This paper will explore how economies that are predominantly agrarian and peripheral may have to undergo different patterns of transformation from those experienced in the semi-peripheries such as China, Brazil, India and South Africa. The constraints of poverty and environmental degradation make it necessary to think how knowledge intensity and systems of innovation for agriculture should be explored without necessarily undergoing the costly process of industrial disruption. If the purpose is to bring about livelihood well-being and ecological sustainability at the same time, there is a need for an intelligent rethinking of how currently low-income economies may find new patterns of co-evolving agriculture with manufacture and services. Broad-based innovation can be drawn from the varieties of locally rooted knowledge communities by drawing in top-end high-tech knowledge to supplement and support their excavation, use and wide diffusion to change the communities.