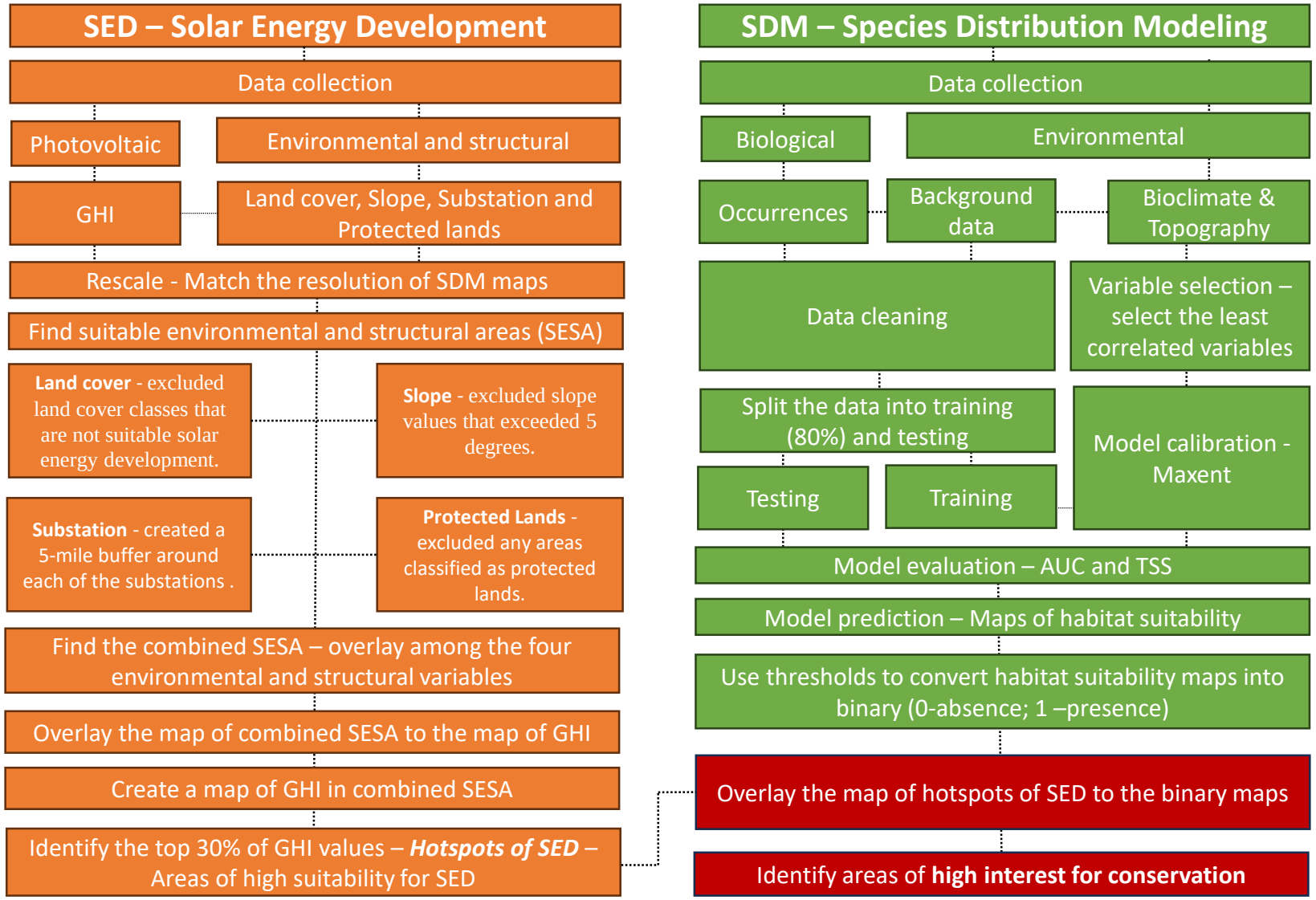
SED – Solar Energy Development
Data collection
Photovoltaic
Environmental and structural
GHI
Land cover, Slope, Substation and Protected lands
Rescale - Match the resolution of SDM maps
Find suitable environmental and structural areas (SESA)
Land cover - excluded land cover classes that are not suitable solar energy development.
Slope - excluded slope values that exceeded 5 degrees.
Substation - created a 5-mile buffer around each of the substations .
Protected Lands - excluded any areas classified as protected lands.
Find the combined SESA – overlay among the four environmental and structural variables
Overlay the map of combined SESA to the map of GHI
Create a map of GHI in combined SESA
Identify the top 30% of GHI values – Hotspots of SED – Areas of high suitability for SED
SDM – Species Distribution Modeling
Data collection
Biological
Environmental
Occurrences
Background data
Bioclimate & Topography
Data cleaning
Variable selection – select the least correlated variables
Split the data into training (80%) and testing
Model calibration - Maxent
Testing
Training
Model evaluation – AUC and TSS
Model prediction – Maps of habitat suitability
Use thresholds to convert habitat suitability maps into binary (0-absence; 1 –presence)
Overlay the map of hotspots of SED to the binary maps
Identify areas of high interest for conservation