



responsible
cultivation areas
for biofuels

sustainability in practice

Executive Summary

Results from field testing of
the RCA Methodology in São
Paulo and Pará states, Brazil

May 11, 2010

**CONSERVATION
INTERNATIONAL**



RCA Executive Summary
Report to the David and Lucile Packard Foundation
From Conservation International
Submitted May 11, 2010

Responsible Cultivation Areas
Pilot Tests in Brazil
Executive Summary and Introduction

Executive Summary

In May 2009, Conservation International (CI) received a grant from the David and Lucile Packard Foundation for the “Responsible Cultivation Areas for Biofuels: Sustainability in Practice” project. This project formed part of the larger Responsible Cultivation Areas (RCA) project, a collaboration between Ecofys, CI and WWF, with additional support from Nestle, Shell and BP.

CI contributed to the development of the RCA methodology, and undertook two pilot studies to apply, test and refine the methodology based on field experiences. One pilot study focused on the potential cultivation of oil palm on “degraded” lands in Pará state, Brazil. The other assessed options for integrating sugarcane into cattle pasture-dominated landscapes in São Paulo state, Brazil. The results of both pilots have been compiled, and are presented in separate documents accompanying this executive summary.

Responsible Cultivation Areas

The goal of the RCA concept is to put forward a practical methodology to identify concrete areas and/or production models that can be used for environmentally and socially responsible energy crop production without causing unwanted displacement effects.

The RCA concept recognizes that bioenergy is an important option to increase the use of renewables in the transport sector, reduce climate change and decrease dependency on limited resources of fossil fuels. However, feedstock demand spurred by biofuel blending and use targets can cause direct and indirect land use changes. Direct land use changes are caused when new areas (e.g. forest areas or degraded land) are taken into production to directly cover the additional feedstock demand. Indirect land use change (iLUC) is caused when existing plantations are used to cover the feedstock demand of additional biofuel production, indirectly causing an expansion of the land use for biomass production to new areas if the previous users of the feedstock (e.g. food markets) do not reduce their feedstock demand.

Both direct and indirect land use change can produce positive and negative results for economies, society and the environment. However, assessing and managing both direct and indirect land use effects is necessary in order to assure truly sustainable energy crop production. To date, options for mitigating unwanted iLUC have been nearly absent. The RCA approach seeks to address this gap.

The RCA concept seeks to identify areas or practices that 1) can be used for environmentally and socially responsible energy crop cultivation and 2) would not cause unwanted indirect effects. Unlike other methodologies, the focus is on the level of the individual production unit, taking into account the needs of market players. (The RCA concept, and parts of the methodology, are also useful for other stakeholders such as governments implementing land use planning processes.) RCA looks at three potential ways to mitigate unwanted effects from direct and indirect land use change:

- Locate new production on “degraded” or “underutilized” lands;
- Integrate energy crops into existing agricultural landscapes without displacing existing production;
- Increase yields of existing production of energy crops without increasing negative impacts.

Other strategies, such as using waste products as feedstocks or switching to feedstocks with higher energy yields, are also possible but are not addressed by RCA.

The RCA methodology follows four principles and adds one additional dimension for practical reasons – agricultural suitability. The agricultural suitability of potential RCAs is taken into consideration throughout the identification process to ensure its suitability for energy crop cultivation. This leads to the following five aspects that are evaluated in the identification of RCAs:

- High Conservation Values (P1)
- Carbon stocks (P2)
- Formal and customary land rights (P3)
- Risk of unwanted displacement effects (P4)
- Agricultural suitability

The methodology uses a four-step process to identify RCAs. The process starts on a large scale with coarse-scale data and readily available information to quickly identify the most promising areas (Site Pre-Selection, or Phase 1). Next, a more detailed assessment is performed on these promising areas to further refine the Pre-Selection of promising areas (Desk-Based Assessment, or Phase 2). In Phase 3, the field work has the purpose to verify the results of the first two steps and to fill all remaining knowledge gaps. In Phase 4, all of the collected information is evaluated to determine whether all or part of the area qualifies as an RCA.

Though the iLCU discussion has been most prevalent in the bioenergy field and the initial focus of the RCA project was on bioenergy, it should be noted that the methodology is equally relevant for any commercial agriculture or plantation forestry. All large-scale land uses face similar challenges related to site identification and mitigation of indirect impacts, and the RCA methodology can easily be applied to any commodity production.

A copy of the final RCA methodology is available here:

<http://www.ecofys.com/com/publications/documents/EcofysRCAMethodologyv1.0.pdf>

Pilot test results

The RCA methodology was tested in the state of Pará, in the Amazon region of Brazil. This is an area where land is being rapidly converted for oil palm. At the same time, substantial quantities of underutilized pastureland are present. The pilot test followed the RCA methodology outlined above, starting initially with an examination of the full state for Phase 1, and narrowing the focus down to one specific region for Phase 2. Ultimately two sites were selected for field visits. This field work included: observations of biodiversity, ecosystem service value, vegetation composition and agronomic suitability; community interviews to determine the history and community use of the sites in question; and discussions with oil palm companies on the logistical requirements of potential plantation locations, as well as the appropriateness of the methodology. Finally, the results were analyzed.

This pilot test showed the RCA methodology to be successful in identifying sites with minimal environmental or social value and little risk of displacement, which could be priority sites for oil palm cultivation. Both sites identified for field visits proved to comply with the RCA criteria once adjustments for on-the-ground observations (such as boundary modifications and the removal of habitat fragments) were made. The oil palm company advising this work confirmed the methodology was feasible, and relatively similar to the process already used to identify sites for purchase or lease. In sum, the methodology worked as hoped for, and the sites identified were considered RCAs.

In São Paulo, the pilot test focused on the integration of sugarcane into landscapes traditionally dominated by cattle pasture. The initial phase of the RCA methodology, as well as expert interviews, showed that there was no lack of underutilized pasture in the state that was also suitable for sugarcane production. There were also no technical barriers to integration; it had been done, on a small scale, for decades. Instead, the barriers were social and economic in nature. Given these findings, the remainder of the work, including a week worth of field visits, was reoriented to identify the barriers to integrating sugarcane cultivation with cattle production without producing displacement. Though this work did not follow the full RCA methodology, we feel the results are important and bear including in the summary of the pilot test.

(WWF carried out a similar pilot test looking at oil palm production on RCAs in Indonesia. Their results were similar to those included here.)

Our interviews with sugarcane mill managers, sugarcane farmers, cattle ranchers, other farmers, government extension agents and academics all suggested that the barriers to integrating sugarcane and cattle production in the region were many and diverse. Some factors were external, such as a reduction in cattle production due to competition with lower-cost cattle production in other regions. Some were cultural; for example farmers and ranchers are two distinct groups, and neither may want to adopt the other activity. Economics, from the lack of premiums for more sustainably produced ethanol to the cost of improving pasture, played a large role. Systematic changes, such as the increasing prevalence of mills owned by multinational companies, also affect the feasibility of creative solutions.

For each barrier identified, we attempted to provide suggestions for potential solutions. These are outlined in the full report on São Paulo. The key message from this field work was that integration of energy crops with non-energy crops is more than likely possible, but the barriers to this integration are varied and location-specific, and the means to overcome them likely require an integrated approach.

Applications

The final RCA methodology, including refinements made on the basis of the pilot tests, is now available on the Ecofys website (see link above). There are numerous opportunities to incorporate the concepts included in RCA into policy and voluntary standards. This is especially true for practice-based ILUC mitigation, which is widely discussed but has not been incorporated into policy frameworks or voluntary standards to date. There is also substantial interest on the part of the private sector for incorporating the RCA principles and methodology into site selection and potentially supply chain decisions. As noted above, the early phases of the methodology may also be incorporated into land use planning processes.