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## Determinants of Crop-Livestock Integration by Small Farmers' in Benin

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### Abstract

Despite the numerous work conducted on integrated crop-livestock systems in sub-Saharan Africa, very little is known about factors determining farmers' trend to integrate. Our study aimed at a socioeconomic characterisation of endogenous crop-livestock integration in Benin and identification of determinants of farmers' decision to use these practices. Two hundred and forty farmers were surveyed in three agro-ecological regions of Benin. A semi structured questionnaire was used to collect information on farmer's characteristics, production factors and agriculture and breeding by-products valorisation practices. On the basis of main links between both productions, three integration levels (no integration, NI: 36%; partial integration, PI: 55%; total integration, TI: 9%) were identified and characterised according to socioeconomic characteristics of farmers. Then the multinomial logistic regression technique was used to predict the integration level of a given farmer in function of its socioeconomic characteristics. The three integration levels differ significantly ( $p < 0.001$ ) according to variables such as membership in farmers' association, educational level, weight of agricultural experience, farm equipment and size of animal herds. The decision by a farmer of the no integration type to choose the total integration type significantly depends ( $p < 0.001$ ) on the size of his cattle herd, his membership in farmers' association and his equipment value. For a farmer of the partial integration type, it depends on the size of his cattle herd and the weight of his agricultural experience. Cattle breeding remain the motor of real crop-livestock integration. This study gives precious information on socio-economics characteristics of farms that need to be improved for better adoption of integrated crop-livestock systems in small scale farms in sub-Saharan Africa. One perspective issue in the Beninese case is to analyse resource flows in the endogenous crop-livestock integration systems.

**Keywords:** Food security, natural resources, pastoralism