

What larger impact can a mobile waste pipe in Blåkulla have?

A LIP-project case study

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Introduction

Waste management is one of the greatest environmental problems, along with emissions from traffic and industry (Sköllerholm & Hanberger 2004), in Solna city north of Stockholm. Solna is a densely populated municipality with its 61,000 inhabitants spread on only 22 km² (<http://www.solna.se>) and with very few possibilities to build new residential areas where modern ideas concerning waste handling could permeate. Instead, Solna must find new solutions to the existing housing areas for example on how to separate non-combustible waste (Solna LIP).

In Hagalund a LIP-investment was used to reconstruct the old refuse collection in 1998. A new recycling facility with a mobile waste pipe was constructed for the inhabitants and the environmental situation improved. The too small refuse collecting facilities in the housing area was the main problem to be solved, and the solution was to increase recycling and waste separation among the residents (Sköllerholm & Hanberger 2004). The construction made it possible to separate waste into three fractions (household waste, compost and waste paper). The goal was to halve the unsorted household waste generated in Hagalund but the goal was not reached (Solna LIP).

Aim of the paper

This paper is very locally based. The case I have concentrated on is a LIP-application and its outcome in a residential area of Solna called Hagalund, between 1998 and 2002. The houses of Hagalund are also called “Blåkulla” (bluehill), since all the blue 14-storey houses are standing on a hill (see Figure 1).

The aim with this study is to give a specific example of a local investment programme (LIP), to present the actors involved in the case and analyse the result. The paper starts with a presentation of the LIP-concept, followed by the specific refuse fractioning case I have focussed on. In the final part there is a discussion about the importance of local participation and what global importance small scale projects could have. How can Blåkulla be put into a larger context?

Local governance

Sweden has a long history of local governance and the devolution of responsibility is of crucial importance to reach ecologically rational governance. Environmental affairs were decentralized during the 1980's, although the autonomous municipalities often co-operate within and along traditional administrative lines (for example on waster and air quality monitoring) to reach resource efficiency. Following the Rio Summit in 1992, the Swedish municipalities were demanded to formulate their own Agenda 21 based on a bottom-up approach on environmental problems and solutions (Lundqvist 2004). Solna created their own Local Agenda 21 action plan in 1996 (Sköllerholm & Hanberger 2004). For Solna, the LIP was regarded as a valuable continue of the LA21 work (Eckerberg et al 2004:54, Solna LIP).

There were expectations among the Swedish municipalities that LIP would carry Local Agenda 21 processes from ideas into action. They also thought that the national funds would stimulate the implementation of sustainable development (Eckerberg et al 2005). When it comes to the residents of Blåkulla, the project stimulated changed behaviour on a broader scale and inspired even more initiatives in support of sustainable development (Solna LIP).

The Local Investment Programme in Solna

The Swedish Local Investment Programme (LIP) was carried out between 1998 and 2002 and was at that time the largest environmental investment initiated by the Swedish Government. The purpose was to increase ecological sustainability all over Sweden by encouraging local project initiatives. Within LIP, more than 1800 projects took off in 161 municipalities (Eckerberg et al 2005:3).

The municipality of Solna applied for three local investment programmes and was awarded one. This programme included 19 projects of which 16 were granted. Solnabostäder was one of them. In total Solna received 54 million kronor in LIP-investments (Sköllerholm & Hanberger 2004).

First, Solna needed to analyse their environmental situation within the municipality; identify the specific local circumstances and needs, and then co-ordinate their environmental measures. The different projects Solna applied for had to be part of a municipal programme and be justified and supported by the municipality. Then the local government leaders (kommunledningen) made a LIP application and invited everyone concerned to information

meetings. Many people were involved in the initial part of LIP and both municipal and private companies participated although they were not used to this kind of projects. To help out, the Agenda 21 coordinator of the environmental council (miljökontoret) was involved to search facts and statistics needed to make a good application (Solna LIP).

Solnabostäder and the mobile waste pipe

The managing director of the municipal company Solnabostäder was the driving force behind LIP in Blåkulla. The environmental coordinator of Solnabostäder had formerly worked with Agenda 21 and was already acquainted with required companies. The managing director was asked to "do something" about the problem with the grand amount of household waste management created in Hagalund, which is a part of the Stockholm "Million Programme" households from the 1970's (Solna LIP), why Solnabostäder appointed a consultant within the company to become the project leader.

All the concerned 14-storey houses had refuse chutes, with 56 apartments per chute. The environmental coordinator had got inspired from a fair in Göteborg on how to use a woven fabric to separate the waste fractions. The woven fabric was delivered by Smedlunds miljösystem and the suck-technique by Avfallsteknik. With this construction, Solnabostäder wanted to separate the waste into household waste, compost and waste paper (Solna LIP).

The collection points for all three fractions were placed on the courtyards and the refuse chutes were taken out of use. However, the waste paper fraction caused some problems in Blåkulla since the lid of the refuse collection bins often blew open in the wind and the newspapers spread all over the courtyards (Solna LIP).

The project was very goal directed, and creative: To halve the amount of household waste generated in Hagalund. However, the goal for the waste separation was not reached and the quantity of household waste was minimized from 400 tonnes to 280 tonnes, of which 70 tonne was out-sorted compost. The amount of separated waste paper rose, but did not reach the goal put to 50 tonnes during the project time (Solna LIP). Some outcomes of the LIP-project of Solnabostäder are presented in table 1.

Local participation

Most people, i.e. from companies and the municipal council, were involved in the beginning of the process, during the application. The participation of the public was mainly concentrated on the functioning of the project when the establishment already was on place. Solnabostäder needed to carry through a great amount of information campaigns for the residents. Studieförbundet were commissioned to tell all inhabitants of Hagalund about the new waste collection system, and during two years an environmental coordinator worked with instructing people on how and why to separate waste (Solna LIP).

David Landgren, a resident of Blåkulla between the years 2001-2005 says his household received information folders about waste separation but they did not care so much about it (Landgren pers. comm. 2007-12-05).

Aspects	On overall level	Good and bad outcomes
Knowledge and valuation		Waste separation has increased environmental awareness (+), 1/3 of 2300 feels they have the change to be environmental friendly and proud (+), probably increased feelings of solidarity in the housing area (+), the cleaning department was positive to a mobile waste pipe system (+), Support: school children are enthusiastic and teach their parents how to sort waste (+)
Treatment	LIP had some effect, but difficult to estimate, tiresome cooperate with companies since they are sensitive to economic fluctuations and restructuring (-)	To sort out and treat refuse in a correct way (+), cost of woven fabric and stoppage in pipes (-), the waste paper fraction does not function as it should (-)
Open discussion and social education	The ones involved in LIP all learned something, much discussions while applying, not that much during implementation	The meetings took a lot of time but gave results (+)
Differing views	Municipal environmental plan in consensus (+), many projects within LIP interlinked (+)	Economically defendable even if there were troubles with the new establishment
Competence today	Is better thanks to the LIP-project (+), though divided about what is best practice	

Table 1: Possibilities to handle environmental problems afterwards LIP (after Solna LIP).

Impacts in a larger perspective

The inhabitants of Blåkulla are today sorting out more of their waste, are a little bit more aware about the environment and are forced to reflect on their behaviour. The project in Hagalund has been paid attention to from other municipalities in Sweden. More municipalities have thereafter introduced waste collection with a mobile waste pipe (Solna LIP). In this way the positive impacts are spreading like the rings on the water.

On a municipal level the whole LIP-initiative has brought about that the environmental questions are set on the political agenda in another way nowadays. For example the waste out-sorting project in Blåkulla would not have been implemented without the LIP-investment (Solna LIP).

On a regional level the minimized amount of waste that needs to be incinerated has caused that waste treatment systems must be changed. To make this structural modernization function, large volumes of separated waste are needed to get big enough fractions. The indirect impact of LIP is that new building projects has started with faster rate to answer the need for the fractions of for example compost (Solna LIP).

Analysis

The LIP-project in Hagalund was carried out as it was proposed. Nevertheless Solnabostäder did not reach the goal to halve the mass of unsorted household waste. Solnabostäder produced many information brochures that were distributed to the inhabitants of Blåkulla. When the new waste fraction facility was inaugurated a party was held with a samba orchestra performance to connect up on A21 in Rio. Totally the information costs went up to 1,5 million kronor and are concerned well used money (Solna LIP).

Members of a household I have spoken to did not take the information given into much consideration. Their attitude is that they *don't believe* in sorting-out waste (Landgren pers. comm. 2007-12-05). My experience is that it is difficult to make people change their behaviour if they can't see the linkage between their behaviour and a better or worse state of the environment. When it comes to waste separation at home, knowledge is of utter importance. The method chosen to influence behaviour also depends on what result is desired. If a more ecologically rational governance is desired, then also sanctions might be needed for the ones who are not cooperating for the common good.

If people are convinced that the neighbours also separate waste papers and compost from the household waste, then it's more likely that they also contribute to the common good. With the huge information campaigns the municipality probably wanted to avoid what is called the "prisoners dilemma", since the positive results rely on the involvement of the majority (Pelikaan & van der Veen 2002).

Discussion

To make everyone cooperate can be very difficult. Therefore the project in Blåkulla must be seen from a broader perspective. Within this specific household area environmental dilemmas arose. Some households were so called "free movers" (Pelikaan & van der Veen 2002) and could be a part of the proud image shown towards the rest of the country. The result was positive even if some households could carry on as before without sorting out waste.

Even if Solnabostäder could convince people that there are several gains for the environment if they separate compost and waste paper from the household waste, they could not force them to act in the wished way, a collective action problem occurred (Pelikaan & van der Veen 2002)

The technical part of the project was successful, the goal was *almost* achieved and maybe the waste separation in Blåkulla will increase over time. On a regional scale the project triggered more waste fractioning facilities to be constructed. On a global scale these refuse treatment systems are seen as very modern and are in line with the purpose of achieving an environmentally sustainable development. I believe in a "glocal" way of thinking: Think globally - act locally!

Meanwhile we have a huge problem in Sweden with the increase of the amount of waste that needs to be separated. Maybe the out-sorted waste fractions are bigger because of good separation, but they can also be that since there is a trend that we consume more products that generates waste (Solna LIP).

Here much attention must be put on the growing generation, in the children we have some hope. In Blåkulla the children were taught to be environmental friendly and separate waste, and they encouraged their parents to do the same (as can be seen in Table 1).

Conclusions

From studying the local investment programmes in Sweden I can make the assumption that real enthusiasts (eldsjälar) are very important when projects are to be initiated and implemented. In many cases it's pointed out how single persons have had impact on the proceeding of a project. For example the managing director of Solnabostäder was a driving force in this case since (s)he was fascinated by LIP and believed it was worth carrying through. Another enthusiastic person pointed out in the LIP in Solna is the Agenda 21 coordinator who engaged the candidates to carry through the applications (Solna LIP).

This is small scale acting that can give results on a global scale when accompanied by more actors. It gives me hope to see that the world is full of real enthusiasts that are hearten to carry through projects for a more environmentally sustainable future.



Figure 1: The 14-storey houses of Blåkulla, Hagalund (<http://solna.se>)

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