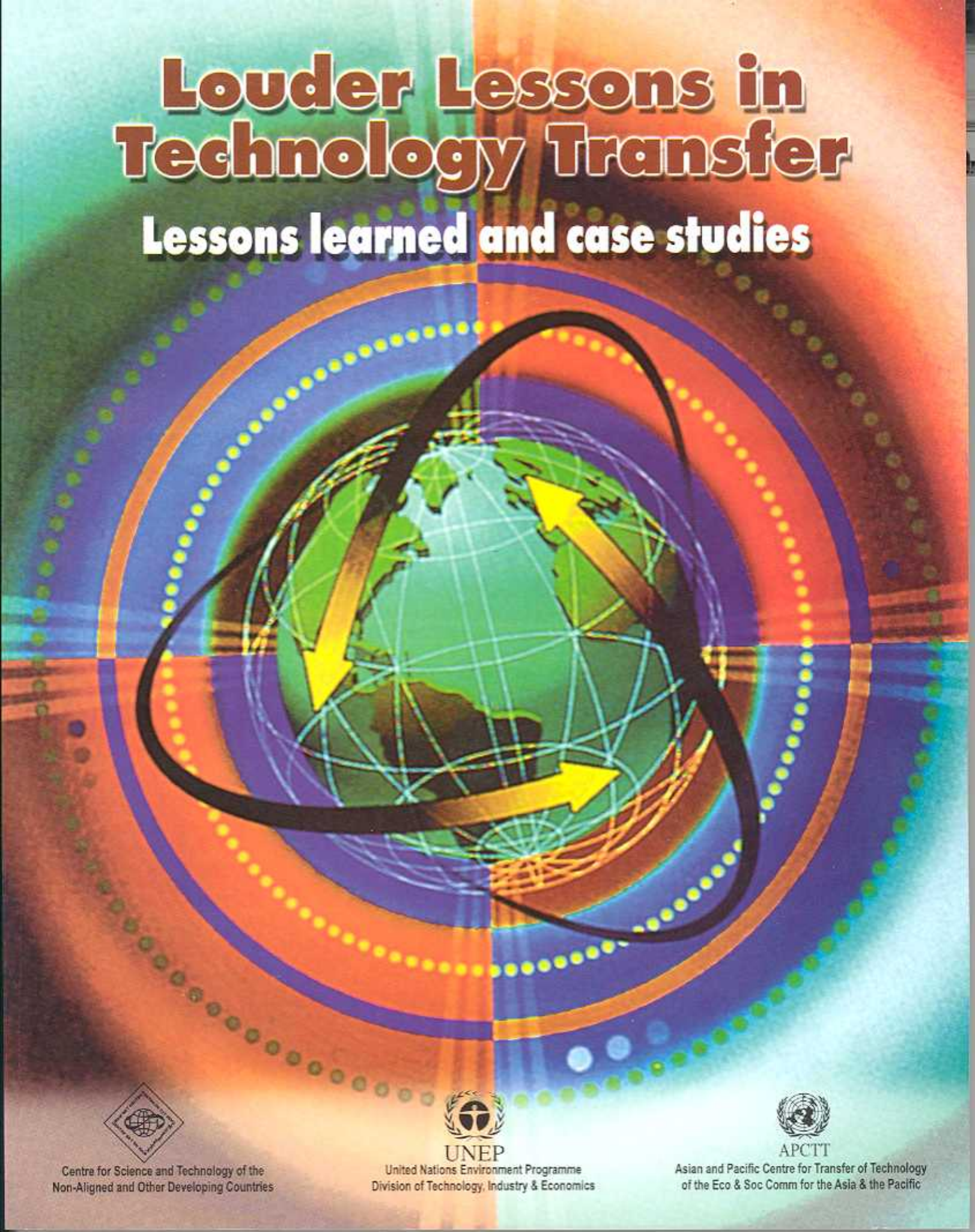
Louder Lessons in Technology Transfer

Lessons learned and case studies



Centre for Science and Technology of the Non-Aligned and Other Developing Countries

UNEP
United Nations Environment Programme
Division of Technology, Industry & Economics

APCTT
Asian and Pacific Centre for Transfer of Technology of the Eco & Soc Comm for the Asia & the Pacific

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Technology Transfer Workshop held in Bangkok, Thailand in March 1999 under the Montreal Protocol on Substances that Deplete the Ozone Layer

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Preface

It has now been fourteen years since the signing of the *Montreal Protocol on Substances that Deplete the Ozone Layer.* During this, a number of successful results of international cooperation to phase out ozone-depleting substances (ODS) have become clearly visible.

For example, science has shown that the concentration of CFC-11, one of the controlled substances under the Protocol, is declining in the stratosphere. Industrialized countries have stopped the production of such ODS as CFCs, halons, carbon tetrachloride and methyl chloroform since 1994, except for some 10,000 tonnes per year for essential uses for which acceptable substitutes are not yet available. And as of July 1999, developing countries have frozen their production and consumption of CFCs, and subsequent control measures will be in place very soon.

Since its creation in 1991, the *Multilateral Fund* of the Montreal Protocol has allocated over US one billion dollars to fund investment and non-investment projects to phase out ozone-depleting substances. These projects have shown tremendous capacity for the successful transfer of ozone protection technologies, not only from developed to developing countries, but also between developing countries themselves. This success is highlighted by the fact that the private sector was very much a partner in the process, and still continues to be.

This document illustrates experiences gained from successful technology transfer under the Montreal Protocol by countries in the Asia-Pacific region. In having compiled and analysed a number of case studies, ten key lessons came to light – lessons that can protentially be used for guiding the transfer of environmental technologies under other international conventions, especially the international convention to mitigate climate change.

Actions to protect the ozone layer, including technology transfers, have grown by leaps and bounds. This would not, however, have been possible without close cooperation between governments and industry that have come together to ensure that environmental considerations come first before economic gain.

United Nations Environment Programme (UNEP) is very happy to be associated with this document, and would like to extend its heartfelt appreciation to the Asian and Pacific Centre for Transfer of Technology (APCTT) and the Centre for Science and Technology of the Non-Aligned and Other Developing Countries (NAM S&T Centre) for a very successful collaboration.

Dr. Klaus Töpfer
Executive Director
UNEP

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INTRODUCTION

The purpose of this publication is to present the findings and main conclusions from the case studies presented in the technology transfer workshop that was held in Bangkok, Thailand, from March 1-3 1999.

The workshop brought together representatives of government and industry from countries in the Asian-Pacific region that have completed the conversion from ODS to non-ODS and had significant experiences as both suppliers and recipients of ozone-friendly technologies.

During that workshop, it was concluded that the OzonAction Programme of UNEP's Division of Technology, Economics and Industry (DTIE) would coordinate follow-up activities for the workshop, including the production of a proceedings focusing on successes in the region, to be disseminated to a wider audience.

As a result of those efforts, this publication begins with a background description of the Montreal Protocol, recent successes, and the increasing need to assist developing countries in phasing out ozone-depleting substances (ODS). The background section then presents successes of the Multilateral Fund under the Montreal Protocol, related successes in developing countries and background to the workshop itself. The section ends with the need to use lessons learned through technology transfer under the Montreal Protocol for guiding the transfer of environmental technologies under other international conventions, especially the international convention to stop climate change and the Kyoto Protocol.

The next section lists the ten lessons learned through technology transfer under the Montreal Protocol by both private and international organizations. Six case studies from the private sector and four from international development organizations are then described in detail.

Finally, an Annex at the end of the publication provides more specific information on the workshop logistics, and about UNEP's Division of Technology, Economics and Industry and its OzonAction Programme, Asian and Pacific Centre for Transfer of Technology and the Centre for Science & Technology of the Non-Aligned and other Developing countries.

BACKGROUND

Eleven years after the *Montreal Protocol on Substances that Deplete the Ozone Layer* entered into force in 1989, the successful results of international cooperation to phase out ozone-depleting substances (ODS) have become clearly visible.

For example, the concentration of one of the controlled substances, CFC-11, is already declining in the stratosphere. And since January 1994, industrialized countries have stopped the production of ODS such as CFCs, halons, carbon tetrachloride and methyl chloroform, except for some 10,000 tonnes per year for essential uses for which acceptable substitutes are not yet available.

The key issue now is that developing countries have become the world's major users of ODS. This is partially explained by the fact that, under the Montreal Protocol, they were given a grace period of approximately ten years after control dates for developed countries to phase out ODS. Attention is therefore now increasingly focused on cooperation between developed and developing countries to eliminate the production and consumption of ODS in developing countries.

The main example of this cooperation has been the *Multilateral Fund,* created in 1990 by the Parties to the Montreal Protocol to provide financial and technical assistance to *Article 5 Parties* (developing countries where production and consumption fall below a set threshold). Assistance is geared to ensuring compliance with the control measures set out under the Protocol and to phase out ODS.

In the global arena, the Multilateral Fund has become one of the most successful funds ever established for resolving an environmental problem, says Dr. Steve Andersen, co-chair of UNEP's Technology and Economic Assessment Panel (TEAP) and convenor of the Task Force studying hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs).

To date, over one billion US dollars have gone to developing countries for funding both investment and non-investment projects to phase out ODS, leading to a phase-out of more than 145,000 ODP (ozone depletion potential) tonnes. Over 110 countries completed their *Country Programmes,* which covers an estimated production of 70,000 ODP tonnes and consumption of 160,000 tonnes of ODS – representing 95 percent of ODS consumption and 100 percent of ODS production in Article 5 countries. And all these countries are being assisted to enhance their capacity to protect the ozone layer through