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“Management of land use systems for enhanced food security:
conflicts, controversies and resolutions”

Post-Harvest Challenges and Economic Consequences – Focus on Rwanda

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Abstract

Post Harvest Losses (PHL) are estimated between 15–22%. Agricultural activities contribute to 34% of share of the GDP, the GNI per capita using PPP is \$1450 according to World Bank data of 2013. PHLs are due to poor post-harvest processing of agricultural products, when valued in monetary terms reflect a tremendous loss in the economy. Such a situation does not only reduce the national income but also it generates a problem of malnutrition in population, 43% of children are subjected to malnutrition.

Both government and private institutions need to invest much effort in research and extension toward improving and modernizing post-harvest facilities to attain more efficient market infrastructure and distribution channels.

in this research we evaluate PHLs of maize, beans, and rice as the pillar of Crop Intensification Program (CIP) initiated by Ministry of Agriculture (MINAGRI). We evaluate the economic impact caused by PHL by quantifying price discounts which small farmers face when selling damaged cereals and the target the establishment of a postharvest model that can tackle postharvest losses.

we use quantitative methods and qualitative methods, interview, and algorithm that operates on a set of postharvest loss profiles and seasonal data in order to evaluate PHL. The double-hurdle model and standard regression models are also used to identify the level of impact of grain damages to evaluate the economic loss caused by these damages.

PHL reduction and management enhances food security and increases the value of agricultural production on the market thus enhance welfare and contribute to Poverty eradication. PHLs reduction contributes to the land use by reducing land and natural resources invested in food production as more food can reach the final consumer.

Keywords: Double hurdle model, economic appraisal, food security, post-harvest losses, regression model, Rwanda, storage technology