

# GEOSYNTHETICS FOR RISK MITIGATION AND PREVENTION

Patrick Kabir Fuentes Andrade<sup>1</sup> Omar Leonardo Torres Parada<sup>2</sup>

## ABSTRACT

**Abstract:** The development of engineering works under the concept of risk is focused towards the combination of threat and vulnerability. This can be understood in the probability that an adverse event can occur and what degree of damage this event can cause on a specific system [1]. In this scope, the use of geosynthetics in civil projects has evolved; from being a technical solution in pavement and subdrainage construction. Today, geosynthetics are being used as primordial elements in construction of retaining walls, slope protection, shore protection and enhancement of banks in rivers and coasts. This paper is intended to support the importance of these materials in infrastructure works. Its performance, advantages in construction processes and other required materials make it possible to design and develop structures and engineering solutions that aim to reduce the susceptibility of a system to a specific natural threat.

**Keywords:** Risk, vulnerability, threat, susceptibility, geosynthetics, mechanically stabilized earth walls, erosion control mats, geogrid, fabric form, geotextile tubes.

---

<sup>1</sup> Civil Engineer from National University of Colombia. Water Resources Specialist with Catholic University of Colombia, Design Engineer and specifications in Hydraulic and Environmental Geomatrix S.A. S. Address: Calle 15 72-72 Bogota Colombia, phone +57-1 424 9999, email: [pfuentes@geomatrix.com.co](mailto:pfuentes@geomatrix.com.co) .

<sup>2</sup> Civil Engineer from National University of Colombia. Specialist geotechnical and pavements Universidad Nacional de Colombia - Arizona State University. Technical Director Geomatrix S.A. S. Address: Calle 15 72-72 Bogota Colombia, phone +57-1 424 9999, email: [otorres@geomatrix.com.co](mailto:otorres@geomatrix.com.co).