

Vinyl 2010 Essay Competition Submission Template

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Summary:

The food and energy crisis is but a manifestation that something in the system has gone wrong. At the very core of this is the importance to understand the concept of net energy, that energy expended in extracting further energy has to be many times more otherwise the system sustained by that energy will in due time collapse.

If one applies this to agriculture the energy input of oil has to be changed into something else because oil's net energy steadily decreases.

Essay:

In the world of today everything revolves around one term: joule. The food crisis is but one aspect of this. The energy crisis is yet another. At its core these two crises are essentially the same. Biofuels truly show the link between these two crises as it show that food and energy are essentially the same. Although the link has always been there, we humans tend to categorize food, for living beings, and energy is used for non-living things. This categorization helps us to avoid the misuse of the resources we have at hand.

One is often lead to believe that biofuels such as ethanol is more environmentally friendly because it does not in itself contribute to the global warming. But one have to keep in mind that ethanol sometimes is made out of corn. This really leads to the absurd metaphor of everyone having an elephant in the garage that has to be fed. If an elephant really lived in the garage it would eat about the amount of food a day it takes for a human to eat in one entire year and therefore also increasing that family's food cost by 300 times. The fact that a lot of more food is needed to sustain these elephants would also contribute to the need of converting larger areas than available on earth to farming. Humans equally eat oil every day due to use of fossil energy used to maintain the large industrial farms that currently provide the western world with food.

What these two examples effectively illustrate is first, the value of the concept of net energy. This concept describes the energy used to gain a certain amount of energy, whereas net energy is the energy left. In the case of turning food crop into ethanol the net energy is very little and therefore huge amounts of crops is needed to sustain the world on ethanol.

Second, a lot of fossil energy is also used in today's agriculture, which means there is a large energy input into the farms providing us with food. This can also be seen in the perspective net energy, but more importantly the times it is cheap to extract oil is over. Compared to the first time oil was found it was relatively easy to extract because the pressure in the oil well was high, but as extraction proceeds the pressure sinks and it becomes increasingly difficult to extract. Therefore external energy has to be used to extract the oil, then net energy in turn also decreases. Industrial farming will as a consequence become increasingly more expensive and less energy efficient. This will further increase the food prices that have been increasing the last seven years and further exacerbate the starving of the 3 billion people that live on 2.5 dollar a day.

To avert further worsening of the food crisis farming has to be decoupled from the dependence of oil. Instead farming has to be coupled with an energy source that is replenished. A coupling that would seem natural is the coupling of animal or human

power as an energy source because this energy source is replenished by farming itself which means a cycle is formed. The benefit of forming a cycle that replenish itself is that it is by far easier to maintain a healthy net energy. If, on the other hand, there is any interruption in the cycle it will manifest itself faster than in an ongoing input system such as the oil dependence the society has today.

Other benefits of having humans or animals power farming is, first, it has to be done in lesser units than the large industrial farming. At first glance this might be seen as something negative because human power is seen as expensive. Although this would be immensely positive for the people in the Global South if they at the same time could get access to their own soil to grow on. If they had access to land and therefore also got access to food the intermediary, money, would no longer be a problem to the same extent as today.

Second, the full cost of industrial farming is not completely internalized, so although it might seem more expensive at first to have smallholdings produce the food with human and animal power, it is easier for these smallholdings to manage their whole crop, giving them more control over their harvest. As recent studies suggest this will have benefits as increasing the soil productivity by being able to use more organic ways of farming. This in turn will also have further benefits actually increasing income of the farmer if the crop is to be sold since buying fertilizer and pesticide is very capital intensive.

Increasing society's well-being in a world faced with food crisis and energy crisis it is important to understand the core of the problem. This is essentially that the net energy gain has decreased dramatically during the last century due to the use of a single non-renewable resource. This manifest itself in the food and energy crisis. To mitigate this problem it is important to decentralize energy sources and try to incorporate energy into cycles. By decentralizing energy sources several systems will not fail if energy source that one is dependent on fails and by incorporating energy in predictable cycles one can make sure that energy output always exceeds energy input.

If this is applied to agriculture there would be a potential for more food and less starvation in the world as farming has to be split up and more equal conditions arise.

Bibliography

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