Towards sustainable development

in Kallankuthal,

a small village in southern India

A case study on local opinions

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Introduction

This paper focuses on the concept of sustainable development. The term is rather new, as it became commonly used about 20 years ago. In discussion over the years, it has been defined and refined.

My main interest has been to make a case study of inhabitants' opinions on the development of their own village. I wanted a country with rapid social change, therefore I chose India. I wanted to meet as many inhabitants as possible in a village face to face: therefore I chose a village with a small enough population. Since the term sustainable development may not be all that comprehensible in their language, I translated it into questions about their views on the changes they have experienced during the last ten years.

The disposition of the paper is as follows. After a brief presentation of the purpose of and methods for my study, I discuss the concept of sustainable development and review its development over time on the basis of a survey of literature (part I).

The main part of my paper – part II - describes my field study in the village of Kallankuthal in the year 2004. The planning of the study is described and its implementation in India. The results of the investigation are also presented. Finally, I add some personal reflections on the experiences gained during the case study.

Purpose of and methods for my case study

The purpose of the study is to collect and analyse the inhabitants' views of local resources and development in Kallankuthal. My particular focus is their opinions on:
- the resources of their village
- what development they have seen during the last decade
- threats and opportunities to the local development
- whether they think they can contribute to the development, or not

Through their comments on these issues I hope to get an understanding of how inhabitants view the major changes in economic, social and environmental development and on basis of their opinions hypothesize about positive and negative aspects of this development.

When I collect the opinions of the inhabitants different methods are used: interviews as well as observations. Interviews are of two kinds: individual and group interviews/focus groups. The main advantage of individual interviews is that they give a lot of detailed information. On the other time they take a lot of time. The focus groups give more structured information. The focus groups also made two different SWOT-analyses. Certain observations are documented with the help of a camera.

Part I
The concept sustainable development

According to Köhn (1998), the roots of the concept sustainable development date back to the nineteenth century. Both John Stuart Mill and Thomas Malthus wrote about topics similar to the concept. The term sustainable development appeared much later; it was invented in the early 1980s and became globally spread by the Brundtland Commission in its report *Our Common Future* (1987). The commission tried to solve environmental problems and socio-political development issues at the same time.

The concept sustainable development carries within it a dynamic tension between poverty and environmental concerns. The commission defines sustainable development as a process "that meets the needs of current generations without compromising the ability of future generations to meet their own needs". This is the most radical aspect of the Brundtland Commission. The commission report argues that the two problems are intertwined to the point that ecological sustainability cannot be achieved if the problem of poverty is not successfully addressed around the world. Under-development is a threat to the ecological systems and the solution is more development. Over-development is another, equal, threat. Here we need a new form, a "sustainable" development to solve the problem (Robinson, 2004). Economic, social and environmental sustainability must be considered together. Each generation should leave the necessary conditions intact for the next generation's wellbeing.

To measure economic, social and environmental sustainability we try to measure man-made "reproducible" capital, human capital, natural or environmental capital and social capital. (Pearce, Markandya and Barbier, 1989)

According to Perman (1996) there are "at least five alternative conceptualisations of the concept". One of them is: "A sustainable state is one in which resources are managed so as to maintain production opportunities for the future". Perman uses the term *resources*. In many other articles the authors discuss the development of different kinds of *capital* and how these change over time. (Perman et. al.1996)

Substitutability between three different kinds of capital
The neoclassical economic models allow intertemporal (physical and economic) scarcity of resources to be considered. In an ideal world exhaustible resources would be replaced by renewable or recyclable substitutes. According to the theory, this makes the present generation entitled to consume more resources than future ones. Coming generations will be better equipped due to their greater technological knowledge. It has been discussed whether this way of thinking is sustainable or not (Köhn, 1997).

Neumayer (2001) says that one problem is that a (natural) resource might be 'critical' so that an achieved level of human development is endangered if this resource is run down. This could happen even if enough of other forms of capital are built up to make total savings positive. Any kind of capital may reach critical levels but natural capital is in this respect more important for sustainability assessments. Lehtonen (2004) adds, "a part of the social capital is critical, irreplaceable, in the same manner as some of the natural capital".

Hediger (2000) argues that already by putting all kinds of capital together into one index one assumes substitutability between the different capitals. "Strong" sustainability means that you cannot substitute the natural capital with other kinds of capital and therefore natural capital stock should be maintained intact. There are other interpretations of the concept that go even further and divide the different natural resources into additional categories where each of them is not allowed to diminish. According to Perman et al. (1996) UNESCO makes an even stronger interpretation. It is supposed to say "each of the resources water, air and soil should be as pure and unpolluted as when they came to earth". Many

articles quotes these words and refer them to UNESCO, but no one mentions an exact reference, neither could an UNESCO Sweden employee trace the quotation to a UNESCO document.

Economics must be more than ecological. It must be socio-ecological. That is, not only must the biophysical bases of economic activity be understood, but also so must the sociological and political. Economic activity involves the transformation of physical materials and energy, but this occurs through the medium of socio-ecological structures, the understanding of which is equally important to economic analysis (Jacobs 1996).

Sustainable development involves questions that need to be discussed with a trans-disciplinary approach. More attention needs to be paid to understanding the culture of science and bridging the differences between science and policy (Shi 2004).

Criticism against the concept sustainable development

There are several forms of criticism against the concept sustainable development. One concern is that the concept is too vague. Meppem (1998) writes "this definition's popularity is probably attributed to its ambiguity, appealing equally to those with a focus on the regenerative capacity of the environment and to those who focus on the potential for technological progress to adapt to changing conditions". This vagueness is clearly shown by the vast number of articles written on this subject from many different perspectives and fields of science. Some authors discuss the concept and suggest ways to measure sustainable development. Some authors criticize the concept and others believe that it opens new doors. Some argue that divergent interpretations and opposing definitions are sources of confusion. Others think that it could be a contribution and a help to reinforce the basic idea of sustainable development (Binswanger, 1998). One of them is Robinson (2004). He asks whether a lack of consensus is a serious problem and argues that an open concept can be an advantage by making it possible for constructive ambiguity where many different opinions can exist.

Another concern is that it is difficult to measure and compare different problems, e.g., habitat destruction versus greenhouse gas emissions, or either of them against unfair labour practices in developing countries. There is a discussion if the concept is pursuing the wrong agenda. The concern is that the concept of sustainable development distracts from the real problems and potential solutions by focusing on wrong issues. The key problem is that sustainable development is an ultimately purely anthropocentric definition and that there is a difference between a primarily utilitarian focus on human well-being and a more spiritually oriented focus on our relation with the natural world. This side argues for a new ethic; a new set of values; and a new way of relating to the natural world. Sustainable development, in this view, is a classic case of a solution that will treat the symptoms only.

The most serious level of concern according to Robinson (2004) is that the concept of sustainable development fosters delusions. To put it in the goals of Brundtland, is it possible to increase world industrial production 5–10-fold in a way that is environmentally sustainable? Many criticise the term development as being made synonymous with growth and that "sustainable development" means ameliorating, but not challenging, continued economic growth. Here the concept "sustainability" is often preferred because of its different focus on the ability of humans to continue to live within environmental constraints. Robinson seems to be quite alone so far to make this distinction between the two terms sustainable development and sustainability. Some articles, like Binswanger's (1998) here below, make other distinctions between them. However, the discussion is marginal in relation to the theme of this paper so no distinction between the terms will be used.

The concept "sustainable development" should be seen as an alternative to the old concept of economic growth. According to Binswanger (1998), sustainable development does *not* demand economic growth to be abandoned but the destruction and depletion of natural resources must stop by qualifying growth

and reconciling economic development with the need to preserve the natural environment. Economics as a discipline has so far been floating free from the physical world but in the future the natural resources must be integrated with the production function of economic theory. The national product must not only be based on the factors of production capital and labour, but also on the environment. (Binswanger 1998)

Figure 1 shows the exchange processes between the environment and economy, i.e. the provision of resources for various economic activities and the uptake of emissions produced thereby. The economic subsystem is limited by the size of the overall system and the intricate ecological connections are more easily disrupted as the relative scale of the economic subsystem grows (Köhn 1998).
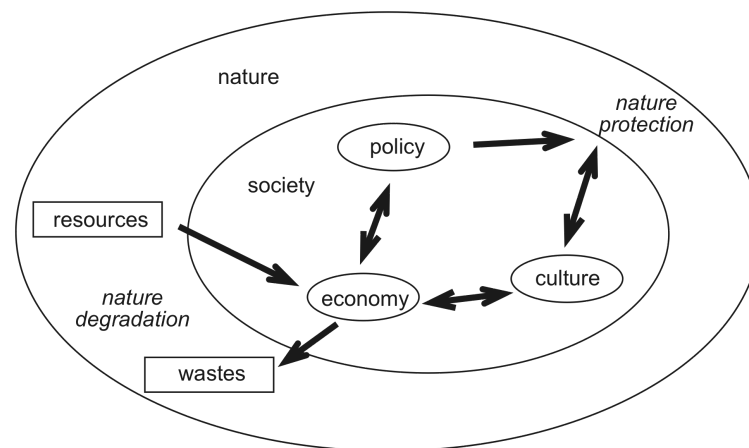

Figure 1: The interdependence of the environment and economy (Köhn, 1998).

Binswanger (1998) also tries to incorporate environmental aspects into the production function. He believes that a reason why nature has been neglected could be that the orthodox production function suggests that the total production output can be attributed to human ability alone, although in different forms as capital and labour and also technical progress. Technical progress has been an effort to increase energy production, extract more resources and substitute energy for labour in production processes. Although research and learning are important factors for economic development, it is energy taken from natural resources that eventually fuels economic growth.

Today the increase of energy consumption in the industrialised world is slowing down, but the total consumption of the world is still rising due to the high growth rates of consumption in developing countries. Because of the world's enormous use of resources we risk not only the life-support system of today's generation, but also the possibilities of future generations to economic and social development.

Developing the concept sustainable development

Robinson (2004) writes that sustainable development must work as an integrating concept: "In particular, it is clear that the social dimensions of sustainability must be integrated with the biophysical dimensions. This is the central message of the Brundtland report and it is no less compelling now than in 1987". Robinson (2004) adds that developments have made it clear how difficult this will be. There is a need to focus more strongly on knowledge, tools and training required to address the challenge of sustainability. The disciplinary division of knowledge in the university system means that many trans-disciplinary issues are lost. Robinson (2004) thinks the concept of sustainability may bridge some of these gaps.

Robinson (2004) writes that sustainability is a subjective concept that we must define together and search for the preferred future "under deep contingency and uncertainty". To do this we need new methods of decision-making that actively engage the relevant interests and communities in thinking through and deciding upon the kind of future they want to try and create. A political dialogue that involves many more people in the conversation must be created. The most fundamental political question is: "Is the goal reform or revolution?" (Robinson 2004) He writes that processes must be developed that allows diversity to be expressed without creating paralysis. To accomplish sustainability governments, the private sector and non-governmental organizations (NGOs) act together and create a political constituency for change, a market for different products and consumption patterns, and social acceptance of both the public policy and the private sector actions needed to accomplish these goals.

The definition of sustainable development from Brundtland contains the words "future generations". It is based on an ethical imperative of equity within and between generations. There are externalities between generations because future generations don't participate in decisions that will affect them, and possibly have an irreversible nature. When comparing decisions now and later you use discounting methods to make the investment comparable. But whether an investment, e.g. for environmental purposes, is justified or not depends on using different discount rates. Conventional analysis considers externalities as market failures but in this case a market does not exist and the conventional solutions are not valid (Padilla, 2002).

Even within the normal confines of economics, capital theory is not a homogeneous body of analysis. Therefore, an exploration of capital theory and its relevance to sustainable development can be expected to generate various perspectives on those measures most useful for gauging the sustainability of economic activity (Victor 1991).

Many researchers have been concerned with partial issues, such as technological assumptions and the substitutability of natural resources in economic transformation processes, and the resilience and criticality of ecological processes. But the social dimension has not received the same attention, and it has not been adequately integrated into formal analysis although it is multifunctional and has linkages both to economic production and is a valuable asset as such. In particular, human health, literacy and life expectancy, cultural and social integrity, and social cohesion are components of human well-being (Hediger 2000).

It must be recognized that the economic process not only brings about the goods and services comprised in the national product, but also influences the state and the quality of the environment. The environment, on the other hand, constitutes an essential part of the quality of human life (Binswanger 1998).

Ecological and economic capital/sustainability are better defined than the concepts of social capital/sustainability that are more elusive. Socio-cultural sustainability could be a concept that seeks to maintain the stability of social and cultural systems, including the reduction of destructive conflict. This is consistent with the definition of Brundtland Commission of sustainable development. It is primarily

based on ethical principles of social justice, including a concern for equity within and between generations, especially the satisfaction of basic human needs and alleviation of poverty, as well as a concern for peace and security. Moreover, as defined by the World Bank, socio-cultural sustainability would at least require maintaining some critical components of social capital (Hediger 2000).

Of the three dimensions of sustainable development – environmental, economic and social - the social dimension has commonly been known as the weakest. "Until recently, sustainable development was perceived as an essentially environmental issue, concerning the integration of environmental concerns into economic decision-making. In the past decade, there has been a resurgence of interest towards the social dimensions of development" (Lehtonen 2004).

Lehtonen (2004) writes that the World Bank "has been one of the most prominent advocates of the social capital approach over the past few years". There are many definitions of social capital. One of the narrowest ones is made by Putnam, who views it as "a set of horizontal associations between people, social networks and associated norms that have an effect on the productivity of the community" (Putnam, 1993). A very broad definition that according to Lehtonen has attracted "plenty of interest among economists" includes "the social and political environment that enables norms to develop and shapes social structure". This definition includes the largely informal, local relationships as well as institutions such as the government, the political regime, the rule of law, the court system, and civil and political liberties.

A unique thing with sustainable development is that it stresses the interactions between environmental, social and economic development but a lot of the work so far has been focused on individual dimensions as such: "Although the multidimensional character is usually mentioned, in actual practice, the interactions between the dimensions, notably the trade-offs between alternative, conflicting goals, have been absent from the analysis". The interaction between the social and environmental dimensions is probably the least developed of the perspectives and few countries have a formal institution responsible for this integration (Lehtonen 2004).

Hediger (2000) presents a social welfare function (figure 2, below) that is an integrated framework for addressing trade-offs across the various economic, social and ecological system goals. In practice, these trade-offs must be evaluated through an adaptive process of optimisation for each location and each time. The figure (2) on the next page is from the work of Hediger (2000) that illustrates the economy-environment sphere. It integrates principles of basic human needs ('critical economic capital'), ecosystem resilience ('critical ecological capital'), and integrity of the socio-cultural system ('critical social capital'), along with individual preferences, income growth and macroeconomic stability. For the given levels the social indifference curve U_0 is based on individual preferences (Hediger, 2000).

For levels of aggregate income and capital beyond the preferences, no terms of sustainability are feasible. Then, an adjustment process is required. Priority must be given to a transition process for initial states outside the sustainable development region. Such a transition towards sustainable development may involve structural changes within the economy and society, especially changes of the stock of human-made production capital and social organization to exceed the minimum standards of criticality (Hediger, 2000).
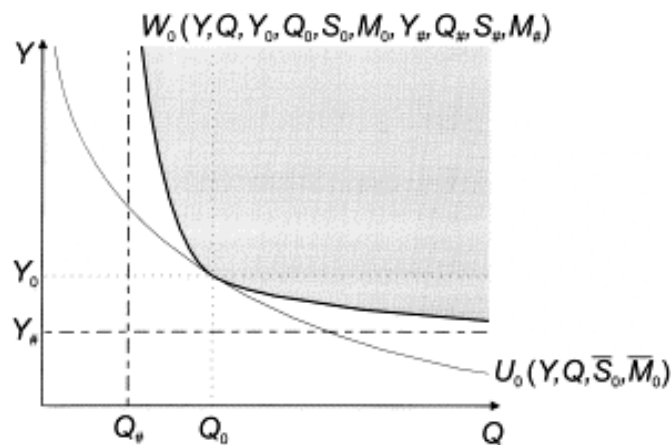
$$W_0(Y,Q,Y_0,Q_0,S_0,M_0,Y_\#,Q_\#,S_\#,M_\#)$$

$$U_0(Y,Q,\overline{S}_0,\overline{M}_0)$$

*Figure 2: The opportunity space for sustainable development
and the sustainability-based social value function (Hediger, 2000)*

Neumayer (2001) writes, "that the more developed countries by and large do not become detected as potentially unsustainable is mostly to be explained by their usually quite high net saving rates. (…) these countries would no longer have such outstandingly good sustainability performance if more pollutants were taken into account".

Neumayer (2001) asks if the poor developing countries with high resource exploitation or the benefiting rich developed countries should be blamed if the exploitation is unsustainable and answers: "resource exploitation should be attributed to the extracting country itself and not to the consuming country. This is because the purpose of resource accounting is to try to measure whether and by how much the natural capital stock of a country is changing. It simply does not matter who is 'responsible' for its growth or decline. Of course, once it has been established that a country's natural capital stock is declining and that this might represent a problem for sustainability of its development, the question of who is 'responsible' for the resource extraction will come back on the agenda" (Neumayer, 2001).

Development of indicators

Very often researchers have tried to find an indicator reflecting one of the three perspectives. Few researchers have tried to find indicators for the linkages between economy and environment. Lehtonen (2004) writes that even less attention has so far been paid to the linkages between the social and the environmental dimensions. The three dimensions have their own characteristics and logics and will likely conflict with each other. Lehtonen (2004) thinks the social dimension is clearly different from the environmental one, since it is bi-polar and reflects both individual and collective levels. It is also reflexive and changing with our perceptions and immaterial but based on material circumstances. Interest in sustainable development has prompted a search for suitable indicators that might complement or supplant the traditional measures of economic success. Although there is no agreement about the precise meaning of sustainable development, one idea that is increasingly in good currency is that sustainable development requires that the stock of capital that one generation passes on to the next be maintained or enhanced. Further, this stock of capital is seen by some to comprise two elements: manufactured capital and 'natural capital'. The extent to which these are believed to be substitutes or complements is one factor that separates the neoclassical school from some of its critics (Victor 1991).

Neumayer (2001) writes that the United Nations Development Programme's (UNDP's) Human Development Index (HDI) tries to give a broader picture of a country's level of human development. UNDP wants the HDI and the Human Development Report to fulfil the mission of "putting people back at the centre of development". Neumayer (2001) discusses a "greening" of HDI. He writes that for a

number of reasons these aspects should not be included into the HDI. One reason is that it already consists of variables that "many regard as hardly commensurable". Another problem is that if the HDI concept changes it means that comparability over time will be impossible. Since that is the second largest objective of the whole HDI-exercise Neumayer (2001) instead wants to add another indicator for this dimension.

In an article about alternative indicators for Scotland the authors have examined the literature on indicators of sustainable development and made a table of different indicators. They say that you can classify the indicators into three groups economic, ecological and socio-political. There is some overlapping between the three, which reflects the complex and interdisciplinary nature of sustainable development (Hanley, 1999).

Figure 3 (below) shows how López-Ridaura (2002) tries to analyse sustainable development with an aggregation of economic, environmental and social indicators. The framework is called MESMIS and consists of a six-step cycle where you first characterise the system, identify critical points and select specific indicators for the environmental, social and economic dimensions. The critical features of a system are those aspects that enhance or constrain system's attributes i.e. productivity, stability, resilience, reliability, equity, adaptability, and self-reliance. Based on those aspects you search for indicators.

After that the information obtained by the indicators is integrated through mixed qualitative and quantitative techniques and multi-criteria analysis that give a value judgement about the resource management systems and provide suggestions and insights aimed at improving their socio-environmental profile. López-Ridaura writes that the MESMIS approach is meant to be a systemic, participatory, interdisciplinary and flexible framework for evaluating sustainability. The evaluation of sustainability is a participatory process requiring an evaluation team with an interdisciplinary perspective. The evaluation team should include external evaluators and internal participants as farmers, technicians, community representatives, and others involved. The methods used are among others PRA-methods as open-ended interviews and participatory group techniques. (López-Ridaura 2002)

The most natural integration of the three perspectives is at the local level and they must act as an engine in the integration. The national level should develop a flexible framework of common principles to guide local level action (such as the precautionary principle), and identify, from any perspective, unsustainable situations. (Lehtonen 2004)

According to Hediger (2000) the challenge is to define operational and consistent terms of sustainability from an integrated social, ecological, and economic system perspective. This gives rise to two fundamental issues that need to be clearly distinguished. The first issue, the positive aspect of sustainable development, deals with questions as "what can be sustained" and "what kind of system we can get". The second issue, the normative questions, raises value judgments like "what should be sustained" and "what kind of development do we prefer". It requires one to understand how the different systems interact and evolve, and how they could be managed (Hediger, 2000

Productivity	Low crop yields and low profits	Efficiency (yields and profits)	Yields, quality of products, cost-benefit ratio
	High opportunity cost for labour	Return to labour	Economic return to labour
Stability, resilience reliability	High degradation of natural resources	Degradation or conservation of resources	Nutrient balances, erosion levels, biophysical characteristics of soils (i.e. compaction, percentage of organic matter), yield trends
	Highly diversified systems (or poorly diversified systems)	Agrodiversity	Number of species grown, income per species
	High vulnerability of production	Crop damages	Incidence of pest, diseases and weeds
	High unstable prices of inputs and outputs	Variability of input/ output prices	Variation of input and output prices (e.g. coefficient of variation of input/output)
Adaptability	Low technological of institutional innovation/adaptation	Ability to change and to adopt new technology	Adoption of new alternatives and/or farmers permanence within a system, capacity building activities, proportion of area with an adopted technology
Equity	Low income farmers	Distribution of costs and benefits	Initial investments costs
	Unequal distribution of benefits and costs		Share of benefits by different farmers groups
Self reliance	Deterioration of farmers' and costs	Organisation and participation	Participation in the design/implementation and evaluation of alternatives, degree of participation in the decision making process
	High indebtedness of local farmers	Degree of dependency from external inputs	Cost of external inputs, use of external resources

Figure 3: Indicators used in the MESMIS-process (López-Ridaura)

Part II
A field study on Kallankuthal, a village in south India

In this field study I interview Kallankuthal inhabitants on how they view the development in their village.

Sustainable development, a definition
I adopt the Brundtland definition of sustainable development, a "development that meets the needs of current generations without compromising the ability of future generations to meet their own needs", (see page 2). My aim is to analyse how inhabitants view the local resources and development according to Brundtland's three resource categories, economic, social and environmental resources.

The Brundtland definition states that a sustainable development satisfies current needs without limiting future generations to meet their needs. Inhabitants probably often prioritize their own generation's well being and not that of the coming generations. This is a problem that is hard to solve. Coming generations can only be heard through our own perspectives.

Planning the study

The planning of the study began in Sweden. I started with identifying the purpose of the study and my definition of the concept sustainable development. I made ethical considerations and planned what methods I was going to use. I wrote questionnaires and tried to plan ahead for future problems.

I wanted to make my observations in a non-industrialised society, a so-called developing country. As my own resources were limited I wanted a country where changes were apparent. I chose India since this country is developing exceptionally fast. This would increase my possibility of finding common opinions among the inhabitants during a relatively short period of time.

For the same reasons I decided to choose a small village with a couple of hundred inhabitants at most. I needed an obvious frame for my study: the small size would make it easier to meet a large part of the inhabitants and make relevant observations.

Because of my limited knowledge of India I needed a local partner. This partner had to be an expert on the area. I selected Russ Foundation since it has worked for many years in South India. Their local projects help to develop the living conditions (i.e. the local resources) for the inhabitants. People working for Russ Foundation would know the language, be familiar with the villages and the resources in the area. Russ Foundation helped me to select a village from my specifications. Russ Foundation's work is further introduced in page 15.

I wanted to get close to the Indian inhabitants. My main aim was to obtain local and personal facts. Therefore I determined not to use questionnaires but to interview the inhabitants face to face. The views of the people living in an area can be assumed to be important components when trying to reach sustainable development, but every opinion also depends on a personal knowledge. Not always has everybody experienced the same problems. Women may experience different problems than men.

The study mainly deals with the resources of today. Since the perspective is development, the situation of today was to be compared with the resources earlier and with what the inhabitants expect from the future. I determined to compare the resources of today with the resources ten years ago. Ten years was chosen since it is enough time for people to experience and realise changes. At the same time the period chosen is short enough to enable even younger inhabitants, as teenagers, to remember the

situation and to make comparisons with today. The future was not defined in years, the inhabitants were just asked about what threats and opportunities they see today.

Inconsistencies between the results may occur. If so they must be analysed. Differences can be of great importance if you allow yourself to opt for more than one single perspective. Therefore discrepancies can be used to probe certain issues in greater depth.

The ethics

I wanted to fulfil the guidelines from the Council for Research in the Humanities and Social Sciences (HSFR):

1. The requirement of consent Participants in a scientific study have the right to determine for themselves whether or not to participate.

2. The confidentiality requirement All information about participants in a study should be given the highest possible confidentiality, and should be stored in such a way that it cannot be accessed by unauthorized persons.

3. The requirement of restricted use Information obtained about individual persons is only to be used for the purpose of research.

4. The informational requirement The researcher should inform those affected by a particular piece of research about the aim of the undertaking.

My plan was to have a discussion about these guidelines with my co-workers so that we would have them fulfilled. I wanted the respondents to feel safe to open up and share experiences with me and I thought that the guidelines would support this.

Translation

Few people, especially among the poor in India, speak English. Nor do I know any Tamil. The lack of a common language is a severe limitation in doing social research. The language itself functions as a barrier, in the shape of a third person translating. It is not two persons, as in a "normal" conversation, but three different perceptions and expressions that intermingle during an interview. An interview also takes more time if you want to have simultaneous translation.

I had to determine when translation between Tamil and English should take place, and in what way. As translation during the interview would disturb it, I decided to record the interviews and have interpreters translate and transcribe the interviews afterwards. I wanted each quotation to be as precise as possible. My original plan was to record each interview and then have it translated and transcribed immediately afterwards. Two translators should be available so they could share the work. After the translation and transcription we were going to read and clarify every indistinct transcribing together, if necessary with a person more skilled in English present.

Translating and transcribing are both time-consuming methods and apart from good technical equipment, you need well-trained transcribers to reach reliable results. This procedure would, if successful, produce immense amounts of text, demanding a lot of time for the analysis as well. At the same time, it would give the material greatest possible reliability. The aim was to get as correct interpretations as possible with few misunderstandings and no nuances lost. I also planned to use quotations in my paper.

Recordings
Since I wanted to record the interviews and bring them with me home I bought an mp3-player with a recorder. I chose a digital recorder since in that way it is easy to move in the recorded material. Another advantage is that it is small so it will not be so noticeable when recording so that it would disturb the respondents as little as possible. Every respondent was of course asked if they accepted recording.

Photos
I wanted to add my own observations, relying on a camera and a notebook. I bought a small and swift camera - a digital camera - since I wanted to use photos as one type of observations during my field study and hoped that the use of my camera would broaden the picture. It could also increase the possibility of formulating new issues while the field study was carried through. This way of working – this photo method - is considered to be much in the manners of Stake. As he underlines, a good researcher must be willing to adopt quite another view during the course of the study. I will come back to this in the next chapter.

When I planned the study I laid great stress on my own observations. I feared that a young white woman like me would draw a lot of attention from the population when visiting the village. Although I assumed that this could become a problem I still hoped for relevant observations, and the possibility to use some of the photos as illustrations in my paper.

Semi-structured individual interviews
I strived to meet Bryman's (1992) criteria for a successful interviewer: she must be knowledgeable, structured, clear, gentle, sensitive, steering, critical, remembering, open, interpreting, balanced and ethically sensitive. The setting for the interview should be calm. It is important to establish the appropriate climate.

Mikkelsen (1995) recommends a method called semi-structured interviews, a method suitable to combine with other methods. Mikkelsen explains: "An interview is not just an interview. There are questions on experience and behaviour, on opinions and values, on feelings, on needs, knowledge and background data, there are presupposition questions and neutral questions, simulation questions, etc., and questions may address the past, present or future." It is important that the interview is open; that it is wide enough. The structure must also give a distinct frame to the discussion.

I determined that the individual interviews should be semi-structured, with open answers especially because such interviews facilitate access to unexpectedly important topics. It makes it easy to search for a context. It views social life as processual, rather than in static terms. This is an excellent method when you want to find new relations rather than verifying old theories.

The wide-ranging nature of unstructured interviews makes it necessary to have a fairly close relationship between researcher and subject. Re-visits, which are relatively rare in structured interviewing, may occur. If so they intensify the relation. A close relationship makes it easier for the researcher to "go native", with its consequence of a greater involvement. This is to a significant degree different from the image of an impartial scientist, which many quantitative researchers promote.

Group interviews
My group interviews were to be carried through with a method called focus groups. I planned to make six groups, divided according to sex and age. Each group would make a SWOT-analysis with two perspectives on the village. The group would discuss what resources they saw in the village for

themselves as well as for the village as a whole. I wanted to do both perspectives to get as much information as possible.

How involved should the facilitator be during a group interview? Since the aim is to try to grasp the perspectives of those studied, the approach should not be intrusive or structured. On the other hand the participants must not take over the running of the session. The facilitator should reassert control in a good way. This is not easy and both intervention and non-intervention carries risks.

Questions for the interviews

I put together two sets of questions beforehand. The questions for the individual interviews asks for facts about the respondent: name, sex, age, caste, religion, education, household type etc. The second part asks for the respondent's relation to the neighbourhood with all its advantages and problems. What differences can he see compared to the situation ten years ago? The respondent is asked to talk about what differences he or she would like to see for the future and in what way he or she could contribute to that change. In the questionnaire's last part I ask the respondent to describe the resources of the village today. To inspire the inhabitants to share as much as possible of their opinions, the three resource categories were further divided into seven categories according to Berg (2003). The individual interview questionnaire can be found in appendix 1.

I made a different set of questions for the group interviews, although the method was still semi-structured. The reason for using different questions was to take advantage of group dynamics. Therefore the groups were given broader and not so detailed questions, possible to discuss without too much interruption and facilitation from the interviewer. The groups were asked to examine the strengths and weaknesses, opportunities and threats on an individual as well as a village level. These discussions were expected to give a perspective both on the current position and what they expect from the future. The group questionnaire can be found in appendix 2.

Adjustments

Even when planning my study I did not expect the whole study to be carried out as planned. I expected I would have to make adjustments and that this had to be done in India. I was aware of my study being a subjective product. I consider my own observations personal; they were only mine. If somebody else had written this paper the paper the results would be different - although probably similar to mine.

Carrying out the study
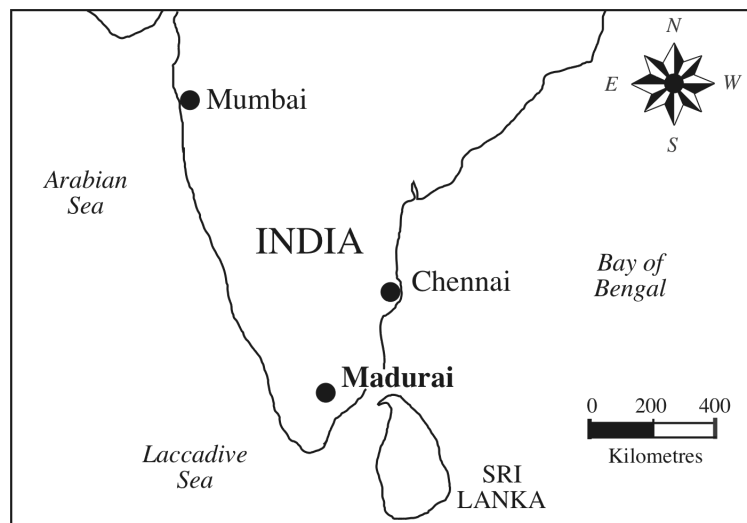
Map of southern India.

The study took place outside the city Madurai in south India in the state of Tamil Nadu. Tamil Nadu has a population of more than 62 million (2001) and more than half of the people live in rural areas. The population density in Tamil Nadu is 480 persons per Sq. Km. When you study a satellite picture it seems like the village Kallankuthal is just on the border of the more densely populated area around Madurai. North of Kallankuthal is the Alagar Hills. The hills are a greener area than the land closer to the village.

The climate is essentially tropical with humidity and temperatures relatively high all year round. The temperature in summer seldom exceeds 43º C and in winter seldom falls below 18º C. The state has three distinct rainfall climates: (1) dry season (February–May), (2) southwest monsoon (June–September) and (3) northeast monsoon (October–January).
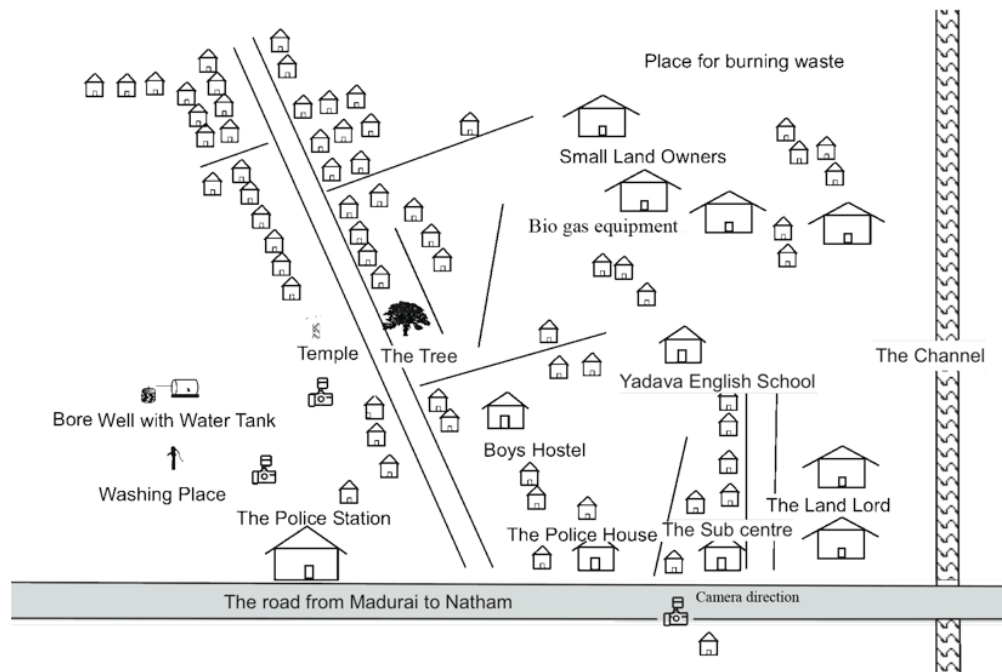
The village Kallankuthal
Kallankuthal is situated 20 kilometres north of Madurai. The village is situated just next to a road and a channel. The channel separates Kallankuthal from a larger village with shops, restaurants and a bus stop. The two villages share the same Panchayat, an institution of self-government for rural areas.

Today Kallankuthal has about 200 inhabitants, or 75 households. Almost all the inhabitants come from the lowest cast. A few are from second lowest cast. The village is 100 years old. At that time there were only a few huts, all made of coconut leaves and clay.

Kallankuthal grew quickly when the government thirty years ago implemented a program of supplying the poor with houses. About thirty houses were built which is almost half of the village houses today. These houses are very simple with one large room where everybody lives and does all their indoor activities. After the government investment, more houses have been built. Some inhabitants have, when they could afford it, built another house as their family grew. Other inhabitants who cannot afford this expansion live together in the old small house as a joint family. The scarcity of houses is a serious problem for most of the families.

Beside the government houses there are some small houses made of clay with a roof of coconut leaves. There are a few houses that belong to the minority of families who own land. Some of the houses have installed technical equipment for producing biogas. The largest house belongs to the Landlord who owns most of the land. A wide yard and a concrete wall surround his houses.

Map of Kallankuthal.

In addition to the private houses there are some other buildings in the village. There is a police station, a medical centre, a forest department house, a school, and a hostel for boys. In the middle of the village stands a large tree. It functions as a centre: at the tree people often sit and talk. Close to the tree is a small temple. In this place there is a washing place and a bore well. On one side of the village is the place where inhabitants burn their waste. Domestic animals as hens and goats walk around in the village; mostly they spend the time under the trees foraging for food.

Russ Foundation

I was accommodated in the guesthouse of Russ Foundation during my visit. I ate my meals and spent a lot of time with the girls at the Children's Home. As these girls speak English I increased my knowledge about India through my discussions with the girls.

Russ Foundation is a registered charity in Tamil Nadu and began its activity with establishing a home for a few poor young people in 1992. Since then the activities have grown. Today Russ Foundation owns an area, similar to a campus, 20 kilometres north of Madurai. Most of their activities take place on the ground of Russ Foundation. The activities involving most people cover five main areas: children's home, preschool activities, vocational training, a community action program and a home for the elderly.

According to Russ Foundation's webpage the heart of the project is the Children's Home. When I visited Russ Foundation more then twenty girls between six and seventeen were accommodated here. The girls come from disadvantaged or homeless backgrounds where the dowry system continues to render female children a burden upon poor families. Russ Foundation educates and trains these girls.

Several teams from Russ Foundation visit and maintain links with twenty-five local villages where Kallankuthal is one of the closest, situated a few kilometres from the Children's Home. The teams provide medical help and health education, as well as help to build community organizations. The medical help is provided by a mobile clinic that visits the villages regularly. The clinic, which is staffed by a doctor and a small group of nurses, prescribes medicines and offers advice to people who would otherwise find it difficult to travel to the distant hospital. Russ Foundation runs a saving scheme, with non-punitive credit facilities, for village members.

Russ Foundation representatives stress that their health-related interventions into village life have a community-based and preventive basis. They have managed to establish a network of 'village-level workers'. Supported by trained nurses, these village members provide education in childcare, AIDS awareness, and preventing waterborne disease. They help establish and maintain mothers' clubs as well as youth clubs.

Rathinakumar and Chellathal

Russ Foundations founder secretary Berlin Jose asked one of their employees in the Community Action Team, Rathinakumar, to assist me. He was a quite recently graduated social worker who had been employed by Russ Foundation about one year. He became my main partner during the interviews. He functioned as an interpreter, interviewer and facilitator. Afterwards he transcribed the recorded interviews. The team had a small bus. The bus driver assisted me a lot. He drove me from the Russ Foundation to Kallankuthal. The bus transported the groups for the interviews.

Rathinakumar translated and transcribed the interviews.

Chellathal was another employee in the Community Action Team. Chellathal had worked as a nurse in Russ Foundation's villages for many years and she provided me with a lot of relevant information. Chellathal had, on Russ Foundation's assignment, listed all inhabitants of the households in notebooks. These notebooks were an indication of Chellathal's careful follow-up of developments in the village and her knowledge an important help. Chellathal took great part: she accompanied me during my walks around the village when I made my observations and added a lot of information about the situation in Kallankuthal.

Chellathal helped with the interviews and gave information about Kallankuthal

Selection of interviewed

All the interviewed among the inhabitants were selected with the help of Russ Foundation. I asked them to try to find a sample with age variation and to choose more women than men. The reason for this was that I expected women to be the most vulnerable (Dyson, 2004) and the most likely to experience even a small lack of resources.

Six discussion groups were formed according to age and sex. Apart from that twelve persons were to be individually interviewed. Some inhabitants participated in both the individual and the group interviews. I met about forty out of the two hundred village inhabitants in the interviews.

The study discusses the village resources of which all inhabitants seem to have a good, common knowledge. Many inhabitants were at home during daytime. This was true especially about women and

children. Many males were at work during daytime and had to be interviewed during the weekends. Maybe this influenced the general selection so that fewer persons with an occupation were chosen. I had to remember the four ethical principles formulated by Council for Research in the Humanities and Social Sciences mentioned earlier (see page 11). The second requirement of confidentiality, states that only authorized persons should have access to information about the participants. In studies with local facilitators like my own this principle is hard to fulfil. This might especially be a problem in foreign countries where translators are needed.

Russ Foundation had been working for many years in Kallankuthal. Has this influenced the result of my investigation? A positive aspect may have been that the informants knew the interviewer beforehand and possibly had a great trust in him. But it could also be that the informants did not want to put criticism against Russ Foundation to one of its members since they could fear that this would have negative effects on them later on.

The interviews were in Tamil without simultaneous translation since I thought that this would give the best climate and therefore more and better answers. Although I understood very little of the interviews I could sometimes grasp part of the discussion. Now and then I understood that parts of the interview were overlooked by my partner and probably not transcribed. Rathinakumar considered these parts of the interview as being beside the study's topic. His way of reducing the information decreased my knowledge.

I made two different kinds of interviews; individual and group interviews and used different questionnaires for them. For the individual interviews I had more specified questions. For the groups I used broader questions that I hoped would open up for discussions where the groups could interact more and give a variety of opinions.

Individual interviews

The individual interviews were mostly conducted in the home of the interviewed person. To begin with I assumed we were always in the home of the person being interviewed, but later I understood that this was not the case. Sometimes the interview took place in the home of a neighbour. We were seldom alone: usually neighbours and family members passed in and out all the time. Being a foreigner I was often offered the only chair of the house and usually I accepted this offer. The others sat on the floor.

Each interview took little more than 30 minutes. Both the recorder and the camera were used during the interview. I tried to be attentive with the camera and refrained from taking photos in unsuitable situations. I noticed if those being interviewed were cautious of the camera. If I felt it was OK I took a photo. I never saw a negative reaction towards the camera or recorder. Quite the opposite; both seemed to be interesting to the respondents. They often wanted to see photos on the display. A couple of times respondents asked if they could listen to their own voices on the recorder.

Twelve persons were individually interviewed. Of these three were men and nine women. They were between 19 and 60 years old. All of them were Hindus and all except one from the lowest scheduled cast. The last person was from the second lowest cast. That person was the only one who owned land, approximately one acre. Four persons had no education, five persons had 5 - 6 years of education and two had 12 years or more. Three lived in extended families and nine in nuclear families.

Occupations among the respondents' were: three persons were working in agriculture, one was doing tailoring work, three were construction builders, four were housekeepers and two were studying and doing part-time work.

One of the respondents listens to her voice after an interview.

Group interviews

My group interviews were to be carried through with a method called focus groups. Each group would make a SWOT-analysis with two perspectives on the village. The group would discuss what resources they saw in the village for themselves as well as to the village as a whole. I wanted to do both perspectives to get as much information as possible.

Since I felt that the environment for the individual interviews had been a bit too eventful, we changed the place for the group interviews. All groups except the middle-age men were moved from the village with Russ Foundation's small buss to the school or to the Community Action Team's house, both at Russ Foundation. As earlier, Rathinakumar led the discussion and I made observations. Thirty-two persons participated in the group interviews. The groups were divided according to sex and age and had the following participants:

Old women: Eight participants from 45 to 60 years old,   all of them married.
Middle-age women: Five participants from 25 to 28 years old,   all of them married.
Young women: Five participants from 11 to 17 years old,   none of them married.
Old men: Six participants from 48 to 60 years old,   all of them married.
Middle-age men: Four participants from 29 to 38 years old,   all of them married.
Young men: Four participants from 15 to 20 years old,   none of them married.

The interview group of middle-age women sitting together with Rathinakumar and Chellathal.

The group respondents were asked to give fewer individual facts about themselves than those who were interviewed on an individual basis. Instead the main topic was the discussion about the strengths and weaknesses of the available resources and future threats and opportunities. The environment for the group interview was calmer, with only the group members present. This time neighbours and relatives could not listen to the discussion. The groups generally developed freer discussions.

During the group interviews all sat together on the floor in an official building where none of the respondents had to function as the researcher's host. I was not placed on a separate chair higher than the others. Did this influence the possibility of all of us sharing deep experiences together?

My own observations became especially intense during the group interviews. The groups behaved more dynamically and there was more to observe. I made notes during the interviews and completed my notes immediately afterwards. I tried to look involved during the interviews, taking part with body, mind and face.

The two groups with young participants appeared to be shy. Especially the group with young girls, which was also the very youngest, behaved differently from the other groups. The focus group didn't sit down in a circle as the other groups and I started wondering if they were treated more like children with fewer questions and more lecturing by Rathinakumar. Were the participants expecting a situation similar to school? Did Rathinakumar present their task differently than to the other groups?

The interview group with young girls in the Community Action Team's house.

The group interviews with the old and the recently married women caused the strongest reactions and some of the participants cried openly. In these two groups several new discussions started and many questions occurred regarding the conditions of living for women. These two groups developed the most supportive atmosphere with physical contact and comments to the person crying.

Why did this happen just to the two oldest female groups? Did they feel closer to me than the other groups, as I am a female in a reproductive age? Had these women already before my arrival developed a closer relationship with Russ Foundation than the others? It could also be that women usually spend time together and consequently know each other better.

Translating and transcribing
After the interviews Rathinakumar and I went back to the girls' home. Rathinakumar sat down by the computer and listened to the recordings and translated and transcribed the interview into the computer. I soon realised that Rathinakumar couldn't manage keeping up with all these interviews. I had to cut down on the amount to give him more time.

Observations
I made many different types of observations. Some were made during the interviews and some together with the Community Action Team when visiting the village. Sometimes we were assisted by one of the local inhabitants who worked in the evening school. During the interviews I tried to be alert and observe as much as possible. I was surprised to see how much I could comprehend without speaking the language.

Often I made observations that I wanted to take photos of, but this was a difficult task. I drew a lot of attention to myself and my camera was popular among young inhabitants. When I was without my partners from Russ Foundation, I always had a lot of kids around me who wanted to be part of the photo.

Gifts

When I planned the study I had decided not to give gifts. However, during my work I felt an increasing need to show my gratitude to those I had interviewed. From Sweden I had brought several pencils with the original intention to give these to beggars in the city. Now I changed my mind. I decided to give one pencil to each of the village households, regardless of whether they had taken part in interviews or not. With this small gift I wanted to thank everybody and say farewell to the village.

The last day I arrived earlier than the Community Action Team to the village. I began at one part of the village, walking from house to house, distributing my pencils. I couldn't imagine that I would draw even more attention to myself this time than the other days. I was mistaken. A crowd gathered: twenty people were all around me. Several discussions started if this very house had been given a pencil or not etc. In this situation I stopped distributing pencils. Instead I gave all the pencils to Chellathal, explained to her what had happened and asked her to fulfil my plan.

Results

The purpose of this study is – as I defined it at the outset – is to analyze the inhabitants' views on the local resources and development of their village. Do they consider the local development to be of high quality in a long term view, i.e. what we call sustainable? I asked the respondents about resources in seven categories. The results from the study are presented in the following under the three different perspectives given by the Brundtland Commission: an economic, a social and an ecological perspective. However, the perspectives are interlinked so one dimension often contains findings of another.

The sources used in this paper come from scientific literature and from the staff and children at Russ Foundation. More important are the direct sources in Kallankuthal, as the individual and group interviews and my own observations and photos.

The transcriptions I brought back from India are rather poor in quality. They are written in less than proper English. To be able to understand them you must read them in the context and over and over again. Often they have not been possible to use without rewriting. The quotations I use in my paper are translated and transcribed by Rathinakumar.

Economic development

Tamil Nadu has had an even faster economic development than the already high Indian average. This is visible in my study of Kallankuthal. One of the persons interviewed says: "development is taking place in all sphere of human". The fast development is easily detectable also to visitors as the old and new ways of living coexist. In some areas the development has changed the living conditions, but in other areas the traditional lifestyle still dominates.

The economic development has been fast; still poverty is immensely present even today. The state has a high rate of unemployment, among the highest in the country. A reason for this is the declining capacity of agriculture to absorb labour, together with absolute job losses in the public sector. Earlier most village inhabitants had jobs in agriculture but today many are unemployed. "Since three years it has been too little rain so the unemployment is very high."

One respondent says that half of the village lives below the poverty line. What does "poverty line" mean to him? The World Bank defines the poverty line to US$ 1/day/person, or Rs 300 in India 2004. There has been estimation that with the World Bank definition, probably more than 75% of all Indians live below the poverty line. The respondents also talk about their own poverty. One respondent, a married woman, says that her joint family with eight members has a monthly income of Rs 1500.

The tough conditions for women became more and more obvious during my visit. The great differences in income between men and women makes women depend greatly on their husbands. This is besides marriage an important reason for migration: women are better paid in Madurai and other cities. Poverty and unemployment are also especially high among women. A respondent says that most men go to work, but only half of the women. Another respondent says she would like to find a job but today only her husband has one. She wishes that both of them had jobs; then the economic situation could improve.

Development in India is fast. One of the households in Kallankuthal repairs electronic equipment. Some things that will be repaired are seen in the background.

According to the respondents most people are employed "on a daily basis", which means that they have to search daily for employment. One man says that he searches for new jobs within 25 km from home. Many do not manage to find work. The problem is not reduced with education, since the educated cannot find work either. Some say it is even harder for the educated to find employment. The young generation is more educated but does not have employment anyway.

Poverty causes many problems. In general people cannot satisfy their own basic needs. Some live in damaged houses, with rain leaking into the house. Others say they cannot repay their loans. Poverty makes some people beg. The respondents say that they would like to have money for their children's education. One son adds that he cannot get married since his family cannot afford another house.

A few of the village houses are very simple with walls made of clay and roof made of coco palm leaves. This is less convenient and although in the short run cheaper, it is less economical in the long run than houses made of e.g. concrete (Glaeser, 1995). Chellathal says that houses are built in this way since those who live there and have constructed the house do not own it. Because of this they do not want to risk money by spending them on something more expensive.

*Rich and poor live different lives. To the right a simple house built of clay and coconut leaves.
To the left the landlord's house with concrete walls surrounding a wide yard and houses.*

When people manage to find work it is almost always physically hard and undermines their health. Many work as masons or with construction work, e.g. they carry material from the basement up the floors. There is nothing to rely on except your own physical strength. This worries many of the elders since they have been working hard for many years and feel that their strength is running out. However, one respondent comment that since most of the people are working physically their health is good.

Everyone underlines that the view on education has changed compared to ten years ago. Today there is a high awareness that education is important from "all aspects". Everybody tries to afford education for his or her children but poverty limits these possibilities. One girl says she has to work because her family cannot afford to give her education. One young man says that since he has misbehaved earlier he is not allowed to go to school. Another respondent believes that the school situation could be better since the teacher usually hits him. Chellathal adds that children finish school too early both because of bad friends and parents.

A reason for the changed opinion on education could be the accelerated educational progress in India and Tamil Nadu during the 1990s, both in terms of quantity and quality. Several centrally and externally funded projects have taken place; they have improved and decentralised management. There are more private schools today and the use of "para-teachers" has increased. The demographic bonus of Tamil Nadu will be even stronger during the years to come.

Earlier girls were not allowed to study in Tamil Nadu, This has changed; today girls have the same rights to study as men. Chellathal says that today the government allots 33% of the seats for girls and the resources for girls are improving. According to Chellathal 20 % of the village students are given higher education. Boys normally study up to 17 years and girls up to 15 years. One of the young female respondents says that she cannot attend school because of poverty. She had to stop after the 6th grade. The other seven girls in the group stress that they want to continue their education. They want to become nurses, doctors and teachers. Nobody mentions anything wanting to get married.

The possibilities for young women to get education are increasing.

Before, all children could not be given the possibility to attend school. Today, the fertility rate is very low and the number of children has diminished. The result is a special choice: the authorities can either reduce the education expenditures, or they can increase the expenditures per child, improving education further. This will make it possible for all children to attend school, regardless of gender, caste and rural livelihood in future.

The fertility decline is supposed to be poverty driven. Parents make a quantity-quality trade off, reducing the numbers of children and instead investing in their education. Parents hope that the children will get an (urban) employment. Many respondents say that they want their children to get an education; one of them wants his son to become an officer.

The Evening Tuition School run by Russ Foundation is also important. The school brings parents and teachers together to a common platform to discuss various issues, not only academic, but also the overall development of the individual, their families and the community at large. It has promoted higher education and reduced the dropout rate from school.

A bus passes through the village but it does not stop until one kilometre away in the next village. Many people complain about this; others mention the existence of the bus as a resource. One respondent remarks that the bus stop is not so far away as in many other places; still you have to walk one kilometre to the public bus stand. Several respondents want a change: since the bus drives through the village the accessibility would be improved with an added bus stop.

Many travel to Madurai to search for work and to buy and sell things. Some respondents say that the roads are bad. This is a common opinion in all of India about all roads, except the highways. During my visit I found that the road to Kallankuthal had a good pavement. A greater problem is that the intense

traffic runs through the villages on narrow streets. Few traffic rules are observed and no marks separate the diverged traffic.

The bicyclist with his cow has to travel close to the passing bus.

Other kinds of infrastructure have also changed. Electricity consumption has increased but the limited electricity supply for night streetlight is a problem. Some say communication has changed. Few have their own TV but they visit friends to watch.

The financial sector has changed a lot for all respondents. Some say they use banks today. Another, maybe even more radical change, is that ten years ago many had their salaries paid in natural goods. Today they earn money which one respondent comments increases the possibility of fulfilling one's needs. This means that the economy in these 10 years has changed from more primitive to more capitalist.

Russ Foundation runs a saving scheme in some other villages and there are discussions with the Kallankuthal inhabitants of starting one here. However, there is little to save and every unexpected event can erase the savings easily.

Some of the respondents have dreams of developing their own business. One wants to have a small vegetable sales business, another a tailoring shop. Today they have no possibility of making such investments, but maybe the future will bring this to the inhabitants. Together with the opportunity comes the threat of losing their business.

Social development

During the interviews there were many answers about political and democracy resources. I have chosen to comment on these perspectives in this section.

Poverty causes many different social problems. One example is that people work too hard. According to Chellathal many people have bad health because of "inefficient food, bad environment, lack of interest in their body conditions and bad habits like smoking, drinking and unsafe sex".

Chellathal says that poverty has not increased but people today are much more conscious of what other people own. This causes psychological stress that has negative effects. Many of the respondents comment on psychological health problems: "without aim we are living". They worry that the health problems will escalate in future. Many comment on drug use. Cigarette smoking, severe use of alcohol and drugs are new but common health problems. Several respondents comment on their use of drugs as a weakness - or the opposite as a strength.

According to Chellathal many children and elders are stay alone in their home during daytime. Nobody takes care of them, as most people have to work the whole day and get back late. Many children who can't go to school due to poverty play in wrong places. Chellathal stresses that nurseries and homes for the elderly must be built.

Life expectancy in Tamil Nadu is higher than Indian average, almost 64.6 years. The state has a relatively small proportion of population of less than 15 years. The fertility rate is exceptionally low; even slightly lower then the replacement level.

Strong Indian development has lead to improvements in living conditions also in Kallankuthal. According to Chellathal calorie availability and income have risen but still 15 % of the children below 10 years are undernourished. The food for one child per day costs from Rs. 10. Many people are undernourished, both in calorific and micronutrient terms. This is especially true among women, adolescent girls and under-fives. There is a slightly better situation for children attending school since they get a meal there.

Several respondents spoke about their own family members who have died because of diseases. Russ Foundation activities have probably improved the availability of medical care in the village. Medical help is provided by a mobile clinic with a doctor and a small group of nurses. This clinic visits the neighbour village regularly. They prescribe medicines and offer advice to people who would otherwise find it difficult to travel to a distant hospital. This is an important step on the way to better health conditions especially for women. Furthermore, there has been a general increase in the availability of purchasing medicines. This is shown in comments like: "Health is good. If any problems we go to hospital". A problem is that during night there is no possibility of using public transport. The Kallankuthal inhabitants, including the pregnant women, cannot get access to medical care at night. Ambulances are not available. Taxis do not go this far from Madurai and the busses do not drive at night.

Chellathal says that diseases like hypertension, tuberculosis, jaundice, typhoid, HIV/AIDS, sexual transmitted infections and asthma cause severe problems. Surveys report that very few in India have heard about HIV/AIDS but according to Chellathal everyone in Kallankuthal has. However, they are not taking this problem seriously, she adds.

Chellathal says that the government and some non-governmental organizations are trying to raise the use of condoms and in this way reduce sexual transmitted deceases. Sterilisation is the method of birth control that is mostly used. Together with the low level of female autonomy it is very difficult for

women to insist on the use of condoms and some men do not want to use them. This causes problems when a woman, monogamous herself, has no control of her husband's sexual behaviour.

Today the fertility rate is low and prenatal care available – but not at night.

Many women who are about to give birth think that if they eat a lot, their baby will be heavier and the delivery more painful. They eat to little and because of this they do not have sufficient physical strength and sometimes because of this babies are born handicapped.

Women are obliged to take care of the family and have little say about their own life. Many women comment on their great dependency on their family. One woman says it is important to be good to the husband's parents. A young girl says that her mother has remarried; after that she and her new husband do not want to help the daughter any more. Another woman says that she is a widow and her (or maybe her ex-husband's) parents want to arrange a remarriage but she does not want to.

Female vulnerability is clearly shown in most of the interviews. Women talk about their great dependency on their husbands and families. They are very concrete when they mention the problems of today; general problems of understanding each other, infidelity and the threat that their husbands would leave them.

The social geography of India is diverse and varied over the country. In the south structures are less patriarchal and women have a higher status. Female infanticides are not as common and young girls get more equal food and as much health care as young boys. Maternal death at childbirth is less common. The balance between boys and girls is less askew. At the same time women's autonomy shows little difference from other places in India. They have little say about childbearing and if they want to postpone or terminate a pregnancy they risk anger from the rest of the family.

Prenatal sex determination and the abortion of female foetuses threaten to askew the sex ratio to new heights. Recognizing and seeking to control this trend, the government of India outlawed prenatal sex determination in 1996. Chellathal says that because of raised awareness couples today accept **one** female child, preferably together with two sons. There are still female children killed. In Kallankuthal Russ Foundation tries to change public opinions on these questions. One sign of the information campaign can be seen at the house of the Community Action team. A poster on a wall informs about the law against prenatal sex determination.

A poster in bright colours informs about the law against prenatal sex determination:
If you kill the foster you will be put in jail.

The struggle against high fertility is old in Tamil Nadu. The state government started compensating poor people being sterilised in the middle of the twentieth century. Sterilisation camps promoted vasectomy. Today fertility in Tamil Nadu is very low. It has declined also among uneducated women partly due to increased use of contraception. The health and family programme has been assisted by relatively effective public service. Media is supposed to have a strong negative impact on fertility in Tamil Nadu. Dependency on the family does not become smaller with increasing age. An old woman says her children don't care for her. Few elder women in India are economically self-sufficient and have savings of their own. Elderly women live with and depend upon other family members to meet their physical, financial and emotional needs.

It is extremely difficult to live as an unmarried or divorced woman, from an economic as well as a social perspective. There are few alternatives if a marriage is unhappy because of assault or infidelity. Some respondents talk about men who hit them and about the use of alcohol.

*Old women usually are not economically self-sufficient
They depend upon their family their whole lives.*

The average age for marrying in Tamil Nadu was 18.7 years in 1998. One female respondent says that in Kallankuthal they marry too young because of the caste marriage system. Of the women being individually interviewed, nine had been living in the village since they were born. Three of them have "probably" been living in the village since they married. "Probably" is used since this is my conclusion, built on the fact that they moved there the same year they married. This is convergent with statistics. Females form the great majority of migrants, especially in rural-rural migration.

Life expectancy is almost eighth years shorter for rural females in the village compared with urban areas, according to Chellathal. One reason is that earlier only 40 % of rural women in India received any prenatal check up from a health professional. Almost all births were delivered at home in unhygienic conditions. Russ Foundation works with these questions and the conditions are supposed to be improving. Chellathal says that today 80 % are taking pre-natal checkups regularly during their pregnancy. This has increased the safety drastically both for mother and child. Today 70 % of the mothers give birth in hospitals.

Many respondents comment on the lack of space. Their homes are too small and not suitable for hosting foreigners. Many complain over the lack of a guesthouse in Kallankuthal. The village has no "public rest room" where visitors can stay. They emphasize that village inhabitants are forced to live in extended families with too little room because there is a lack of houses. During these circumstances family cooperation sometimes becomes a problem. Once again, women are probably influenced the most. The women migrate from their family and if their relatives cannot travel back and forth on the same day, they have problem to visit the married and migrated woman.

Many women migrate when they marry and have problems meeting their old family.

When asked about their individual strengths and weaknesses, everybody comments on their physical and psychological capacity. They stress the importance of their own individual capacity. Most comments deal with their ability for hard work. Many respondents stress that they manage to live without the help of others, that they have good relationships and the importance of being a good person. Maybe these comments are more common in Kallankuthal than in a richer country.

Several discuss the behaviour of others. Many say that they would like to change the way others behave. A few underline that behaviour is presently changing: "People behaviour also change in a good manner". Two perspectives are often mentioned: the greater acceptance of educating the children and the change of dress code.

Two castes live side by side in the village. Rathinakumar call them Yathwer and Sakliar. Chellathal describes Sakliar as the most backward class. The people from the Sakliar caste do the dirtiest work; they clean the gutters, brush the shoes and bury the dead.

Some respondents say that the two castes have a good relationship with each other. Others complain that village inhabitants are treated badly because of their low caste. The negative term "backward" is heard often. Also the respondents use the term for their own caste.

The village as such is considered to be a resource to them socially. They underline that they generally have good relations with each other. One respondent says that the "co-operation within the community is good", another that "they share the problems, often sitting by the tree plant".

The village is a social resource where especially the women know each other well.

Almost everybody comments on the dependency on their family. Many people emphasize that they are proud that they can manage on their own. Others complain that their relatives are not helping them, "Economically relatives not supporting". Some respondents find the village inhabitants too selfish. Apparently there are limitations to how much you want to share with others: "All are in touch with everyone but do not help each other financially".

Another concrete problem is the washing place in the centre of the village. Many complain that it is too open and that men and women are obliged to take their baths at the same place. In another village I saw a woman washing herself the traditional way: at an open washing place with the clothes on. Do the inhabitants want to be able wash themselves more privately and without clothes on?

The toilet system is open but nobody mentions the toilets at all. Chellathal says the government has built toilets in the village but people prefer to go outside anyway since the toilets are not maintained properly.

Several respondents accentuate that there is a police station in the village. This has lead to greater safety. Today everybody can complain to the police if something is wrong. There are many positive comments on the police: "Police help the people in the time of any problem". Not a single respondent mentions anything negative about the police.

Many respondents emphasize that the village has good story writing and good dance traditions. A few people would like to form a dance group. Many mention that it is good to have a public temple, but that it is too small. Some bring up traditions as a strength, "We are follow the older thought and worship, and traditional are follow the time of marriage and death". Also in this area poverty is striking. Many stress the lack of resources: "Because of poverty last seven years no temple celebration" and "Not enough land for burning ground".

The temple to the left and the meeting point by the large tree to the right.

I visited the village temple. Inside the temple there was a fence and on the other side statues, painted in bright colours. Outside there were more statues, but unpainted and falling into pieces. They seemed to be much older. The old statues were put outdoors, to become earth again. The inhabitants said that the old statues had replaced by the new ones.

In the temple new ones have replaced old statues.
The old ones are placed outside, falling into pieces.

The inhabitants want to influence their livelihood. They are very open-minded with what their contribution might be. One respondent says, "Whatever people feel I do for the change". Another calls himself an "advisor for the change". Many say they want to actively take part in creating change. But as is often the case: it is the same people who cannot express their preferences on the market that have too little say in local decision-making. A young woman says that it is a problem that they don't have role models in the village.

Kallankuthal has a Panchayat; a local leaders' group together with the village on the other side of the channel, but Kallankuthal doesn't have an elected member in it. Many comment on this. Some say their lack of representation is caused by their low level of education and knowledge, others think that it is because they are low caste people.

The obstacles to increasing the influence are both internal and external to the village. People have to work hard to meet their basic needs and some of them are unaware of the government's projects. But it is also an external problem: Some say it is a problem of the official's perspectives, Maybe the distance between the Panchayat and Kallankuthal has increased: "Before the Panchayat leader helped our people but now the present Panchayat leader does not implement the government program". Some say the government has a top to bottom approach. One person says that to strengthen the possibilities for influencing the development, economical enforcements are needed. ¨

Many of the inhabitants want to be more involved in decision-making. It is a challenge to increase the possibility to influence not only for the poor but also for the women.

Environmental development

As shown in the last chapter the strong economic development has lead to social improvements. It could also lead to increased environmental problems in Kallankuthal as it has in India as a whole. The increasing population will accelerate the environmental problems if environmental policies are not put in place.

So far the conflict between economic and environmental development is less obvious in Kallankuthal but one of the respondents says: "Our village has good water facilities and air because don't have an industry so very good environment for human living condition". The quotation shows that he experiences a direct link between economic growth and environmental problems.

Everybody needs water. Many comment on environmental losses in general; negative examples from other places where the inhabitants have suffered loss of water or other resources when multinational companies are allowed to use the groundwater. In the future the lack of water will possibly be still more important when people choose where to live. Perceived scarcity of water will perhaps cause large-scale migration as well as conflicts. Property rights entitle anyone to pump any amount of water from a well on his own land, even if he reduces the water levels for the neighbours. Since electricity has been free or heavily subsidised the price of running pumps is low. Therefore "water lords" has emerged in many places, drilling deep and selling water. So the rich pump water for free, and the poor have to buy water from the rich well owner.

This has happened in the neighbourhood but not in Kallankuthal. Many respondents mention that some years ago Russ Foundation funded a bore well and a water tank. Since then there is "good water without money". All this water cannot fill irrigation needs. Agriculture uses most of India's fresh water and its demand is increasing even in Kallankuthal together with domestic and industrial demands. There is generally a potential of increased harvests and decreased poverty if you start using drip irrigation and carry through a careful selection of crops. Chellathal says that this is already used to a large extent.

The washing place. The new bore well lies to the right, just outside the picture.

One obvious area that needs to be amended is the waste management. All of India is scattered with wastes and the amount of waste is increasing. If collected, the waste is dumped in landfills and these are increasing exponentially. More and more common is to burn the waste. This is the method used in

Kallankuthal. Close to the village houses they use a place to burn the waste but there is still a lot of waste in the area.

Today health problems related to environmental factors are increasing. One example is indoor and outdoor pollution that are alarmingly high in many places. Chellathal comments: because of the pollution most factories are situated outside the cities, but instead often built close to villages.

Some households in Kallankuthal have equipment that produces biogas. In the concrete tank biogas is produced. They deposit their organic waste and dung in the tank and after fermentation they get gas that they can use as cooking fuel, which decreases the need for fuel wood.

The white concrete sphere is a tank that produces biogas.

The respondents describe the weather as "six months cool and six months very hot". This type of weather leads to generally good biological conditions for agriculture. Many people comment on this and consider it to be an important resource. Except for last year's drought the climate has been good. They normally grow rice, banana, mangos, coconut palms and pully and have cows, dogs and goats. The Alagar hills normally give good rain. The air and the soil are good, and the soil has been further improved by cultivating, according to the respondents.

Some respondents tell me that a lot of herbal plants and medical plants for diseases like head pain and jaundice are available in the area. They also get fuel wood from three kilometres away. I do not know where the collection of plants is done. Even on the government owned land collection is not legal. One alternative could be Common Pool Resources (CPR) available in the area. A CPR is an area that is not privately owned where landless people can collect goods like fuel wood or different plants. The CPR may be the only available asset to them. Therefore a CPR can be an important safety net and contribute to social and economic development.

Chellathal adds that the lowest groups are always very careful with the resources. They don't throw anything away: everything is used for something. She gives one example: the cow dung is used as

minerals for the farms. During the interviews I visited several homes: their skill of using natural material could be observed everywhere. Every home - the homes in Kallankuthal as well as the Girl's Home at Russ Foundation - had the same kind of brushes. One day I learned how these were made; a tiresome work it seemed to me. The girls at Russ Foundation sat together outside the home and cut out the straw from the coco palm leaf's middle. After that hundreds and hundreds of straws were tied together, materializing into a brush.

Ramya makes a brush from coconut leaves.
Hundreds and hundreds of straws are tied together.

Reflections: a sustainable development in Kallankuthal?

The main purpose of this paper has been to establish and analyse the Kallankuthal inhabitants' view of sustainable development from an economic, social and environmental point of view.

Poverty is general in Kallankuthal; everybody admits that. There is a constant and common lack of economic and social resources. At the same time development is fast – fast enough to be obvious to everybody. Today many people – and especially the younger generation – maintain a hope for the future. The older generation anticipates their children will have a better life.

What differences have become most obvious during the last ten years? The largest problem is unemployment. When agriculture fails many become unemployed. One of the respondents told me Kallankuthal has good environmental resources because there is no industry in the village. To this respondent it probably seemed inevitable that an industry would decrease environmental resources. A clean environment together with employment requires the Indian government to introduce regulations that encourage decision-makers to use the best available technique.

Another example of the conflict between environmental and economic resources is the family biogas equipments. Today only few households can afford this equipment that decreases the need for wood for fuel because of the expensive investment. Maybe the government could educate people how to build village equipments for biogas.

The Kallankuthal inhabitants first of all ask for better economic resources: they would like an opportunity to get loans to build their own houses; they want a toilet and bath facilities with separate rooms for men and women. They want to be able to reach hospital at night, and they want a new and larger temple. They want a safe road and a bus stop near their village.

The most sweeping change has been that today children attend school and there are few drop outs. They have the old well for washing and the bore well for drinking. Mothers get prenatal care and a doctor is available in the neighbour village once a week.

So far development has meant great changes for women. This is especially evident if you compare different generations with each other. Old women are the most vulnerable: they have given birth to many children and have not been allowed to educate themselves. The middle-age generation has in theory had an opportunity of an education, but many parents could not afford it. Today's rural women are still dependant on the family and lack resources of their own. Their main task is to please their husbands. But things are changing. In the cities you can get a job and high salaries are sometimes paid also to women.

Today's young generation is relatively small. Many of the young girls are given more resources than before and above all: they get a chance to study. They sometimes go to public schools and have to leave their own village during weekdays. In school they get a space of their own and an opportunity to study without interference from their families.

The great difference in economic and social resources between men and women is still a great problem. Many women complain over the bad conditions for rural women. These conditions must improve greatly, both economically and socially. The opportunity for a rural woman to live without a husband is still small. There is a special need for a basic safety net for everyone to rely on when their relatives are absent or the family is broken.

Many inhabitants underlined that the fast changes cause new social problems. Maybe the use of alcohol and other drugs has increased. The fast development has intensified stress on those who cannot take care of themselves. Many adults have to travel several hours a day to search for a job. They cannot stay in

their home village during daytime and their relatives, the older and the younger generations, are left without care. Kallankuthal needs nurseries as well as homes for elderly people.

Many of those who cannot express their preferences in the market have little say in local decision-making. This is true also in Kallankuthal. When planning for development you need to take in the views of all inhabitants'. Once the Panchayat was invented with the aim of increasing everybody's possibility to influence the future, but there are still many obstacles to overcome. The Panchayat should have representation from every village. By involving the whole population in development, all inhabitants' knowledge can grow and implementation of decisions be facilitated. Future priorities should be made together with the inhabitants. Local policies need to be developed in close relationship with inhabitants.

Kallankuthal has every incentive to move towards broad sustainability. During this process there is a need to involve more people in the discussion on where India is going. Sustainable development could be used as a forum - for a broad discussion on finding the right road forward. Politicians, researchers and inhabitants need to be involved in this process. The process will in itself contribute to a sustainable development but also give a road map to the future. The totality of the benefits of broad involvement is hard to see in advance, but comprise both finding the best solutions as well as increased possibilities for realizing the ideas.

Carrying out a study in a foreign country is different from doing it at home. In my original planning I took great care trying to find methods that emphasized local knowledge. I wanted to enable local people to make their own appraisals, analyses and plans. My original plan was not carried out. I did not manage to solve my dependency on my interpreter and I could rely only marginally on my own observations.

Before I started the field research I tried to reduce the workload on Russ employees. I accepted to work together with Rathinakumar, one of the employees of Russ foundation, a man thirty years old. I searched for an additional transcriber in the neighbourhood since I realised that my demands would not be fulfilled with less than two co-workers. This took a lot of time but was not successful. I was a guest at Russ Foundation and could not invite assistants, as I wanted. Nor could I ask for more of the resources of Russ Foundation. I had to accept that Rathinakumar did all the interviews. When he returned home after an interview he had hours of translating and transcribing. He had to work many hours per day.

My fear that his English was not good enough was verified. This resulted in too arbitrary transcriptions where many details were left out. It was not possible to receive the transcriptions soon after an interview. My original intention of returning to those interviewed and deepen my knowledge at certain points had to be abandoned.

The overload of work for Rathinakumar also meant less time for our internal communication. I wanted to discuss the process and the different participants' expressed opinions and feelings. Because of the restraints in translation and transcribing resources, the result became not as good as it could have been. This does not mean that the results are wrong, just that they are not deep enough.

The difficulty in communication also meant that I couldn't arrange the interviews, as I wanted. I became too dependent on Rathinakumar. Here comes one example: When the married women sat down to be interviewed they formed a circle together with Rathinakumar. From this position they could all discuss on an equal level. When the young women sat down they behaved like in school; they sat down in three different rows. Rathinakumar stood in front of them asking questions like a teacher. The girls had to look up at Rathinakumar and he looked down on them. This meant that the girls became isolated from each other as they could not see and respond to each other's reactions.

Apart from my original plan I got additional help from Chellathal, another employee at the Community Action Team. Chellathal had great experience of the village from her work as a nurse, since she had

worked in the area for more than 10 years. She had a deep knowledge that she generously shared. She knew the surroundings very well and had also an overview of the whole of the Indian situation. Every day during my stay in Kallankuthal I profited from her deep knowledge. Also after my return to Sweden I kept in contact. I passed my questions and she answered back over the Internet.

Another unexpected good source of knowledge was the Children's Home where I stayed during three months. Here some twenty girls between six and eighteen get their education. We met a lot and had many meals together. Their knowledge of English gave me a possibility of getting to know them. I learned about the girls' family situation, their life story, activities, food and religion and about their dreams for the future. They gave me a vivid picture of a possible future for young girls in Kallankuthal.

The definition of sustainable development made by Brundtland states that a sustainable development satisfies current needs without limiting future generations to meet their needs. Inhabitants probably often prioritize their own generation's well being and not that of the coming generations. This is a problem that is hard to solve. Coming generations can only be heard through our own perspectives. In a study with more resources there might be a way to analyse the opinions with this inter-generational perspective taken into account.

My own camera turned out to be an unexpectedly good source of information. One single photo often tells two stories: about ordinary life as well as of a better life to be expected.

Some girls are sitting on the stairs outside the Children's Home scrutinizing a newspaper. One of them has just carried through her exam and the result is printed in the paper. Her exam opens a door to a better future. If her results are good enough, her dreams may come true.

This photo of some girls of different ages forms a peeping hole to the future. Tomorrow the situation for young women from Kallankuthal will change radically. These children will contribute to improving India's future. Then Kallankuthal will have reached higher sustainability.

The oldest girl Paulpackiam studies the newspaper on the stairs of the Children's Home.
This day the newspaper is especially interesting, since it contains her exam results.

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Webpages:
http://www.russfoundation.com
http://www.wakeupcall.org (under the link "poverty line")

Appendix 1

Individual interview questionnaire

Name
Sex
Age
Caste (sakliar (SC) or yathwer)
Religion
Farm size (if any)
Highest education
Household type (nuclear family or joint family)

What is your occupation right now?

For how long have you been living in your village?

Whom do you live with?

Are you satisfied with your village?
Do you intend to continue to live here the following years?

What do you do at home?
Do you find this work ok or not?

What do you do in your village when you are not inside your home?

If you had the power to decide yourself over the situation, what would you like to change in your village?

What's the difference between how it is and how it could be? Why?

Tell me about your village.

How do you like your village
a) What do you find is good by living here in this village?
b) What do you find not being so good by living here in this village?

Do you want to change anything in your village?
a) What would you like the change to be like?
b) What kind of role do you have in such a work of change?
c) Could you imagine having another role in such a work?
d) Obstacles?

How has the village changed compared to 10 years back in time?

Tell about your village from these seven terms:
Physical Resources, Economic Resources, Biological Resources, Organizational Resources, Social Resources, Aesthetic Resources, Cultural Resources:

Appendix 2

Group interview questionnaire

Name
Age
Education
Aim of education

Individual level analysis:
Strengths
Weaknesses:
Opportunities:
Threats:

Village level analysis:
Strengths:
Weaknesses:
Opportunities:
Threats: