



*Supplement of*

**Carbon isotopic ratios of modern C<sub>3</sub> and C<sub>4</sub> vegetation on the Indian peninsula and changes along the plant–soil–river continuum – implications for vegetation reconstructions**

**Frédérique M. S. A. Kirkels et al.**

*Correspondence to:* Francien Peterse (f.peterse@uu.nl) and Frédérique M. S. A. Kirkels (f.m.s.a.kirkels@uu.nl)

The copyright of individual parts of the supplement might differ from the article licence.

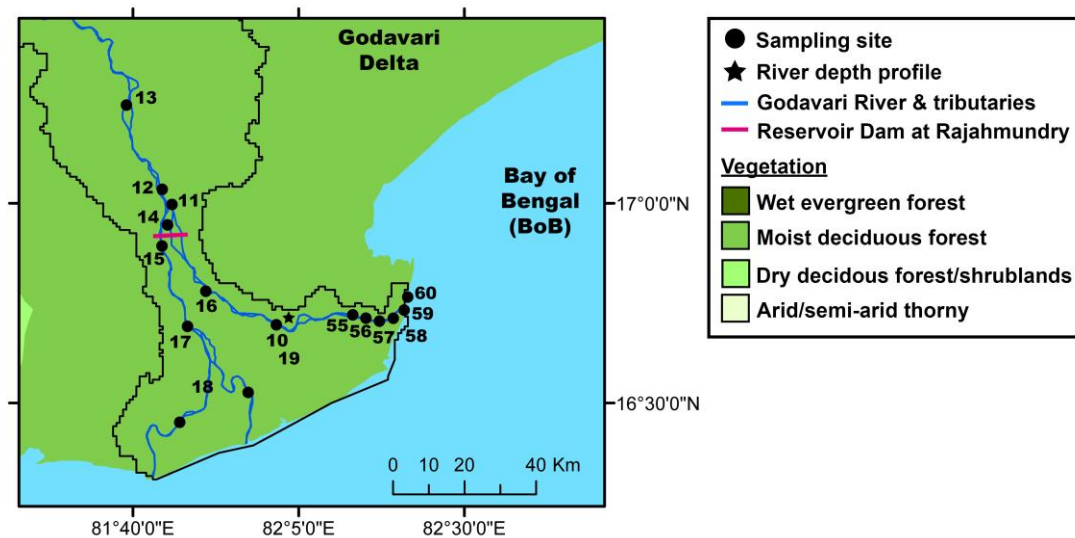


Fig. S1: Zoom for Godavari delta, with sampling sites and the major vegetation zones (Olson et al., 2001; Asouti and Fuller, 2008).

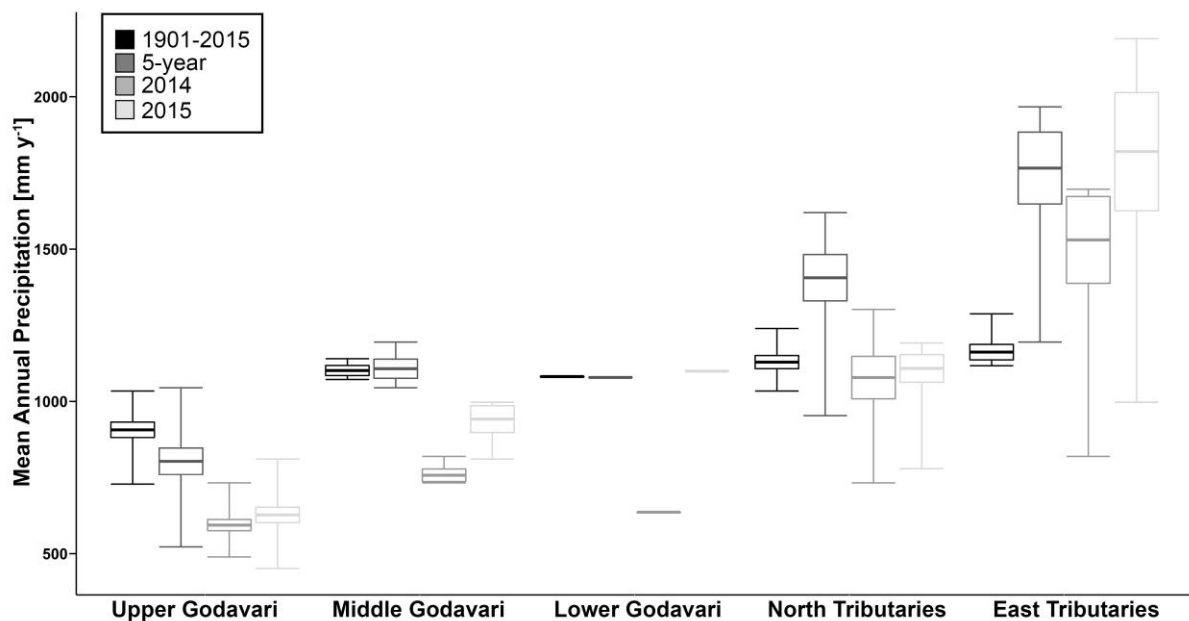
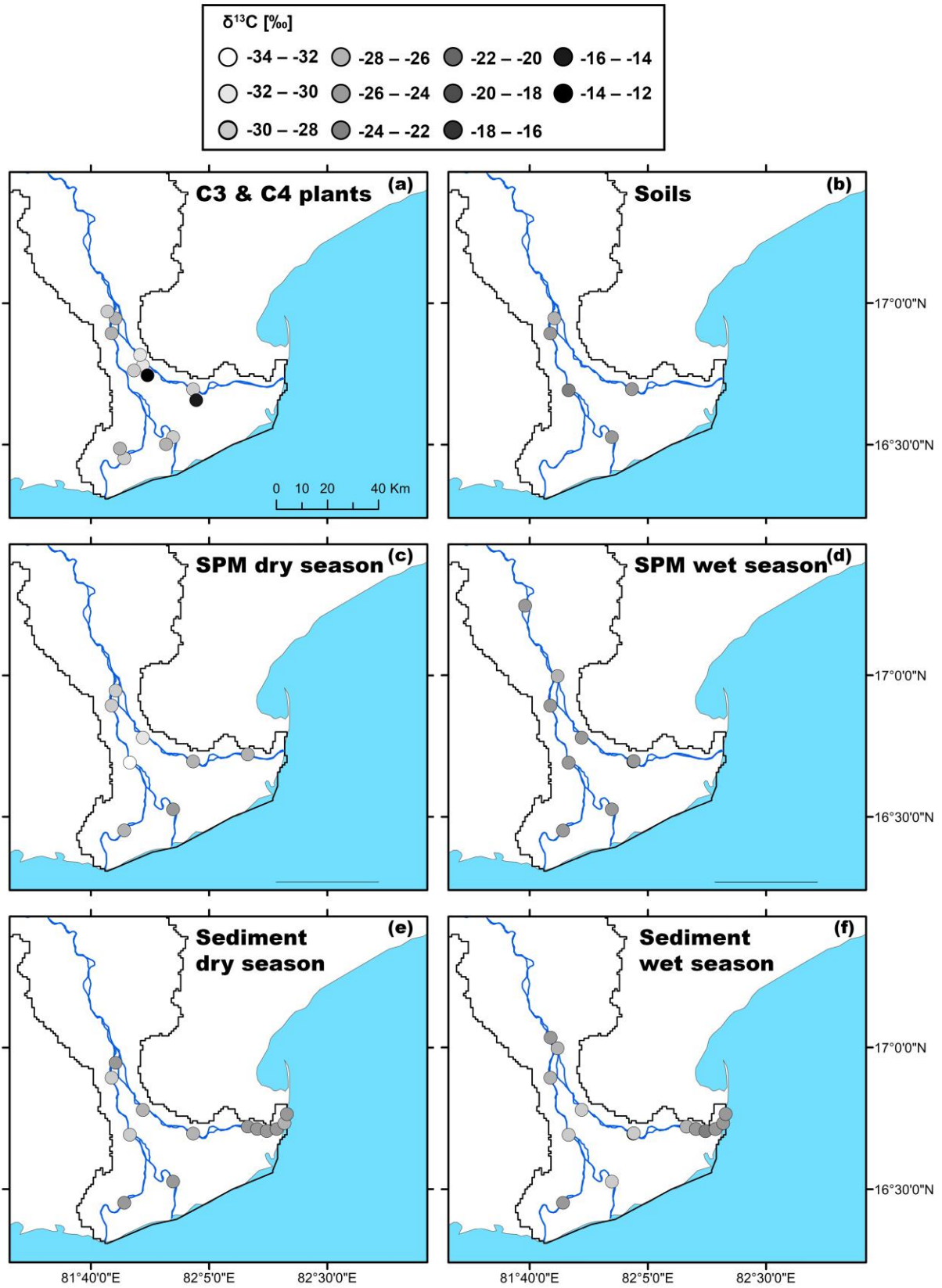
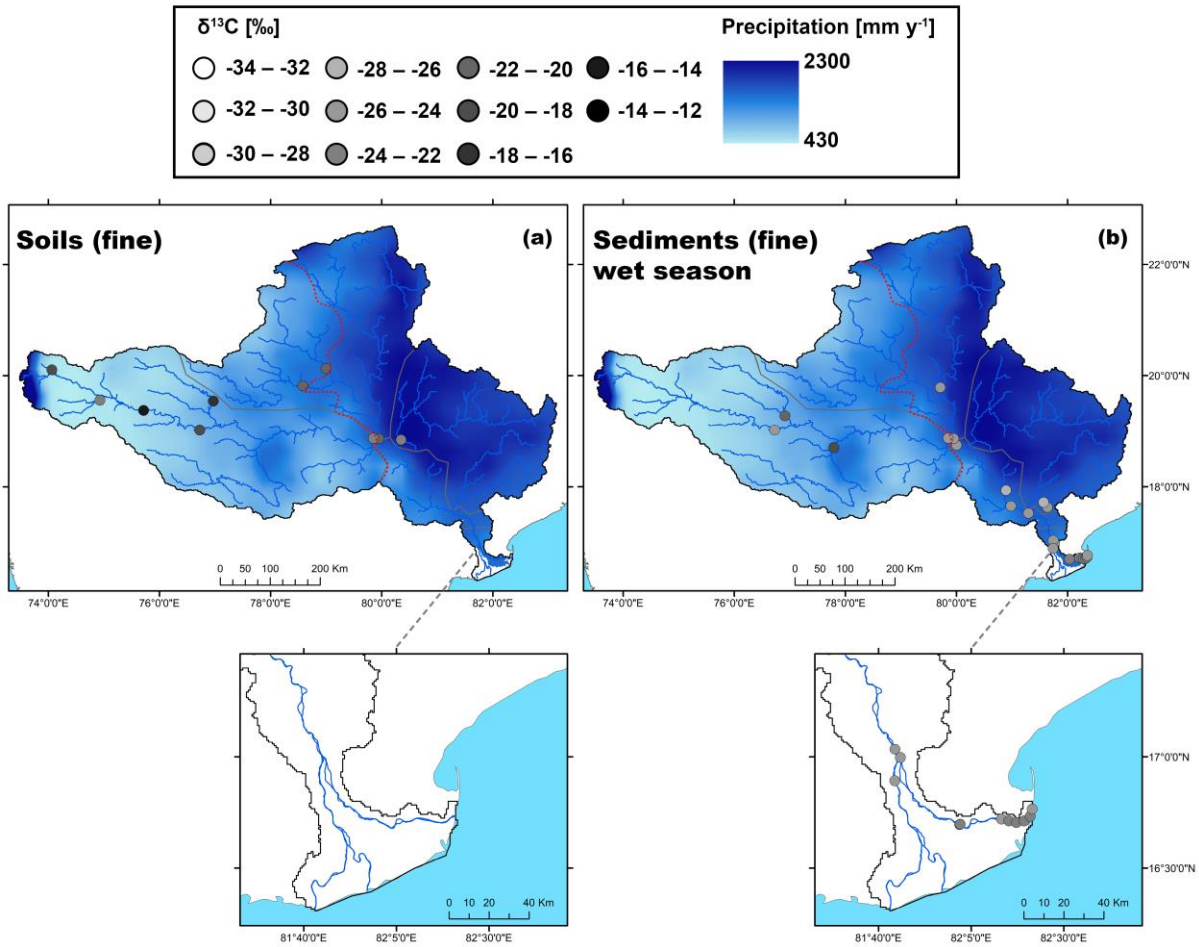


Fig. S2: Box-and-whisker plot of long-term (1901–2015; CRU TS v. 3.24.01 dataset; Harris et al., 2014; Dearing Crampton-Flood et al., 2020), 5 year (2012–2016), 2014 (previous growing season) and 2015 (sampling year) Mean Annual Precipitation (MAP) for the 5 subbasins (Water Resources Information System, accessed 01/02/2021). The box represents the mean – 1 standard error (SE) and mean + 1 SE, the horizontal line in the box represents the mean, and the whiskers extent to the minimum and maximum values.



**Fig. S3:** Maps showing the spatial distribution of (bulk)  $\delta^{13}\text{C}_{(\text{org})}$  values in the Godavari delta for (a) C3 and C4 plants, (b) (bulk) soils, SPM collected in the (c) dry and (d) wet season, and (bulk) riverbed sediments collected in the (e) dry and (f) wet season. The points refer to the measured  $\delta^{13}\text{C}_{(\text{org})}$  values.



**Fig. S4:** Maps showing the spatial distribution of (bulk)  $\delta^{13}\text{C}_{\text{org}}$  values in the Godavari basin for (a) fine ( $\leq 63 \mu\text{m}$ ) soils and (b) fine riverbed sediments collected in the wet season. The main panel shows the whole basin, with a zoom for the delta region. The points refer to the measured  $\delta^{13}\text{C}_{\text{org}}$  values and the 30-year average rainfall distribution is shown on the background (MAP;  $0.25^\circ$ , APHRODITE dataset; Yatagai et al., 2009).

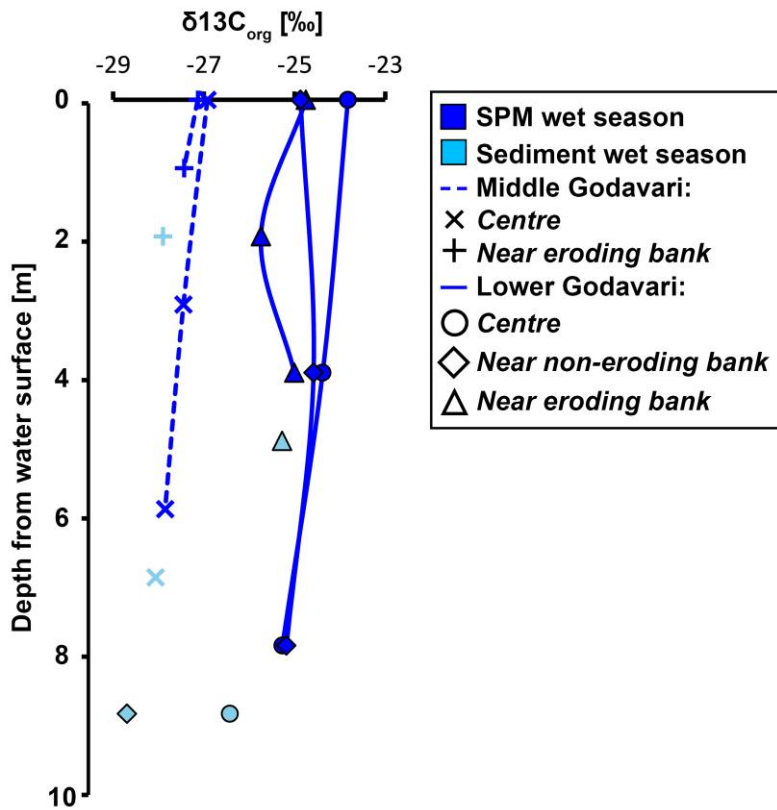


Fig. S5: Measured  $\delta^{13}\text{C}_{\text{org}}$  values with river depth for in SPM and (bulk) riverbed sediments collected in the wet season in the Middle (site 28) and Lower Godavari (site10). The symbols represent the position in the channel: mid-channel (centre), and near the (non-)eroding riverbank. The shallowest profiles are taken near the non-eroding riverbank.

## References

Water Resources Information System, Government of India, Ministry of Water Resources: Rainfall data in the Godavari basin: <https://indiawris.gov.in/>, access: 01/02/ 2021.

Yatagai, A., Kamiguchi, K., Arakawa, O., Hamada, A., Yasutomi, N. and Kitoh, A.: APHRODITE: Constructing a long-term daily gridded precipitation dataset for Asia based on a dense network of rain gauges, *Bull. Am. Meteorol. Soc.*, 93, 1401-1415, 2012.