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## **Dynamiek in beeld. Onderzoek van Westfrieze nederzettingen uit de bronstijd**

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# SUMMARY

## Visualising dynamics. Research of West Frisian settlements in the Bronze Age

### Farmers of the Coast

This research forms part of the project *Farmers of the Coast* of the University of Leiden, financed by the Dutch Organisation for Scientific Research (NWO project 360-60-100). This project focuses on agrarian Bronze Age communities in the coastal region. The region of West Frisia forms the focal point of the research, because here an unique prehistoric landscape is well preserved. In the 1960's en 70's large scale research was carried out by the Institute for Prae and Protohistory (IPP) of the University of Amsterdam, as well as the State Service for Archaeology (ROB). However the results of these excavations were never published. The aim of this project is to combine all the available data from these excavations to form a complete overview, consisting of four themes: the physical landscape (Van Zijverden 2017), the settlements, the farmers' existence (Van Amerongen 2016) and the identity of the West Frisian inhabitants and their place in communication networks (Valentijn in preparation). The organisation and dynamics of the settlements is the theme of my research. I focus on the settlement structure and on the question of how the houses, fields, barrows and other features were situated in relation to each other. I have tried to create an insight into how, against the background of the physical landscape, the West Frisian Bronze Age farmers set out their land as a cultural landscape, this interpretation occurs at three levels: the house, the farmstead and the settlement (chapter 1).

### The history of West Frisian Bronze Age archaeology

West Frisia has a rich history in relation to research into the Bronze Age. A short overview of this work is presented in chapter 2. Professional archaeological research in West Frisia started, as in the rest of the Netherlands, with the excavation of barrows. In 1942 the first mounds to be investigated were in Zwaagdijk and later near Oostwoud, Grootebroek and Hoogkarspel.

Farmsteads had at this point not been identified, this however changed when researchers of the Stichting voor Bodemkartering (Stiboka) under the guidance of P.J. Ente carried out a large scale ground survey in this region in the 1950's. Then for the first time in West Frisia, archaeological features were identified and recorded. The so called 'map of Ente' published in 1963, gave the archaeologists a first overview of ancient settlement locations in the east of West Frisia. Shortly after the publication of this map,

the ROB received notification of pottery finds retrieved during work carried out on a stretch of land south of the Streekweg in Hoogkarspel, close to a number of ancient settlement sites mapped by Ente. The IPP was set to work and for the first time settlement remains were excavated on a large scale, first near Hoogkarspel-Tolhuis and later near Hoogkarspel-Watertoren (chapter 4).

The results at Hoogkarspel-Tolhuis provided a wake up call for Dutch archaeologists. A complete cultural landscape in superb preserved condition lay hidden in the West Frisian subsoil, however these remains were under threat from land consolidation projects planned for 1972. In consultation with the IPP the ROB initiated a large scale research project in the region. In 1972 field surveys began and a large number of sites dating from the Middle and Late Bronze Age were identified and mapped. In 1973, two of these sites were excavated to test the results from the surveys (Andijk-South & North; chapter 5). In 1974 an excavation of, at that time huge proportions was started north of Bovenkarspel: over a period of five years 15 ha was excavated at the site Bovenkarspel-Het Valkje (chapter 6).

Besides the above mentioned excavations, the ROB carried out large-scale field surveys in the polder Het Grootslag from 1972 to 1978. In the mid 70's, W.H. Metz (IPP) took many aerial photographs to map the distribution and nature of the Bronze Age sites (Metz 1993). Together with numerous smaller excavations and observations, they form the data for my thesis.

## Method

The excavations that form the basis of this study, were carried out by various institutes, each with their own fieldwork methods. It was therefore necessary to compare and contrast these methods in chapter 3. The quality of the field observations varied which in turn influenced the reliability of the results from the afore mentioned sites. The field drawings of the excavations at Hoogkarspel, Andijk and Bovenkarspel form the main part of my dataset. Most of the drawings were made at scale 1:50 but at the site Hoogkarspel-Watertoren the drawings are much less accurate (scale 1:100). Another major influence on the quality of the results of the various excavations was the number of levels excavated at each site. The sites at Andijk for instance were excavated in one level, whereas at Hoogkarspel-Tolhuis and Bovenkarspel-Het Valkje at times five or six levels were investigated. The last method gives a much clearer resolution for interpretation.

An important part of the research was to digitalise the levels of features of the excavations and entering all the data into one database and GIS application. Only when this had been accomplished it was possible to analyse the data as a whole. One of the main goals of my thesis was to understand the different phases and dating of the sites.

To create an overview of the dating and occupation span of the settlements, pottery analysis and <sup>14</sup>C-dating were used. However as the pottery could only be dated as either Middle or Late Bronze Age, the study of the horizontal stratigraphy of the various sites was the key to understanding the different phases. In the context of this study it was not possible to expand and refine the typology set up by Brandt (1988a) in Hoogkarspel-Old (HKO) and Hoogkarspel-Young (HKY). With the exception of the excavation at Hoogkarspel-Tolhuis, the pottery recovered from all sites had been scanned during my study and classified as belonging to one of the two groups.

The HKO-pottery is dated to the Middle Bronze Age (1500-1100 BC) and the HKY-pottery to the Late Bronze Age (1100-800 BC). Unfortunately the <sup>14</sup>C-dates offered little support. In total 123 <sup>14</sup>C-dates are available from settlement contexts in West Frisia, but for a large part these have been samples from (often treated) bone, or charcoal from unreliable contexts. Both material and context as well as the large fault margins of the dated samples give the absolute dates little value.

## House, farmstead and settlement

The results of the excavations in Hoogkarspel, Andijk and Bovenkarspel are presented in chapters 4, 5 and 6. The analyses were done on three levels: house, farmstead and the settlement. It was not possible to understand each site at all three levels. For instance the constructive details of houses were best investigated in the small-scale excavations at Andijk, because the ground plans were hardly disturbed by modern ditches. However the limited size of these excavations meant that it was impossible to produce an hypothesis about the organisation of the farmsteads or the settlement. Only at the large scale excavations, such as Bovenkarspel, was it possible to interpret the results on a broader level.

### *The house*

125 ground plans of houses have been analysed for this study. The West Frisian Middle Bronze Age houses were all built according to certain general principles: they have a three aisled construction and the pairs of posts are placed at a regular distances from each other. The width of one pair of posts is on average 3 meters and the distance between each pair is on average 2.1 meters. These measurements are consistent at the level of individual ground plans. The length of most houses varies between 15 to 19 meters and they are ca. 6 meters wide. The entrances are to be found on both the short sides of the house. Most of the posts marking the entrances were dug in less deeply than the inner posts, which is the reason why not all entrances were preserved. The entrance was 1 to 1.5 meters wide and often consisted of only one pair of posts.

Features of wall construction are rare. It is assumed that the walls were constructed from turf. At Andijk-Noord and Bovenkarspel-Het Valkje some ground plans were identified with small postholes along the wall, possibly to support the turf walls or to construct a framework within which the turf could be placed. However such features are the exception rather than the norm.

Surrounding every house is a house ditch with an average width of ca. 1 meter and up to 1 meter deep. Although in the study by IJzereef and Van Regteren Altena (1991) the standard house in West Frisia is marked by a ditch immediately under the foot of the roof, this was proved to be untrue. The ditch was often dug somewhat removed from the house, sometimes several meters away. Trends or developments in the shape of the ditches could not be established. However it does seem to be the case that the ditch along the east side of the (mainly east-west oriented) houses was often interrupted over a distance or even completely absent. This made the house easier to approach on that side. This may be an indication that the stalls or working area was located here.

Another indication for the division in the house can be found between the first two or three pairs of posts in the western area, close to the entrance. Here we often find extra smaller posts that form part of an inner construction feature, possibly an attic. Although the function of this part of the house is unclear, what is clear is that this area had a defined and fixed location within the house.

Trends or developments in farm construction were also not identified. Although houses dating to the Late Bronze Age are rare, only two were found at the site Hoogkarspel-Tolhuis F, their construction does not differ to those of the Middle Bronze Age. Only the typical house ditch surrounding the houses are absent. Instead, a number broad ditches were dug at a greater distances from the Late Bronze Age houses.

### *Farmsteads*

The research at the level of farmsteads was challenging. It proved to be almost impossible to distinguish individual farmsteads. This is because most of the settlement sites were in use for a very long time. Therefore the contemporariness of these structures could not be established. In spite of the plethora of ditches it appears the farmsteads were not clearly marked out. Only at a single site, Enkhuizen-Kadijken, was it possible to reconstruct some farmsteads with ditches surrounding the houses (Roessingh and Lohof 2011). In the Middle Bronze Age the farmsteads were part of a large scale managed and clearly defined landscape: ditches can often be followed over hundreds of meters. These ditches mark the borders between the parcels, yet also form the binding elements between various yards and their inhabitants.

The settlement sites in the Middle Bronze Age were often occupied over a long period, which has led to a complex horizontal stratigraphy. This stratigraphy is an important tool in understanding the developments of these sites. The areas are marked on the one hand by continuity and on the other hand by a change in use and function of locations. We see continuity through the multiple phases of farmsteads. New houses are built on almost the exact same locations as their predecessor, in some cases we could reconstruct up to four consecutive houses at the same spot. This means that not only the house, but also the farmstead with accompanying structures had a fixed location in the settlement site for a long period of time (at least 100 years). This continuity can be seen in other structures, such as the large clusters of ditched structures as well as in the clusters of ditches that are the result of long term 'maintenance' of one location. At the same time we see that this continuity was at some point abandoned. Old house sites were given a new function and were transformed into arable land, or ditches were dug through them or they became the location for ditched structures.

### *Settlements*

Dynamics play a major role when we look for the settlement sites and the borders of the cultivated landscape. These borders are hard to distinguish and identify at the locations where large scale excavations have been carried out. They will almost certainly have existed, but due to the continuity of occupation at these sites and the sheer number of features, it is very difficult to identify these areas. This brings us to the question of which parts of the original landscape were most suitable for habitation. Traditionally the old creeks and gullies, which in the Bronze Age landscape had turned into ridges through the process of inversion, are considered the logical location for settlement. However the study by Van Zijverden (2017) made it clear that such ridges were only visible as broad elevated ridges at relatively few locations, *e.g.* at Bovenkarspel-Het Valkje. The smaller creeks and gullies filled up with sand and silt were probably also slightly elevated and relatively well drained. We see that these landscape units influenced the layout of the settlement site. Houses and ditches are often situated parallel to or at right angles with these areas.

In the Late Bronze Age we see major changes in the layout of the farmsteads and settlements. The large scale managed landscape of the Middle Bronze Age is replaced by relatively small habitation centres locked in by bundles of ditches. The fact that the farmsteads become more visible within the landscape, whilst the houses themselves are very rare is striking. So far only two have been identified at the site Hoogkarspel-Tolhuis F. At Bovenkarspel-Het Valkje a large area consisting of a number of Late Bronze Age ditches was investigated. The ditches often surrounded relatively small zones (average 25 x 10 meters), within



which houses could have been situated, yet features of these were not found. It is generally suggested that these houses were built on small settlement mounds and that these were at some point levelled including the features of the houses that had stood on them. It is however unlikely that houses were present at all of these locations. Within one of these clusters at the well preserved site Hoogkarspel-Tolhuis F for example, features of houses were absent but rows of posts, pits and a number of ditches were present.

### *Fields and barrows*

In this study, attention is not restricted only to the settlements themselves, but extends to features, such as fields and barrows. Fields are identified through plough marks, that although observed at many excavations are generally poorly recorded. However at a number of sites the plough marks were accurately recorded, such as the site Hoogkarspel-Tolhuis F where it was possible to see the varying orientation of the plough marks, which indicates the long term use and various phases of land use.

Like the farmsteads themselves the function and use of the fields changed, with ditches being dug through them as well as houses and ditched structures being built on them. Unfortunately as the relationship between the plough marks and other features was not recorded, it is impossible to fully understand the evolution of these sites, although it is clear that after a period of continuity change did occur. On various settlement sites, barrows have been identified. I have focused on the relation between these barrows and the settlements. It is clear that these barrows formed landmarks within in the landscape, often consisting of groups or rows of barrows. Apparently the community buried their dead in the same location over a long period of time, as we have seen at sites such as Hoogkarspel-Tolhuis D, Hoogkarspel-Tumuli/Watertoren and Andijk-Noord.

It is clear that that the barrows become an integral part of the cultural landscape, *e.g.* at Hoogkarspel-Watertoren. Here one of the barrows was erected in a corner of a plot of ground that was already in use. The ditch of another barrow at this site was connected the ditch system of the settlement itself. This does not however occur at all sites. At other locations the mounds were demolished and the plot was transformed into arable land (Andijk-Noord). At other locations a house was built right on top of the barrow location (Andijk-Noord and Bovenkarspel-Het Valkje). The dynamics that we have observed at farmsteads and fields, are to some extent also applicable to barrows. The impressive row of burial mounds at Hoogkarspel-Tumuli forms perhaps the exception to the rule. Here it seems that the barrows are part of a clearly defined landscape of the dead, with very few features that can be associated with settlements.

## **Dynamics of occupation and the West Frisian Bronze Age**

### *Development of the landscape*

In chapter 7 we try to place this dynamics in the context of its relationship with the physical landscape. In the Early Bronze Age the landscape is marked by creeks and ridges with pronounced levees and splays. In the lower areas we find marshes, reed and willow. Sites dating to this period are rare, those that have been identified consist of barrows, fields as well as a number of deep pits, ditches and rows of pits. Convincing houses are absent. It is likely that these do exist at these sites but that we are at this time unable to recognize them.

At the end of the Early Bronze Age, 1800 to 1700 BC, major changes occurs in the landscape, possibly caused by one or several storm floods (Van Zijverden 2017). There is no longer a direct connection between the coast and the lake area in the present IJsselmeer basin which causes the West Frisian landscape to completely change character. Around 1700 BC when the balance is restored, in the west a small opening remains in the coastline near Bergen. The area sweetens rapidly and the vegetations in this new landscape is varied, brook forests in the lower parts and forests of ashes and elm trees in the drier parts (Van Amerongen 2016). This is where in the course of the Middle Bronze Age small hamlets appeared in a wide by ditches parcelled out landscape.

At the end of the Middle Bronze Age eastern West Frisia becomes more waterlogged. The sea level gradually rises which caused stagnation in the drainage of water by the river Vecht, that had flowed to sea via the IJ river in southern West Frisia since the Early Bronze Age. This stagnation caused the formation of peat and to a (seasonal) expansion of the sweet water lakes in the north and east of West Frisia. This is probably the reason why in the Late Bronze Age the higher parts in the landscape were selected for occupation and houses were built on settlement mounds.

### *Settlements and social cohesion*

Although the West Frisian Bronze Age is often associated with barrows and settlements consisting of houses and many ditches, the oldest sites (Middle Bronze Age A; 1800-1500 BC) are marked by single pits and remarkable rows of pits and some ditches. The typical settlement structures from the Middle Bronze Age B are absent on these sites. The same rows of pits occur in some Middle Bronze Age B sites, such as Andijk and Bovenkarspel-Het Valkje. Stratigraphically they belong to the oldest structures there.

In Middle Bronze Age B, around 1500 BC, some major changes occur in the way settlements are laid out. Large terrains are set out for which long ditches were dug.

The houses suddenly become clearly visible by the deeply dug in posts of the three aisled construction and the house ditches dug alongside or surrounding the houses.

At almost all sites we find multiple phases on houses sites, new houses were built on nearly the same spot as their predecessor. In some cases up to four consecutive houses could be reconstructed. We do not know for how long a house was inhabited, but if we assume a 25 year lifespan then such a house site could easily have been occupied for a century. With these multiple phased sites the place of habitation is evidently fixed. I assume this was also to the case with clusters of house sites, that may well have been consecutive houses. A good example is to be found at Bovenkarspel-Het Valkje, where a cluster of nine houses was found with a deviating north-south orientation. The houses are situated very close to each other and suggest that these are consecutive structures on a more or less fixed farmstead. If this assumption is correct and we take into account the 25 year lifespan of houses, then this terrain was in use as a farmstead for a minimum of 200 years.

The continuity in settlement is also expressed through other associated structures. New ditches were dug closely along the older ones, or silted up ditches were dug out afresh. Also in the clustering of ditched structures and rings of pits the continued use of places to position these structures is apparent. This continuity affirms the sense of community. People lived in the same place for generations; this implies that some agreements were made in relation to property and use of land. The long ditches are beyond the level of a single household. The ditches separate parcels, but also connect the various households in a settlement. The digging and maintaining of these ditches must have been a task performed in mutual agreement by the community as a whole.

The construction of houses was work in which the whole community had to cooperate. For example, agreements had to be made about the location of the new houses. Also the gathering of the required building materials could not be carried out alone: a quick estimate of the material need to construct a single house shows that at least 100 meters of wood, an estimated 2.600 turfs as well as many cubic meters of reeds and willow twigs for roofing and thatching was needed. There would probably have been little discussion on the constructive details. The fixed measurements and structure show a long lasting building tradition.

However structure and cohesion form only one side of the story. Apparently this continuity was at some point abandoned: farmsteads were deserted and turned into ploughed fields or ditches were dug through them. We see that settlement sites regularly changed function in the course of the Middle Bronze Age, however a fixed pattern in these changes cannot be observed. Although

areas do get new functions, distinctive elements remain within the in the landscape influencing the later organisation of the land. This can be seen in the orientation of the structures such as houses and systems of ditches. This old, organised landscape was there and must have remained (in part) visible.

### *Recommendations*

Chapter 7 is concluded with a number of recommendations for future research. One is that attention should be paid to more detailed research on house sites. At some point a house is abandoned or rebuilt. It would be possible to get a clearer understanding of this process through a more structured approach to sampling. Through intensive  $^{14}\text{C}$ -research it may well be possible to understand more clearly the time frame in which the above mentioned processes took place. Another recommendation also relates to the aspect of time: we still do not have enough understanding of the dating or phasing of settlement sites. Therefore we do not know how a single farmstead was structured and where other structures were positioned in relation to the house. To understand these matters we should in future research give higher priority to the excavation of areas that were occupied for a short period of time. On these sites enough  $^{14}\text{C}$ -dates could prove the contemporary existence of structures and with that a completer understanding of the layout of a single farmstead. These farmsteads are suitable for multiproxy analysis, which will inform us on the use of space and functions of structures and areas on the yard (Grabowski 2014).

A third recommendation is to extend our attention to areas of the Late Bronze Age. This is important to understand the changing settlement organisation and the ultimate disappearance of the West Frisian Bronze Age communities. The dating of structures of this period is of major importance. More  $^{14}\text{C}$ -dates combined with the study of pottery (from  $^{14}\text{C}$ -dated contexts) are desirable to get to a better understanding of the developments in this period.

To conclude we must not forget that a large part of the West Frisian cultural landscape is still uncharted territory. The archaeological research is as yet focused on 'dry land', where we can encounter the settlements and barrows. However the water rich areas surrounding the settlements played a crucial role in the life of the West Frisian Bronze Age inhabitants. These areas were not just frequented for fishing, hunting or the collection of materials. The water provided important access to extensive networks. Unfortunately these areas have yet not been investigated. At these locations we can expect to find a wealth of information, due to its low lying location as well as the favourable preservation conditions. An interesting location in this respect, may be the area south of Wervershoof.

