

Cobweb Polygons (Spider Diagrams) for Visual Display of Sustainability

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- Gomez, A.A., D.E.S. Kelly, J.K. Syers, and K.J. Coughlan. 1996. Measuring sustainability of agricultural systems at the farm level. In: Methods of assessing soil quality, J.W. Doran and A.J. Jones, editors. Soil Science Society of America, Madison, WI. p. 401-410.
- Olson, R.K. 1998. Procedures for evaluating alternative farming systems: a case study for eastern Nebraska. Extension & Education Materials for Sustainable Agriculture, Vol. 8, Center for Sustainable Agricultural Systems, Univ. Nebraska – Lincoln, NE. p. 39-44.
- Van Mansvelt, J.D., and M.J. van der Lubbe. 1999. Checklist for sustainable landscape management. Elsevier Publ., Amsterdam.

How do we Quantify Sustainability?

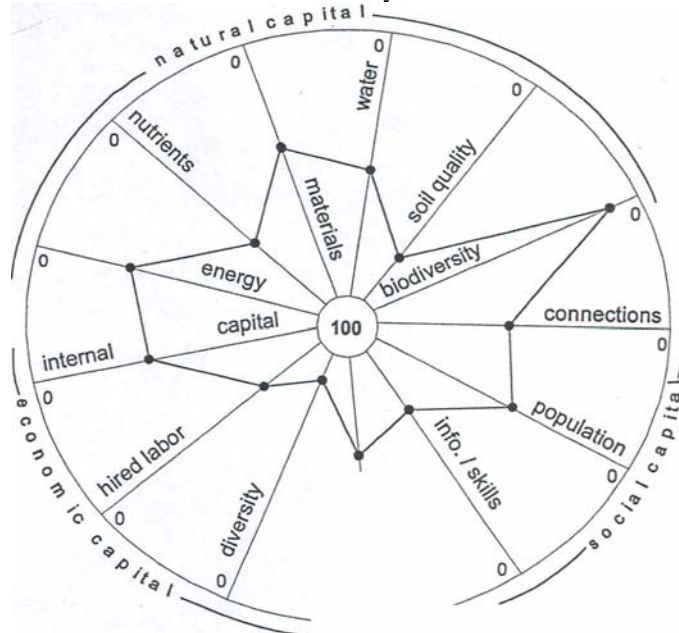
Once we have solved the not insignificant challenge of defining sustainability, the next question is how we measure or quantify sustainability according to chosen criteria. For each selected criterion we must decide on a scale with which to evaluate; e.g. (1) crop yields might range from a low of zero to a potential high of 10,000 kg/ha, and this could be given values from 0 to 100; (2) hired labor could range from 0 in maize or soybean to 100 hours in the case of intensive vegetable production, and again this could be coded from 0 to 100. Biological, economic, and environmental criteria may be more easily quantified than social variables.

Examples (see Olson, p. 41-43):

- Crop diversity: 1 crop = low sustainability (code 0) to 10 crops = high sustainability (100)
N losses: 0 = high sustainability (code 100) to 50 kg/ha = low sustainability (code 0)
Farmer knowledge: 1 = high knowledge (code 100) to 0 = low knowledge (code 0)

How do we Illustrate Sustainability?

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