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## Methodological Approach to Analyse the Efficiency of Animal Recording Practices

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### Abstract

Animal recording is an interactive process that involves collection of data on identified animals in the production units and processing these data into information that can be used for decision making. Efficiency of recording is essential to ensure utility of outcomes necessary for sustainable participation. Most evaluation approaches define efficiency in economic terms with little regard to institutional issues affecting utility of the outputs. In animal recording systems where there are no direct economic benefits, efficiency evaluation based on utility derived from the records would be more laudable. In that case, a system is considered efficient when outcome-utility dependent participation is sustained. Approaches for evaluating efficiency based on utility of the outputs are however unavailable. The study presents an approach for evaluating efficiency of the animal recording based on output utility using institutional analysis and development framework. The approach considers animal recording as an action arena with various actors in three action situations namely animal identification and registration, pedigree and performance recording, and animal evaluation and information utilisation. The variables include the positions occupied by actors, their actions, the outcomes associated with the actions, level of control over choice, available information and the cost and benefits of engagement. As an interactive process, animal recording has rules that order relationship between actors. It also exists within a bio-physical system and community whose attributes jointly with the rules influence the actions and outcomes of recording. These are evaluated by looking at rule formation structures, enforcement and compliance, and the level of interaction between the recording system and other biophysical characteristics and the community for their effects on outcomes, their utility and sustainability of recording. Participatory tools; Stakeholder matrix and Venn diagrams are used to identify the variables, quantify their interactions and link them to outputs. The approach evaluates efficiency by incorporating institutional issues influencing the operations of the system and its outcomes. It may therefore be used to evaluate efficiency of systems whose outputs do not have direct market value and in situation where quantitative market information is scarce.

**Keywords:** An approach, animal recording, efficiency evaluation, institutional analysis, participatory tools