



**Company**  
BIO PAPPTEL

**Sector:**  
Pulp and Paper

**Location:**  
Morelia, Mexico.

**Date:** July 28th 2020

## ABOUT BIO PAPPTEL



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.



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 pulp in Bio Pappel Scribe Industrial Plant located in Morelia, Michoacán in 2018.



### SCOPE

The LCA of the production of 1 ton of pulp in Bio Pappel Scribe Industrial Plant located in Morelia, Michoacán in 2018, includes the life cycle inventory analysis and potential impact assessment to water from cradle to gate.



### 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.



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**SYSTEM BOUNDARY**



The raw materials supply also predominates with a percentage above 90% in the category of human toxicity cancer and with percentages above 80% in the categories of fresh water eutrophication and marine eutrophication.

The production stage contributes on a greater proportion on: fresh water eutrophication, marine eutrophication, fresh water ecotoxicity and human toxicity.

**FUNCTIONAL UNIT**

**To produce 1 ton of Pulp in Bio Pappel Scribe Morelia Industrial Plant in 2018.**

**RESULT OF THE EVALUATION OF THE POTENTIAL IMPACT TO WATER IN THE LIFE CYCLE OF 1 TON OF PULP IN BIO PAPPTEL SCRIBE MORELIA INDUSTRIAL PLANT.**

**SIGNIFICANT ISSUES**

The pulp production process has the biggest impact on water scarcity, with 54.9%, followed by obtaining 100% sodium hydroxide in the same impact category with 31.2%. For the fresh water acidification category, the main contributor is natural gas, followed by sodium chlorate as a raw material. On fresh water eutrophication, the contributor is the sodium chlorate with 24.7% of the total, and with 13.8% the sodium hydroxide at 100%. On the marine eutrophication stage the sodium chlorate contributes with 21%. On the category of fresh water ecotoxicity the contribution of wood from Michoacán and wood from Tabasco contributes with 17.1%. On human toxicity, non cancer, the biggest impact is from LPG, fuel oil and diesel. Finally, on the category of human toxicity cancer, the wood from Michoacán contributes with 30.4 and with 30.5% the wood from Tabasco, both are the major contributors to the impact categories of the study.

**IMPROVEMENTS FOR WATER MANAGEMENT**

The main recommendation is to work with suppliers to improve information sources. To have data with less uncertainty to obtain better results. To improve data collection, contemplating more scenarios.

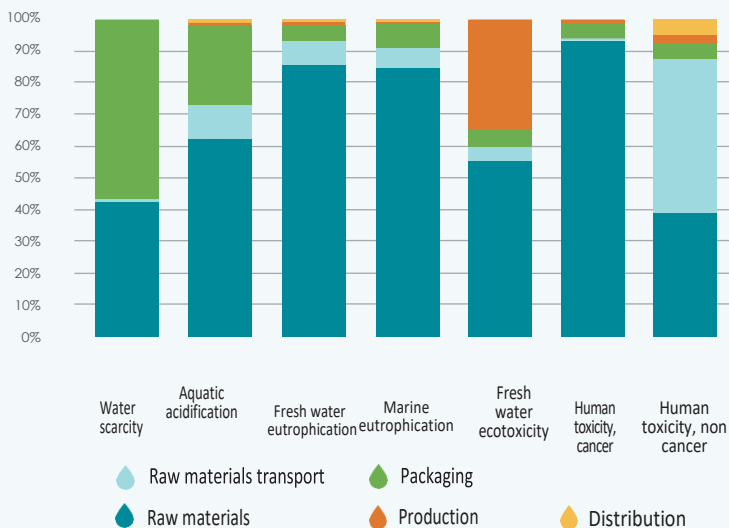


Figure 1. LCIA results of the water footprint of 1 Ton of pulp in Morelia Industrial Plant.

On figure 1 the unit process with more impact in all categories on the life cycle of a ton of pulp is the raw materials, except for water scarcity where the biggest impact is on the production and human toxicity non cancer, where the raw materials transport predominates.