Supporting Information for

**A reexamination of the dry gets drier and wet gets wetter paradigm over global land:
insight from terrestrial water storage changes**

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Table S1. Datasets used in this study

Type	Dataset name	URL	Selected period	Temporal resolution	Spatial resolution
GRACE Reconstructions	Li et al., 2021	Doi: 10.1029/2021GL093492	1985-2014	Monthly	0.5°
	Humphrey and Gudmundsson, 2019	Doi: 10.5194/essd-11-1153-2019	1985-2014	Monthly	0.5°
GRACE	CSR RL06 mascons-v02	http://www2.csr.utexas.edu/grace/	2002-2014	Monthly	0.25°
	JPL RL06 mascons-v02	http://podaac.jpl.nasa.gov/grace	2002-2014	Monthly	0.5°
	GSFC RL06 mascons-v02	https://earth.gsfc.nasa.gov/geo/data/	2002-2014	Monthly	0.5°
Global Hydrological Models	WGHM-v2.2d	https://gmd.copernicus.org/	1985-2014	Monthly	0.25°
	GLDAS2.0-VIC	https://ldas.gsfc.nasa.gov/gldas	1985-2014	Monthly	1°
	PCR-GLOBWB	https://globalhydrology.nl/research/	1985-2014	Monthly	0.5°
Land Surface Models	GLDAS2.0-Noah	https://ldas.gsfc.nasa.gov/gldas	1985-2014	Monthly	1°
	CPC-v2	https://www.psl.noaa.gov/data/	1985-2014	Monthly	0.5°
	GLDAS2.0-CLSM	https://ldas.gsfc.nasa.gov/gldas	1985-2014	Monthly	1°
Global Climate Models	ACCESS-CM2	https://esgf-node.llnl.gov/projects/	1985-2100	Monthly	1.25°×1.875°
	ACCESS-ESM1-5	https://esgf-node.llnl.gov/projects/	1985-2100	Monthly	1.24°×1.875°
	CanESM-5	https://esgf-node.llnl.gov/projects/	1985-2100	Monthly	2.8125°×2.8125°
	GFDL-ESM4	https://esgf-node.llnl.gov/projects/	1985-2100	Monthly	1°×1.25°
	IPSL-CM6A-LR	https://esgf-node.llnl.gov/projects/	1985-2100	Monthly	1.2587°×2.5°
	MIROC6	https://esgf-node.llnl.gov/projects/	1985-2100	Monthly	1.4063°×1.4063°
	MPI-ESM1-2-HR	https://esgf-node.llnl.gov/projects/	1985-2100	Monthly	0.9375°×0.9375°
	MPI-ESM1-2-LR	https://esgf-node.llnl.gov/projects/	1985-2100	Monthly	1.875°×1.875°

Table S2. Description of the selected Special Report on Extremes (SREX) regions from Intergovernmental Panel on Climate Change (IPCC).

Acronym	Name	Continent	Type
ARP	Arabian-Peninsula	ASIA	Land
CAF	Central-Africa	AFRICA	Land
CAR	Caribbean	CENTRAL-AMERICA	Land-Ocean
CAU	C.Australia	OCEANIA	Land
CNA	C.North-America	NORTH-AMERICA	Land
EAS	E.Asia	ASIA	Land
EAU	E.Australia	OCEANIA	Land
ECA	E.C.Asia	ASIA	Land
EEU	E.Europe	EUROPE	Land
ENA	E.North-America	NORTH-AMERICA	Land
ESAF	E.Southern-Africa	AFRICA	Land
ESB	E.Siberia	ASIA	Land
MDG	Madagascar	AFRICA	Land
MED	Mediterranean	EUROPE-AFRICA	Land-Ocean
NAU	N.Australia	OCEANIA	Land
NCA	N.Central-America	CENTRAL-AMERICA	Land
NEAF	N.Eastern-Africa	AFRICA	Land
NEN	N.E.North-America	NORTH-AMERICA	Land
NES	N.E.South-America	SOUTH-AMERICA	Land
NEU	N.Europe	EUROPE	Land
NSA	N.South-America	SOUTH-AMERICA	Land
NWN	N.W.North-America	NORTH-AMERICA	Land
NWS	N.W.South-America	SOUTH-AMERICA	Land
NZ	New-Zealand	OCEANIA	Land
RAR	Russian-Arctic	ASIA	Land
RFE	Russian-Far-East	ASIA	Land
SAH	Sahara	AFRICA	Land
SAM	South-American-Monsoon	SOUTH-AMERICA	Land
SAS	S.Asia	ASIA	Land
SAU	S.Australia	OCEANIA	Land
SCA	S.Central-America	CENTRAL-AMERICA	Land
SEA	S.E.Asia	ASIA	Land-Ocean
SEAF	S.Eastern-Africa	AFRICA	Land
SES	S.E.South-America	SOUTH-AMERICA	Land
SSA	S.South-America	SOUTH-AMERICA	Land
SWS	S.W.South-America	SOUTH-AMERICA	Land
TIB	Tibetan-Plateau	ASIA	Land
WAF	Western-Africa	AFRICA	Land
WCA	W.C.Asia	ASIA	Land
WCE	West&Central-Europe	EUROPE	Land
WNA	W.North-America	NORTH-AMERICA	Land

WSAF	W.Southern-Africa	AFRICA	Land
WSB	W.Siberia	ASIA	Land