

The **SEnSOR** project: Addressing the knowledge gaps in oil palm sustainability

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Oil palm (*Elaeis guineensis*) is a globally important crop. However, there are environmental and social issues surrounding its production which need to be addressed to maximise sustainability, ensuring long term benefits for *People, Planet* and *Profit*. The knowledge base required for RSPO to further develop and implement robust guidelines for sustainability is incomplete and there is a need to examine existing Principles and Criteria to determine whether they are currently fit for purpose to deliver sustainability, and to examine how their effectiveness could be maximised.

A scoping study was undertaken to synthesise current knowledge and to identify the knowledge gaps for RSPO principles 4-7- 'agricultural best practices', 'social and environmental responsibility', and 'new plantings'. Four months were dedicated to information gathering. This involved a literature search, an on-line survey, and face to face interviews with growers, consultants, NGOs, leading academics and consumer members about ongoing work and research needs.

The study found that research is urgently needed in five Topic Areas: **1) Soil and water (Principles 4,5 & 7)** - understanding and reducing erosion, regulating water availability and quality, and optimising fertiliser inputs to minimise environmental impacts without reducing yields, **2) GHGs and air quality (Principles 4,5 & 7)** - quantifying carbon budgets, nitrogen emissions and management, and air quality from ozone and particle emissions, **3) Biodiversity (Principles 4,5 & 7)** - reducing loss of species, and maximising the potential for biodiversity and ecosystem services in plantation-dominated landscapes, **4) Participatory processes and rights (Principles 6 & 7)** -investigating 'Free, prior and informed consent' (FPIC) for achieving satisfactory outcomes for stakeholders, improving interactions with unions and collective bargaining, improving rights of vulnerable groups **5) Livelihoods (Principles 4, 6 & 7)** - maximising livelihood outcomes for smallholders through yield improvement practices and arrangements for access to inputs and markets, improving living standards, health and safety for workers. Three Key Themes: 1) HCV implementation, 2) fertiliser and chemical inputs, and 3) integrated cost-benefit analyses and compliance, emerged as having important knowledge gaps across topic areas.

Based on the findings of this scoping study we have developed a collaborative research programme for an inter-disciplinary project (**SEnSOR: Socially and Environmentally Sustainable Oil palm Research**) that will address these themes and contribute directly to providing evidence-based assessments to test the effectiveness and further develop the RSPO Principles and Criteria.