

# WORK FROM WASTE

## Recycling Wastes to Create Employment

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### vii Preface

Who is this book for?

Although 'Work from Waste' is written primarily for use in developing countries, it may also be of interest in industrialized countries, **for communities and groups practising local self-reliance**. It covers a wide range of technologies and can be used by people with various levels of skill. It is hoped that two groups of people in developing countries will particularly benefit from it. Firstly, **the unemployed who see no reasonable hope of any other kind of job**. Secondly, those who are already employed in the collection and recycling of waste but do not make an adequate living from it. There are millions of these people; they form a large minority in every Third World town and city, and include many women, children, the handicapped and ex-prisoners. **They generally have little skill and no capital or equipment beyond a few sacks or a small cart**. They usually collect material and sell it unprocessed, in tiny quantities, to middlemen and it is these merchants who, because they process and transport it in larger quantities, can sell it at increased value.

The reasons why the small collectors rarely increase the value of what they sell are many: **not enough cash to finance stocks, no transport, no equipment or premises and no ability**. Yet there are many technologies which are simple and require little or no capital; the purpose of this book is to bring these to the attention of the poorest and least skilled. As only a small proportion of such people can read, it may be necessary for a friend to read and explain the book to them. Therefore, the readers of the book in the first instance will be those who work, either professionally or from goodwill, **to help the poor**. They will include extension workers, **missionaries**, field staff of development agencies, teachers and instructors in training colleges and universities, village leaders and overseas volunteers. Not all will be technically trained and, . . .

viii This book may, in addition, be useful to those small and medium companies which have been built up by enterprising people, often with limited capital and skill. Through running their own business or factory they have developed confidence in their ability to introduce new activities, use new materials, employ better techniques and make additional products. To them this book should be an encyclopaedia of wastes, their origins, uses and methods of processing, which will stimulate new activities and create employment in this way.

Finally, this book may be of interest to large industrial companies, even those that are state-owned, **which create their own wastes but only sometimes process or recycle them**. It may encourage them to use them more imaginatively and to use other peoples' wastes instead of more costly raw materials.

### Ethics

Finally, it is necessary to comment on ethics. **In many countries, the scrap reclamation industries have been regarded by the public and by the police as activities bordering on crime**. This is often true; many of the people who have helped me with information for the book were part-time waste collectors/part-time thieves. **The more important truth is that it is poverty, not scrap trading, that causes crime because many poor people see crime as the only road to escape from their poverty. . .**

'Work from Waste' is the first book to be written on this subject and it is far from perfect. Corrections, suggestions and new information from readers in developing countries will be very welcome and should be sent to the author at the publishers' address.

## Introduction

... Unemployment and underemployment (employment for too little reward or in a 'marginal' activity such as crime or scavenging) are features of underdevelopment as common as poverty, illiteracy, bad housing or disease. **Worse, it is in the countries that lack the resources for social security that unemployment means not just boredom and spiritual demoralization but, in addition, abject poverty, destitution and even starvation.**

**This book is about one field of employment opportunity: the exploitation of waste. Waste is one of the world's largest industries, although you could not discover this from any book of statistics, because its activities cut across the normal divisions into which industries are placed.** If you buy a bottle of medicine it may have a metal top and be protected by plastic foam padding, in a cardboard box. To recycle these parts after the medicine has been taken you will need to sell the bottle to a glassmaker, the top to a foundry, the plastic to a moulder and the cardboard to a paperboard mill. Recycled materials are only a small part of the materials used by most of those factories; yet add up all the bottles, tops, packaging and cardboard cartons and you have an enormous quantity of material. Then add wastes from agriculture, animal and meat industries, mining and quarrying, industries that make iron and steel and other metals, textiles, rubber, chemical and oils and it is even bigger. Finally, include all the activities of local government in collecting and disposing of household and other wastes and the huge size of the industry becomes apparent.

xi **Why, when employment is so difficult to create, should it be easier to do so in the waste business, and activity in which hundreds of thousands of people are already scratching a living.** There are several reasons and they will be discussed in some detail. **By persuading the reader that waste offers unique opportunities for creating jobs,** it is hoped to encourage him to read further and then to consider whether he can **apply some of the ideas to his own business or to the group of poor people with whom he is working** or just to pass on the ideas or the book to others. **This book is of no value until someone, one day, uses it and finds work and earns money when previously they were idle.**

The reasons are these:

### Waste is plentiful

In most towns and cities of the world it is not only heaped in huge quantities on refuse dumps but also lies in piles around the streets and in small illegal dumps on any piece of waste ground. . . These are the people who can afford packaged goods, processed goods, new furniture or a car or clothing, who take a daily newspaper and cultivate a garden.

### Waste is free

**or if not free then very cheap. It is thrown away because it is either impossible or not worth the time or trouble to sell.** Any process that uses materials to make a product has to pay for those materials and, worse, has to pay for them before being paid for the product itself. **This need to finance raw material stocks with working capital is, as much as any other, a requirement that hinders the setting up of small industries. If the materials are free or very cheap this hindrance is removed.**

### Waste is flexible

Even if the material is free, there are other expenses in making a product to sell for money; even if only that of feeding one's family while doing so. **Waste is flexible in the amount of work it needs.** A weaver cannot sell a half finished piece of cloth. **A collector of waste, however, can either process it into something more valuable himself or can**

xii **sell it immediately to someone else for the price of his next meal.**

### Waste is labour-intensive

It needs people to collect and sort it. This is because it comes from so many different places; from thousands of different homes, each eating slightly different foods, wearing different clothes, living in different kinds of houses down different sorts of streets. **Although it can be collected and sorted by machines, no one has yet produced a machine that can do these two things as cheaply and effectively as a human with eyes, hands and legs. In the industrialized countries, where wages are high and fewer and fewer people are willing to do dirty jobs, machines are being used where possible to collect and sort waste but often the result is a cost so high that the attempt to recycle or re-use the waste is abandoned altogether.** This will not happen in the Third World while so many people earn a very low income. **Waste lends itself to the kind of sub-contracting by big firms to small that helped the 'economic miracles' of Japan, Singapore and Hong Kong.**