Explanation of aggregated attributes in data from WOCAT 'Questionnaire on Maps' (QM)

1. Map units

Map units are identified by a unique combination of Land Use System (LUS) and at least one other subdivision unit (subdiv). Examples of such subdivisions can be slope classes or administrative borders. The map units are numbered. Each number represents a single map unit but such a map unit can contain several polygons.

For more information about map units, please consult the introduction section of Questionnaire on Maps (QM).

2. Excel sheet

In the excel sheet you can find all recorded data of a single map. There are three different sub-tables corresponding to three different sections of QM:

- Land use system

Lists all the map units and their characterisation.

- Land degradation

Lists all recorded degradation information per map units

- Land conservation

Lists all recorded conservation measures per map units

- Expert recommendation

Lists all expert recommendations per map units

All attributes correspond to questions in the QM. For more information consult the Questionnaire on Maps.

3. Shapefile

The shapefile contains an attribute table.

Each row contains attributes for one single map unit. Feature type is MULTIPOLYGON, which means that a single map unit can contain several polygons.

Aggregations

Dominant degradation, Dominant conservation

The questionnaire offers the possibility to enter records for multiple subareas per map unit. For each subarea, one can enter combinations of up to three degradation types or conservation measures.

Example for one map unit:

Mapping_unit_id	Degradation type 1	Degradation type 2	Degradation type 3	Extent	Degree
1	Wt	Bh	Pa	20	2
1	Bf	Bg	Hb	60	1
1	Cf	Wb	Bf	20	3

To visualise information about degradation types and conservation measures in a map unit, a formula was used to define the dominant degradation type as well as the dominant conservation measure.

This aggregation is done only with the main categories of degradation types or conservation measures represented by the initial capital letter in the data records (see excel sheet).

For a single map unit the calculation goes as follows:

For each degradation type, the extents of all subareas in which it occurs are summed.

Example:

Main deg. type	All extends where deg. type occurs	Sum of Extends
W	20 + 20	40
B	20 + 60 + 20	100
P	20	20
H	60	60
C	20	20

For each degradation type, the degree of degradation of each subarea is weighted with the respective extend and this weighted degrees are summed for all subareas and to then calculate the mean degree of degradation for the respective degradation type.

Example:

Main deg. type	Calculation of degree of deg.	Mean degree of deg.
W	((20*2)+(20*3))/40	≈ 3
B	((20*2)+(60*1)+(20*3))/100	≈ 2
P	(20*2)/20	2
H	(60*1)/60	1
C	(20*3)/20	3

So each main degradation type per map unit ends with sum of extends and a mean degree of degradation. This list is then ordered by the sum of extends and mean degree of degradation.

Example (List ordered by sum of extends and mean degree):

Main deg. type	Sum of extends	Mean degree of degradation
B	100	2
H	60	1
W	40	3
C	20	3
P	20	2

The first in the list is taken as dominant degradation type.

The calculation for the dominant conservation measure is the same, except that the degree of degradation is replaced with the effectiveness of the measure.

Attributes

MAPUNIT, MAPPING_UN
ID of the map unit, which is a unique combination of LUS, SUBDIV_1, SUBDIV_2 and SUBDIV_3.

LUS
Land use system

SUBDIV_1, SUBDIV_2, SUBDIV_3
Any kind of subdivision units forming characterizing the map unit together with the LUS.

COUNTRY_CO
3-letter country code specifying the country.

MAP_NAME
Name of the map

MAP_ID
Used in the database to identify a single map unit.

AREA_TREND
Area trend of LUS as explained in the introductory user's guide of the questionnaire.

INTENSITY

Land use intensity trends as explained in the introductory user's guide of the questionnaire.

DOM_CON_CO

Dominant conservation measure. See explanation in section 'Aggregations' above for explanations.
Possible values are:

- **A**: Agronomic measures
- **S**: Structural measures
- **M**: Management measures
- **V**: Vegetative measures

DOM_CON_AR

Extend in percentage of the map unit area on which the dominant conservation measure is used.

DOM_CON_EF

Conservation effectiveness:

Code	Legend
4	Very high
3	High
2	Moderate
1	Low

DOM_DEG_CO

Dominant degradation type. See explanation in section 'Aggregations' above for explanations.
Possible values are:

- **W**: Soil erosion by water
- **E**: Soil erosion by wind
- **C**: Chemical soil deterioration
- **P**: Physical soil deterioration
- **H**: Water degradation
- **B**: Biological degradation

DOM_DEG_AR

Extend in percentage of the map unit area on which the dominant degradation type occurs.

DOM_DEG_DE

Mean degree of dominant degradation (see section 'Aggregations' above). Values are:

Code	Legend
1	Light
2	Moderate
3	Strong
4	Extreme

DEG_AREA

Percentage of map unit area with degradation.

DEG_DEGREE

Mean degree of degradation per area for the map unit.

DEG_RATE

Mean degradation rate per area for the map unit.

CON_AREA

Percentage of the map unit area covered with conservation measures.

CON_EFF

Mean efficiency of conservation measures per area for the map unit.

CON_EFF_TR

Mean trend of conservation efficiency per area for the map unit.

GROUP_DOM

Dominant group of conservation measures.
For the explanation on group of conservations please consult the Questionnaire on Maps (QM)

Dominant group is aggregated the same way as dominant degradation type and dominant conservation measure. Please see section 'Aggregations' above.

GROUP AREA

Percentage of map unit area covered by dominant conservation group.

GROUP_EFF

Mean efficiency of the dominant conservation group.