

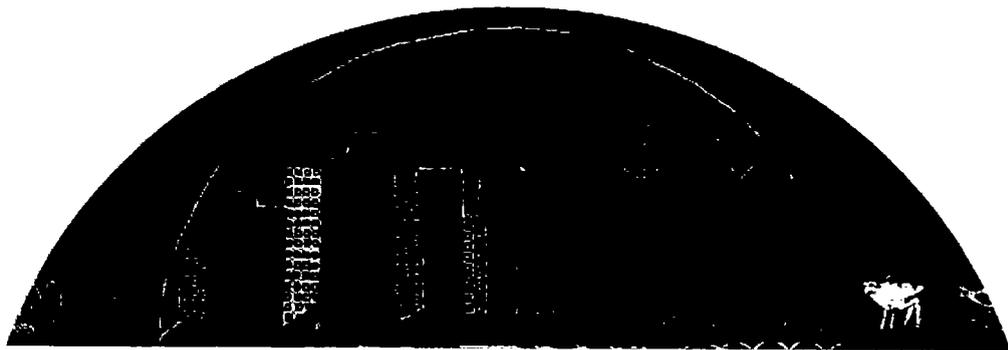


World Health Organization
Sustainable Development and
Healthy Environments

WHO/SDE/WSH/00.4
Distr.: General
English only

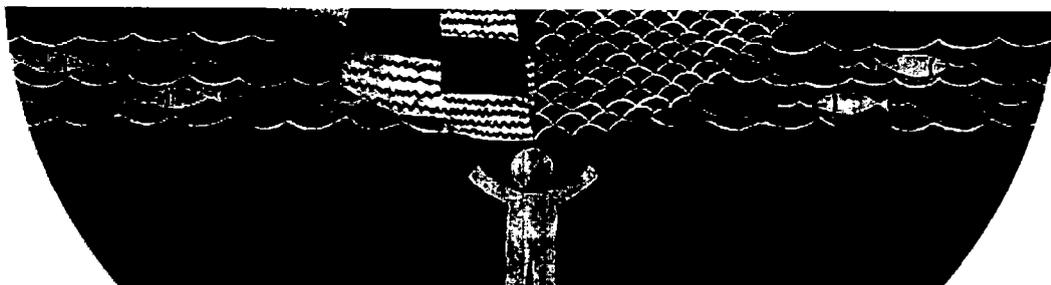
Towards an assessment of the socioeconomic impact of arsenic poisoning in Bangladesh

prepared in cooperation with
the Department of Health in Sustainable Development



**Protection of the Human Environment
Water, Sanitation and Health**

Geneva, 2000



Towards an Assessment of the Socioeconomic Impact of Arsenic Poisoning in Bangladesh

Prepared by:

Alistair Curry¹

Health in Sustainable Development

Guy Carrin¹

Health in Sustainable Development

Jamie Bartram

Water, Sanitation and Health

Sombo Yamamura

Water, Sanitation and Health

Han Heijnen

WHO Office, Dhaka, Bangladesh

Jacqueline Sims

Health in Sustainable Development

Jose Hueb

Water, Sanitation and Health

Yuko Sato

Water, Sanitation and Health



¹ At the time of the study, A. Curry and G. Carrin were with WHO's Department of Health in Sustainable Development (HSD). They are currently with the Lewin Group (UK) and WHO's Global Programme on Evidence for Health Policy (GPE), respectively.

© World Health Organization, 2000

This document is not a formal publication of the World Health Organization (WHO), and all rights are reserved by the Organization. The document may, however, be freely reviewed, abstracted, reproduced or translated, in part or in whole, but not for sale or for use in conjunction with commercial purposes. The views expressed by named authors are solely the responsibility of those authors.

The illustration of the cover page is extracted from Rescue Mission: Planet Earth, © Peace Child International 1994; used by permission.

TABLE OF CONTENTS

Acknowledgements	1
1. Introduction	3
2. The importance of safe water supply to the household	3
3. Health effects of arsenic in drinking water	5
3.1 <i>Non-cancer health effects</i>	5
3.2 <i>Cancer health effects</i>	6
3.3 <i>Treatment of arsenicosis sufferers</i>	8
4. Mitigation of arsenic in drinking water	8
4.1 <i>Groundwater</i>	8
4.2 <i>Surface water</i>	10
4.2.1 <i>Surface water treatment</i>	10
4.2.2 <i>Rainwater</i>	11
4.3 <i>Technology choice</i>	12
5. Arsenicosis and economic status: the poor suffer most	12
5.1 <i>The relationship between household income and prevalence of arsenicosis</i>	12
5.2 <i>Explanations for the role of socioeconomic status in arsenic poisoning</i>	13
6. The socioeconomic impact of arsenic poisoning: coping and steps towards modelling	14
6.1 <i>Coping with the impact of arsenic poisoning: introductory elements</i>	15
6.2 <i>The policy question: the arsenic poisoning and its socioeconomic impact</i>	16
7. A sub-model of the epidemiology of arsenicosis at village level	16
7.1 <i>Epidemiological model</i>	17
7.2 <i>Assignment of prevalence and incidence</i>	18
7.3 <i>Natural history of arsenicosis</i>	19
7.4 <i>Model results</i>	20
8. Sub-model of arsenicosis and its socioeconomic impact on village households	21
8.1 <i>Socioeconomic household survey at T0</i>	21
8.2 <i>Coping</i>	22
8.3 <i>Modeling the impact of mitigation methods</i>	24

9. Remaining challenges for modelling	25
9.1 <i>Including other health and social effects</i>	25
9.2 <i>Transition between stages of arsenicosis</i>	26
9.3 <i>Unit of time in the simulation model</i>	26
10. Conclusion	27
Bibliography	28
Figures and Tables	33
Appendix I	39

Acknowledgements

The authors wish to express their appreciation to all those whose efforts made the production of this report possible. Special thanks are made to the following persons including:

- Dr Masakazu Tani, Department of Environmental Design, Kyushu Institute of Design (Japan), for providing the original data of his study in Bangladesh with the report (published by Asia Arsenic Network), and comments to finalize the documents,
- Professor Guy Alaerts, the World Bank, for his views on the health and economic aspects of arsenic poisoning,
- Dr. D.N. Guha Mazumder, Institute of Post Graduate Medical Education and Research (India), for providing his report and information,
- Dr Quazi Quamruzzaman, Dhaka Community Hospital (Bangladesh), for his comments and suggestions about further needs of study,
- Professor Sushil Ranjan Howlader, Institute of Health Economics, University of Dhaka (Bangladesh), for his comments,
- Dr Antero Aitio, PCS/PHE/SDE WHO, for information about health impact,
- Dr Jenny Pronczuk, PCS/PHE/SDE WHO, for information about diagnosis.

All remaining errors as well as the views expressed in this paper are the responsibility of the authors only, however.

预览已结束，完整报告链接和二维码如下：

https://www.yunbaogao.cn/report/index/report?reportId=5_30486

