Human Urine as Soil Enhancer to Sustainable Vegetable Gardens of an IDP Community in Marawi City

Meiyoshi A Masgon*
Gina S Itchon
Jeramell Y Gustilo
William V Repulo

Xavier University
ATENEO DE CAGAYAN

Introduction

In May 23, 2017, the Philippine government launched a military and law enforcement action in the Islamic City of Marawi, in Mindanao, Philippines. This is in response to the threat of a siege launched also by the suspected Islamic State of Iraq and Syria (ISIS) terrorists, which affected not only Marawi City but also the surrounding villages and displaced more than 360,000 individuals. One of the major challenges of the combat operation is the need to increase food and nutrient sources to feed the increasing number of Internally Displaced Persons (IDPs) in the entire region affected by the military action. The nutrition situation of young children of poorest families is affected by the loss of household income and restricted access to livestock and market.

The limited food supply prompted Xavier University to encourage IDPs to start planting vegetables to supplement food supplies in order to improve the nutritional needs of children in evacuation centers. Having very limited sources of synthetic fertilizers for gardening, the IDPs were introduced to the use of urine as liquid organic soil conditioner to enhance plant growth.

Methodology

This case study builds on an action research process of IDP residents in Bito Buadi Itowa of Marawi City, who are in collaborative experimentation on the use of human urine as soil enhancer. This case study aims to explore Meranao IDPs' cultural acceptability and evaluation of the practice as potential solution to inaccessibility of farm, livestock and market due to the violence and disruption of lives.

Orientation of Maranao IDPs on Gardening and Seed Distribution

Findings

Urine fertilization is valued as low-cost practice contributing to significant increase in vegetable yield with important contributions to nutrition and food security especially to those who have few options in soil utilization and management. Difficulties identified by the IDPs relate mainly to limitations in collection and storage capacity rather than to the practice of actual urine reuse.

Urinal and Urine Catchment

Application of Urine as fertilizer

Brassica spp and *Abelmoschus esculentus* initial harvest from communal gardens

Conclusion and Recommendations

Collective action where group of IDPs together develop new processes and adapt practices, serves as an important ground for social change compromising norms and taboos, which can otherwise influence the acceptance and circulation of alternative soil management practices. The case study illustrates that interdisciplinary studies can guide pathways towards sustainability.

The use of urine as soil enhancer should be acknowledged as a valuable strategy for supporting sustainable agricultural gardens. Furthermore, the importance of societal behaviors and cultural acceptability should be recognized but not treated as absolute barriers to the diffusion of practice.