

Applications of Greenhouse Data in Guatemala in the Analysis of Sustainability Indicators

Authors : Maria A. Castillo H., Andres R. Leandro, Jose F. Bienvenido B.

Abstract : In 2015, Guatemala officially adopted the Sustainable Development Goals (SDG) according to the 2030 Agenda agreed by the United Nations Organization. In 2016, these objectives and goals were reviewed, and the National Priorities were established within the K'atún 2032 National Development Plan. In 2019 and 2021, progress was evaluated with 120 defined indicators, and the need to improve quality and availability of statistical data necessary for the analysis of sustainability indicators was detected, so the values to be reached in 2024 and 2032 were adjusted. The need for greater agricultural technology is one of the priorities established within SDG 2 "Zero Hunger". Within this area, protected agricultural production provides greater productivity throughout the year, reduces the use of chemical products to control pests and diseases, reduces the negative impact of climate and improves product quality. During the crisis caused by Covid-19, there was an increase in exports of fruits and vegetables produced in greenhouses from Guatemala. However, this information has not been considered in the 2021 revision of the Plan. The objective of this study is to evaluate the information available on Greenhouse Agricultural Production and its integration into the Sustainability Indicators for Guatemala. This study was carried out in four phases: 1. Analysis of the Goals established for SDG 2 and the indicators included in the K'atún Plan. 2. Analysis of Environmental, Social and Economic Indicator Models. 3. Definition of territorial levels in 2 geographic scales: Departments and Municipalities. 4. Diagnosis of the available data on technological agricultural production with emphasis on Greenhouses at the 2 geographical scales. A summary of the results is presented for each phase and finally some recommendations for future research are added. The main contribution of this work is to improve the available data that allow the incorporation of some agricultural technology indicators in the established goals, to evaluate their impact on Food Security and Nutrition, Employment and Investment, Poverty, the use of Water and Natural Resources, and to provide a methodology applicable to other production models and other geographical areas.

Keywords : greenhouses, protected agriculture, sustainable indicators, Guatemala, sustainability, SDG

Conference Title : ICASA 2022 : International Conference on Agricultural Sustainability and Agrobiodiversity

Conference Location : Amsterdam, Netherlands

Conference Dates : September 15-16, 2022