

Commercial and social dimensions of Eco-Units

The Eco Unit concept addresses the challenge of maintaining quality of life and living standard for present and coming generations. Traditional measures like GDP and average income per person should indicate life quality is rising as the present world economy expands. However, whilst most accept economic measures as ONE valid dimension of living standard, there is growing awareness that our present life style is actually eroding quality of life. Several alternative value frameworks shed light on this development. These frameworks are made up of criteria such as social cohesiveness, control over one's destiny and sustainable development, for coming generations as well as our own. Max Neef's framework is a good example.ⁱ

These more balanced approaches to assessing progress show the downsides of maintaining our present standard of living; for every day our industrialized lifestyle continues, a more and more troublesome legacy awaits coming generations. Populations are growing whilst signs of resource depletion point to much as half of the Earth's' legacy of oil has already been usedⁱⁱ, water is becoming scarceⁱⁱⁱ, and even the quality of air in cities is threatening to reduce life expectancy.

Nature tends to ecological maturity, that is to maintain water, soil nutrients, the sun's energy etc, in one geographic area. Human activities are creating immature eco systems, where water runs off quickly, nutrients are leached from the soil and the sun's energy is not captured by living plants.

For every metal atom we remove from beneath the earth and release into the biosphere, for every fossil energy source we burn we release by products into the biosphere and atmosphere, for the vast quantities of garbage building up, deposited as landfill, the greater the burden on coming generations.

The system that produces our standard of living, characterized by a linear, industrialized approach^{iv}, needs continuous economic growth in order to continue. It demands one-time consumption of basic resources and stresses ecosystems^v. Consequently, future generations may find themselves in a densely populated world, with ecosystems in such a state that food and water are hard to produce and lacking easily available energy resources to use to address the issues.

The longer we leave it, the more dependent on just this energy intensive system we become. This system is reinforced by the choices we as individuals make about where we work - what kind of business we commute to and work in - about the kind of house we invest in and where we regularly get our food and shopping. All of these choices cement the current infrastructure and put the individual's own livelihood at risk when energy depletion means supply can no longer meet demand^{vi}. As urbanization continues, other downsides become apparent, as lifestyles give rise to more stress related illnesses and loss of feeling of closeness to nature.

In this light, conventional investments can only be seen at best as short term. For example, few would want to invest in a petroleum refinery against the background of dwindling oil supplies. Likewise, investment in Nuclear power seems dubious when it takes 20 years to reach break even, and there may only be 30 years of uranium left of the Earth's endowment.

There is therefore a need for alternative investments, which

- Increase resilience towards rising energy costs
- Stimulate the development of ecological maturity in the geographic area the investment encompasses.
- Offer a possibility for the individual to be involved in redressing the direction of development towards a more sustainable way of life.
- Reduce stress, and offer a closer to nature experience.

Operational models for Eco-units can be evaluated against these criteria. One possible model for Eco Units is cooperative ownership, based loosely on the Swedish Tenant owner cooperative housing model^{vii} (fig 2). Here an economic association is set up with the purpose of promoting the economic interests of its members by providing housing, food and business framework in a setting giving an experience of closeness to nature. The cooperative owns a plot of land which includes farmland, the farm and housing as well as areas for water recycling and energy capture.

Members join the cooperative by purchasing a share. Then, food and housing are provided in return for a monthly service charge. Extra services are available, like the use of business premises or other resources for leisure activities like boats, canoes, bicycles. Members can either work on food growing or in other areas of the cooperatives activities, for example in running a child day-care centre. The work in the cooperative would result in a reduction of the service fee. Members are expected to offer 120 hours a year^{viii} in participating in the running of the cooperative by working on the board, and/or with common activities like spring and autumn clean ups or on the farm.

The attractiveness of investing in this way is that the better the energy capture and farm work, the more food and energy produced, the more resilient the investment is against rising energy costs. The share in the cooperative should be worth more as the unit is able to reduce reliance on the electricity and water grid.

The same for food. As the farm section is developed, and less and less food needs to be bought from outside, the more valuable the return on investment becomes.

In terms of the ecological maturity of the area, the less leakage of nitrogen and phosphorus from the area, the more is retained for food growing, and less artificial fertilizer is needed. (fig. 1)

The advantage of this kind of ownership model is that the individual's involvement in the running and management of the cooperative will directly affect both the financial performance and its ecological maturing of the land.

The model was presented to the Cooperative development assistance bureau in Stockholm for evaluation and preliminary evaluation against the EU social economy (as per the descriptions on their website) was carried out. Preliminary results:

- A cooperative producing and consuming its own food and housing fits in with current models of cooperative ownership where the purpose of the organization is to further the members economic status by providing low cost housing and food.
- There were some concerns about the contribution of the eco unit to the municipality, as the unit would not need to pay taxes for garbage removal and water rates. On the other hand, the unit would contribute tax via each individual's taxation and property tax.
- That members' food was cheaper than buying at the local supermarket is regarded as providing healthy free market competition.

- On the question of being employed in one's own business, employed by the cooperative or simply part of a system that shared the products of the cooperative among its members, it was unresolved what the tax status would be. More voluntary activities would result in the rights to more service from the cooperative, perhaps in the form of reduced monthly fee. In a tenant cooperative the reduction in service fee is seen as remuneration for employment and liable for both employer's tax and personal taxes.
- In principle a points system could facilitate a fair distribution of the cooperatives resources. For example, each owner could receive a certain number of points a year, and these could be used on common shared resources like a car pool, leisure activity equipment like Jacuzzi, sauna, canoe, bicycle, and gym. Some voluntary work outside the obligatory 120 hours a year, for example, growing flowers for communal use, or making jam from locally picked berries, giving a larger entitlement.
- The main advantage of sharing resources is that they are used much more effectively and a far higher level of eco efficiency is reached along with utility. By sharing the resources, residents can enjoy a higher standard of living without having the investment if they were to try to own each individually.
- Where the points system meets possible barriers is when, say, working in the farm could reduce the monthly fee to zero. At this point, the market value of housing and food should be seen as wages and the recipient expected to pay social costs and personal taxes.

The model was also explored from the point of view of pensions and housing association. One possibility is for a pension fund to invest in the unit in return for providing housing for pensioners. The fund investor would, on retirement either "cash in" to move into special accommodation in the eco unit or sell their entitlement on the open market. In the same way, saving in the "building society" could entitle the saver to rented accommodation on the unit, and when they had saved enough, could buy a share in the cooperative.

The cooperative model also presents challenges:

- Governance: By definition, the cooperative is democratically governed. At the same time it has several different areas of activities. To get all of these different interests to work together may prove difficult. One suggestion is to set up separate cooperatives for the various functions so that members can be actively involved in the areas that best fit their situation and interest.
- Balancing the noble purpose envisioned by the originators and the day to day concerns of the residents. Defining the Eco Unit too closely would subject residents to a strict regime. Defining it too loosely, either the purpose is not achieved or the concept does not work. Balancing this fine line is not easy.

Next steps would include

- Definition more exactly of how the eco unit would function in order for the description to be analyzed by tax and legal expertise.
- Survey of attitudes to the concept
- Development of an evaluation model of the potential for an eco unit in a given area. (fig.3)

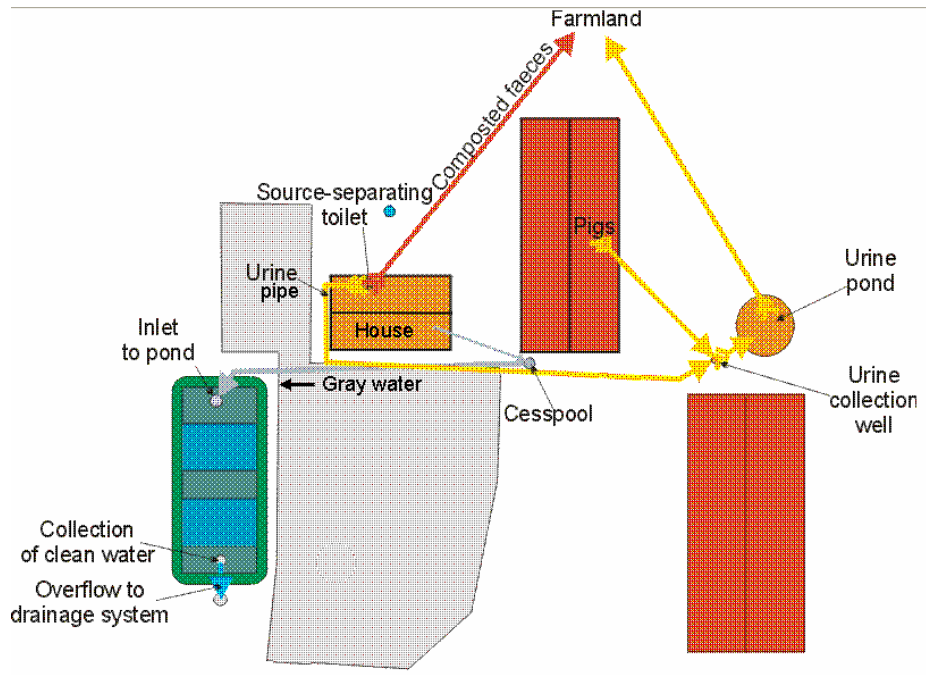


Figure 1: phosphorus from urine is recycled to agriculture.

operational model: co-operative

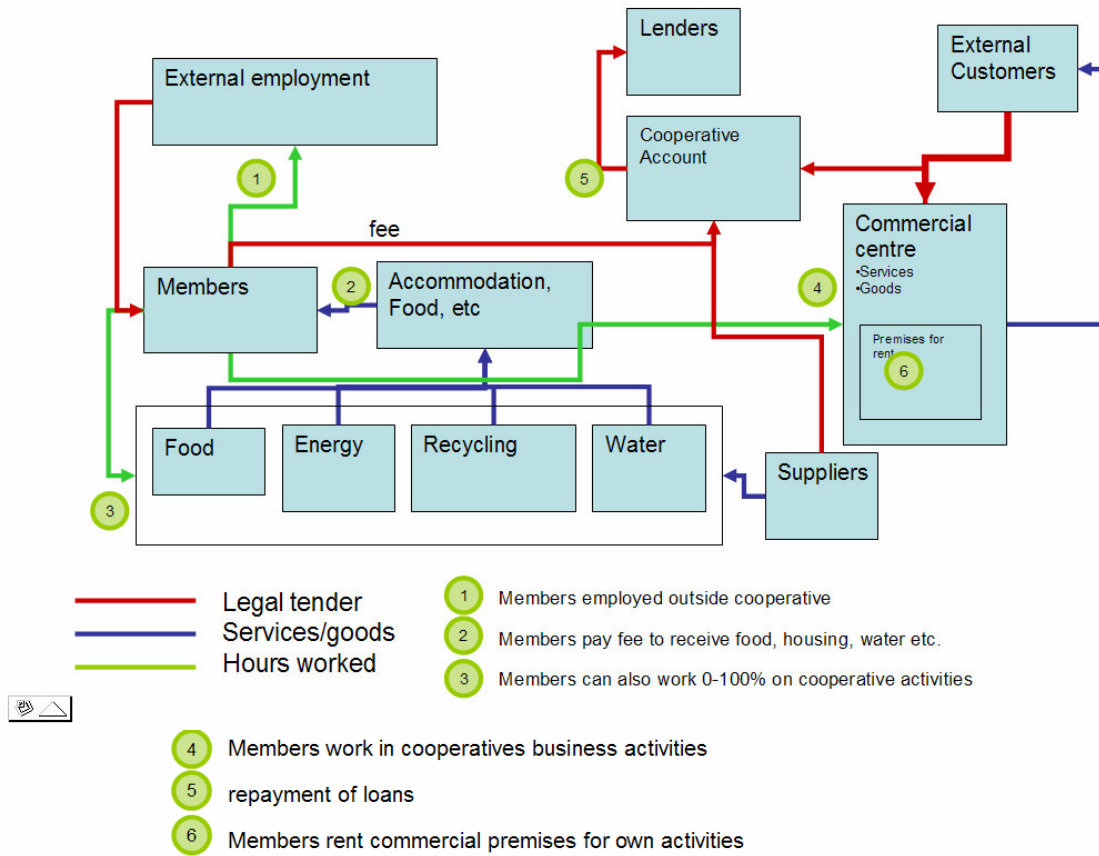


Figure 2 The operational model evaluated against experiences of the Cooperative centre, Stockholm and against the EU website descriptions of Social

economy.

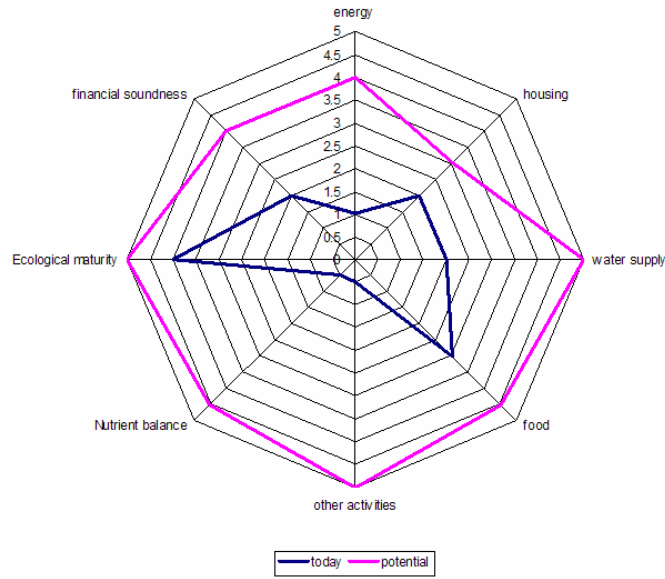


Figure 3. Evaluation model to clarify potential for eco unit establishment in any one specific location.

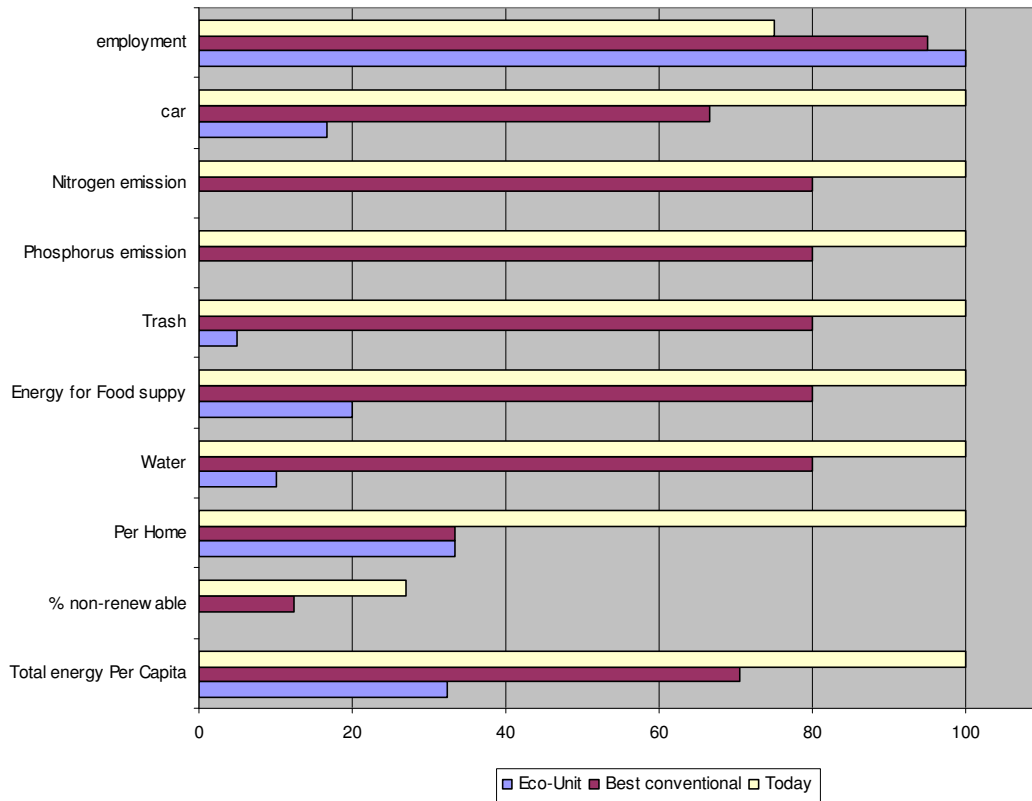


Figure 4. The potential eco efficiency performance of eco units matched to best available conventional approach, where average today = 100

ⁱ See <http://www.rainforestinfo.org.au/background/maxneef.htm> for more information on Max Neef's models.

ⁱⁱ See the Association for the study of peka oil. Home page <http://www.peakoil.net/>

ⁱⁱⁱ See the BBC's Planet under pressure at http://news.bbc.co.uk/2/hi/in_depth/sci_tech/2004/planet/default.stm

^{iv} The linear approach is described in detail by Folke Günther. Especially the linear flow of phosphorus, which is essential for agriculture. See <http://www.holon.se/folke/kurs/Distans/Ekofys/Recirk/Eng/phosphorus.shtml>

^v See the Millennium Global assessment of the state of ecological systems at <http://www.millenniumassessment.org/en/index.aspx>

^{vi} See for example Powerdown by Richard Heinberg <http://www.museletter.com/Powerdown.html>

^{vii} The EU refers to operational models like this as Social Economy. <http://europa.eu.int/comm/enterprise/entrepreneurship/coop/index.htm>

^{viii} This represents just 7.5% of a normal working year, an estimated 50% of the average number of leisure hours per year.