

CREATING A GRAPH OF THE NDVI INDEX OF TASHKENT REGION

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Introduction. NDVI (Normalized Difference Vegetation Index) – normalized relative vegetation index – is a simple quantitative indicator of the amount of photosynthetically active biomass (commonly called the vegetation index). It is calculated according to the following formula: $NDVI = (NIR - RED) / (NIR + RED)$ Here: NIR – reflectance in the near-infrared region of the spectrum RED – reflectance in the red region of the spectrum During the process of deriving the NDVI index for Tashkent region, we use the ArcGIS Pro software. After opening the ArcGIS Pro program, we select the analysis tab and from there run the model builder, and a window opens like the following. Then we select the analysis tab again and from there click on Tools, and a window opens.

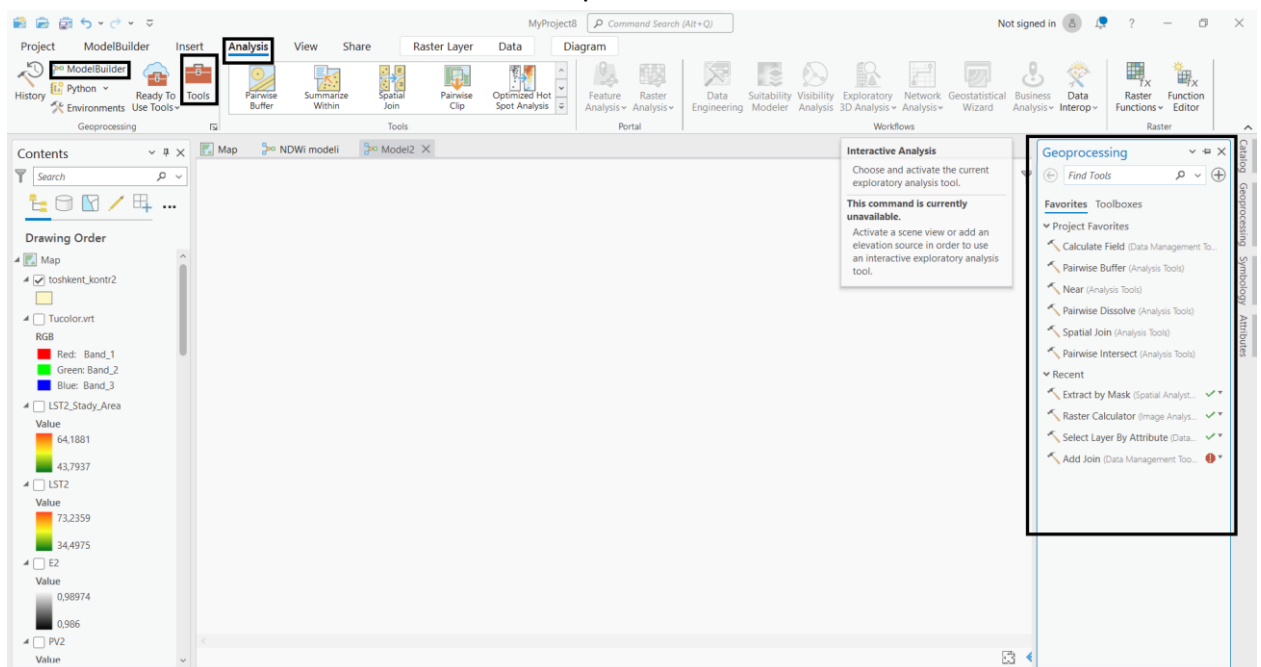


Figure 1. Activating the geoprocessing process

After this, we will start assembling the model through the window on the right side. First, we will use the Moiscac to new raster panel twice, then we will add the raster calculator panel, and after that, we will also add the extract by mask panel. Then we move on to the second stage of the model and use the zonal statistics as table panel from tools, and our model will look like this.

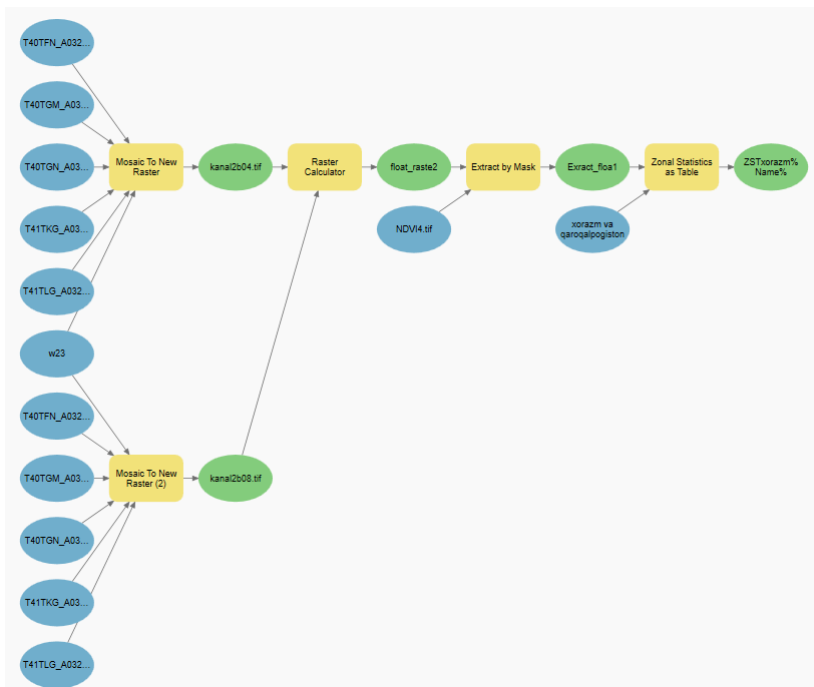


Figure 2. Structure of the NDVI index model

Before we start working, we open the ArcGIS Pro program. Then we go to the View panel of the program and click on the Catalog Pane. After that, the catalog window opens on the right side of the program. Then we add the Tashkent contour, take the Tashkent contour, right-click on it, then a window opens. From the window, we click on Attribute Table, and the Attribute data window opens. Then we click on Switch, and it selects all the attribute data. After that, we click on copy, and we copy all the attribute data.

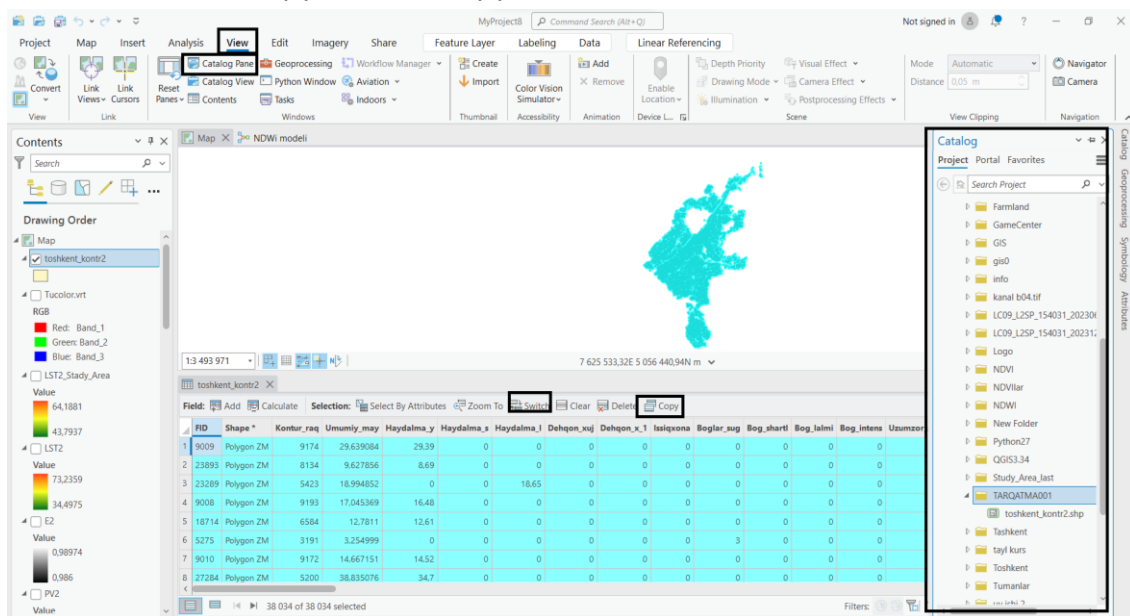


Figure 3. Process of obtaining attribute information

After that, we start the Excel program. Once the program opens, we move the mouse over row A and click, then drag the required attribute data into the Excel program. Next, for the unnecessary attribute data, we move over row B and drag it up to the row we need, right-click the mouse, a window opens, and we click on Hide, after which the unnecessary attribute

data is removed. After that, we select the NDVI index values, go to the Insert row, choose graph, and the NDVI index values are displayed in graph form.

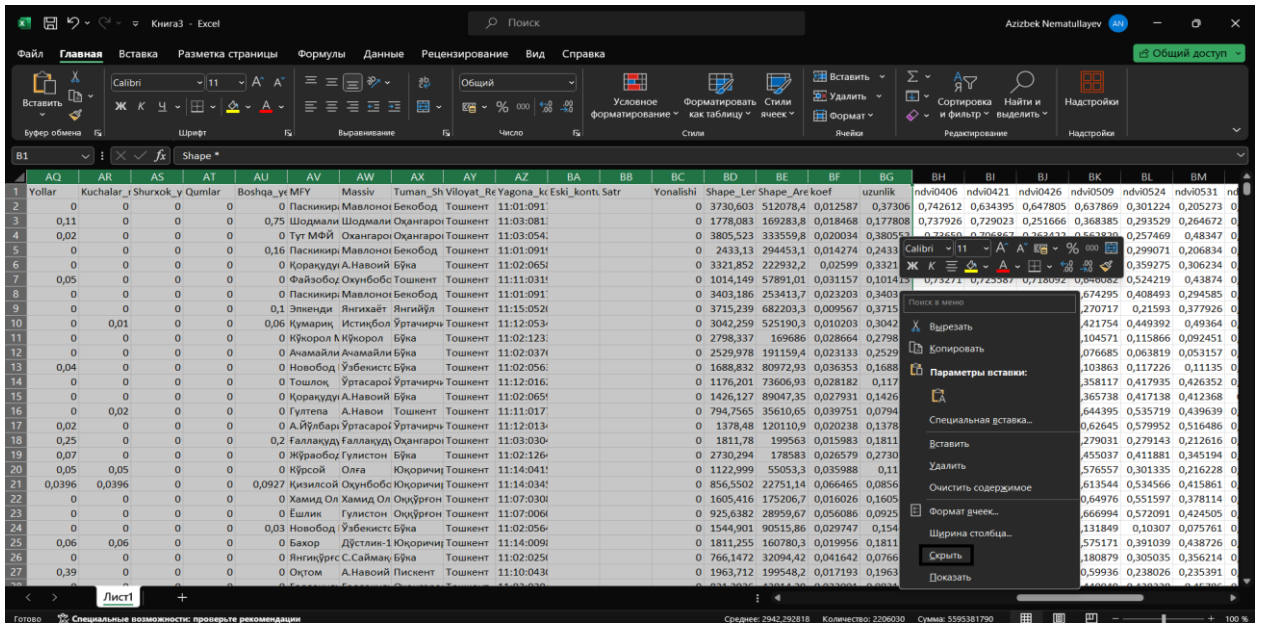


Figure 4. The process of transferring attribute data of agricultural lands of Tashkent region to Excel

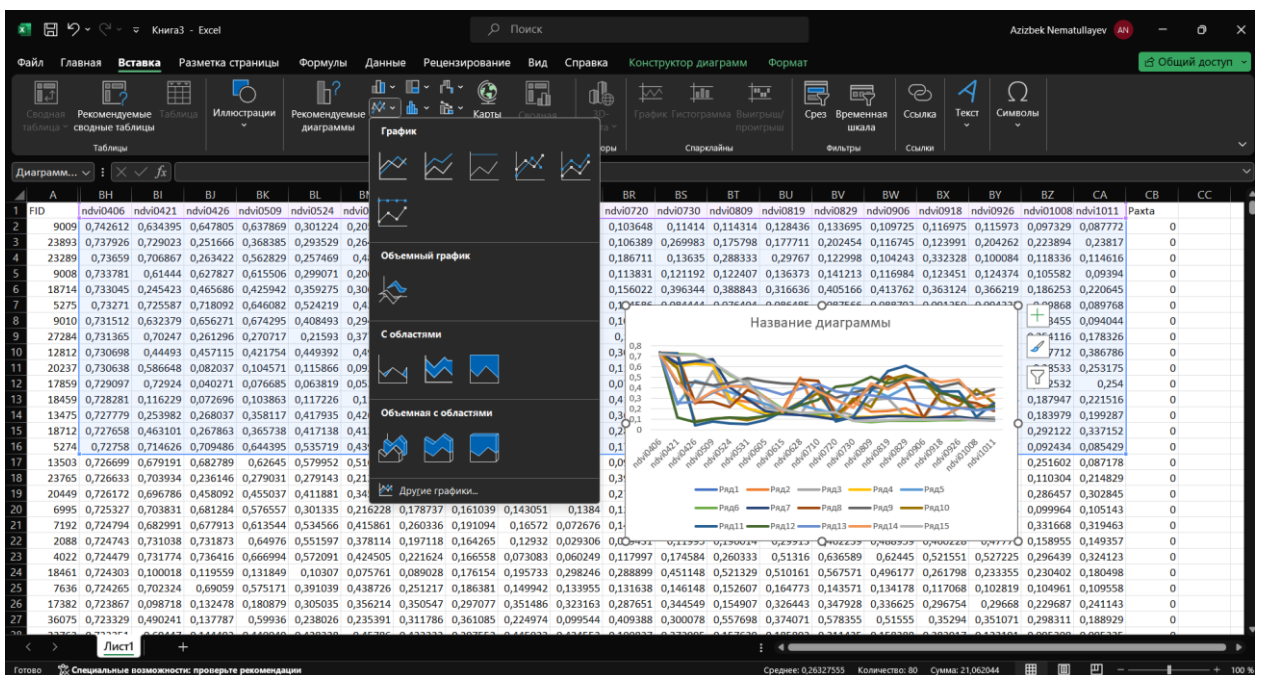


Figure 5 Creating a graphic using attribute data.

Conclusion. Using the capabilities of the ArcGIS Pro program, we used the Model Builder panel and Tools to discard and collect the details necessary for the NDVI model, and through this, we can create the NDVI index for each month. In ArcGIS Pro, we extracted the NDVI index values and conducted analysis in 2026. As a result, through the NDVI index values, we determined the level of productivity in 2026. Through our research, we illustrated in graph

form which month had what level of productivity. Through this, we determined the level of productivity of different types.

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