Appendix D2: Weights and Measures

The medieval Nordic systems of weights and measures varied considerably over space and time, and with respect to the object(s) being measured. One must distinguish between

A) measures of capacity and volume ("rummål"),
B) measures of 1) length and 2) surface/area ("jordmål"), and
C) measures of weight.

Some terms occurred in more than one category, for example *tunna* and *fjärding*, which might denote volume as well as area or length, depending on context. The units were generally parts of larger, hierarchically structured terminological systems. As examples of such connections, some terms have been included that are not found in the provincial laws (e.g. *tunna*, *skippund* and *skålpund*). On the other hand, it is virtually impossible, for reasons of space, to accommodate all local variations in a general survey. For this reason, only the more important regional differences are considered.

A) With respect to capacity and volume, dry and liquid goods were measured differently.

OSw measures of grain were *sal(d)/soldh* (145.8 litres in WSweden), usually divided into 6 *skæppor*, each containing c. 24.6 litres. Of the same size as the *soldh* was the *tunna*. Much used was the unit *spander* (ODan *spand*, ON *spann*) (c. 73 litres), divided into *fiærþungar* ('fourths') à 18.3 litres.

In Denmark the main unit was *tunna* (Dan *tønde*), varying in size from 139 to 194 litres. *Spand* was 1/8 *tønde*, i.e. c. 17 litres as a measure of oats; usually *spand* was a measure of butter (1/16 *tønde*, i.e. 8.7 litres).

In Norway and Iceland the *sáld* was the largest unit (in Iceland also a measure of liquids), varying in size between 97.2 and 132.4 litres, divided into 6 *mælar* à 22 litres (Iceland) or 16.2 litres (Norway). The *sáld* could also be divided into 4 *skeppur* à 24.3 (SNorway) or 32.4 litres (NNorway). Alternatively, in ENorway (including Bohuslän) the *sáld* was divided into 12 *séttungar* (OSw *siattungar*, known from Norrland); in king Magnus the Law-Mender's Law of the Realm (1274) 1 *séttungr* equalled 1/4 *mælir*, varying in size between 5. 4 and 12.1 litres.

Towards the end of the Middle Ages, the *sáld* was replaced by the *tunna*, varying in size between 97 and 145 litres, in WNorway even 162 litres. The *tunna* was usually divided into 4 *mælar* or 6 *spæn* (pl. of *spander*); in WSweden 6 *skæppor* à 24.8 litres; in DL 1/6 *tunna* was called a *trö*.

As a measure of butter, *spander* and *tunna* were used in all the Nordic countries. The *spann* varied in Norway from c. 4 to c. 16 .litres. The Icelandic *skjóla* (= *spann*) contained c. 4 litres.

A third frequent unit was the (OSw) *löper* (Dan *løp*, ON *laupr*), varying in size between 10 and 21 litres (i.e. from 2 up to 4 steelyard pounds, "bismerpund", or from 48 to 96 *merkr*); in WSweden 1/9 *tunna*, in Denmark usually 1/6 *tønde*, in Gotland 1/4 *tunna*.

As far as shiploads and cargo of salted goods, e.g. fish (but also grain) are concerned, the largest unit was the *læst* (ON *lest*) (ca. 1,600−2,000 kg), divided into 10 or 12 *skippund* à 170 kg (in Denmark 126 kg, in ENorway 185, in WNorway 148 kg); 1 *skippund* equalled 24 *li(f)spund* (lispound) à 8 kg (Sweden and Denmark) or 9 kg (Norway). The *li(f)spund* was divided into 16 *skålpund* à 415 g (Sweden) or 496 g (Denmark) or 428 g (Norway).

An important ON grain measure was the *vétt/vætt*, ranging from 6 to 46 kg. In weighing fish the *vág* (18 kg) was a unit in WNorway.

B) 1. Measures of length were the (OSw) *alin* (ODan *alæn*, ON *öln*); (OSw) *foter/fiæt* (ODan *fiat*, ON *fet/fótr*); (OSw) *spann*, (ON) *spönn*; (ON) *stik(k)a*; *hundrað*; and (OSw) *famn* (ODan *fafn*, ON *faðmr*).

The *alin* ('ell') varied between 47 and 64 cm, in Zealand and Scania 63.26 cm, In Jutland c. 57 cm. Sweden had at least two types of *alin*. In addition to the old *alin* of 55.5 cm and the old Stockholm *alin* of 52.3 cm, there was (since the middle of the 15th century) a newer *alin* of 60−61 cm.

Norway had also two types of *alin*, a shorter one (called *alin* or *öln*) and a longer one (called *stik(k)a*); but these three terms were often used interchangeably. The shorter *alin*, also (in the FrL) called *þumalöln*, was 47.4 cm, the longer one 55.3 cm.

The OIce *öln* has been calculated to 49.2 cm, a younger one, the so-called "Hamborgaralen", was usually 57.3 cm in all the Nordic countries. The length of the OIce *stika* is uncertain, but it may have been identical to the Norw *stik(k)a*.

The *foter* ('foot') usually measured 26−34 cm; in Sweden 25.9 cm ("the Tychonic foot"), 33−35 cm ("den nordliga foten"), or 26.8 cm (the so-called "östsvensk aln"). In addition, a Guthnic foot of 27.5−27.7 cm was used in Gotland and parts of Sweden, and a Zealandic foot of c. 31.4 cm in large parts of Southern and Central Sweden. Due to lack of sources, the length of the Norwegian foot cannot be ascertained. The OIce foot was probably 23−24 cm. – The *spann* varied from 6 to 8 or 9 inches ('tummar').

The OIce *hundrað* was equivalent to 120 ells of wadmal. It was the measure for the value of a cow or six sheep, and also for a certain quantity (weight) of fish (see below).
The *famn* ('fathom') was usually 3 ells (in Hälsingland and Iceland 3 1/2), i.e. c. 1.5 m. This was the square measure for the height and breadth of a woodpile. In Iceland, the fathom was also a cubic measure of hay (*málfaðmr*), 42.875 ells^3.

A *fiærþunger* ('quarter', namely of a mile) varied between 1,500 and 3,750 m, dependent on the size of an old Nordic mile. This term (*fiærþunger*) was also used as a measure of volume (see above). Much used were also the *stång* ('stick, pole', OSw, ODan *stang*, ON *stöng*) and the *rep* ('rope', ON *reip*), both usually of 4.5−9 (in Norway 6 or 8) *alnar*. In Norway, the *stöng* equalled 2 *faðmar*, in Denmark 10−18 feet.

B) 2. The area of a surface was measured in different ways. Arable land was often measured in terms of **a)** the amount of seed sown, **b)** the size of the crop or harvest, or **c)** worth (land rent).

a) The amount of seed sown. Sædesland (from *sæde* 'seed') is used as a general term for land sowed with a certain amount of grain, specified in the first part of the compound in question. Under this term may be subsumed, e.g., *mælisland* and *såldsåð*. A *mælisland* (Norway) was sown with 1 *mælir*, its size equalled 4.7 are; a *såldsåð* (Norway) with 1 *såld*, possibly c. 4 decare (c. 1/4 acre); a *pundssåð* (Norway) with 1 *skippund*. The same pattern is shown by Sw *spannaland* and *tunnland* (c. 4,000 m$^{2)}$. A special Sw term is *seland* (Ångermanl.), for which the quantity of sowed grain is not known; its size has been estimated to 800 square fathoms.

b) The size of the crop or harvest. Sw *snesland* (from *snes*, 'score, set of twenty', 1 *snesland* = 9 *bandland*) (measured according to the size of the harvest), and the Faroese *tunnulendi* (64 square fathoms).

c) Worth (land rent). Much more frequent are measurements based on rent ("landskyld", the tax or fee paid by the tenant to the landowner), where the first part of the compound denotes the size of the rent. Examples are (Sw*) löpsbol*, (Norw) *laupsból*, *laupsleiga*, (Sw) *markland*, (Gutnish) *laupsland*, *marklaigi,* (Sw, Dan) *öre(s)land*, (Dan) *ørebol*, (Norw) *ørtuga(r)ból*, (Sw) *örtoghaland*, (Sw) *pænningsland*, (Norw*) månaðarmatarból*, *merkrból*, *markaból, øyrisból, auraból*.

The Sw *öresland* equalled 3 *örtoghaland*, each comprising 3,000−4,000 m^2 (= 1 *tunnland* or 1 *dagsværk* ('day's work') or 36 *snesland*). The Norw *merkrból* equalled 8 *auraból* (= 24 *ørtogaból* or 480 *penningaból*). 1 *månaðarmatarból* equalled 1 *laupsból* (= 1/3 *merkrból*).

The central Dan unit was *bol*, the value of which was normally (in Zealand) 1 *mark* "skyldjord", in Zealand it corresponded to c. 110 *tønder* (sown) grain. But the size of the *bol* varied considerably. Those valued less than 1 *mark* "skyldjord" were divided into *fjerdinger* (fourths) or *ottinger* (eighths).

The Sw *attunger* was originally 1/8 of a village (*by*) or of the smallest conscription unit of the levy (the *hamna*). It was primarily not an area measure, but a measure of wealth, a unit used in the taxation of farms as a base for the military levy. As an area measure, it expressed the size of fields. In the Early Middle Ages a normal *attunger* was equal to the size of a field sown with 2 *tunnor* each year, when half of the field lay fallow, and the crop was 12 *tunnor*. In the High Middle Ages it became a norm for the rent (Sw *avrad*), in Sweden and Denmark normally 24 *spand*. It was equal to 1/2 *markland* in Svealand, 1/8 *bol* in Denmark.

A special case were the OIce *kristfé* ("Christ's properties"). These were freeholding foundations *ad pios usus*, properties or parts thereof encumbered with servitudes implying that the rent should be used

to pay for the maintenance of paupers in the local district. Dependant on the size of this rent the property in question was called *karlgildr* (196 ells) or *kvengildr* (144 ells), irrespective of the gender of the recipient.

C). Measures of weight were partly the same as the units mentioned in the appendix D 1 (q.v.). This especially applies to the *mark*, *öre*, and *örtogh*. The *mark* had the weight of c. 210 g, varying somewhat over time and regions (in Sweden 213.3 g (Skara), 207.2 g (Stockholm); in Denmark 217.5 g (1282), 210.47 g (1332−33), and c. 230 g ("the Cologne mark"); in Norway c. 214.3 g (1287) and 214.5 g (1329)). The *öre* was 1/8 *mark*, the *örtogh* 1/24 *mark*. Larger measures were the *skálpund*, *li(f)spund*, *skeppund*, *vétt/vætt* and *vág* (see above). In Iceland, larger quantities of fish were weighed in *hundruð* (pl. of *hundrað*). 1 *hundrað* equalled 120 *gildir fiskar* (40 à 4 *merkr* and 80 à 5 *merkr*).

Refs.: Ericsson 2007; 2008a, 8−10; 2008b, 39−63; KLNM, s.v.v. *bol, byamål, fiskhandel, hundrað, hömått, jordmått, kornmål*, *kristfé, mil, sædesland, tegskifte, ytmått*; all with further references; NK 29, passim; 30, passim; Pettersen 2013, 142, 224−225; Riddersporre 2008, 23−38; Siltberg 2008, 85−117; Sporrong 2008, 242−247; Tollin 2008, 139−148