A study was carried out using a simple statistical analysis to evaluate the kinds and role of livestock in Mwea agro ecosystem, central Kenya. Study area covered two villages (Ciaigini and Mbui-Njeru) in the irrigated rice growing area and another two (Kagio and Murinduko) outside the irrigated area but within the same agro ecological zone. Indigenous cattle, goat, sheep and chicken were the main domestic animal species kept. Land acreage per household differed (P<0.05) between the villages; Ciaigini had the highest (5.6), Murinduko the least (0.1) with Kagio and Mbui-Njeru being intermediate. Murinduko had the lowest (P<0.05) tropical livestock units compared to the other villages. More households in the irrigated villages kept cattle compared to non-irrigated villages (48 vs. 38%). In contrast, households in non-irrigated villages preferred small ruminants (60 vs. 15%) and indigenous chicken (80 vs. 45%) compared to irrigated villages. Livestock production in Mwea agroecosystem was multi-faceted with the objective of provision of a variety of services and products for subsistence. Fifty-three and 59% of livestock owners in irrigated and non-irrigated villages respectively reported feed scarcity and diseases as the most important constraints to livestock production. In conclusion, Mwea agroecosystem livestock keepers preferred indigenous breed for multiple utility and hardness.