

## **Life Cycle Assessment of *Jatropha* as feedstock for biodiesel production**

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Biofuels have been regarded as a remedy to our reliance on fossil sources and are currently in the focal point of political agendas. Several studies have been conducted concerning biofuels potential and associated risks, as well as the link between agricultural production and food security. The life cycle approach has been determinant to the policies towards biofuels, as it made apparent the land use change issue, which raised a whole discussion upon food security, water conservation and biodiversity loss. Life Cycle Assessment (LCA), as an analytical tool, quantifies all relevant emissions and resources consumed and the related environmental and health impacts and resource depletion issues that are associated with any goods or services (“products”) use.

Within JatroMed ([www.jatromed.aua.gr](http://www.jatromed.aua.gr)), an LCA of *Jatropha* as a feedstock for biodiesel production is conducted and Morocco is used as a case study. Four methodological steps comprise the LCA framework and will be carried out consecutively:

- Define scope of the study and system boundaries
- Identify and quantify energy, water and material use
- Evaluate potential human health and ecological impacts
- Assess the completeness, sensitivity and consistency of data and methodological choices.

The study is anticipated to pinpoint and quantify the major environmental burdens along *Jatropha*-biodiesel life cycle and make system’s optimization suggestions. At the same time, a “methodological prototype” will be developed which may be replicated by the other partner countries, namely Egypt and Algeria. Finally sustainability criteria will be formulated.