



## Impact assessment for integrated crop-livestock-forest technology transfer

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**Introduction** An environmental impact assessment method has been proposed to test and promote integrated crop-livestock-forest (ICLF) strategies adopted in *technology reference units* (TRU), established under the scope of a ‘National Technology Transfer Network’. The approach was tried out in a TRU set up in Paragominas in collaboration with Embrapa Eastern Amazon, as a demonstration of the procedure to be adopted in all TRU associated with the Network in Brazil.

**Material and Methods** The illustrative case study was carried out at a large scale ranch, whose ICLF system was implemented as a response to productive decline (caused by *Urochloa brizantha* cv Marandu death syndrome). The field study surveyed observable changes attributed to ICLF (typically, 20m-apart eucalyptus lines, rows sown to soybean in biannual rotation with pasture), as compared with the former pasture condition. The observable changes were registered in the set of socio-environmental indicators, organized in the multi-criteria impact assessment method (Ambitec-Agro, Rodrigues et al., 2010).

**Results** Due to its usual intensification effect, as compared with extensive pasture, ICLF caused increases in input use, a negative index that represent a trade-off for environmental performance (Fig. 1). Even then, due to important improvements in environmental quality (all compartments), the integrated index for this dimension resulted positive.

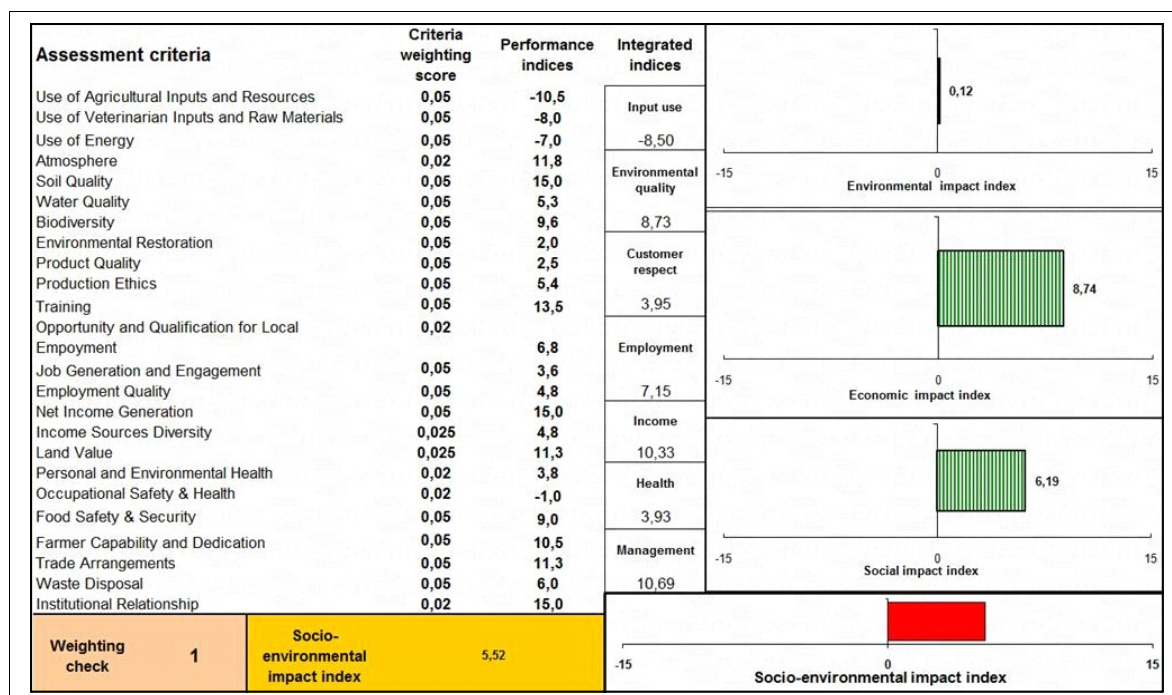


Fig. 1. Multi-criteria performance indices observed in an ICLF system in Paragominas (PA, Brazil).

Positive results were observed also for the economic and the social dimensions of sustainability, attesting to the valuable contributions of ICLF for the general performance of the farm.

**Conclusion** The replication of this environmental assessment procedure is one of the technology transfer mechanisms adopted by Embrapa and its partners in the National ICLF Network.

**Reference cited** Rodrigues et al. (2010) JOTMI 5(4):38-56.