

Monitoring the overgrowth and abandonment of agricultural land

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Overgrowth of agricultural land and consequently its abandonment is becoming a serious problem in some European countries. Monitoring and identification of overgrowth and abandonment of agricultural land is significant for the process of evaluation of agricultural policy with the aim of reducing the rate of abandonment of agricultural land. Traditionally monitoring of overgrowth and abandonment of agricultural land in Slovenia is done in the scope of maintenance of agricultural and forest land use/land cover data. Data is interpreted directly, using comparison of old and new ortho-photo images to detect changes. The photointerpretation of overgrowth is very complex and time demanding, therefore we propose two novelties in the existing method:

- use of normalized digital surface model data (derived from aero photos) as auxiliary data in the photointerpretation process and
- automatic identification of overgrowth and cut areas based on a series of orthophotos and normalized digital surface model data.

Object based image analysis has been used for extraction of cut and overgrowth areas in different stages (low, middle and high overgrowth). Completeness, correctness and potential use of the automatic identification results in the future maintenance process has been assessed by expert photointerpretators. The major advantage of proposed automated change detection in the spatial data maintenance process is, that automatically identified changes highlight the areas of potential overgrowth. This way the work of photointerpretator is focused on limited areas instead of entire working unit and consequently overgrowth areas, that often get failed to notice on ortho-photo, are easier to interpret.