doi:10.1038/nature11688

I. Supplementary Figures

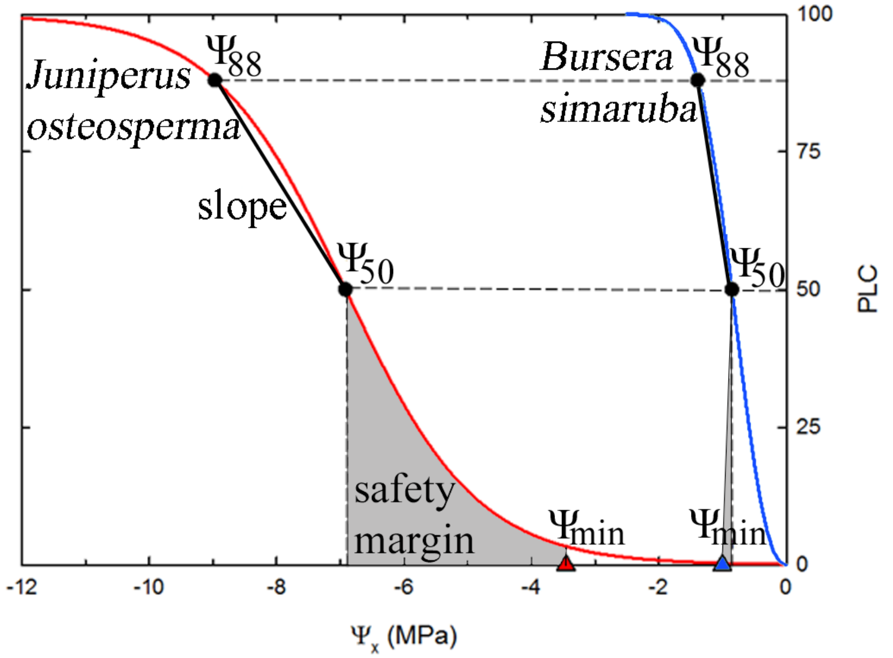

Figure S1: Embolism vulnerability curves showing percentage loss of hydraulic conductivity (PLC) as a function of xylem pressure (Ψ_x). Curves are shown for the angiosperm species *Bursera simaruba*, a tropical rainforest species (blue curve), and the gymnosperm *Juniperus osteosperma*, a dry forest species (red curve). Points show the xylem pressures at which PLC = 50% (Ψ_{50}) and PLC = 88% (Ψ_{88}) for each species (Ψ_{50} = – 6.9 MPa and – 1 MPa for *J. osteosperma* and *B. simaruba*, respectively). A smaller decrease in xylem pressure is required to move from Ψ_{50} to Ψ_{88} in *B. simaruba* because of the steeper slope of the curve between Ψ_{50} and Ψ_{88}. Ψ_{min} values are indicated by triangles and represent the minimum Ψ_x measured in the field. The difference between Ψ_{min} and Ψ_{50} (grey area) corresponds to a "safety margin", which is 3.4 MPa for *J. osteosperma*, while Ψ_{min} passes the Ψ_{50} point marginally for *B. simaruba*, resulting in a slightly negative safety margin and thus a more risky hydraulic strategy than *J. osteosperma*. Curves were redrawn from literature[1,2].

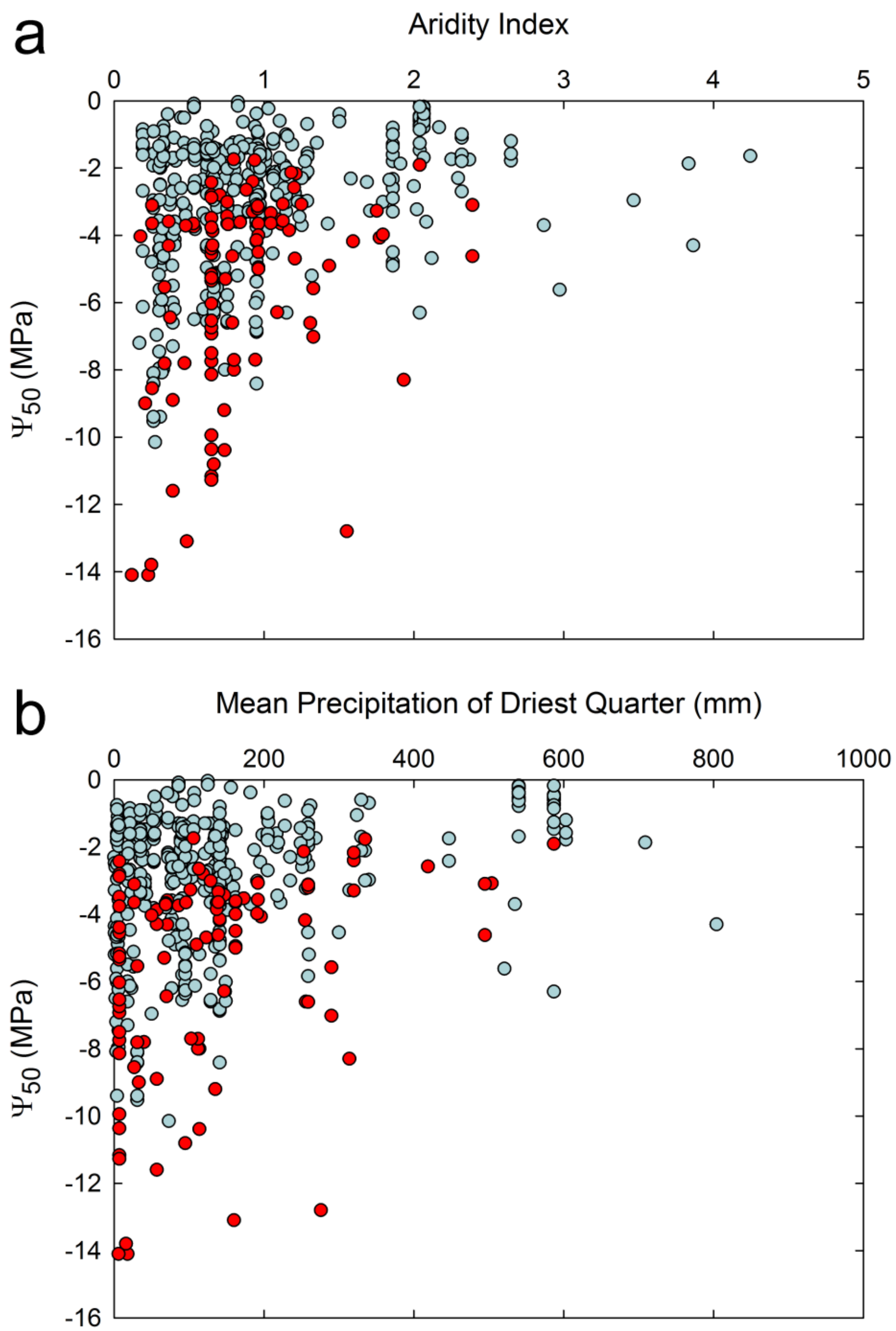

Figure S2: Embolism resistance (Ψ_{50}) as a function of (a) Aridity Index (AI, calculated as the ratio of MAP to PET as defined by the United Nations Environment Programme) and (b) Mean Precipitation of the Driest Quarter (mm) for 384 angiosperm (blue dots) and 96 gymnosperm (red dots) species with each point representing one species. The mean precipitation of the driest quarter is the sum of the average precipitation in the three driest successive months, a measure that takes into account the seasonality of rainfall. A generalised model indicated Ψ_{50} was significantly related to AI ($P < 0.00001$) and Mean Precipitation of the Driest Quarter ($P < 0.0001$) for both angiosperms and gymnosperms, illustrating a similar relationship as observed for Ψ_{50} and MAP (Figure 3).

II. Supplementary Table

The dataset compiled from published work and unpublished data of the authors is provided in **Supplementary Table 1**, including species names, Ψ_{50}, Ψ_{88}, Ψ_{min}, safety margins, climate data, life form, biome, site data, and the sources of published data

III. References

1 Lopez, O. R., Kursar, T. A., Cochard, H. & Tyree, M. T. Interspecific variation in xylem vulnerability to cavitation among tropical tree and shrub species. *Tree Physiol.* **25**, 1553-1562 (2005).

2 Linton, M. J., Sperry, J. S. & Williams, D. G. Limits to water transport in *Juniperus osteosperma* and *Pinus edulis*: implications for drought tolerance and regulation of transpiration. *Funct. Ecol.* **12**, 906-911 (1998).