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EVALUATING AGRICULTURAL PRACTICES IN THE SAHEL

ASSESSING THE PERFORMANCE OF ADAPTATION MEASURES

CONTEXT

Climate change is predicted to result in rising temperatures, shifts in rainfall patterns and amounts, and more frequent extremes of drought, rainfall, and flooding in the Sahel. In different locations, some practices will become less useful, and others more effective. Governments, donors, research institutions, and other organizations that seek to help farmers in the Sahel will need an approach to evaluate how the changing climate will affect the tools and management practices currently in use.

THE APPROACH

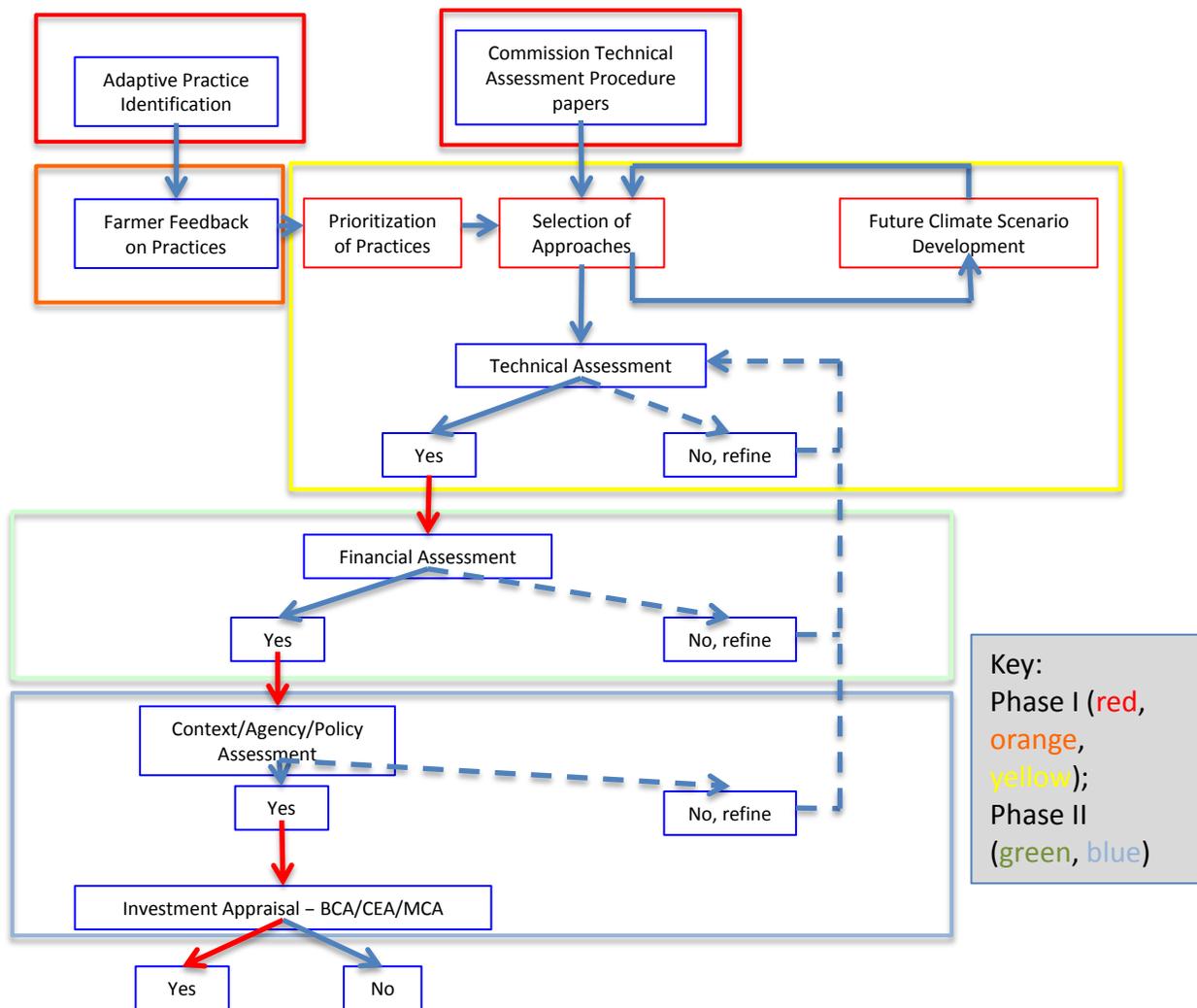
The proposed approach to assessing agricultural practices within a changing climate has three steps:

1. **Define potential future climate conditions to which agricultural practices will need to adapt, and estimate when these changes will occur.** In the manner outlined in Simpson (“An Approach to Conducting Phenological Screening,” 2013, USAID.), this approach would define the area of analysis, set the period of analysis, and select weather stations to gather information on changes in rainfall patterns, changes in daytime and nighttime temperatures, and changes in the frequency of extreme events. These data would then be compiled and studied to project climate change scenarios for the 2025 season, which would provide the basis for assessing adaptive practices. Given the sensitivity of crops to the intra-seasonal distribution of rainfall, this analysis should look beyond simple changes in annual rainfall.
2. **Identify the practices to be assessed and create an “adaptation profile” for each one.** This step should include defining adaptation objectives and using that information to identify priority practices for assessment. (Note that a catalog of the most relevant practices is provided in Ray and Simpson’s “Agricultural Adaptation to Climate Change in the Sahel: Profiles of Agricultural Management Practices,” 2014, USAID.) Given the paucity of scientific evidence currently available, further research is needed regarding the characteristics of each practice.
3. **Select or develop assessment procedures for the different classes of practices and evaluate the responsiveness of those practices to the anticipated conditions** under the various climate change scenarios identified in Step 1. At a minimum, the practices will need

to be screened for their potential technical, financial, and social benefits. These practices should not only generate the climate adaptation outcomes required; they should also have a neutral or positive financial impact on the farmer, align with the farmer’s desires, and fit within the farmer’s capacity to manage.

While important, adaptability to climate change will not be the only — or even the most important — determining factor guiding decisions about investments in various farming practices. Many other factors also need to be considered, including international trade, domestic policies, large-scale infrastructure investments, the functioning of research and extension services, and local social structures.

As outlined in the preceding sections, the complexity of assessing adaptive practices across the Sahel, and the appropriate sequencing of steps, lend themselves to depiction through the following illustration.



ADDITIONAL INFORMATION

This brief highlights key conclusions from Simpson, B. (2014). *Agricultural Adaptation to Climate Change in the Sahel: An Approach to Evaluating the Performance of Agricultural Practices*. USAID. Interested readers are invited to review the full paper at <http://community.eldis.org/ARCC/>.