Abstract

Decoupling energy, water, and food (EWF) consumption and production from GHG emissions could be an important strategy for achieving the UN Sustainable Development Goals (SDGs), especially SDG 2 (Zero Hunger), SDG 6 (Clean Water and Sanitation), and SDG 7 (Clean and Affordable Energy) in Africa. This study applies Tapio's decoupling method to analyze the relationship between GHG emissions and EWF resources use in 15 African countries over the period 1990–2017. The results show a remarkable relationship, which includes the contamination of EWF by GHG emissions, that mostly exhibits unsatisfactory decoupling state to satisfactory decoupling over a period of several years. The decoupling of water and energy resources from GHG emissions in most countries of Africa has not been able to reach an excellent decoupling state or a strong positive decoupling state. This requires countries in Africa to support environmentally friendly water and energy infrastructures and to promote an integrated, mutually managed, whole resource interaction system. The study also highlights the importance of tracking sources of GHG emissions, whether within individual resource sector activities or across resources to each other.