A Sustainable Natural Resource (Moringa oleifera) in Tropical and Sub-Tropical Areas: An Intensive Literature Review

Md Kamal Hossain¹, Barbara Sturm¹, Alexander Quadt², Oliver Hensel¹

¹University of Kassel, Agricultural and Biosystems Engineering, Germany
²Fulda University of Applied Sciences, Nutrition, Food and Consumer Sciences, Germany

Abstract

Moringa oleifera is a plant that native to the tropical and sub-tropical regional areas including Bangladesh, Nepal, India, Pakistan and Afghanistan. It is widely contributing in the sustainable food, agriculture and medicine as well as for the development of sustainable aquaculture. Especially Moringa oleifera is a promising natural food source in the tropics because the tree is in full of leaves at end of the dry season when other foods are typically scarce. Furthermore, the Moringa oleifera trees have been advocated by the Educational Concerns for Hunger Organisation as a “natural nutrition for the tropics”, especially among infants and nursing mothers. This literature review research has been conducted with more than 30 internationally published research articles. It has been already proven that the Moringa oleifera tree is one of the most underutilised tropical crops because of lack of awareness, although it has multidimensional applications and functionalities including antioxidant, anti-diabetics and antibacterial activities. Apart from that, the Moringa oleifera leaves extract shows the better results in a comparison study of the antimicrobial activities of sea fish preservation compared to the brine solution. On the other hand, the entire Moringa oleifera trees (e.g. leaf, shoot, flower, pod, seed and root) are using in numerous applications including traditional diets. Also, the dried Moringa oleifera leaves can be preserved for a longer period without any preservative and adverse nutritional losses. Hence, drying can be done using the economical household appliance as well as commercial drying techniques. Above scientific evidence gives an indication that the Moringa oleifera grown for economic purposes as well as on a commercial scale, also the creation of employment, reduction of poverty and the rural development. This review research work would deliver the key indications and background for the future research.

Keywords: Economic and sustainable development, Moringa oleifera, natural resource

Contact Address: Md Kamal Hossain, University of Kassel, Agricultural and Biosystems Engineering, Nordbahnhof Str. 1A, 37213 Witzenhausen, Germany, e-mail: kamal.forty8@gmail.com