

*Jatropha curcas* (JC) is a non-edible, perennial, multipurpose plant with many positive attributes and considerable potentials. The seeds have high oil content (e.g. for biodiesel or as fuel for kitchen stoves) and it can be used to reclaim land as a hedge or commercial crop. JC is said to be a fast growing and drought tolerant plant, even growing on soils where nothing else survives, and therefore not compromising food security. Thus cultivation of JC could provide employment, improve the environment and enhance the quality of rural life. Moreover, JC could provide resource-poor countries with a means to invest in their own rural areas instead of spending their capital to purchase fossil fuel.

The research revealed the current status of JC systems and its potential for rural development in 6 regions of Burkina Faso. Randomly selected JC systems in different agro-ecological-zones of Burkina Faso were investigated by using semi-structured interviews, focus group discussions and direct observation in the field. A total of 180 farmers participated, named preferable characteristics for their JC, explained *Jatropha*'s advantage and contribution to their livelihood and environment, and stated their experiences and main obstacles in JC production. The research identified two central JC systems in Burkina Faso, plantation and hedge systems and highlights differences among and between them regarding: (a)Basic information, (b)Management, (c)Utilization, (d)Land use (change) and (e)Soil characteristics. Moreover it determined risk and sustainability points in JC production, in order to elaborate site-specific recommendations. There is only a limited understanding on the impact of different systems and management factors regarding yield structure of JC hence measurements were done in the two systems to reveal differences and correlations among the systems and yield structure factors.

The multipurpose use of JC, benefiting economic, environmental and social development, should be further improved by considering traits of local importance. To use the full potential of JC and to support further development and systematic selection, breeding and domestication are required. Altogether, the research assisted to systematically investigate JC systems in Burkina, in order to support sustainable production. Thus it can contribute to rural development and livelihood improvement of JC producers in Burkina Faso.