



**Company:**  
BIO PAPPEN

**Sector:**  
Pulp and Paper

**Location:**  
Atenquique, Mexico.

**Date:** July 28th 2020

### ABOUT BIO PAPPEN



With a history of more than 35 years, Bio Pappel® began with an ambitious dream: To build a world-class paper company to promote integral sustainability by recovering post consumed paper and cardboard, the efficient use of water and energy and the sustainable use of our forests, guided by one purpose: To serve Mexico with the best of our entrepreneurship, supported by a strong culture of learning and innovation, inspired by the best business practices of the international paper industry.

Since then, the company has built a successful history in the paper industry, expanding not only vertically but geographically to become an international company and the largest manufacturer of paper and paper products in Mexico, with operations in the United States and Latin America.

Faced with this problem, Bio Pappel® has decided to be part of the solution and has started important tasks such as the efficient use of water in all its processes, zero water discharges system and wastewater treatment. In addition, Bio Pappel® is constantly looking to increase competencies. They have recently initiated a staff training project in the use of tools that allow them to improve their water management, with an internationally valid methodology and recognition over stakeholders, that will enable them to quantify their potential impacts of their activities on water resources.

This is how Bio Pappel® has provided the tools and facilities for its staff to know and develop projects for Water Footprint quantification according to the ISO 14046 standard and following the recommendations for regional coherence developed by the community of practice in Latin America.

It is important to mention that, when talking about Water Footprint, not only the volume is considered, that is, the amount of water consumed throughout the life cycle; but also its availability, varying from one region to another, as well as the water quality and the impacts such as contamination of aquatic ecosystems and the water source.



### MAIN PRODUCTS

#### Scribe®

Is the largest integrated white paper company in Mexico and Latin America. Products: Large bond paper rolls for books, continuous forms and commercial printing, cut bond paper and notebooks.

#### Titan® Empaques

Is the largest paper manufacturer and leader in the production of corrugated and high graphics packaging in Mexico and Latin America. It maintains the leadership in its field thanks to the structured strategy of vertical integration, geographical presence, a wide national network and advanced technology to stay ahead.



Products: Large paper rolls for packaging and containing, white and brown liner paper for packaging. Corrugated and high graphic boxes, newsprint and paper bags.

#### McKinley®

Is the largest Mexican company in paper, corrugated packaging and containing manufacturing in the United States. It has an extensive production and distribution network, from its industrial plants in the states of Washington, New Mexico, California, Texas, Georgia, Colorado, Arizona and Indiana, as well as Baja California in Mexico.

Products: Paper for packaging and containing, corrugated boxes.



### GOAL

To quantify the potential impact to water from the production of 1 ton of Kraft Liner Paper produced in Bio PAPPEN Atenquique Jalisco Industrial Plant in 2018.



### SCOPE

In Bio Pappel Atenquique Jalisco Industrial Plant, the following paper products are made:

- Medium Paper
- Sack paper
- Liner paper

The LCA of Kraft paper includes the life cycle inventory analysis and potential impact assessment to water from cradle to gate.



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**SYSTEM BOUNDARY**



The Production process has a majority contribution in Fresh water acidification. The raw materials consumption that go into the paper, water discharges, air and soil emissions are in this process.

**SIGNIFICANT ISSUES**

Analyzing the results of the main significant impacts, the following information was obtained:

The **distribution** of the finished product to the North Zone represents 48.16% of the Scarcity Impact.

The **production process of manufacturing paper**, included in the Air, Water and Soil Emissions, represents 63.24% of Fresh water acidification.

The **wood chip** is the one that contributes 83.66% in Marine eutrophication and 74% in Fresh water eutrophication.

Regarding Human Toxicity - Cancer, there are mainly **wood chip, Distribution - North Zone and Electric Power of CFE**, having contributions of 23.99%, 17.77% and 12.65%.

Human toxicity – non cancer is mainly affected by the **Product distribution to the North Zone and the Starch** used, being 41.28% and 16.87% respectively.

The majority contribution to Fresh Water Ecotoxicity with 91.57% is the **Starch**.

**Wood chip** mainly contributes in 3 categories: Marine eutrophication, Fresh water eutrophication and Human toxicity - Cancer.

**FU FUNCTIONAL UNIT**

**To produce 1 ton of Kraft paper in the Atenquique Industrial Plant in 2018.**  
**LCIA RESULTS OF 1 TON OF KRAFT PAPER**

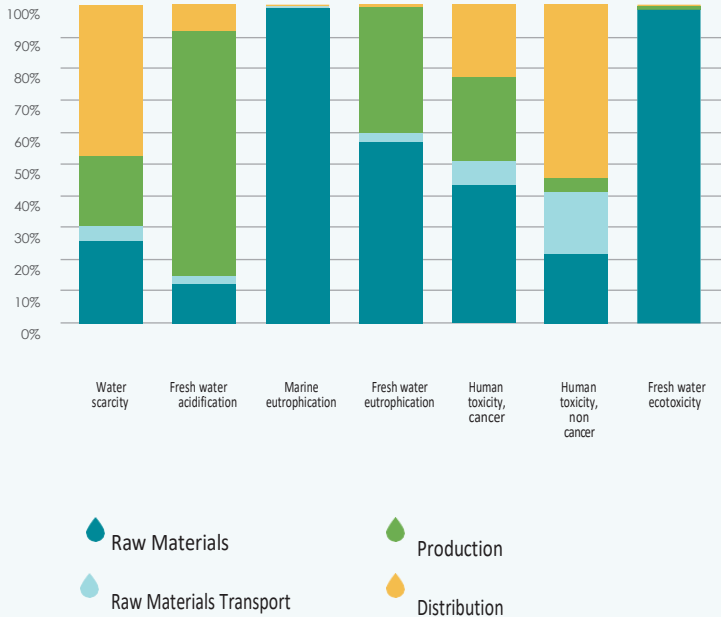


Figure 1. LCIA results of the water footprint of 1 Ton of Kraft paper.

The process that mainly contributes to Marine eutrophication, Fresh water eutrophication and Human toxicity, cancer are the Raw Materials used in the manufacturing of paper. These raw materials are grouped into: Wood chip, Recycled cardboard and Organic and Inorganic compounds.

The Distribution process is the one that has the main contributions in Water scarcity and Human Toxicity, not cancer. The finished product distribution is carried out by road in a trailer.



**IMPROVEMENTS FOR WATER MANAGEMENT**

It is recommended to continue with this analysis to strengthen the loaded information in the system by extending its study to other products that are manufactured.

To have a framework and alternatives that allow us to reduce our impacts, It is recommended to compare the impacts obtained in this analysis with the production of the same product at a national and international level.