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Industrial Pollution Reduction Practices and Wastewater Governance Analysis

ENHANCING GOVERNANCE OF INDUSTRIAL WWM IN TWO PALESTINIAN DAIRIES USING CP & WFP SOFTWARE

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Section 1

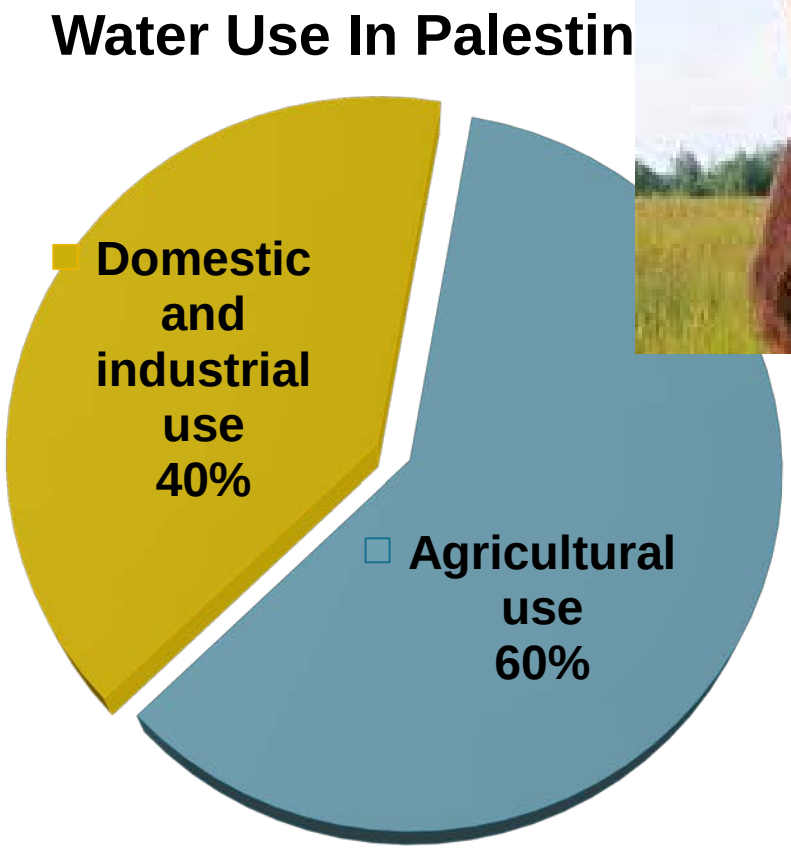
Introduction

Introduction

Palestine suffer from Water Scarcity

Protect the water resources

Introduction



Introduction

- Most of the working WWTF are designed for domestic purposes.
- Illicit industrial discharge is common practice in Palestine.
- The diary industry same as most industries in Palestine is scattered, thus relying on pollution control at source is must, by using CP and WFP principles.

All the previous are calls for having

Enforced Governance

which will help solidify the networking and enhance communications between all parties.

Section 2

Objective

Objective

This research aims at identification of approaches to implement cleaner production principles and water footprint to achieve a desired governance for wastewater management in agrifood industries taking two Palestinian diaries as case studies.

In addition, the impacts of implementing effective regulations on dairy industrial wastewater in the West Bank will be analyzed in depth considering perspective of diverse key decision makers.

Section 3

Research question

Research question

- What is the status of applying the cleaner production and minimizing water footprint principles in Palestine?
- What are the challenges for enforcing / implementing the cleaner production and minimizing water footprint principles to achieve applicable and solid governance for sustainable management of industrial wastewater from two Palestinian dairies?
- What is the opportunity for developing CP and WFP in the targeted dairies considering political, sociocultural, and financial aspects?
- How to implement cleaner production (CP) and promote water footprint (WFP) approaches to achieve wise governance in managing agrifood industrial wastewater?

Section 4

Background

Background

Some definitions is needed as preamble to understand the relationship between the key words for this research as follows:

Sustainability wastewater Management

Sustainability wastewater Management is related to continuous improving for wastewater systems; the infrastructure and services to satisfy the growing demands

Governance

to decision-making, covering a wide range of partners, formal and informal institutions at different levels and in several sectors. The term also provides / defines the opportunity /responsibility for all partners when getting involved in local experiences; well defined governance will indeed be reflected in better management of all sectors and the water sector too (Pittok, 2016)

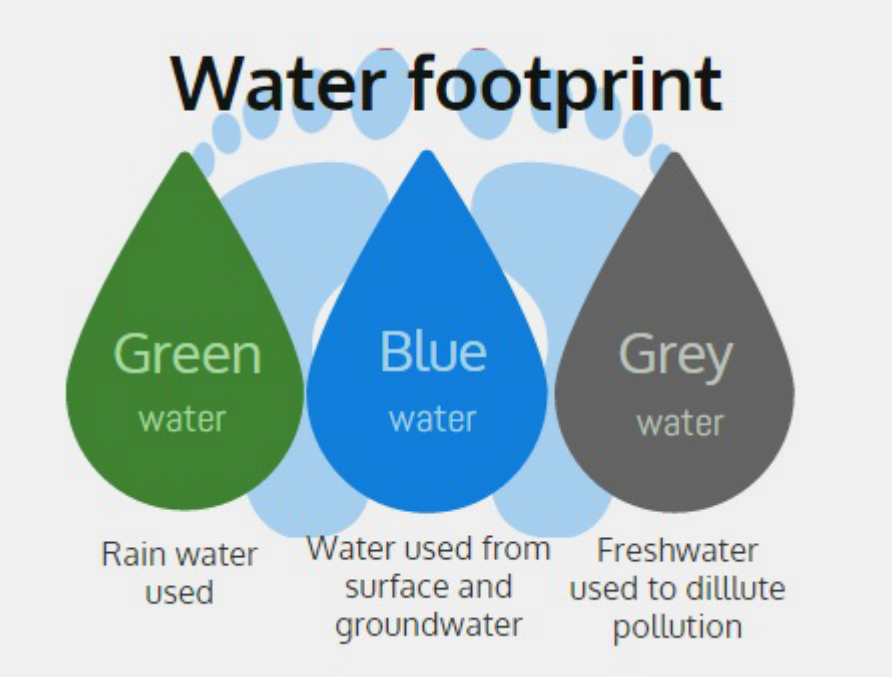
Cleaner Production

the continuous application of an integrated preventive environmental strategy applied to processes, products, and services to increase overall efficiency and reduce risks to humans and the environment" (UNEP, 2011). Cleaner Production principles, which are also practiced as waste minimization, pollution prevention, and eco-efficiency, are founded on the four Rs: Reduce, Recycle, Reuse, and Reformulate. (World Bank, 2012)

The Water Footprint

The Water Footprint (WFP) measures the amount of water used to produce each of the goods and services we use. It can be measured for a single process, such as growing rice, for a product, such as a pair of jeans, for the fuel we put in our car, or for an entire multi-national company. The water footprint can also tell us how much water is being consumed by a particular country – or globally – in a specific river basin or from an aquifer. (Water Footprint Netwrok, 2018)

The Water Footprint



The WFP for diary consist of three types : the Green WFP, Blue WFP, and Gray WFP. The green water footprint is the water used for crop growth

The blue water footprint is water lost from surface and ground water bodies during the supply chain of a product in the catchment area by evaporation and retaining to another catchment area.

The grey water footprint is the amount of water needed to dilute the water polluted during

Section 5

Research process

Research Process

1. Identify the current governance challenges at two Palestinian dairies. This at answering the research question “which approaches can promote cleaner production (CP) and water footprint (WFP) principles in achieving a feasible governance for agrifood industrial wastewater management? At two dairies, field visits and interviews of decision makers and directors of operations shall provide the enabling environment for implementing powerful regulations on wastewater management from agrifood industries.

Research Process

2. Compile and review existing legislation at various levels (national and municipal) regarding food industry wastewater. The existing CP and minimizing the water footprint approaches in Palestine will be explored and analyzed. The focus of this stage is to define what regulations currently exists, the current compliance from existing actors/processes, and barriers to their full implementation, e.g. lack of incentives or sanctions.

Research Process

3. Develop interview questionnaire to identify current practices: Practices refer to how current production processes are carried out, that provides answers on the third research question: What are the challenges for enforcing / implementing the regulations related to sustainable food industry wastewater management in Palestine?

Research Process

4. Identify the current and alternative production processes and resources (technical financial, organizational, and knowledge) in two Palestinian dairies [Nablus and Al-Bireh cites], apply CP principles, and water foot print (WFP) software, such as SimaPro the leading (LCA) software package. This shall find potential governance gaps or synergies that contribute to the current wastewater management and should be modified to improve the situation. Using WFP and CP approach will provide answers to the opportunity for developing cleaner production in targeted food industries for pollution reduction.

THANK YOU