

## SOIL SUITABILITY

The soil suitability map has been prepared from the same base documents as the map of the associations (sheet 11 B) of the first National Atlas (R. MARÉCHAL and R. TAVERNIER, 1970) and in particular from the detailed soil maps at a scale of 1 : 20 000 drawn by the Centre for Soil Surveying under the direction of R. TAVERNIER and published under the auspices of the Institute for the promotion of Scientific Research in Industry and Agriculture (IRSIA). However, for the Low-Luxemburg (Gaume) area the more recent data of the soil association map on scale 1 : 80 000 prepared by R. STEFFENS (1971) have also been taken into account.

This sheet was based on manuscript work at the 1 : 160 000 scale, compiled during a project work under the CST (temporary employment) scheme. In its general conception, the legend largely follows the one established for soil suitability maps by J. AMERYCKX and K. SYS, for the survey "Het Gentse, Meetjesland, Vlaamse Ardennen en Land van Waas" and by J. AMERYCKX for the survey of West Flanders during the 1960's. Later on similar maps were designed for the whole country but unfortunately they have never been published, except for certain ones in a simplified form.

The comments made in the explanatory text for the aforementioned sheet 11 B concerning soil associations are equally valid for classes of soil suitability; in fact, variations in soil suitability can be so great, even within a small plot, that it is utterly out of the question to give an exact representation for the entire country, at least at the 1 : 500 000 scale which is imposed by the Atlas. As a matter of fact all the map units correspond to zones which are more or less heterogeneous, and this is stressed in the final column of the map legend. Thus, for example, it is impossible to show on this map all the detail of the drainage network, and more particularly, to show all the numerous depressions and valleys - dry or wet - which are so typical of the larger part of Central and Upland Belgium. Soils associated with valleys and depressions are to be found in the majority of the units of these regions; they can be called ubiquitous and their soil suitability often differs strongly from the category as shown on the map.

The map legend consists of fifty-six units, numbered 1 to 56. In the first instance these units are defined according to agricultural suitability (i.e. their agricultural suitability in a broad sense), followed by their suitability for building (i.e. for the construction of ordinary dwellings of a rather modest size) and where necessary according to their specific use (i.e. the most appropriate land use : cultivated land, pasture, market gardening, woodland or natural reservation). The definitions of the different units are completed by a brief note on the nature of the dominant soils and their distribution.

As far as soil suitability is concerned for agriculture and for building as well, five classes have been distinguished : A : very suitable; B : suitable; C : rather suitable; D : less suitable; E : unsuitable. At first the above units are grouped according to their agricultural suitability (1 - 11 : very suitable; 12 - 24 : suitable; 25 - 39 : rather suitable; 40 - 51 : less suitable; 52 - 56 : unsuitable) and then within each aforementioned group, according to their suitability for building (e.g. 1 - 4 : very suitable; 5 - 9 : rather suitable; 10 - 11 : less suitable). In the third place the specific land use is mentioned, if relevant. When this specific use is less pronounced, it is shown in parentheses. Occasionally certain soils, which display very slight differences according to the preceding three criteria, are nevertheless shown separately when they are of very different pedological nature. Thus, for example, units 42 and 43 include soils of little suitability for agriculture, high suitability for construction, above all appropriate for forest, but corresponding respectively to the superficial calcareous soils of the Famenne (42) on the one hand and to the sandy soils with sandstone substratum of Low-Luxemburg (43) on the other.

In the final column of the legend reference is made to the degree of homogeneity of the different units and also to the danger of flooding. As far as the first aspect is concerned, four groups have been distinguished : (a) homogeneous zones, (b) rather homogeneous zones, (c) rather heterogeneous zones, (d) heterogeneous zones; as an example of case (a), one can cite the zones on dry silt loam (unit 1), where nearly all the soils correspond to the general definition of the unit except in certain regions the soils of the humid depressions. An example of case (d) is provided in eastern Brabant (unit 26) where excellent dry silt loam soils (similar in fact to unit 1) alternate with poor sandy soils (which should in reality be included in unit 45) to form a complex mosaic. The rather homogeneous zones of category (b) generally correspond to the zones with a continuous Quaternary cover in Low and Central Belgium or to the zones with a homogeneous substratum in Upland Belgium. The rather heterogeneous zones (c) are in general those areas with a thin discontinuous cover of Quaternary materials and/or a strongly variable substratum.

With respect to danger of flooding, category (e) corresponds on the map to a special shading indicating zones with a flooding danger within units 1 and 7, where the danger is not normally present; (f) indicates zones in danger of flooding in certain units, where the danger can be considered as normal (valleys and wet polders); (g) indicates a danger of flooding in valleys entrenched between the steep slopes of unit 54.

Finally, it should be underlined that, as far as soils are concerned in terms of agricultural value or with reference to the danger of flooding, the map refers to the natural situation. This state can be considerably modified by man's intervention : use of fertilizers, artificial drainage, dewatering, dyke construction, for example.

The colours used on the map have been selected to reflect in the first place the suitability of the different units as much for agriculture as for building, but in addition to accentuate the nature of the soils and their distribution in natural regions. Strong colours have been used for soils with a rather heavy texture : vermilion red for the silt loam soils, orange for the clays derived from the alteration of limestone, green for clays derived from the alteration of shales. Lighter colours in contrast indicate the lighter soils or the shallow stony loam soils : for example pink for the sandy or light sandy loam soils, beige or brown for the sands, light green for the shallow shale soils. The wetter soils or the deeper stony loam soils are represented by darker or greyer shades.