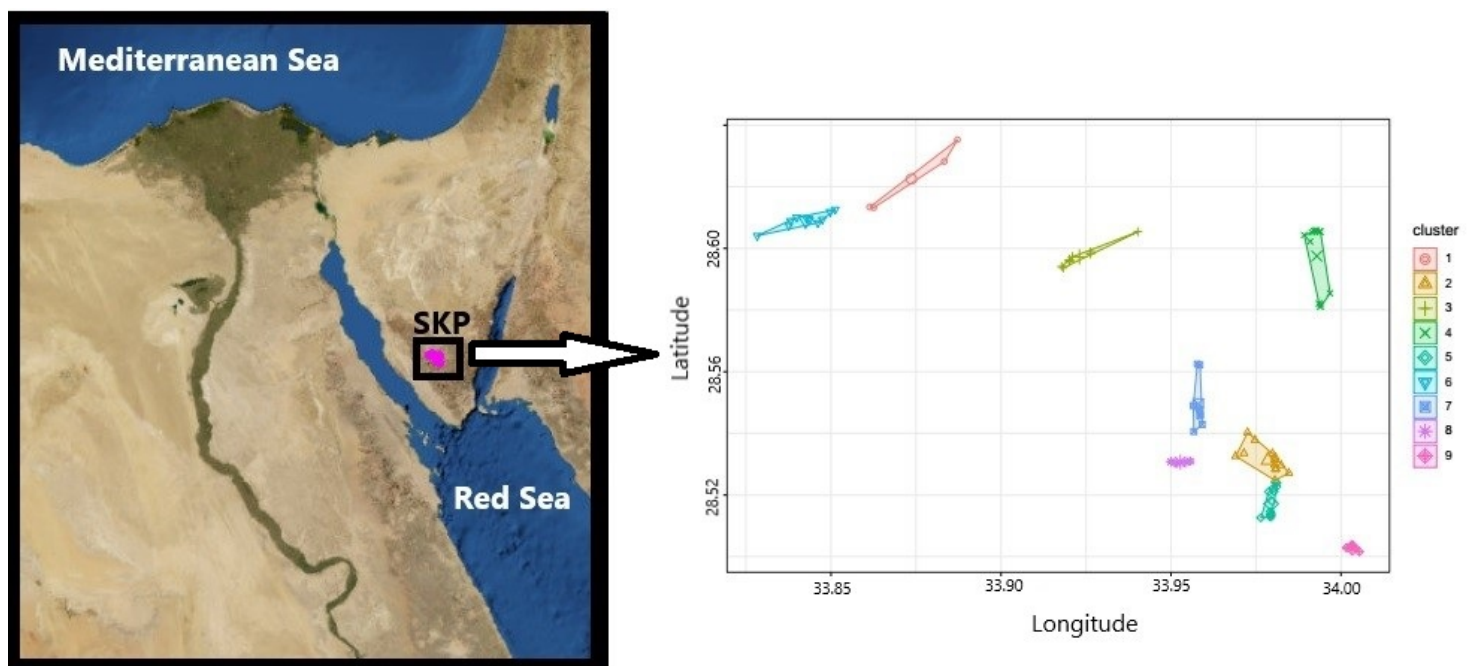


**Supplementary Data to:**

El-Barougy RF, Bersier L-F, Gray SM, El-Keblawy A, Galal T, Ullah F, Elgamal IA and Dakhil MA (2025)  
Shaping beta diversity in arid landscape through native plant species contributions: synergy of climate,  
soil, and species traits. *Front. Plant Sci.* 16:1521596.



**Fig. S1.** Location of Saint Katherine Protectorate (SKP) the study area and the clusters of study plots (84 plots) on which SCBD was calculated.

| <i>Species Identity</i>          | <b>SCBD</b> |
|----------------------------------|-------------|
| <i>Achillea_fragrantissim</i>    | 0.01012341  |
| <i>Adiantum_capillus_veneris</i> | 0.016300487 |
| <i>Alkanna_orientalis</i>        | 0.051561106 |
| <i>Anarrhinum_pubescens</i>      | 0.015897648 |
| <i>Anchusa_milleri</i>           | 0.005510532 |
| <i>Arenaria_deflexa</i>          | 0.001302489 |
| <i>Atraphaxis_spinosa</i>        | 0.004315528 |
| <i>Ballota_kaiseri</i>           | 0.009519352 |
| <i>Ballota_undulata</i>          | 0.027216612 |
| <i>Blepharis_attenuata</i>       | 0.007379031 |
| <i>Bufonia_multiceps</i>         | 0.044977009 |
| <i>Capparis_sinaica</i>          | 0.005372769 |
| <i>Caylusea_hexagyna</i>         | 0.002865477 |
| <i>Chenopodium_album</i>         | 0.002262219 |
| <i>Chiliadenus_montanus</i>      | 0.030108432 |
| <i>Colutea_istria</i>            | 0.000754073 |
| <i>Conyxa_aegyptiaca</i>         | 0.003438572 |
| <i>Conyza_bonariensis</i>        | 0.002249076 |
| <i>Cotoneaster_orbicularis</i>   | 0.004796025 |
| <i>Crataegus_x_sinaica</i>       | 0.006331071 |
| <i>Deverra_triradiata</i>        | 0.006758535 |
| <i>Diploaxis_harra</i>           | 0.002865477 |
| <i>Echinops_glaberrimus</i>      | 0.029631678 |
| <i>Ephedra_sp</i>                | 0.005687294 |
| <i>Fagonia_arabica_arabica</i>   | 0.002477432 |
| <i>Fagonia_mollis</i>            | 0.049166013 |
| <i>Ficus_carica</i>              | 0.000477579 |
| <i>Ficus_palmata</i>             | 0.000795966 |
| <i>Galium_setaceum</i>           | 0.002865477 |
| <i>Heliotropium_arbainense</i>   | 0.000955159 |
| <i>Hyoscyamus_boveanus</i>       | 0.023671772 |
| <i>Hypericum_sinaicum</i>        | 0.012454254 |
| <i>Juncus_rigidus</i>            | 0.007540729 |
| <i>Launaea_capitata</i>          | 0.002729026 |
| <i>Launaea_nudicaulis</i>        | 0.003306319 |
| <i>Lavandula_coronopifolia</i>   | 0.007305889 |
| <i>Malva_neglecta</i>            | 0.002262219 |
| <i>Matthiola_arabica</i>         | 0.011866351 |
| <i>Matthiola_longipetala</i>     | 0.002834134 |
| <i>Mentha_longifolia</i>         | 0.030789909 |
| <i>Nepeta_septemcrenata</i>      | 0.021572015 |

| <i>Species Identity</i>          | <b>SCBD</b> |
|----------------------------------|-------------|
| <i>Nicotiana_glauca</i>          | 0.000573095 |
| <i>Origanum_syriacum</i>         | 0.063976785 |
| <i>Peganum_harmala</i>           | 0.004629726 |
| <i>Phlomis_aurea</i>             | 0.085286472 |
| <i>Plantago_sinaica</i>          | 0.002620832 |
| <i>Primula_boveana</i>           | 0.077696794 |
| <i>Pterocephalus_sanctus</i>     | 0.007026238 |
| <i>Retama_raetam</i>             | 0.001102106 |
| <i>Rosa_arabica</i>              | 0.054150262 |
| <i>Rumex_vesicarius</i>          | 0.004249391 |
| <i>Salvia_multicaulis</i>        | 0.00527851  |
| <i>Scrophularia_libanotica</i>   | 0.001432738 |
| <i>Scrophularia_xanthogolssa</i> | 0.009282997 |
| <i>Seriphidium_herba_album</i>   | 0.027870799 |
| <i>Silene_leucophylla</i>        | 0.014178026 |
| <i>Silene_schimperiana</i>       | 0.037844028 |
| <i>Solanum_nigrum</i>            | 0.002865477 |
| <i>Stachys_aegyptiaca</i>        | 0.018230195 |
| <i>Stipa_sp</i>                  | 0.015508379 |
| <i>Tanacetum_sinaicum</i>        | 0.028634143 |
| <i>Teucrium_polium</i>           | 0.007436307 |
| <i>Thymus_decussatus</i>         | 0.001364513 |
| <i>Umbilicus_horizontalis</i>    | 0.010728106 |
| <i>Verbascum_decaisneanum</i>    | 0.007163692 |
| <i>Verbascum_sinaiticum</i>      | 0.019681092 |
| <i>Zilla_spinosa</i>             | 0.010895151 |

**Table S1.** Shows the list of studied native species and their SCBD values

