Taiwan. Food and Fertilizer Technology Center (FFTC). 2002. *Soil chemical and biological indicators selected for assessing the soil quality of Taiwan soils* [Table 5. Soil biological indicators selected for assessing the soil quality of Taiwan soils [Tables on web site]. --From URL: http://www.fftc.agnet.org/library/image/eb473t5.html

> Table 4: Soil chemical indicators selected for assessing the soil
> Table 4 Soil chemical indicators selected for assessing the soil quality of Taiwan soils. E-mail:From:www.fftc.agnet.org/library/image/eb473t4.html
> Table 5: Soil biological indicators selected for assessing the soil
> Table 5 Soil biological indicators selected for assessing the soil quality of Taiwan soils.

Thomas, R., and M. A. Ayarza. 1999. Sustainable land management for the Oxisols of the Latin American Savannas: Dynamics of soil organic matter and indicators of soil quality. Cali, Columbia: Centro Internacional de Agricultura Tropical (CIAT).

> This book contains the following chapters: (1) sustainable land management for the Oxisols of the Brazilian cerrados; (2) Oxisol development along a compound catena of the Araguari River, Central Brazil; (3) agropastoral systems based on legumes: an alternative for sustainable agriculture in the Brazilian cerrados; (4) physical and chemical properties of selected Oxisols in the Brazilian cerrados; (5) distribution of water-stable aggregates and aggregating agents in Oxisols of the Brazilian cerrados; (6) aggregation studied by laser diffraction in relation to ploughing, soil organic matter, and lime in the Brazilian cerrados; (7) short-term variation in aggregation and particulate organic matter under crops and pastures; (8) soil organic matter in Oxisols of the Brazilian cerrados; (9) soil organic carbon, carbohydrates, amino sugars, and potentially mineralizable nitrogen under different land-use systems in Oxisols of the Brazilian cerrados; (10) carbon fractions as sensitive indicators of quality of soil organic matter; (11) labile N and the nitrogen management **index** of Oxisols in the Brazilian cerrados; (12) characterizing labile and stable nitrogen; (13) phosphorus fractions under different land-use systems in Oxisols of the Brazilian cerrados; (14) phosphorus pools in bulk soil and aggregates of differently textured Oxisols under different land-use systems in the Brazilian cerrados; (15) acid monophosphatase: an indicator of phosphorus mineralization or of microbial activity?A case study from the Brazilian cerrados; (16) microbial biomass, microbial activity, and carbon pools under different land-use systems in the Brazilian cerrados; (17) organic matter in termite mounds of the Brazilian cerrados; (18) pesticides in soil, sediment, and water samples from a small microbasin in the Brazilian cerrados; and (19) general conclusions. *--CAB Abstracts.*

Torri, D. 2001. Land use, soil qualities and soil functions: Effects of erosion [Italy]. **Source, from: valbook3 [European web site for: Leibniz-Zentrum für Agrarlandschafts- und Landnutzungsforschung (ZALF) e.V.] at URL:** http://www.zalf.de/essc/valbook3.htm

> Scientists cannot evaluate soil quality in eroded/degraded areas until soil functions are determined, processes are modelled, and impacts assessed. W.E.H. Blum (Austria) maintains soil quality definitions must be function-based; SQ parameters must be defined by specific land use/function/ SQ indicators must be in framework of the OECD's "Driving Force>Pressure>State>Impact>Response" relationship or model (after the European Environmental Agency), for use by all socio-economic stakeholders involved in land management.

Trasar-Cepeda, C., C. Leiros, F. Gil Sotres, and S. Seoane. 1998. Towards a biochemical quality index for soils: an expression relating several biological and biochemical properties. *Biology & Fertility of Soils* [Berlin, Germany: Springer Verlag] 26, no. 2: 100-106.

> Soil biological and biochemical properties are highly sensitive to environmental stress and thus can be used to assess quality. Any soil quality index should include several biological and biochemical variables so as to reflect better the complex processes affecting soil quality and to compensate for the wide variations occurring in individual properties. Many authors recommend the use of a native soil supporting climax quality reference soil. In this study which examined three such native soils of Galicia (N.W. Spain) bearing Atlantic oakwood as the climax vegetation, biological and biochemical properties were found to vary widely seasonally and with sampling site and depth. These variations were closely correlated with the total carbon (C) and/or total nitrogen (N) contents of the soils. The following equation: Total N=(0.38x10(3)) microbial biomass C +(1.4x10(3)) mineralized N +(13.6x10(3)) phosphomonoesterase +(8.9x10(3)) beta glucosidase + (1.6x10(3)) urease explained 97% of the variance in total N for the soils studied, suggesting that a balance exists between the organic matter content of a soil and its biological and biochemical properties. A simplified expression of the above equation may be useful as a biochemical quality index for soils. *Agricola 1998-2003*

abstract.

Truman, C., W. Reeves, J. Shaw, A. Motta, C. Burmester, R. Raper, and E. Schwab . 2003. Tillage impacts on soil property, runoff, and soil loss variations from a Rhodic Paleudult under simulated rainfall. Journal of Soil and Water Conservation 58, no. 5 (Sep-Oct).

These researchers did not attempt a SQ Index, but this is the type of study which could include SQI for testing.

Tugel, A. J., S. Seiter, D. Friedman, J. Davis, R. P. Dick, D. McGrath, and R. R. Weil. 2001. Locally led conservation activities : Developing a soil quality assessment tool. In: Sustaining the global farm—Selected papers from the 10th International Soil conservation Organization Meeting (ISCO99)D. E. Stott, R. H. Mohtar, and G. C. Steinhardt, 529-34West Lafayette, IN: International Soil Conservation Organization in cooperation with the USDA and Purdue University.

This paper presents the positive aspects of developing soil quality cards as assessment tools for use by farmers. Using the Wisconsin model, the USDA-NRCS 7 CES, 7 SQI developed 43 indicators of soil quality through farmer inputs, held workshops in 1997 & 1998 in Oregon & Maryland, USA; developed soil quality cards, tested their validity, & further applied the techniques across Illinois, Maryland, Montana, North Dakota, Ohio, & New Mexico, as well as Oregon (7 cards).

Turco, R. F., A. C. Kennedy, and M. D. Jawson. 1994. Microbial indicators of soil quality. Defining soil quality for a sustainable environment; Proceedings of a symposium, Minneapolis, MN, USA, 4-5 November 1992: 73-90. J. W. Doran, D. C. Coleman, D. F. Bezdicek, and B. A. Stewart, editors. Madison, WI: Soil Science Society of America.

Aspects of groundwork for selecting proper indicators to estimate the microbial component of soil quality are discussed. Methods addressing the size and diversity within the soil microbial community, especially bacteria, are considered. Generally microbial form and function in soil should use methods that estimate the diversity between ecosystems and/or estimate the community structure within ecosystems. The need to identify the minimal number of biological parameters that consider both processes and community diversity for estimating the role of the biotic component in determining soil quality is emphasized.