Impact of agricultural plastics on rural landscape: visual impact assessment on the “Metapontino” agri-food district (Southern Italy)

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**Abstract.** The use of plastics in agriculture represents one of the main topics for planners and policy-makers, dealing with the issues of environmental sustainability in the agricultural sector. The effectiveness, economy and versatility in the use of different plastic polymers made these products widespread in highly profitable agricultural activities (orchards and horticulture). The intensification in the use of agricultural plastics is often localized in some specific areas, where there is a concentration of different covering materials to reduce production costs. These clusters of agricultural plastics pose a problem of their end-of-life disposal, since an incorrect management can determine serious environmental impacts.

Moreover, another problem concerns the visual impact that these large clusters can have on the surrounding rural landscape. In fact, the aesthetic quality of these territories - often located in areas characterised by a fragile environment and a marked tourist vocation - may be deteriorated. Indeed, new structures for protected cultivation covered with wide surface of plastic material are increasingly spreading all over Europe, mostly in the Mediterranean Countries. If this phenomenon should continue with the same trend, an increase of these plastic-covered areas could be predictable in the next years. In some cases, it has been assessed how they alter in a significant way the local agricultural landscape, that constitute one of the most important heritage of these fragile territories. Therefore, their visual impact should be properly evaluated and potentially mitigated, so contributing to the preservation of the formal aesthetic characteristics of the rural landscape. However, its perception is difficult to quantify and measure it.

In this paper, a GIS-based methodology, aimed to perform a visual impact assessment, has been proposed, by applying it to the case study of the “Metapontino” agri-food district (Basilicata Region - Southern Italy), where there is an increase in the use of agricultural plastics, accompanied by an increase in tourist flows. From the obtained results, GIS tools, besides allowing complex spatial analysis, have hence revealed as a powerful planning tool for public authorities, able to enable mitigation strategies for the visual impact of plastics on the rural landscape as well.