Annex 1

Egypt

PROCEDURE FOR THEMATIC AGGREGATION

The following is an example of some custom aggregations performed on the spatially aggregated dataset of Egypt. The examples are not comprehensive in that they are not the only aggregations that can be performed. There are many aggregations that can be done, depending on the specific use of the data. This cultivation example is unique due to the complexity of agriculture in Egypt.

Example 3 – Cultivated Areas

A user requests that they require all agriculture in Egypt for a study involving farming practices. From your knowledge of the land cover database you know that the user needs all terrestrial and aquatic cultivated and managed lands. To make it easier for the user, you decide to separate the cultivation into the following classes:

Cult-id	Cult-desc
AG-1	Rainfed herbaceous crop
AG-2	Irrigated herbaceous crop (sprinkler), two crops per year
AG-2A	Irrigated herbaceous crop (sprinkler), two crops per year (approx. 60 % polygon area)
AG-2B	Irrigated herbaceous crop (sprinkler), two crops per year (approx. 40 % polygon area)
AG-2C	Irrigated herbaceous crop (sprinkler), two crops per year (approx. 30 % polygon area)
AG-2D	Irrigated herbaceous crop (sprinkler), two crops per year (approx. 15 % polygon area)
AG-2X	Irrigated herbaceous crop (sprinkler), two crops per year with a subdivision of summer crops (cotton, maize) and winter crops (wheat, clover), in a different years rotation
AG-3	Irrigated fields with a subdivision of rice, summer crops (cotton, maize) and winter crops (wheat, clover) in a different years rotation
AG-3A	Irrigated fruit trees (and date palms) mixed with irrigated herbaceous crops (approx. 60 % polygon area)
AG-3B	Irrigated and rainfed fruit trees (and date palms) (approx. 40 % polygon area) mixed with bare soil, sand or other
AG-3X	Irrigated fruit trees (and date palms) mixed with irrigated herbaceous crops (approx. 60 % polygon area) with a subdivision of summer crops (cotton, maize) and winter crops (wheat, clover), in a different years rotation
AG-4	Irrigated and rainfed fruit trees (and date palms)
AG-5	Irrigated sugarcane fields

This aggregation is difficult in the case of Egypt. Therefore, a custom aggregation such as this should only be attempted by an experienced interpreter.

Because of this complexity we do not use the classifiers to assign the aggregation classes to polygons. A simpler method is used and will be explained in detail.

Due to the complexity of cultivation in Egypt, some further specification is needed.

Basically, in the delta, each field is subdivided into sub-plots that are cultivated with a different crop in summer and winter with rotation of these crops in different years.

These cases can only be explained by a mix of different single classes. There are two basic systems: field with subdivision of summer crop and field with subdivision of rice in summer.

At Africover, field size is also considered. This will lead to four different agricultural classes:

GDZ-r/HD3HQ57-ct,w/HD3HQ57-mz,cl
Large to Medium size Fields with a subdivision of rice, summer crops (cotton, maize), and winter crops (wheat, clover), in a different years rotation.

GRZ-r/HR3HQ57-ct,w/HR3HQ57-mz,cl
Small size Fields with a subdivision of rice, summer crops (cotton, maize), and winter crops (wheat, clover), in a different years rotation.

HD3HQ57-ct,w/HD3HQ57-mz,cl
Large to Medium size Fields with a subdivision of summer crops (cotton, maize), and winter crops (wheat, clover), in a different years rotation.

HR3HQ57-ct,w/HD3HQ57-mz,cl
Small size Fields with a subdivision of summer crops (cotton, maize), and winter crops (wheat, clover), in a different years rotation.

Taking the above into consideration, you can now begin to aggregate the classes. Create a summary table on the "UserLabel" field and then export this table for the interpreter. The table should look similar to this):

USERLABEL	COUNT
HR4	39
6L/HD3HQ57	2
HD3HQ57	87
HD3HQ57/6L	24
HD3HQ57W-pv	21
HD3HQ57W-pv/6L	5
HD3HQ57K	50
HD3HQ57/TBED57-d	5
HD3HQ57/TBER157-d	2

This table is given to the interpreter and the interpreter will then add the "Cultid" and begin to assign each polygon code to an aggregation class (from the description table), as shown below:

CultID	USERLABEL	COUNT
AG-1	HR4	39
AG-2	6L/HD3HQ57	2
AG-2	HD3HQ57	87
AG-2	HD3HQ57/6L	24
AG-2	HD3HQ57W-pv	21
AG-2	HD3HQ57W-pv/6L	5
AG-2A	HD3HQ57K	50
AG-2B	HD3HQ57/TBED57-d	5
AG-2B	HD3HQ57/TBER157-d	2

Once the interpreter has finished this process of assigning aggregation classes, it is given back to the GIS expert. The GIS expert then joins this table back to the landcover table using "Userlabel" as the join field.

NB: Notice that the A, B, C and D values are assigned directly in this step. This adds to the complexity of the aggregation and should therefore only be attempted by an experience interpreter.

Once the join is complete, select all the records in the "cultid" field that have a value. Convert this selection to a shapefile and delete all unwanted fields.

Dissolve the shapefile on the id field using the Geoprocessing extension to remove unwanted polygons and then explode using the Africover extension, to remove multi-part polygons. You can now join the description table to the id field and calculate area for the new shapefile.

This is the aggregation for the cultivation in Egypt.