

(Long et al., 2003). Additionally, the involvement of local communities in conservation initiatives has proven to be a critical factor in the success of these efforts, as it ensures the continuity of traditional practices and the sustainable management of tea resources (Lu et al., 2021; Bai et al., 2024).

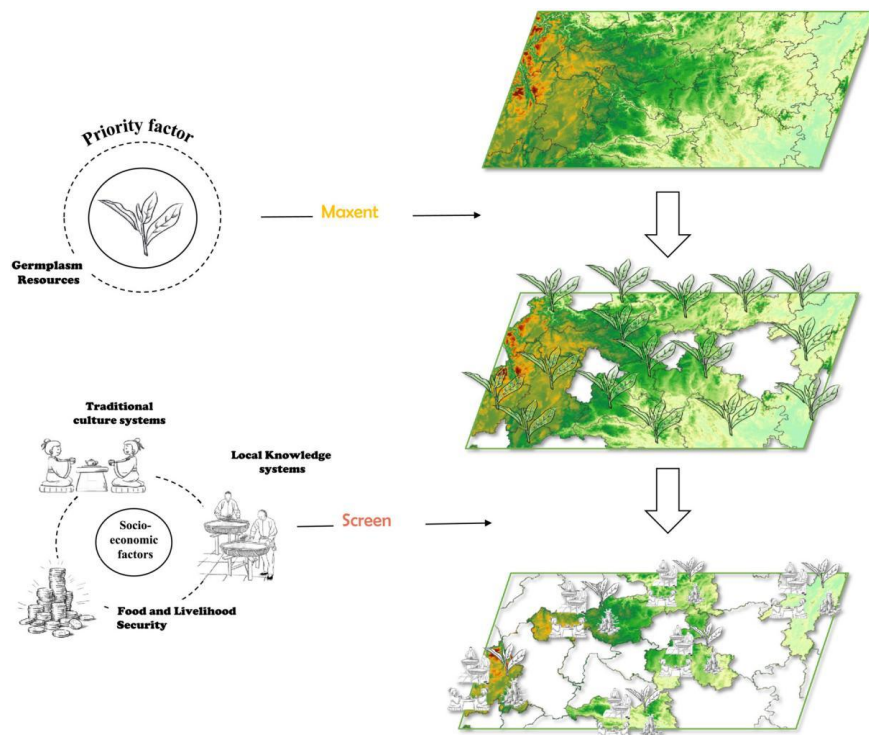


Figure 1 Schematic diagram of the process of identifying potential areas of agricultural heritage systems (AHS) based on agro-biodiversity (Adopted from Bai et al., 2024)

To enhance the conservation of Yunnan's tea varieties, it is recommended to increase support for research and development activities that focus on the genetic improvement of tea plants. This includes the exploration of biotechnological tools for germplasm innovation and the development of new cultivars with enhanced traits. Furthermore, policies that promote the sustainable use of tea resources and the protection of traditional agroecosystems should be prioritized to ensure the long-term preservation of Yunnan's rich tea heritage.

7 Collaborative and Multilateral Approaches

7.1 International collaboration in tea genetic research

International collaboration plays a crucial role in the preservation and enhancement of tea plant genetic resources. Countries around the world depend on genetic resources that originate beyond their borders, making international cooperation essential for securing access and ensuring conservation. This is particularly important for tea plants, which are cultivated globally and require diverse genetic inputs for breeding and improvement. Japan, for instance, has actively engaged in collecting and preserving both domestic and foreign genetic resources of tea, highlighting the importance of international collaboration in expanding genetic diversity and improving breeding materials.

The establishment of international agreements and frameworks, such as the Convention on Biological Diversity and the International Treaty on Plant Genetic Resources for Food and Agriculture, underscores the need for a multilateral approach to genetic resource management. These frameworks facilitate the sharing of genetic resources and benefits, ensuring that countries maintaining these resources are adequately compensated and supported (Ebert et al., 2023). Such collaborative efforts are vital for the continued development and sustainability of tea cultivation worldwide.

7.2 Sharing of Genetic Resources and Data

The sharing of genetic resources and data is a cornerstone of effective plant genetic resource management. Public and private genebanks play a pivotal role in conserving and distributing genetic materials, which are essential for