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Measurement of Energy Consumption and GHG Emissions of Kurdistan's Economic Sectors

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EXTENDED ABSTRACT

INTRODUCTION

One of the challenging issues of the present era is climate change and its adverse effects due to the accumulation of greenhouse gases in the earth's atmosphere. One of the proposed solutions to this challenge is to move towards clean energy sources and absorb carbon dioxide, for example, through foresting. Therefore, the present study aimed to measure the energy consumption and greenhouse gas emissions of economic sectors of Kurdistan province and determine the contribution of CO_2 uptake in the province's forests. In previous studies, the pattern of energy consumption at the sector level and in the form of energy content in the region has yet to be considered. They have not been able to highlight its environmental impacts. Therefore, this study is currently trying to measure the energy and greenhouse gases of Kurdistan province within the framework of the input-output model and highlight the environmental impacts of co2 emissions.

METHODOLOGY

This study aims to measure the energy and greenhouse gas content of different economic sectors of Kurdistan province based on the input-output table and determine the contribution of carbon dioxide uptake in the province's forests. The advantage of preparing a regional input-output table is that it is possible to identify each region's facilities and limitations of production and economical construction by relying on them and using them in the region's development and achieving national development with regional development. For this purpose, an input-output table and hydrocarbon balance sheet have been used. Using the import separation technique and MFLQ method and according to the statistics related to national and regional accounts, the input-

output table of Kurdistan province for 2016 (to show the orientation and policies of economic sectors) has been estimated. Then, using this table, the content of greenhouse gases is measured. In discussing the CO_2 absorption capacity of forests in the province, using vegetation area and annual absorption rate per hectare of forest, carbon dioxide emitted and the amount of forest needed for carbon dioxide absorption have been calculated.

FINDINGS

The results show that transportation and power plants have the province's most significant share in greenhouse gas consumption, respectively. Those with positive trade balances are among the most critical sectors requiring careful revision and planning. Also, Kurdistan's biological capacity is about 560,000 hectares. However, the forest necessary to attract more than 6 million hectares is facing a deficit. Therefore, Kurdistan Province needs long-term policy-making by studying the nature of sectors in terms of emissions and identifying the relationships between economic activities.

CONCLUSION

This study seeks to measure the greenhouse gas emissions content of different economic sectors of Kurdistan province based on the input-output table and determine the contribution of carbon dioxide absorption in the province's forests, i.e. the amount of energy consumed in the production of goods and services directly and indirectly. Here are three greenhouse gases CO_2, NO_X, and SO_2. The aim of comparing the direct and indirect content of greenhouse gases in 2001 and 2011 is to show the direction and policy-making of economic sectors.

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