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Book Review
Environmental and Material Flow Cost Accounting

A review of Christine Jasch' Environmental and Material Flow Cost Accounting: Principles and Procedures, 2009

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Recognizing the increasing importance of environmental issues and the difficulty of managing these issues, the International Federation of Accountants (IFAC) in 2005 issued a guidance on environmental management accounting (EMA). The document, commissioned by IFAC and supported by the Division for Sustainable Development of the United Nations Department of Economic and Social Affairs (DSD/UNDESA), was written by Deborah Savage of the Environmental Management Accounting Research and Information Center and Christine Jasch of the Austrian Institute for Environmental Management & Economics.

In 2008, ISO, the International Standardization Organisation, took up the issues and decided to develop a guideline on material flow costs accounting, ISO 14051, within its standard series on environmental management. ISO 14051 is currently available as draft international standard and will be released in 2010.

Since the publication of the UNDSD Workbook on Environmental Management Accounting in 2001, several companies all over the world have implemented "Environmental and Material Flow Cost Accounting" (EMA and MFCA). The recent book at Springer Publishers on "Environmental and Material Flow Costs Accounting" explains and updates the approach developed by Christine Jasch for the United Nations Department of Economic and Social Affairs (DSD/UNDESA) and the International Federation of Accountants (IFAC) and in addition includes experiences of several case studies and recent developments regarding EMA and MFCA in national statistics and ISO standardization.

The book explains how to install an environment and material flow-related in-

formation system that is consistent with the accounting information system and thus auditable for environmental and sustainability reports and greenhouse gas emission permits. It includes recommendations and guidelines from several case studies worldwide. It is especially relevant for manufacturing companies, who implement an environmental management system, deal with the new ISO TC 207 work item on Material Flow Cost Accounting or install information systems for the verification of CO2 emissions.

UNIDO has included this approach into its tools for the initial review of companies performing cleaner production projects as well as into its COMFAR tool for investment appraisal, as especially in countries with low legal compliance requirements and low wages, where costs for materials are relatively more important, the approach developed by Christine Jasch allows companies to set a baseline in order to be able to show, how preventative environmental management and cleaner technologies pay, as the costs on the input side are being reduced.

Christine Jasch is a well know practitioner in the field of environmental and sustainability management, indicators, auditing and reporting and has influenced several standards of the ISO 14000 series and participated in the development of the Global Reporting Initiatives standard on Sustainability Reporting and Indicators. She has worked with the United Nations, UNIDO and IFAC, the International Federation of Accountants, on developing and promoting environmental management accounting.

Chapter 1 of the book discusses the terms, range and relevance of environmental costs and environmental accounting. Chapter 2 and 3 describe the input and output side of the material flow balance. The physical accounting information collected under EMA is a prerequisite for the calculation of many environment-related costs. Mass balances in volumes, energy content and liters and materials flow accounting in monetary terms are the basis for EMA assessments. The physical categories are in line with the general structure of ISO 14031 for environmental performance indicators for the operational system. Chapter 4 deals with environmental performance indicators.

Chapter 5 describes the different types of environmentally relevant equipment, which is often the first step when conducting an EMA assessment. The term "equipment" may comprise a single machine or an entire production hall, but the assessment is best performed on a cost center level. In order to provide the necessary data for investment appraisal, actually three categories of environmentally relevant equipment should be distinguished:

- End-of-pipe equipment for treatment of waste and emissions
- Integrated cleaner technologies which prevent emissions at source
- Scrap producing equipment and energy conversion losses

The different approaches of IFAC, UN DSD and UNIDO in opposition to SEEA and CEPA regarding the inclusion of cleaner technologies and integrated prevention are highlighted.

Chapter 6 describes the different envi-

ronmental cost categories in detail. They are based on the IFAC EMA Guidance Document. For each cost category the sub-categories relating to financial accounts, such as equipment depreciation, operating materials, water, energy and personnel are discussed and examples provided. Chapter 7 focuses on linking the physical and monetary information system. It starts with consistency and consolidation issues to be considered when defining the system boundaries for an EMA assessment and when aggregating data from several sites or companies.

Chapter 8 describes a case study developed from the brewery Murau in depth and at the same time demonstrates how to use the excel template for the EMA cost assessment that is provided as a download under www.ioew.at and at Springer´s homepage under *http://springer.com/978-1-4020-9027-1*, where the book is available also in an online version.

Chapter 9 describes how to organize an EMA pilot project. The competencies of the project team, selection of sites for pilot testing and a general project plan are discussed. In general, this is the same approach as taken by UNIDOs Cleaner Production Centres, e.g. with projects in Honduras. The Annex provides checklists for environmentally relevant equipment and environmental costs by environmental domains.