

PRESENTATION TITLE: AGRICULTURAL WATER PRODUCTIVITY  
RESEARCH FOCUS: INCREASING AGRICULTURAL WATER PRODUCTIVITY  
STUDENT NAME: MWANJWANGO, GWAMAKA ALLY  
SCHOOL: SOKOINE UNIVERSITY OF AGRICULTURE (SUA)  
DEPARTMENT: DEPARTMENT OF ENGINEERING SCIENCE  
AND TECHNOLOGY (DEST)  
STUDENT LEVEL: UNDERGRADUATE (2<sup>ND</sup> YEAR)  
PRESENTATION TYPE: ORAL PRESENTATION

**Abstract:**

Increasing water productivity is an important element in improved water management for sustainable agriculture, food security and healthy ecosystem functioning. Water productivity is the amount of agricultural output per unit of water depleted, and can be assessed for crops, trees, livestock and fish.

This paper reviews challenges and opportunities for improving water productivity in socially equitable and sustainable ways by thinking beyond technologies and create awareness in the society. Both in irrigated and rain-fed cropping systems, water productivity can be improved by choosing well-adapted crop types, reducing unproductive water losses and maintaining healthy, vigorously growing crops through optimized water, nutrient and agronomic management. Livestock water productivity can be increased through improved feed management and animal husbandry, reduced animal mortality, appropriate livestock watering and sustainable grazing management. In agroforestry systems, the key to success is choosing the right combination of trees and crops to exploit spatial and temporal complementarities in resource use. In aquaculture systems, most water is depleted indirectly for feed production and evaporation from water bodies, and through polluted water discharge, and efforts to improve water productivity should be directed at minimizing those losses. Identifying the most promising options is complex and has to take into account environmental, financial, social and health-related considerations. In general, improving agricultural water productivity, thus freeing up water for ecosystem functions, can be achieved by creating synergies across scales and between various agricultural sectors and the environment, and by enabling multiple uses of water and equitable access to water resources for different groups in society.