Baobabs in Africa Mapped Project (BAM)

Data Collection Guidelines for iOS Users

Version: 20241106 V1

This form describes collaborative data collection instructions for the African Baobab Mapped Project (BAM) https://opals-exeter.org/bam/. If you have any questions about this guidance, please contact Chafika Phiri (cp844@exeter.ac.uk) or WhatsApp: +260770590580.

Preparation for Data Collection

These steps provide a comprehensive guide to using your iOS mobile device for offline data collection.

What you need:

- ✓ An iOS mobile device with a camera and GPS (be sure to allow geolocation in your device settings).
- ✓ Brief access to the internet.
- ✓ Measuring Tape.

Step 1

- Before leaving network range, open your web browser on your mobile device. Insert the link https://ee.kobotoolbox.org/x/5ManCnRV into the URL field to access survey form.
- Click Go.

Step 2

- The survey form should now be visible in the browser window.
- Then Click the share icon on the top right corner of your browser.
- Scroll down to find "Add to home screen"
- Tap "Add to home screen"
- A small Kobotoolbox logo app should now be visible, then tap "Add" on the top right corner. The Kobotoolbox icon is now added to your home screen
- Go to your home screen and open the Kobotoolbox icon
- The survey form can now be re-opened in the field without an internet connection.

Step 3: Fill Out the Form

- Tap “Start new form” from the main menu every time you want to start new form for your paired observation.
- Complete the form by following the prompts for each question. Use navigation buttons or scrolling to move through the form.
- Top Tip: Ensure devices are fully charged before embarking your fieldwork and carry a power bank if available.
- Most questions have sufficient guidance included within the form, but this additional guidance helps clarify how some questions should be answered consistently.

Overall Baobab condition assessment

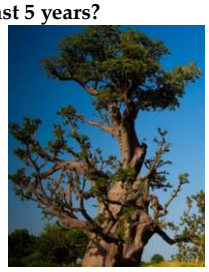
Elephant damage, less than 5 years?

				
Class Severity of damage description	**No visible Damage** There are no signs of damage or disturbance caused by elephants.	**Minor Damage** Damage is minimal, such as small scratches on the bark, which do not significantly affect the tree.	**Moderate Damage** Damage is noticeable, significant sections of bark being stripped, or small portion of branches broken.	**Severe Damage** Damage is massive, such as large sections of the tree being stripped of bark, branches broken, or the trunk being heavily damaged.

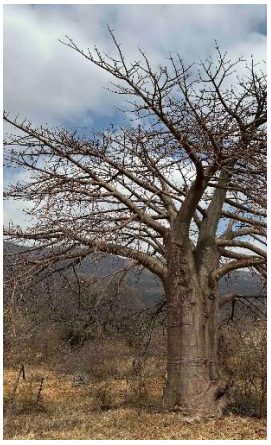
Bark harvesting by humans in the last 5 years?

				
			Andriafidison et al. (2019)	Gebauer et al., (2016)
Class Severity of damage description	**No visible Damage** There are no signs of damage or disturbance caused by humans. The bark is intact, and the tree appears healthy.	**Minor Damage** Small or shallow cuts on the bark.	**Moderate Damage** More noticeable sections of bark have been removed exposing the inner layers.	**Severe Damage** Large portions of the bark stripped away, deep cuts into the trunk, or substantial areas affected.

Leaf harvesting by humans in the last 5 years?

				
Class Severity of damage description	**No visible Damage** There are no signs of damage or leaf removal caused by humans. The leaves and overall foliage appear healthy and intact.	**Minor Damage** Small number of leaves have been harvested or pruned.	**Moderate Damage** Substantial number of leaves harvested or pruned. The shows signs of stress.	**Severe Damage** Large portion of the foliage removed, including entire branches being stripped of leaves.

Any black mould growth?

				
Class Severity of damage description	**No visible growth** The bark, leaves, and overall structure are free from any signs of black mould.	**Minor growth** Small, isolated spots of black mould present on the bark or leaves.	**Moderate growth** Mould covers larger sections of the tree, including the bark and possibly the leaves.	**Severe growth** Mould growth is extensive, covering significant portions of the tree, including large areas of bark and leaves.

Tree measurements

Girth at breast height: Use a tape to measure the tree's girth at 1.3 meters (breast height) and enter the measurement in centimetres (see the illustration below). If the tree two or more stems below the 1.3 m, take measurement of two stems. If the forking is above 1.3m, consider it as one stem.

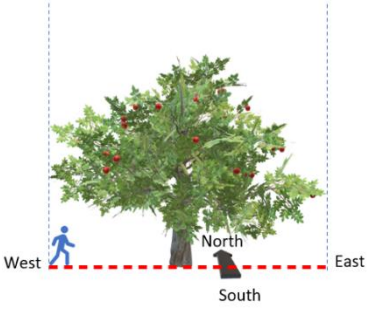
Tree height: This is optional, if you don't have any tree height measurement tool, leave the question blank.

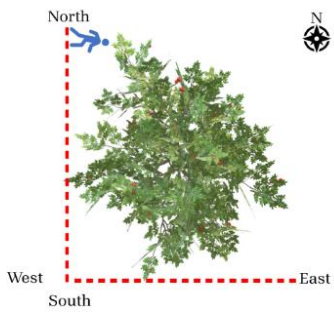
Crown width: To be measured as two perpendicular lines (North–South and West–East orientation) under the tree and to the tip of the branches on both sides (in metres) (see the illustration below). You can use pacing (stepping) method or a measuring tape.

- If you don't have a measuring tape, here is how you can do pacing method:
    1. **Calibrate your step length (pace) to 1 meter:** First, identify any known distance, e.g., 10 meters. Walk along this distance, counting your steps so that it takes exactly 10 steps to cover 10 meters. This means your calibrated step length is 1 meter per step.
    2. **Measure the tree canopy width in the field:**

       a) North-south measurements: First, identify canopy edges and stand directly beneath the edge of the tree canopy on the northern side. Walk from the northern edge to the opposite edge of the canopy (toward the south), counting your steps. Record the number of steps based on the calibration from step 1.

       b) East-west measurement: Repeat the above process, walking from the eastern edge of the canopy to the western edge, counting your steps and recording the distance.





Phenology observations

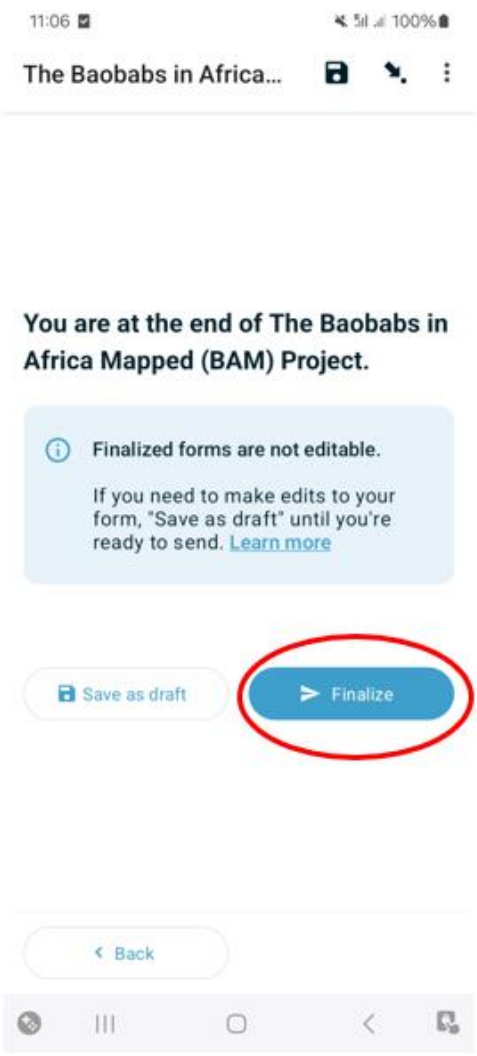
- **Leaves Presence**: Indicate if the tree has leaves (Yes/No).
    - If **yes**, describe the stage of leafing (e.g., Sprouting (small leaves emerging), Mature (green leaves), Senescent (yellow leaves).
- **Flowers**: Indicate if the tree has flowers (Yes/No).
- **Fruit**: Indicate if the tree has fruits (Yes/No).

Recording non-baobab tree

- For each baobab entry, also sample and record data for a non-baobab tree with similar canopy cover to that of the baobab. The non-baobab tree must be at least 20 metres away from the baobab tree.

Step 5: Saving and managing forms

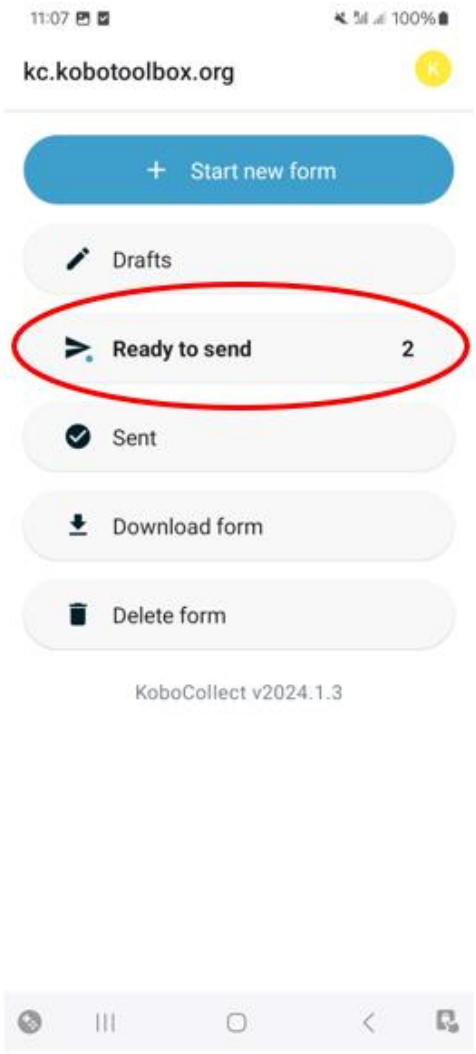
- Save form: After completing the form, tap "Finalize" to store it locally and ready to be sent when connected to internet.
    - **Warning:** when you select "**Finalize**" you cannot edit your form otherwise you can "**Save as draft**" if you would want to edit your form later.



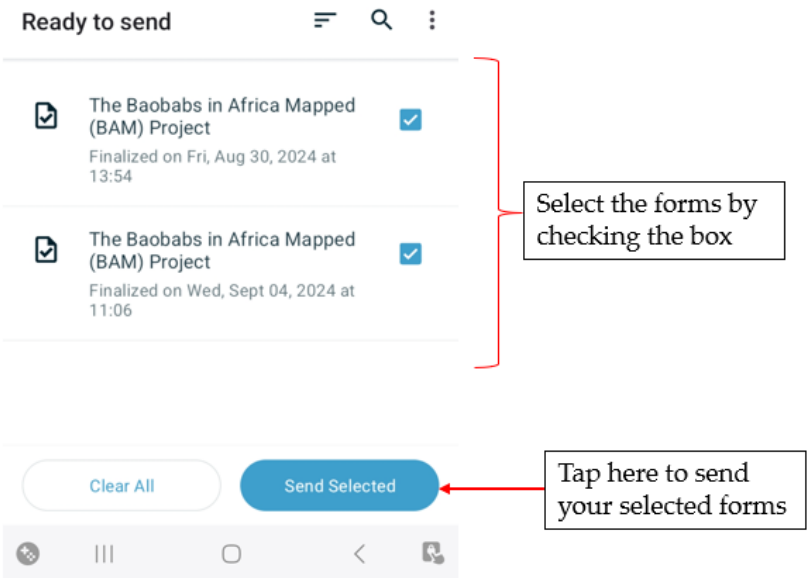
- Manage forms: Access the menu to "Edit Saved Form" to view, edit, or delete completed forms.

Step 6: Sending Completed Forms

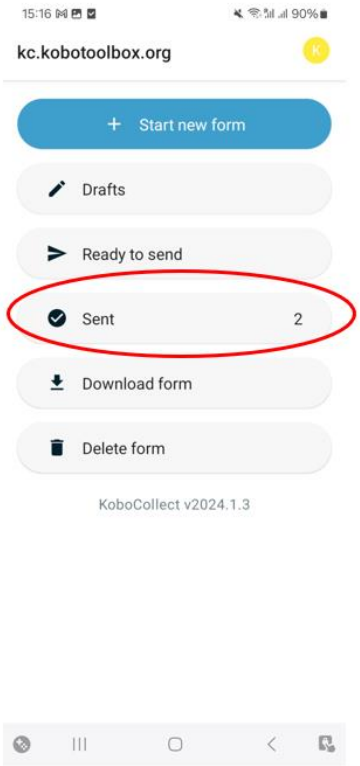
- Connect to Internet: Once you have internet access, open your KoboCollect on your mobile phone
- Select and Send: Tap "Ready to send" to choose the forms to send



- Select individually all the forms you want to send and then tap “Send selected”.



- After sending you can check the main menu to verify that your forms have been sent



- After sending your records, please contact us by email at: cp844@exeter.ac.uk to confirm receipt and to stay informed on further updates.