**Object based supervised classification parameters used**

The three images from different sensors are expected to have differences due to sensor positions, scanner modes, number of spectral bands, signal to noise ratios and spatial resolution of the images (USGS; Mancino et al., 2020). Consequently, this has required us to use different parameters for image segmentation and attribute calculation under the object based supervised classification workflow as shown in the table below.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sensor** | **Segmentation parameters** | | | **Attribute calculation** | | |
| **Scale** | **Shape** | **Compactness** | **Statistical** | **Geometrical** | **Vegetation indices** |
| Landsat 4-5 | 10 | 0.5 | 0.5 | Mean & Std Dev | Compactness, elongation, circularity and rectangularity | NDVI |
| Landsat 7 ETM+ | 8 | 0.25 | 0.25 | Mean & Std Dev | Compactness, elongation, circularity and rectangularity | NDVI |
| Landsat 8 OLI | 5 | 0.20 | 0.20 | Mean & Std Dev | Solidity, Form factor, Compactness, elongation, circularity and rectangularity | NDVI |

Hence there is no universal standard for the values and types of calculations, the researchers used trial and error method to find best values that bring better segmentation results. The trial-and-error method is a method recommended by the PCI Geomatica to attain better results that corresponds to images collected from different sources under different scenarios.