Several large issues are approached in this small yet thought-provoking article, at the heart of which lies the author’s concern that “the sustainability movement is pressing for adoption of agricultural practices under the banner of sustainability before either the science has been done or the technology is available.”

From within an historical context, Ruttan (1988) identifies the sustainable agricultural movement in terms of the productivity and technology in the developed and the developing worlds. Modern agricultural productivity, he states, is due to the fusion of science, technology, and lots of practice, with the prior two causes advancing greatly since the mid-19th century. While remaining undefined, Ruttan (1988) states that these advances facilitated large changes in material well-being that were previously unimaginable. However by the 1960s and 1970s many earlier advancements were interpreted as “contributing to the subversion of traditional rural values and institutions and to the degradation of natural environments.” From these doubts and uncertainties a new concern over the political power of science and technology brought us to a time in which we need rhetorical banners to champion our efforts to reform. Because the term sustainability seems to represent something so many people desire as part of their reform philosophy, many ideologies and social reforms picked up the banner before there was even a real definition. Now it is a term so widely applied that it is unable to be defined.

Within the world of agriculture Ruttan (1988) gives us a few brief examples of what he considers sustainable. The introduction of integrated crop-animal husbandry in Western Europe in the late middle-ages allowed for intensive use of new forages and the easy and direct application of green manure crops. Smaller areas of land became more productive in lesser amounts of time due to recycling of plant nutrients and subsequent maintenance or improvement of soil fertility. This was an increase in sustainability. A second example is a system that was sustainable. Shifting cultivation (forest and fallow) was practiced world wide in pre-modern times and continues to be practiced in many tropical regions today. However, due to population pressures, decreased fallow periods, soil degradation, and declining soil productivity, this system is no longer sustainable in many regions.

Through the use of these examples Ruttan’s argument now becomes one concerned with population growth, technological divides, and insufficient research. He states that his literature review on sustainability (circa 1988?) did not yield sufficient recognition of the challenges now imposed on agriculture due to population pressures. Ruttan (1988) argues that only institutional innovation in the north, and the development and advancement of scientific knowledge and technological innovations in the south will sustain and enhance productivity. Meanwhile, we must work through technology towards the conservation of water and land resources, and facilitate substitutions of biological technologies for chemical technologies, all while trying to determine our own actual limits in a biological perspective.