The role of GIs in public goods production and SDGs achievement: a methodological proposal

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Abstract – **Food Quality Schemes (FQS), that include Geographical Indications (GIs), represent good examples of food production that lean towards sustainability through good practices handed down in Code of Specifications (CoS) and management rules lied down by GI Consortia. Thus, the objective of this paper is to analyse and assess the capacity of GI systems to produce Public Goods (PGs) that support the Sustainable Development Goals (SDGs). In this context, the assessment is organised in four steps: i) the analysis of PGs as the result of the management rules defined in the CoS; ii) definining indicators to measure the impact of the PGs produced by GIs in the achievment of the SDGs; iii) the definition of the criteria for assessing the identified indicators; iv) the evaluation of PGs generation and their impact on SDGs. In this framework, the paper discusses the PDO Parmigiano Reggiano (Italy) and PGI Doi Chaang Coffe (Thailand) case studies analysed in the H2020 Strength2food project framework. Results confirms the presence of PGs associated to GI products and their role as a qualifying attribute of GI food products and their production systems.**
Keywords – **Sustainable Development Goals; Public Goods; Geographical Indications.**

INTRODUCTION

In recent years, the focus on the sustainability of food supply chains and their environmental, economic and social impact on territories has increased. In this context, Food Quality Schemes (FQS), that include Geographical Indications (GIs), represent good examples of food production that lean towards sustainability through good practices handed down in Code of Specifications (CoS) by GIs Producers Group. These practices produce positive environmental, social and economic externalities that can be considered as Public Goods (PGs) (Vandecandelaere et al., 2009; Belletti et al., 2017; Arfini et al., 2021; Arfini et al., 2019). Although PGs produced by GIs are not directly visible to consumers at the time of purchase and consumption, they can contribute positively to rural development in several ways in terms of immaterial goods (like reputation) instrumental to improve market efficiency, as well as preserve local knowledge, cultural heritage, social cohesion and local biodiversity (Arfini et al., 2021). The importance of PGs is also highlighted by the

United Nations. Indeed, in 2015, through its new strategic development agenda, UN categorised seventeen Sustainable Development Goals (SDGs), many of which can be directly related to the "food environments" (FEs) (HLPE, 2017) of the GIs production system. FEs are the physical, economic, political and socio-cultural contexts in which consumers engage with the food system to make decisions on acquiring, preparing and consuming food (HLPE, 2017). Thus, we can argue that a FE, while producing PGs also supports SDGs, allowing the preservation of production systems and producing environmental, social and economic benefits. The production of PGs is codified by rules concerning the local FE that are defined in the CoS and adopted by the producers. Based on such premise, some of the SDGs represent a tangible image of the GIs production system sustainability as a consequence of the externalities that the defined rules spill over the territories. Thus, the objective of this paper is to analyse and assess the capacity of the GI systems to produce PGs that directly impact some SDGs.

METHODS

The paper discusses the PGs produced by two GIs production systems within the H2020 Strength2food project framework (Bellassen et al., 2022; Arfini et al.; 2019). In this context, the assessment consists of four steps: i) the analysis of PGs as the result of the management rules defined in the CoS lied down by GI Consortia. The analysis aims to map the PGs that the different GIs production systems are able to produce within the value chain and in the territories. For this purpose, three classes of PGs have been considered: Cultural Heritage Preservation, Socio Economic and Use of Natural Resources; ii) the definition of indicators to measure the impact of the PGs produced by GIs in the achievement of the SDGs using the FAO-SAFA (2013) sustainability indicators. To this aim, forty-two qualitatives indicators were identified for the assessment of seven SDGs; iii) the definition of evaluation criteria that support the awarding of a score for the identified indicators. For each indicator, a 5 point Likert scale has been adopted to assess the good practices implemented by GI production systems (lowest contribution to the generation of PGs

-score 1; highest contribution -score 5). Furthermore, quantitative indicators set on a 1-5 scale were normalized in order to make the indexes of different categories comparable; iv) the evaluation of PG production and their impact on SDGs by grouping the 42 indicators per relevant SDG. For each SDG, a synthetic index was calculated as the geometric average of the involved indicators. The whole process allowed to highlight and compare good practices set in the GIs CoSs that, as a consequence, produce PGs that impact the SDGs. In this paper two case studies are reported: PDO Parmigiano Reggiano-PR (Italy) and PGI Doi Chaang Coffe-DCC (Thailand).

RESULTS

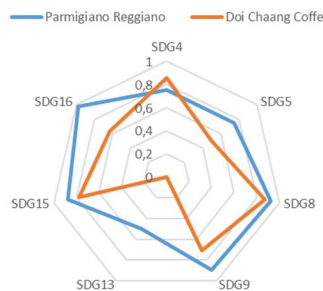Figure 1 shows the capacity of the PR and DCC value chains to contribute to the production of SDGs.

Figure 1. GIs contribution to SDGs

Overall, PR general index (0,79) is higher than DCC (0,71). Thus, PR shows a greater capacity to contribute to the SDGs achievement. However, if we consider SDG4 "ensuring the access to adequate health and educational services" we observe an opposite trend. More specifically, as an example, SDG4 is supported by two indicators: "Educational Farm Activities" and "Education-Professional training on the GIs". In this case, DCC is higher (0.86) than PR synthetic index (0.75). The innovative element in DCC value chain is the institution of a Coffee Academy where coffee farmers are trained to produce high quality coffee (from sowing to brewing). The DCC Academy, through the collaboration of university's lectures, teaches agronomy and farm management classes. Moreover, it plays a crucial role to research and develop the coffee processing technology. In the case of PR, the Consorzio provides technical assistance, supports trade fairs and events, and helps dairies to comply with health, safety, labelling and traceability regulations. In addition, technical assistance, research and consultancy services are also offered by public and private bodies. However, there is no specific educational system, as in the case of DCC, that directly impacts the educational level of the whole community.

DISCUSSION

PR and DCC are analysed in order to highlight their capacities to respond to the societal needs expressed by the SDGs. To this end, synthetic indexes are generated for each SDG. This makes it possible to analyse which aspects of a GI production system contribute to produce PGs and SDGs and which aspects can be improved over time. The cases show that PR value chain contribution is higher in terms of SDGs achievement. Specifically, the main difference concerns SDG16 "building stable and strong institutions (0.98 for PR and 0.63 for DCC), SDG13 "take urgent action to combat climate change and its impacts" (0.5 for PR and N/A for DCC). The first depends on governance actions (guidelines for sustainability and quality), bargain power distribution (i.e. socio economic sustainability of supply chain structure), short supply chain organisation and management, whose indexes show the main gap between the two GIs production systems. The latter depends on carbon footprint control and environmental management practices. However, if on the one hand, DCC needs to introduce practices to strengthen the governance system, on the other hand, both PR and DCC require to strengthen practices towards SDG5 "gender equality" and SDG13 "Climate action".

CONCLUSION

Findings confirm that the presence of PGs associated with GI products is a positive qualifying attribute of GI food products and their production systems. Furthermore, PGs impact on SDGs, responding to society's need. Therefore, a logical process aimed at assessing PGs helps local policy makers, operators, and managers of GI value chain to define which PGs should be monitored over time.

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