Figure S1: Difference of foliage projective cover in m^2 m^{-2} between the C-costly and the Original BNF approach for dynamic land use simulation and each plant functional type (PFT).
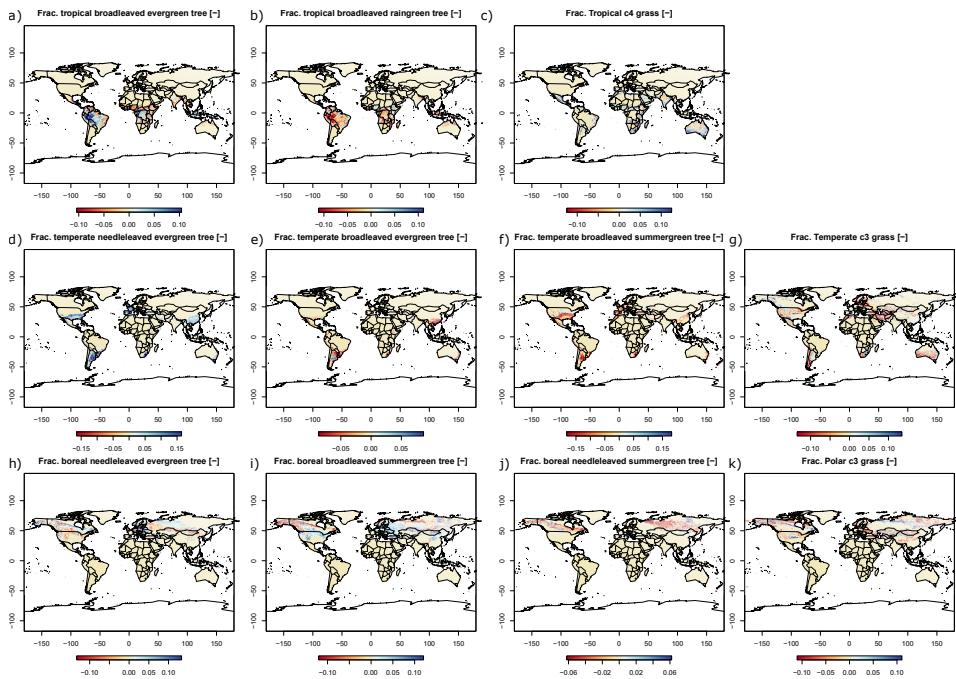
Figure S2: Difference of foliage projective cover in $\mathrm{m}^2\ \mathrm{m}^{-2}$ between the C-costly and the Original BNF approach for potential natural vegetation simulation and each plant functional type (PFT).
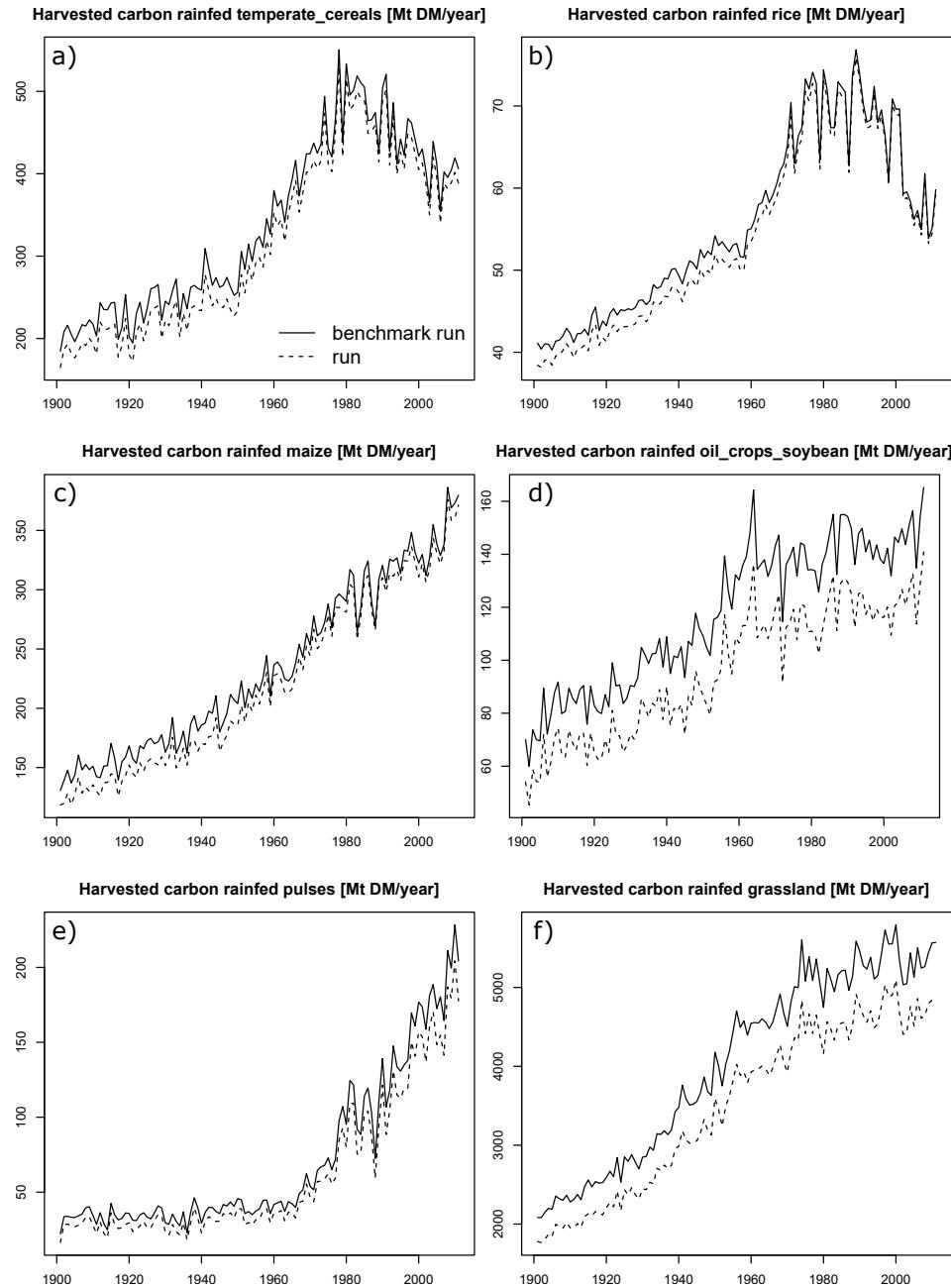
Figure S3: Global sums of harvested carbon from 1901 to 2011 for rainfed temperate cereals (a), rice (b), maize (c), soybean (d), pulses (e) and managed grasslands (f)
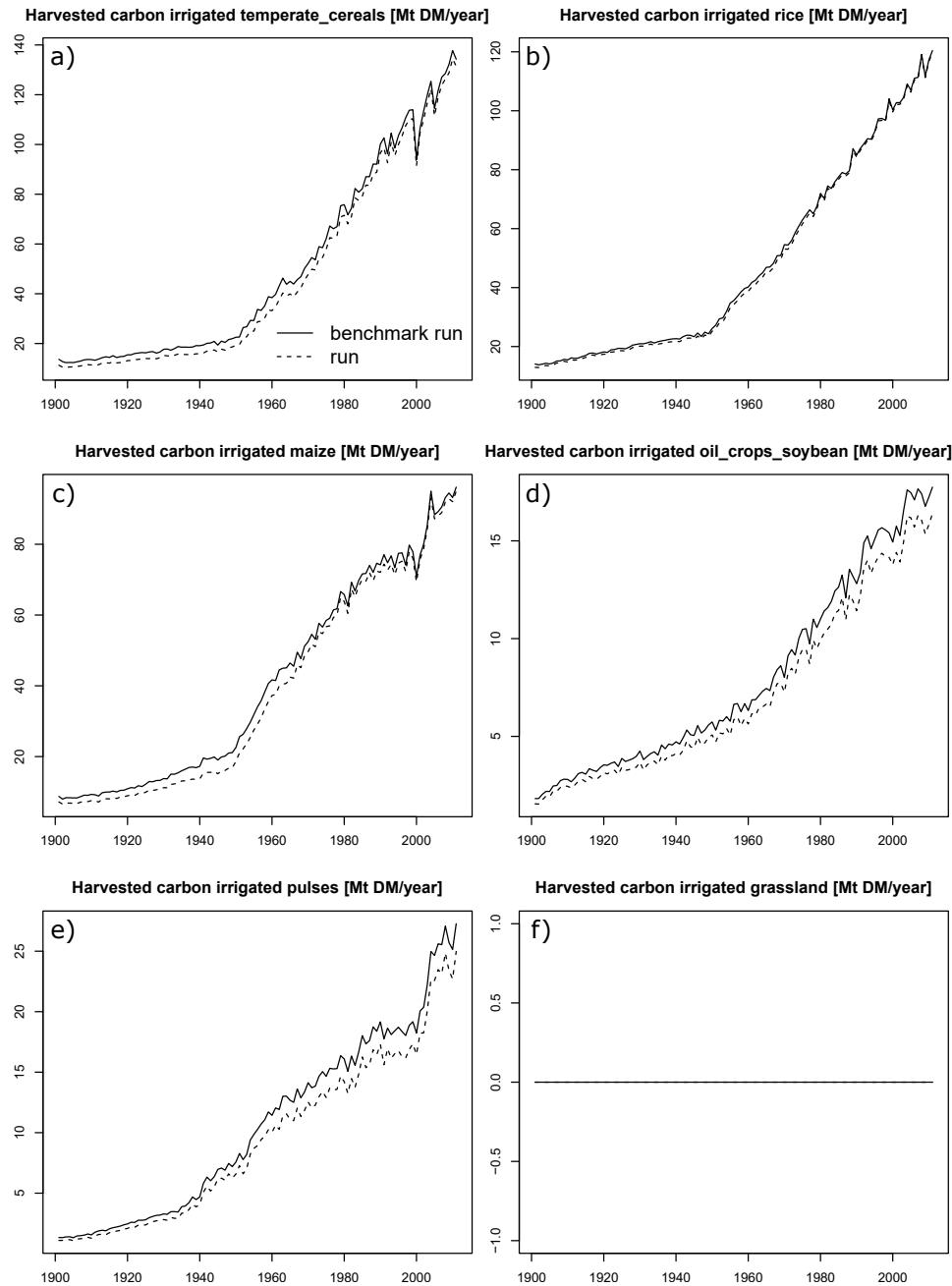
Figure S4: Global sums of harvested carbon from 1901 to 2011 for irrigated temperate cereals (a), rice (b), maize (c), soybean (d), pulses (e) and managed grasslands (f)
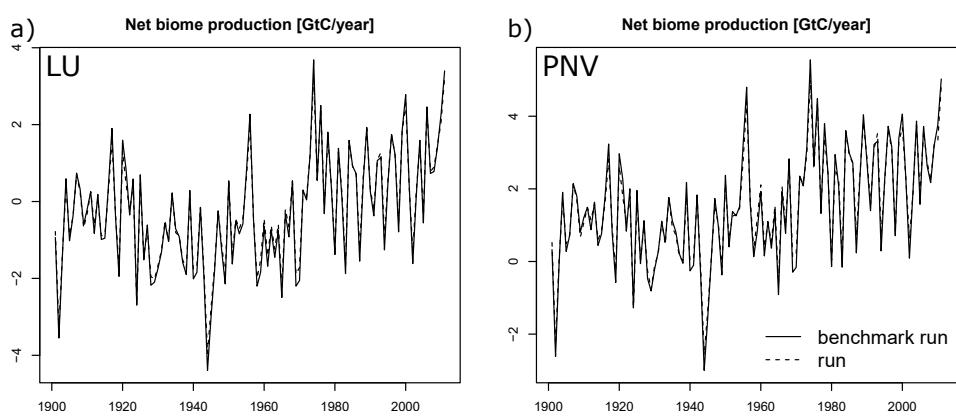
Figure S5: Global sum of net biome production from 1901 until 2011 for the dynamic land use (LU)) (a) and potential natural vegetation (PNV) simulation (b)