

# Energy Leverage in Agriculture

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While human beings lived as hunters and gatherers, 500 calories of human effort yielded 2000 calories of food produce giving a ratio of 1:4 (Beyond Civilization by Daniel Quinn). In our endeavor to leave nomadic life we moved from tribal to agriculture age although it resulted into lower return on food energy. During the transition supplementary requirements for survival, like shelter, clothing, domestication of animals etc., laid the foundation for occupations other than growing food. This resulted in drop of human effort to food yield, but we still managed not only to survive but also to grow. This growth was due to the external source of surplus energy which we found in form of Fossil Fuels.

Before the industrial era, farming was a net producer of energy. Today the food system has turned into a net user of energy, it takes 7-10 calorie of fossil energy to produce 1 calorie of food produce (Searching for a Miracle, Richard Heinberg). Fossil energy is a onetime gift, in a span of 3.5 billion years of earth's formation, which will start running dry during lifetime of most of us alive today. The effects will be felt on food production and supply, one of the non negotiable for our existence. If Maharashtra exports 90% of its tomato produce to places all over the country (from Gujarat to Delhi) then it is worth thinking on how many miles does our basket of food items travel before landing on our table??

It's time we proactively prepare for Peak Oil and strive for sustainability by moving from Globalization to Localization forms of living. Many such small movements have started where people with a purpose have started developing spaces which have low environment footprint and are more local. (Van vadi, Acres Wild, SuryaGram)

With time closing on us, lets hope such movements keep getting intensive and extensive.

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