Wastewater treatment plants (WWTPs) are designed for two main functions: to reduce suspended solids and to reduce organic carbon. The principle is to aerate the wastewater and promote microbial degradation of organic matter. A flocculation system will then separate the suspended matter and insoluble bacteria from the treated water. For other operations such as the reduction of nitrogen load, organic or mineral pollutants, few installations take them into account. Sometimes, a so-called tertiary treatment will reduce the nitrogen load or target certain molecules, but they are not systematic. A WWTP will therefore mainly produce liquid and solid effluents. The abundance of microplastics in wastewater has been demonstrated by several studies. They are mainly fibres that come from synthetic fibre textiles and their washing. They are made of polymers rich in organic carbon but very resistant to bacterial degradation. When they arrive in the WWTP, their quantity will not decrease over time, they will simply be distributed between the liquid and solid effluents. Depending on the types and compositions of the microplastics, they will be more present in the solids or liquids, but in both cases they will pursue their life in the environment. The liquid effluents will be discharged into rivers and the sea, while the solid effluents will be spread on agricultural land and thus spread to rivers and the sea through runoff. This article clearly shows the inability of WWTPs to manage the pollution of microplastics in the current state of the technologies used.

Companies therefore have a great opportunity to work adopting a circular economy approach. They can consider upstream changes in fibre types, weaving methods, washing methods or filtration of washing water. They can also consider downstream by working on technologies to collect these synthetic fibres at the WWTP level. Not forgetting the consumer who, if well informed, can also make clever choices about his textiles and their use. In particular, as we indicated in SeaView n°1 (2 April 2020), by reducing the hyperconsumption currently in place in the fashion industry.

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