

SDC 2019 Annual Meeting Abstracts

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Title: Synergies between SDGs: an assessment of direct and indirect effects of electricity access on food security



Worldwide access to electricity, that is a target for SDG 7, has been improving over the years. Some countries have made considerable progress in increasing the electricity access rate of their population, but others still lag behind, such as Sub-Saharan African countries where millions of people remain excluded from it. The use of energy is inextricably linked to sustainable development and it has positive impacts on several development challenges including health, education, food security, gender equality, poverty reduction and climate change. This work aims at exploring development implications of electricity access by assessing its impact on SDG 2 and, more specifically, on food security. Although there are many reasons to suppose that electricity access is positively related to food security, such impact is expected to accrue through both direct and indirect routes whose size and prevalence are unknown. The direct impact of electricity access on food security refers to the immediate effects on the food sector that are achieved through improvements in food production, processing, transportation and conservation. Indirect impacts include productivity increases and the creation of new economic activities, generating general increases in monetary income that in turn would improve the economic access to food. Since developing countries suffer from scarcity of financial resources, understanding which of the two impacts prevail can guide policymakers in directing infrastructural investment for improved access to electricity (e.g. investment in grid extension, or off-grid systems deployment) where they are more likely to have the strongest effect when the aim is to promote food security. After theoretically discussing the two kinds of impact, we empirically assess the relation between electricity access and food security using panel data for 50 developing countries over the period 2000-2016. Food security is measured by the prevalence of undernourishment (SDG indicator 2.1.1) and its relation with the proportion of population with access to electricity (SDG indicator 7.1.1) is studied within and between countries. Adopting a five-step estimation method, we then disentangle the direct effects of electricity access on food security from the indirect effects that stem from changes in GDP per capita. Results are then used to draw policy recommendations.