Zambezia (1983), XI (i).

RESEARCH REPORT

TRADITIONAL SYSTEMS OF SOIL CLASSIFICATION IN ZIMBABWE

SINCE INDEPENDENCE A large number of researchers have scrambled into the communal lands of Zimbabwe to investigate agricultural production in relation to the physical environment as well as the socio-economic structures of these tribal communities. Many of the researchers are social scientists whose mode of investigation follows a Farm Systems Research approach. Most of the workers, by reason of their training or background, or both, do not have a ready key for translating vernacular expressions for environmental factors into their correct technical equivalents and yet the accuracy of such translations is central to the correct interpretation of the implications of such environmental factors to productivity. This report seeks to establish a key for use by scientists working in communal lands which accurately represents the technical implications of soil names.

Contrary to common belief, the indigenous population of Zimbabwe had a comprehensive system of recognizing and describing soils and edaphological conditions in their environment. Phimister (1975, pp. 13 – 14) cites references on some of the surprisingly detailed geobotanical criteria used by the Shona for the identification of mineral deposits well before the advent of the Europeans. Ellis (1950, p. 50) noted how, for sodic soils,

> it was a significant that the natives in that area had dug a drainage furrow down the slope, below the mopani, so that water washing off mopani soils should discharge into a vlei, and not wash on to their productive lands.

These peasant farmers therefore recognized the salinity of mopane soils and identified the soils in relation to vegetation.

PRINCIPLES OF THE SYSTEM

Traditional classifications are of two types. The first used specific names for specific soil types, usually based on colour and texture. These are sound parameters, even in modern scientific terms, and are frequently used by scientists in field descriptions of soils when laboratory data are not available: thus we find in use such expressions as 'red clays', 'brown sandy loams', and others. The second type is an ecological one which describes soils in terms of their edaphic environment, for example, 'vlei' soils, 'mopane' soils (after the tree; Shona *mupani*), and so on. This ecological approach also is sound and is borne out in the writings of scientists, such as Weaver and Clements (1938, p. 456), who observed that 'The most reliable indicators of the agricultural possibilities of a region are found in the native vegetation'; in the same vein, Vincent and Thomas (1961) did an agro-ecological zonation of Zimbabwe in which soil vegetation associations were widely used as indicators of the agricultural potential of soils.

Of the chemical characteristics, only two were widely used, namely salinity, and organic matter content. These were, of course, not expressed quantitatively but qualitatively on the basis of the taste, smell and appearance of the soil. Examples of these classifications are shown in the Table.

Table

CORRELATION OF TRADITIONAL TERMS AND SCIENTIFIC KNOWLEDGE[1]

Names		
Shona	*Ndebele*	*Description and Remarks*
shapa/sapa bungure	ihlabathi	Light sandy soil. Associated vegetation: mzhanje *(Uapaca kirkiana),* mutsatsati *(Faurea* spp.), mutunguru/munhunguru *(Flacourtia indica).*
rusekenya ruzekete	unknown	Extremely sandy, usually very deep, infertile soil.
ndoronya	unknown	Descriptive of its rheological properties; no strength, and will fail under minimal stress. Light textured, gleyed, hydromorphic soil. Associated vegetation: shrub mukute (*Syzygium huillense* [Hiern F. White]).
tsangarahwe rukangarahwe	unknown	Shallow, gravelly, well-drained soils which most respondents described as good for rapoko (finger millet). The preference of this soil for rapoko is related mainly to the drainage and possibly is also because there is less competition from weeds on these stony soils, making them ideal for broadcasting rapoko and practising minimum tillage.
chishava	unknown	Gravelly red soil, non-arable, good for building on.
mpunzo rondo chiombwe	ibumba	Clays that are 'infertile' but good for ceramics. Light grey in colour. Considered to be good indicators of sites suitable for location of wells. Associated vegetation: mukute *(Syzygium* spp.), muroro *(Annona stenophylla* [Eng. and Diels]), mtsamviringa *(Ficus ingens).*
bukutu jiho	isibomvu	Red clays, usually very fertile, very slippery when wet. Associated vegetation: musasa *(Brachystegia spiciformis),* mutukutu *(Pliostigma thonningii).*
gova[2]	isidhaka	Vertisol (black cracking clay). Associated vegetation: muunga *(Acacia nilotica),* mubaya mhondoro *(Acacia polyacantha),* kananga *(Acacia nigrescens).*
chivavane	isikwaka	Very hard sodic to saline soils, usually a medium grey colour. Poor permeability, as indicated by standing water in the rainy season.
gokoro	isimunyu	Much paler in colour and more saline than chivavane/isikakwa.

[1] Names of soil types in the Table are given in standard Shona and Ndebele and major dialects, but for the sake of brevity the names of trees are given in Shona only, followed by the botanical name. Ndebele and common English names may be obtained by referring to the dictionary by Wild (1972).

[2] Known in both Shona and Ndebele by the slang term 'dhakiumnyama'.

DISCUSSION

Some of the comments reported in the 'remarks' column of the Table show a great deal of knowledge about the non-agricultural uses of the soils and their behaviour in those circumstances. The choice of clay for ceramics, for example, coincides precisely with the mineralogical properties of those clays: nearly one hundred per cent kaolin, which the modern ceramics industry prefers for its strength and guarantee against cracking. The selection of well-sites in relation to the occurrence of certain hydromorphic soils is a fundamental principle of hydrogeology since the soil properties suggest a very high water-table in a zone of good recharge.

Very often, where a soil is not good for normal arable agriculture, the peasant farmer can suggest alternative uses or benefits. For example, while respondents generally felt that sodic soils were useless for cropping, they are very good licks for livestock. Similarly, it was suggested that sodic soils can sometimes be improved or even reclaimed by the addition of anthill soil. Anthill soils often, but not always, have a substantial amount of calcium carbonate which is ideal for flushing out the sodium of the more inimical sodic soils.

On the whole, there were fewer Ndebele names for soils of wet environments than was the case for Shona names. This should not in any way suggest that the one language has an inherently richer vocabulary than the other but is merely a reflection of the differences in environmental conditions as well, possibly, as differences in type of agricultural acitivty. Much of the area in which Ndebele is spoken is arid. In addition, the Ndebele have historically been engaged in livestock activity rather than in arable farming.

Acknowledgements

My thanks are due to Messrs A. C. Hodza and S. J. Mhlabi of the Department of African Languages and Literature of the University of Zimbabwe, for assistance in collating information on Shona and Ndebele names respectively, and to Professor G. Kahari of the same Department for correcting the orthography.

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