



FIGURE 1 Cone of acceptable outcomes with varying levels of goodness.

TABLE 1 Ideas for creating sustainable knowledge. Sustainable knowledge is considered knowledge that is robust enough to handle some level of variability within its domain of action and can be dynamically modulated to handle large-scale changes, uncertainties or increasing complexities within that domain.

- Practice **action learning**. Every time you apply knowledge, even when it is successful, question the results, the domain, the key factors, etc. *Ask:* If this or that variable or critical factor had been different, would this action have worked? From this response you can (1) get a sense of the robustness of your knowledge, and (2) modify or expand your knowledge as needed. *Ask:* While my action worked, did it work exactly as I thought it would? Why or why not? While knowledge may work in the cone of acceptability, if the results were not exactly as planned or anticipated, then there is something in that domain or situation that has been missed.
- Absolute knowledge does not exist**; therefore, all knowledge should be questioned by associating what you know and believe with new ideas, then questioning your own knowledge. Never take your knowledge for granted, that is, never let knowledge decay to a set of rules, habits, or routines. When this happens, knowledge is transformed into cold, lifeless information, perhaps even dangerous information because you may use it as knowledge!
- Always recognize the **difference between information and knowledge**. Information will tell you what is, knowledge will tell you *why* it is and what to do about it (under what conditions, critical variables, key relationships, what is and is not important, etc.). Information that tells you what to do without being accompanied by knowledge may be dangerous.
- Your **frame of reference** determines what you see and know, and your past success with knowledge influences your frame of reference and cone of perception. This could become a dangerous bias in new situations. A first step in softening this bias is to understand your frame of reference. A second step is developing the ability to look at a situation from different perspectives, through different frames of reference. *One technique* for doing this is to take an individual you know well and respect, but who thinks differently than you, and try to look at the situation from that individual's point of view. *Another useful tactic* when problem solving or making a decision is to write down a list of all individuals or parties that would be affected by the problem solution or decision. Then ask yourself how each of them would view the problem or the decision. This shifts your own frame of reference and helps understand issues and consequences from multiple perspectives. The resulting insights from these and similar techniques frequently give rise to more robust and effective knowledge and problem solutions.
- Consider **group knowledge** and the danger of group knowledge reuse; for example, groupthink, assumed expertise, a limited frame of reference, and third-order knowledge. Third-order knowledge assumes loss or gain in translation. The signal to noise ratio goes down or up in any transfer of knowledge, either decaying or improving for the specific situation at hand (Bennet and Bennet, 2007a). (NOTE: Recall that what is transferred is "knowledge re-created" it is not the *same* knowledge.)