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Approaches to sustainable habitation III

HOUSEHOLDS AND LIFESTYLES

by Per G Berg

8.1 The role of households

Today there is a general consciousness that we have to do something about the environmental and resource crises of the world. In the countries in the Baltic region most people are aware that this also means some personal commitment. Nevertheless, only a minority of households are acting strongly. Why?

One possible explanation is that creating sustainability is difficult. It is a demanding and complex task. Take ecological housing for instance: it is not enough to install environmentally beneficent technical solutions. If ecological housing is too expensive, it will attract only a few. If waste-sorting solutions are too complicated, no one will endure the trouble. If an ecologically adapted waste water treatment plant smells, often jams, and is considered a security risk for children, it will never be produced in additional copies. If taking care of green areas, gardens and garden plots takes too much time, the weeds will win in the long run. If the solar-collecting house is ugly, people will eventually move out.

The environmentally sound techniques and the healthy solutions we develop to create sustainable habitats for human beings must thus have certain additional properties. They must have a robust and simple function, be reasonably cheap, save valuable personal time, inflict a feeling of security on their users and be aesthetically attractive. What experts, then, beside technicians and planners, may help us understand this complex requirement for sustainable habitation? The answer is most probably that the individual and the household must be involved in the search for resilient habitable space for modern man. But how willing is the general citizen to accept new technologies? Is the common inhabitant of the urban environment prepared to try new habits, new consumer patterns and for 'overall' changes in his or her lifestyle?

8.2 The household's environmental load and resource use

Environmentally malevolent substances have many sources in our modern culture: traffic, residential areas, mines, industrial areas and farming areas are some of the main sources. In Sweden, the National Board for Environmental Protection has calculated that households are directly causing about one-third of the carbon- and nitrogen-oxides that contribute to the greenhouse effect. Households are also directly responsible for about half of the nitrogen and phosphorous salts that cause eutrophication of lakes. From one perspective, all unwanted effluents of our society are coupled in one way or another to individual households. The consumption of raw materials and the use of economic resources can also be coupled directly or indirectly to the life patterns of households.

The quantitative share of households is of course different in different countries. In the north in particular, the share of the national energy budgets used for the heating of homes is considerable; about one-third. The travel budget of households is also very important. About 50 per cent of the direct energy use of households is due to travel; most of it being fossil fuel dependent.

The national policy goals in Sweden prescribe major cuts in resource use and emissions of harmful substances. The cuts amounts to more that two-thirds for carbon-, nitrogen- and sulphuric oxides, volatile compounds, as well as nitrogen and phosphorous salts, and close to 100 per cent for certain toxic substances such as mercury and organic poisons, as well as ozone-decomposing substances.

To achieve this, households must also contribute. To manage a sustainable resource use and management, we must reduce use in households by between half (water, heat energy and electricity) and two-thirds (transports and solid waste). It is evidently very difficult to achieve such dramatic effects only by legislation or through the games of the markets. We must involve people in general. It is consumers, residents and the travelling public that must contribute with their ideas and strategies to the development towards increased sustainability.

8.3 Attitudes towards new technologies

To create sustainable human habitats, we are dependent on the will and belief of and opportunities for ordinary people to change their lifestyle. We must all learn to reorganize our lives to fit new social, economic and technological solutions. But what is the willingness to change for instance habits with regard to new waste sorting systems and new toilet systems when they are introduced as possible improvements for the envi-

Changing lifestyle

THE DETERMINANTS OF BEHAVIOUR

What make people change their mind and act differently for example more environmentally friendly?

It is useful to distinguish between two different kinds of determinants of behaviour.

The closer, proximal, factors are knowledge, attitudes of individuals and the everyday situations in which the behaviour occurs. Social factors, that is, how other individuals behave, and physical factors, such as the availability of the utensils needed for, for example, waste sorting, etc., are important.

Distal factors are, for example, legislation, political decisions and economic factors, such as fines and taxes, referred to as incentives. These have a more indirect relationship with the everyday situation, but are not necessarily less important.

THE ROLE OF ATTITUDE

It is often assumed that the most important is to influence people's attitudes towards the environment. However, one has to differentiate between attitude and behaviour, and it is only behaviour that has an effect on the environment. There is no research to demonstrate that a change in attitude will necessarily lead to a change in behaviour per se. Quite the opposite! It is recognized among psychologists that it is in general difficult to make people change their behaviour, particularly when it comes to long-lasting changes, which is the important change for the environment.

"Tell them and they will forget.
Demonstrate and they will remember.
Involve them and they will understand."

Another common assumption is that information, or knowledge, is a prerequisite for attitude and behavioural change. However, there is not much empirical evidence to support this assumption either. On the contrary, there are many examples of knowledge not leading to such changes. Health behaviour is one well-studied area where we know that information about the negative effects of, for example, smoking and drinking, has little relevance to changes. The same has many times been shown to be true for environmental behaviour.

THREE WAYS TO CHANGE BEHAVIOUR

There is scientific support for at least three different relations between knowledge, attitude and behaviour:

1) Knowledge > Attitude > Behaviour

2) Behaviour > Attitude > Knowledge

3) Knowledge > Behaviour > Attitude

The models work in different situations.

1) When the consequences of behaviour is drastic enough, such as you will get sick by eating a specific product, knowledge leads to attitude change and behaviour change directly. This is seldom the case in the field of environment and thus this model is not often relevant to introduce environmentally friendly behaviour.

2) At times behaviour might be a base for change of attitude: experience-based attitudes. For environmentally friendly behaviour it might be useful to start here by, for example, offering an easy opportunity for behaviour change, such as by making receptacles for sorted waste easily available, providing free bicycles, etc. This might be particularely relevant for those who do not appreciate extensive information.

3) This model works when the knowledge is about the behaviour itself, that is 'how to do'. This might also be useful for changing environmental behaviour.

(LR based on a paper by Per-Olow Sjödén)

ronment? In general, adaptation to new technologies occurs in an atmosphere of suspicion and wait and see.

Recent studies at the University of Agriculture in Uppsala by sociologist Tuula Eriksson reveal a substantial vulnerability when new technical solutions are introduced to ordinary inhabitants in ordinary urban habitats in Sweden. Attitudes are often quite negative if technical problems occur, if the costs are slightly higher or if the system requires only a little bit more time to manage.

By contrast, there is a great tolerance to failures in technical systems and their economy in highly motivated groups, namely, people who have undertaken to live in ecologically adapted housing. The latter groups are characterized by a large amount of patience with unexpected costs for new parts in, for example, garbage handling systems. They are often sympathetic to time-consuming repairs or adaptation of environmentally friendly experimental techniques, such as solar collectors, new toilet systems, alternative transportation modes or other common property equipment, buildings or routines. Obviously these environmentalists have a role to develop these new technologies beyond the initial stages.

As information improves and as best practices are presented, however, a fairly rapid change in people's attitudes may occur. Two outstanding examples in the area of green consumption are already part of our modern environmental

history: the dramatic transformation in the paper industry from chlorine-bleached pulp to other bleaching methods within a few months. This was the result of a strong and rapid value shift in the Swedish population due to a very successful information effort on the adversary effects of chlorine bleaching. The second occurred when practically all of the washing powder producers in the Nordic countries in the course of a year changed the composition of detergents, by removing the phosphate, to have a green label on their packages.

These early successes are now being followed by a rapid change in consumption patterns with regard to a wide range of products, formerly designated as environmentally problematic. Although the willingness to change to more sustainable technical systems seems to be both vulnerable and far off, there is always a possibility for change as our knowledge and values change.

8.4 Lifestyles, values and reality

The Institute for Future Studies in Sweden has for several years asked secondary school students questions about their visions and attitudes towards a future society. It is clear from these studies that a great majority of young people give environment and health issues a high priority. Swedish pre-university students are well informed and well motivated to advocate environmental protection. About 20 years ago, only a minority of young people were well trained in environmental issues. Today more than 80 per cent are well informed.

But what is the true value of such a potentially strong changing force, as these people become decision-makers or just ordinary committed citizens? One obvious answer is that we don't really know. Many of the answers on environmental commitment are contradicted by other answers. For instance, most young people look at the car as a great environmental problem. At the same time, many of them predict that they will have a driver's licence when they grow older.

There are many reasons for the gap between values and real actions. It might simply be difficult to apply values in everyday daily life. Determinants for actions are mostly something other than ethical ones. Values might rather be part of visions for future strategies for an individual. He or she has to start in the reality of present everyday life although it might be contradictory to the expressed values.

Lifestyles and resource use

Studies of lifestyles show a large variety of ways to arrange one's life. Work, housing, relation to nature, relation to culture and social interaction are components of your lifestyle. Each of these is approached by the individual as a choice of life. Thus one might want to live in the country, rather than in a city core, to enjoy the calm, for aesthetic reasons, to spend time with the family, etc. But the choices are decisive for the final environmental impact and resource use of the individual.

Helsinki University of Technology, as well as several others, has developed a computer software which allows the calculation of resource use of different lifestyles. Energy use as well as CO_2, NO_x and SO_x emissions are estimated.

8.5. Roads to sustainable households and a new lifestyle

One of the most successful initiatives at the household level to inspire an environmentally sound lifestyle is called The Global Action Plan. GAP, founded in 1992, is an international association of neighbourhood-based study groups, all with the objective of saving resources and money at the same time. What makes this organization unique is the ambition to calculate the total effect of all the GAP groups concerted actions. The groups work by saving household water, electricity, heat, waste and transportation. The accumulated savings for the 25,000 active households all over the world is at present around 2 million litres of petrol saved and 0.5 million tonnes of clean water and 3,000 tonnes of garbage not produced. The accumulated personal savings for the households are estimated to be SEK 250 million or 30 million USD, based on SEK 10,000 per year per household. The same amount of money is saved at municipal and national levels.

It is interesting to extrapolate these environmentally sound and, at the same time, very simple methods of saving money to a larger scale. Imagine for instance that the joint effort comprised 5 million of the inhabitants of the Baltic region (less than 10 per cent of the population in the drainage basin). The personal savings would then amount to SEK 50 billions, or 6 billion USD, and the same amount at national level. Just after the turn of the century this would mean a substantial decrease in the environmental impact of the citizens of this region.

Another interesting initiative comes from the Swedish Natural Protection Association. They have recently launched a campaign called Lighter Luggage. In this campaign a new argument is presented for leading a more resourceful life: all the things we surround ourselves with in modern western society represent a heavy weight to carry through life. Although they often have some value, all the small and large things such as papers, books, machines, tools, adornments and other 'useful things' in our apartments and workplaces constitute a burden by appropriating our time in a number of ways. By reducing the things in our everyday life, it is argued that we will gain a better and more equitable environment along with less resource

House and home

The home is in many ways a physical expression of a lifestyle choice. The buildings themselves are central to society's energy and resource flow. From the 1950s onwards, with the last wave of urbanization, house construction was in many ways decided by optimal production techniques, cheap building materials and urban expansion needs. Today there is a growing interest to create 'ecological' housing, either by returning to traditional methods or by new developments. The basic principles of sustainability, resource use, economy and the social dimensions, can then be a starting-point.

1.Materials management.

The house should be built without materials noxious to the environment or health. It is important to look at, for example, piping, boards, paints and panels, each of which often has been produced with toxic and persistent organic compounds, and to avoid these. Materials should allow for long-term use, which is the best way to reduce materials flows per service.

2. Energy management.

The house should be insulated to minimize heating costs. This is particularly important in respect of windows (double or triple glass) and ceilings, where much heat may be lost. Large windows should face towards the south, while the north side should have minimal windows. Heating should be based on renewable resources, which is often the case with district heating, and water as heat carrier. Local heat production is possible through, for example, solar panels. Electricity, to be used sparingly, is exclusively needed for lighting, electronic equipment and household gadgets. It might also be used for heat pumps. Local electricity can be obtained from wind power, small hydropower stations, and photovoltaic cells. At the extreme, it is possible to build zero energy houses.

3. Food/nutrient management.

A large share of the household energy budget is contained in the food, especially with regard to its transport costs. This is reduced if a large proportion of the food comes from local producers. Both single-family and multi-storeyed houses may have a garden or other possibilities for cultivation of, for example, fresh vegetables. Left-over food is best composted and returned to the garden. Toilet systems should ideally allow for separated waste streams. Urine might then be used as a nutrient source in local agriculture.

4. Water management.

Water systems should preferably allow for separated streams. Then water might be recirculated within the house and, for example water from the laundry and shower may be used for the toilet. If drinking water is scarce, it is best if produced in a separate stream and used only for cooking, drinking, etc.

5. Mobility management.

Mobility accounts for a large proportion of the resource use in a household. Commuting should best be short and by public transport. Use of information technologies at home or in the neighbourhood might reduce commuting. Use of bikes and coordinated car use in neighbourhood/multi-apartment houses, rather than private cars, improves mobility management.

Many interesting experiments in house construction are presently being carried out in the region. Some address questions of resource use: Quite a few houses today have no heating costs at temperatures above -10 centigrade, due to good insulation, use of, for example, solar panels and the geothermal temperature at a depth at some 2 metres.

Some houses have a good and pleasant indoor climate by, for example, indoor open water, indoor plants, high ceilings, etc.

There is also a social dimension: It is important to construct the house to have a good balance between private and common space. Some houses can, with small adaptations, provide different degrees of private space at different stages of its use, for example, when parents are retired or children become teenagers.

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depletion, more free time and - in summary - lighter luggage.

On the individual and household level the resource consumption is on an average smaller in East than in West in the Baltic Region. However, the potential for improvement is present in all countries in the region, but clearly more difficult to achieve by individual life style choices in societies with traditional inefficient technologies.

One might believe that a less resource-using lifestyle would lead to a more poor and uninteresting life. This is not necessarily true. Statistic of material flows show that there is an enormous potential for improved resource efficiency without sacrificing life qualities. A sustainable life style is not a question of impovering but improving life qualities.