Background and objectives

When I studied archaeology in the late 1960'ies, it was to a large degree a study of chronology and cultural diffusion across Europe. We paid almost no attention to the organization and living conditions of local societies. This was to change profoundly in the 1970'ies and 1980'ies triggered by the Cambridge school of Economic Archaeology and the Anglo-American New Archaeology.

As a result, a generation of young archaeologist began to focus their interests on the inner workings of local societies dealing with issues like ecological and economic settings, patterns of land use and social organisation. Perhaps, many of us thought that we were inventing the wheel, but this was far from so. South Scandinavian archaeology already had a deeply rooted tradition for a "settlement" approach to archaeology started by Sophus Müller (1904, 1911, 1913, 1914), and later reinforced by Mathiassen (1948, 1959). For a complete overview of the "settlement archaeology" tradition in South Scandinavia, see Thrane 1989.

The new flux into settlement archaeology, however, did bring a real renewal to the existing tradition because of the theoretical background in Anglo-Sachsen and Anglo-American literature. There was a willingness to go beyond a mere description of observed patterns and present explanatory models for the societies behind the artefacts.

Projects were formulated with diverse backgrounds and objectives. Many were earnest, while others were no more than hot air. For those who persisted, however, the practical reality of running a settlement archaeological project soon became obvious. There was more to it than modelling prehistoric societies. My own project was formulated in the mid 1970'ies, but only now more than 40 years later have I succeeded.

The East Jutland project stage I

When I was a student, the problems of early agriculture fascinated me, both in general and more specifically in relation to South Scandinavia. This fascination stayed with me, and was the background for the settlement archaeology project I designed. I wanted to study the organisation and development of Neolithic society in a local area. The area I chose was a 1600 km^2 chunk of east central Jutland (Fig. 1). Chronologically I limited the study to the TRB-culture (TBK for short) dating between 3900 and 2800, or more or less the oldest half of the Neolithic.

I started to do excavations on a regular basis within the area in 1973, and soon after, I began to record material from the area. In 1981 I wrote a paper called "Settlement Systems of Early Agricultural Societies in East Jutland, Denmark: A Regional Study of Change" (Madsen 1982). The objective was

> "to build a general model for the development of these settlement systems on the basis of our current knowledge of settlement and grave sites within the research area as well as supplementary information from other parts of Denmark. The purpose of the model at this preliminary stage is to serve as a guideline for future research in the area and to elicit comments on the interpretive framework underlying the research project, not least the part concerning change in land use patterns" (Madsen 1982: 197).

Theoretically, the paper was strongly dependant on New Archaeology and the Cambridge school as the following citation shows:

> "Man never willingly fights nature, but rather utilizes it as economically as possible. That is to say, he chooses the option which will give him the highest possible returns for the least work under the given circumstances" (Madsen 1982: 220).

The paper, however, was not a clear case of economic determinism. It was quite clear to me that social mechanisms played a crucial role:

> "In a case, as will be shown in the following, where each group needs a large territory to make a living, symbolic expressions of rights to that territory might be expected. Elaborate social organization and ritual also may develop to control patterns of access over large areas" (Madsen 1982: 221).

The general model presented, operated with three chronological phases. The early phase equalled what is now termed EN I dating from 3900 to 3450 BC. The middle phase equalled EN II – MN A II dating from 3450 to 3050 BC. The late phase equalled MN A III-V dating to 3050 to 2800 BC.

I considered the settlements from the early phase to be of two kinds. Those placed at the sea or lake shorelines and those placed on sandy spots away from the shores. The former type was clearly associated with fishing and hunting, while I assumed that the latter type was associated with agriculture. From excavations, it was clear that the catching sites were used continuously over a long period, while the agricultural sites appeared to be small and short-lived.

General pollen diagrams showed a forested landscape for this phase with only few traces of agriculture. This combined with the nature of the settlement sites led to an assumption of a mobile forest fallow economy with small slash-and-burn plots and animal husbandry in temporary clearings. Hunting and fishing from advantageous positions along the shores supplemented the agriculture.

In the middle phase, the agricultural sites apparently grew in number and size, while the *Landnam* effect in the pollen diagrams indicating clearances in the forest peeked. At the same time, new types of sites appear. The megalithic tombs were built in this phase and the same was true with a number of causewayed enclosures. All this led to a hypothesis of a society competing for land and resources, where the tombs – apart from being tombs – functioned as markers of land ownership

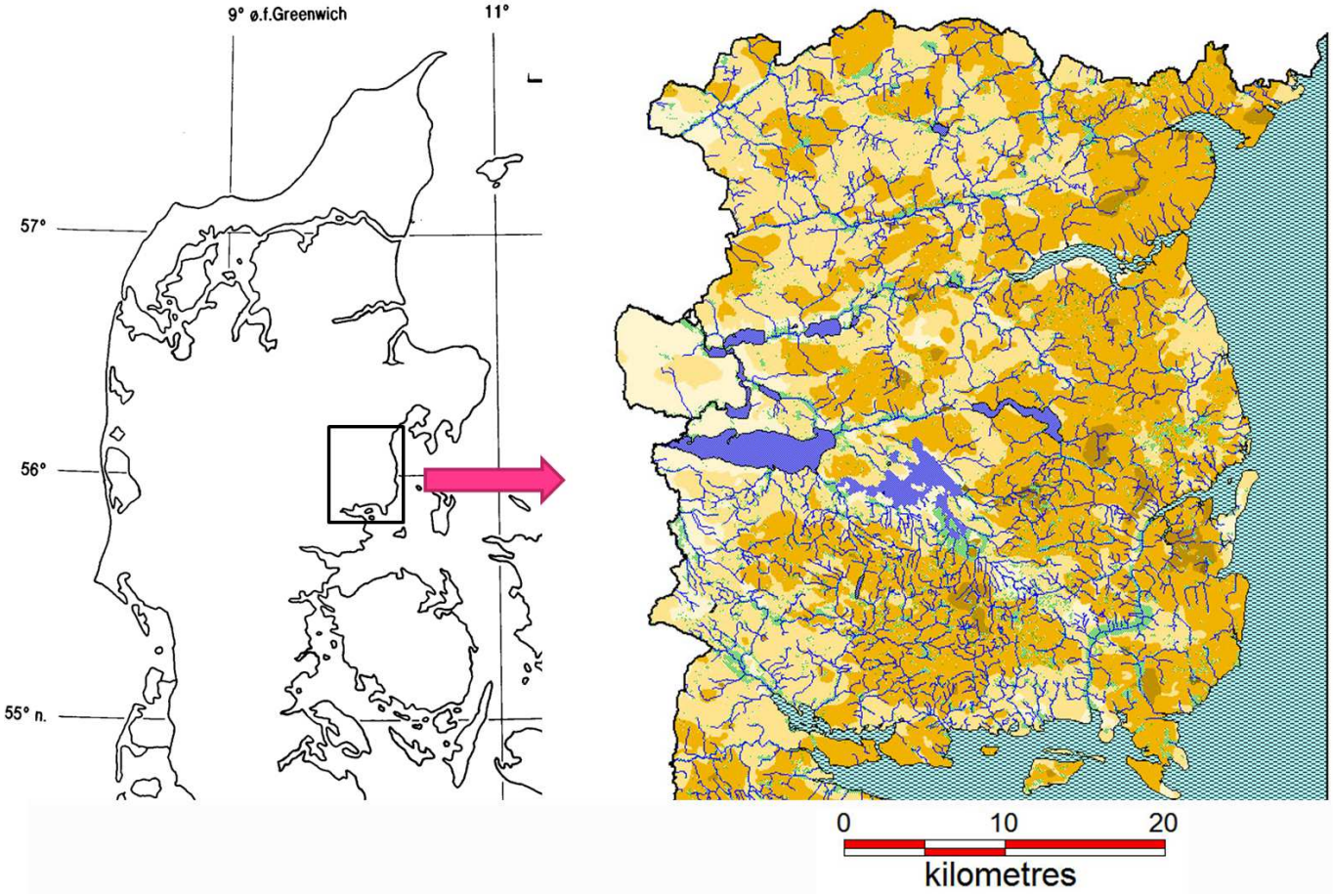

Figure 1. Research area for the east Jutland project as defined in 1982.

– while the causewayed enclosures were considered centres with a function of social regulation in society.

With the late phase profound changes happened. The settlement sites became larger and more permanently inhabited, and the causewayed enclosures went out of use, or rather were transformed into settlements. Megalithic tombs were reused, but no longer built. I interpreted this development as a consolidation of society with a more permanent territorial structure and therefore less social stress.

In three separate papers, I elaborated on these ideas. A contemporary paper (Madsen & Jensen 1982) analysed in detail the land use pattern in the early phase, while a paper from 1988 (Madsen 1990) dealt more broadly with TBK land use, and gave an updated version of the model presented in the 1982 paper. Another paper from 1988 (Madsen 1991) dealt with the social organization in early Neolithic society. In reality that was the last paper written in relation to the project.

What then happened to the project itself? It slowly faded away in the face of severe practical problems. I simply had not anticipated the size of the material. I could not find a way to record the artefacts in a manageable fashion nor find a dynamic way to create distribution maps. I had started making sketches of the artefacts, but they were not useable for publication, and publishing just a few selected items was not what I wanted. I kept the sketches and notes in a card index organised after location. The material was mapped on a parish-by-parish basis, which was easy enough to handle, but when I wanted to see the total distribution of say an axe type, it began to be complicated. First, I had to locate the individual items in the card index, find their position on the parish map and then transfer the point to a general map of the area.

Soon it became clear to me that I needed something that was in the being, but had not matured to a degree where it was useable. I needed digital technology.

The East Jutland project stage II

I got involved with computers at a very early stage. In the late 1970' ies, I took courses in programming at the university, and I used the university mainframe computer on a regular basis, mostly for statistical analyses. I experimented with databases as well, but was not impressed. In 1984, I got hold of my first PC, but that was certainly four years too early. From 1987 and onwards I became increasingly involved with computing in archaeology, and through the 1990'ies I was almost exclusively working with the development and introduction of computing in Danish archaeology. The East Jutland Project ended up in a mothproof bag.

Around 2002 I began to reconsider the project. I now knew what I was up against, and I had the tools. I

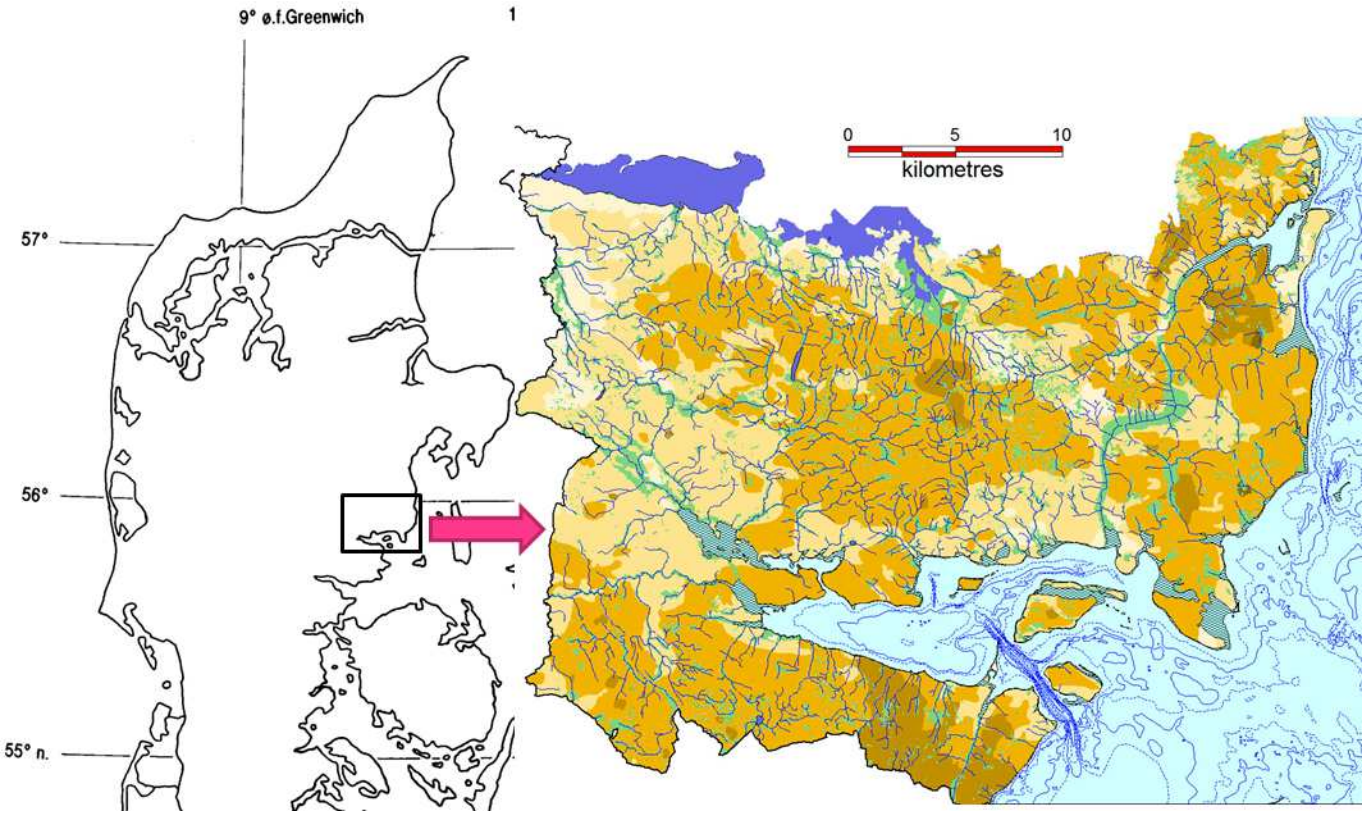

Figure 2. Curent research area for the east Jutland project.

started by creating the maps I needed, and from 2006, when I retired from the university, I began working full scale on the project. "Full scale" needs a modification, though. I enjoyed time by travelling widely and I also had a major backlog problem with some of my own excavations, foremost Aalstrup that I excavated between 2000 and 2005.

Restarting the project also meant that I had to reconsider the objectives. Firstly, my experiences from the first attempt showed that the area was far too big. If I should have any chance of completing the project, I would have to reduce the size. I decided to focus on the southern half of the original area and at the same time displace it slightly to the south in order to include a strip of land on the south side of Horsens Fjord (Fig. 2).

A second change was to include all Neolithic material in the project, and not just the TBK material. The reason for this was primarily that within the area there is a well-documented presence of the earliest Single Grave Culture (EGK for short) parallel to the latest TBK. This gave me a unique opportunity to investigate how these two different traditions were amalgamated into a single cultural tradition leading into the late Neolithic period.

I have decided not to state any particular theoretical position in advance of this study. That does not mean I do not have one, nor does it mean that I implicitly accept my position from 1982. On the contrary, the way I look at things to day is widely different from the way I looked at them then. The main reason is that I do not want to cement my position in advance. As I am writing these lines, I truly do not know, where I will end, and I see no reason to return when I am done, to add my "a priory theoretical position".

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