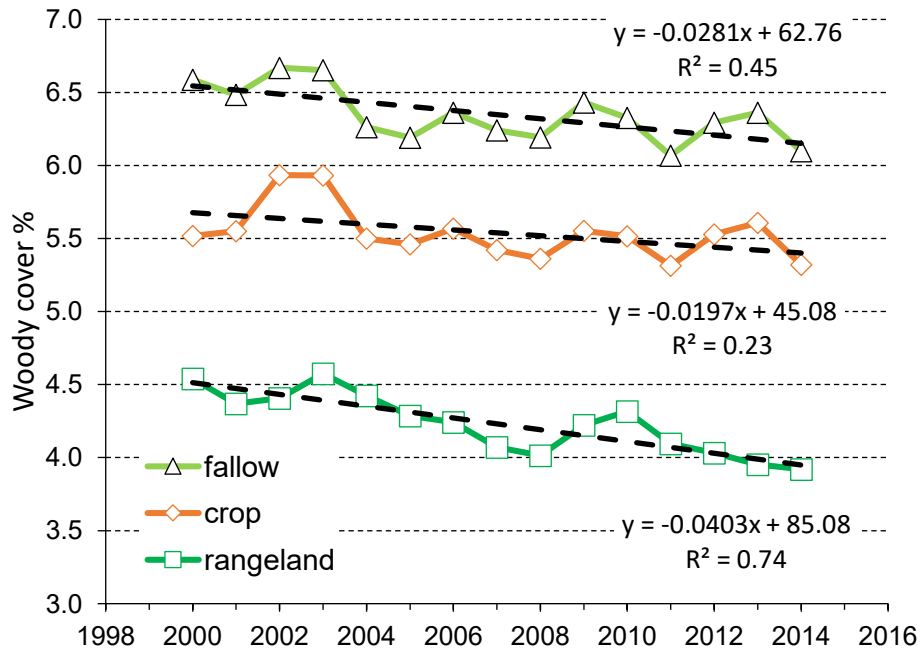
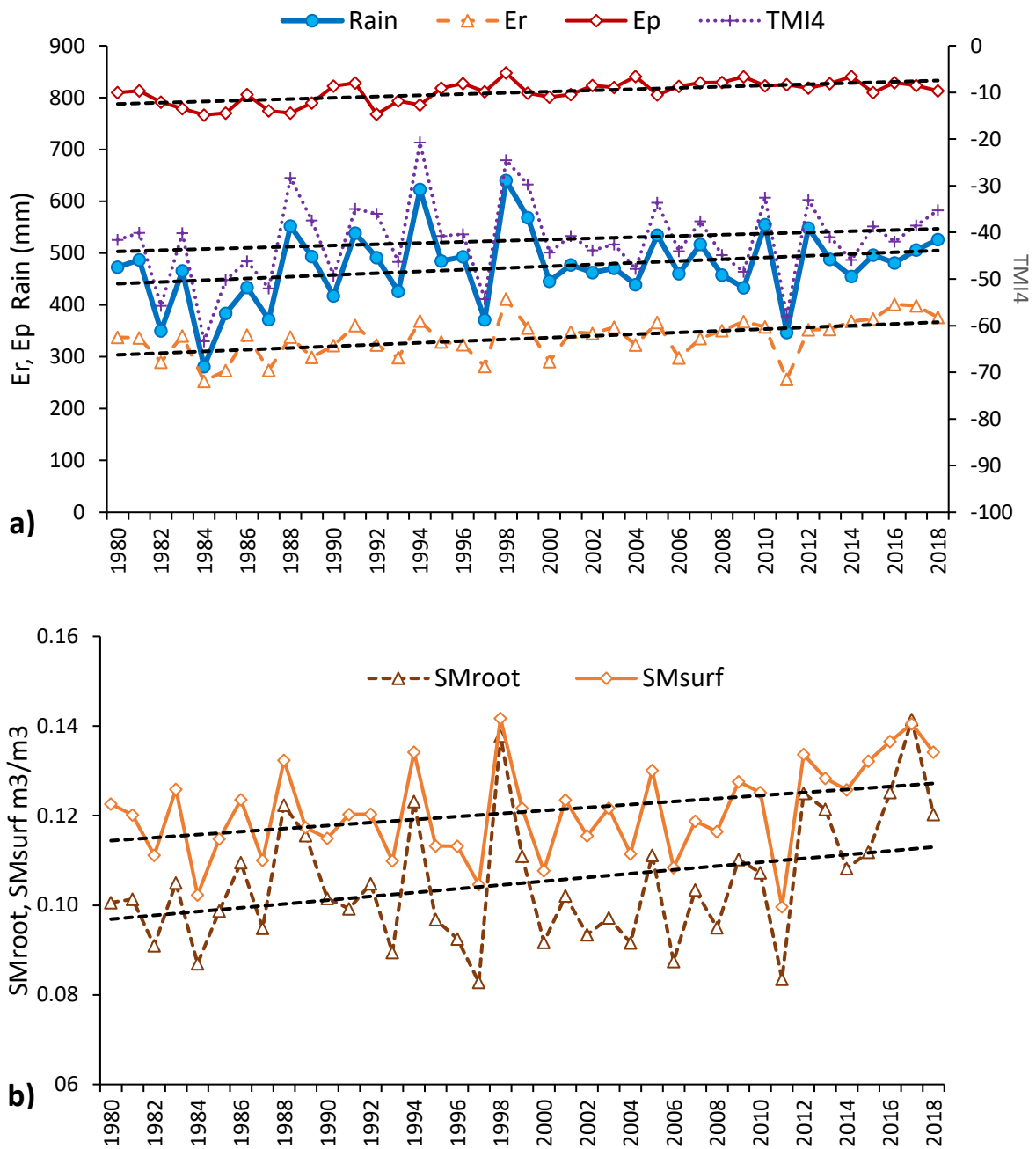


**Figure 5** Mean species relative contribution (%) to: **a)** woody plant density, **b)** basal area, **c)** crown cover, **d)** foliage mass, **e)** wood mass in 29 sites monitored from 1996 to 2017.



**Figure 6.** Mean annual woody plant cover derived from dry season NDVI calculated on MODIS (MCD43A4, 500 m) satellite data for 6 rangeland sites, 12 crop sites and 11 fallow sites (Brandt et al. 2016b).



**Figure 7** Interannual variations between 1980 and 2018 and over the Fakara region (13°-14° Latitude North; 2°-3° Longitude East) of: **a)** annual rainfall (mm) from CHIRPS data base, mean actual (Er) and potential (Ep) evapotranspiration (mm), from GLEAM v3 data base, and Thornthwaite Moisture Index (TMI4) calculated with the GLEAM v3 data. **b)** mean annual soil moisture (m<sup>3</sup> m<sup>-3</sup>) in top 10cm of soil (SMsurf) and in soil root zone (SMroot) from GLEAM v3.3a data sets (Martens et al. 2017; Miralles et al. 2011).

## Highlights

- Woody plant density, crown and basal area decrease over 1996-2017 in West Niger.
- Woody plant cover assessed by remote sensing decreased gradually over 2000-2014.
- The rate of woody vegetation decrease is higher for rangeland than cropland.
- Cropland woody plant decrease is driven by cropping expansion and shorter fallow.
- Rangeland woody plant decrease is driven by more cutting for fuel wood.