



Sustainable Development from the Perspective of the Supply and Demand for Ecosystem Services

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Abstract

Sustainable Development (SD) aims to strengthen human welfare. “The 2030 Agenda for Sustainable Development” announced 17 Sustainable Development Goals (SDGs) to improve human lives. The ecosystem services provide ecological functions for human and the relationship between the supply and demand of ecosystem services indicated the balance between the ecology and the economy. This article emphasized the necessity of balancing the supply and demand of ecosystem services regarding the promotion of SD to increase human welfare.

Keywords: Ecosystem services; Sustainable development; Human welfare; Supply and demand

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Introduction

The Sustainable Development (SD) was proposed to promote the balance among the economy, society and environment to increase human welfare. To call for the peace for the planet and the provision of human welfare, “The 2030 Agenda for Sustainable Development” put forward 17 Sustainable Development Goals (SDGs) to guide SD [1]. The evaluation of human welfare is mainly based on Human Development Index (HDI) [2], Genuine Progress Indicator (GPI) [3], and Index of Sustainable Economic Welfare (ISEW). However, they lack the discussions on the linkages between SD and the supply and demand of ecosystem services. Ecosystem service was first proposed by Holden and Ehrlich in 1974 and defined by the Millennium Ecosystem Assessment as the benefits provided by ecosystems to humans [4]. The mismatching of the supply and demand of ecosystem services indicates the mismatching of the protection of the ecology and the development of the economy and the society, illustrating that the 17 SDGs have not yet been met. To promote SD and increase human welfare, we should keep the surplus of ecosystem services to ensure the sustainable ecological functions.

The Linkages Between SD and Ecosystem Services

The author listed the relative linkages between the SDGs and ecosystem services regarding their values on providing human welfare, as Table 1 shown.

Table 1: The relative linkages between the SDGs and ecosystem services.

SDGs	Ecosystem Services
Basic materials for a high quality of life	
No Poverty, Zero Hunger, Clean Water and Sanitation.	Food Production, Water Supply, Livestock Production.
Natural environmental conditions for good mood and health	
Good Health and Well-being, Climate Action, Life below Water, Life on Land.	Air Quality Regulation, Regional Climate Regulation, Global Climate Education, Water Conservation, Soil Conservation, Nutrient Regulation.
Good social relations at the social and upbringing levels	
Decent Work and Economic Growth, Sustainable Cities and Communities, Responsible Consumption and Production, Partnerships for the Goals.	Cultural Identity and Protection.
Access to natural and other resources and security	
Quality Education, Affordable and Clean Energy, Industry, Innovation and Infrastructure.	Energy Supply, Wood Production, Water Purification, Intrinsic Value of Biodiversity, Pollination.
Freedom choice of personal values and action	
Gender Equality, Reduced Inequalities, Peace, Justice and Strong Institutions.	Aesthetic, Educational and Spiritual values, Leisure and Tourism.

Suggestions on SD Promotion from the Perspective of Ecosystem Services

Regarding the supply of ecosystem services, to ascertain the increasing human welfare, apart from the SDGs which are contained in the basic materials for a high quality of life, the SDGs such as gender quality and quality education are the necessities. Considering the demand for ecosystem services, both of the natural values of the environment and the artificial values of the society and the economy should be accessed, indicating that the promotion of SD should take the stakeholders of ecosystem services into consideration. From the perspective of the supply and demand of ecosystem services, the relative relationship between the supply and demand of ecosystem services illustrates the availability and actual assess to human welfare from the ecology. It can be

used to evaluate the degree of sustainable human welfare. So, the government can use the supply and demand of ecosystem services to evaluate regional SD and come out practical actions for SD promotion.

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