

Trip Report March 20th-31st 2026

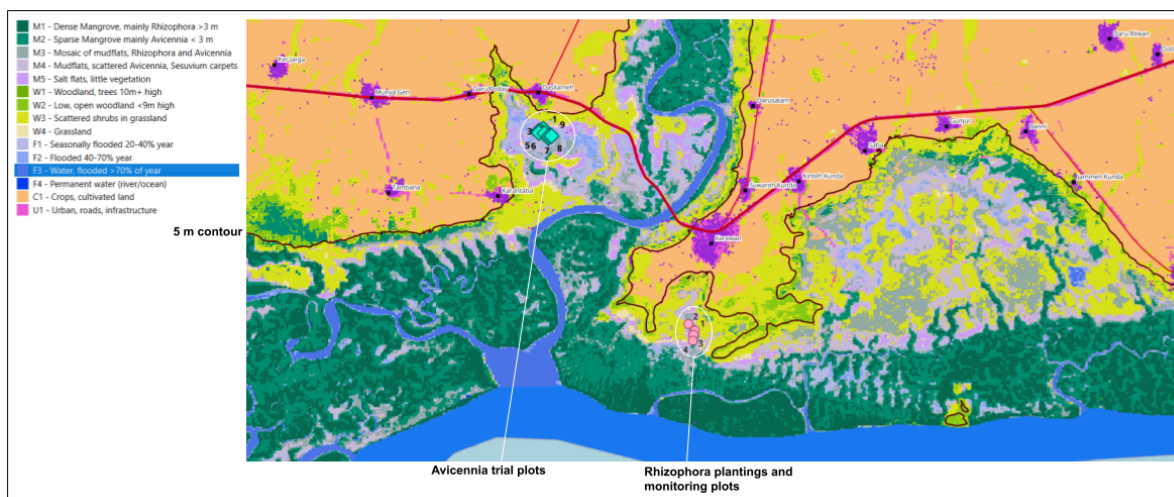
Denis Alder

I arrived on the TUI flight at about 8.30 pm on Friday 20th and was met by Abass and Willemijn, who took me to accommodation booked at Metzzy Hotel. After an overnight stay there, we left at about 1 pm for the ferry with Osainu, Willemijn, Abass and Laye as driver. The ferry was not especially crowded and it was an easy crossing. After a brief stop for a meal, we drove to Kerwan, arriving at the guesthouse in the evening.



On **Sunday 22nd March**, we went out for a reconnaissance visit to the Rhizophora planting sites near the Kerewan seed bank, and to the Dasilameh Avicennia nursery area. Figure 1 below shows the relative locations, together with other features of the local area, including land cover classes, the 5 m contour line (black), main roads (red), buildings (violet), and the sample plots that were established later in the week.

Figure 1 : Features of the visit area



At both sites, from this visit it was possible to determine suitable locations for plots. We also discussed at length the possible designs for the Avicennia trials, taking into account the realities of access and working in the thick mud at that site.

On **Monday 23rd** a training session was held at the conference centre adjacent to the rest house. The topic was the basic use of the Qfield app to capture geographical data on the ground with tablets or smartphones. 21 people attended (list available [here](#)). Participants were shown how to download and install Qfield, open a pre-prepared project and view the map layers, use gestures to zoom and pan and control various aspects of the app, to switch

between edit and browse modes, and in edit mode, how to add point data. The process was quite slow given both the range of devices available and the range of experience in their use among the participants. Osainu was extremely helpful in assisting me in delivering the material in a way that ensured that everyone was on board with each step of the process, also in translating and explaining as necessary.

Figure 2 : Rhizophora plantings and monitoring plots

On **Tuesday 24th** we went to the Rhizophora planting site to establish the monitoring plots. As with all the mangrove work, access was not easy, involving crossing a channel with about 1 m of water depth and 60-80 cm of soft mud at the bottom and on the banks, with all our equipment and a number of poles cut beforehand to be used to make the plots. Figure 2 shows the location of the plots against a satellite map. The Blue is the channel that had to be crossed to access the area. Pink circles represent plot locations, with their ID numbers. Green is the approximate extent of plantings. The grid is of 1-ha (100 m x 100 m) squares to give an idea of scale.



Plot 1 was established as a circular plot of 8 m. A plot centre pole was placed, and all mangrove plants within an 8 m radius of the centre were enumerated, identified by species (in practice either *Rhizophora* or *Avicennia*), measured for height in cm, and status recorded as Alive (A), Stressed (S) or Dead (D). Plants were considered stressed if there was necrosis in the upper leaf pair. Natural regeneration was also recorded in the same way as the planted trees, but tagged as NR. There were 139 live, planted *Rhizophora* on the plot (equivalent to 6913 trees per ha), 11 stressed and 11 dead trees (6.8% mortality), and 9 natural regeneration. The planted trees were all *Rhizophora*, and the natural regeneration all *Avicennia*. The plot was soft wet mud, with feet sinking 3-6 cm, and a ground cover of *Sesuvium portulacastrum*.

It took about one and a quarter hours to enumerate the plot, and the process was quite inefficient, as care had to be taken to avoid double counting or missing patches. After completing the plot, we discussed the design, and Willemijn suggested that a transect or linear plot would be less confusing to enumerate. We settled on a 50 m transect, with 2 m either side being measured, giving a plot area of 200 m². This compares in area with the 8 m circular plot, which has an area of 201.1 m². For plot 2, we tested this design, and found it worked well, with two recording teams (a booker and a measurer) able to work on the left and right side of the centre line tape without interference. For these transects, distance of each plant along the line was also recorded, which adds useful information about clustering of plants, particularly with areas of mortality. Changes in ground cover at different distances

along the transect could also be noted. There was not a great time advantage (about 1 hour versus 1¼ hours for the circular plot), but significantly more information can be gathered in that time, and the work is easier and less liable to error.

Figure 3 : Measuring the 50 m transect plot

We finished about 2 pm, by which time it had become too hot for further field work (40°C+), with 2 monitoring plots established, and useful field training and experience gained. Back at the resthouse, based on this fieldwork experience, we considered what would be the best statistical and practical design for *Avicennia* trials to be led by Willemijn. It was decided to go for 9 plots, with 3 replicates each of very wet, moderately wet and damp ground conditions. Dry areas were simply unsuitable for *Avicennia* at this time of year. Based on the experience of the day's heat, an early start was also planned for the next day.



Figure 4 : Location of *Avicennia* trial plots



On **Wednesday 25th March** we left the resthouse at about 7.30 am, and went directly to the *Avicennia* site near Dasilameh. Figure 4 shows the ultimate plot locations. The grid is again 100 x 100 m (each square is 1 ha), to give a reference scale. The blue diamonds are the plot locations, whilst the red dot is the *Avicennia* nursery. Each plot is 12 x 12 m, comprising 7 x 7 plants at 2 m spacings. The inner 5 x 5 plants comprise the

measurement plots, whilst the outer plants are a buffer, or as usually called in experimental design, a surround, to reduce edge effects on the experiment. Plots 1,2 and 4 were relatively fast, the ground being firmer, though still muddy with feet sinking 10 cm or so. Plots 3 and 5 were wetter and slower to establish. Moving the plants from the nursery was itself quite difficult due to the artificial lagoon that surrounds the nursery, itself in mud that is nearly waist deep. This work was largely done by ladies from the Dasilameh community (Figure 5).

Figure 5 : The plant carrying team
(not including myself. This was very arduous work due to the depth of mud around and in the nursery).

Plot 6 was on the other side of a channel that required swimming and slithering through very thick mud, with a border of dense *Avicennia*, so transporting the plants there was even slower and more difficult, a process in which I also assisted.



The actual planting was done by first establishing plot corners with poles, at 12 m apart carefully arranged as a square. Lines were then drawn in the mud at 2 m intervals, and plants placed at each intersection. Willemijn, who in research terms is the Principle Investigator (PI) of this trial determined plot locations and supervised layout, but the Gambian team rapidly became efficient at this.

By 2 pm, when heat prevented further work, we had completed plots 1-6 in terms of layout and planting. The following day, **Thursday 26th March**, we returned to complete the remaining plots (7-9) across the creek, and then begin to measure them. Measurements on the *Rhizophora* plots, described earlier, had been recorded in notebooks, and later manually entered into a Google sheets file. This day we began to record directly onto the tablet using G sheets. I worked with Laye on this for this day, he measuring and I recording. Later, Laye took over recording on the tablet with others measuring. Using the tablet rather than paper cuts out the transcription process and overall saves time. With a well-designed form from Kobo Toolbox or similar, it would probably be faster in the field than writing on paper, but with G sheets the popup keyboard is not very good and wastes time. However, G sheets involves a minimal learning curve and is very easy to set up and robust in terms of saving data automatically to the cloud whenever the internet becomes available or working securely offline without any need for the user to worry about the process. By the end of Thursday, plots 7-9 had been laid out and planted, a difficult process because of access across deep mud, and plots 1, 6-9 had all been measured.

On **Friday 27th March** we split into two groups. Willemijn went with Osainu to finish measuring all the remaining *Avicennia* plots at Dasilameh and to take soil samples from them. I went with Abass and team to do two more monitoring plots at the *Rhizophora* site. Most of the field work was directed by Abass, laying out and measuring the plots. As we only had one tablet in the field (mainly because of an oversight in planning!), but always 2 measuring teams on the transects (left and right side being done independently), some recording was done on the tablet, and some recorded in notebooks, which I transcribed later. I took 16 soil samples with the augur according to Willemijn's specifications, 4 from each of the monitoring plots 1-4, and we completed all the work on setting up and recording monitoring plots 3 and 4 (see Figure 2 above).

In the afternoon and evening I worked to complete the slides and exercises for the further training planned for the weekend.

On **Saturday 28th March**, a training course was given in using G sheets, starting with downloading and installing, and then doing exercises in basic usage. This worked well, as G sheets is a robust piece of software, and even with the usual power cuts, internet outages etc, we were able to continue effectively. I was greatly assisted in presenting and teaching by Osainu, who is very good at making sure the audience are keeping up with the material being presented or demonstrated. Laura also was a great help, as she is very skilled with this software and could identify problems with the behaviour of some phones and tablets that baffled me. The participants were the same as those for Monday's session, as given in the link there.

On **Sunday 29th March**, we gave another session on Qfield. This was essentially a practical exercise in collaborative mapping. We repeated much of the material from Monday but with a different project file. I asked all the participants to locate their own communities, and if possible homes, on their own tablet, and we then did an exercise to synchronize these 20 or so different versions of the digitized data from each device (tablet or phone) onto a single map on the computer. It took a little while to get the synchronized version together due to the fragile internet access, but was eventually successful and a powerful demonstration of how separate teams could work to map different features and data, and then merge them into a single map.

The slides used for the training sessions [can be accessed here](#).

On **Monday 30th March** I travelled back to Banjul via the ferry with Osainu, Laura and Willemijn. We were all due to depart the following day. The rest of Monday and early Tuesday were spent writing these notes. I departed by Tui on Tuesday evening back to the UK.