

**Sustainable Water from
Collector Well Systems
and
Sustainable Heating and Cooling
from Ground-Source Energy Systems
in
SRI LANKA**



**Vythilingham Tharumaratnum
&
Deon V Canyon PhD**

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Dr Deon V Canyon is a Senior Lecturer at James Cook University, Australia who teaches postgraduate classes and conducts research on rural and remote environmental health.

FOREWORD

Energy and water are central to sustainable development and poverty reduction efforts globally. They affect all aspects of development, whether social, economic, or environmental. Sustainable energy and water are core business in meeting the Millennium Development Goals (MDGs) in most developing countries. The eight goals that comprise the MDGs build on agreements made at United Nations conferences during the 1990s.¹ They represent commitments by countries around the World to reduce poverty and hunger, and to tackle ill-health, gender inequality, lack of education, lack of access to clean water and environmental degradation.

Various international agencies, including the United Nations Development Program (UNDP)^{2,3} and the World Health Organisation (WHO),^{4,5} are making efforts in tackling the key issues of sustainable energy and water, which will be essential if we are to achieve the MDGs. It is particularly relevant to the first MDG, which is the reduction by half the proportion of people living in poverty by 2015.¹ Through an integrated development approach, agencies, such as the UNDP and WHO, are gathering momentum in creating the enabling policy frameworks, in developing local capacity, and in providing knowledge-based consultancy services for addressing the need for sustainable energy and water, especially for the poor.

Energy is essential to meeting the basic needs of people throughout the world. These basic needs include: cooking, boiling water, lighting and heating, and are a prerequisite for good health. A little known global statistic is that the humble kitchen is responsible for approximately 1.5 million deaths annually.⁴ This is due to cooking with inappropriate fuels, such

as wood, dung, coal and other solid fuels, which is a major risk factor for pneumonia among children and chronic respiratory disease among adults, with more than two thirds of these deaths occurring in South-East Asia and sub-Saharan Africa. Progress in access to modern cooking fuels or alternative energy systems since 1990 has been negligible. To halve, by 2015, the number of people without access to such fuels, 485,000 people will need to gain access to modern energy services every day for the next 10 years.⁴

Given the importance of water to poverty alleviation, human and ecosystem health, the management of the water resources should be deemed of central importance. Globally, over 1 billion people lack access to water.⁵ Access to clean water is lowest in Africa, while Asia has the largest number of people with no access to basic sanitation. Every year there are around 1.6 million diarrhoeal deaths related to unsafe water, sanitation, and hygiene—the vast majority among children aged under 5 years.⁵ The UNDP's response to this global water crisis has been to emphasise an integrated approach to water resource management through effective water governance.²

This present book, *Sustainable Water from Collector Well Systems and Sustainable Heating and Cooling from Ground-Energy Systems in Sri Lanka*, is a significant contribution to addressing these challenges. Vythilingham Tharumaratnum and Deon Canyon present a unique publication that is sure to assist professionals and students working in public health and environmental health, as well as related areas such as public health or environmental engineering. The main components of the book, as suggested by the title, are Sustainable Water from Collector Well Systems and Sustainable Heating and Cooling

from Ground-Source Energy Systems. It pursues these themes through a useful mix of theory and practical case examples. The major advantage as always with electronically published monographs is the full colour illustrations. This is an important online publication to add to your list of website bookmarks.

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