Land suitability for *Jatropha* biofuel production

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*Jatropha curcas* L. is a small tree of the semi-arid tropics with a high potential for biodiesel production on marginal lands. The tripled market price for rapeseed oil and the increasing criticism on palm oil from recently deforested land have raised expectations for Jatropha oil production sky-high.

The question is if Jatropha can meet these expectations. Nobody seems to have tackled the question on how much land is available for Jatropha production worldwide. And is this land suitable for reasonable production? Is it in competition with other land uses? How favourable is its greenhouse gas balance compared to other oil crops?

We try to answer these questions through a step-wise global land suitability analysis. In a first step we exclude all unavailable land using climatological (e.g. too cold), legal (e.g. protected area) or land use (e.g. urban land) criteria. In a second step we build a suitability model locating high, medium and low potential sites for Jatropha growing. In a third and last step we evaluate some feasibility criteria for these potential sites, looking at the opportunity cost of substituting other crops for Jatropha and at the carbon depth due to clearing previous vegetation.

The results may offer a powerful prefeasibility tool for developing countries and project investors.