

# How THE RESEARCH WAS DEVELOPED

## A Chronology

**1987** – Researchers start to assess the viability of a large-scale fog-water collection system.

**1990** – Work on the installation of a fog-water collection is completed and work on the distribution system in the mountains of northern Chile begins.

**1992** – The first tap is turned on in the village of Chungungo.

**1993** – With 75 fog collectors and pipelines delivering 11,000 litres of clean water a day, the Chungungo fog-collection system is the largest in the world.

**1994** – Demonstration projects will be initiated in three other regions.



G. Saussier / Gamma / Contrasto

## WHAT IS IDRC?

Through funding of scientific research in Africa, Asia, Latin America, the Caribbean, and Canada, the International Development Research Centre (IDRC) helps communities in the developing world find solutions to problems related to health, technology, food, social and economic policy, information and communication, and the environment. Created by the Parliament of Canada in 1970, IDRC supports research projects that address the challenges of sustainable and equitable development.

### Science in ACTION

is a brochure series profiling IDRC projects worldwide. IDRC-funded research uses science and technology to help identify practical, appropriate solutions to problems in developing countries.

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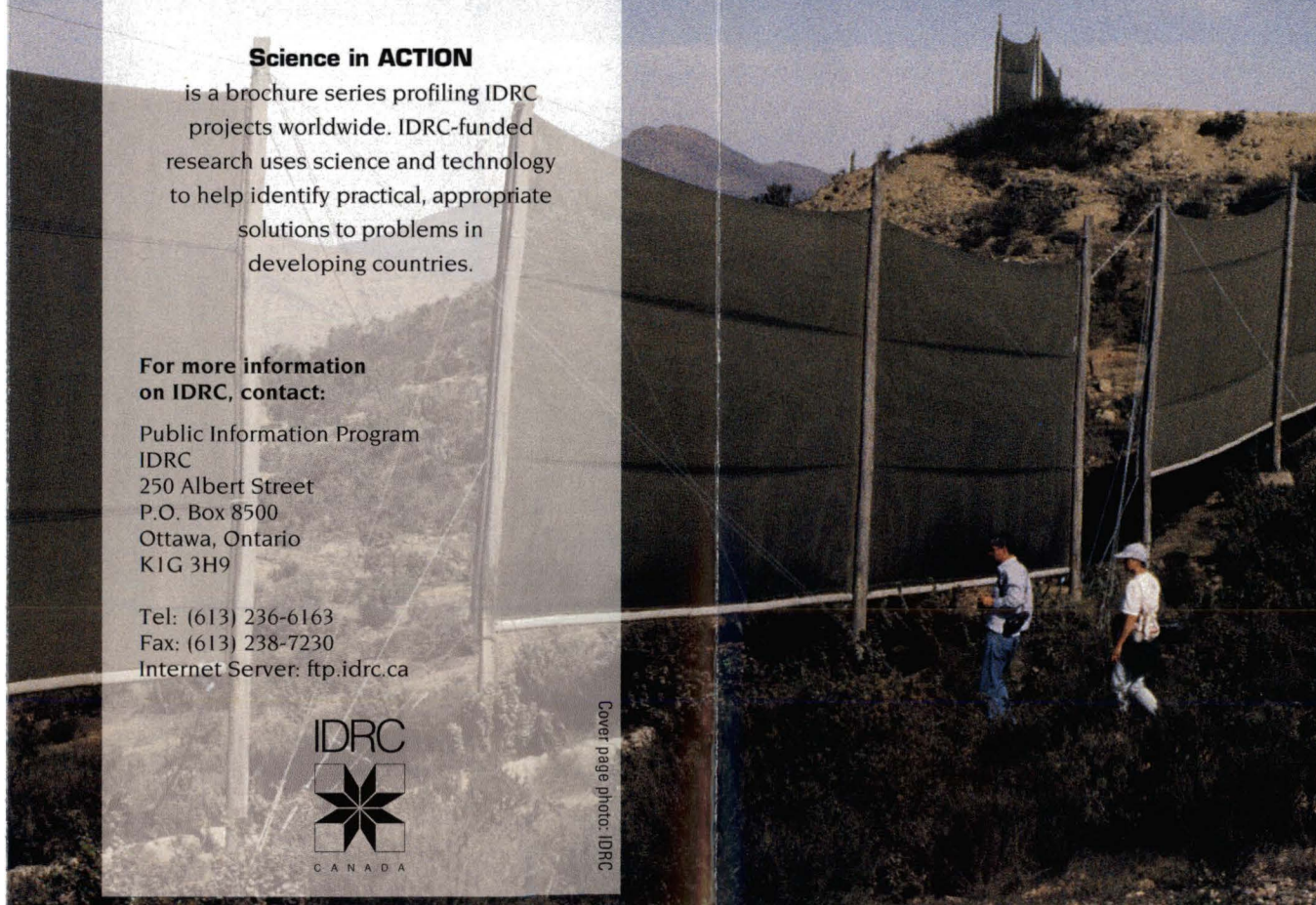
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# CLOUDS ON TAP



science in action



# CLOUDS ON TAP

*Villagers in Chile's arid northern region are converting fog into drinking water by harvesting clouds with nets. This simple technology could benefit 30 other countries where water is scarce.*

## ONE VILLAGE'S WATER SHORTAGE



The village of Chungungo lies in the shadow of the coastal mountains in northern Chile – one of the driest regions in the world. Water for its 350 residents used to come from a town 50 km away, transported once or twice a week in an old tanker truck.



The water was expensive and sometimes unclean. The truck was also used to carry other cargo that could contaminate the water.



The lack of water contributed to poor sanitation, ill health, and low food production in the village.

## A SOLUTION

*For centuries in the deserts of Oman, the leaves of olive and other trees have trapped droplets from coastal clouds. The water drips down into small tanks built at the foot of the trees. Scientists from Canada and Chile have updated this ancient technology by using nets as fog-water collectors.*

- Scientists from Environment Canada, the Pontificia Universidad Catolica de Chile, and the Corporacion Nacional Forestal have developed a system of large nets to collect moisture from the mountain fog above Chungungo. A pipeline carries the water from 75 fog-water collectors to taps in the village.

IDRC



*The water runs down the nets into gutters that drain into a 100,000-litre reservoir.*

- About 11,000 litres of water flows into Chungungo a day – more than twice as much as it used to get from the truck deliveries and the fog-water costs less.
- The water is clean, although a small amount of chlorine is added to ensure that it is safe to drink.
- The system is inexpensive, easy to install and maintain, and environmentally sound.
- In addition to improving health, the system has increased the food supply and created jobs in Chungungo. Now there is enough water to support vegetable gardens, fruit trees, and a primary school.



## FROM NET TO TAP

*"Water production has been above our expectations... the reservoir has been overflowing with fog-water."*

*Dr Robert Schemenauer, a scientist at Environment Canada and one of the project leaders.*

The fog-water collectors resemble oversized volleyball nets. Made of locally available polypropylene mesh, each net is stretched between two posts and hangs two metres off the ground. As fog passes through the nets, beads of water form on the mesh. The water runs down the nets into gutters that drain into a 100,000-litre reservoir. A pipeline carries the water down the mountain and into the village taps.

## TECHNOLOGY TRANSFER

The fog-collector technology could be installed in 30 countries on six continents. It requires frequent fog cover and a mountain range about 500 metres high, perpendicular to the prevailing winds.



*Fog-water collection systems, developed in Chile with IDRC support, could benefit 30 other countries where water is scarce.*