Description of output O.4.3 Innovative Decision Support Tool

Contents

1. Summary of the output

The innovative Decision Support Tool (DST) is putting together and facilitating the analysis of the most relevant spatial data. It is created by spatial planners in cooperation with partners from fields of ecology and environment protection. Its objective is to ensure that the most appropriate solutions are taken in order to safeguard the ecological corridors and to resolve various conflicts between nature conservation and the intended or existing economic development projects.

The DST engages spatial planners, environmentalists, authorities and other stakeholders by involving them in relevant meetings and workshops where the tool will be developed and demonstrated in practice.

The DST strives to demonstrate that informed decisions can be made much easier and faster by having and overlapping all major categories of spatial data (e.g. ecological corridors, land-use categories and ownership, road and railways, settlements, etc.) together. This way, the decisions can be easily accepted and shared by the majority of the stakeholders. Additionally, the system is transferable and replicable to other areas providing existence and availability of spatial data.

2. How to access the output

The innovative Decision Support Tool had been integrated into CCIBIS (Carpathian Countries Integrated Biodiversity Information System) - http://ccibis.org/.

The direct link to the Decision Support System integrated into CCIBIS is http://ccibis.org/decision-support-system/

Here the user can read the description of the system, how it works, enter the documentation https://cloud.spectra-perseus.sk/index.php/s/4zz0JMARenXg3b4/download , enter the video tutorial https://www.youtube.com/watch?v=KbUw4Bji-Xc and enter the GIS-based Decision Support Tool https://gis.vm.stuba.sk/portal/apps/webappviewer/index.html?id=1f53713820c140989eebfa4ff9198730

2. What is Decision Support System?

The innovative Decision Support Tool (DST) is to a GIS-based support tool in the pre-planning phase of the decision-making process about a new investment in the territory. Its aim is to help looking for a better alternative or a better location of a planned infrastructure according to the ecological value of the area.

3. How it works?

The system is calculating the area covered by the proposed investment and evaluates to what extend it occupies protected areas and/or components of the ecological networks. This way, the user can have an information about the risk of the proposed investment in relation to the ecological connective of the area. topics:

The risk for the purposes of the DST is calculated according to the attributes of the polygons. The lowest risk value is 3 – good areas for biodiversity. The risk value 2 are the polygons covering important areas for biodiversity – ecological corridors. The highest risk value 1 are the key areas for biodiversity – critical zones, which must be protected and any investments here should be avoided.

🟥	Risk 1	Highest risk	Key are for biodiversity	Avoidance is necessary
🟧	Risk 2	Medium risk	Important area for biodiversity	Avoidance or strong mitigation or compensation needed (e.g., big tunnels, viaducts, ecoducts, create a new patch of forest or a new wetland)
🟩	Risk 3	Low risk	Good area for biodiversity	mitigation needed (e.g., tunnels, viaducts, underpasses, overpasses)

4. How to use?

After opening the DST, the GIS Web Application Graphical User Interface allows the user to see the legend, find the broader area of interest using the zoom in/zoom out options or by using the search button or to select the layers to be displayed.
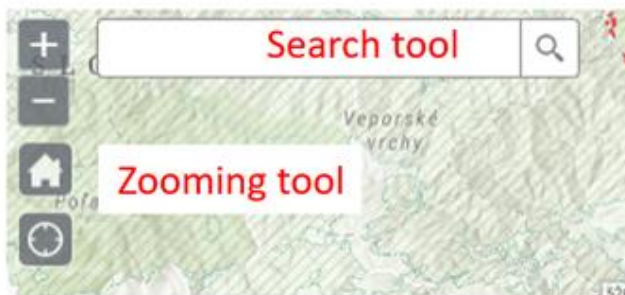
User interface
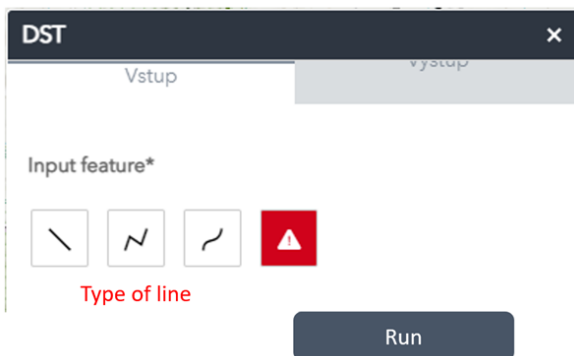
Inserting an input to the system

5. Example of using the Decision Support System

Consider planning an investment in the Slovak-Hungarian cross-border area. Figure 9 shows an example of the result on the user's screen. In this example, the user made a straight line input in two variants – variant A and variant B. The major difference between these two variants is the areas the investment is crossing. In variant A, the proposed investment is crossing over areas of risk value 1, 2 and 3, which includes risk 3 areas / critical zones from the point of view of ecological connectivity which must remain intact. Variant B is not crossing over risk 3 areas so when compared to variant A, it is less disturbing to nature from the ecological connectivity point of view.