Application of Local Ecosystem Readiness Level: a case study

D. Sarri1\*, A. Pagliai1, C. Perna1, G. Bucalossi1, M. Vieri1, S. Lombardo2

1Department of Agricultural, Food, Environment and Forestry, University of Florence, Piazzale Delle Cascine 15, 50144 Florence, Italy

2Ente Terre Regionali Toscane, Via di Novoli 26, Florence, 50127, Italy

**Keywords.** Precision farming, TRL, index, technologies, policies

**Abstract.**

Introduction - Precision Agriculture (PA) application is scarcely in the south Mediterranean area. This could be due to different causes, such as the lack of a systemic vision of the institutions and/or subjects needed in a precision agriculture system. This deficiency makes it difficult, or even impossible, to evaluate the effectiveness and consistency of the adoption of Precision Agriculture Technologies (PAT). In order to better understand the presence and solidity of networks between the agricultural system entities, a composed index was developed. Materials and methods - The local ecosystem readiness level (LERL) was structured in nine indicators concerning all actors involved in PAT adoption, and it was measured on a normalized scale from -20 (low) to +100 (high). In this paper, an extensive case study was carried out to understand better the index soundness, representativeness, accuracy and usability. The update of assessment methods and index criteria was performed through this case study. The case study took place in Italy to evaluate and measure the drivers of the PAT. The data necessary to calculate the index were obtained through specific surveys on the local ecosystem actors, farmers, technicians, consultants, and educational centres. A context evaluation was carried out to assess PA local infrastructure, governance and providers. For the latest, a database was created to identify local PA providers easily. Results and discussion – The application of LERL showed a framework in which many weaknesses were come up due to the lack of competencies in the Educational System and substantial structural deficit with few infrastructures at disposal for farmers. The LERL index results in the case study showed a low level, identifying a status between the first (Absence) and second (Emergency) level. Conclusion – This index makes it possible to identify and quantify, in a territory, what may be gaps, excellences and needs for a profitable introduction of the PA. It is a tool that both farmers and policymakers can use to plan investments and business strategies and comply with international policies. In future perspectives, a worldwide application of LERL will be made to make it a robust index, able to evaluate the adoption of PAT.