

The Oil Drum: Campfire

Discussions about Energy and Our Future

Sustainability: Planning from a Base of Zero

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If we want to plan for truly long term sustainability, it seems to me that we need to plan from a base of zero in terms of fossil fuel usage, rather than from present day usage. This is very much a change from most thinking--how we can make tweaks to our current system to use less oil or gas. Over the long term, we know our current system won't work, so at some point we need to be thinking where we want to head, while we still have resources in hand that we can use to make changes.

We are so unaccustomed to thinking local, that it is hard to even contemplate the idea. What can be made with strictly local inputs, besides simple things like baskets and bricks? It is hard to even contemplate the idea, if one has to put all of the necessary steps in place, like transporting the raw materials to an area where they can be worked on, then working on the raw materials, and distributing the finished products to new locations.

When planning, we need to consider the actual state of our resources. At this point, our mines are generally fairly depleted, making it in general difficult to extract ores, especially if all one has to work with is local materials. The one thing we have to offset this is a huge amount of infrastructure that may be of little use if we have to go to almost strictly local economies. If any of the infrastructure can be recycled to make things we will need (like horse shoes and hand tools and nails), this may be helpful.

There might be the possibility of some fossil fuel use, if residents in a particular area can gather it (or extract it) using tools made from local materials. But the amount would likely be tiny compared to today's usage. There might even be some electricity, if residents can get all of the pieces together to create a generating unit of some type.

Some things we might want to consider:

Where People Will Live

We know where people live now, but over the long term, it seems like people will need to live where there is adequate food can be grown and there is sufficient water, so many will have to move.

If there is a great surplus of food, and there is transportation for food, it might theoretically be possible to have cities as well, but this cannot be counted on. If people live in cities, the nutrients they eat will not get back to the soil, unless some approach is set up to handle this issue as well. Because of the difficulties in trying to transport both food and nutrients, the most likely sustainable outcome is that most people will live in villages, in areas with adequate food and

Some people will do better in some parts of the world than others. I am a fair-skinned blue-eyed blonde. I would get sun-burned very quickly near the equator. People may need to consider moving back to the climate their ancestors were from.

Water Supply

Most water is pumped by mechanical means out of wells or from lakes, and treated with chemicals. Long-term, it is hard to see how this will continue, unless the pumping equipment and chemicals can all be made locally.

Somehow, each community will need to come up with its own supply of water. This may require wells that are really sustainable with local tools and equipment, or cisterns for holding rainwater. If irrigation water is used, it will need to be obtained by an approach that can be maintained with tools that are made locally. If small windmills can be made locally (perhaps from no longer needed infrastructure), they may be helpful for pumping water.

Food Supply

Somehow, we will need seeds for a wide range of foods for the various parts of the world. It would be helpful if the seeds are not too uniform, so that regardless of weather conditions, some crop is produced each year. The seeds need to be ones that farmers can collect and use the next year.

Plans need to be made for soil fertility. Part of this will involve recycling nutrients, and part will involve rotating crops, so as to keep fertility at adequate levels. Nutrients eaten by animals and humans will need to get back in to the soil. Some soils will naturally be more fertile--heavy rains seem to wash nutrients to levels deep in the soil, making the nutrients difficult to reach by other than deep-rooted trees.

Approaches will be needed for dealing with plant diseases and plant pests without chemicals as pesticides. One approach might be to plant a wider variety of seed types, so some will be spared, regardless of what diseases or pests are encountered.

Approaches will also needed to keep wild animals from eating the crops. If animals are raised for food, they will need also need protection from predators. This protection could involve fences (perhaps made from recycled materials). Shepherds with dogs might be another approach.

Methods will be needed for preserving food--probably not canning it, unless all of the necessary parts (glass jars, lids) are manufactured locally. Drying or salting food may be methods of choice.

Some method of cooking food will be needed, since nutrients in food are often more accessible if cooked. Cooking methods will vary in different parts of the world, but will often involve burning wood, charcoal, or animal dung. Deforestation may be a problem.

Tools for planting and cultivating crops will be needed. Perhaps these can be made from scrap metal from old cars or trucks.

Some areas may choose to use draft animals to help with cultivation of crops. If so, it would be helpful to start raising these animals in advance--perhaps now. People will also need to learn to

Transportation

One of the first questions is how roads will be paved. Traditional methods include stones or bricks. Or perhaps methods can be developed to re-use current asphalt and concrete.

What kinds of vehicles will travel on the roads we are able to maintain? Will it be horse drawn carts, or bicycles (assuming all of the parts can be created locally) or something else?

Will any type of rail transportation be possible, perhaps using existing rail lines, if they can be kept in adequate repair? What kind of fuel would be used?

If sailing ships and canoes are the boats of the future, perhaps we should be making some of them now, and training people to operate them.

Paper and books

We are used to books, newspapers, magazines, and paper money. Can mills be set up to produce paper locally, using local materials (so they can be repaired locally as well). How about printing presses?

Clothing and shoes

Local solutions will be needed--animal skins, wool, and cotton were traditional solutions. It will take some work to adapt them to local conditions, or perhaps new solutions can be found.

Home heating

It seems like this will be a real problem, quickly leading to a loss of forests. If peat or coal that can be gathered using low-tech methods, it seems like residents will do this.

Home lighting

Perhaps bees wax candles? Or whale oil? Or will it be possible to extract and transport enough petroleum products for lighting?

Money supply

Local currency will be much more of a challenge if paper is inadequate supply and if gold and silver are in very limited supply. Local governments will need to figure out something to use in lieu of barter--this may be a challenge. Perhaps melted down copper from wires?

Conclusion

I haven't more than scratched the surface, but one can see that we would have real challenges in a lot of areas.

This is a very different way of thinking about things. Do you think it is in any way helpful? What might we be able to do now, to enable society long-term to transition to a truly sustainable approach? How might starting now be better than waiting until there is no alternative?



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