

# Chapter 13

## The Use of Carbon Finance for Struggling With Climate Change

**Filiz Konuk**

*Sakarya University, Turkey*

### ABSTRACT

*The developments in science and technology have brought a lot of problems with them. The most important of these is climate change, which appears at the global level. The effect of climate change, which comes first as an environmental problem, cannot be ignored. Management, which has had serious income and economic losses because of weather conditions, has taken several precautions in order to reduce climate change risks. One of these is weather derivations. Weather derivations are a safety type that makes the determined payments if there are defined weather events. However, the most commonly used are weather option agreements, weather swap agreements, and weather future agreements. In the chapter, climate change and the weather derivations that are a means that managements use to avoid climate change risks will be explained.*

### INTRODUCTION

When the acquisitions which industrialization and development process in 18th century provided and the cost of this process on the physician environment of earth is compared, whether the result is profit or loss has become one of the most debated subjects of our day (Saraç, 2010). Along with the fact that it is difficult to reveal the result of this numeral cost benefit analysis, there is a known fact that this huge

DOI: 10.4018/978-1-5225-7808-6.ch013

development and change process is a feedback for human as climate change and global warming today (Yalçın, 2010).

The desire for economic growth and development has brought about the increased need for fossil energy. Increasing fossil fuel consumption and unconscious human behavior have caused an increase in atmospheric concentrations of the gases. These gases prevent the ray energy to go up to upper atmosphere after hitting Earth and the cooling of atmosphere layers close to Earth and land (Samur, 2007) caused an increase in atmospheric concentrations (Başoğlu & Telatar, 2013). The earth atmosphere functions as the mirror of greenhouse effects. Therefore, this resulting effect mechanism is called 'greenhouse effect'. This mechanism enables the short wave radiation of the sun to come but it holds the long wave radiation reflected by the world (Saraç, 2010). That is to say, the short wave radiation from the sun are again reflected to the earth by the greenhouse gases in the atmosphere in the form of long wave radiation after hitting the earth (Alper & Anbar 2008:226).

Gasses such as carbondioxide ( $\text{CO}_2$ ), methane ( $\text{CH}_4$ ), diazotmonoxit ( $\text{N}_2\text{O}$ ), halogenated compounds containing hydrophlorone carbones (HFC<sub>s</sub>) sulphurhexafluoride ( $\text{SF}_6$ ) have greenhouse effect (Demireli & Hepkorucu, 2010).  $\text{CO}_2$  which has an atmospheric life ranging between five to two hundred years and whose increase can be attributed to heavy fossil fuel consumption, is one of the major factors which is increasing infrared radiation (Başoğlu & Telatar, 2013, p. 10). In addition,  $\text{CO}_2$  is a greenhouse gas type which forms approximately 80% of the greenhouse gas effect of developed countries and approximately 60% of total greenhouse effect globally. The density of this gas in the atmosphere has increased 40% compared to the period before industrial revolution due to fuel consumption and incorrect land usage. Before industrial revolution, the density which was 280 ppmv (one molecule in million volume or a piece of one million) has become 391 ppmv during 2011 (Liu et al., 2009).

The greenhouse gas emissions in previous years also has an effect on today's density level of greenhouse gases in atmosphere. Global greenhouse gas emissions between years 1970-2004 has increased 70%. IPCC emission scenarios, private report asserts that global greenhouse gas emissions will increase 25% to 90% between years 2000-2030 (IPCC, 2007). The report prepared by OECD asserts that greenhouse gas emissions will increase 50% by 2050 unless the needed precautions are taken (Şaylan, 2010).

The increase in greenhouse gas densities in the atmosphere destroys the energy balance on earth. This is the reason why the radiation from Erath is prevented from reaching space by being kept in atmosphere by greenhouse gases and left again and earth is heated more. The increased burning of carbon containing fossil fuels like petrol, natural gas and coal since 19th century and incorrect land usage policies which have led to mass deforestation have greenhouse gas densities in the atmosphere.

25 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: [www.igi-global.com/chapter/the-use-of-carbon-finance-for-struggling-with-climate-change/220729](http://www.igi-global.com/chapter/the-use-of-carbon-finance-for-struggling-with-climate-change/220729)

## Related Content

---

### Automatic Real-Time River Traffic Monitoring Based on Artificial Vision Techniques

Luca Iocchi, Luca Novelli, Luigi Tombolini and Michele Vianello (2012). *Sustainable Policy Applications for Social Ecology and Development* (pp. 101-114).

[www.irma-international.org/chapter/automatic-real-time-river-traffic/68777](http://www.irma-international.org/chapter/automatic-real-time-river-traffic/68777)

### Literature as a Source of Ecological Sustainability With Reference to Feminist Writings

Deepanjali Mishra (2022). *International Journal of Social Ecology and Sustainable Development* (pp. 1-9).

[www.irma-international.org/article/literature-as-a-source-of-ecological-sustainability-with-reference-to-feminist-writings/293239](http://www.irma-international.org/article/literature-as-a-source-of-ecological-sustainability-with-reference-to-feminist-writings/293239)

### Environmental Education through Envkids Didactical Framework and ICT Tools

Hariklia Tsalapata, Rene Alimsi and Olivier Heidmann (2014). *Sustainable Practices: Concepts, Methodologies, Tools, and Applications* (pp. 1492-1504).

[www.irma-international.org/chapter/environmental-education-through-envkids-didactical-framework-and-ict-tools/95008](http://www.irma-international.org/chapter/environmental-education-through-envkids-didactical-framework-and-ict-tools/95008)

### AI-Powered Sustainability: Transforming Finance Sector for a Better Tomorrow

Neha Bansal, Sanjay Taneja and Ercan Özen (2025). *Achieving Sustainability with AI Technologies* (pp. 27-46).

[www.irma-international.org/chapter/ai-powered-sustainability/366765](http://www.irma-international.org/chapter/ai-powered-sustainability/366765)

### Green Growth and Energy Use in India

Sudhakar Patra and Kabita Kumari Sahu (2019). *Handbook of Research on Economic and Political Implications of Green Trading and Energy Use* (pp. 252-265).

[www.irma-international.org/chapter/green-growth-and-energy-use-in-india/230594](http://www.irma-international.org/chapter/green-growth-and-energy-use-in-india/230594)