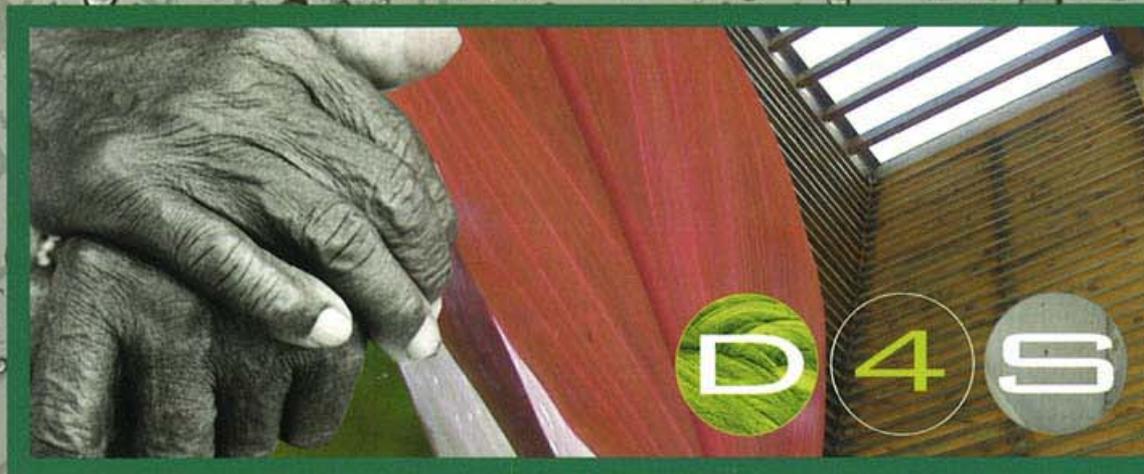




DESIGN FOR SUSTAINABILITY

*A Practical Approach
for Developing Economies*

UNITED NATIONS ENVIRONMENT PROGRAMME
DELFT UNIVERSITY OF TECHNOLOGY



Internationale Weiterbildung
und Entwicklung gGmbH Capacity Building
International, Germany

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**A PRACTICAL APPROACH
FOR DEVELOPING ECONOMIES**

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Delft University of Technology

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FOREWORD

It is clear that current patterns of consumption and production are unsustainable. The accelerating processes of globalization and trade liberalization, supported by advances in information technologies, have fundamentally changed the landscape of the private sector in all countries -developed and developing- providing new opportunities and challenges. Companies, large and small, have made impressive efforts to address sustainability issues with a triple bottom line focus. Design for Sustainability (D4S) has the potential to improve efficiencies, product quality and market opportunities (local and export) and at the same time improve environmental performance. In many developed countries, because of a high level of awareness, D4S efforts are linked to the broader concepts of product-service mixes, systems innovation and other life cycle-based efforts. In developing economies, due to limited awareness, more immediate technical support is needed to introduce the D4S concept. However, successful implementation of D4S requires working in partnership. This publication is an example of one such effort.

The growing attention paid to D4S is a natural outcome of UNEP's work on cleaner production, eco-efficient industrial systems and life cycle management. It is the next step in a progressive widening of the horizon of pollution prevention; a widening which has gone from a limited focus on production processes (cleaner production), to include products (ecodesign), product-systems (D4S incorporating transport logistics, end-of-life collection and component reuse or materials recycling) and systems innovation.

Building upon the work carried out with the Dutch Delft University of Technology and other experts in ecodesign, UNEP published the ground breaking manual 'Ecodesign: A Promising Approach to Sustainable Production and Consumption' in 1997. The concept of product re-design has since then spread as seen in the number of manuals and sector specific supporting materials now produced in many languages. As a result and based on experience gained, ecodesign has evolved through Design for Environment (DfE) to the broader concept of D4S – which encompasses issues such the social component of sustainability and the need to develop new ways to meet consumer needs in a less resource intensive way. D4S goes beyond how to make a 'green' product – and now strives to meet consumer needs through sustainability in a systematic and systemic way.

UNEP's activities in the D4S area include the development of an updated global manual for designers and other professionals working in the area of product development in industry and elsewhere to provide support and guidance on the evolved concept of D4S. It is useful to those new to ecodesign as well as those interested in breakthrough innovation for sustainability.

This practical approach for developing economies is based on the larger Design for Sustainability: A Global Guide but focuses on the specific needs of small- and medium-sized companies in developing economies. With all the progress in D4S, few targeted efforts have been made to introduce the benefits of D4S to business and business intermediaries in developing economies. Surveys of centres of excellence confirm that D4S is a service that they could sell to industry. Increasing focus of supply chain management efforts on resource use improvements reinforces this need. Whereas, in developed countries end-of-life regulations provide incentives for com-



panies to rethink what and how they are designing products, in developing economies products tend to be 'benchmarked' (copied) from those existing on the market. Companies are concerned about entering developed country markets. They need to take into account new market standards to have access. In general, there is also an overall lack of awareness in companies on how to improve efficiencies and improve environmental performance at the same time.

Developing economies have different and more immediate needs. Awareness about the implications of resource use – efficiency or environmental - is relatively low. Reaching companies in developing economies can best be done through intermediaries such as centres of excellence (UNIDO-UNEP National Cleaner Production Centres, for example) or through supply chain relations with larger companies including multi-nationals. Concerns for poverty alleviation and rapid environmental degradation underscore the potential in developing economies for integrating D4S into business development. D4S is one approach that enables 'leap frogging' over the resource intensive and pollution generating development patterns that have been followed by developed countries. UNEP, whose mandate is to work globally on environmental protection and poverty reduction, especially in developing economies, is one of the key international actors involved in developing this approach.

A draft version of the D4S approach was tested and modified based on the results of a training session sponsored by InWEnt in October 2005, on representatives from 9 countries. The publication introduces the D4S concept and outlines how to apply it in a company setting. It can be used by companies to pursue internal D4S efforts (via the supply chain or single operation context) and by intermediaries who work with companies. The initial dissemination of the D4S concept will be through the UNIDO-UNEP NCPCs, which operate as capacity building focal points in some 30 countries. To further adapt the training materials, relevant examples and case studies will be developed based on demonstration projects being carried out in Costa Rica and Morocco in 2006. The lessons learned from the projects will be integrated into the Spanish and French versions of the manual which will be available on UNEP's web site in 2007.

UNEP invites partners - companies, industry associations, governmental bodies, educators- to join in collaboration by using the material in their own training programs and developing additional sector/product specific guides on how to plan for and develop more sustainable products and services. In particular, we also welcome case studies of lessons learned and feedback on how to best apply the D4S concept in a practical setting.

Changing current unsustainable consumption and production patterns can benefit a lot from the D4S approach. We envision that, as a result of the joint efforts of all concerned partners, this publication will contribute to reversing the current negative trends.

Monique Barbut
Director
UNEP DTIE



D4S GRAPHIC DESIGN CONCEPT

The D4S graphic design of this publication is based on the sustainability concept and its consideration of the three elements of PEOPLE, PROFIT AND PLANET. The graphic design is comprised of 3 subjects and 3 colours to illustrate these elements:

PEOPLE are illustrated by the expressions of Human beings from different cultures and races.

PLANET is represented by different natural elements of the planet such as water, rocks, trees, sand and plants.

PROFIT is illustrated by views of the building environment taken from examples of highly developed sites from throughout the world.

The graphic design was developed by SUSDESIGN, an entity devoted to the promotion of Design for Sustainability and is illustrated with photographs of Carmen van der Vecht and SUSDESIGN.



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PART I

WHAT IS D4S AND WHY DO IT?

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