We present a geographic information system (GIS) dataset with a nominal spatial resolution of one-kilometer composed of grid polygons originally derived and utilized in a high-resolution climate vulnerability model for Nepal. The different data sets described and shared in this article are processed and tailored to the specific objectives of our research paper entitled “High-resolution Spatial Assessment of Population Vulnerability to Climate Change in Nepal” (Mainali and Pricope, In press) [1]. We share these data recognizing that there is a significant gap in regards to data availability, the spatial patterns of different biophysical and socioeconomic variables, and the overall population vulnerability to climatic variability and disasters in Nepal. Individual variables, as well as the entire set presented in this dataset, can be used to better understand the spatial pattern of different physical, biological, climatic, and vulnerability characteristics in Nepal. The datasets presented in this article are sourced from different national and global databases and have been statistically treated to meet the needs of the article. The data are in GIS-ready ESRI shapefile file format of one-kilometer grid polygon with various fields (columns) for each dataset.

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Specifications Table

| Subject area          | Geography          |
|-----------------------|--------------------|
| More specific subject area | Climate vulnerability |
| Type of data          | Geographic information system shape file |
| How data was acquired | From various secondary sources |
| Data format           | Different levels of analysis |
| Experimental factors  | Different data sets are normalized |
| Experimental features | Very brief experimental description |
| Data source location  | Nepal               |
| Data accessibility    | Data is submitted with the article |
| Related research article | [1]               |

Value of the data

- It is a first one-kilometer resolution information of various biophysical and socio-economic data for Nepal used to derive population vulnerability to climate change and variability.
- It can be used by various organizations, local governments, and other researchers as a starting point to understanding climate vulnerability of Nepal.
- These data can be used to calculate various indices or components of vulnerability such as exposure, sensitivity, adaptive capacity, physiography, and socio-economic characteristics from a village scale to National scale in Nepal.
- The data and organization of this dataset can serve as a methodological transferability tool to help organize similar analyses in other locales.

1. Data

The data we are publishing here are processed information we created for the high-resolution climate vulnerability analysis in Nepal. The data is about one-kilometer resolution polygon shape file. These data are sourced from various national and global database as referenced in our original article [1]. Due credit has been given to all the sources we obtained the original data from. The data quantifying various biophysical and socioeconomic characteristics were used to derive climate vulnerability of Nepal. The individual datasets are presented as a column in an attribute table of the shape file.

2. Experimental design, materials and methods

In this dataset, we present a shapefile with one-kilometer grid (~0.0083°) for the country of Nepal and include 36 different variables we created (Table 1). Among them, 13 variables are created from different secondary databases from various sources. These 13 variables underwent different statistical treatments so as to derive the rest of the variables. Please refer to our article [1] for the data sources and detailed procedures of data processing. We based part of our methodology to create these variables on the approach employed by de Sherbinin et al. [2].
**Table 1**

Name and description of variables available in shapefile (MainaliPricopeData.shp).

| SN | Variable name in shapefile | Variable description |
|----|---------------------------|----------------------|
| 1  | prcp                      | Average precipitation (mm) |
| 2  | prcp_cov                  | Coefficient of variation of Precipitation (mm) |
| 3  | temp_trend                | Temperature trend (°C/yr) |
| 4  | ndvi_std                  | Standard deviation of NDVI |
| 5  | slope                     | Slope (deg) |
| 6  | floodFreq                 | Flood frequency (Number per 100 years) |
| 7  | soc                       | Soil organic carbon (gm per thousand grams of soil) |
| 8  | landCover                 | Land cover (Rank) |
| 9  | Irrigl                    | Irrigation (Percentage) |
| 10 | wealth_ind                | Household wealth Index (Rank) |
| 11 | femaleHH                  | Percentage of households with female head (Percentage) |
| 12 | healthInfr                | Health Infrastructure (Rank) |
| 13 | distanceCi                | Distance to city (min) |
| 14 | temp_std                  | Standardized variable of temperature trend |
| 15 | prcp_std                  | Standardized variable of average precipitation |
| 16 | prcp_cov_s                | Standardized variable of coefficient of variation of precipitation |
| 17 | ndvi_std_s                | Standardized variable of standard deviation of NDVI |
| 18 | slope_std                 | Standardized variable of slope |
| 19 | flood_std                 | Standardized variable of flood frequency |
| 20 | soc_std_1                 | Standardized and inverted variable of soil organic carbon |
| 21 | landC_std                 | Standardized variable of land cover rank |
| 22 | irrig_std                 | Standardized and inverted variable of percentage of irrigated land |
| 23 | wealth_std_1              | Standardized and inverted variable of household wealth index |
| 24 | female_std                | Standardized variable of percentage of households with female head |
| 25 | health_std_1              | Standardized and inverted variable of Health Infrastructure |
| 26 | distance_s                | Standardized variable of distance to city |
| 27 | exposure_std              | Standardized variable of exposure index |
| 28 | sensitiv                  | Standardized variable of sensitivity index |
| 29 | lackA_std                 | Standardized variable of lack of adaptive capacity index |
| 30 | averageVuln               | Standardized variable of additive climate vulnerability index |
| 31 | physiograp                | Physiography region |
| 32 | pc1_std_1                 | Standardized and inverted variable of loading in first principle component |
| 33 | pc2_std                   | Standardized variable of loading in second principle component |
| 34 | pc3_std                   | Standardized variable of loading in third principle component |
| 35 | pc4_std                   | Standardized variable of loading in fourth principle component |
| 36 | vuln_pc124_Std            | Standardized variable of principal component-based vulnerability index |

**Acknowledgements**

This work was supported by International Foundation for Science (Grant number W/5696-1). We would like to thank the Fulbright Commission (15141925), for funding the first author of this work at University of North Carolina Wilmington (UNCW). The datasets we include here were originally derived from secondary sources.

**Transparency document. Supplementary material**

Transparency data associated with this article can be found in the online version at Transparency data associated with this article can be found in the online version at http://dx.doi.org/10.1016/j.dib.2017.04.045.
Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at http://dx.doi.org/10.1016/j.dib.2017.04.045.

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