ANALYSIS OF THE DEPLETION OF OZONE LAYER AND ITS EFFECTS

Turyahebwa Robert

University of Lay Adventists of Kigali, Faculty of Law

Email: rturyahebwa@gmail.com

Abstract

The ozone layer is a region of Earth's stratosphere that absorbs most of the Sun's ultraviolet (UV) radiation. It contains high concentrations of ozone (O₃) relative to other parts of the atmosphere, although it is still very small relative to other gases in the stratosphere. The ozone layer contains less than ten parts per million of ozone, while the average ozone concentration in Earth's atmosphere as a whole is only about 0.3 parts per million.

The ozone layer is mainly found in the lower portion of the stratosphere, from approximately 20 to 30 kilometres (12 to 19 mi) above Earth, though the thickness varies seasonally and geographically.

The ozone layer was discovered in 1913 by the French physicists Charles Fabry and Henri Buisson. Its properties were explored in detail by the British meteorologist G. M. B. Dobson, who developed a simple spectrophotometer (the Dobson meter) that could be used to measure stratospheric ozone from the ground.

The ozone layer absorbs 97–99% of the Sun's medium-frequency ultraviolet light (from about 200 nm to 315 nm wavelength), which otherwise would potentially damage exposed life forms near the surface.

The ozone layer can be depleted by free radical catalysts, including nitric oxide (NO), nitrous oxide (N₂O), hydroxyl (OH), atomic chlorine (Cl), and atomic bromine (Br).

In terms of legal framework, the protection of the Ozone layer is governed by the Vienna Convention for the Protection of the Ozone Layer which is a Multilateral Environmental Agreement. It is one of the most successful treaties of all time, having been ratified by 197 states¹. Rwanda ratified the convention on the protection of the Vienna convention on 11 Oct 2001 a.

¹. It was agreed upon at the Vienna Conference of 1985 and entered into force in 1988.