

# Analysing influencing factors of corporate environmental information collection, management and communication

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## ABSTRACT

Relevant and understandable environmental information about production and products is needed in any attempt to mitigate environmental impact from production, products, and consumption. This paper introduces an analytical framework for studying the drivers, barriers and enablers of corporate environmental information collection, management and communication. The framework is built up by two main parts. In the first, we sort out what corporate environmental information is and how to spot gaps in information collection, management and communication. The second part examines the stakeholders and company features that could constitute important influencing factors. The framework is intended to support qualitative and quantitative studies which aim to increase understanding of what shapes the flow of environmental information in companies and product chains.

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## 1. Introduction

Today's production and consumption patterns give rise to large-scale environmental impacts, such as global warming, loss of biodiversity, and air and water pollution. Correct, unbiased, relevant, sufficient, and understandable information about the environmental impacts of production and consumption is necessary (however insufficient in itself) for any attempt of society to decouple increased environmental impact from growing affluence and population. Information is needed by market actors and governmental bodies to minimize environmental impact from production processes and products. Information is also a prerequisite to making informed decisions related to consumption, including product purchase, use, and subsequent disposal.

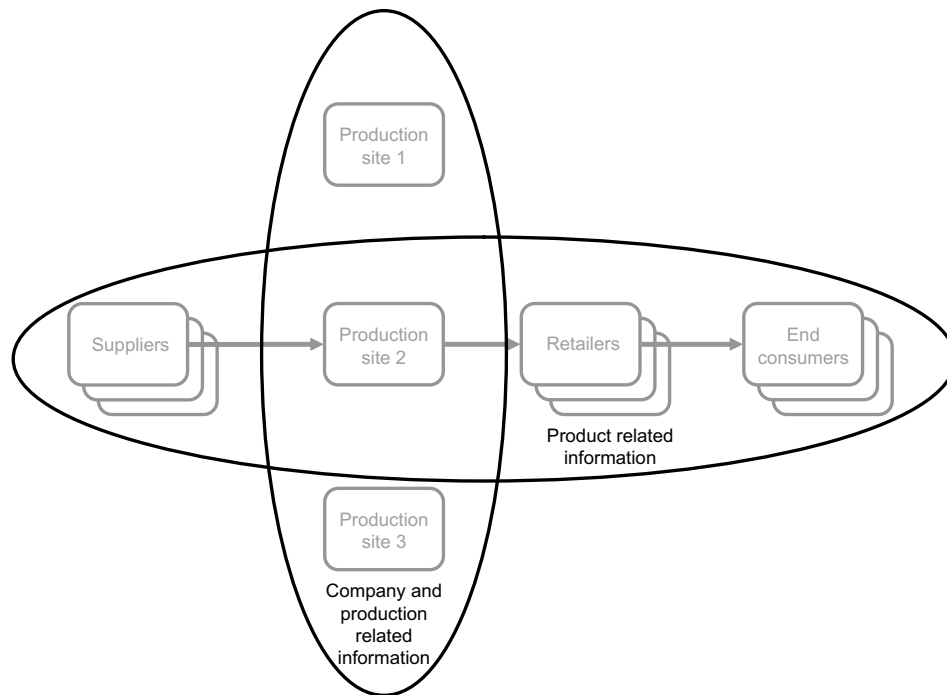
Environmental information does not just suddenly appear; it needs to be collected, compiled, and disseminated. It is evident that for product-related information, it is a challenge for market actors and governmental bodies to set up information systems that supply (other) market actors and end consumers with information that

can be used for environmental decision-making. Many products placed on the market are not supplied with environmental information or supplied with information that can hardly be used for decision-making. Two governmental reports, from the European Commission's Integrated Product Policy Working Group on Product Information [1] and the Swedish EPA [2], identify several barriers to the supply and use of environmental information on products. Lack of a coherent policy vision, weak market drivers, a weak enforcement framework, lack of public confidence in green product information, insufficient stakeholder involvement, and insufficient coordination of information schemes coupled with the complexity of product chains are just some of the barriers identified. Problems have also been identified in production-related information: information may be perceived as ambiguous, information management can be costly and time consuming, and the organizational memory and availability of information can be low [3,4].

This paper covers both company-related information and product-related information (see Fig. 1). Company-related information is defined as focussing on the environmental impact related to the company's own activities, primarily production processes. Product-related information too includes the company's own activities, but often only a subset of them. And above all, it includes the resource use and emissions of suppliers and customers. For

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**Fig. 1.** The different scopes of company-/production-related and product-related environmental information.

a company, product-related information collection, management and communication offers bigger challenges than production-related information as it implies that a life-cycle perspective must be taken. First, this means that a much larger number of actors must be interacted with. Secondly, these actors are not under the company's direct control. Thirdly, even if first-tier suppliers are well known and have an established cooperation with the company, there may be more anonymous second- and third-tier suppliers that are more difficult to interact with. The same goes for the customers, the use and end-of-life phases of a product are harder to influence than the company's own activities.

In this paper, CEIM will be used as short for corporate environmental information management. CEIM includes the collection, management and communication of corporate environmental information of all types, both company, production and product related.

Research explicitly examining CEIM as such can be seen as simultaneously abundant and scarce. There is rich literature in certain areas, but little literature that examines the field as a whole. Examples of well-described areas are environmental reporting [5–7], ecolabelling [8,9], and environmental IT systems [3,10–15]. The literature on ecolabelling and environmental reporting has either a product or company perspective, respectively, but does not discuss both types of information simultaneously. The IT systems literature sometimes does adopt simultaneously a product and company perspective. IT systems are however only one of many influencing factors for CEIM.

Given this scattered field, we argue there is a need to develop a more comprehensive conception of what shapes CEIM. To support studies, we also see a need to use an analytical framework for CEIM. As we could not find such a framework in previous literature (see the theoretical background below), we developed the one presented in this paper.

The aim of the framework is to support the study of influencing factors for CEIM. The framework is an attempt to present a comprehensive map of what relevant and understandable

corporate environmental information is, and the factors that may influence the collection, management and communication of such information. The results from studies based on this framework can be used by both policy makers and market actors to take action to improve the preconditions for an increased flow of relevant and understandable environmental information in product chains. Actions can for example include the removing of technical and structural barriers and the promoting of effective drivers and enablers.

First, we present some theoretical and methodological background to the framework. Then we introduce the first part of the framework, which covers the types and distribution of environmental impacts, the categories of corporate environmental information, three information management approaches, and a discussion on information quality. The second part of the framework presents the stakeholders and other influencing factors for CEIM. We end the paper by explaining how the framework can be put to use.

## 2. Theoretical background

In our CEIM studies, we soon discovered the need for a supporting analytical framework. The present analytical frameworks however only cover selected parts of what we want to study. For example, Brammer and Pavelin [16] map up the quality influencing factors for company-related voluntary information disclosure. Mogensén and Holbech [17] present drivers and barriers for the existence and quality of company-related information disclosure, and also set a simple framework for what information quality is. However, these information-related frameworks do not cover the influencing factors for product-related information, neither company-/production-related information for internal use.

The possibility to borrow and adapt a framework from the general environmental management literature was also examined. An early framework by Vastag et al. [18] limits the influencing factors for environmental management approaches to the

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