# INDICATOR 8: Seasonal Character of Settlements

## a) Winter–Summer Difference.tif

- File Name: Diff_Win_Sum
- Coordinate Reference Systems: WGS 84 (EPSG:4326)
- Resolution: 0.00416667° × 0.00416667°
- Max: 40.504669189453
- Min: -39.474670410156
- No Data: –3.40282e+38

## b) Winter–Spring Difference.tif

- File Name: Diff_Win_Spr
- Coordinate Reference Systems: WGS 84 (EPSG:4326)
- Resolution: 0.00416667° × 0.00416667°
- Max: 22.949333190918
- Min: -44.121337890625
- No Data: –3.40282e+38

## c) Winter–Autumn Difference.tif

- File Name: Diff_Win_Aut
- Coordinate Reference Systems: WGS 84 (EPSG:4326)
- Resolution: 0.00416667° × 0.00416667°
- Max: 36.411331176758
- Min: -50.327346801758
- No Data: –3.40282e+38

## d) Spring–Summer Difference.tif

- File Name: Diff_Spr_Sum
- Coordinate Reference Systems: WGS 84 (EPSG:4326)
- Resolution: 0.00416667° × 0.00416667°
- Max: 33.947341918945
- Min: -15.304672241211
- No Data: –3.40282e+38

## e) Spring–Autumn Difference.tif

- File Name: Diff_Spr_Aut
- Coordinate Reference Systems: WGS 84 (EPSG:4326)
- Resolution: 0.00416667° × 0.00416667°
- Max: 25.001998901367
- Min: -15.653999328613
- No Data: –3.40282e+38

### f) Autumn–Summer Difference.tif

- File Name: Diff_Aut_Sum
- Coordinate Reference Systems: WGS 84 (EPSG:4326)
- Resolution: 0.00416667° × 0.00416667°
- Max: 23.167343139648
- Min: -15.07200050354
- No Data: –3.40282e+38

**Description of Indicator:** Satellite images of nighttime lights can be used for seasonality tracking in the activation of certain settlements. It is possible to determine that there is a dynamic component of depopulation in certain areas. Seasonal Character of Settlements indicator is calculated using monthly satellite nighttime lights images in the period 2015–2019. Originally, the data are filtered to exclude impact by stray light, lightning, lunar illumination, and cloud-cover. Processing procedures included detection and exclusion of negative values in original data and interpolation of excluded pixels applying the Nearest-neighbor interpolation method. Additionally, the data were checked on outliers that have been removed from further analysis. Seasonal values are calculated as monthly averages (Winter – December, January, February; Spring – March, April, May; Summer – June, July, August; Autumn – September, October, November) and differences between seasons were estimated.

**Source data for indicator calculation**

| Type of data | Source |
|---|---|
| Nighttime Lights | Version 1 VIIRS DNB [Earth Observation Group (EOG); Colorado Mining School, 2015–2019] |