

GENERATING VALUE

FROM ORGANIC WASTE



EDITOR

PUTU ANOM MAHADWARTHA

ALUISIUS HERY PRATONO

BART M. VERSTAPPEN

CHRISTIAN ZURBRÜGG

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Editors

Putu Anom Mahadwartha

Aluisius Hery Pratono

Bart M. Verstappen

Christian Zurbrügg

Research Cooperation between

The Department of Water and Sanitation in Developing Countries (Sandec)
of the "Eidgenössische Anstalt für Wasserversorgung,
Abwasserreinigung und Gewässerschutz (Eawag)
Dübendorf, Switzerland

Master of Management Program, Faculty of Business and Economics,
Universitas Surabaya
Surabaya, Indonesia

Centre for Business and Industrial Studies, Universitas Surabaya
Surabaya, Indonesia

2016

SSBRN

*Social Science & Business Research
Network (Peneliti Ilmu Sosial Indonesia)*

Cover Image : © pinterest.com, © Freepik

Cover Design : Johanes Joshua Poedjianto

Published by Master of Management Program, Faculty of Business and Economics, Universitas Surabaya, Surabaya, Indonesia

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Library of Congress Cataloging-in-Publication Data:

Mahadwarta, Putu A., Pratono, Aluisius H., Verstappen, Bart M., Zurbrügg, Christian

Generating Value from Organic Waste.

Includes Index.

ISBN 978-602-74915-2-6

April 23th 2017

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Preface



The original motivation of this book springs from the pilot project in an established waste management that involves market mechanism, as generating revenue from organic waste management raises challenging issue on business sustainability. This book seeks to explore critical perspectives of an international nature on social enterprise at waste management sector.

The aim is to bring together business studies that reflect on how far the sector has developed - both in terms of the political economy for social enterprise and the development of organisations that trade for social purpose. This study is expected to provide critical reflection on how far the sector has developed in terms of the development of organisations. This studies that involve post graduate students from FHNW School of Business, Switzerland and Master of Management Program, Universitas Surabaya Indonesia.

Involving the market mechanism to the waste management system may involve promoting participation to overcome market and governance failure, which become subject to problems of coordination, asymmetric information and pervasive inequality (Mansuri & Rao, 2004). Involving community-based organization to exploit commercial opportunities through developing revenue stream toward sustainable waste management can be associated with seminal approach of social enterprise model.

However, the challenge of amalgamate enterprise with aim to solve social problem, including waste, becomes springs from leap of faith as it characterises social enterprise as a way of “doing” business. Heralded as an alternative model to deal with the tension between social and economic failure, as the activities involve asset based community development, which has not yet universally conceptualised (Bull, 2008). There also remains potential debates whether the progressive development in sites Surabaya is adoptable in elsewhere as part of wider “policy circulation repertoires” that becomes an important direction for further research on decentralized governance in Indonesia (Bunnell, Miller, Phelps, & Taylor, 2013).

Economic restraints seems to be apparent since there is no best practice that could allow greater recapture, recovery, and reuse to solve the plastic debris problem (Tibbetts, 2015). Hence, there is a research gap on what happens when the intervention involves exogenous shocks, such as distributed collaboration technologies do not provide significant change until other complementary solutions (Puranam, Alexy, & Reitzig, 2014).

Along with widespread partnership, the market-driven approach allows the community to convert those waste materials into highest value through recycling, composting, or extracting energy (Weaver, Ellen, & Mathiassen, 2015). However, there is a lack of empirical evidence from studies on social enterprises on conflicting institutional logics has been based on in-depth case study research in similar fields, such as micro-finance, work integration or fair trade (Conforth, 2014). In addition, little is known about how market-based waste management or other social enterprise models create and sustain a balanced income portfolio and how they decide on the appropriate level of surplus or profit (Doherty, Haugh, & Lyon, 2014).

There are at least three major elements that contribute to the sustainable development, i.e. economic objective, social objective and environmental objective (Soubbotina, 2004). Conceptually, engaging more citizens is associated with a higher level of cooperation and more accountability. However, power distribution may determine a social-goal set that established by reconciling individual in relation to community resources (Dompere, 2014).

Different communities may have different priorities in their development agenda. Major literatures raise a challenging question whether the financial benefits are sufficient to provide incentive for social and environmental goals. For example, ecotourism is essential to generate income for conservation but not sufficient (McAlpin, 2008).

Chapter one discussed waste management on Municipal of Sidoarjo District that designed to support the need of greener policy. The rapid filling of landfills can be avoided and only need to accommodate the fraction of Municipal Solid Waste Management left after recycling. Keeping the large organic waste fraction out of landfills reduces waste transportation requirements, extends landfills' lifetimes and reduces the costs of leachate treatment and methane control.

In chapter two, Bucher and Peterhans demonstrate that the insect protein could be introduced successfully in Sidoarjo regency for several reasons, such as a great number of potential customers who expressed real interest,

increasing price and demand for competing products, legal aspect and initial investment.

Chapter three concerns on biogas. Bucher and Peterhans highlight that in order to successfully implement the product, biogas requires support from the government for a pilot project. Monetary contribution of potential interested consumers is only inclined to a minuscule amount. This fact can highly be underlined by the given competition coming from traditional prestigious gas suppliers such as PGN or Pertamina.

Chapter four highlights the process of diffusion of innovation was on the early level of customer knowledge. Based on the observation, the work on black soldier flies has potential to lead to an even bigger market, solving the industry and sustainability problem along the way.

Chapter five indicates there is opportunities to sell bagged compost to the home gardener market but it is a highly competitive market. The opportunities depend upon the type and quality of product. Being able to actively and accurately present the benefits of using the compost to potential customers is the surest way to establish the product and facility as reliable.

Chapter six aims of identifying the legal structure that best meets the needs of the business. Sugiarto compares some advices from attorneys and accountants to help the busnes to make the decision in order to anticipate the concerns based on their experience and on information you provide.

Chapter seven pays attention on the waste processing industry, which challenges a new system improvements such as new technologies, better collection vehicles, and new methods of routing. This chapter aims to evaluate the program and strategies to improve service and reduce costs in the Sidoarjo solid waste management.

In addition, we wish tho thank the numerous editors of the books:

- a) Putu Anom Mahadwartha
- b) Aluisius Hery Pratono
- c) Bart M. Verstappen
- d) Christian Zurbrügg

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MUNICIPAL SOLID WASTE MANAGEMENT

GENERATING VALUE
FROM ORGANIC WASTE

1. Municipal Solid Waste Management : Market-driven Upcycling of Urban Organic Solid Waste in Indonesia

Bart M. Verstappen¹, Fictor Ferdinand Pawa⁵, Bram Dortmans¹,
Arseto Yekti Bagastyo³, Aluisius Hery Pratono⁴, Pradnya Rahmani⁵,
Christian Zurbrügg²

FORWARD is a research and development project in Sidoarjo, East Java, Indonesia. Driven by market opportunities for conversion products, Sandec is piloting the innovative Black Soldier Fly Larvae technology as the pivot of an integrated organic waste conversion system.

The challenge

There is a dire need for location-specific solutions for municipal solid waste management (MSWM) in rapidly developing small- and medium-sized cities where the authorities often cannot respond adequately to rapidly changing conditions. Indonesia, the fourth most populous nation in the world, is no exception. The island of Java has the highest *average* population density of all islands worldwide (1'000/km²) and the urban density approaches 10'000/km². This has intensified the waste problem, and in many towns and cities, much of all generated waste is dumped, burned or discharged into rivers. Organic waste (OW) is around 60% of the total generated municipal solid waste (MSW), by far the largest fraction of MSW. Sustained solutions for this large OW fraction are rare, mainly due to the low (often negative) ratio of market value to processing cost of OW conversion products.

Focus on market opportunities

The *From Organic Waste to Recycling for Development (FORWARD)* project evaluates how OW treatment can be driven by local market opportunities for waste conversion products. The aim is to foster a business