GENERAL INFORMATION

1. Title of dataset: DATA FROM: A FIELD EXPERIMENT EXPLORING DISTURBANCE-AND-RECOVERY, AND RESTORATION METHODOLOGY OF *ZOSTERA CAPENSIS* TO SUPPORT ITS ROLE AS A COASTAL PROTECTOR

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3. Date of data collection: 2018 - 2019

4. Geographic location of data collection: Inhaca Island, Eastern Africa

5. Funding sources that supported the collection of the data: WIOMSA/ MARG I Project, MASMA Project and Fundação Aga Khan and FCT – Fundação para a Ciência e Tecnologia IP.

6. Recommended citation for this dataset: Amone-Mabuto et al. (2022), DATA FROM: A FIELD EXPERIMENT EXPLORING DISTURBANCE-AND-RECOVERY, AND RESTORATION METHODOLOGY OF *ZOSTERA CAPENSIS* TO SUPPORT ITS ROLE AS A COASTAL PROTECTOR

ABSTRACT

These data were generated to assess the ability of seagrass *Z. capensis* to recover naturally after sediment digging for clam collection and to evaluate the feasibility of active seagrass restoration through two experiments running in parallel at Inhaca Island in Mozambique. The data were collected at four sampling events between September 2018 to September 2019. The first experiment included sediment digging and turnover of two plots (4 m × 20 m) and other two undisturbed plots were designed as “control plots”. Each plot was further divided in 16 subplots of 0.5 m2 and three subplots of each treatment were randomly selected at each sampling event. Shoot density measurements were recorded, and epiphytes and sediment samples collected. The average shoot density among the control and the digging plots varied significantly across time with fewer seagrass shoots in the digging plots compared to controls, while, no significant difference in the epiphyte percentage cover and sediment type were revealed between digging and the control treatments. The second experiment was focused on the effectiveness of replanting *Z. capensis* using the Plug method with PVC tubes. Data were collected in four seagrass restored plots (4 m × 3.2 m), each plot divided in two subplots and an equal number of plugs (80) were transplanted with the 4.5 cm diameter tube and with the 7.5 cm diameter tube. Survival rate was recorded and epiphyte and sediment samples collected. The survival rate of seagrasses differed significantly between the two plug sizes, with a higher survival rate (75%) in the 7.5 cm diameter PVC tube treatment.

Methods

Shoot density measurements were performed counting the number of shoots at each 0.5 m2. The abundance of epiphytes on seagrass was visually assessed in the field as a standard estimate of percentage cover. Epiphytes were then removed from the host plant and transported to the laboratory of identification. Survival rate was obtained from the number of the survived plugs. Sediment samples for both experiments were collected using PVC tube with 10 cm length and 5 cm diameter and sediment grain size assessed by wet sieving. All data were analysed using R in BlueSky statistics (Ver- 7.30).

Usage Notes

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| Documents | Contents |
| Clean\_ data | Contains clean data in three sheets:   * **Digging & Control plots** for the digging experiment (with Sand, Silt, Clay, Epiphytes and Shoots as variables). * **Restoration plots** for the restoration experiment (with Sand, Silt, Clay and Epiphytes as variables) * **Survival rate-restored Plots** for the restoration experiment **(**with survival rate of transplanted seagrass as variable) |
| Digging experiment\_ shoots density | Output of shoot density data analysis in digging experiment |
| Digging experiment\_ epiphytes | Output of epiphytes data analysis in in digging experiment |
| Digging experiment\_ sediment | Output of sediment data analysis in digging experiment |
| Restoration experiment \_ survival rate | Output of survival rate in restoration experiment |
| Restoration experiment \_ epiphytes | Output of epiphytes data analysis in restoration experiment |
| Restoration experiment\_ sediment | Output of sediment data analysis in restoration experiment |

DATA-SPECIFIC INFORMATION FOR: **Digging & Control plots** sheet

1. Number of variables: 9
2. Number of cases/rows: 48
3. Variable List:

Plot: Type of plot; Digging/Control

Time: sampling occasion; T1, T2, T3, T4

No Plot: sampled plot ID; D3,D5, C2, C4

Sand[%]: Percentage of sand

Silt[%]: Percentage of silt

Clay[%]: Percentage of clay

% Epiphytes: percentage of epiphytes

Shoots/0.25m2: shoot density per 0.25m2

Shoots/m2: shoot density per m2

DATA-SPECIFIC INFORMATION FOR: **Restoration plots** sheet

1. Number of variables: 7
2. Number of cases/rows: 96
3. Variable List:

PVC Tube: Diameter of the PVC tube used for sampling; 4.5cm/7.5cm

Time: sampling occasion; T1, T2, T3, T4

No Plot: sampled plot ID; R1, R2, R3, R4

Sand[%]: Percentage of sand

Silt[%]: Percentage of silt

Clay[%]: Percentage of clay

% Epiphytes: percentage of epiphytes

DATA-SPECIFIC INFORMATION FOR: **Survival rate-restored Plots** sheet

1. Number of variables: 5
2. Number of cases/rows: 32

3. Variable List:

PVC Tube: Diameter of the PVC tube used for sampling; 4.5cm/7.5cm

No Plot: sampled plot ID; Plot 1, Plot 2, Plot 3, Plot 4

Time: sampling occasion; T1, T2, T3, T4

Survival plugs: number of survival plugs

Survival rate (%): Percentage of survival plugs