

ANNEX 1

Burundi

The following is an example of some custom aggregations performed on the spatially aggregated dataset of Burundi. 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.

Example 3 – Cultivated: Trees or shrub crop and herbaceous crop

A user requests that they require all agriculture in Burundi 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 distinction between trees or shrub crop and herbaceous crop i.e. the aggregation will have two classes: one for tree or shrub crop (class 1) and one for herbaceous (class 2).

The two major land cover groups that you are interested in are Cultivated – terrestrial (A11 or Group 1) and Cultivated – aquatic (A23 or Group 3).

The classifiers you are interested in for class 1 (Trees or shrubs) are:

Cultivated - Terrestrial (Major LC group 1 – A11)

| |
|--------------------------|
| Trees (A1) |
| Shrubs (A2) |
| Scattered clustered (B6) |
| Scattered isolated (B7) |

For class 2 (herbaceous) you need the following classifiers:

Cultivated - Terrestrial (Major LC group 1 – A11)

| |
|--------------------------|
| Herbaceous (A3; A4; A5) |
| Scattered clustered (B6) |
| Scattered isolated (B7) |

Cultivated - Aquatic (Major LC group 2 – A23)

| |
|--------------------------|
| Herbaceous (A1; A2) |
| Scattered clustered (B6) |
| Scattered isolated (B7) |

These classifiers and the associated codes can be found in the LCCS manual, Appendix C, page 169.

Also keep in mind that some polygons codes are made up of two or three land cover classes, indicating a mixed unit e.g. A/B or A/B/C. This means that land cover codes can occur in the first, second or third class.

- 100% polygon area is the single class only. Occurs in **CODE1** only. Applies to codes which contain only single classes i.e. CODE2 and CODE3 fields are empty and only CODE1 has a value. E.g. **A (100)**
- A – indicates 60% polygon area. Only occurs in **CODE1** when it is first in a mixed class of two codes only e.g. **A/B (60/40)** i.e. CODE3 is empty, CODE2 has a value AND CODE1 has a value.
- B – indicates 40% polygon area. Occurs in **CODE1** when it is first in a mixed class of three codes e.g., **A/B/C (40/30/30)**. I.e. CODE3 and CODE2 and CODE1 have a value.
Also occurs in **CODE2** when it is the second class in a mixed class of two codes e.g. **A/B (60/40)**. I.e. CODE3 is empty AND CODE2 has a value AND CODE1 has a value.
- C – indicates 30% polygon area. Occurs in **CODE2** when it is second in a mixed class of three codes e.g. **A/B/C (40/30/30)**. I.e. CODE1 and CODE2 and CODE3 have a value.
Also occurs in **CODE3** when it is third class in a mixed class of three codes e.g. **A/B/C (40/30/30)**. I.e. CODE1 and CODE2 and CODE3 have a value. CODE3 is always C except in the presence of scattered or isolated agriculture (in which case a 'D' is assigned indicating 15%).

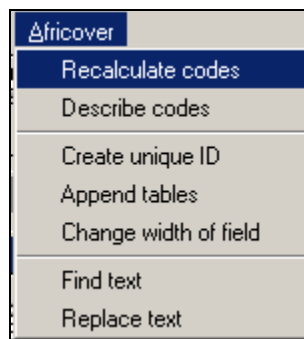
1. Create a description table indicating the above in ArcView.

| | |
|----|----------------------------------------------------------------------------------------|
| 1 | description of class |
| 1A | description of class (60% polygon area) |
| 1B | description of class (40% polygon area) |
| 1C | description of class (30% polygon area) |
| 1D | description of class (15% polygon area) (Agriculture only – isolated and scattered) |

For this aggregation example the table will look as follows:

| ag-desc.dbf | |
|----------------|---------------------------------------|
| <i>cult-id</i> | <i>cult-desc</i> |
| 1 | Tree or shrub crop |
| 1A | Tree or shrub crop (60% polygon area) |
| 1B | Tree or shrub crop (40% polygon area) |
| 1C | Tree or shrub crop (30% polygon area) |
| 1D | Tree or shrub crop (15% polygon area) |
| 2 | Herbaceous crop |
| 2A | Herbaceous crop (60% polygon area) |
| 2B | Herbaceous crop (40% polygon area) |
| 2C | Herbaceous crop (30% polygon area) |
| 2D | Herbaceous crop (15% polygon area) |

2. Load the Africover extension and recalculate the lccode field of the land cover table without the subcode separator i.e. enter \$ in the subcode separator. This separates the lccode for each code into 3 separate fields.



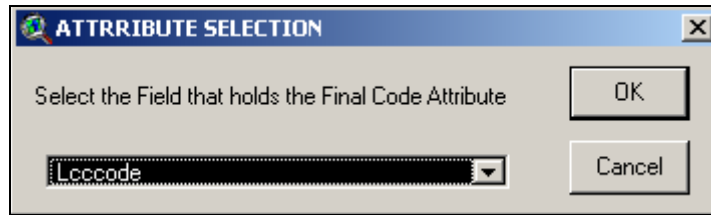
Choose the major code separator.

The 'MAJOR CODE SEPARATOR' dialog box prompts the user to 'Enter the Code Separator Character'. The input field contains the character '/', and there are 'OK' and 'Cancel' buttons.

Choose the minor code separator.

The 'MINOR CODE SEPARATOR' dialog box prompts the user to 'Enter the SubCode Separator Character'. The input field contains the character '\$', and there are 'OK' and 'Cancel' buttons.

Choose the field that is to be separated.



3. Create 3 new fields: grp_code1, grp_code2 and grp_code3.

You are now going to assign the major land cover group for each class, so as to make querying easier later.

Select code3 starting with a 1. This will give you all code3 values within the Cultivated – terrestrial land cover group.

```
( [Code3] = "1*" )
```

Calculate grp_code3 = “A11” - A11 corresponds to the major land cover group of Cultivated – terrestrial

```
( [Grp_code3] = "A11" )
```

Select code3 starting with a 3. This will give you all code3 values within the Cultivated – aquatic land cover group.

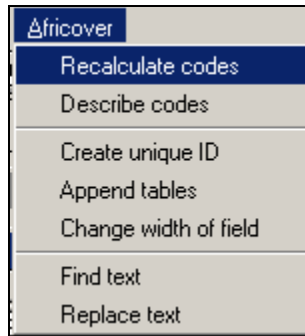
```
( [Code3] = "3*" )
```

Calculate grp_code3 = “A23” – A23 corresponds to the major land cover group of Cultivated – aquatic

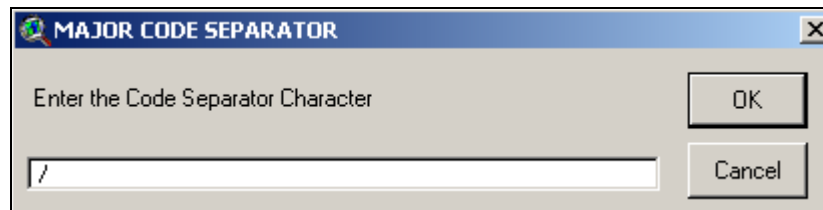
```
( [Grp_code3] = "A23" )
```

Repeat this procedure for code2 and code1, making sure to calculate grp_code2 and grp_code1 respectively.

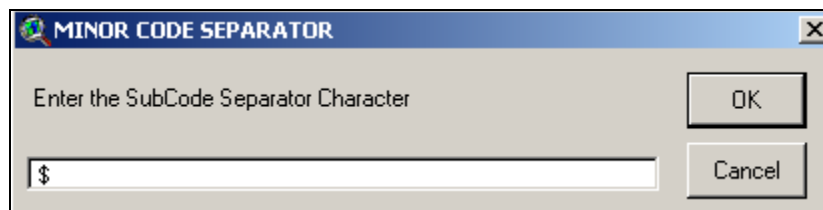
4. Using the Africover extension, recalculate the lcclevel field of the land cover table without the subcode separator i.e. enter \$ in the subcode separator. This separates the lcclevel for each code into 3 separate fields.



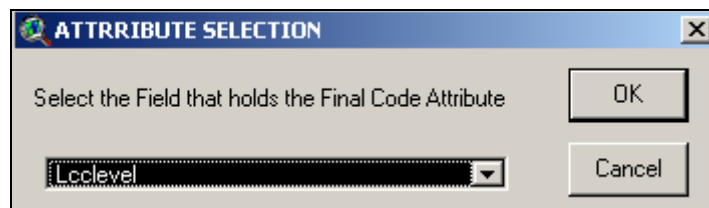
Choose the major code separator.



Choose the minor code separator.



Choose the field that is to be separated.



Please note that code1, code2 and code3 now contain lcclevel (classifiers) and not lcccode as before.

5. Now you can begin to assign aggregation classes. Start with the letter C and D and the 3rd class i.e. (30% - A/B/C).

a) Finding trees or shrub crops and herbaceous crops in the 3rd class of a mixed unit

Create a field called id3.

- Finding tree and shrub crops

Cultivated – Terrestrial

- Select all grp_code3 that fall into the **Cultivated vegetation – terrestrial** major land cover group.

([Grp_code3] = "A11")

You now need to find the classifiers that you identified earlier, from the currently selected features.

| |
|--------------------------|
| Trees (A1) |
| Shrubs (A2) |
| Scattered clustered (B6) |
| Scattered isolated (B7) |

([Code3] = "A1*") or ([Code3] = "A2*") make sure to select from the currently selected set.

The selected polygons indicate Cultivated terrestrial areas with tree or shrub crop in the 3rd class of a mixed unit.

With the above selection active, calculate id3 = “1C”

Note: remember that agriculture can occur as scattered or isolated fields, which make up only 15% of a polygon area. 15% area is indicated with a D value.

From the above selection, you need to select those classifiers that contain scattered clustered (B6) or scattered isolated fields (B7).

([Code3].contains("B6") or ([Code3] .contains("B7")))

With the above selection active, calculate id3 = “1D”

Cultivated – aquatic

There are no tree or shrub crops in the cultivated – aquatic group

- **Finding herbaceous crops**

Cultivated – terrestrial

- Select all grp_code3 that fall into the **Cultivated – terrestrial** major land cover group.

([Grp_code3] = "A11")

You now need to find the classifiers that you identified earlier, from the currently selected features.

| |
|--------------------------|
| Herbaceous (A3; A4; A5) |
| Scattered clustered (B6) |
| Scattered isolated (B7) |

([Code3] = "A3*") or ([Code3] = "A4*") or ([Code3] = "A5*") make
sure to select from the currently selected set.

This query results in a selection. Calculate id3 = "2C". Remember that 2 indicates herbaceous crops, as you set up in the description table earlier. C indicates 30% of the polygon area.

Note: remember that agriculture can occur as scattered or isolated fields, which make up only 15% of a polygon area. 15% area is indicated with a D value.

From the above selection, you need to select those classifiers that contain scattered clustered (B6) or scattered isolated fields (B7).

([Code3].contains("B6") or ([Code3] .contains("B7")))

With the above selection active, calculate id3 = "2D"

Cultivated – aquatic

- Select all grp_code3 that fall into the **Cultivated – aquatic** major land cover group.

([Grp_code3] = "A23")

You now need to find the classifiers that you identified earlier, from the currently selected features.

| |
|--------------------------|
| Herbaceous (A1; A2) |
| Scattered clustered (B6) |
| Scattered isolated (B7) |

([Code3] = "A1*") or ([Code3] = "A2*") make sure to select
from the currently selected set.

The query above selects nothing. This means that in the 3rd class of a mixed unit, there are no Cultivated aquatic areas with herbaceous crops.

You are now finished assigning the 3rd class to the aggregation. We can now move on to the 2nd class.

b) Finding trees or shrub crops and herbaceous crops in the 2nd class of a mixed unit

Create a field called id2.

- **Finding tree or shrub crops**

NOTE: remember that the 2nd class can have a B value, a C value or a D value in the case of agriculture. I.e. it is B when it is the second class in a mixed class of two codes e.g. A/**B** (60/**40**). I.e. CODE3 is empty AND CODE2 has a value AND CODE1 has a value.

It is C when it is second in a mixed class of three codes e.g. A/**B**/C (40/**30**/30). I.e. CODE1 and CODE2 and CODE3 have a value.

It is D when there is scattered clustered or scattered isolated fields. This will be assigned after the B and C values have been assigned.

Cultivated – terrestrial

- First assign the C value.

Select all grp_code2 that fall into the **Cultivated – terrestrial** major land cover group.

([Grp_code2] = "A11")

Select from the above set, all the code3 and code2 that have a value.

([Code3] <> "") and ([Code2] <> "")

You now need to find the classifiers that you identified earlier, from the currently selected features.

| |
|--------------------------|
| Trees (A1) |
| Shrubs (A2) |
| Scattered clustered (B6) |
| Scattered isolated (B7) |

([Code2] = "A1*") or ([Code2] = "A2*") make sure to select from the currently selected set.

The selected polygons indicate all areas with Cultivated - terrestrial that have tree or shrub crops in the 2nd class and occur in a mixed class of 3 codes.

Calculate id2 = "1C" where 1 indicates tree or shrub crops and C indicates 30% of the polygon area.

- Assigning the **B** value

Select all grp_code2 that fall into the **Cultivated – terrestrial** major land cover group.

([Grp_code2] = "A11")

Select from the above set all code3 that is empty and code2 that have a value.

([Code3] = "") and ([Code2] <> "")

You now need to find the classifiers that you identified earlier, from the currently selected features.

| |
|--------------------------|
| Trees (A1) |
| Shrubs (A2) |
| Scattered clustered (B6) |
| Scattered isolated (B7) |

([Code2] = "A1*") or ([Code2] = "A2*") make sure to select from the currently selected set.

The selected polygons indicate all areas with Cultivated terrestrial vegetation that have trees in the 2nd class and occur in a mixed class of 2 codes.

Calculate id2 = "1B" where 1 indicates tree or shrub crops and B indicates 40% of the polygon area.

Cultivated Vegetation – aquatic

There are no tree or shrub crops in the cultivated – aquatic group

- **Finding herbaceous crops**

NOTE: remember that the 2nd class can have a B value, C value or D value. I.e. it is B when it is the second class in a mixed class of two codes e.g. A/B (60/40). I.e. CODE3 is empty AND CODE2 has a value AND CODE1 has a value.

It is C when it is second in a mixed class of three codes e.g. A/**B**/C (40/**30**/30).
I.e. CODE1 and CODE2 and CODE3 have a value.

It is D when there is scattered clustered or scattered isolated fields. This will be assigned after the B and C values have been assigned.

Cultivated – terrestrial

- First assign the **C** value.

Select all grp_code2 that fall into the **Cultivated – terrestrial** major land cover group.

$([Grp_code2] = "A11")$

Select from the above set, all the code3 and code2 that have a value.

$([Code3] <> "") \text{ and } ([Code2] <> "")$

You now need to find the classifiers that you identified earlier, from the currently selected features.

| |
|--------------------------|
| Herbaceous (A3; A4; A5) |
| Scattered clustered (B6) |
| Scattered isolated (B7) |

$([Code2] = "A3*") \text{ or } ([Code2] = "A4*") \text{ or } ([Code2] = "A5*")$

make sure to select from the currently selected set.

The selected polygons indicate all areas with Cultivated terrestrial vegetation that have shrubs in the 2nd class and occur in a mixed class of 3 codes.

Calculate id2 = “2C” where 2 indicates herbaceous crops and C indicates 30% of the polygon area.

- Assigning the **B** value

Select all grp_code2 that fall into the Cultivated vegetation – terrestrial major land cover group.

$([Grp_code2] = "A11")$

Select from the above set all code3 that is empty and code2 that have a value.

$([Code3] = "") \text{ and } ([Code2] <> "")$

You now need to find the classifiers that you identified earlier, from the currently selected features.

| |
|--------------------------|
| Herbaceous (A3; A4; A5) |
| Scattered clustered (B6) |
| Scattered isolated (B7) |

([Code2] = "A3*") or ([Code2] = "A4*") or ([Code2] = "A5*")
make sure to select from the currently selected set.

The selected polygons indicate all areas with Cultivated terrestrial vegetation that have shrubs in the 2nd class and occur in a mixed class of 2 codes.

Calculate id2 = "2B" where 2 indicates herbaceous crop and B indicates 40% of the polygon area.

Cultivated vegetation – aquatic

- First assign the **C** value.

Select all grp_code2 that fall into the **Cultivated – aquatic** major land cover group.

([Grp_code2] = "A23")

Select from the above set, all the code3 and code2 that have a value.

([Code3] <> "") and ([Code2] <> "")

You now need to find the classifiers that you identified earlier, from the currently selected features.

| |
|--------------------------|
| Herbaceous (A1; A2) |
| Scattered clustered (B6) |
| Scattered isolated (B7) |

([Code2] = "A1*") or ([Code2] = "A2*") make sure to select from the currently selected set.

The above query selects nothing. This means there are no Cultivated - aquatic areas with herbaceous crops in the 2nd class of a mixed unit of 3 classes.

- Assign the **B** value

Select all grp_code2 that fall into the **Cultivated – aquatic** major land cover group.

([Grp_code2] = "A23")

Select from the above set all code3 that is empty and code2 that have a value.

([Code3] = "") and ([Code2] <> "")

You now need to find the classifiers that you identified earlier, from the currently selected features.

| |
|--------------------------|
| Herbaceous (A1; A2) |
| Scattered clustered (B6) |
| Scattered isolated (B7) |

([Code2] = "A1*") or ([Code2] = "A2*") make sure to select from the currently selected set.

The above query selects nothing. This means there are no areas with Cultivated - aquatic that have herbaceous crops in the 2nd class and occur in a mixed class of 2 codes.

You now need to assign the D values for the values in id2. this will be all the values in id2 that contains scattered clustered or scattered isolated classifiers in code2.

Select all the records that contain values in id2.

([id2] <> "")

From the above selection, you need to select those classifiers that contain scattered clustered (B6) or scattered isolated fields (B7).

([Code2].contains("B6") or ([Code2] .contains("B7")))

Select from the above set all values that contains “1”

([id2].contains("1"))

With the above selection active, calculate id2 = “1D”

Select all the records that contain values in id2 once again.

([id2] <> "")

From the above selection, you need to select those classifiers that contain scattered clustered (B6) or scattered isolated fields (B7).

```
( [Code2].contains("B6") or ([Code2] .contains("B7")))
```

Select from the above set all values that contains “2”

```
( [id2].contains("2" ))
```

With the above selection active, calculate id2 = “2D”

You are now finished assigning the 2nd class to the aggregation. We can now move on to the 1st class.

c) Finding trees or shrub crops and herbaceous crops in the 1st class of a mixed unit and single units

Create a field called id1.

NOTE: remember that the 1st class can have a single unit value, an A value or a B value. It is a single unit value when it is a single class i.e. there are no mixed units. I.e. CODE2 is empty AND CODE3 is empty.

It is A when it is the first class in a mixed class of two codes e.g. A/B (60/40). I.e. CODE3 is empty and CODE2 with a value.

It is B when it is first in a mixed class of three codes e.g. A/B/C (40/30/30). I.e. CODE1 and CODE2 and CODE3 have a value.

- **Finding tree or shrub crops**

Cultivated – terrestrial

- First assign the **B** value.

Select all grp_code1 that fall into the **Cultivated vegetation – terrestrial** major land cover group.

```
( [Grp_code1] = "A11" )
```

Select from the above set, all the code1, code2 and code3 that have a value.

```
( [Code3] <> "" )
```

You now need to find the classifiers that you identified earlier, from the currently selected features.

| |
|--------------------------|
| Trees (A1) |
| Shrubs (A2) |
| Scattered clustered (B6) |
| Scattered isolated (B7) |

([Code1] = "A1*") or ([Code1] = "A2*") make sure to select from the currently selected set.

The selected polygons indicate all areas with Cultivated - terrestrial that have tree or shrub crops in the 1st class and occur in a mixed class of 3 codes.

Calculate id1 = "1B" where 1 indicates tree or shrub crops and B indicates 40% of the polygon area.

- Assigning the **A** value

Select all grp_code1 that fall into the Cultivated vegetation – terrestrial major land cover group.

([Grp_code1] = "A11")

From the above selection, select all Code3 that are empty and all Code 2 with a value.

([Code3] = "") and ([Code2] <> "")

You now need to find the classifiers that you identified earlier, from the currently selected features.

| |
|--------------------------|
| Trees (A1) |
| Shrubs (A2) |
| Scattered clustered (B6) |
| Scattered isolated (B7) |

([Code1] = "A1*") or ([Code1] = "A2*") make sure to select from the currently selected set.

The selected polygons indicate all areas with Cultivated - terrestrial that have tree or shrub crops in the 1st class and occur in a mixed class of 2 codes.

Calculate id1 = "1A" where 1 indicates tree or shrub crop and A indicates 60% of the polygon area.

- Assign the **single** class

Select all grp_code1 that fall into the Cultivated vegetation – terrestrial major land cover group.

([Grp_code1] = "A11")

From the above selection, select all Code3 that are empty and all Code 2 that are empty.

([Code3] = "") and ([Code2] = "")

You now need to find the classifiers that you identified earlier, from the currently selected features.

| |
|--------------------------|
| Trees (A1) |
| Shrubs (A2) |
| Scattered clustered (B6) |
| Scattered isolated (B7) |

([Code1] = "A1*") or ([Code1] = "A2*") make sure to select from the currently selected set.

The selected polygons indicate all areas with Cultivated - terrestrial that have tree or shrub crops in the 1st class and occur as a single unit.

Calculate id1 = "1" where 1 indicates tree or shrub crop and the absence of a letter indicates 100% of the polygon area.

Cultivated vegetation - aquatic

There are no tree or shrub crops in the cultivated – aquatic group

- **Finding herbaceous crop**

NOTE: remember that the 1st class can have a single unit value, an A value or a B value. It is a single unit value when it is a single class i.e. there are no mixed units. I.e. CODE2 is empty AND CODE3 is empty.

It is A when it is the first class in a mixed class of two codes e.g. A/B (60/40). I.e. CODE3 is empty and CODE2 with a value.

It is B when it is first in a mixed class of three codes e.g. A/B/C (40/30/30). I.e. CODE1 and CODE2 and CODE3 have a value.

Cultivated vegetation –terrestrial

- First assign the **B** value.

Select all grp_code1 that fall into the **Cultivated vegetation – terrestrial** major land cover group.

([Grp_code1] = "A11")

Select from the above set, all the code1, code2 and code3 that have a value.

([Code3] <> "")

You now need to find the classifiers that you identified earlier, from the currently selected features.

| |
|--------------------------|
| Herbaceous (A3; A4; A5) |
| Scattered clustered (B6) |
| Scattered isolated (B7) |

([Code1] = "A3*") or ([Code1] = "A4*") or ([Code1] = "A5*")
make sure to select from the currently selected set.

The selected polygons indicate all areas with Cultivated - terrestrial that have herbaceous crops in the 1st class and occur in a mixed class of 3 codes.

Calculate id1 = "2B" where 2 indicates herbaceous crop and C indicates 40% of the polygon area.

- Assigning the **A** value

Select all grp_code1 that fall into the Cultivated vegetation – terrestrial major land cover group.

([Grp_code1] = "A11")

From the above selection, select all Code3 that are empty and all Code 2 with a value.

([Code3] = "") and ([Code2] <> "")

You now need to find the classifiers that you identified earlier, from the currently selected features.

| |
|--------------------------|
| Herbaceous (A3; A4; A5) |
| Scattered clustered (B6) |

| |
|-------------------------|
| Scattered isolated (B7) |
|-------------------------|

([Code1] = "A3*") or ([Code1] = "A4*") or ([Code1] = "A5*")
make sure to select from the currently selected set.

The selected polygons indicate all areas with Cultivated - terrestrial that have herbaceous crops in the 1st class and occur in a mixed class of 2 codes.

Calculate id1 = "2A" where 2 indicates herbaceous crops and A indicates 60% of the polygon area.

- Assign the **single** class

Select all grp_code1 that fall into the Cultivated vegetation – terrestrial major land cover group.

([Grp_code1] = "A11")

From the above selection, select all Code3 that are empty and all Code 2 that are empty.

([Code3] = "") and ([Code2] = "")

You now need to find the classifiers that you identified earlier, from the currently selected features.

| |
|--------------------------|
| Herbaceous (A3; A4; A5) |
| Scattered clustered (B6) |
| Scattered isolated (B7) |

([Code1] = "A3*") or ([Code1] = "A4*") or ([Code1] = "A5*")
make sure to select from the currently selected set.

The selected polygons indicate all areas with Cultivated - terrestrial that have herbaceous crops in the 1st class and occur as a single unit.

Calculate id1 = "2" where 2 indicates herbaceous crops and the absence of a letter indicates 100% of the polygon area.

Cultivated vegetation – aquatic

- First assign the **B** value.

Select all grp_code1 that fall into the **Cultivated – aquatic** major land cover group.

([Grp_code1] = "A23")

Select from the above set, all the code1, code2 and code3 that have a value.

([Code3] <> "")

You now need to find the classifiers that you identified earlier, from the currently selected features.

| |
|--------------------------|
| Herbaceous (A1; A2) |
| Scattered clustered (B6) |
| Scattered isolated (B7) |

([Code1] = "A1*") or ([Code1] = "A2*") make sure to select from the currently selected set.

No polygons are selected, meaning no areas with Cultivated - aquatic that have herbaceous crops in the 1st class of a mixed class of 3 codes occur.

- Assigning the A value

Select all grp_code1 that fall into the Cultivated vegetation – aquatic major land cover group.

([Grp_code1] = "A23")

From the above selection, select all Code3 that are empty and all Code 2 with a value.

([Code3] = "") and ([Code2] <> "")

You now need to find the classifiers that you identified earlier, from the currently selected features.

| |
|--------------------------|
| Herbaceous (A1; A2) |
| Scattered clustered (B6) |
| Scattered isolated (B7) |

([Code1] = "A1*") or ([Code1] = "A2*") make sure to select from the currently selected set.

The above query selects nothing. This means there are no areas with Cultivated - aquatic that have herbaceous crops in the 1st class and occur in a mixed class of 2 codes.

- Assign the **single** class

Select all grp_code1 that fall into the Cultivated vegetation – aquatic major land cover group.

([Grp_code1] = "A23")

From the above selection, select all Code3 that are empty and all Code 2 that are empty.

([Code3] = "") and ([Code2] = "")

You now need to find the classifiers that you identified earlier, from the currently selected features.

| |
|--------------------------|
| Herbaceous (A1; A2) |
| Scattered clustered (B6) |
| Scattered isolated (B7) |

([Code1] = "A1*") or ([Code1] = "A2*") make sure to select from the currently selected set.

The above query selects nothing. This means there are no areas with Cultivated - aquatic that have herbaceous crops in the 1st class and occur as a single unit.

6. You have now completed the assignment of the aggregation classes. You can now combine the id1, id2 and id3 fields into one id field.

Create a new field called id.

Calculate id = id1 + id2 + id3

You will notice that some values of the new id fields are made up of two values. An example can be seen in the table below.

| id2 | id1 | id |
|-----|-----|------|
| 1B | 1A | 1A1B |
| 1B | 1A | 1A1B |
| 1B | 1A | 1A1B |
| 1B | 1A | 1A1B |

This indicates that trees occurred in the 1st class and the 2nd class of a mixed unit. In these cases you have to adjust the values to reflect the correct area percentage. E.g. A = 60 % and B = 40 %. If these two are added 60 + 40 = 100 %. The id field will then have to be adjusted to 1 indicating that trees make up 100% of the polygon.

In some cases we have a first class 1A (60% area) and a second class of 1D (15% area). In these case it is rounded down to the nearest major grouping i.e. this would stay 1A.

| | | |
|----|----|------|
| 1D | 1A | 1A1D |
| 1D | 1A | 1A1D |
| 1D | 1A | 1A1D |
| 1D | 1A | 1A1D |

In case where you have a layer of trees in the 1st class and shrubs in the 2nd class, the first class always takes priority.

| <i>id2</i> | <i>id1</i> | <i>id</i> |
|------------|------------|-----------|
| 2B | 1A | 1A2B |
| 2B | 1A | 1A2B |
| 2B | 1A | 1A2B |
| 2B | 1A | 1A2B |
| 2B | 1A | 1A2B |

In the case above you have a first class of tree or shrub crop and a second class of herbaceous crop. The aggregation class will then become 1A because the first class takes priority.

7. **Once all these issues are resolved, select all the records in the id field that have a value. Convert this selection to a shapefile and delete all unwanted fields.**
8. **Dissolve the shapefile on the id fields using the Geoprocessing extension to remove unwanted polygons and then explode using the Africover extension, so remove multi-part polygons. You can then join the description table to the id field and calculate area for the new shapefile.**

This is the aggregation for Cultivated areas that has tree or shrub crop and herbaceous crop i.e. all cultivation in Burundi.