



IMPLEMENTED MODELS OF CIRCULAR MANAGEMENT OF WATER

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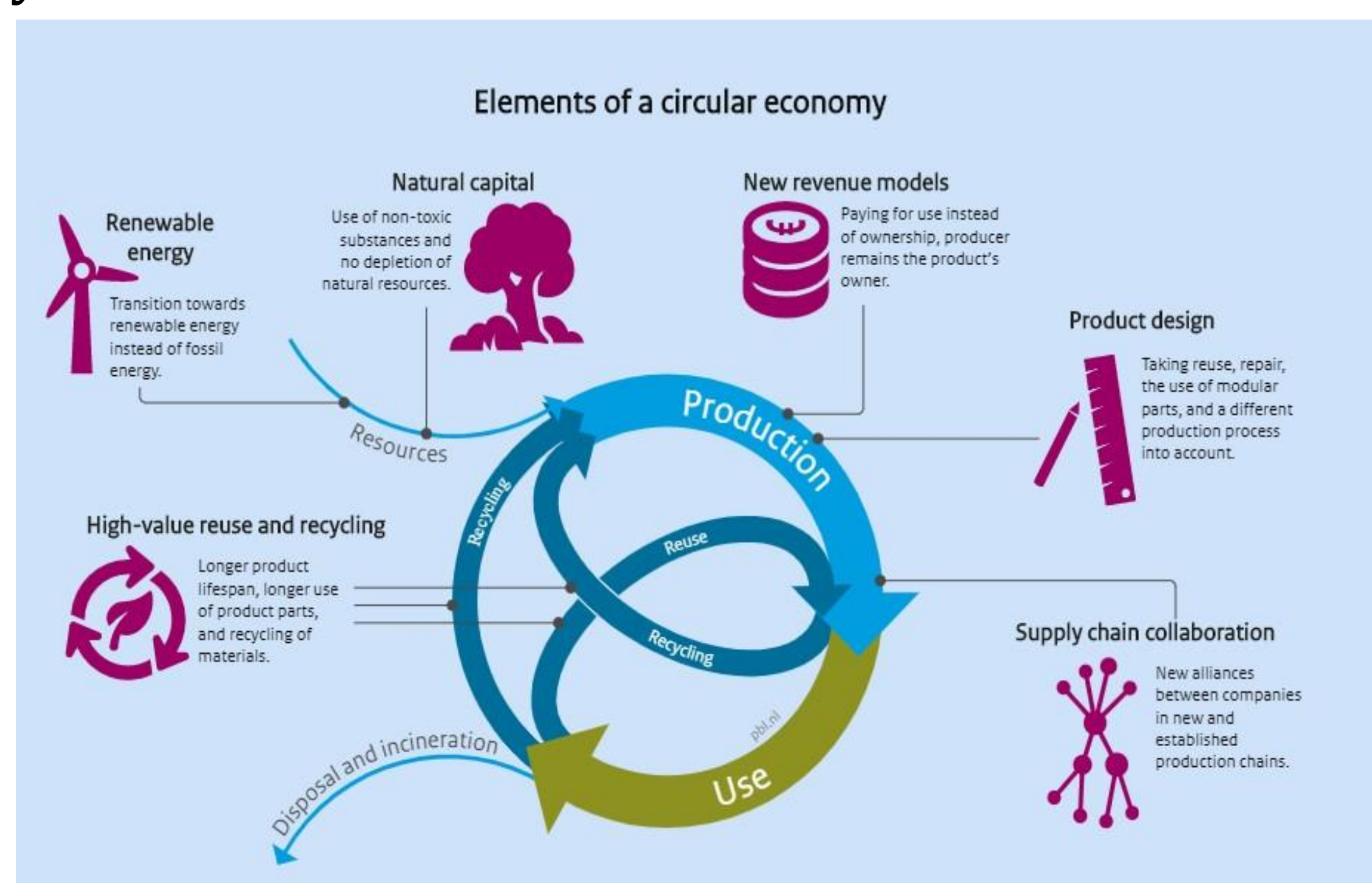
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Abstract: Practices involving the use of water around the globe are gravely damaging the availability of this resource in the future. Conventional water sources are becoming more and more prone to anthropogenic, industrial and natural pollution. One of the most accessible and cost effective way to adress this issue is the treatment of greywater, in order to reuse it. The purpose of this paper is to highlight a few of the solution implemented on the territory of Europe and India, regarding a circular approach to grey water, in order to reduce the stress exerted on this precious resource.

• Introduction

The basis for circular economy are found in the study of natural living system, having the particularity of being non-linear, feedback-rich systems.



A circular approach to water management must be based on the natural hydro-cycle, which re-circulates the same amount of water, filtering and purifying it in the process.

• Material and method

The materials needed to comprise this study were gathered by the authors from studies, books and reports specialized on the matter and the official web sites of EC, Indian Government and the enterprises that adopted and implemented circular models for water management.

•Conclusions

The examples above are only a few of the innovations happening all over the planet, innovations that shift our behavior towards a mindful approach to the available resources.

In developing countries, like India, about 62% of total sewage is discharged without delay, directly into nearby water bodies, due to the incompatibility of the sewage treatment plants.

It is obvious therefore that there is increasing need to develop natural solutions for greywater recycling, that are affordable and do not require massive work to be implemented.

• Results and discussions

1. All-Gas, El Torno Chiclana, Spain

Developed in 2011 by Aqualia, the project focuses on reusing wastewater from the area to create bio-fuel extracted from algae.

2. Aquaporin, Copenhagen, Denmark

This company uses the aquaporin protein, in order to develop a natural membrane that has the capacity to facilitate safe and sustainable water reuse, in households or industrial venues.

3. Hydraloop, Leeuwarden, Netherlands

Instead of using filters and membranes, Hydraloop combines six innovative technologies in the water treatment process, in order to create an easy to use and affordable system for greywater recycling.

4. VA Tech Wabag Ltd., Chennai, India

Their technology is based on Tertiary Treated Reverse Osmosis, in order to produce non-potable recycled water for industrial use.

5. Greywater (Jaldhara Technologies Pvt. Ltd.), Maharashtra, India

This company offers a unique range of highly compact, modular products, for residential and commercial buildings, hospitals and industrial sector.