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Antonio A. Romano
Giuseppe Scandurra
Alfonso Carfora
Monica Ronghi

Climate Finance as an Instrument to Promote the Green Growth in Developing Countries

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Antonio A. Romano
Department of Management Studies
and Quantitative Methods
University of Naples "Parthenope"
Naples, Italy

Alfonso Carfora
Italian Revenue Agency
Rome, Italy

Giuseppe Scandurra
Department of Management Studies
and Quantitative Methods
University of Naples "Parthenope"
Naples, Italy

Monica Ronghi
Department of Management Studies
and Quantitative Methods
University of Naples "Parthenope"
Naples, Italy

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Abbreviations

UNFCCC	United Nations Framework Convention on Climate Change
GHG	Greenhouse gas emissions
COP	Conference of the Parties
USD	US Dollar
SIDS	Small Island Developing States
LDCs	Least developed countries
GCF	Green Climate Fund
OECD	Organization for Economic Cooperation and Development
EIT	Economies in transition
GEF	Global Environment Facility
CIFs	Climate Investment Funds
AF	Adaptation Fund
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
NGOs	Non-governmental organizations
RES	Renewable energy sources
ODA	Official development assistance
DAC	Development Assistance Committee
OOF	Other official flows
CP3	Climate Public Private Partnership
GNI	Gross national income
EPI	Environmental Pollution Index
JICA	Japan International Cooperation Agency
JPP	Japan Partnership Program
CAIT	Climate Analysis Indicators Tool
GDP	Gross domestic product
CO_2	Carbon dioxide
IEA	International Energy Agency
CH_4	Methane

N_2O	Nitrous oxide
CFCs	Chlorofluorocarbons
HCFCs	Hydrochlorofluorocarbons
HFCs	Hydrofluorocarbons
PFCs	Perfluorocarbons
SF6	Sulfur hexafluoride
CIs	Composite indicators
BOD	Benefit of the doubt
MPI	Mazziotta-Pareto index
EW	Equal weighting
PCA	Principal component analysis
PCs	Principal components
LAD	Least absolute deviation
EIA	US Energy Information Administration

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Chapter 1
Introduction

Abstract In this chapter we introduce the topics and the goals of the book. We present the problem of environmental sustainability of the current economic production system and consumption of goods starting from one of the first approach attempts through dynamical systems proposed by J.W. Forrester. It shows how concern for the Earth system was already important in the late '60s. Finally, it outlines the work plan in view of the deepening of a measure of adaptation-mitigation as the Climate Finance.

Keywords System dynamics models • Stock and flows systems • Sustainability • Conferences of parties

1.1 Introduction and Background

Since the beginning of 1972, the expected development of some of the most important social, demographic, environmental and economic variables that form the foundation of growth and human development is been outlined in the book on "*The Limits to Growth*" by Donella H. Meadows et al. (1972). A summary, necessarily incomplete, of the results obtained is shown in Fig. 1.1, in the uncertain graphic of the calculators in those years. For those variables, the work included a number of points of no return, distributed between 2015 and 2050.

It is unnecessary today to assess the accuracy of the forecasts[1] made by the authors at the time, but it is interesting to point out at least two important points: (*i*) the fact that even in those years, the problem of the sustainability of economic development, left to itself, had become so important as to draw the attention of organizations such as the Massachusetts Institute of Technology (MIT), the Club of Rome and the Volkswagen Foundation; and (*ii*) for the proposed method in order to obtain predictions, that approached for the first time, the centre stage, in a field that

[1]Dynamic models do not make forecasts in the common sense of the term. They once built and tested the model, show future trends of variables involved in the hypothesis that the structure of the model remains unchanged over time. The model can also consider the possibility of including exogenous factors but its structure should not change.

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