Here are some ways to approach the problem in a more effective manner:

1) The occurrence of soil erosion in forests is largely impacted by several significant factors including FVC, degree of soil exposure, slope, and the health status of vegetation. The vegetation's health status can be determined through the analysis of nitrogen and yellow leaf indexes. The SEUFM model development considered these factors in identifying areas within the forest that are prone to erosion. Furthermore, these five factors can be directly obtained from remote sensing data, making it a convenient and efficient way to detect soil erosion potential in forested regions. (link for more information about each factor: A remote sensing Based Method to Detect Soil Erosion in Forests)

2) Satellite imagery provides valuable insights into the factors contributing to erosion, including topography, soil, vegetation, and land use. Digital elevation models generated from satellite image processing tools like ALOS, SRTM, and ASTER GDEM allow for terrain characteristics to be accurately determined. Using this data, factors such as slope, slope profile, aspect of slope, and horizontal and vertical dismemberment of the earth's surface can be calculated. By analyzing these indicators, areas with varying potential for erosion processes - plane and linear erosion - can be identified.
(Application of A Remote Sensing in Monitoring of Erosion Processes)

3) To evaluate the soil condition, spectral indices such as form index (FI), coloration index (CI), and brightness index (BI) are employed based on the reflectivity of the soil surface. Color is a crucial factor that helps to characterize the soil condition. The form index, which characterizes the spectral reflectance of soil, is dependent on the number of iron oxides and carbon compounds present. Low reflectance is usually associated with a low degree of erosion, which is attributed to the presence of iron oxides and the absence of carbonates. The brightness index helps to distinguish between vegetation and uncovered soil, making it a commonly used indicator of soil erosion. The vegetation cover is responsible for the low level of brightness index, while the uncovered surface accounts for the high level.
(Application of A Remote Sensing in Monitoring of Erosion Processes)

3) To obtain vector data results, post-processing operations are necessary to convert the predicted grid output. The following steps are involved in the entire process from image prediction output to vector:

- Grid splicing: The output must be divided into administrative regions, and thus the previously input and cropped image prediction results are split into an entire grid image in the unit of administrative regions.
- Adding spatial coordinates: As the output raster image does not have any coordinate information, it is important to inherit the spatial coordinate data from the input image.
- Filtering small spots: As the network predicts the image pixel-by-pixel, small spots may appear in the output result. To comply with the requirements of soil and water conservation projects, a spot area threshold of 400 m2 can be set, and any spot with a pixel point less than this threshold can be filled with the pixel value of the nearest spot.

(Application of Deep Learning in Land Use Classification for Soil Erosion Using Remote Sensing)