

GERD LÜTTIG

HISTORY OF THE UTILIZATION OF PEATLANDS IN EUROPE WITH SPECIAL REFERENCE TO GERMANY

Soiden hyödyntämisen historiasta Euroopassa, erityisesti Saksassa

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From pre-Christian times peatland-use and attitudes towards peatlands in Germany have changed to a great extent. Agricultural use of the inhospitable peat bog terrain only developed after the fertile soil regions had been conquered in the so-called struggle for food production. Use for fuel production never reached the amount of peatland used for agriculture, and with the use of peat as a horticultural ameliorator at the beginning of this century, only a small portion of the peat area has been touched and is not larger than the area under nature conservation. With these changes, attitudes about the associated environmental impact have shifted enormously at the same time.

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CHANGING ATTITUDES ABOUT PEAT BOGS THROUGH HISTORY

It is astonishing how attitudes about the utilization of peatlands have changed during historical times in different countries around the world. In Central Europe, peatlands were left fallow for a long time because of their high water content, poor accessibility, the inability to farm them with primitive means, and the plant and animal life in them, which Man found unpleasant. Criminals took refuge in peatland areas and the condemned were executed there. It was only when traffic routes meant traversing a peat bog was unavoidable that an attempt to form a

crossing with a log road was made (Fig. 1), but mostly one kept clear of these inhospitable parts of the landscape. Many psychological barriers against peat developed at a time when Man had already learned to plough and had long kept animals (Lüttig 1984). The attitude towards the “naturalness” of the landscape goes back to this basic psychological pattern.

ANCIENT PEATLAND USE

The first utilization of peatlands was for fuel. As long ago as the first century Pliny the Elder (24–79 A.D.) described the meagre attempts of the Chaukes tribe,



Fig. 1. A log road in the Großes Moor, Dümmer, FRG, dating from ca. 50 B.C. (Photo: Dr. Hayo Hayen).

Kuva 1. Suohon hautautunut tukkitie n.vuodelta 50 e.a.a. Dümmerin Großes Moor-suolta, Pohjois-Saksassa. (Kuva: Dr. Hayo Hayen).

which lived on the breezy German and Dutch coasts of the North Sea, to cut and dry peat for fuel. His condescending remarks were those of a Roman from a well-developed civilization. However, Pliny overlooked the fact that even in his home country considerable efforts were being undertaken to dry swamp areas, e.g. in Conca del Fúicino, east of Rome. The purpose, besides for fuel was undoubtedly for agriculture. Evidence of ancient peat cutting, e.g. appropriate wooden tools has also been found in southern Germany (Dieck 1983).

MEDIEVAL AND FIRST MODERN USE

No evidence has been found about the use of peatlands between the time of the end of

Roman Empire and the Middle Ages, although one must assume that peatland utilization did continue.

Strangely, it was utilization for salt peat production which appeared in more recent times. Through the research of Wegner (1931), Andresen (1937), Bantelmann (1939) and Marschalleck (1973), we know of medieval and modern day extraction of perimarine peat in North Friesland, which was burnt in order to gain sea salt. According to Andresen (1937), an area of 1 000 km² of peat between the Amrum-Foehr Islands and the Eiderstedt Peninsula was thus used prior to 1362 when a large storm tide occurred. The first account of salt production is from the year 1180 (Saxo Grammaticus 1839, 1858). A similar procedure also took place in Holland (De Jong, cit. Bantelmann 1939). However, it was made illegal in 1515 by a ban from Charles V so as not to endanger his Spanish salt trade. Nevertheless, salt peat was still extracted around 1590 according to Marschalleck (1973), and the method was still in use until 1782.

Greater efforts to utilize peatlands only started at the beginning of modern times. It was without doubt the Dutch who began to reclaim land quite early in their low lying country endangered by storm tides and, at the same time, produce fuel peat for energy. The cultivation of fens by the Dutch, in which large peatland areas were burnt at the same time, is the oldest organized agrarian method used on a large scale. The Dutch, who are experts in land and water management, were gladly welcomed to develop unsettled areas in a number of neighbouring countries as a result and were sent for by many foreign rulers, e.g. Frederick the Great to develop the bogs of the Spree and Havel regions.

At numerous locations peat experts were at work, inspired by the Dutch example. Thus, in the Netherlands up to 10 million m³ of peat were extracted annually on an area of 1 400 ha which had been

made available for agriculture since the 1425 Fen Edict of Groningen (Richard 1976).

In addition, Irish monks and others e.g. the Cistercian were also involved with the cultivation of low bog areas in Central Europe.

Considerable changes took place during the 17th and 18th centuries. Fuel peat extraction was carried out by farmers for their private consumption but was unsystematic and often senseless. Peat cutting for people living near by the bogs was also mostly unregulated. Therefore, some of the administrative institutions soon deemed it necessary to pass appropriate regulations. The oldest regulation, the Edict of Groningen of 1425, has already been mentioned. The sod farmers' regulation in East Friesland regulated the management of burning peatland for cultivation in 1705. Frederick the Great created the basis for regulated peatland cultivation in Prussia in 1765 with the Cultivation Edict of 1716. The exemplary Bremisch-Verdener bog settlement campaign became famous with J.C. Findorff in the years of 1750 to 1792. An excellent example is also the development of the Burtangen Bog, which was the first act of the Episcopal Government of Münster, later Marcard and the Schöningh brothers in Meppen, more or less precursors of the Emsland GmbH (Richard 1976).

Finally, this peat production resulted in the first sizeable citizens' initiative (what we would today call an ecology movement) in the 19th century, namely the "Bremen Association Against Bog Burning". Apparently there was so much peat cut and burnt in the surroundings of Bremen that at times the air was as polluted as had been cited for Nottingham, England in the year 1257. Queen Eleanor found the results of burning of coal so unbearable that upon her recommendation her husband, King Edward I, enacted a corresponding but non-effective ban (Down &

Stocks 1977). The Bremen citizens' initiative resulted in the Prussians, (who owned the surrounding area of Bremen,) to set up the famous Bog Research Station in 1877 (Overbeck 1975, Kuntze 1977, Lüttig 1977), which is today known as the Institute for Soil Technology and is part of the Lower Saxony Geological Survey in Hannover.

AGRICULTURE MOVING INTO GERMAN PEAT-BOGS

After the promotion and popularization of the agricultural doctrine by Albrecht Thaer (1752–1828) and the fertilizer doctrine by Justus von Liebig (1803–1873), and under pressure from a constantly growing population in the area of the German Reich, German agriculture finally turned to peatland areas (Fig. 2). As a result new techniques such as heath and marsh cultivation, subsoil ploughing (Fig. 3), German high bog cultivation, and mixed sand cultivation (Baden et al. 1969, Kuntze 1977) developed. However, the bog farmer must always have been aware of the German saying, "Dem Ersten der Tod, dem Zweiten die Not, dem dritten das Brot" ("The first one will die, the second will live in need, and only the third gets some bread.") The numerous efforts to develop the bogs using gangs of prison workers should not be forgotten; a role taken over by the Labour Service of the Third Reich.

German high bog and mixed sand cultivation, guided by the scientific achievements of the Bremen Bog Research Station, considerably extended the agriculturally usable area in the former German Reich. The yield potential of the soil was considerably less than that today, and as there was a much higher amount of farming production area per capita of the population than today it became necessary to extend the area under agriculture to peat-

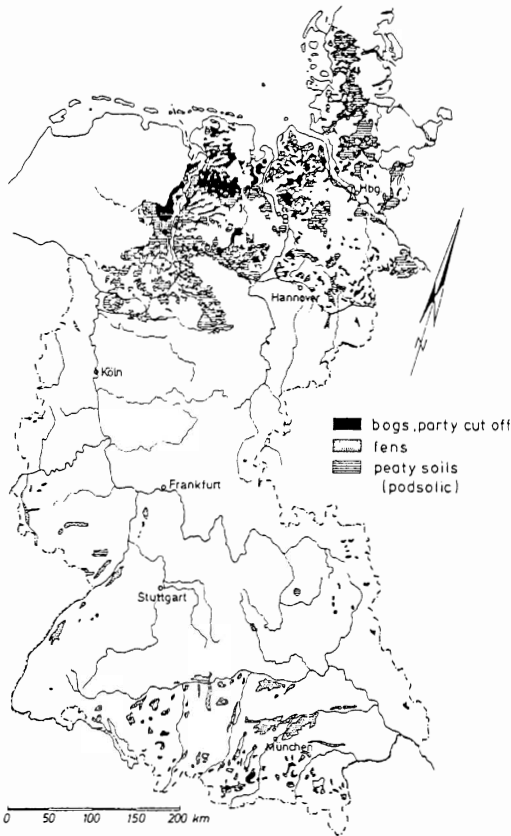


Fig. 2. Location of peatlands in the FRG, after Kuntze (1971).

Kuva 2. Soiden sijainti Saksan liittotasavallassa Kuntzen (1971) mukaan.

lands. There was little concern about nature and landscape conservation as is the case today. Agriculture thus came to occupy the largest portion of the peatlands in this country. Today 75% of the high bogs and 95% of the low bogs can be considered cultivated.

HISTORY OF PEATLAND UTILIZATION IN SOUTHERN GERMANY

In Southern Germany, where there is evidence of extraction of peat before the turn of the era, the systematic extraction of peat only began 200 years ago. Bog cultivation



Fig. 3. The biggest German peat bog plough in Hesepe, Emsland. Photographed by the author.

Kuva 3. Suurin saksalainen suoaura Hesepestä, Emslandista. Kuva kirjoittajan.

goes back to the 16th century (Gipp 1987). The Danube Moss, one of the largest low bogs in the Federal Republic of Germany, began to be dewatered at the end of the 15th century. Prince Elector Karl Theodor of Bavaria began settling this area. In the Fichtel Mountains the production of fuel peat began early because the forest resources had been destroyed by mining activity in the northeast Bavarian ore-mining area, which, in the 16th and 17th centuries, was like the present Ruhr district in Central Europe.

POST-WAR DEVELOPMENT

After World War II the improvement of peatlands was made a goal. A number of institutions, led by the Geological Survey in Hannover, pushed forward peatland soil mapping in particular (Hollstein 1953, W. Müller 1970). With this peatland mapping, a considerable development was made in pedological mapping in general resulting in the high standard of geological and soil mapping in the Federal Republic of Germany today (Lüders 1970, Benzler & Müller 1983). Dutch colleagues (De Jong & Hageman 1960, Hageman 1963a, b) also carried out mapping, developing the profile type map, which became generally in pedological and geological mapping.

The aim was to change the relatively poor soils of the Emsland into soils with better production capacity and to develop dewatering and fertilization methods on a scientific basis in an area which had to accommodate a large number of refugees from the former German Eastern territories. As a result the marshes of Lower Saxony were pedologically and geologically mapped (Richter 1957, Müller 1970), and the valuable experience gained could be applied almost directly to all soils where the groundwater is close to the surface.

RECENT DEVELOPMENT

After the economic boom following the Second World War and after the creation of the European Community, agriculture in Central Europe changed fundamentally. Knowledge about agricultural soil chemistry and the importance of soil physics, which is becoming more and more evident, knowledge of the water balance, horticulture and insecticides and their use, have raised the yield potential of soils considerably and it has finally led to the present over-production in agriculture.

At the same time, the ecology movement developed and there has been a change in the awareness by the general public of the natural environment. Nature conservation, landscape protection and protection of plants and animals have increased constantly. Man has become aware of the fact that with the increasing utiliza-

tion of natural resources, he has a considerable impact on the environment. This meritorious movement has affected government policy and politics. An abundance of regulations has resulted and peat production has to be carried out according to the corresponding laws, e.g. the soil extraction law. These new laws have not necessarily facilitated the interests of those branches of industry using peat.

The peat industry has become hindered by the variety of opinions and the often illogical regulations (Lüttig 1977, 1979, 1984). In the Federal Republic of Germany, the area owned by the peat industry accounts for only 7.8% of the peatlands, and an area of just the same size (8%) is given to nature conservation. Only 0.4% of the peat produced in the FRG is needed for peat balneology, i.e. only 0.13% of the peat area.

Many of the difficulties can be alleviated by careful land-use planning. Geoscientific maps of the natural environment's potential, e.g. peatland use maps (Lüttig 1976), are suitable for planning the land-use of peatlands.

In contrast to the restrictions found in the FRG, in some countries, e.g. Finland, Canada, The Soviet Union, Ireland and Sweden, considerable efforts are being undertaken to make some peatland areas available again for conventional types of use, such as fuel peat production. In those countries the circle in peatland utilization has closed again, a fact, a German telmatological expert can only dream of.

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TIIVISTELMÄ:

SOIDEN HYÖDYNTÄMISEN HISTORIASTA EUROOPASSA, ERITYISESTI SAKSASSA

Jo ajanlaskun ensimmäiseltä vuosisadalta on Plinius vanhemmalta mainintoja Pohjanmeren rannoilla eläneistä heimoista, jotka käyttivät turvetta polttoaineena.

Keski-Euroopassa jätettiin suot pitkään rauhaan niiden vaikean lähestyttävyyden, käytettävyyden ja epämiellyttävän eläimistön vuoksi. Lähinnä vain rikolliset pakenivat suoalueille ja toisaalta monet tuomitut teloitettiin soilla. Soiden laajamittainen viljely alkoi Hollannin alueella jo tämän vuosituhannen alussa. Hollantilaisia myös kutsuttiin suoviljelyn asiantuntijoiksi muualle Eurooppaan. Esimerkiksi Fredrik Suuri aloitutti heillä Spreen ja Havelin alueen soiden hyödyntämisen.

Jo 1700-luvulla annettiin myös rajoituksia soiden viljelylle Keski-Euroopassa. 1800-luvulla perustettiin myös ensimmäi-

nen kansalaisliike vastustamaan laajamittaista turvetuotantoa. Tämän kansalaisliikkeen ansiosta Preussiin perustettiin v. 1877 Bremenin suontutkimusasema. Osittain tämän suontutkimusaseman toiminnan ansiosta sekä väestöpaineen vuoksi alkoi soiden laajamittainen viljelykäyttö Saksassa. Tätä edisti myös maaperäkartoituksen kehitys toisen maailmansodan jälkeen. Tällä hetkellä n. 75% alueen kohoista ja 95% nevamaisista soista on viljelykäytössä.

Koska luonnontilaisia soita on enää hyvin vähän jäljellä, on niiden suojelu nousut entistä tärkeämmäksi. Tästä syystä Saksassa rajoitetaan monin lain ja säännöksin turpeen nostoa energia- ja kylpyläkäyttöön.

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