Input data

Satellite data

Primary information for windthrow delineation

- GFC (1)
- EEFCC (2)
- Landsat/Sentinel-2 images (3)
- HRI (4)
- MODIS and METEOSAT (5)

Additional data

Secondary information for windthrow characteristic determination

- Media news and eyewitness reports (6)
- Weather station reports (7)
- Existing scientific literature (8)
- Hazardous weather event database (9)
- Weather radar data (10)

Data processing

Windthrow and EDA delineation

- Automatic delineation of a gross outline of windthrow area (1, 2, 3)
- Specification of exact contours of elementary damaged areas (EDAs) (3, 4)
- Exclusion of EDAs below a threshold
  Merging EDAs to windthrow
- Manual delineation of elementary damaged areas (EDAs) (3, 4)

Verification and determination of type, parameters, and dates

- Windthrow type and its certainty determination (3, 4, 5, 6, 7, 8) — III
- threshold
- Verification of windthrow
  Exclusion of windthrow below a threshold (3, 4) — I
- Estimates of area, mean and maximum width, and length (1, 2, 3) — IV
- Merging windthrow areas to a storm event — V
- Determination of date of windthrow
  Collection of additional information (1, 2, 3, 5, 6, 7, 8, 9, 10) — II

Output data

General information

I, V

The GIS database

3 layers (.shp files)
WGS84 coordinate system (EPSG:4326)

Three GIS-layers and their main attributes

I, III

GIS layer for EDAs

Main attributes:
IDs (for EDA, windthrow, and storm event)
Geomerical characteristics (area)

I, II, III, IV

GIS layer for windthrow

Main attributes:
IDs (for windthrow, storm event)
Type of windthrow and its certainty
Date of windthrow
Geometrical characteristics (area, width, length)
Number of EDAs within windthrow
Additional information (impact, windspeed, precipitation, nearest weather station, etc.)
Information on data sources (for delineation, type and date determination)

III, V

GIS layer for storm events

Main attributes:
ID (for storm event)
Number of windthrow within a storm event
Geometrical characteristics (area, width, length)