Measuring the circular economy in a national accounting framework

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Society's use of resources has been a focus of attention for many decades. It is clear that, given the growing population and affluence of the global population, polices are needed to curb the use of resources. One of the most popular terms in the current debate is the "circular economy" which has its origin in previous research such as "Spaceship Earth" (Boulding, 1966), industrial ecology and cradle-to-cradle. The circular economy is aimed at recycling, reusing and remanufacturing, thereby replacing the "linear economy" which is characterized by â€œTake, Make, Dispose". Recently, a set of influential publications by the McArthur Foundation has further popularized the term by estimating the economic benefits of the circular economy. So far the conceptualisation of the circular economy has been fairly ad/hoc and unstructured. No attempt has been made to create a comprehensive measurement framework. In this paper the basis for our measurement system is the material flow monitor developed at Statistics Netherlands. The measurement system includes the accounting structures of the national accounts, namely supply and use tables and assets accounts. Physical and monetary units are inluded so that both environmental and economic aspects of the circular economy are taken on board. The paper also explores the data availability and the input/output models that may be applied to this novel system. Finally the relationship with other common debates such as the biobased economy, resource efficiency and ecoystem accounts are also provided.