



## Supplement of

## Influence of irrigation on root zone storage capacity estimation

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## Supplement



Figure S 1 Irrigated area fraction ( $I_a$ ) stratified in the four groups used in Fig. 7 with dots representing the catchment outlets (Siebert et al., 2015)



Figure S 2. Climate zone stratification used in Fig. 8b. (a) shows all study catchments and (b) catchments with  $I_a$ >0.05. The following classification based on Koppen-Geiger is used: tropical (Af, Am, Aw), arid (BWh, BWk, BSh, BSk), temperate dry summer (Cfa, Cfb, Cfc), Mediterranean(Csa, CSb), and continental (Dfa, Dfb, Dfc, Dfd)(Beck et al., 2018).





Figure S 3. Catchment  $S_r$  in mm for (a) the No Irrigation (NI) case, (b) the IWU irrigation case, and (c) the IAF irrigation case (Table 1), with dots representing catchment outlets.





Figure S 4. Relative difference in  $S_r$  ( $\Delta_r S_r$  (-)) for IWU compared to IAF ((IWU-IAF)/IAF). See Table 1 for details on the irrigation cases.