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Foreword

What is it that a farming family in rural Scotland, an Inuit community in northern Canada, a peri-urban slum dweller in South Asia, a young mother in central Malawi, a family at their vacation home in Iceland and a child in an aboriginal family in Australia are likely to have in common? There is a great chance that, to meet their indispensable need for water to drink, to ensure their personal hygiene and to serve their domestic requirements, they rely on a small community water supply.

In fact, a substantial part of the world’s population, in high-income, middle-income and low-income countries alike, relies on small community water supplies. While the definition of “small community” will vary by region, what sets these water supplies apart are challenges in ensuring effective administrative, management and technical support structures. Such supplies serve communities that are, by contextual definition, small and frequently remote. They tend to be vulnerable communities, often living in places of climatic hardship, with little access to education and health care and, not uncommonly, at considerable distance from major economic centres. But many peri-urban communities also rely on what can be characterized as small community water supplies.

Living in remote areas may have the benefit of access to more pristine water sources, but poor sanitation may tip the balance with an increased risk of contamination of those sources, and the quality of available groundwater sources cannot always be verified.

Inherent health hazards and their associated risks may be present but will vary from one location to the other. Managing the risks will be a challenge in a setting where facilities are limited, resources constrained and technical know-how comes
at a premium. By definition, small community water supplies cannot benefit from economies of scale. Yet, ensuring access to safe and clean water remains the basic foundation for good health and a key intervention in a primary prevention approach. It can greatly relieve the burden on health services.

Under such conditions, economic evaluation of drinking-water supply options is crucial. It will provide a critical instrument to pave the way for adequate funding streams in support of improvements in access and use. Yet, bearing community vulnerability in mind, a simple analysis of investments required to improve drinking-water supplies with a view to achieving a number of outputs (for example, number of household taps installed) will be insufficient. Small communities derive a host of social benefits from the provision of safe and clean drinking-water, and these have to be valued and made part of the overall equation. Without placing small community water supplies in this livelihood context, its economic case will be hard to make.

This publication, whose production was supported by Health Canada and carried out by a consortium of international experts, gives clear insights into how the principles of social cost-benefit analysis can be turned into practice in the context of small community water supplies.

For small communities, remote or in water-scarce areas, access to safe water is basic to their overall livelihood. Improving their lot in terms of access will require optimal investment in human and material capital. This book is expected to contribute importantly to this goal.

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Introduction

The aim of this book is to give decision-makers, health professionals and analysts a comprehensive view of the arguments and challenges associated with establishing the value of drinking-water interventions.

The experts who have contributed to this publication provide guidance on assessing the benefits from improving access to safe drinking-water and from reducing the burden of water-related diseases. They show how to compare the value of these benefits to the costs of interventions, with special reference to small-scale drinking-water systems.

The specific focus of this publication is on the socioeconomic appraisal and evaluation of drinking-water interventions. Of course, interventions that combine drinking-water and sanitation improvements will reinforce the benefits from improved drinking-water alone. But while the framework offered here could be applied to sanitation improvements, there are some specific aspects of sanitation that would be better addressed separately.

This book is especially concerned with small-scale drinking-water systems. Such systems are predominantly relevant to rural areas (although the methods described could also be applied, in principle, to large-scale drinking-water systems in urban areas). In any country, communities depending on small systems are the hardest to reach in terms of achieving the water and sanitation targets of the Millennium Development Goals. There is often a difference between the water supplies of urban and rural areas, with rural communities most likely served by a small system. The main differences, however, are in the levels of technology and the institutional arrangements for management, maintenance and protection of water sources. Small drinking-water systems are
also of concern because they are more liable to contamination and breakdown, and therefore pose a permanent health hazard.

To give decision-makers, health professionals and analysts the tools to promote improved access to safe drinking-water, especially for small and vulnerable communities in developing countries, this book discusses this promotion from the point of view of principles and practice, technology and economics, health, livelihoods and ethics.

Chapter 1 explains why it is important to be able to demonstrate the economic value of interventions that will increase access to safe drinking-water, particularly with regard to small-scale interventions.

Chapter 2 shows how, in practice, to carry out an economic assessment of a small-scale drinking-water intervention.

Chapter 3 explores the possibility of low-income communities financing drinking-water interventions. It argues that public resources should be allocated on the basis of an assessment of the full range of social and economic effects of an intervention, rather than just on the basis of narrowly-defined health outcomes.

Chapter 4 outlines the huge problems that small or vulnerable communities throughout the world still face in getting supplies of safe drinking-water. It also emphasizes the benefits of water supply for livelihood activities.

Chapter 5 looks at ways of estimating disease burden within a community and the proportion of disease that may be attributed to a specific environmental risk. In the case of drinking-water, the focus is mainly on diarrhoea.

Chapter 6 explains how to gather livelihoods data to assess the economic changes that result from small-scale drinking-water interventions.

Chapter 7 summarizes the interventions that are currently available to improve communities’ access to safe drinking-water through small-scale systems.

Chapter 8 explains how to estimate the financial commitment required to install, maintain and operate a small-scale drinking-water supply system.

Chapter 9 describes how to estimate the physical health impacts of small-scale interventions that give improved access to drinking-water for a target group of people. Clearly, the method could also be applied to other environmental health interventions.

Chapter 10 looks at how cost–effectiveness analysis is done and how it can be used to compare different health interventions.

Chapter 11 discusses the principles of social cost–benefit analysis and shows how they can be applied to drinking-water interventions.

The final Chapter 12 reviews the evidence on drinking-water interventions, available from various studies that use some form of social cost–benefit analysis.