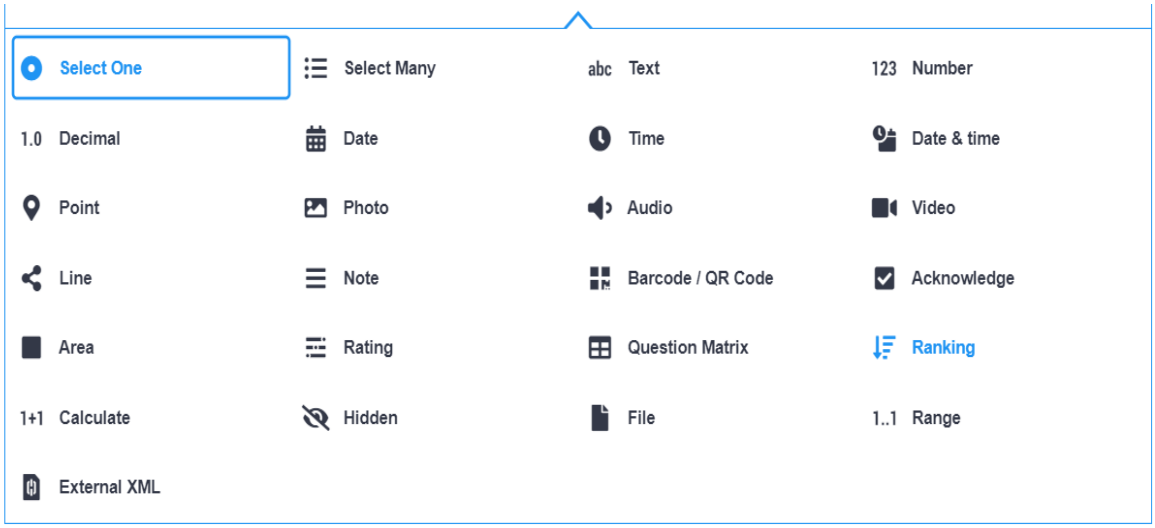


4.9 Adding Questions to the Library

In order to reuse a question in future forms, you can click on 'Add Question to Library' . It will be saved in your Question Library as a copy, meaning that you can make further changes to the original question in the form or even delete it, without affecting the copy that has been placed in the library.



Section 5: Types of Questions



5.1 The below table provides a high-level summary of each of the response types available to use in the formbuilder:

Question type	Answer input
integer	Integer (i.e., whole number) input.
decimal	Decimal input.
range	Range input (including rating).
text	Free text response.
select_one [options]	Multiple choice question; only one answer can be selected.
select_multiple [options]	Multiple choice question; multiple answers can be selected.
select_one_from_file [file]	Multiple choice from file; only one answer can be selected.
select_multiple_from_file [file]	Multiple choice from file; multiple answers can be selected.
rank [options]	Rank question; order a list.

Question type	Answer input
note	Display a note on the screen, takes no input. Shorthand for type=text with readonly=true.
geopoint	Collect a single GPS coordinate.
geotrace	Record a line of two or more GPS coordinates.
geoshape	Record a polygon of multiple GPS coordinates; the last point is the same as the first point.
date	Date input.
time	Time input.
dateTime	Accepts a date and a time input.
image	Take a picture or upload an image file.
audio	Take an audio recording or upload an audio file.
background-audio	Audio is recorded in the background while filling the form.
video	Take a video recording or upload a video file.
file	Generic file input (txt, pdf, xls, xlsx, doc, docx, rtf, zip)
barcode	Scan a barcode or QR Code
calculate	Perform a calculation; see the Calculation section below.
acknowledge	Acknowledge prompt that sets value to “OK” if selected.
hidden	A field with no associated UI element which can be used to store a constant.
xml-external	Adds a reference to an external XML data file.

Formbuilder Question type	Icon	Answer input
Rating		Compare different items using a common scale.
Ranking		Compare a list of different objects to one another.
Question Matrix		Create a group of questions that display in a matrix format.

5.2 Descriptions and uses of the question types which are applicable to this exercise

5.2.1 "Select one", "Select many"

When you have a categorical question with a list of predefined options for respondents to choose from, you have to choose either the “Select One” or “Select Many” questions type in KoboToolbox. A “Select One” question type, also known as a “single response” question, means a respondent can only select a single response from a list of options. Similarly, a “Select Many” questions type is also known as a “multiple response” question where a respondent can select multiple responses from a list of options.

“Select One” and “Select Many” question types can be better choices for maintaining quality data when the question has a narrow and defined scope. This is because, unlike the open-ended nature of the “Text” question type, the two select question types limit the user to the options listed.

When to use them

Use the “Select One” question type when a question has a list of choices, and the respondent is limited to just a single option from the list. Examples include marital status, sex, or religion.

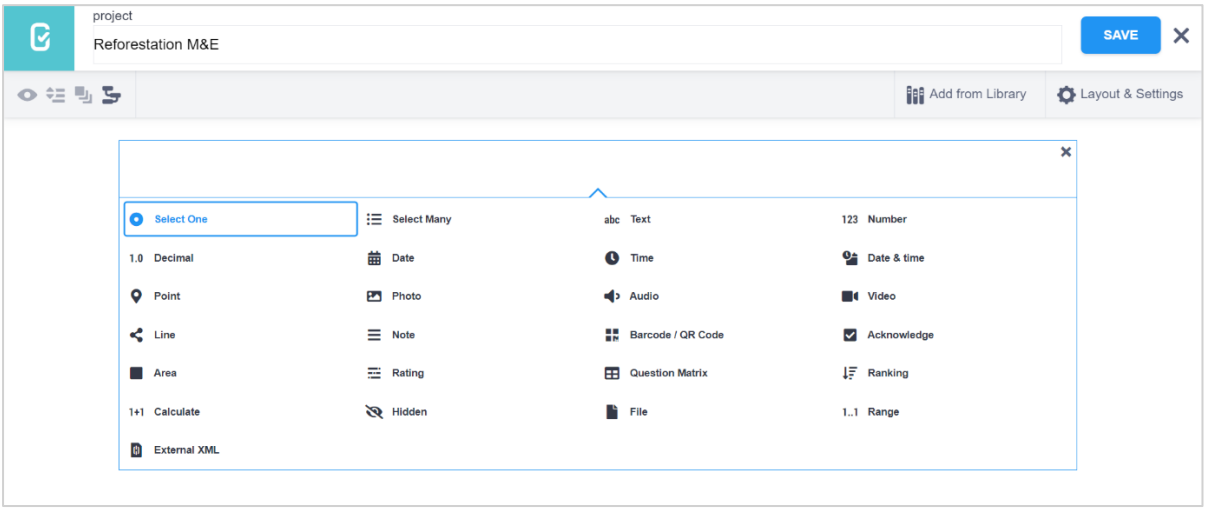
Use the “Select Many” question type if there is a list of choices and the respondent may find it appropriate to select more than one choice. Examples include household sources of income or a list of household assets.

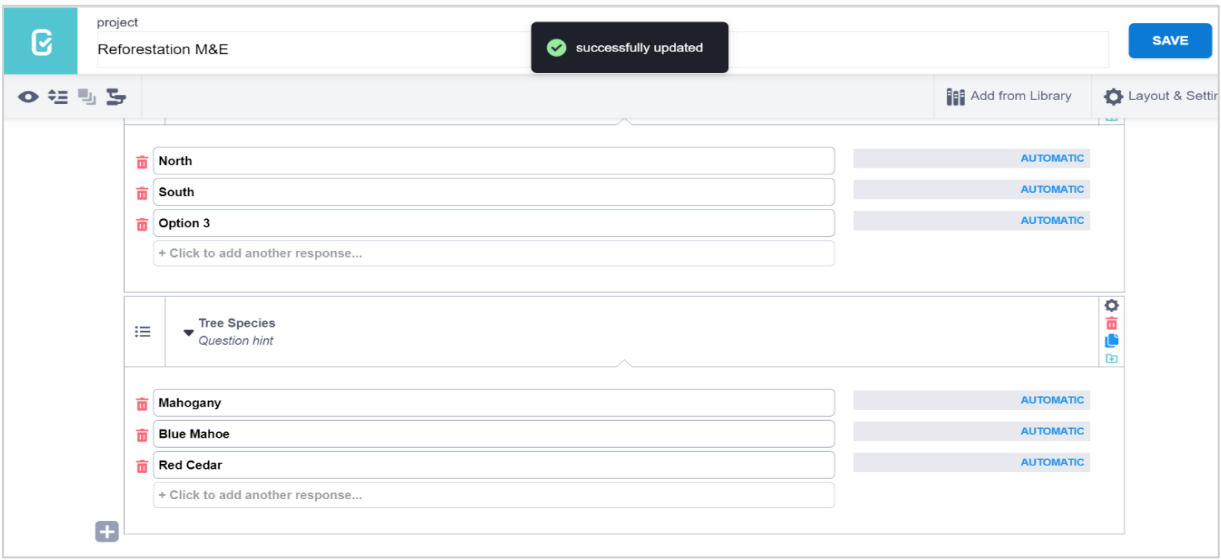
Setting up the question and choices

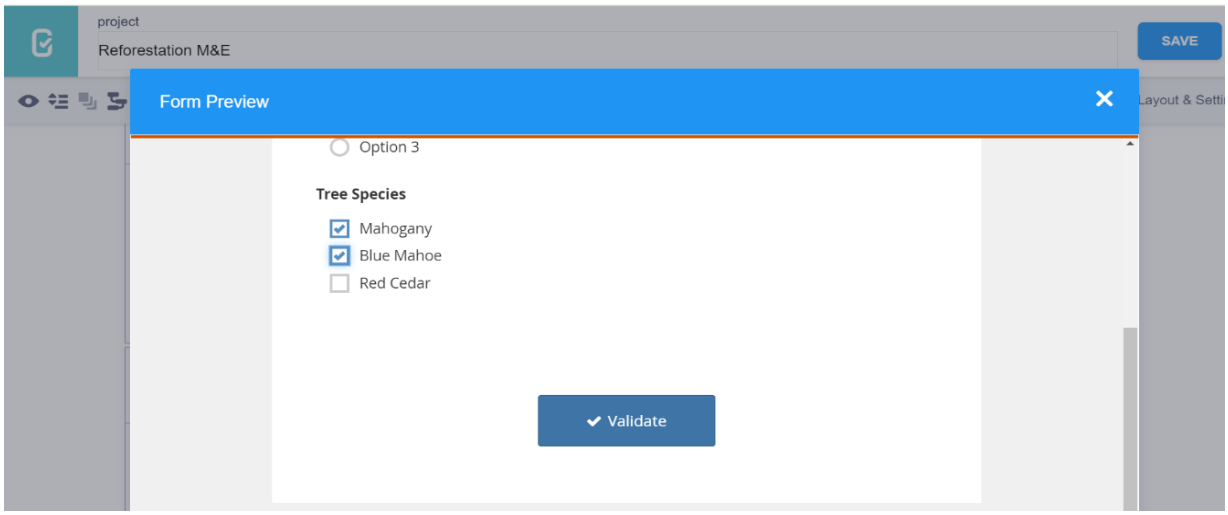
Follow the same steps for setting up either a “Select One” or a “Select Many” questions:

- In the formbuilder, click the **+** button to add a new question.

- Type the question label, for example, “What is your marital status?”. Then click + Add Question (or press Enter).
- Choose the question type (“Select One” or “Select Many”)
- Type the response labels where there is “Option 1”, “Option 2”. Add more choices if necessary.







5.2.2 "Text" and "Note" question types

The “Text” question type is best used for questions that require undefined or open-ended responses, such as names, feedback, explanations or descriptions.

The “Note” question type does not allow for a response value, instead they can be used to add instructions, or any additional information to make the survey clearer or easier to navigate

How to set the questions up

Setting up text or note questions is very similar:

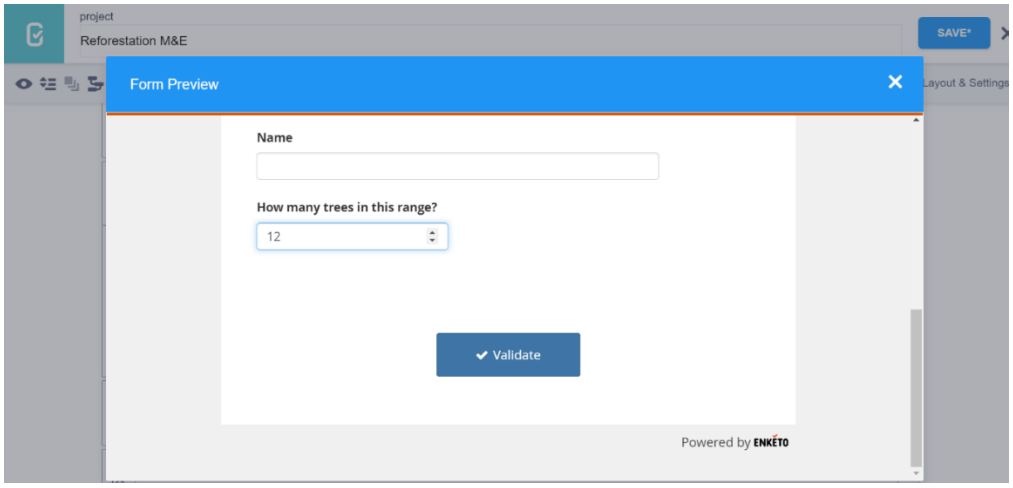
- In the formbuilder, click the **+** button to add a new question.
- Type the question text. For example, “What is your name?”. Then **click + ADD** QUESTION (or press Enter).
- Choose the question type **(“Text” or “Note”)**

5.2.3 "Number" and "Decimal" question types

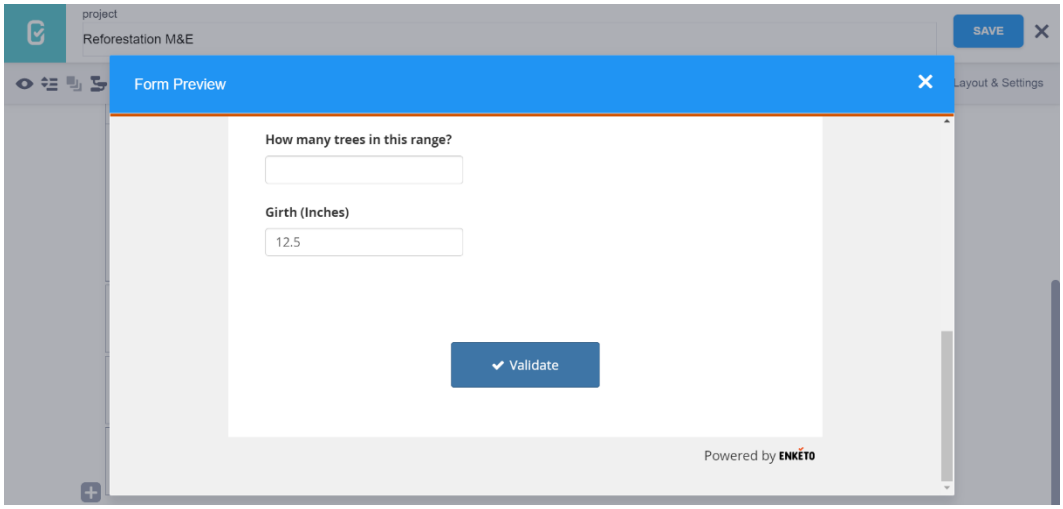
When creating questions with numeric responses, you can choose between the “Number”, “Decimal” and “Range” question types in KoboToolbox.

When to use them

Number: The “Number” question type in the formbuilder is equivalent to the integer question type in XLSForm. Use the “Number” question type when responses to a question will be in the form of whole numbers, such as number of children (1, 3, 5, etc.).



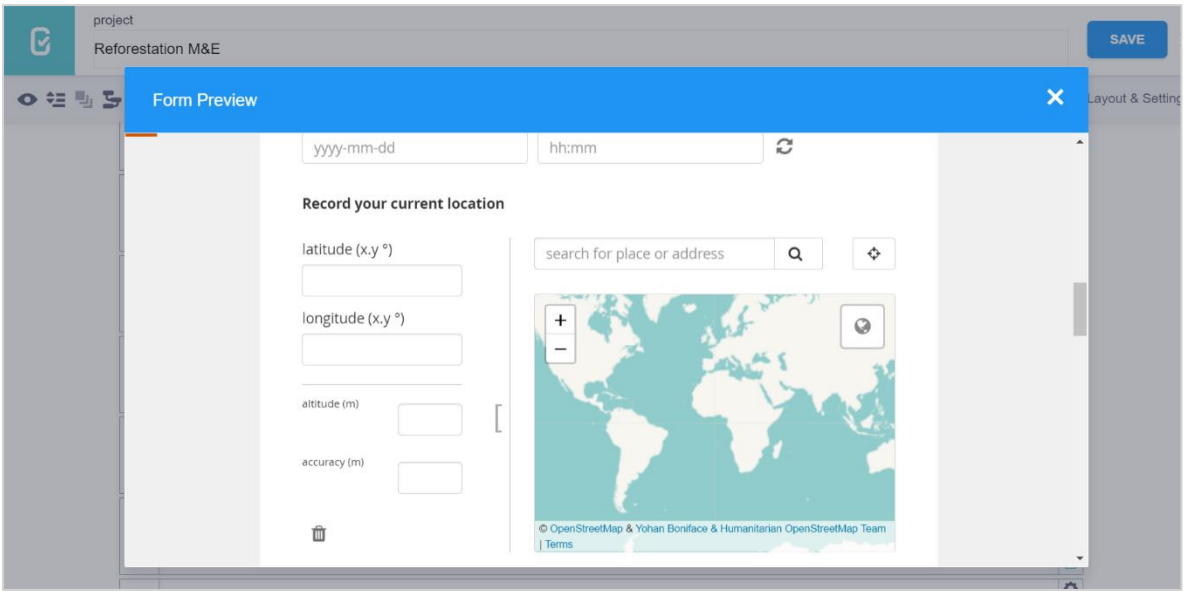
Decimal: Use the "Decimal" question type when a question's response will be in the form of decimal numbers, such as monthly income (1.2, 34.5, 42.42, etc.).



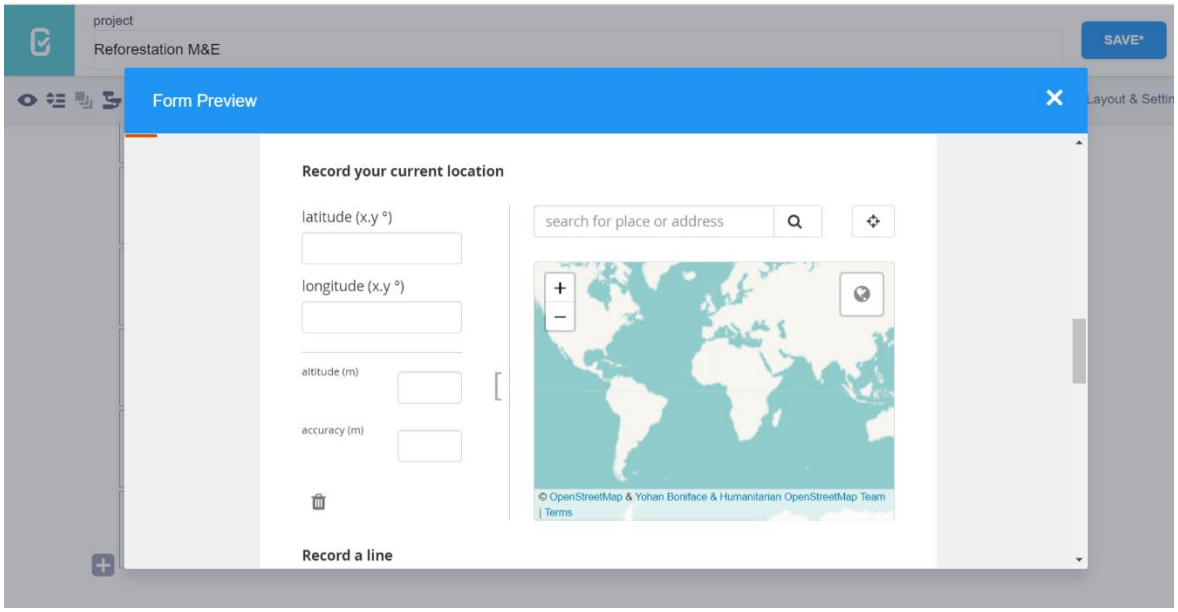
5.2.4 GPS question types

In KoboToolbox, you can collect GPS coordinates as part of your data collection form. There are 3 GPS question types you can use, namely "Point", "Line" and "Area".

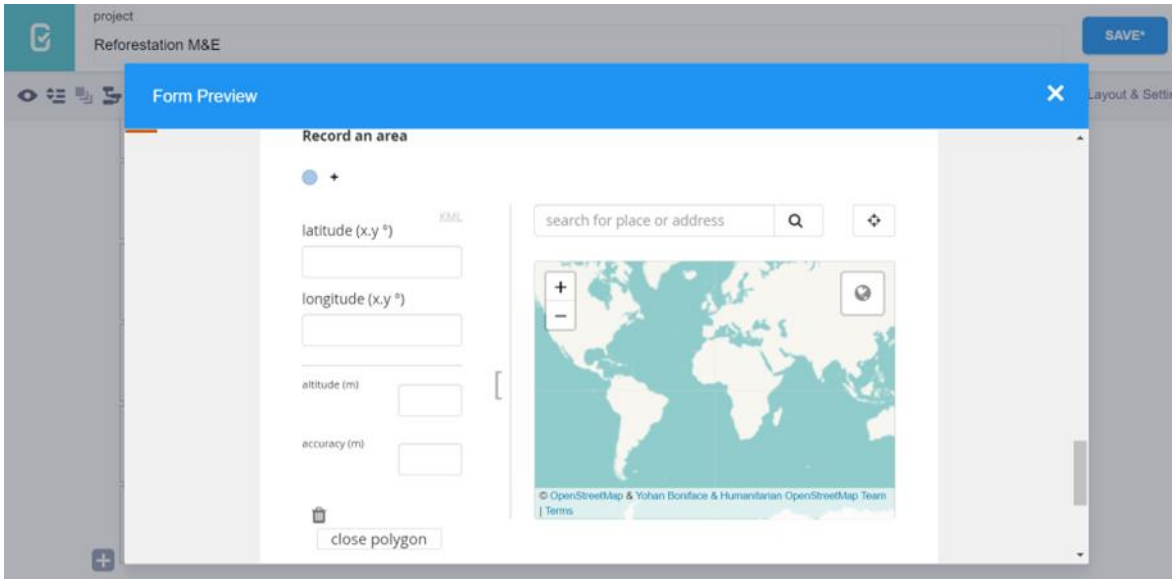
Use a "Point" question type when you want to record a single GPS coordinate. This is perfect for questions where you need to show the location of a single feature such as a house, or a borehole.



Use a “Line” question type when you want to record multiple GPS points to trace a path. This question type can be used for collecting location data on features such as roads, tracks and rivers.



The “Area” question type is used for collecting multiple GPS points that form the boundaries of a feature. You can use it, for example, to trace the boundaries of reforestation plots.



How to set up the "Point", "Line" and "Area" question types

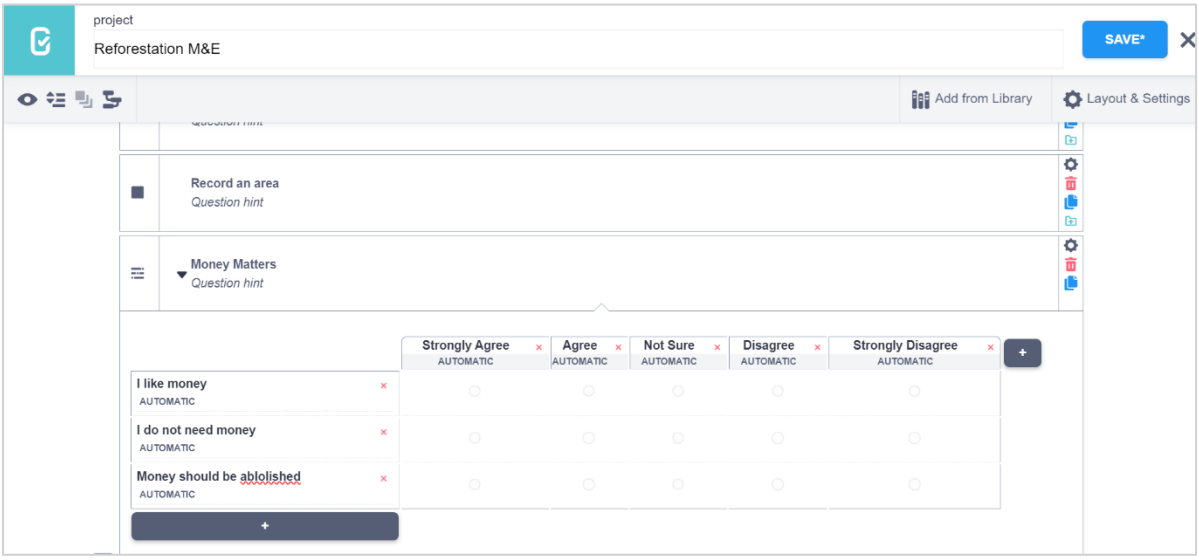
Setting up in formbuilder

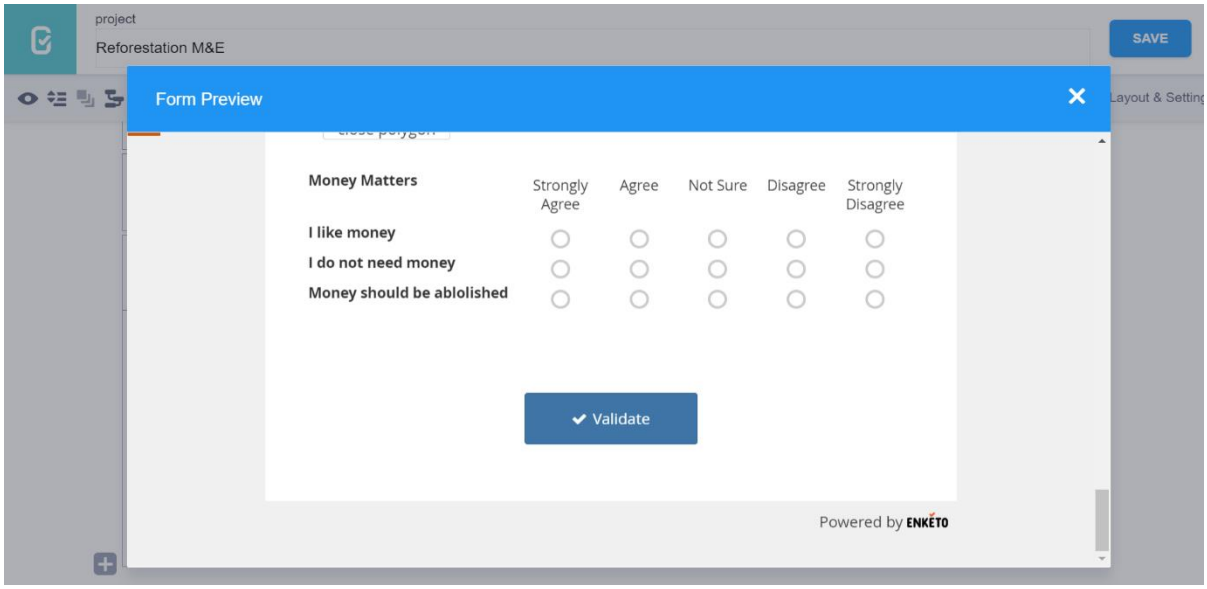
Adding GPS questions on the form is simple:

- In the formbuilder, click the + button to add a new question
- Type the question text, for example "Capture the location of the housing unit", then click ADD QUESTION or press ENTER on your keyboard
- Choose the question type (e.g. Point)

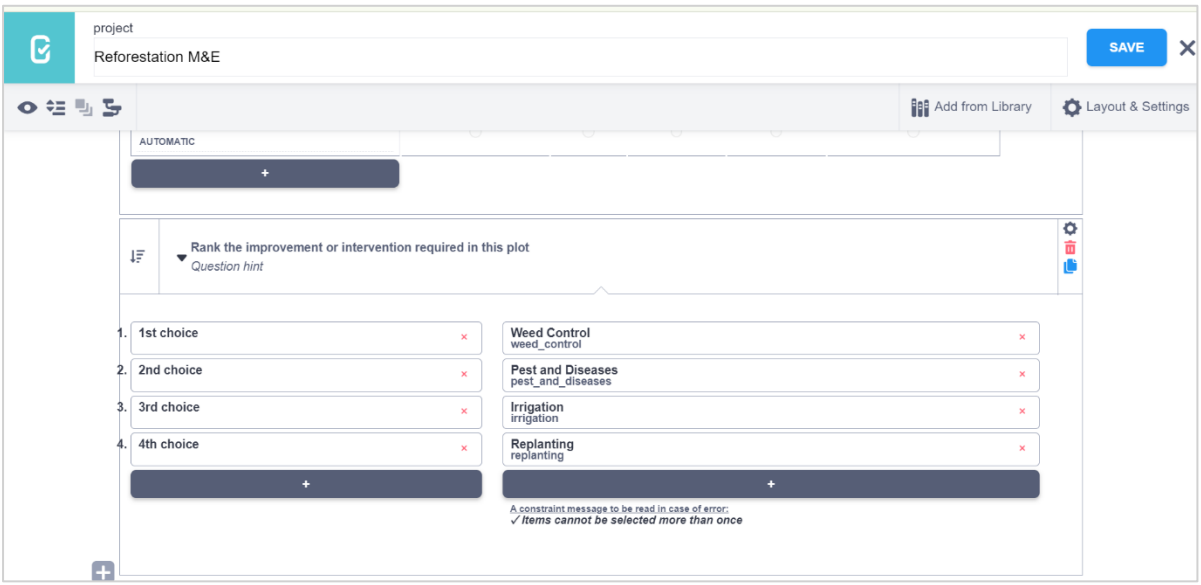
5.2.6 "Rating" and "Ranking" question type

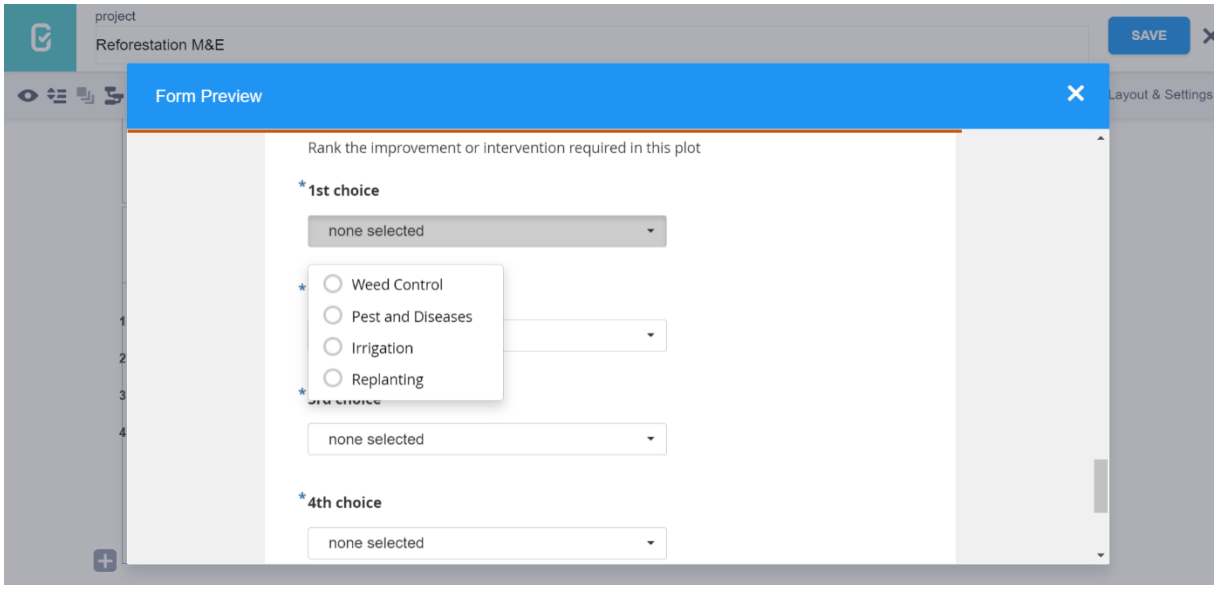
A **rating question** asks survey respondents to compare different items using a common scale (e.g. "Please rate each of the following objects on a rating scale of 1-10, where 1 is 'not at all important' and 10 is 'very important.'").





A **ranking question** on the other hand asks survey respondents to compare a list of different objects to one another (e.g. "Please rank each of the following items in order of importance with #1 being the most important object to #10 being the least important object."). The ranking question asks respondents to compare items to each other by placing them in order of preference. When analyzing ranking questions, an average ranking is calculated for each answer choice, allowing you to quickly evaluate the most preferred answer choice.



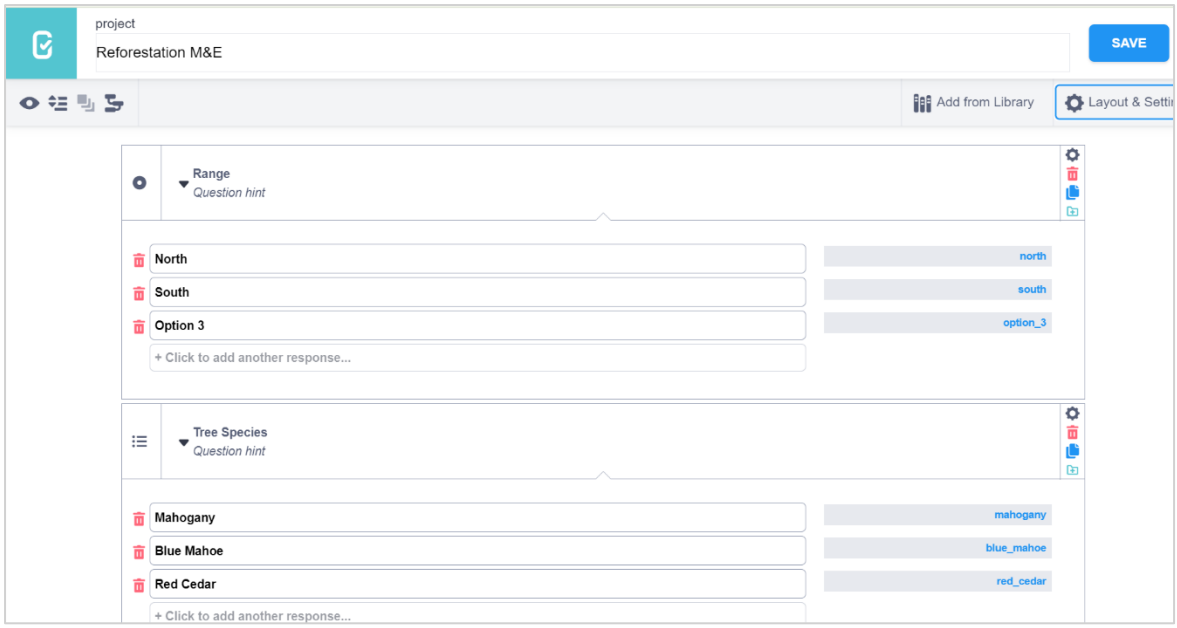


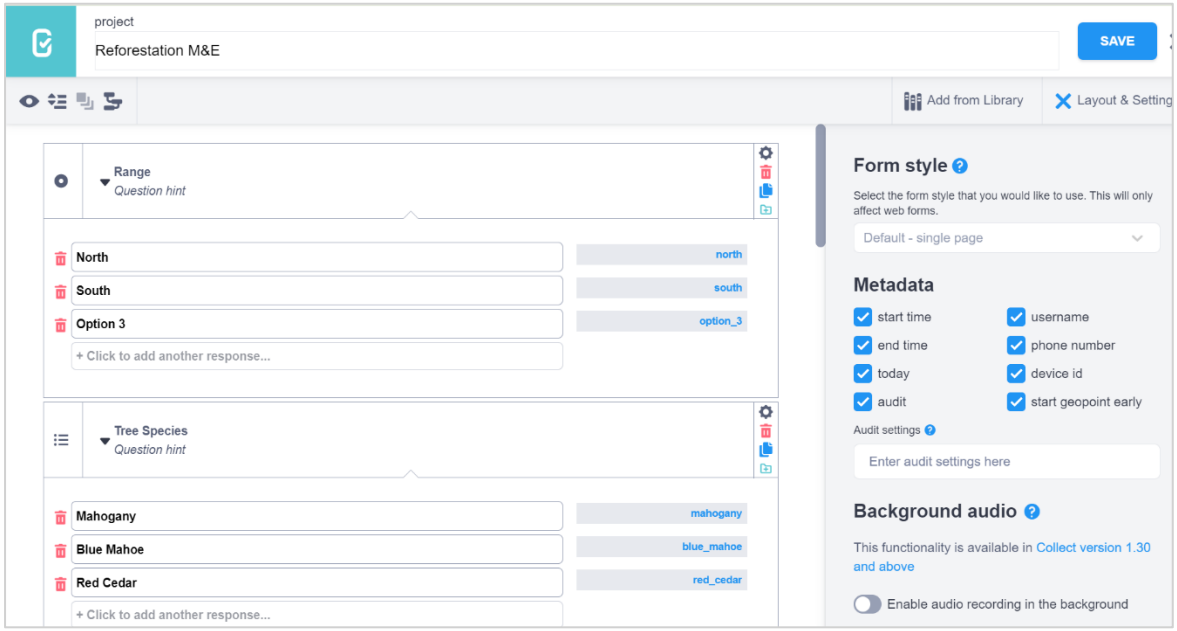
5.2.8 Metadata

What is Metadata?

Metadata is data that provides information about other data. It helps to organize, find, and understand data by describing its content, context, quality, and condition. Metadata can include a variety of details such as:

1. **Descriptive Metadata**: Information about the content of the data, such as title, author, and abstract.
2. **Structural Metadata**: Information about how the data is organized, such as how different parts of a dataset relate to each other.
3. **Administrative Metadata**: Information to help manage a dataset, such as when and how it was created, file type, and access permissions.
4. **Technical Metadata**: Information about the technical aspects of the data, such as the file format, resolution, and compression.
5. **Reference Metadata**: Information on the methodology, quality, and data source used to collect the data.

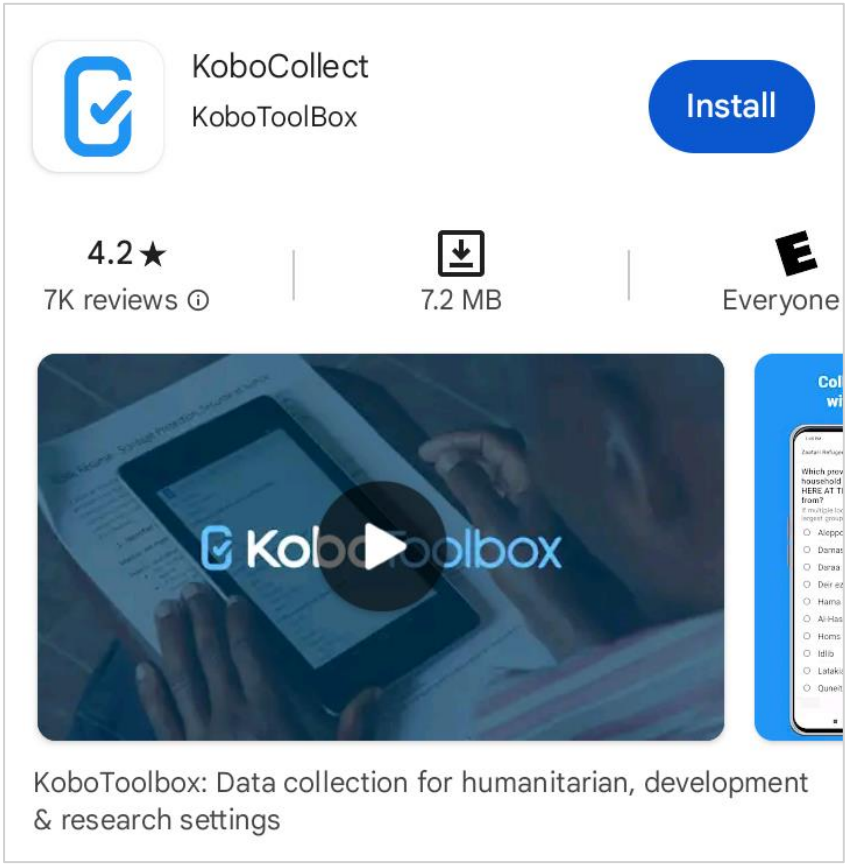

project
Reforestation M&E
SAVE
Add from Library
Layout & Setti
Range
Question hint
North
north
South
south
Option 3
option_3
+ Click to add another response...
Tree Species
Question hint
Mahogany
mahogany
Blue Mahoe
blue_mahoe
Red Cedar
red_cedar
+ Click to add another response...


project
Reforestation M&E
SAVE
Add from Library
Layout & Setting
Range
Question hint
North
north
South
south
Option 3
option_3
+ Click to add another response...
Tree Species
Question hint
Mahogany
mahogany
Blue Mahoe
blue_mahoe
Red Cedar
red_cedar
+ Click to add another response...
Form style
Select the form style that you would like to use. This will only affect web forms.
Default - single page
Metadata
start time
username
end time
phone number
today
device id
audit
start geopoint early
Audit settings
Enter audit settings here
Background audio
This functionality is available in Collect version 1.30 and above
Enable audio recording in the background

Section 6: Downloading the Kobo toolbox App

Downloading KoboCollect App

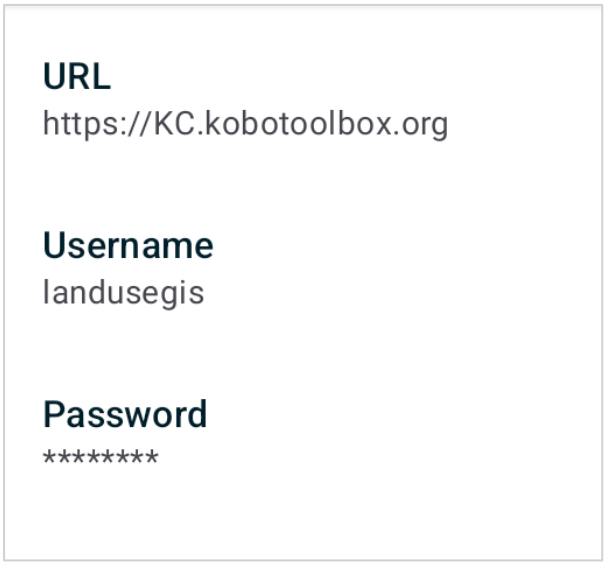
1. **Open Google Play Store**: On your Android phone, open the Google Play Store app.



2. **Search** for KoboCollect: In the search bar at the top, type "KoboCollect" and hit the search button.
3. **Select the App:** Find KoboCollect in the search results and tap on it.
4. **Install the App:** Tap on the "Install" button to download and install the app on your device.
5. **Open the App**: Once the installation is complete, open the app by tapping the "Open" button in the Play Store or by finding the KoboCollect icon on your home screen or app drawer and tapping on it.

Connecting KoboCollect to a Server

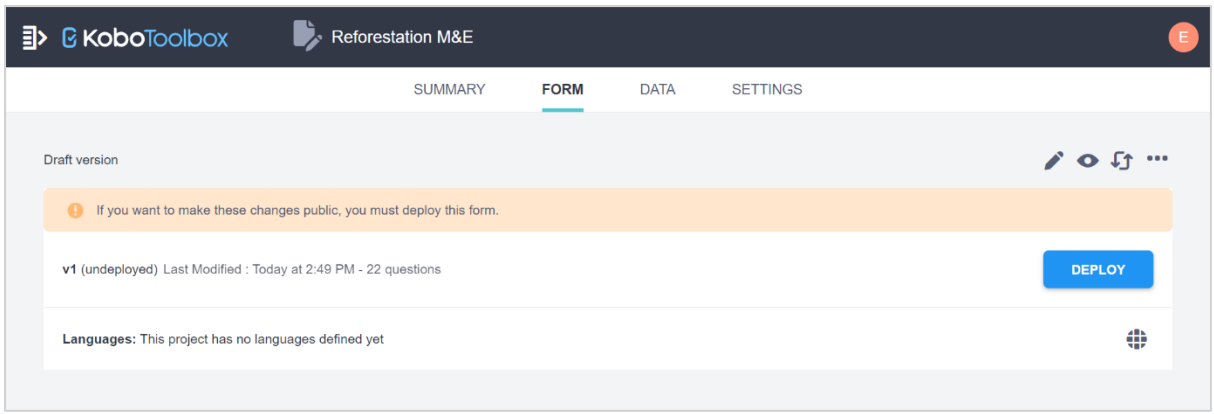
1. Open KoboCollect: Launch the KoboCollect app on your Android phone.
2. Access General Settings: Tap on the three vertical dots (menu) in the top-right corner of the screen and select "General Settings."
3. Configure Server Settings: In the General Settings menu, tap on "Server" to access the server settings.
4. Enter Server URL: Tap on "URL" and enter the server URL provided by your project or organization. This is typically in the format https://kc.kobotoolbox.org/[your_username] or a custom server URL if you are using a private server.
5. Enter Credentials (if required): If your server requires authentication, enter your username and password in the respective fields.
6. Save Settings: After entering the server URL and credentials, tap the back arrow to save the settings and return to the main screen.
7. Test the Connection: To ensure the connection is successful, you can try downloading a blank form by tapping on "Get Blank Form" from the main menu. If the connection is configured correctly, you should see a list of available forms to download.

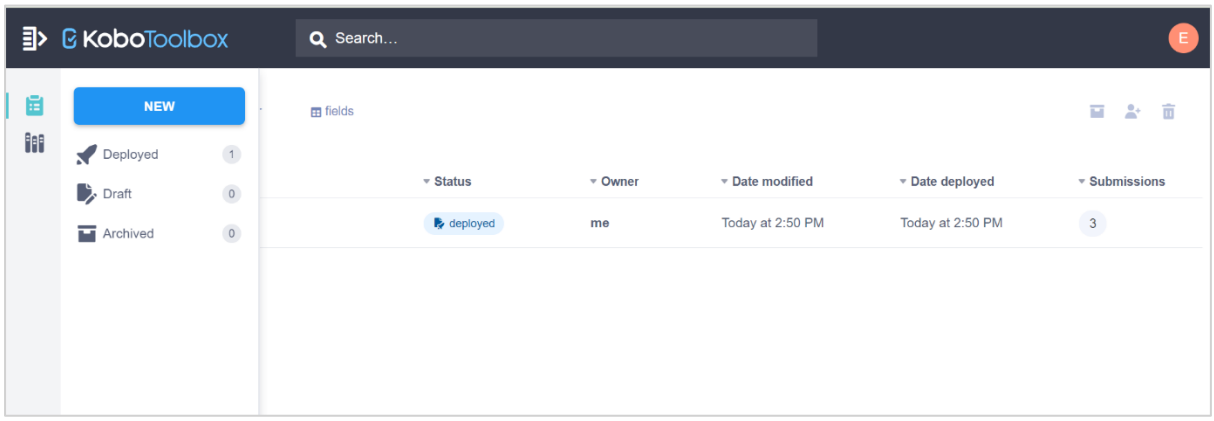


Section 7: Form Deployment

Once your form is ready and you have configured all settings, click on the **Deploy** button located at the top right corner of the form builder.

Confirm the deployment when prompted. Your form is now deployed and ready for data collection.





Section 8: Data management in Kobotoolbox

Data management in KoboToolbox involves organizing, analysing, and securing the data you collect. Here are the key aspects and steps to effectively manage your data in KoboToolbox:

8.1 Reporting in kobo toolbox

8.2 Viewing, accepting, editing and deleting data

8.3 Downloading data

8.4 Map tool

8.5 Gallery