TITLE: RENEWABLE RESOURCES IN A LONG-TERM MODEL

AUTHORS: BIDARD, CHRISTIAN ; ERREYGERS, GUIDO

EMAIL: guido.erreygers@ua.ac.be

COUNTRY: BELGIUM

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ABSTRACT:

We build an elementary model which aims to capture some basic properties of a long-term model of the Sraffian type after the insertion of renewable resources. The simplest type of model considers one good only, timber (wood), produced by a forest, with either one or several possible methods of production which determine the growth of the forest. The main features of the model are: (i) the production of wood is an intertemporal process, and (ii) land is homogenous, scarce and owned privately. Due to these characteristics, the properties of the long-term positions are inherited from both the theory of fixed capital (e.g. the endogenous determination of the age of truncation) and the theory of land with intensive rent (e.g., the coexistence of two methods of production, which can take the form of the use of a unique method of production with two alternative dates of production). In the simplest cases, the average age of the forest increases with the level of demand. The generalization of these results to a multisector economy, with input-output relationships between the industries, sets no theoretical difficulties. The main limit of the analysis comes from the hypothesis (ii), which needs to be adapted when the model involves other types of renewable resources with different features.