

WATER FOOTPRINT FOR THE PRODUCTION OF OIL PALM SEEDLINGS

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Water is an extremely important element for all humans in the world. People use water for many purposes, such as drinking, cooking and washing. However, over the last five years, water shortage has become one of the main threats to humanity. Water scarcity, as a result of poor water management and climate change, has caused society to become more concerned about the sustainability of water resources. Therefore, the concept of water footprint (WF) was introduced to study the relationships between human consumption and water usage as well as between global trading and water resource management. WF is defined as the amount of water needed to produce goods and services, and has three components, *i.e.* blue, green, and grey WF. Blue WF is defined as the volume of freshwater that evaporates from the global blue water resources (surface water and ground water) to produce the goods and services consumed by an individual or a community. Green WF refers to the consumption of rainwater (rainwater insofar as it does not become run-off). Finally, grey WF

is the volume of polluted water associated with the production of all goods and services for an individual or a community. Determination of WF enables the identification of areas of high water usage intensity, which in turn enables the reduction of water consumption as much as possible.

At present, sustainability of palm oil production has become a hot topic throughout the world. Water management, in relation to the sustainable development of the oil palm industry, is vital for the long-term profitability of the crop. To cater to this need, the Malaysian Palm Oil Board (MPOB) has recently completed a cradle-to-gate study on WF for the production of palm oil from the seedlings up to the production of crude palm oil (CPO) at the mills.

MPOB now offers a WF consulting service to the oil palm industry at several stages along the supply chain, from production of oil palm seedlings to crude palm oil production. This report is on a WF study which focuses on the volume of water required for the production of oil palm seedlings (*Figure 1*).

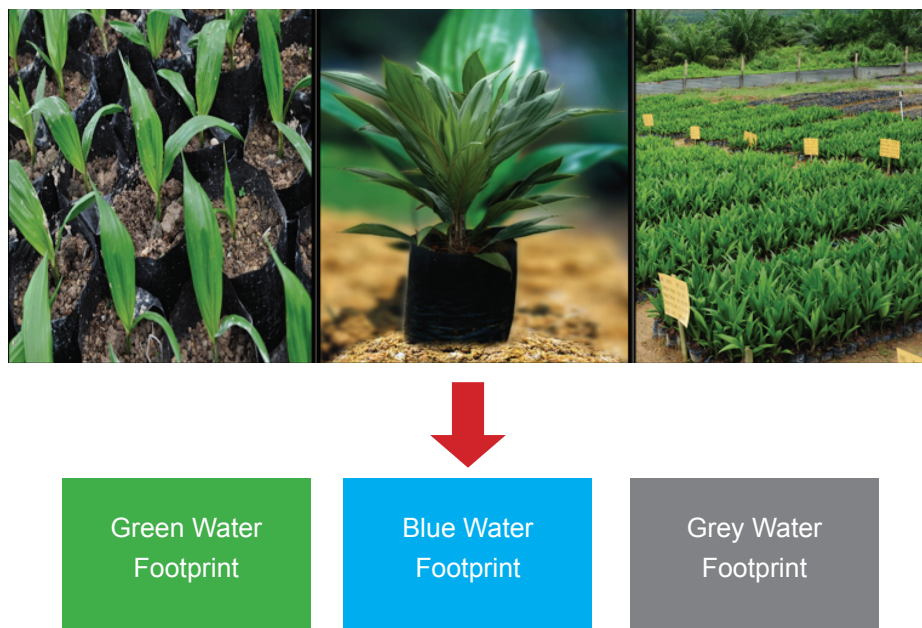


Figure 1. Water footprint for the production of oil palm seedlings.

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OBJECTIVES

- To quantify the blue, green and grey WF for the production of oil palm seedlings at the nursery.
- To identify the hotspots for the production of oil palm seedlings where the largest amounts of water are consumed in the supply chain.
- To evaluate the opportunities and to suggest mitigation measures to reduce the WF for the production of oil palm seedlings, if any.
- To contribute to the sustainable development of the oil palm industry by identifying and addressing environmental hotspots related to water use.

METHODOLOGY

The methodology used in this study is based on the framework of the Water Footprint Network (WFN) and the ISO standards 14046:2014.

BENEFITS

- Compliance to sustainability criteria and regulations related to trade of goods.
- WF is a recognised tool for gaining credibility in sustainable claims.
- Identification of areas that contribute to an adverse environmental impact which can be overcome by better utilisation of energy, water and materials.
- Enabling the industry to remain competitive in the global market.

TYPES OF SERVICES

- Setting up of system boundary and functional units for the study at the oil palm nursery stage.
- Collection of inventory data for the stipulated system boundary to produce a Life Cycle Inventory (LCI).
- Calculation of WF for the production of oil palm seedlings.
- Interpretation of results and suggestions of mitigation measures.
- Capacity building – training on water footprinting using the LCA approach which will consist of a combination of lectures and case studies to understand WF.

SERVICES

Services offered in Peninsular Malaysia, Sabah and Sarawak.

INDICATIVE COST

Depends on the type and extend of services required and subject to change. Estimation cost for cradle-to-gate study (nursery) is RM15 000.

CLIENTS

Oil palm industry, scientific community, academics, government agencies, *etc.*

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