

A large pile of discarded orange electronic devices, likely mobile phones, in a recycling facility. The devices are stacked high, filling the frame. Some devices are open, showing internal components like circuit boards and batteries. The background shows a building with windows and a doorway, suggesting an industrial or recycling setting.

UNMAKING WASTE IN PRODUCTION AND CONSUMPTION

TOWARDS THE CIRCULAR ECONOMY

EDITED BY:

**ROBERT CROCKER, CHRISTOPHER SAINT,
GUANYI CHEN AND YINDONG TONG**

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Preface

Unmaking Waste in Production and Consumption: Towards the Circular Economy

Li'an Hou

The annual *Living Planet Report* released by the World Wide Fund for Nature (WWF) and the International Non-Governmental Organisation (INGO) Global Footprint Network revealed that 'Earth Overshoot Day', the day on which humanity starts using more ecological services and resources than the earth can generate, is again ahead of schedule.¹ The 2017 Earth Overshoot Day was August 2, 28 days earlier than 10 years ago, and 67 days earlier than 20 years ago. Facing our current situation of resource shortages and environmental pollution, the linear economic road of 'make-use-waste' has been difficult to maintain, and the circular economy of 'make-use-renew' has become an inevitable choice, to promote the recycling of limited resources, so as to make human society sustainable.

The circular economy requires a fundamental change to the traditional economic model of mass production, increasing consumption and ever larger amounts of waste. From the technical perspective of resource utilisation, the circular economy is to be realised mainly through three means: the efficient utilisation of resources, the recycling of resources through the economy and harmless production. The circular economy is based on resource reuse to achieve sustainable economic growth, which is obviously better than the traditional linear economy, which has relied on the destruction of the natural environment in exchange for short-term economic growth. The development of the circular economy thus not only reduces the waste of resources, but also represents a significant new development model.

In recent years, the economic and environmental costs of traditional ways of developing resources have steadily increased. Some countries have begun to mine deep-sea resources, searching for these deep below the surface of the earth and ocean, and even trying to discover resources in outer space. However, finding these increasingly distant resources, or other alternatives, is not the only way to solve our resource crisis. The circular economy advocates the recycling of raw materials, rather than the continuing pursuit of new resources, as a way of meeting the larger needs of social development.

If the search for new resources involves a kind of 'addition' to economic activity, but one dependent on consuming more resources, then the circular economy involves a 'multiplication' of this activity, but one requiring less resources, and

thus less environmental impact. The development of the circular economy is thus the only way to achieve social and economic development before sufficient alternative resources can be found. After years of practice, it has been shown that the production and development model of the circular economy is of great significance to business, environment and society. Facing increasingly tighter resource constraints, ‘Unmaking Waste in Production and Consumption: Towards the Circular Economy’ becomes an important pathway to implementing the circular economy for the new era.

This book is based on research from both developing and developed countries. Through interdisciplinary exchanges, discussions and studies, it analyses the concept of the circular economy, emphasizing the different contexts in which the circulation of materials through the economy takes place. It presents some unique views on the theory and practice of the circular economy, and embodies some remarkable achievements in the study of its application.

The first half of the book mainly interprets the past and present of the circular economy, at a more theoretical and policy level. This part, starting with the flow of raw materials and the efficiency of resources, explores the internal law and operating mechanism of the circular economy in the light of the consumption of goods and services. The second half focusses on the impact of the circular economy concept on technology and design, from the perspective of enterprise, environment and society and suggests ways in which the circular economy can be applied in new and traditional industries, from the macro level.

The book’s authors include dozens of scholars from around the world who have collaborated to develop new insights into the circular economy and its application. In this book, you can find both scientific and reliable firsthand survey data, but also find profound theoretical analysis and research on this developing model for a sustainable future. It can be used as a reference for both researchers and decision-makers, as well as for ordinary readers concerned about how the problems of resource overconsumption and environmental damage might best be solved through the implementation of the circular economy. This book is timely, a valuable contribution to academic and scientific work on this vital topic.

(Translated from Chinese by Dr. Na Ji.)

Note

1. Initially started on December 31 in 1986, Earth Overshoot Day has been moving forward ever since. See: <https://www.overshootday.org>.

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