An assessment tool and integrated index for sustainable oil palm production

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Introduction

Many prominent sectors of the international agricultural commodities market have been calling upon their stakeholders to define and implement social responsibility and sustainability benchmarks, aiming at product quality and production practices certification. One of these initiatives, the Roundtable for Sustainable Palm Oil (RSPO), is compelling all producing parties (plantations as well as smallholders) to comply with proposed Principles, Criteria and Indicators (PC&I), in an international social responsibility assurance movement. In addition to the PC&I, an integrated index is being sought out (in a CIRAD/Embrapa coordinated effort) as a complementary method for environmental management and sustainability conformity check. The aim is to assure both procedural social responsibility (PC&I compliance) and actual environmental and biodiversity conservation in the field.

Methods

The APOIA-OilPalm system proposed for this objective integrates 64 indicators of oil palm environmental management, according to five sustainability dimensions: i) Landscape Ecology, ii) Environmental Quality (Atmosphere, Water and Soil), iii) Socio-cultural Values, iv) Economic Values, and v) Management and Administration (Figure 1). Assessments are carried out by evaluation of effects of oil palm production on the set of indicators, each considered in its appropriate quantitative measurement unit. Data collection is carried out in field surveys, field and laboratory analysis, and interviews applied with the producers and managers in the rural establishment, allowing active participation and favoring adequate documentation for communication of results. Scaling checklists are formulated for each indicator and include the rationale for calculation of utility values (scale normalized from 0 to 1, with baseline defined as 0.7), which are integrated to compose the Sustainability Assessment of the rural establishment. A typical scaling checklist may be seen in Figure 2.

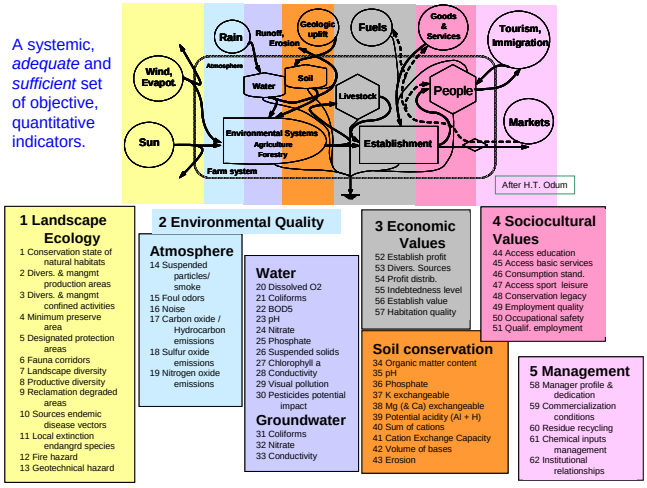

Figure 1. Systemic encompassment and set of indicators of the APOIA-OilPalm sustainability assessment system.

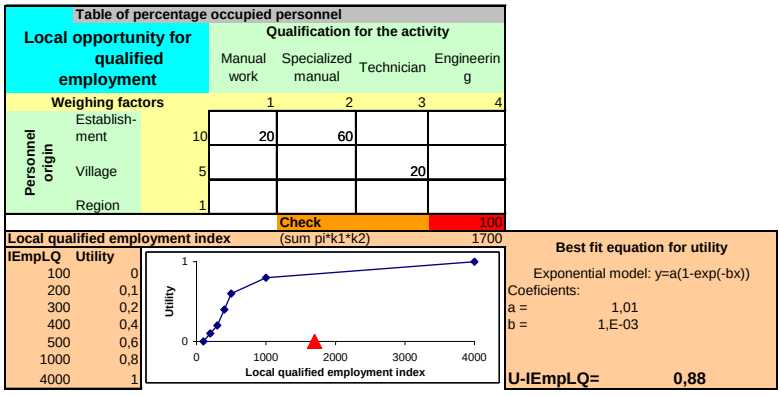

Figure 2. Typical scaling checklist of the APOIA-OilPalm system.

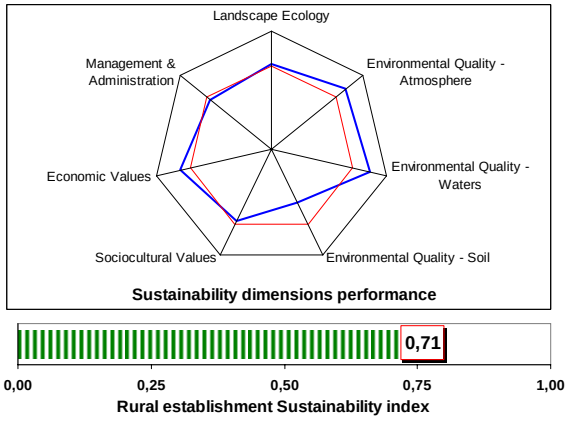

Figure 3. Sustainability assessment results of an oil palm farm obtained with the APOIA-OilPalm system.

Results and discussion

The sustainability assessment procedure proposed is a contribution toward the farms' environmental management practices, in a quantitative, objective, documented, systemic and reproducible fashion. The field test carried out showed the practicality of the assessment, and indicated favorable contributions, as well as recommended improvements for oil palm sustainable production.

The experience attained with this sustainability index, proposed in a process of international negotiation, dedicated to such an important productive sector such as the palm oil, can be instrumental for other initiatives, such as the roundtables on responsible soy, sustainable biofuels, and sustainable forests.

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