

(a)

Inputs (dataset)	[ME] Method Applied (dataset) <i>[QC] Quality Control Measures (dataset)</i>	GHI Outputs
Station metadata (CWC-21)	<p>[ME] Compile station information (CWC-21) <i>[QC] Compare station lat/long (WRIS-OL)</i></p> <p>[ME] Relocate stations on to river network (HydroSHEDS and MERIT) <i>[QC] Use online maps to verify station locations, add landmarks (Google Maps, OpenStreetMap)</i></p>	<p><b>GIS Data</b></p> <ul style="list-style-type: none"> <li>- [Layer 1] Composite river basins;</li> <li>- [Layer 2] station metadata (station raw locations, relocated locations, landmarks, other attributes);</li> <li>- [Layer 3] station-specific catchment boundaries, station-specific river networks</li> </ul>
Hydrography (HydroSHEDS)	<p>[ME] Delineate major basin boundaries (HydroSHEDS) <i>[QC] Compare with other basin boundaries (WRIS-GIS)</i></p> <p>[ME] Delineate station-wise catchment boundaries and river networks (HydroSHEDS) <i>[QC] Compare with other river networks (Lin et al., 2021)</i> <i>[QC] Compare with other river networks (Google Maps, OpenStreetMap)</i></p> <p>[ME] Estimate catchment area (HydroSHEDS) <i>[QC] Compare with other catchment area estimates (MERIT)</i></p>	<p><b>Tabular Data</b></p> <ul style="list-style-type: none"> <li>- station metadata (station raw locations, relocated locations, landmarks, other attributes);</li> <li>- monthly/annual time series (observed streamflow, precipitation, ET, runoff)</li> </ul> <p><b>Graphics</b></p> <ul style="list-style-type: none"> <li>- station-wise maps;</li> <li>- station-wise time series charts</li> </ul>
Observed streamflow (WRIS-OL)	<p>[ME] Compile monthly/annual streamflow time series (WRIS-OL) <i>[QC] Compare with compiled streamflow (CWC-YB, CWC-19)</i></p>	
Precipitation (IMD) Precipitation, ET and runoff (ERA5-Land) ET (GLEAM)	<p>[ME] GIS mapping of gridded datasets to catchment boundaries to generate dataset-specific interpolation masks; Compile grid-area-weighted monthly/annual hydrometeorological time series (IMD, ERA5-Land, GLEAM) <i>[QC] Compare with compiled precipitation (CWC-19)</i> <i>[QC] Analyze catchment annual water balance</i></p>	

(b)

