

When the Iceberg Arrives!

“When the iceberg arrives, there will be drinking water for hundreds of thousands of people!” That was the statement made by Paul Emile Victor, the famous French polar explorer, and he was right. He had devised a plan to provide the citizens of Saudi Arabia with fresh water. The idea was to transport an iceberg from Antarctica to the Middle East. Of course towing an iceberg over such a long distance would be both dangerous and expensive, but it would be worth the effort, said the Frenchman. As everyone knows, drilling for water in Saudi Arabia is far more expensive than drilling for oil. Furthermore, the biggest icebergs can reach a height of 120 (*one hundred and twenty*) meters above the water, the equivalent of a forty-story building, and they are often several kilometers long. One single large iceberg could provide enough water for all the needs of a big city over a whole year. One mustn't forget that only $1/7$ (*one-seventh*) to $1/10$ (*one-tenth*) of an iceberg is above the surface of the sea. All the rest—in other words at least $6/7$ (*six-sevenths*)—of the iceberg's total mass is underneath.

Why go all the way to Antarctica to get drinking water? The answer is simple. Icebergs are formed when ice breaks off from glaciers on the edge of the Antarctic continent. This ice is in fact compacted snow that fell from the sky in the form of precipitation many, many years ago. It is not frozen seawater as is the case of the Arctic Sea. It is fresh water that can be used for numerous purposes. One should also bear in mind that 93% (*ninety-three percent*) of the world's icebergs are to be found in Antarctica.

If this project is carried out, several steps will have to be taken. First, scientists must locate the right iceberg. This can be done through satellite observation. A suitable iceberg must be tabular and must not have any cracks or faults. The ice in the cold core must be very compact and thus relatively heavy. The temperature of the core must be between -15 (*minus fifteen*) and -20 (*minus twenty*) degrees Centigrade. Second, engineers will have to connect it to the tugboats that will tow it during its 12,000-kilometer (*twelve thousand-kilometer*) journey. Third, they will have to find a way to keep the iceberg from melting too much before it reaches its destination. One idea is to place strips of plastic over the iceberg to reduce contact with the warmer seawater.

The actual towing process will last over six months, and a considerable amount of ice—up to one third—may be lost during this time. Finally, once the iceberg has been transported to the shores of Saudi Arabia, engineers will have to saw it into blocks of ice that can be transported onto the mainland. The trip may be dangerous due to storms and the possibility of an iceberg tipping over and causing the tugboats to sink. However, if this project is carried out successfully, drinking water will no longer be a problem in Saudi Arabia.