**Table S1.** Dependent and Independent variables, sampling methods and measurement calculations.

| Variable | Units | Variable Type | Measurement or Sampling Dates | Number of Visits | Observer Effort | Measurement |
|---|---|---|---|---|---|---|
| **Dependent** | | | | | | |
| Shade Cover | % | numerical, continuous | 5-30 Jun 2022 | 1 | 1 observer; 1 recorder | Number of Shaded Points/200 |
| Ave DBH | cm | numerical, continuous | 5-30 Jun 2022 | 1 | 1 observer; 1 recorder | (Circumference/**π**)/Total Trees |
| Total DBH | cm | numerical, continuous | 5-30 Jun 2022 | 1 | 1 observer; 1 recorder | (**Σ**(Circumference/**π**)in 1-ha) |
| Ave Tree Height | m | numerical, continuous | 5-30 Jun 2022 | 1 | 1 observer; 1 recorder | Individual tree height/Total Trees |
| Tree Species Richness | count | numerical, discrete | 5-30 Jun 2022 | 1 | 1 observer; 1 recorder | Count of all tree species in 1-ha |
| Total Trees | individuals | numerical, discrete | 5-30 Jun 2022 | 1 | 1 observer; 1 recorder | **Σ**(All individual trees in 1-ha) |
| Flowering Plant Species Richness | count | numerical, discrete | 5 Jun-24 Jul; 7-19 Dec 2022 | 4 | 1 observer | Count of all plant species with open flowers in 1-ha |
| Flower abundance | count | numerical, discrete | 5 Jun-24 Jul; 7-19 Dec 2022 | 4 | 1 observer | Count of all open flowers in 1-ha |
| Independent | | | | | | |
| Bee species richness | count | numerical, discrete | 5 Jun-24 Jul; 7-19 Dec 2022 | 4 | 3 observers X 6hr exhaustive surveys + 2 observers X 1hr X 2 honey bait stations | 3 observers X 6 hrs X 4 sampling periods + 2 observers X 1hr X 2 honey bait stations X 4 sampling periods |
| Bee abundance | count | numerical, discrete | 5 Jun-24 Jul; 7-19 Dec 2022 | 4 | 3 observers X 6hr exhaustive surveys | 3 observers X 6 hrs X 4 sampling periods |
| Weighted connectance | NA | numerical, continuous | 5 Jun-24 Jul 2022 | 3 | 3 observers X 6hr exhaustive surveys | 3 observers X 6 hrs X 3 sampling periods |
| Modularity Q | NA | numerical, continuous | 5 Jun-24 Jul 2022 | 3 | 3 observers X 6hr exhaustive surveys | 3 observers X 6 hrs X 3 sampling periods |
| NODF (nestedness) | NA | numerical, continuous | 5 Jun-24 Jul 2022 | 3 | 3 observers X 6hr exhaustive surveys | 3 observers X 6 hrs X 3 sampling periods |
| H2' (specialization) | NA | numerical, continuous | 5 Jun-24 Jul 2022 | 3 | 3 observers X 6hr exhaustive surveys | 3 observers X 6 hrs X 3 sampling periods |

**Table S2.** Raw network indices.

| Farm | Type | Meliponine H2 | Meliponine wC | Meliponine Q | Meliponine NODF | Entire H2 | Entire wC | Entire Q | Entire NODF |
|---|---|---|---|---|---|---|---|---|---|
| FC | Pasture | 0.8020407 | 0.09925344 | 0.4314169 | 13.72549 | 0.7406818 | 0.09006467 | 0.6083284 | 14.91165 |
| GR | Pasture | 0.4108102 | 0.2054753 | 0.3564209 | 28.35249 | 0.4363859 | 0.0999572 | 0.4952163 | 16.67428 |
| AL | Pasture | 0.6981549 | 0.1608385 | 0.4056122 | 21.2963 | 0.5876287 | 0.1111888 | 0.5155377 | 12.49589 |
| MU | Pasture | 0.6414741 | 0.2001825 | 0.1840278 | 11.90476 | 0.5628776 | 0.165905 | 0.3089665 | 17.88056 |
| RE | Pasture | 0.4993554 | 0.1441759 | 0.4635429 | 18.92677 | 0.5287073 | 0.093331543 | 0.5459925 | 15.85281 |
| HA | Coffee | 0.3942444 | 0.1682426 | 0.3717193 | 24.21875 | 0.5417657 | 0.1197319 | 0.5345751 | 13.01387 |
| IA | Coffee | 0.3290617 | 0.1704174 | 0.3295671 | 43.95714 | 0.3962126 | 0.09666944 | 0.3928784 | 15.42526 |
| NS | Coffee | 0.7538011 | 0.1271489 | 0.5920181 | 12.84848 | 0.8006755 | 0.1145999 | 0.676553 | 10.52974 |
| VR | Coffee | 0.5594268 | 0.1080376 | 0.559328 | 21.44558 | 0.5564905 | 0.08152504 | 0.5950972 | 13.57143 |
| WL | Coffee | 0.5117821 | 0.1682718 | 0.4273117 | 18.42105 | 0.4381848 | 0.1478609 | 0.3608416 | 21.71921 |

**Figure S1.** Bee abundance comparing coffee agroforests and silvopasture.

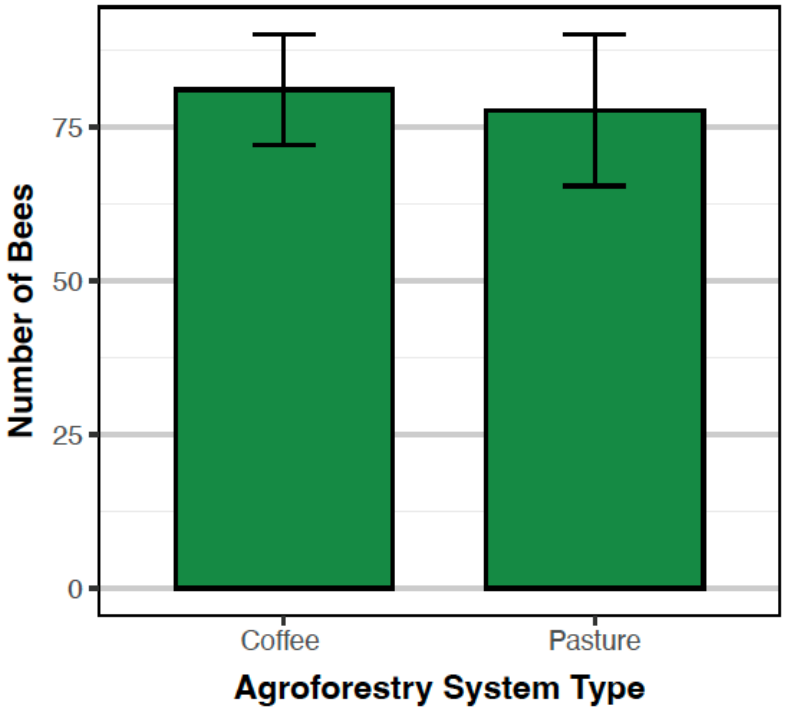



**Figure S2.** a. Bee abundance.

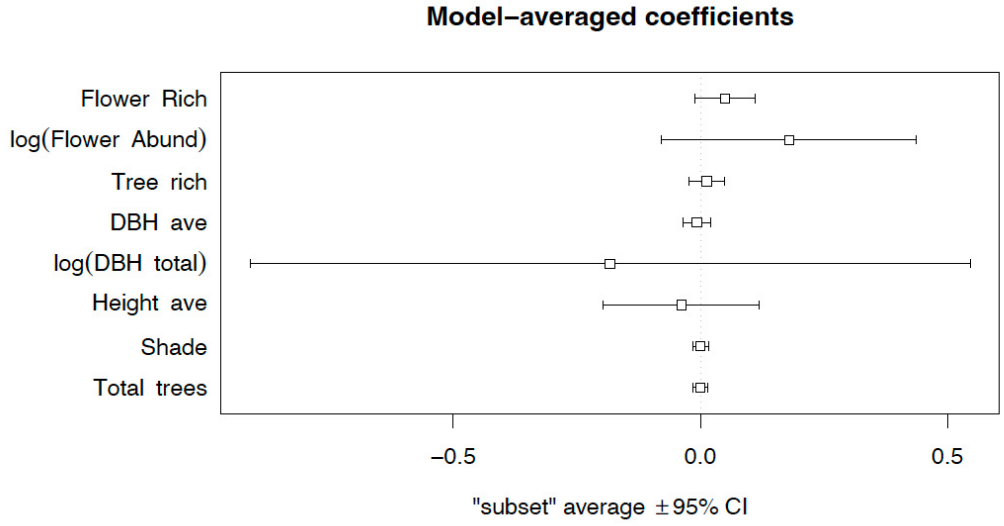


**Figure S2.** b. Bee species richness.

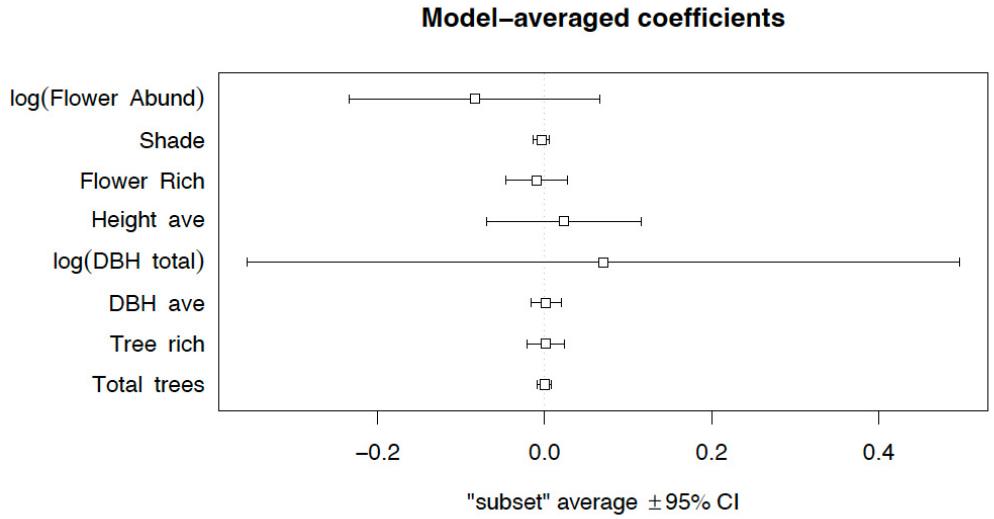



**Figure S3.** Species accumulation curve, comparing species richness, S, to abundance-based estimators, Chao1 and ACE.

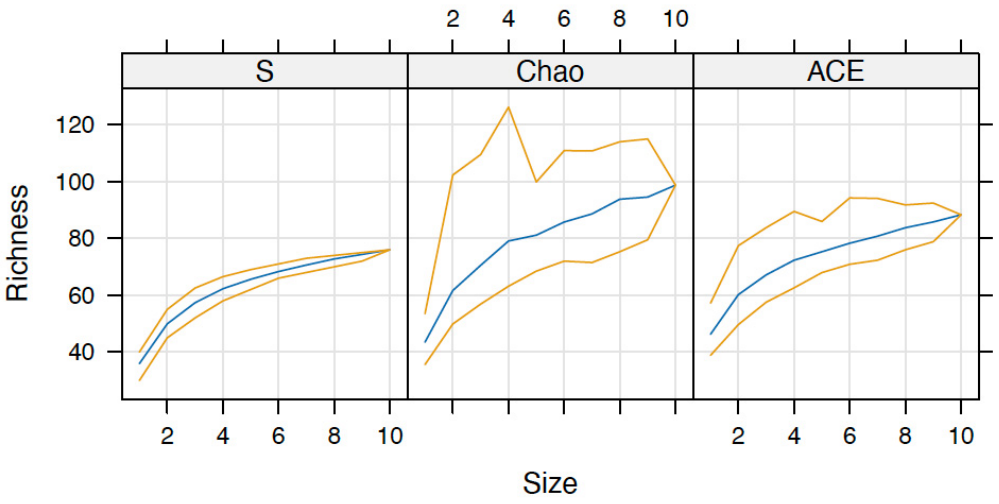


**Figure S4.** Distance-based redundancy ordination plot.

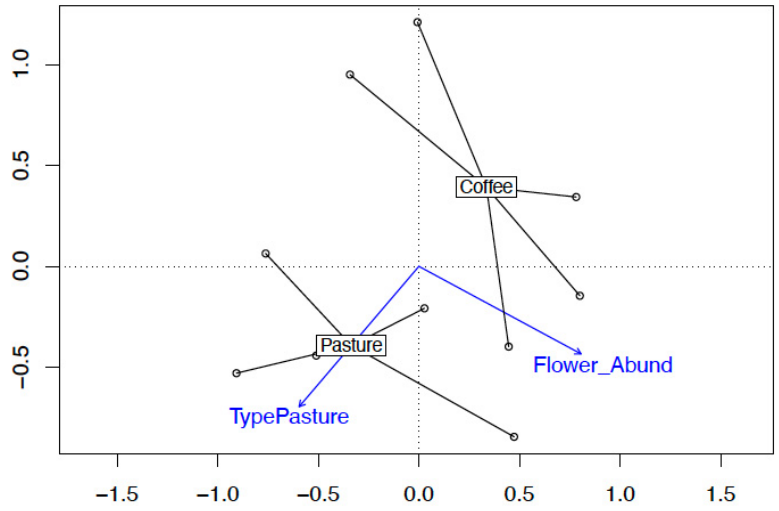



**Figure S5.** a. Connectance-Entire bee network.

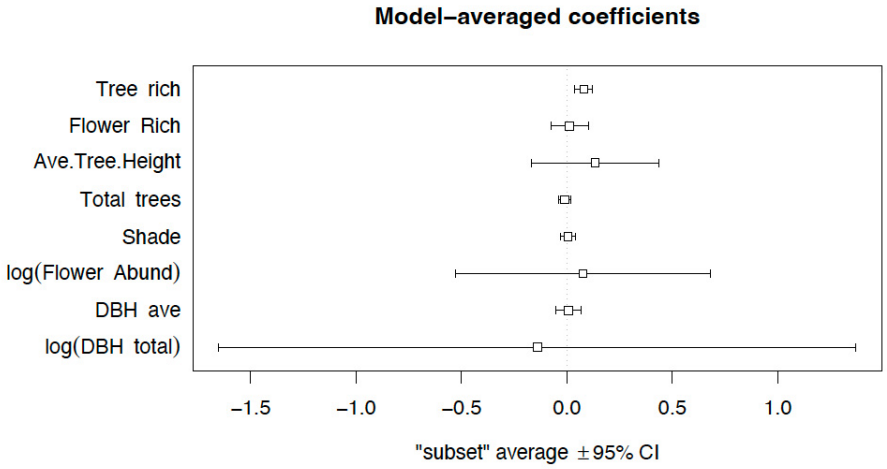



**Figure S5.** b. Connectance-Meliponine bee network.

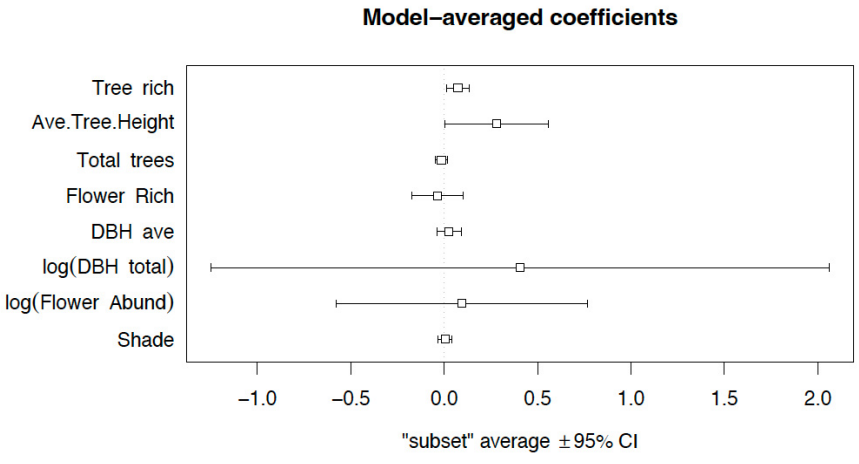


**Figure S5.** c. Modularity-Entire bee network.

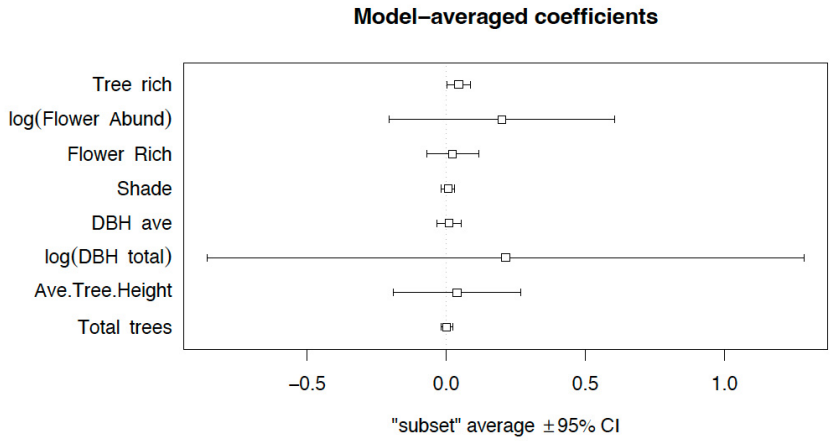



**Figure S5.** d. Modularity-Meliponine bee network.

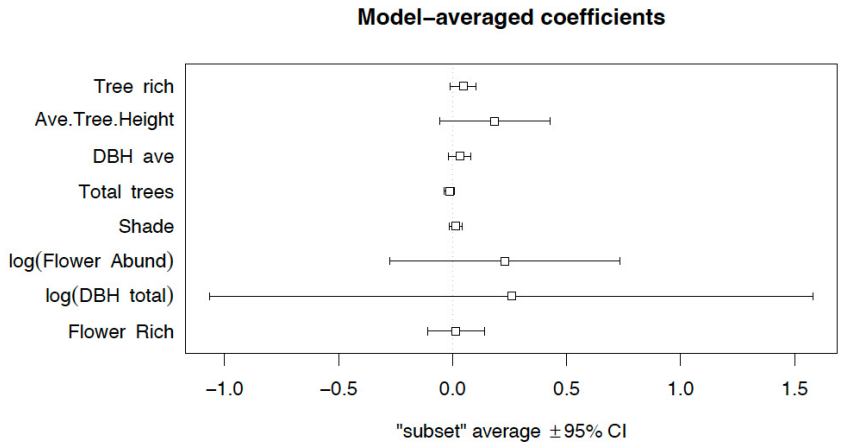



**Figure S5.** e. Specialization-Entire bee network.

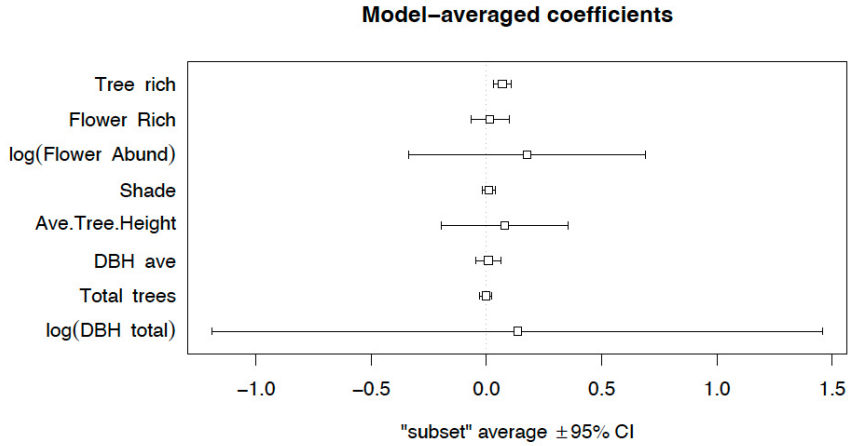



**Figure S5.** f. Specialization-Meliponine bee network.

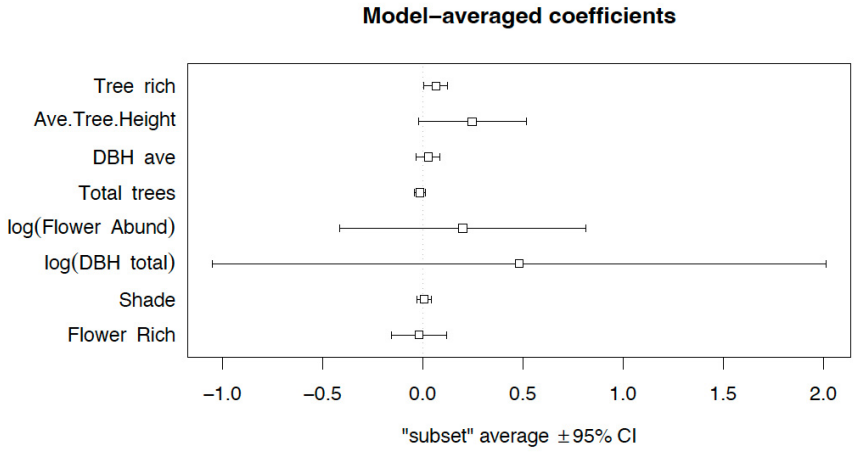



**Figure S5.** g. Nestedness-Entire bee network.

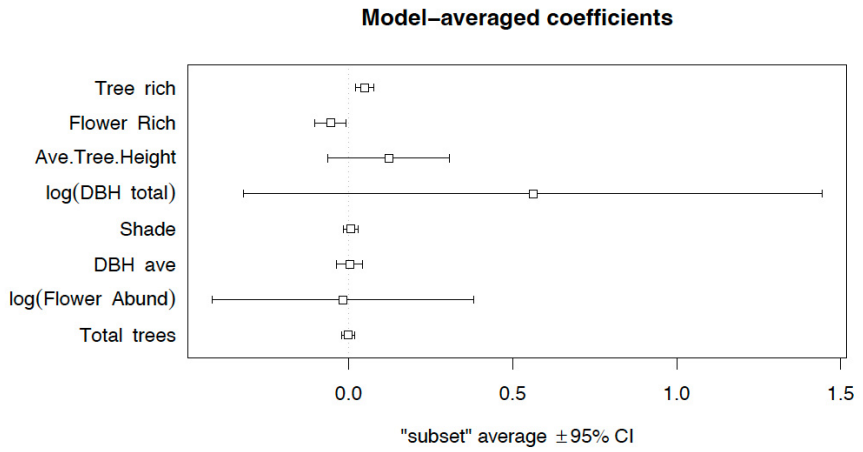



**Figure S5.** h. Nestedness-Meliponine bee network.

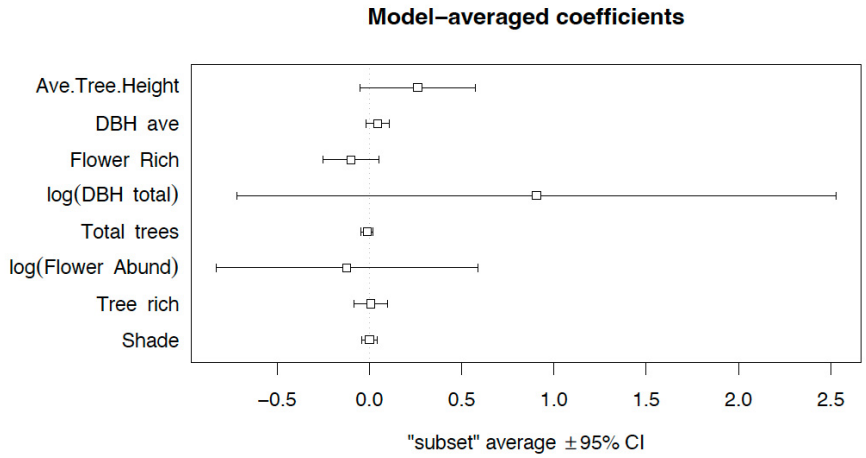


**Figure S6.** Entire bee and stingless bee networks quantitative modularity analysis.

