

Conservation Status of Medicinal Plants in Mwenezi District, Zimbabwe

by

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ABSTRACT

This project was developed in collaboration with Canadian Mennonite University (CMU), Mennonite Central Committee (MCC) Zimbabwe, and local partners to address gaps in the assessment and conservation of medicinal plant species in Mwenezi District, southern Zimbabwe. These species are central to local healthcare systems and traditional knowledge but remain underrepresented in formal conservation frameworks, including the IUCN Red List and CITES. CMU and MCC Zimbabwe brought long-standing relationships with communities and partners in Zimbabwe to this collaboration, developed through years of sustained presence in the region.

The gap this practicum addresses is the absence of practical, context-sensitive assessment tools that NGOs and conservation organizations in resource-limited settings can use to assess medicinal plant conservation status. The project aimed to develop such tools through a methodology combining systematic literature review, taxonomic verification, and multi-criteria assessment frameworks, alongside stakeholder consultation through workshops and feedback sessions with NGO and government partners in Zimbabwe.

A pilot secondary data assessment documented 202 medicinal plant species across 72 families in Mwenezi District. Of these, 52.5% lacked formal IUCN evaluation, and only five species (2.5%) were classified as threatened or near threatened among assessed species, a finding that likely reflects assessment gaps rather than genuinely low threat levels. Application of the Environmental Security Framework demonstrated stronger performance for the availability and stability dimensions than for perception and access, which require community-based field data to complete adequately.

Key outputs include a Secondary Data Assessment Guide and a Rapid Community-Based Assessment (RCBA) Guide, designed to complement existing frameworks by identifying data gaps, supporting stakeholder dialogue, and enabling more inclusive, community-informed conservation processes in future implementation. The RCBA Guide recognizes that communities are not uniform: knowledge about medicinal plants is distributed unevenly, with some knowledge held broadly across a community and other knowledge held by specialist practitioners, such as traditional healers, who have dedicated their lives to this field. The guides address both dimensions and include guidance on navigating community authority structures, including both formal governance systems and customary governance, when seeking permission to undertake assessment work. Together, these tools provide NGOs with a structured yet flexible methodology for conservation assessment in resource-limited, data-scarce contexts.

The project contributes to bridging scientific and local knowledge systems in Mwenezi District and similar semi-arid communal farming regions, demonstrating how secondary data assessment can systematically identify conservation priorities and guide targeted field verification where community-based methods are subsequently applied.

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CHAPTER 1: INTRODUCTION

In December 2023, my supervisor, Iain Davidson-Hunt, connected me with colleagues working on medicinal plant conservation in Zimbabwe, asking if I would be interested in developing a practicum project around this work. The opportunity immediately resonated with my background in biodiversity conservation, but more importantly, it offered a chance to address a problem I had observed throughout my training: medicinal plants remain largely invisible in conservation planning despite their critical importance to healthcare systems across Africa. This collaboration between Global Affairs Canada, Canadian Mennonite University (CMU), and local organizations in Zimbabwe's Mwenezi District would become my MNRM practicum, allowing me to develop practical conservation assessment tools that resource-limited organizations could use.

The study focused on Mwenezi District in Zimbabwe, which lies within agro-ecological regions IV and V. Approximately 90 % of the district falls into the driest region, V (Brazier, 2018). The communities examined are primarily inhabited by the Mashona ethnic group, who traditionally depend on medicinal plants to manage health concerns (Zvinorova et al., 2016). Although the conservation status of medicinal plants in these two agro-ecological zones is unknown, global studies highlight the importance of the issue. In Zimbabwe, over 75% of the population relies on medicinal plants for primary healthcare (WHO, 2021), due to affordability and cultural acceptability (Maroyi, 2013), nearly 15,000 medicinal plant species globally are threatened with extinction from overharvesting and habitat destruction (Bentley, 2010). This is exacerbated in these two agro-ecological zones as they have become unstable due to climate change, which is worsening conditions in already arid areas (Manatsa et al., 2020). Given the general concern with conservation status globally and the climate challenges in Mwenezi District, there is a need for tools that can support community-based assessments of medicinal plants.

Standard conservation assessment tools, designed for data-rich contexts and charismatic species, prove difficult to apply in these resource-limited settings, precisely where medicinal plant conservation is most urgently needed. The gap this practicum addresses is the absence of practical, context-sensitive assessment tools that NGOs and conservation organizations in resource-limited settings can use to assess medicinal plant conservation status using both available secondary data and community-informed approaches. My practicum addressed this challenge by developing practical assessment tools that organizations could use without extensive technical capacity or comprehensive baseline data, tools tested through real-world application in Mwenezi District.

Project Partnership and Development

The Conservation Status of Medicinal Plants in Mwenezi District, Zimbabwe project was conceived as a collaborative initiative between Global Affairs Canada, Canadian Mennonite University (CMU), and local organizations in Zimbabwe. The project was developed within the broader context of the LINCZ (Locally Led Indigenous Nature-Based Solution for Climate Change Adaptation in Zimbabwe) initiative, which works to strengthen community resilience through integrated approaches to health, nutrition, and environmental sustainability. The practicum student served as project manager and led the technical work, including systematic literature review, database analysis, and guide development. Canadian institutional partners provided coordination, grant management, and supervisory expertise, while local partners contributed essential on-ground knowledge, cultural expertise, and access to partner networks and biodiversity data.

CMU and MCC Zimbabwe brought long-standing relationships with communities and partners in Zimbabwe to this collaboration, developed through years of sustained presence in the region.

My primary contact at CMU was Dr. Rachel Krause, who provided essential coordination between the university and our Zimbabwean partners. Dr. Jodi Dueck-Read managed the grant processes that made this work possible, while Alrika Rojas coordinated logistics for international workshops. In Zimbabwe, our key partners included MCC-Zimbabwe, Score Against Poverty (who led the LINCZ initiative), and research partners Dr. Luke Jimu and Dr. Admore Mureva from the Global Biodiversity Information Facility Zimbabwe. These partners proved instrumental not just in reviewing my work but in fundamentally shaping it through their cultural expertise and practical insights.

My academic committee provided ongoing guidance to ensure the project met both scholarly standards and practical requirements. Prof. Iain Davidson-Hunt served as my advisor, bringing expertise in community-based natural resource management and helping me navigate the complexities of international partnership and Indigenous knowledge systems. Dr. Rachel Krause coordinated between CMU and Zimbabwean partners, providing regular feedback and connecting my work to the broader LINCZ initiative. Prof. Kirit Patel contributed critical insights on evaluating assessment methodologies based on their intended purpose, whether for power transformation, knowledge sharing, or scientific assessment, and emphasized ensuring the guides would be practically useful for local implementing partners with limited resources. Danna Leaman provided technical guidance on incorporating IUCN Red List criteria and FairWild Standards into accessible tools. Sheldon McLeod provided strategic oversight to ensure deliverables met both academic rigour and practitioner needs, regularly challenging me to simplify objectives, clarify deliverables, and consider how organizations with limited resources would use what I was creating.

My role as the practicum student involved conducting a comprehensive literature review of existing medicinal plant assessment methodologies, developing two complementary assessment

guides through iterative design and stakeholder consultation, and implementing a pilot study of the secondary data methodology specifically in Mwenezi District. Throughout the project, I was responsible for maintaining regular communication with my academic committee and Zimbabwe partners, organizing the critical feedback workshop in Mwenezi, incorporating all review feedback into successive guide revisions, and producing deliverables that met both academic standards and practical utility for local conservation organizations.

Project Objectives and Deliverables

Firstly, I conducted a comprehensive literature review examining existing methodologies for both secondary data assessment and rapid community-based assessment of medicinal plants. This review revealed significant gaps in approaches that integrate global conservation science with local ecological knowledge, as I discuss further below. Secondly, I developed two complementary assessment guides: a Secondary Data Assessment Guide that enables organizations to systematically utilize existing databases and research, and a Rapid Community-Based Assessment Guide that provides structured approaches for incorporating traditional ecological knowledge into formal conservation planning.

Thirdly, I implemented a pilot study of the secondary data assessment methodology specifically focused on medicinal plants in Mwenezi District, providing both a rigorous test of the methodology and valuable conservation information for immediate use by local partners.

These objectives translated into **three concrete deliverables**. The **Literature Review** (Chapter 2) systematically examined existing assessment methodologies across global conservation frameworks, database-driven approaches, and community-based methods, identifying critical gaps that my guides would need to address. The **Assessment Guides** (Chapter 3) include both the

Secondary Data Assessment Guide (Part A), which provides step-by-step protocols for organizations to access and analyze existing biodiversity databases, published research, and grey literature with particular attention to working effectively in data-poor contexts where comprehensive baseline data does not exist, and the Rapid Community-Based Assessment Guide (Part B), which complements secondary data approaches by providing structured methods for documenting traditional ecological knowledge and integrating multiple knowledge systems into conservation planning. Finally, the **Mwenezi District Pilot Implementation Report** (Chapter 4) demonstrates the Secondary Data Assessment Guide in action, generating conservation information on 202 medicinal plant species and documenting both the methodology's potential and its practical challenges.

What I Learned from Background Research

My background research revealed three critical challenges that fundamentally shaped my approach, as detailed in Chapter 2. More information can also be found in my background information report in the Integrated Project Plan, which is included as Appendix I of this document.

Firstly, global conservation frameworks assume data that does not exist for most African medicinal plants. The IUCN Red List relies on comprehensive baseline data, detailed population surveys, distribution mapping, and demographic studies, which rarely exist for medicinal plants in semi-arid African contexts. The Global Biodiversity Information Facility (GBIF), despite mobilizing over 2.2 billion occurrence records for almost 7 million species globally (Heberling et al., 2021), exhibits significant geospatial biases (Beck et al., 2014), with plant data particularly skewed toward temperate regions and countries with greater research infrastructure (Yesson et al., 2007). For Mwenezi District, herbarium specimens and field observations remain scattered across institutional collections and unpublished reports. When initial GBIF queries revealed insufficient

occurrence records, I faced a choice: abandon the assessment or develop approaches that can work with incomplete data. I chose the latter, systematically compiling species lists from multiple secondary data sources including ethnobotanical studies, traditional medicine surveys, herbarium records, published papers on medicinal plants, ethnographies, government and NGO reports, and expert consultations. I also conducted targeted outreach to researchers and organizations working on medicinal plants in Zimbabwe to identify any data that might not be easily accessible through standard internet searches.

This included a visit to Bindura University, where I met with Dr. Luke Jimu and Dr. Admore Mureva. They were generous with their time and shared relevant documents and materials. However, the PDFs they provided turned out to be drawn from the same publicly available secondary literature I had already compiled during my database searches, and I was not given access to unpublished student theses or internal institutional research. This experience confirmed that the data limitation I encountered was real and unavoidable, even when local academic institutions are consulted directly, the available data in Zimbabwe often mirrors what is already accessible through international databases, underscoring just how data-scarce this field remains in this context. It is also worth noting that the availability of secondary data will differ for each country and region, in some contexts more robust local ethnobotanical literature or national databases may exist, while in other researchers may need to rely heavily on international databases supplemented by direct expert consultation.

This methodology showed that meaningful conservation assessment remains possible even in severely data-poor contexts, though it requires methodological adaptation rather than strict application of global frameworks.

Secondly, traditional ecological knowledge remains inadequately integrated into formal conservation assessments. Conventional frameworks typically treat Indigenous knowledge as supplementary information to be validated against scientific data, rather than recognizing it as a coequal knowledge system with its own validity and depth. This hierarchical approach undermines community engagement and overlooks the deep temporal and spatial understanding that traditional practitioners hold about plant population dynamics, seasonal availability patterns, and sustainable harvesting practices. Traditional healers in Mwenezi District possess knowledge accumulated across generations, knowledge about which species populations are declining, how harvest pressure varies seasonally, which plants regenerate readily, and which do not. Yet this knowledge rarely appears in formal conservation databases.

It is important to recognize, however, that medicinal plant knowledge within a community is not uniformly distributed. Some knowledge, such as the general identification and common uses of widely harvested plants, is held broadly across a community. Other knowledge is held by specialist practitioners, such as traditional healers, who have invested a lifetime developing deep expertise in plant ecology, preparation, and application. These two categories of knowledge holders contribute differently to a conservation assessment, and the guides I developed are designed to engage both. This distinction is discussed further in Chapter 3.

This revealed that any tools I developed needed to genuinely value traditional knowledge as essential conservation data, not merely as cultural context to be acknowledged, then set aside.

Thirdly, existing frameworks fail to address medicinal plants' dual role as both biodiversity resources and healthcare infrastructure. The IUCN Red List evaluates extinction risk through ecological criteria but does not systematically consider the healthcare implications of species loss or the cultural dimensions of traditional medicine systems. Similarly, the Convention on

International Trade in Endangered Species of Wild Fauna and Flora (CITES) primarily addresses sustainability from a trade perspective, overlooking locally important medicines that face significant harvest pressure within communities but never enter formal trade channels. Conservation frameworks essentially ask, 'Will this species go extinct?' without asking, 'What happens to community health if this species becomes locally unavailable?' For communities in Mwenezi District where traditional medicine serves as primary healthcare for up to 80% of the population, this omission represents a fundamental gap. A plant species might be globally secure but locally depleted in areas where communities depend on it for healthcare, yet conventional frameworks would miss this critical conservation concern.

To address these limitations, I adapted the Environmental Security Framework as described by Davidson-Hunt et al. (2016). This framework examines four interdependent dimensions: Availability (whether plant populations exist in sufficient quantities to meet community demand sustainably), Access (whether communities can physically and economically reach medicinal plant resources when needed), Stability (how consistent the medicinal plant supply remains across seasons and years), and Perception (how different stakeholders understand and prioritize conservation needs). This framework proved particularly appropriate because it explicitly acknowledges that plant conservation cannot be separated from human needs, cultural practices, and healthcare systems. Rather than framing conservation as protecting plants from people, it shifts the discourse toward supporting sustainable relationships between communities and medicinal plant resources.

I also drew on FairWild Risk Analysis Methodology (Leaman and Schippmann, 2021), which provides specific criteria for assessing whether wild plant harvest can be maintained without depleting populations, integrating IUCN Red List Categories and Criteria into a nine-factor

resilience assessment. I had to adapt these global standards for local application by developing approaches to work with incomplete data using the precautionary principle. This balancing act, maintaining scientific credibility while creating tools that work in resource-limited contexts, would prove to be one of my project's central challenges.

How I Approached the Work

I used a mixed-methods approach combining systematic literature review, iterative guide development with ongoing stakeholder input, and pilot implementation to test whether the tools worked in practice. The literature review examined existing assessment methodologies across three domains: global conservation frameworks (IUCN, CITES, FairWild), database-driven methodologies (GBIF, herbarium-based assessments, species distribution modeling), and community-based approaches (participatory rural appraisal, rapid ethnobotanical assessment, local ecological knowledge surveys). This comprehensive review revealed not just what tools existed, but more importantly, where significant gaps remained, particularly in approaches that integrate global conservation science with local ecological knowledge and function effectively in data-poor contexts.

The development of both assessment guides involved an iterative cycle of design, review, and refinement. I would draft sections, share them with Prof. Iain Davidson-Hunt for initial review, then with Dr. Rachel Krause for feedback on clarity and structure. Regular meetings with Dr. Krause provided ongoing guidance on the broader project. During the workshop in Zimbabwe, I presented the guides to local partners for feedback on practical utility and cultural appropriateness, which informed final refinements. Through this process, the guides evolved from separate documents to an integrated, comprehensive workflow, and ultimately back to two standalone documents with cross-references to optimize both comprehensiveness and accessibility.

The pilot implementation in Mwenezi District tested the Secondary Data Assessment Guide through a comprehensive analysis of available data on medicinal plants in the region. I began with what I thought would be a straightforward process: querying GBIF for occurrence records. However, initial queries revealed very limited georeferenced occurrence records for the Mwenezi region, far fewer than needed for a robust assessment. This data gap required significant methodology adaptation. The methodology was revised to systematically compile species lists from ethnobotanical studies, traditional medicine surveys, herbarium records, and expert consultations. This labor-intensive process required establishing new partnerships and significantly extended my timeline but ultimately generated assessment data for 202 medicinal plant species. The experience proved invaluable: it demonstrated that the methodology could work even in severely data-poor contexts, though it also revealed just how challenging medicinal plant conservation assessment using secondary data really is.

Throughout the project, regular stakeholder engagement ensured methodologies remained grounded in practical needs rather than becoming theoretical exercises. Monthly updates with Zimbabwe partners, Score Against Poverty, GBIF Zimbabwe, and our research collaborators, kept everyone informed and created opportunities to surface concerns before they became major problems. The workshop organized in Mwenezi to gather direct feedback on draft guides represented a particularly important milestone. Bringing together Score Against Poverty staff, Environmental Management Agency representatives, and Forestry Commission representatives for a structured review provided direct input from potential users and enabled real-time methodology refinement. This workshop revealed critical gaps I had not anticipated, particularly the need to include plant names in multiple local languages (Shangaan, Ndebele, Tonga) rather than only Shona, given Mwenezi's linguistic diversity, which fundamentally improved the guides' usability.

Before engaging in any community-based conservation assessment, practitioners using these guides will need to carefully consider who constitutes 'the community' for the purposes of their project, and who holds the authority to grant permission for that work to proceed. These are not straightforward questions. In many contexts, including Mwenezi District, communities are governed through both formal systems (such as district councils and government agencies) and customary governance systems (such as traditional or tribal authorities). Both types of authority may be relevant when seeking permission to conduct assessments, and the appropriate pathway will differ depending on the specific project, location, and community. Practitioners are encouraged to consult relevant literature on community authority and governance as they plan their projects, including resources on free, prior, and informed consent (FPIC), community-based natural resource management, and participatory research ethics.

What Follows in This Document

The following chapters document both the process and outcomes of this collaborative conservation initiative.

Chapter 2 presents the comprehensive literature review (Deliverable 1). **Chapter 3** introduces the Secondary Data Assessment Guide and Rapid Community-Based Assessment Guide (Deliverable 2). **Chapter 4** demonstrates the pilot implementation in Mwenezi District (Deliverable 3). **Chapter 5** offers critical reflections on the project management process, examining lessons learned from coordinating this international collaboration and identifying strategies that could improve similar initiatives in the future. This reflection addresses early assumptions that proved incorrect, pivotal decisions and their outcomes, the effectiveness of formal project management plans, what I would do differently, and how this experience shaped my development as a conservation practitioner. It provides an honest assessment of what worked, what did not, and why.

Finally, the **appendices** provide detailed technical materials, comprehensive stakeholder feedback, database protocols, framework applications, and the complete Integrated Project Plan that guided this work.

CHAPTER 2: DELIVERABLE 1: LITERATURE REVIEW

This literature review is the initial deliverable for the "Conservation Status of Medicinal Plants in Mwenezi District, Zimbabwe" project. It consolidates existing secondary data assessment methods and rapid community-based assessment (RCBA) approaches relevant to medicinal plant conservation, serving as the foundation for creating practical assessment guides that NGOs and local partners can use in resource-limited settings.

The review addresses a fundamental challenge in medicinal plant conservation: while robust assessment methodologies exist globally, most require technical expertise, extensive resources, or cultural adaptations that exceed the capacity of organizations working at the community level. By examining both formal scientific approaches and participatory methods, this review identifies best practices, critical gaps, and practical requirements that directly inform the design of the Secondary Data Assessment Guide and Rapid Community-Based Assessment Guide (Deliverable 1).

Two methods are particularly relevant for assessing medicinal plants. Secondary data methods leverage existing databases, herbarium records, and published research to establish baseline conservation information without requiring extensive field work. RCBA methods incorporate local ecological knowledge and community perspectives essential for understanding medicinal plant use patterns, cultural significance, and community-level conservation priorities. Together, these approaches can provide comprehensive assessments that balance scientific rigor with cultural appropriateness and practical feasibility.

DELIVERABLE 1: LITERATURE REVIEW REPORT ON SECONDARY DATA ASSESSMENT AND COMMUNITY-BASED ASSESSMENT METHODOLOGIES



This project is partially funded by: Global Affairs Canada and Canadian Mennonite University (Prof. Davidson-Hunt), and the Government of Canada's New Frontiers in Research Fund (NFRF), grant NFRFT-2020-00188, through the Ārramāt Project

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(Partners, Zimbabwe)

CHAPTER 2: LITERATURE REVIEW REPORT ON ASSESSMENT METHODOLOGIES

This literature review establishes the methodological foundation for the two primary project deliverables: a Secondary Data Assessment Guide and a Rapid Community-Based Assessment Guide for medicinal plant conservation in Zimbabwe's Mwenezi District. Rather than comprehensively surveying the field, this review identifies the key frameworks, tools, and contextual lessons that directly inform the design of those guides.

2.1 Search Strategy

Medicinal plant species data were obtained from comprehensive reviews on traditional plant use in Zimbabwe, including Nyagumbo et al. (2022), which focused on plants used in managing respiratory diseases with implications for COVID-19, and Nyagumbo et al. (2024), a systematic review of medicinal plants traditionally used for the treatment of genitourinary infections. Additional literature was accessed through Google Scholar, PubMed, JSTOR, ScienceDirect, TRAFFIC, and IUCN publications, covering publications from 2005 to the present.

Key search terms included combinations of:

- "Medicinal plants" OR "medicinal herbs" OR "traditional medicine plants"
- "Conservation assessment" OR "conservation status" OR "threat assessment"
- "Rapid assessment" OR "community-based assessment" OR "participatory assessment"
- "Secondary data assessment" OR "literature-based assessment"
- "Environmental security" OR "resource security"
- "Zimbabwe" OR "Southern Africa"
- "IUCN Red List" OR "CITES" OR "FairWild"

Additional sources were identified through reference list scanning (snowball method) of relevant articles and consultation with experts in ethnobotany, conservation biology, and traditional medicine systems. Data collected from the literature included the species' common name in Shona, and conservation status. Zotero reference management software was used to extract data from websites, retrieve articles from databases, and identify duplicates. Grey literature: including unpublished data from university libraries and bibliographies of cited reports, was retrieved through Google searches and organisational websites.

2.2 Screening Process

Full-text articles that at least reported on the ethnobotany of Zimbabwean medicinal plants published in peer-reviewed journals, reports, books, theses, and dissertations dated until May 17, 2025, were considered. All publishing years were included without any geographical restrictions. Articles that reported data not relevant to the study and not written in English were excluded from the study.

Sources were included based on the following criteria:

- Peer-reviewed journal articles, books, technical reports, or guidelines from recognized conservation organizations
- Focus on medicinal plants or transferable methodologies from plant conservation
- Relevance to at least one dimension of the environmental security framework
- Applicability to resource-limited contexts and/or developing regions
- Inclusion of methods that can be implemented by NGOs or community-based practitioners

Sources were excluded if they:

- Studies focusing solely on animal conservation
- Focused solely on pharmaceutical development without conservation considerations
- Studies focusing exclusively on veterinary use or lacking methodological detail were excluded from the final dataset.
- Articles that reported data not relevant to the study and not written in English were excluded from the study.

2.3 Review Limitations

The review acknowledges potential bias toward English-language publications and the limited availability of African case studies in international databases. Additionally, grey literature from NGO reports and local assessments may be underrepresented. Despite these limitations, the structured and targeted nature of the review provides a robust and contextually relevant evidence base for guide development

2.4 Secondary Data Assessment Methodologies

2.4.1 Existing Global Frameworks

Three global frameworks provide the foundation for secondary data assessment of medicinal plants.

2.4.1.1 IUCN Red List Methodology

The International Union for Conservation of Nature (IUCN) Red List of Threatened Species, established in 1964, is the leading authority on global species extinction risk and has exerted immense influence on conservation science, policy, and practice globally (Betts et al., 2020). It

has become the primary tool for assessing drivers of recent biodiversity losses (IUCN, 2023). Its data requirements often exceed available information for medicinal plants in data-poor contexts like Zimbabwe (Maroyi, 2013). The IUCN methodology relies on five primary criteria: population decline (Criteria A and E), population size and distribution (Criteria C and D), and geographic range (Criteria B and D2), with Criterion B being the most frequently applied in global assessments (Le Breton et al., 2019). Species are categorized into extinction risk levels, including extinct (EX), extinct in the wild (EW), critically endangered (CR), endangered (EN), vulnerable (VU), near threatened (NT), least concern (LC), and data deficient (DD). CR, EN, and VU species are classified as threatened with extinction.

2.4.1.2 CITES Framework

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is a legally binding international treaty drafted in 1963, in force since 1975, and currently with 184 Parties (CITES, 2024). Its explicit objective is to ensure that international trade in wild species does not threaten their survival, operating through three Appendices (see <http://www.cites.org>) that regulate trade at different levels of restriction (CITES, 2024). This includes Appendix I, when commercial trade, with very limited exceptions, is prohibited and Appendix II, when species may still be traded but are subject to a range of restrictions and trade monitoring, including provision of a sustainability and legal certifications to allow trade. Appendix III enables individual Parties to seek international cooperation in controlling trade in nationally protected species. For Mwenezi District, where most medicinal plants are harvested for local rather than international use, CITES provides limited conservation benefit. Its trade-focused approach creates a mismatch with conservation needs driven by local harvesting pressure, and CITES listings therefore serve as one indicator of concern in the secondary data guide rather than a comprehensive assessment tool.

2.4.1.3 FairWild Standard Assessment Methodology

The FairWild Standard is the only global standard of sustainable and ethical harvesting offering a rigorous third-party certification specializing in wild plants, fungi, and algae tailored to the unique needs of wildcrafting communities, where employment is often informal and unstable, and to the environmental challenges of wildcrafting, where harvest levels must be controlled for long-term sustainability (Timoshyna *et al.*, 2019). Now in its third edition (2023), the Standard uses seven principles and 24 criteria to address ecological, social-cultural, and business practices (FairWild Foundation, 2023). While full certification is impractical for most NGO contexts given documentation and capacity implications. FairWild's principles for evaluating harvest sustainability and integrating social factors alongside ecological concerns shaped the assessment criteria developed in the guides (ARRGO, 2021; FairWild Foundation, 2023)

2.4.2 Database and Literature-Based Assessment Methods

Several databases provide occurrence and distribution data for secondary assessment, each with distinct strengths and limitations.

2.4.2.1 Global Biodiversity Information Facility (GBIF)

GBIF currently hosts over 2.5 billion species occurrence records from over 2,000 institutions and open access data repositories, making it the largest public aggregator of georeferenced species occurrence data (GBIF, 2023). However, even enormous databases such as the GBIF are incomplete and uncertain, with a considerable amount of biodiversity data subject to errors, often due to the low accuracy, low precision and lack of standardization from multiple data sources (Cobos *et al.*, 2018, D'Antraccoli *et al.*, 2022). Accepting that biases and gaps in biodiversity data often cannot be avoided, especially in the more unevenly sampled countries and regions of the world (Hopkins, 2019; Lessa *et al.*, 2019), it becomes important to quantify and understand the

limits of our biodiversity knowledge. This challenge proved central to this project: secondary data for medicinal plant species in Mwenezi District was sparse, taxonomically inconsistent, and heavily weighted toward global assessments that did not reflect local ecological conditions.

2.4.2.2 Herbarium-Based Conservation Assessments

National herbarium collections and regional flora databases complement global sources by providing presence data and historical distribution records more relevant to local contexts. Zimbabwe Flora (zimbabweflora.co.zw) and national herbarium records offer regional data that is often more current than global aggregators. Brummitt et al. (2008) showed that georeferenced herbarium specimens can be used to calculate extent of occurrence (EOO) and area of occupancy (AOO) for preliminary IUCN-based assessments, correctly discriminating threatened from non-threatened taxa in 74% of cases. However, measuring EOO and AOO is not possible for most plant species due to inherent bias and gaps in the occurrence data used to calculate them (Meyer *et al.*, 2016).

2.4.2.3 Plants of the World Online

Plants of the World Online (POWO), a comprehensive global database of plant taxonomy, nomenclature, and conservation. POWO provides scientific names, classifications, descriptions, images, and geographic distribution. Its intuitive interface connects users to scientific literature and herbarium records, offering a centralized source of botanical data. This interconnected resource not only facilitates access to existing information but also promotes the generation of new biological knowledge, making it an ideal platform for identifying and compiling reliable records worldwide (POWO, 2025).

2.5 Community-Based Assessment Approaches

Community-based assessment approaches complement secondary data methods by capturing local ecological knowledge, community priorities, and contextual information that no database can replicate. While secondary data assessment addresses what existing records can tell us about species status and distribution, community-based methods address what only communities can tell us about access, perception, and lived experience of medicinal plant availability. This section reviews the participatory methods and frameworks that informed the design of the Rapid Community-Based Assessment Guide.

2.5.1 Participatory Methods

2.5.1.1 Participatory Rural Appraisal Techniques:

Participatory Rural Appraisal (PRA) is a methodology for learning about rural life and environments from rural people, developed as a shift from top-down extractive approaches to experience sharing by local communities (Chambers, 1992). The participatory research process contributes to the promotion of capacity building, empowerment of communities to address their health needs and priorities, and an increased sense of ownership of the project (Dias & Gama, 2018).

Core PRA methods relevant to the community-based guide include seasonal calendars, resource mapping, matrix scoring, trend analysis, wellbeing and wealth assessment, and analytical diagramming, all requiring facilitation skills and time rather than expensive equipment, making them suitable for NGO implementation in resource-limited contexts like Mwenezi District (Chambers, 1993). Its application includes (but is not limited to) delineating current natural resource uses (Nackoney *et al.*, 2013), mapping people's landscape values (Bourgoin *et al.*, 2012;

Fagerholm *et al.*, 2012), and supporting efforts to gain legal recognition of customary land and resource rights (Bryan, 2011).

Participatory mapping of land use changes based on local knowledge complements remotely sensed data (Zaehring *et al.*, 2018) and is included in the community-based guide to document harvesting locations, access routes, and access restrictions unavailable from secondary sources.

2.6 Environmental Security Framework

The Environmental Security Framework (ESF) organizes assessment around four dimensions of resource security, access, availability, stability, and perception, and provides the overarching structure for the community-based assessment guide. Davidson-Hunt *et al.* (2016) developed the ESF through indigenous community collaborations, demonstrating how it bridges local and scientific knowledge systems without privileging one over the other.

2.7 Lessons from Similar Contexts

Case studies from Zimbabwe and comparable resource-limited contexts provide direct methodological grounding for this project's approach. Maroyi (2013) documented traditional medicinal plant use in south-central Zimbabwe, finding that despite the critical role of medicinal plants in primary healthcare, indigenous knowledge remains inadequately documented and utilized plants inadequately conserved, directly justifying the need for practical assessment tools and a multi-source approach. Khakurel *et al.* (2024) combined field surveys, community interviews, and multiple formal frameworks (IUCN, CITES, and Rapid Vulnerability Assessment) in Nepal's Annapurna Conservation Area, demonstrating that combining ecological data, traditional knowledge, and secondary databases identified threatened species that single-source approaches would miss, supporting this project's sequential secondary-then-community assessment design.

Together these studies confirm two consistent lessons: no single data source is adequate alone, and local-scale assessment routinely reveals conservation concerns invisible in global databases, particularly for culturally important species facing harvest pressure without formal conservation listings.

2.8 Implications for Guide Development

2.8.1 Secondary Data Assessment Guide

The literature establishes several non-negotiable elements for a credible secondary data guide in Zimbabwe's context. The guide must provide a multi-database protocol integrating GBIF, national herbarium records, IUCN SIS, and published ethnobotanical literature, with explicit guidance on evaluating data quality and acknowledging geographic bias. It must include an IUCN-compatible approach to conservation status analysis using the IUCN threat classification system to group species by documented threats and identify priority species for community engagement. Data gap severity categories, distinguishing species absent from databases, marked Data Deficient, or assessed only on historical data, enable systematic prioritization even where formal assessments do not exist. Throughout, transparent uncertainty documentation identifying which conclusions rest on robust data versus assumption or extrapolation is essential for appropriate interpretation of results.

2.8.2 Rapid Community-Based Assessment Guide

The literature justifies a guide built around the ESF as its organizing framework, with each of the four dimensions, access, availability, stability, and perception, addressed through specific PRA and participatory mapping tools. The guide should prioritize methods implementable by NGO staff without botanical training, drawing on the simplified approaches documented by Chambers

(1992). Culturally grounded protocols for prior informed consent and knowledge governance are essential given the sensitive nature of traditional medicinal knowledge in Zimbabwean communities. The guide should explicitly address how community-based assessment integrates with secondary data findings, positioning the two guides as complementary rather than standalone tools.

2.9 Conclusion

This review identifies sufficient methodological grounding to develop both project guides with confidence. The IUCN Red List, GBIF, national herbarium data, POWO, and the IUCN Species Information System provide the foundation for secondary assessment. PRA, participatory mapping, and the ESF provide the foundation for community-based assessment. Case studies from Zimbabwe and comparable semi-arid, resource-limited contexts confirm that no single data source is adequate alone, integrated, multi-source approaches are both necessary and feasible for meaningful conservation assessment where comprehensive baseline data does not exist.

It is important to acknowledge that while international databases such as the IUCN Red List and GBIF form the primary foundation for secondary assessment, national-level databases and resources should also be consulted where they exist. However, the depth and quality of conservation information available at the national level varies considerably across countries. In the case of Zimbabwe, for example, the Zimbabwe Flora database provided useful occurrence and abundance information but did not offer formal conservation status classifications such as vulnerable, threatened, or endangered. This underscores the importance of triangulating across multiple sources, international, national, and literature-based, rather than relying on any single database, and of being transparent about the limitations of available data when conducting assessments in resource-limited contexts.

A key insight emerging from the literature is that secondary databases can partially address two ESF dimensions, availability through occurrence records and stability through population trend data, but the access and perception dimensions require community-based methods that no database can replicate. This finding directly shapes the two-guide design of this project: the Secondary Data Assessment Guide addresses what existing data can tell us, while the Rapid Community-Based Assessment Guide addresses what only communities can tell us.

The primary design principle emerging from this review is that assessment tools for this context must balance methodological rigour with practical accessibility, capable of producing credible results in the hands of NGO practitioners with limited technical infrastructure. This principle guided every methodological choice in both guides developed as Deliverable 2.

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CHAPTER 3: DELIVERABLE 2 - ASSESSMENT GUIDES

This guide package is the second deliverable of the Conservation Status of Medicinal Plants in Mwenezi District, Zimbabwe project, developed directly from the findings of the literature review in Chapter 2. Where the literature review identified what methodologies exist and where the critical gaps lie, this chapter responds to those gaps by providing two practical tools that organizations can use in the field.

The Secondary Data Assessment Guide (Part A) provides step-by-step protocols for systematically compiling and analyzing existing biodiversity databases, published literature, herbarium records, and grey literature to establish a conservation baseline for medicinal plant species. It is designed specifically for data-poor contexts where comprehensive occurrence records do not exist and where organizations must work creatively across multiple secondary sources to build an adequate picture of species status.

The Rapid Community-Based Assessment Guide (Part B) complements the secondary data approach by providing structured, ethically grounded methods for documenting traditional ecological knowledge and community perspectives on medicinal plant availability, access, stability, and perception. It is built around the Environmental Security Framework and a four-stage progressive consent structure that places community decision-making at the centre of the assessment process.

Together, these guides create an integrated pathway from desk-based secondary assessment to field-ready community implementation, bridging global conservation methodologies with local community realities in resource-limited settings.



A Framework for Assessing Conservation Status Through Secondary Data Analysis Method

About This Guide

This guide is intended to provide conservation practitioners, NGOs, and research partners with a systematic framework for assessing the conservation status of medicinal plants in Zimbabwe. While the methodology presented is universally applicable, the case studies and examples are drawn from work in the Mwenezi District of Southern Zimbabwe.

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LIST OF ABBREVIATIONS

AOO	Area of Occupancy
CITES	Convention on International Trade in Endangered Species
EMA	Environmental Management Agency (Zimbabwe)
EOO	Extent of Occurrence
ESF	Environmental Security Framework
GBIF	Global Biodiversity Information Facility
GIS	Geographic Information System
IUCN	International Union for Conservation of Nature
NGO	Non-Governmental Organization
POWO	Plants of the World Online
SI 61	Statutory Instrument 61 of 2009 (Zimbabwe)
SIS	Species Information System (IUCN)

QUICK START: USING THIS GUIDE (PHASE 1)

Who is this guide for? NGOs, researchers, and conservation organizations are conducting secondary data analysis to prepare for community-led medicinal plant conservation assessments

What does this guide do? Provides systematic desk research methodology (Phase 1) to:

- Compile existing information about medicinal plants from databases and literature
- Identify which species would benefit from community dialogue
- Prepare questions for community engagement (Appendix II)
- Support data repatriation to communities.

How long does it take? Phase 1 (Desk research): 13-20 weeks total

- Step 1 - Preparation: 2-3 weeks
- step 2 - Data Collection: 4-6 weeks
- Step 3 - Verification: 2-3 weeks
- Step 4 - Analysis: 3-4 weeks
- Step 5 - Prioritization: 1-2 weeks

What's the output? Information prepared to support community-led assessment:

- Priority list of medicinal plants for community dialogue
- Questions for community consideration (Appendix II)
- Verified species data with conservation status
- Community engagement plan (Template A4)

Key principles:

- ✓ Check legal requirements for your jurisdiction (Section 8.3)
- ✓ Prepare information FOR communities, not conclusions to impose
- ✓ Identify questions for dialogue, not gaps to fill (Section 7.0)
- ✓ Data repatriation: Return information to source communities
- ✓ Communities are primary knowledge holders
- ✓ Acknowledge limitations of secondary data (Section 9.0)

Where to start:

- Start with Section 1.0 for full methodology overview
- Jump to Section 3.0 if ready to begin Step 1
- See Section 8.0 to adapt this guide to your context
- Use templates in Appendix I throughout the process

1.0 INTRODUCTION

Medicinal plants serve as the primary source of healthcare for around 80% of the population in developing countries globally (Dubale et al., 2023). Increasing demand for herbal medicines and natural health products underscores the need to identify and conserve medicinal plant species (Chen et al., 2016).

This guide provides a framework for non-governmental organizations (NGOs) and research partners preparing to support communities in assessing the conservation status of medicinal plants important to them. While the focus is on medicinal plants, the methodology is broadly applicable to other plant groups, culturally significant species, or other taxa where community knowledge and secondary data assessment are relevant to conservation planning

Phase 1 (Secondary Data Assessment) reviews biodiversity databases, conservation assessments, and relevant literature, including information that may have originated from communities in prior studies. The purpose is not to determine conservation outcomes, but to prepare structured information that communities can evaluate and respond to on their own terms.

Phase 2 (Rapid Community-Based Assessment) is described in the separate RCBA Guide. In Phase 2, communities test the species list and preliminary findings from Phase 1 against their own knowledge, determining which species are of greatest conservation concern and what responses, if any, are appropriate within their context.

Legal Compliance for Phase 1

Secondary data assessment involves analysis of publicly available databases and published literature. Legal requirements primarily apply to Phase 2 (community engagement). However, users should familiarise themselves with applicable legislation, for example, SI 61 in Zimbabwe (Government of Zimbabwe, 2009) and, where applicable, national implementation of the Nagoya Protocol on Access and Benefit-Sharing (CBD, 2010). See also Section 8.3 for jurisdiction-specific guidance.

Application Context

Although the methodology is transferable across regions, illustrative examples are drawn from work conducted in Mwenezi District, Southern Zimbabwe. Users may adapt this approach to other geographic contexts by adjusting data sources, species lists, and relevant ecological or legal considerations (see Section 8.0).

Important Note: Phase 1 prepares information to share with communities, not conclusions to impose on them. In Phase 2, communities review and interpret the Phase 1 findings through their own knowledge systems to determine which species are of greatest conservation concern and priority within their context and priority within their context, and whether and how they wish to respond.

1.1 Why a Secondary Data Assessment?

Secondary data refers to information originally collected by others and subsequently reused for new analytical purposes (Boslaugh, 2007; Vartanian, 2010). Whether data are considered primary or secondary depends on the research context and intended use (Peter & Piet, 2012). In this guide, secondary data means information from published literature, biodiversity databases, and conservation assessments, as distinct from direct community observations gathered in Phase 2.

Conducting a structured secondary data assessment prior to community engagement serves several important functions.

1.1.1 Benefits of Secondary Assessment Before Community Engagement

1.1.1.1 Respects Community Time and Expertise

- Focuses dialogue on verification and validation of existing data, and on knowledge gaps where no external documentation exists, rather than re-collecting information already documented elsewhere. Asking communities to confirm or update secondary data is an appropriate and intended use of this guide; the aim is to avoid asking communities about things external sources already answer well.
- Reduces redundant data collection, communities are asked to confirm, update, or challenge what is already documented, not to provide information that already exists in accessible form
- Demonstrates preparedness by engaging with existing knowledge before initiating dialogue
- Ensures questions are directed toward areas where community perspective is genuinely essential

1.1.1.2 Identifies Knowledge Gaps and Areas for Clarification

- Reveals species lacking formal documentation, where community knowledge is the primary source
- Highlights inconsistencies, uncertainties, or outdated assessments
- Identifies where local knowledge is essential for accurate interpretation of existing data

1.1.1.3 Supports Data Repatriation

- Compiles information that may have originated from communities in prior studies
- Creates opportunities to return documented knowledge for community review
- Enables communities to assess whether published claims align with current realities
- **Note:** When Phase 1 identifies information of a sensitive cultural or spiritual nature in published sources, this material is compiled for potential return to communities but is not used to formulate direct questions in Phase 2. Communities retain full control over whether and how such information is discussed (see Appendix II boundaries)

1.1.1.4 Enables Strategic Resource Allocation

- Directs limited time and funding toward species where community input is most needed
- Avoids unnecessary focus on species with comprehensive and recent documentation
- Supports efficient preparation for community dialogue

1.1.1.5 Prepares Structured Information for Dialogue

- Synthesizes information from multiple databases and sources
- Verifies taxonomic accuracy before engagement
- Organizes findings using recognized frameworks (e.g., IUCN, Environmental Security Framework, see Section 1.3, CITES)
- Develops focused questions based on identified gaps and conflicts

1.1.2 Important Limitations of Secondary Data

Secondary data assessment has inherent constraints that must be acknowledged.

1.1.2.1 Temporal Limitations

- May not reflect recent changes observed by communities
- Assessment dates vary widely across species
- Historical records may not represent current conditions

1.1.2.2 Geographic Limitations

- Global assessments reflect species' status across their entire range and are not designed to capture local conditions. A species assessed as globally Critically Endangered may appear locally abundant, but this does not mean the local population is unimportant. On the contrary, it may be among the most significant surviving populations for the species, making local stewardship especially valuable.
- Occurrence data may reflect collection effort rather than actual distribution
- Data gaps are common in areas where communities hold primary knowledge

1.1.2.3 Documentation Limitations

- Traditional knowledge may be incompletely or inaccurately recorded by external researchers
- Species identification may not align with local naming systems. Local nomenclature often groups several accepted species together or subdivides them in ways that reflect local perceptions and values. These are not wrong and may themselves have conservation significance.
- Cultural significance and spiritual values are often under-documented in external sources.
- **Note:** While secondary data may contain this type of information, Phase 2 community engagement protocols (Appendix II) are designed to avoid directly eliciting sensitive cultural and spiritual knowledge. Communities control what is shared.

1.1.2.4 Uneven Coverage Across Information Types

- Some dimensions (e.g., global conservation status, species occurrence) are well documented
- Others (e.g., local threats, access, cultural meaning) are poorly represented
- The four dimensions of the Environmental Security Framework (ESF, introduced in Section 1.3) are unevenly represented: Availability is relatively well-covered in global databases; Stability is partially documented (with threats better covered than regeneration); while Access and Perception are poorly represented in secondary sources.
- Published research reflects researcher priorities, not necessarily community priorities

1.1.2.5 Interpretation Challenges

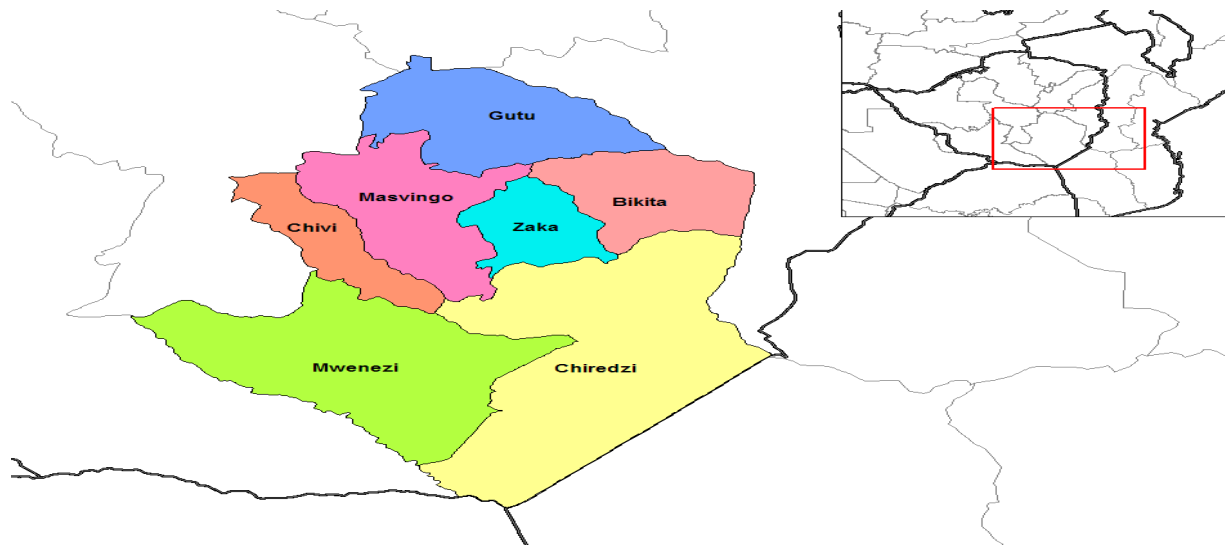
- Global conservation categories may differ substantially from local conservation realities
- Documented threats may not apply uniformly across contexts
- Data quality varies across sources, complicating synthesis
- Many species assessed as Least Concern also lack detailed population data, the category reflects the absence of evidence for high concern rather than confirmed stability. Community observations can be particularly valuable for these species.

1.1.3 Why These Limitations Matter

These constraints underscore a fundamental principle: secondary data cannot replace community knowledge. External sources provide context and raise questions, but communities hold authoritative knowledge about local conditions, current local status, and appropriate local responses. Phase 1 identifies what external sources document and where they fall short; Phase 2 invites communities to evaluate that information and determine what it means for them.

Note for NGOs and Research Partners: This guide was developed and piloted in Mwenezi District, Zimbabwe, with a focus on secondary data assessment for medicinal plants. It is intended for use by NGOs, university research partners, and other external practitioners preparing to support community-led conservation assessment. The protocols are designed for broader application and can be adapted by organizations working with communities on medicinal plant conservation in other regions.

Figure 1: Location of Mwenezi District within Masvingo Province, Zimbabwe.



Source : http://www.wikiwand.com/en/Mwenezi_District.T

1.2 Purpose

This guide aims to support practitioners preparing for community-led conservation assessment by:

- Compiling and organizing what external sources document about medicinal plants in a defined geographic area
- Identifying gaps, inconsistencies, and uncertainties that warrant community dialogue
- Presenting relevant global conservation tools, including the IUCN Red List and CITES (the Convention on International Trade in Endangered Species, which monitors legal and reported international trade in species potentially at risk), for community consideration, without privileging them over local knowledge system
- Clarifying legal and ethical responsibilities related to traditional knowledge and genetic resources
- Supporting community autonomy in determining whether conservation concerns exist and what responses are appropriate

Key Principle: This guide supports preparation for community-led assessment. Secondary data inform dialogue but do not validate, replace, or override community knowledge.

1.3 Assessment Framework

This guide integrates complementary analytical approaches across both phases. These frameworks are used differently in Phase 1 (secondary data assessment) and Phase 2 (community dialogue).

1.3.1 Environmental Security Framework (ESF)

The Environmental Security Framework (Davidson-Hunt et al., 2016) provides a structured way for communities to discuss and articulate their observations about medicinal plants. Although the

ESF has broad application beyond medicinal plants, this guide applies it specifically in that context. Rather than being an analytical tool imposed by researchers, it helps communities organize their knowledge according to four dimensions that affect their ability to continue using medicinal plants.

A brief overview of these four dimensions is provided below, with more detailed information available in Davidson-Hunt et al. (2016). The utilization of a species, or a community's capacity to utilize it, is influenced by:

- **Availability of Species:** The presence and relative abundance of a species within a specific landscape. Communities can assess: Are plants still present? Are they abundant or becoming scarce?
- **Stability of Species Populations:** The consistency of a species' availability over time, which can be affected by both short-term factors such as seasonal changes and long-term influences such as shifts in population size. Communities can assess: Are plant populations stable, increasing, or declining over time?
- **Access:** The capability to benefit from a species, including physical access to harvest locations and legal or customary rights to use the resource. Communities can assess: Can we still reach places where plants grow? Are there new restrictions affecting our access?
- **Perception:** How a species is understood and valued within the community, which influences all aspects of its use. Communities can assess: Is this plant still valued? Is knowledge about it being passed on to younger generations?

In Phase 2, communities interpret these dimensions from their own perspectives and determine whether concerns exist. The framework facilitates conversation; communities determine meaning and conclusions.

1.3.2 Use of ESF in Phase 1

In Phase 1, the ESF functions only as an organizing structure for reviewing external documentation. Secondary data are grouped according to the four dimensions to:

- Identify what is well documented
- Highlight gaps or uneven representation across dimensions
- Prepare focused questions for potential dialogue
- Clarify where community knowledge is essential

Key Principle: Phase 1 does not generate ESF-based assessments of communities or their knowledge. It identifies patterns and documentation gaps in external sources only. Determination of status occurs, if at all, through community-led dialogue in Phase 2.

1.3.3 IUCN Use and Trade Classification Scheme

The IUCN Use and Trade Classification Scheme (IUCN, 2020) is a standardized 17-category system for documenting how species are harvested and used. It covers end-use categories ranging

from human food and medicine to construction materials and handicrafts, and records use across four scales: subsistence, commercial, small industry, and large industry.

In this guide, the scheme is used to summarize how external assessments characterize medicinal plant use and trade. It does not determine local sustainability or override community perspectives on how plants are used or valued.

It is important to note that many IUCN Red List assessments have not recorded known uses under this scheme. This is because the Red List Committee made a deliberate decision to remove use data from the list of information required for assessments. Absence of use data in a Red List record therefore does not indicate that the species lacks documented uses, it reflects a gap in required reporting, not a gap in knowledge.

1.4 How to Use This Guide

This guide is designed for flexible application depending on project phase and organizational capacity. The subsections below outline recommended starting points for three types of users.

1.4.1 Starting a New Project

If beginning a medicinal plant conservation initiative:

1. Consider whether preliminary community awareness and consent are appropriate before investing in the full Phase 1 process, communities may also be able to contribute to scoping at this phase
2. Review Sections 1–2 for conceptual overview
3. Complete Phase 1: Secondary Data Assessment (Sections 3–7)
4. If working in a new geographic or cultural context, review Section 8.0 for adaptation guidance.
5. Share organized findings with communities
6. Proceed to Phase 2 only if communities choose to engage. If communities decline, Phase 1 findings retain independent value, they can inform regional conservation planning, support other researchers, and remain available for communities to access in future if they choose

1.4.2 Mid-Project Implementation

If secondary data is already compiled:

- Review Section 2 for process alignment
- Apply analytical steps outlined in Section 6
- Use prioritization guidance in Section 7
- Organize findings using templates in Appendix I

1.4.3 Adapting to Other Contexts

When applying this methodology elsewhere:

- Review Section 8 for adaptation guidance

- Identify regionally relevant databases
- Adjust legal compliance procedures
- Modify species lists and ecological contexts
- Translate materials as appropriate

1.4.4 Key Reference Tools

- Appendix I — Secondary data templates
- Appendix II — Questions for community dialogue
- Appendix III — Medicinal plant reference database

2.0 SECONDARY DATA PROCESS OVERVIEW

Building on the benefits and acknowledging the limitations outlined *in Section 1.1*, Phase 1 systematically compiles and analyzes existing information about medicinal plants through a five-step process.

Who conducts this phase: The research team, which can be done remotely before field engagement.

Total Timeline: 13-20 weeks for the complete Phase

2.1 Five-Step Process Overview

This assessment follows a systematic five-step process designed to maximize efficiency while ensuring comprehensive coverage.

Figure 2: Shows how the steps connect and which can run in parallel.

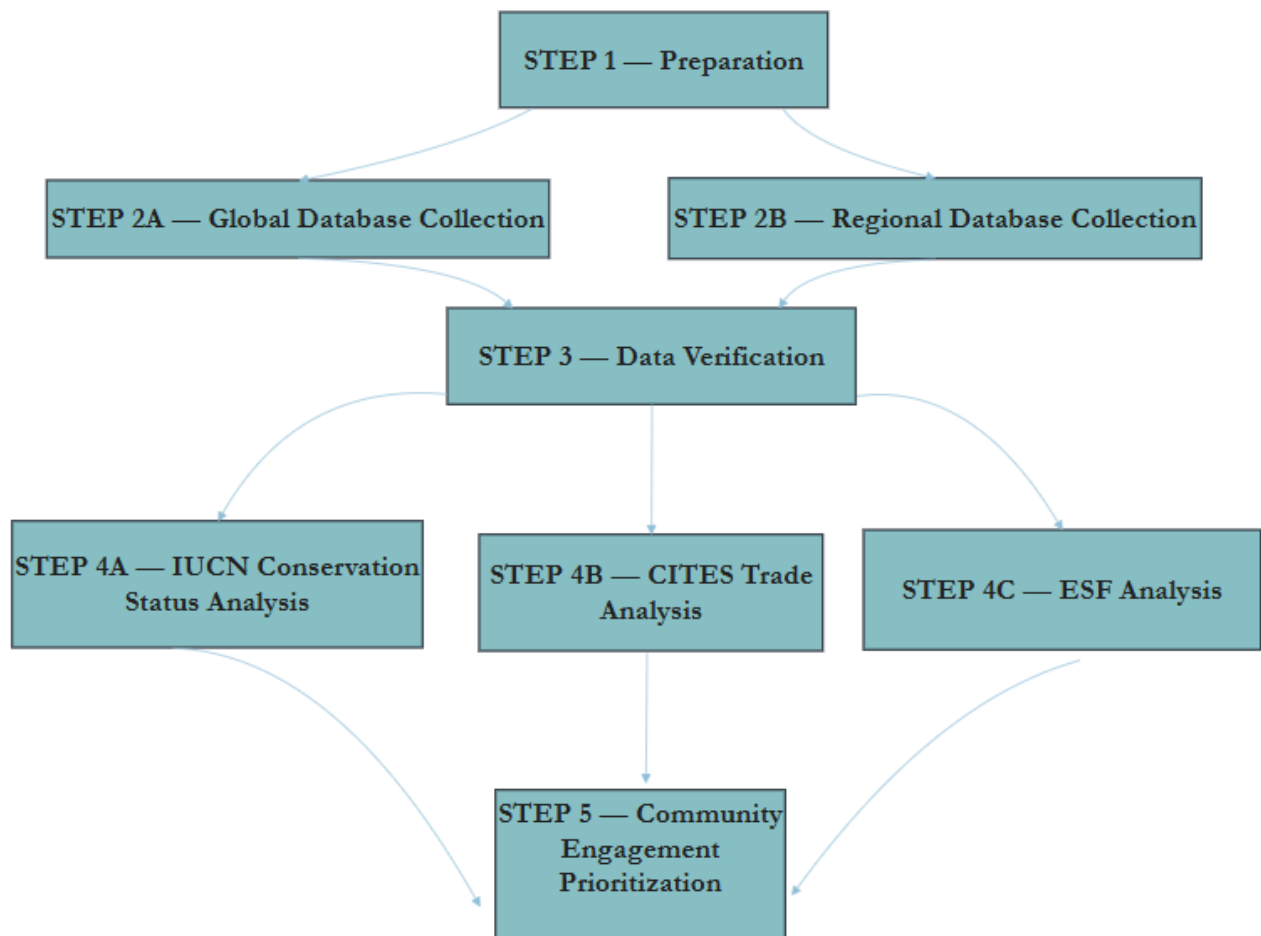


Table 1: Summarises the five steps with estimated timelines, key tools, and outputs.

Step	Activity	Timeline	Key Tools	Key Outputs
1	Preparation: Define scope, compile initial species list	2-3 weeks	Template A1	Geographic boundaries, initial species list, literature database
2	Data Collection: Compile information from databases and literature	4-6 weeks	Global & regional databases	Species occurrence records, conservation assessments, and documented uses
3	Verification: Ensure accuracy before analysis	2-3 weeks	Template A2	Verified species list, data quality assessment, preliminary prioritization
4	Analysis: Apply analytical frameworks to identify patterns	3-4 weeks	Template A3	ESF assessment by species, conservation status summary, threat analysis
5	Prioritization: Identify species warranting community dialogue	2-3 weeks	Template A4	Priority ranking, questions for dialogue, engagement strategy

Total estimated time: 13–20 weeks

2.2 How the Steps Connect

Each step builds directly on the outputs of the previous one. Preparation (Step 1) defines the scope and species list that guides all subsequent data collection. Steps 2A and 2B compile global and regional data simultaneously, feeding into Step 3, where accuracy is verified before analysis begins. Step 4 applies three analytical frameworks to the verified data. Step 5 translates patterns and gaps into a structured dialogue plan.

Sequential Dependencies (must follow in order):

- Step 1 must be completed before Step 2 begins
- Step 3 requires completion of Step 2
- Steps 4 and 5 are sequential (analysis before prioritization)

Parallel Processing (can occur simultaneously):

- Within Step 2: Global databases (4.1) and regional databases (4.2) can be searched at the same time
- Within Step 4: IUCN analysis (6.1), CITES analysis (6.2), and ESF analysis (6.3) can occur simultaneously once Step 3 is complete

Flexibility:

- The process can pause at any step to accommodate resource constraints or changing priorities
- You can return to earlier steps if new information emerges
- Timeline estimates are flexible based on data availability and team capacity

2.3 Key Outputs of Phase 1

2.3.1 *Verified Species List with Conservation Context*

- Taxonomically verified species names (scientific and local where available)
- Existing conservation status from IUCN, where available
- International trade regulations from CITES, where applicable, CITES covers only international export and import trade for listed species and does not address local harvest management.
- Summary of what external sources currently document for each species

2.3.2 *Community Dialogue Prioritization Framework.*

- Species categorized as Critical, High, Moderate, or Low priority specifically to guide the focus and depth of community dialogue, not to rank species for conservation action
- Based on data gaps, conflicts, and uncertainties in external sources
- Reflects where community perspective is most needed, not a prescription for action

2.3.3 *Questions for Community Dialogue*

- Specific, focused questions organized by species and ESF dimension
- Based on identified gaps, conflicts, and uncertainties in external data

- Prepared in advance but not asked until communities choose to engage.
- Compiled in Appendix II for easy reference

2.3.4 ESF-Organized Findings

- External sources organized by ESF dimension: Availability, Stability, Access, and Perception
- Clear identification of where information exists and where gaps remain
- Recognition that all four dimensions require community perspective for accurate assessment

2.3.5 Geographic Focus Areas

- Identification of areas where community observations would be most valuable
- Based on distribution data gaps and conservation concern patterns

2.4 How This Information Serves Communities

If communities choose to participate in their own assessment (Phase 2), this preparation enables:

- **Data Repatriation:** Returning information that may have originated from communities through previous studies
- **Efficient Dialogue:** Focusing conversation on questions where community perspective is essential, rather than re-collecting information already well-documented
- **Informed Evaluation:** Presenting what databases document so communities can assess whether it matches their observations, including helping communities understand what a global conservation status means for locally observed populations.
- **Community-Driven Priorities:** Allowing communities to determine which external concerns are relevant to their context and which are not

***Note on Global versus Local Conservation Status:** When communities observe that a species appears locally abundant, this does not contradict a global assessment of Critically Endangered or Vulnerable. Global assessments reflect the status of a species across its entire range. A locally abundant population of a globally threatened species is not cause for reassurance, it may be one of the last significant surviving populations, making local stewardship especially important.*

***Key Principle:** Phase 1 outputs do not prescribe conservation actions. They identify what external sources document, where those sources have limitations or conflicts, which topics would benefit from community dialogue, and which questions to prioritize in discussions with communities if they choose to engage*

***Note on Engaging Communities Before Phase 1 Begins:** Given the significant time investment required for Phase 1 (13–20 weeks), practitioners should consider initiating preliminary conversations with potentially participating communities before beginning desk-based research. These early conversations need not constitute formal consent processes but should inform communities that a secondary data review is being considered and explore whether they would be interested in participating in any subsequent assessment. Community members may also be able to contribute to the scoping of Phase 1, potentially improving its quality and relevance.*

2.5 Next Steps

- If communities choose to participate → Proceed to Phase 2 (Rapid Community-Based Assessment) using the separate RCBA guide
- If communities decline → Phase 1 findings still provide valuable conservation context and can inform other conservation planning efforts

3.0 STEP 1: PREPARATION PHASE

Objective: Define the geographic and thematic scope of the assessment and compile an initial species list, ideally informed by preliminary conversations with potentially participating communities.

Prerequisites: None (Starting point of assessment)

Timeline: 2-3 weeks

Where feasible, practitioners should consult community representatives before finalizing geographic boundaries or species lists. Early engagement can help ensure that the scope reflects community priorities, improves species list accuracy, and reduces conceptual translation challenges later in the process.

If early consultation is not possible, practitioners should clearly document how scope decisions were made, remain open to revising the species list during subsequent dialogue, and be transparent with communities about how and why initial boundaries were set when findings are shared.

3.1 Define Geographic Scope

Establish clear geographic boundaries for the assessment area:

- Identify the target area (e.g., Mwenezi District, Southern Zimbabwe)
- Document relevant administrative boundaries
- Note ecological zones or habitat types present
- Record any protected areas or land use designations

***Note:** Clear geographic boundaries ensure that data collection is focused and comprehensive; species lists are relevant to the target area; community engagement planning is geographically appropriate; and results can be compared with other regional studies.*

3.2 Compile Initial Species List

The initial species list draws on multiple types of secondary sources. No single source is sufficient on its own, the breadth of sources consulted directly determines the quality and completeness of the species list that will guide all subsequent steps. The following source categories should all be considered:

3.2.1 Academic and Peer-Reviewed Literature

Search the following databases:

- Google Scholar (scholar.google.com)
- Web of Science
- PubMed (for medical and pharmacological applications)
- African Journals Online (AJOL)

Prioritize published papers on medicinal plants in your target region, ethnobotanical studies documenting traditional plant use, ethnographies that include material culture or health practices, and pharmacological or ecological studies of species identified through those sources.

Search terms to use:

- "[Region name] medicinal plants"
- "[Region name] ethnobotany"
- "[Ethnic group] traditional medicine"
- "[Region] flora checklist"
- "[Country] plant conservation"

3.2.2 Theses and Grey Literature

Peer-reviewed journals are not the only source of rigorous secondary data. Student theses; particularly master's and doctoral dissertations, often contain detailed regional ethnobotanical and ecological data that has never been published in journals. Where theses are publicly available through institutional repositories, they should be included in the literature search.

Search for theses and grey literature through:

- University digital repositories (search the websites of universities in your target country or region)
- ProQuest Dissertations and Theses Global
- National botanical garden archives and publications
- Natural history museum databases
- National library digital collections

Grey literature, reports, assessments, and documentation produced by government agencies, NGOs, and conservation organizations, should also be included. This material is often not indexed in academic databases but may contain species lists, distribution data, or harvest assessments that are not available anywhere else. Sources to check include:

- Environmental agency reports and biodiversity assessments
- Conservation organization publications and project reports
- Traditional medicine programme documentation from health ministries
- Community forestry or natural resource management programme reports
- International development organization project reports relevant to the region

Important: Grey literature and theses are sometimes the only sources of locally specific data for a given region. Do not restrict the search to peer-reviewed journals alone. Document all sources searched and all sources consulted, even where searches returned no results, this document the limits of what secondary data can provide and informs the scope of Phase 2 community engagement.

3.2.3 Institutional Repositories and Herbaria

Contact or search:

- National herbaria — specimen collections often include locality data and collection dates not available online
- Botanical garden libraries — particularly those with regional specializations
- University departments of botany, ecology, or natural resources in the target country

Herbarium specimen records are particularly valuable for species with limited published literature, as they provide direct evidence of historical presence and distribution within a region

3.2.4 Direct Outreach to Researchers and Organizations

Some secondary data exists but is not easily accessible through internet searches. Researchers, NGOs, and government bodies working on medicinal plants in your target region may hold unpublished datasets, project reports, or institutional knowledge that would significantly improve the species list. Practitioners should actively identify and contact:

- Academic researchers who have published on medicinal plants or ethnobotany in the target region
- NGOs with active medicinal plant or traditional medicine programmes in the area
- Government environmental, forestry, or agricultural agencies with biodiversity mandates
- Biodiversity information facility nodes (such as GBIF national nodes) who may know of datasets not yet published online
- International organizations working on plant conservation in the region (such as TRAFFIC, Botanic Gardens Conservation International, or WWF country offices)

When making contact, briefly describe your project and the type of information you are looking for. Ask specifically whether they hold any data, published or unpublished, that might not be accessible through standard database searches. Be transparent about how the data will be used.

Practical Note: Direct outreach is worth doing even if it does not yield new data. If researchers and organizations confirm that what is available through databases is all that exists, that confirmation is itself a finding, it documents that the data gap is real and cannot be filled through further desk research. Document all outreach attempts and their outcomes so that the limits of the secondary data search are on record before Phase 2 community engagement begins.

3.2.5 Key Outputs from Species List Compilation

These outputs will carry forward into all subsequent steps:

- Initial species list with documented sources for each species
- Literature database with full citation and source type recorded (Template A1)
- Log of all databases, repositories, and outreach contacts consulted, including searches that returned no results

- Geographic boundary definition with map
- Contact information for potential community engagement

***Connection to Next Step:** The species list and literature database from this step define the scope that guides all subsequent data collection in Step 2.*

***Key Principle:** Identify what external sources say about medicinal plants in this area, information that can be shared back with communities for their evaluation*

3.3 Initial Relevance Assessment

For each species on the preliminary list, note:

- Frequency of mention in literature (indicates documented importance)
- Types of uses documented (medicinal, food, cultural)
- Geographic specificity (documented for this area vs. general region)
- Temporal relevance (recent studies vs. historical only)

This helps identify which species are most frequently associated with the target area and may warrant priority attention in community dialogue.

4.0 STEP 2: DATA COLLECTION PHASE

Objective: Systematically compile existing information from databases and literature, extracting specific data points that will support later analysis

Prerequisites: Completed Step 1 (species list and scope defined)

Timeline: 4-6 weeks

***Note:** Global and regional data collection (**Sections 4.1 and 4.2**) can run simultaneously. This step focuses on data extraction. Analysis of this data occurs in Step 4.*

4.1 Global Biodiversity Databases

For each species on your list, extract and record the following information from global databases.

4.1.1 Global Biodiversity Information Facility (GBIF)

GBIF provides species occurrence data from natural history collections, observations, and research.

- **Access:** <https://www.gbif.org/>
- **Search:** Species names from your list
- **Extract:** Occurrence records for your geographic area
- **Filter by:** Coordinates, date ranges, data quality indicators
- **Record:** Number of occurrences, temporal coverage, data sources

What this tells you: Which species have many documented occurrences versus few or none. Species with zero records indicate community knowledge may be the only information source.

4.1.2 IUCN Red List of Threatened Species

The IUCN Red List provides global conservation assessments for species that have been evaluated.

- **Access:** <https://www.iucnredlist.org/>
- **Search:** By species name or taxonomic group
- **Extract:** Conservation category, threats documented, population trends, habitat descriptions, range maps, assessment dates
- **Note:** Many species lack assessments (marked "Not Evaluated" or "Data Deficient")

What this tells you: Which species have formal conservation assessments and what those assessments claim. Species without assessments represent significant information gaps where community knowledge is essential.

4.1.3 IUCN Species Information System (SIS) Access

SIS provides detailed use and livelihood data for assessed species that goes beyond what's publicly available on the Red List website.

How to request access:

1. Email IUCN Species Programme: Craig.hilton-taylor@iucn.org
2. Include in your request:
 - Brief project description (1-2 paragraphs explaining you're conducting a secondary data assessment for medicinal plants)
 - Geographic focus area (e.g., "Mwenezi District, Zimbabwe")
 - Target species or taxonomic groups (e.g., "medicinal plants documented in regional ethnobotanical studies")
 - Intended use of data (e.g., "preparing for community-led conservation assessment")
3. Request access to: Use and Livelihoods data modules
4. Specify: Need for both current assessments and historical data to track changes over time.

Response time: Typically, 2-4 weeks

What this provides: Detailed documentation of how species are used, harvest patterns, and livelihood dependencies not captured in the public Red List. Useful for identifying whether external sources have documented medicinal uses

4.1.4 Plants of the World Online (POWO)

POWO provides authoritative taxonomic information and plant images from Kew Gardens.

- **Access:** <http://www.plantsoftheworldonline.org/>
- **Search:** By species name
- **Extract:** Current accepted names, synonyms, distribution, images

What this provides: Taxonomic verification to ensure you're using current scientific names, and plant images that can support communication with communities using both scientific and local names.

4.1.5 CITES Species Database

CITES (Convention on International Trade in Endangered Species) monitors legal and reported international trade in species potentially at risk from international trade. Note that CITES covers only international export and import trade for listed species, it does not address local harvest management or domestic trade. Relatively few medicinal plants are CITES-listed.

- **Access:** <https://checklist.cites.org/>
- **Search:** By species name from your list
- **Extract:** Appendix status (I, II, or III), date of listing, annotations, trade restrictions, and permit requirement

***Note on terminology:** CITES uses the term "Appendix" to categorize trade restrictions. This is distinct from the appendices in this guide (Appendix I, II, and III). To avoid confusion, always write "CITES Appendix I" or "CITES Appendix II" in full rather than using the shorthand "Appendix I" alone when referring to CITES regulatory categories.*

What this tells you: Which species on your list face international trade restrictions, and what those restrictions mean. Species not listed in CITES may still face significant trade pressure; absence from the list does not indicate a species is unaffected by commercial demand.

How to search CITES effectively:

- Enter the current accepted scientific name (from POWO) to avoid missing listings under synonyms
- Check annotations carefully, they specify which parts or preparations are regulated (e.g., roots only, or all parts)
- Record the date of listing to understand how recently protection was applied
- Note whether a species appears on national appendices in addition to international ones

4.2 Regional and National Databases (Can run parallel with 4.1)

4.2.1 National/Regional Flora Databases

Identify and access databases relevant to your region. These databases typically hold more current and contextually relevant distribution data than global databases

- **Example for Zimbabwe:** Zimbabwe Flora (<https://www.zimbabweflora.co.zw/>)
- **For other regions:** Contact national herbaria and botanical institutions
- **Request:** Specimen data and distribution information documented for the region

National herbaria often have recent collection records and local taxonomic expertise. Even where collections are not fully digitized, direct contact with the institution may yield data not accessible online.

4.2.2 Ethnobotanical Literature Review

Conduct a systematic search of published and unpublished literature on traditional plant use and ecology in the target region. This category of sources often provides the richest data on medicinal plant use, local names, harvesting practices, and community knowledge, data that global databases do not capture.

Source types to include:

Published ethnobotanical studies: peer-reviewed journal articles documenting traditional plant knowledge in the target region or among the relevant ethnic or language group. These are often the primary source for species lists and use documentation:

1. **Ethnographies:** Anthropological and sociological studies that document material culture, health practices, and relationships with the natural environment. These may include plant use data even where the primary focus is not ethnobotanical.

2. **Theses and dissertations:** Master's and doctoral research often contain detailed regional data that has not been published in journals. Search university repositories in your target country. Where theses are publicly available, treat them as valid secondary sources. Where access is restricted, contact the institution or supervisor directly to ask whether sharing is possible.
3. **Government and NGO reports:** Environmental impact assessments, natural resource management plans, community forestry reports, traditional medicine programme documentation, and biodiversity surveys produced by government agencies and conservation organizations. These are typically grey literature not indexed in academic databases and require direct searching of institutional websites or contact with the organizations involved.

Where to search:

Academic databases: Google Scholar, Web of Science, PubMed, African Journals Online (AJOL)

- University repositories in the target country
- National environmental agency websites
- NGO publication archives (search by organization name and region)
- International conservation organization databases (TRAFFIC, WWF, BGCI, IUCN Species Survival Commission specialist groups)

Search terms to use:

- "[Region name] medicinal plants"
- "[Region name] ethnobotany"
- "[Ethnic group] traditional medicine"
- "[Country] plant conservation"
- "[Region] flora checklist"
- "[Region] traditional knowledge" OR "indigenous knowledge"

What to record:

- Which species are mentioned, in what contexts, and with what frequency
- Source type (peer-reviewed journal, thesis, government report, NGO report, ethnography)
- Date of publication or assessment
- Geographic specificity (does the source document your specific area, or a broader region?)
- Local names documented: record all variants and the language they belong to

4.2.3 Direct Researcher and Organization Outreach

After completing database searches, actively contact researchers and organizations working on medicinal plants in the target region to identify data that may not be publicly accessible. This step often surfaces unpublished datasets, project reports, or institutional records that databases do not hold.

Who to contact:

- NGOs with active traditional medicine or plant conservation programmes in the area
- Government environmental, forestry, or agricultural agencies with biodiversity mandates
- National biodiversity information facility (GBIF national nodes)
- University departments of botany, ecology, or pharmacognosy in the target country

Important: Document all outreach attempts and their outcomes in Template A1, including contacts approached, dates, and results. If outreach confirms that no additional data exists beyond what databases provide, that confirmation is itself a meaningful finding, it establishes that the data gap is real and that Phase 2 community engagement is essential, not optional.

4.3 Organize and Document Searches

Use Template A1 (Database Search Record) to track all databases and sources searched; search terms used; results obtained; date of search; data downloaded or recorded; source type (peer-reviewed, thesis, grey literature, direct contact); and outreach contacts with outcomes.

This creates a transparent, replicable record of the data collection process and documents what was and was not accessible, information that will directly inform the scope of Phase 2 community engagement.

4.4 Key Outputs

- Comprehensive data compilation organized by species
- Database search logs documenting sources (*Template A1*)
- Occurrence records from GBIF and regional databases
- Conservation assessments from IUCN (where available)
- Documented traditional uses from literature (for potential repatriation)
- Identified patterns and gaps in existing knowledge

Connection to Next Step: These outputs feed directly into Step 3, where accuracy is verified and species are preliminarily prioritized before analysis begins.

5.0 STEP 3: DATA VERIFICATION PHASE

Objective: Ensure information accuracy before analysis and community engagement so data presented is reliable and communities can focus on evaluating relevance rather than correcting basic errors.

Prerequisites: Completed Step 2 (data collection)

Timeline: 2–3 weeks

5.1 Taxonomic Verification

Verify all species names using Plants of the World Online (POWO) as the authoritative source.

Process:

1. Check each species name against POWO
2. Update to the current accepted name if synonyms are found
3. Document both scientific and vernacular or local names
4. Flag taxonomic uncertainties or conflicts

Record:

- Original name as found in literature
- Current accepted name if different
- Common synonyms encountered
- Local names documented in literature

5.2 Data Quality Assessment

Evaluate the reliability of different data sources before presenting to communities.

Quality Indicators:

- Source credibility: Peer-reviewed versus gray literature, recent versus historical
- Data completeness: Full records versus minimal information
- Geographic specificity: Local versus regional versus extrapolated
- Temporal relevance: Recent data versus decades-old

Record the Following in Your Data Quality Notes:

- Conflicting information: Where sources disagree, note for community clarification
- Data gaps: Species with minimal or no documentation where community knowledge is essential
- Quality issues: Uncertainties or limitations to acknowledge

5.3 Preliminary Prioritization

Apply preliminary criteria to identify which species might most benefit from a community perspective.

Scoring Scale

All criteria are scored from 1 to 5, where 1 indicates minimal evidence or concern documented in external sources and 5 indicates extensive evidence or significant concern documented in external sources. Scores reflect external documentation only, not community observations, experience, or values.

***Note on Community-Identified Species:** This scoring system reflects only what external sources document. Communities may be aware of conservation concerns for species that do not appear in any secondary source, plants that have become harder to find, harvesting areas that have been lost, or species with cultural significance not captured in literature. These species should be added to the dialogue agenda regardless of their score. Facilitators should explicitly invite communities to identify any species of concern not already on the list at the start of Phase 2 engagement.*

Criteria

- **Medicinal importance:** Frequency of mention in literature (1 = rarely mentioned; 5 = frequently documented across multiple sources)
- **Conservation concerns:** External assessments or indicators (1 = no concerns documented; 5 = significant concerns documented)
- **Economic value:** Market indicators at local, national, or international levels (1 = no market documentation; 5 = significant commercial value documented)
- **Harvest intensity:** Documented collection pressure (1 = no harvest pressure documented; 5 = significant harvest pressure documented)
- **Ecological role:** Documented importance to ecosystem function (1 = no ecological role documented in external sources; 2 = incidentally mentioned but no specific function described; 3 = ecosystem role mentioned in literature but not well documented, for example noted as useful to wildlife or soil; 4 = important ecological role described, such as pollinator support, seed dispersal, or erosion control; 5 = critical ecological role well documented, such as keystone species status, primary soil stabilizer, or sole food source for a documented pollinator)

Use Template A2 (Species Prioritization Matrix) to score each species. Aggregate scores may be used to group species into broad discussion categories (5–25 possible points):

- 21–25 points: High priority for community dialogue
- 16–20 points: Moderate priority for community dialogue
- 11–15 points: Lower priority for community dialogue
- 5–10 points: Minimal priority or relatively abundant external data

***Note:** The numerical scoring system functions as an internal organizational tool to structure preparation for dialogue. It does not represent a definitive assessment of species importance or conservation status. These categories are intended to help practitioners decide where to begin a conversation, not to prescribe which species require protection.*

5.4 Key Outputs

- Taxonomically verified species list with both scientific and local names (Template A2)
- Data quality assessment, noting strengths and limitations of external sources
- Preliminary prioritization suggesting where to start community dialogue
- List of uncertainties and conflicts where community knowledge would provide clarity

Connection to Next Step: These outputs feed directly into Step 4, where the verified data are analyzed using IUCN, CITES, and ESF frameworks.

6.0 STEP 4: CONSERVATION STATUS ANALYSIS

Objective: Analyze the data compiled in Step 2 to identify conservation patterns, recognize information gaps, and prepare specific questions for potential community dialogue.

Prerequisites: Completed Step 3 (verified species list and quality-checked data)

Timeline: 3–4 weeks

Note: This is an analysis step. You are analyzing data already collected in Step 2, not re-collecting information from databases. The goal is to identify patterns, gaps, and questions that would benefit from community dialogue.

This section applies three analytical frameworks to the species data compiled in Steps 1–3:

- **Section 6.1:** IUCN Red List analysis (addresses ESF Availability dimension)
- **Section 6.2:** Trade and harvest pressure analysis (CITES and market data)
- **Section 6.3:** Environmental Security Framework analysis (Stability, Access, Perception dimensions)

All three analyses can run simultaneously once Step 3 is complete.

6.1 IUCN Red List Analysis

Using the IUCN data compiled in Step 2, analyze conservation status patterns to understand what external assessments claim and where they have limitations. When recording assessments, always note whether they are global, regional, or national in scope, this distinction affects how findings should be interpreted and shared with communities.

6.1.1 Analyze Existing Assessments

For species with IUCN assessments from your Step 2 data collection, identify key patterns:

Conservation Category Patterns: Group species by IUCN category (Critically Endangered, Endangered, Vulnerable, Near Threatened, Least Concern, Data Deficient, Not Evaluated).

Assessment Quality Analysis:

- **Recent assessments (under 5 years):** Generally reliable as a starting point for community dialogue
- **Outdated assessments (over 10 years):** Require community verification of status. Note that community perception may differ from a global assessment without either being incorrect, a global assessment reflects a species' status across its entire range, while community observations reflect specific local conditions. Both perspectives are valid and can enrich understanding of the species' status. Neither overrides the other.
- **Geographic scope:** Always record whether an assessment is global, regional, or national, as global assessments may not reflect local conditions

- **Assessment scale:** A locally abundant population of a globally threatened species is not cause for reassurance, it may signal that the local population may be of heightened conservation importance for the species as a whole

Population Trend Analysis:

- Count species with documented declines (high priority for community input)
- Identify stable populations (community can confirm or identify emerging issues)
- Note where trend data is missing (community observations needed)

Threat Pattern Analysis: Using the IUCN threat classification system (IUCN, 2012), group species by documented threats:

- **Habitat threats:** Agriculture, logging, development, fire
- **Direct threats:** Overharvesting, collection pressure
- **Climate threats:** Temperature change, precipitation changes, extreme weather
- **Other threats:** Invasive species, pollution, disease

For each threat category, note severity ratings and identify species with multiple threats. The community dialogue questions for this dimension are compiled in Appendix II. They are selected and organised during Step 5 (Section 7), not at this phase.

6.1.2 Analyze Unassessed Species

For species lacking formal IUCN assessments, determine priority for community dialogue using available indicators. Note also that species assessed as Least Concern should not be assumed fully documented, many lack population size and trend data, and community observations can be particularly valuable for these species.

Distribution Indicators:

- Wide range with many GBIF records → Lower priority
- Narrow range or few records → Higher priority
- No occurrence records at all → Community knowledge is the only source (extensive clarification needed)

Threat Indicators from Literature:

- Multiple threats documented → Higher priority
- Habitat loss in documented range → Higher priority
- Commercial harvest mentioned → Higher priority

Key Principle: *These are preliminary observations based on limited external data, not definitive assessments. Communities determine actual conservation status from their own perspective.*

6.2 Trade and Harvest Pressure Analysis

Using CITES data and market information collected in Step 2, analyze trade patterns that may affect conservation status. CITES monitors only legal and reported international trade for listed species. Relatively few medicinal plant species are included in the CITES appendices. Both CITES-listed and unlisted species may face significant trade pressure.

6.2.1 Analyze Existing CITES Listings

Review trade regulations for species on CITES appendices using data collected in Step 2. See **Section 4.1.5** (CITES Species Database) for guidance on accessing the CITES database and understanding the appendix system.

Document for each listed species:

- Appendix status (I, II, or III)
- Date of listing and any annotations
- Trade restrictions and permit requirements
- Any species-specific regulations

6.2.2 Assess Trade Pressure for Unlisted Species

Many medicinal plants face harvest pressure despite not being CITES-listed. Using literature and market data from Step 2, assess indicators of trade pressure:

Trade Pressure Indicators:

- Commercial harvest documented in literature
- Market demand evidence at local, national, or international level
- Price information suggesting economic value
- Collection pressure mentioned in studies

Market Pattern Analysis:

- Local markets: Subsistence or small-scale commercial use
- National markets: Regional trade networks
- International markets: Export documentation or mentions

Harvest Intensity Indicators:

- Frequency of mention in market surveys
- Documented collection rates or volumes
- Reports of overharvesting or depletion
- Competition among harvesters

6.3 Environmental Security Framework Analysis

(Can run in parallel with Sections 6.1 and 6.2 once Step 3 is complete.)

Organize data using ESF dimensions to prepare structured questions for community dialogue, focusing on aspects not fully addressed by the IUCN conservation status analysis.

Not all ESF dimensions are equally well-documented in secondary sources:

- **Availability:** Well-documented through IUCN assessments (covered in Section 6.1)
- **Stability:** Partially documented (threats well-covered, but regeneration data often missing)
- **Access:** Limited documentation (legal restrictions somewhat documented, but local barriers rarely captured)
- **Perception:** Minimal documentation (only what appears in ethnobotanical literature)

Because Availability is primarily addressed through the IUCN conservation status analysis in Section 6.1, this ESF analysis focuses on the three remaining dimensions: Stability, Access, and Perception. Template A3 (ESF Summary) includes an Availability column where you will reference your Section 6.1 findings rather than repeating the same analysis.

6.3.1 Stability Dimension Analysis

Note, how this section differs from Section 6.1: Section 6.1 identifies which threats exist and how severe they are at a global level based on IUCN classifications. This section asks a different question: what do external sources reveal about long-term sustainability and regeneration capacity, aspects that IUCN threat listings alone do not capture?

Group threats documented in your compiled data:

- **Habitat threats:** Agriculture, logging, development, fire
- **Direct threats:** Overharvesting, collection pressure
- **Climate threats:** Temperature change, precipitation changes, extreme weather
- **Other threats:** Invasive species, pollution, disease

Regeneration Capacity Assessment (from botanical literature reviewed in Step 2):

- Fast-growing species with rapid reproduction → More resilient
- Slow-growing or single-harvest species → More vulnerable
- Documented recovery rates after disturbance
- Traditional sustainable harvest practices mentioned

Assign a Concern Level: HIGH, MODERATE, LOW, NONE, or UNKNOWN (see section 6.4 for definitions).

6.3.2 Access Dimension Analysis

Analyze what affects the community's ability to reach and harvest plants using data from Step 2:

Legal and Policy Barrier Analysis:

- **Protected species status:** Can communities legally harvest?
- **Harvest restrictions:** Permit, quotas, or prohibitions documented.
- **Protected area overlap:** Do species occur in restricted areas?
- **Land tenure patterns:** Public, private, communal lands documented

Physical Barrier Analysis:

- Distance from communities to documented populations where spatial data exists
- Protected area boundaries restricting access
- Development or infrastructure blocking traditional routes if mentioned in literature
- Seasonal access limitations mentioned in studies

Assign a Concern Level: HIGH, MODERATE, LOW, NONE, or UNKNOWN.

***Important Limitation:** Secondary data rarely captures local access issues, informal restrictions, or community-level barriers. This dimension particularly requires community knowledge.*

6.3.3 Perception Dimension Analysis

Analyze documented cultural value and knowledge systems from ethnobotanical literature and related sources.

Traditional Use Documentation Analysis:

***Note on scope:** This analysis documents what external sources (ethnobotanical literature, published studies) have recorded about cultural significance and traditional use. This information is compiled for data repatriation, to return to communities for their evaluation, and to identify where knowledge gaps exist. It does not form a basis for direct elicitation of cultural or spiritual knowledge in Phase 2. Appendix II community dialogue protocols explicitly exclude questions about specific healing knowledge, spiritual or ceremonial significance, preparation methods, and knowledge transmission networks. The distinction that applies throughout Phase 2 is this: asking whether knowledge is still being passed on (general transmission) is appropriate; asking who holds it, how it is transmitted ceremonially, or what the specific content is (specific healing or spiritual transmission) is not.*

- Frequency of mention: How often does this species appear in ethnobotanical literature?
- Use diversity: Single use or multiple applications documented?
- Cultural significance: Spiritual, ceremonial, or symbolic importance mentioned?
- Conservation practices: Traditional rules, taboos, or protection methods described?

Knowledge Transmission Evidence:

- Intergenerational learning mentioned in studies
- Youth participation in traditional practices documented
- Knowledge loss concerns expressed in literature
- Changes in use patterns over time

Assign a Concern Level: HIGH, MODERATE, LOW, NONE, or UNKNOWN.

***Important Limitation:** Published sources often fail to capture contemporary community values, spiritual significance, or knowledge transmission dynamics accurately. This dimension is particularly poorly served by secondary data and requires substantial community input.*

6.4 Synthesize Findings by Species

For each priority species, create an ESF summary using Template A3.

Step 1: Document Each Dimension

For each ESF dimension record: Status (brief description from external sources), Concern Level (see definitions below), Evidence (key data points supporting the rating), and Questions (references to Appendix II for relevant community dialogue questions).

Concern Level Definitions:

- **HIGH:** External sources document significant concerns, major threats, serious population declines, critical access barriers, or well-documented cultural loss
- **MODERATE:** External sources suggest concerns that warrant community verification, partial data, some threats documented, access issues noted
- **LOW:** External sources suggest stable conditions with limited concerns documented
- **NONE:** External sources document no concerns and conditions appear stable
- **UNKNOWN:** No relevant external data exists for this dimension. UNKNOWN is not the same as LOW. A species with multiple UNKNOWN ratings requires community input precisely because external sources cannot speak to those dimensions at all.

Step 2: Determine Dialogue Preparation Level

***Note:** The dialogue preparation level is an internal planning tool, not a conservation verdict. It indicates how much community input is needed given the gaps in external sources*

Dialogue Preparation Levels:

- **Extensive clarification needed:** Two or more HIGH concern levels, OR two or more UNKNOWN ratings across dimensions
- **Focused discussion needed:** One HIGH concern level, OR one HIGH + one or more MODERATE
- **Targeted clarification:** Two or more MODERATE concern levels, with no HIGH
- **Brief confirmation:** Mostly LOW or NONE, with at most one MODERATE

Example Assessments:

Species	Availability	Stability	Access / Perception	Dialogue Preparation Level
<i>Kigelia africana</i> (Sausage Tree)	HIGH (rare, declining rapidly)	HIGH (habitat loss, no regeneration data)	Access: HIGH (mining blocks harvest areas) / Perception: LOW (highly valued,	Extensive clarification needed (3 HIGH)

			knowledge maintained)	
<i>Lannea edulis</i> (Wild Grape)	MODERATE (uncommon, slowly declining)	HIGH (overharvesting documented in some areas)	Access: MODERATE (some restrictions, longer travel) / Perception: LOW (knowledge maintained)	Focused discussion needed (1 HIGH + 2 MODERATE)
Unnamed species: no external data	UNKNOWN (zero GBIF records)	UNKNOWN (no threat data)	Access: UNKNOWN / Perception: UNKNOWN	Extensive clarification needed (4 UNKNOWN, community knowledge is the only source)

Key Principle: UNKNOWN ratings indicate an absence of external data, not an absence of concern. When information is limited or ambiguous, document the uncertainty transparently rather than defaulting to LOW.

6.5 Key Outputs from Step 4

1. IUCN Status Summary (from Section 6.1 — addresses Availability)

- Species grouped by conservation category with geographic scope noted (global, regional, or national)
- Assessment quality flags (recent versus outdated)
- Unassessed species categorized by information gap level
- Least Concern species flagged where population data is also absent

2. Trade Analysis (from Section 6.2)

- Species with CITES listings and regulatory implications
- Unlisted species with trade pressure indicators
- Market demand indicators by scale (local, national, international)

3. Environmental Security Framework Summary (Template A3)

- Assessment across Stability, Access, and Perception dimensions
- Availability assessment referenced from Section 6.1
- Concern level ratings (HIGH / MODERATE / LOW / NONE / UNKNOWN) with supporting evidence

- References to specific community dialogue questions in Appendix II
- Dialogue preparation level: Extensive clarification needed, Focused discussion needed, Targeted clarification, Brief confirmation.

4. Questions for Community Dialogue (Appendix II)

- Organized by species and ESF dimension
- Specific, focused questions based on identified gaps and conflicts
- Ordered by extent of clarification needed from the community.

Transition to Step 5: These outputs feed directly into Step 5, where patterns, gaps, and conflicts identified across Sections 6.1–6.3 determine which species warrant community dialogue, at what depth, and with what questions

7.0 STEP 5: PRIORITIZING COMMUNITY ENGAGEMENT

Objective: Identify which species warrant community dialogue and plan an engagement approach

Prerequisites: Completed Step 4 (conservation analysis)

Timeline: 1–2 weeks

7.1 Understanding Prioritization Purpose

***Key Principle:** Step 4 identified patterns, gaps, and conflicts in external data, not conservation prescriptions. Step 5 translates those findings into a structured dialogue plan: determining which species to prioritize in discussions with communities and at what depth, not designing conservation interventions or prescribing outcomes.*

What This Prioritization Is:

- A framework for identifying which conversations to have with communities
- A way to focus limited resources on species where community input is most valuable
- A starting point for community-led assessment, not a prescription for action

What This Prioritization Is NOT:

- A conservation action plan (that comes from communities after dialogue)
- An external mandate for interventions
- A replacement for community knowledge and decision-making
- A finished conservation strategy

7.2 Question Classification System

Categorize each species based on the urgency of community dialogue. Note that the question count ranges below (5–8, 8–12, 5–8, 3–5) are recommended starting points. The appropriate number depends on the species' priority level and the specific data gaps identified for that species.

Category 1: Community Knowledge is Primary Source

- No conservation assessment in any database
- Absent from occurrence databases (GBIF, national databases)
- Minimal documentation in the literature
- Dialogue Preparation Level: Extensive clarification needed, community perspective urgently required to understand if concerns exist

Category 2: External Data Insufficient

- Listed in databases but marked Data Deficient
- Minimal occurrence records (fewer than 5 in GBIF)
- No recent population data
- Conflicting information from different sources
- Dialogue Preparation Level: Focused discussion needed, secondary data insufficient; community observations essential

Category 3: Historical Data Needs Updating

- Last assessment more than 10 years old
- No recent occurrence or population data
- Historical data only, lacking current validation
- Dialogue Preparation Level: Focused discussion needed, community can confirm whether old data still reflects reality.

Category 4: Regional Context Needed

- Global data available, but no local information
- Conservation status unclear for regional populations
- Local threat factors not incorporated in existing assessments
- Regional or local context understood but not documented
- Dialogue Preparation Level: Targeted clarification, community can provide local context

Category 5: Data Appears Sufficient

- Recent assessment (under 5 years)
- Multiple data sources agree
- Comprehensive information available
- Regional and local context documented and available
- Dialogue Preparation Level: Brief confirmation, community dialogue is still valuable, but less urgent

7.3 Engagement Prioritization Levels

These summaries are outputs from Phase 1. Whether and how to share them with communities is determined in Phase 2 based on community preferences, protocols, and dialogue format preferences.

Level A — (Urgent Community Dialogue Priority)

- Criteria: Category 1 species (no external data) OR three or more dimensions with HIGH or UNKNOWN concern
- Why Urgent: Community knowledge is the only information source, OR secondary data suggests serious information gaps requiring community input
- Suggested Questions to Select (5–8 questions): Does [species name] grow in this area? How common is it, abundant, common, uncommon, or rare? Has abundance changed over time? What are the main threats to this plant? Can people reach areas where it grows? Is this plant important to protect?
- See Appendix II - 'For Species with No External Data' subsections for the complete question bank.

Level B — (Focused Community Dialogue)

- Criteria: Category 2–3 species (insufficient or outdated data) OR one to two dimensions with HIGH concern
- Why Needed: Secondary data is incomplete or outdated; community knowledge is essential for accurate assessment
- Suggested Questions to Select (8–12 questions): External sources assessed [species] in [year] as [status]. Does this match what you observe? Published data suggests [threat]. Do you observe this locally? Are there new threats not documented in [year]? Has access changed due to [documented barrier]? Is commercial collection affecting local availability?
- See Appendix II - 'For High Priority Species' subsections for the complete question bank

Level C — Community Consultation

- Criteria: Category 4 species (context-specific gaps) OR two or more MODERATE concerns
- Why Valuable: Regional data is lacking; community knowledge can provide local context. Stable conditions suggested but community knowledge can reveal early warning signs
- Suggested Questions to Select (5–8 questions): Global assessments say [species] is [status] in [region]. Is the local situation different? Do you observe [threat documented elsewhere]? Are there early warning signs of future problems?
- See Appendix II - 'For Moderate Priority Species' subsections for the complete question bank

Level D — Community Information-Sharing

- Criteria: Category 5 species (data appears sufficient) OR mostly LOW concerns
- Why May Be Useful: Confirm stable conditions, or the community may identify issues that databases missed
- Suggested Questions to Select (3–5 questions): External data suggests these plants are stable and abundant, is this accurate? Do you have any concerns we should know about? Are there patterns or changes external sources may have missed?
- See Appendix II - 'General Availability/Stability Questions' subsections for the complete question bank

Key Principle: This prioritization identifies which species to prioritize in discussions with communities, not which interventions to implement. Communities determine whether concerns exist and what responses, if any, are appropriate from their perspective.

7.4 Prepare for Community Engagement

Transform your analysis into materials that can support community dialogue if communities choose to engage.

Step 1: Organize Species by Priority Level

Group species from Template A3 into Template A4 priority levels:

- Extensive clarification needed → Priority A (Urgent)
- Focused discussion needed → Priority B (Priority)
- Targeted clarification → Priority C (Consultation)
- Brief confirmation or Monitoring → Priority D (Information-Sharing)

Step 2: Select Questions Using Appendix II

Appendix II contains the complete question set organized by ESF dimension and priority level.

For each priority species:

- Review Template A4 "Appendix II Question Sections to Use" column
- Navigate to those sections in Appendix II
- Select the appropriate number of questions based on priority level and specific data gaps identified in Template A3
- Organize questions in a natural dialogue sequence rather than by ESF dimension

Each dimension in Appendix II contains two types of questions:

- General questions apply across all species at a given priority level and provide broad context for the conversation
- Species-specific questions are tailored to individual species based on your Template A3 findings
- Both types count toward the recommended question total for that priority level

***Note:** The ranges (3–5, 5–8, 8–12) are guideline, adjust based on the specific gaps identified for each species and the available time for dialogue.*

Step 3: Organize Findings into Shareable Format

For each priority species, organize your findings into a format that could be shared if you proceed to Phase 2. Use the following structure:

SPECIES: [Scientific and local name] DIALOGUE PREPARATION LEVEL: [A / B / C / D]

WHAT EXTERNAL SOURCES SAY:

- IUCN: [Status or "Not assessed"]
- Records: [GBIF count or "None"]
- Threats: [From literature or "Not documented"]
- Gaps: [What is missing]

***Note:** These summaries are outputs from Phase 1. Whether and how to share them with communities is determined in Phase 2 based on community preferences, protocols, and dialogue format preferences.*

SPECIES: [Scientific and local name] DIALOGUE PREPARATION LEVEL: [A / B / C / D]
WHAT EXTERNAL SOURCES SAY: IUCN: [Status or 'Not assessed'] Records: [GBIF count or 'None'] Threats: [From literature or 'Not documented'] Gaps: [What is missing]
WHY COMMUNITY KNOWLEDGE MATTERS: [One sentence] QUESTIONS FOR DIALOGUE: [Selected questions in natural dialogue order]

7.5 Key Outputs from Step 5

- Completed Template A4 with species organized by dialogue preparation level
- Species-organized dialogue packages (one per priority species) containing what external sources document, data gaps identified, and selected questions from Appendix II
- Materials translated into local languages where appropriate
- Implementation plan with time and resource estimates

Connection to Phase 2: If communities choose to participate in their own assessment, use the separate Rapid Community-Based Assessment (RCBA) Guide for detailed protocols for community-controlled dialogue, consent procedures, and legal compliance. If communities decline, that decision is itself an expression of community control, Phase 1 findings remain available as conservation context if communities choose to access them in the future

8.0 ADAPTING THIS GUIDE TO OTHER CONTEXTS

This guide was developed for Mwenezi District, Zimbabwe, but can be adapted to other regions by modifying key elements while maintaining core principles of community-centered assessment.

8.1 Geographic Scope

Adaptation Steps:

- Define boundaries appropriate to your region (district, watershed, ecological zone)
- Identify relevant administrative units (municipalities, counties, provinces)
- Map ecological zones specific to your area (forest types, grasslands, wetlands)
- Document land use patterns and designations (protected areas, communal lands, private holdings)

Example Adaptations:

- **Tropical regions:** Focus on rainforest, montane forest, or coastal ecosystems
- **Temperate regions:** Adapt to deciduous/coniferous forests, grasslands, or agricultural landscapes
- **Arid regions:** Focus on desert, semi-arid shrublands, or oasis ecosystems

8.2 Data Sources

Replace Zimbabwe-Specific Databases with Regional Equivalents:

Zimbabwe Flora → Your Regional Equivalent:

- **Africa:** African Plant Database, PROTA (Plant Resources of Tropical Africa)
- **Asia:** Flora of China, Flora of Southeast Asia databases
- **Americas:** Flora of North America, Neotropical databases
- **Europe:** Euro+Med PlantBase, Flora Europaea

Maintain Global Databases (relevant across all contexts): GBIF, IUCN Red List, Plants of the World Online (POWO), CITES Species Database

8.3 Legal Framework

***Important Note:** Legal requirements vary significantly by country and must be verified locally before beginning any engagement.*

Identify Applicable Legislation in Your Jurisdiction:

- Genetic resources access laws (national implementation of the Nagoya Protocol, CBD, 2010)
- Traditional knowledge protection legislation
- Indigenous peoples' rights frameworks (UNDRIP implementation)
- Research ethics and consultation requirements
- Benefit-sharing regulations

Example Legal Frameworks: Philippines: Indigenous Peoples' Rights Act (IPRA); India: Biological Diversity Act; Brazil: Law on Access to Genetic Resources; Peru: Law on Protection of Indigenous Knowledge; Canada: OCAP Principles for Indigenous data

Action Required:

- Consult legal counsel familiar with your jurisdiction
- Contact national environmental agencies for guidance
- Review research ethics protocols at local universities
- Engage with Indigenous rights organizations

8.4 Language and Cultural Context

All materials must be translated into local languages; reviewed by native speakers for accuracy; tested with non-participant community members for comprehension; and adapted for literacy levels (consider oral presentation methods).

Priority Documents for Translation: Consent forms (Phase 2); species lists with local names; ESF dimension descriptions; community dialogue questions.

Cultural Protocols - Adapt to Local Customs:

- Decision-making structures: Individual vs. collective, elder councils, gender-separated discussions
- Communication styles : Direct vs. Indirect, formal vs. Informal
- Timing and scheduling: Agricultural seasons, cultural calendars, religious observances
- Sacred knowledge: Some plant knowledge may be restricted by age, gender, clan, or initiation status
- Engagement protocols: Gift-giving customs, proper greetings, and appropriate venues

8.5 Species Lists and Ecological Context

Modify Species Selection

Regional Adaptations:

- Use regional flora checklists as a starting point
- Prioritize species with documented medicinal uses in your region
- Include species important to local Indigenous or traditional communities
- Consider threatened endemic species specific to your area

Ecological Context:

- Adapt habitat classifications to local ecosystem types
- Modify threat categories to reflect regional pressures (e.g., logging, agriculture, mining, urbanization, climate impacts)
- Adjust seasonality considerations for plant availability
- Account for regional climate patterns (monsoons, dry seasons, etc.)

8.6 Community Authority, Governance, and Knowledge Holders

Before beginning any community engagement under Phase 2 of this guide, practitioners need to think carefully about three foundational questions: Who constitutes the community for this project? Who holds the authority to grant permission for the work? And among those who will participate, who holds what kinds of knowledge? These questions do not have universal answers, they will be specific to each project, each location, and each community context. What this section offers is a framework for thinking through them, and a set of resources to consult as practitioners work out the right approach for their own situations.

8.6.1 Defining the Community

The word "community" in community-based conservation can mean very different things depending on context. In one project, the relevant community might be the residents of a defined administrative area, such as a district or ward. In another, it might be the members of a particular ethnic or language group whose traditional territory overlaps with the assessment area. In others still, the relevant unit might be a specific village, a group of households who share a common grazing or harvesting area, or the members of a traditional healers' association.

The boundaries of the community are not yours to define alone. Early conversations with local partners, potential participants, and relevant authorities will help clarify who considers themselves part of the community for this work, and who considers themselves outside it. Be prepared for these boundaries to be contested or to shift as the project develops.

8.6.2 Navigating Community Authority

Working within a community requires navigating authority structures that may be formal, customary, or both. In many contexts, including communal farming areas in southern Africa; both types of authority are present, and both may need to be engaged before work can begin.

Formal governance systems include elected local government bodies, district councils, environmental management agencies, and national government departments with jurisdiction over biodiversity, natural resources, or community development. Formal authorities may have legal roles in permitting research or assessment activities, particularly where national legislation on genetic resources, traditional knowledge, or environmental management applies.

Customary governance systems include traditional authorities, chiefs, headmen, village elders, or equivalent structures depending on local terminology and practice, who hold recognized authority over community decision-making, land use, and cultural protocols. In many communities, customary authority must be engaged first and their support secured before any community-level work can proceed. Proceeding without customary authority approval, even where formal permits have been obtained, can damage relationships and undermine the project.

The right sequence for engaging these different authority structures will differ in every context. Practitioners need to understand their specific situation and work out the appropriate pathway;

there is no single formula that applies across all communities and jurisdictions. Local implementing partners and community liaisons are usually the best guides to navigating this.

Further resources: For broader guidance on community authority and governance in conservation contexts, practitioners may wish to consult: Agrawal, A. and Gibson, C.C. (1999). *Enchantment and disenchantment: The role of community in natural resource conservation*. *World Development*, 27(4), 629–649. Borrini-Feyerabend, G. et al. (2013). *Governance of Protected Areas: From understanding to action*. *Best Practice Protected Area Guidelines Series No. 20*. IUCN, Gland, Switzerland. CBD (2010). *Nagoya Protocol on Access and Benefit-Sharing*. *Convention on Biological Diversity*, Montreal

8.6.3 Generalist and Specialist Knowledge Holders

One of the most important distinctions for medicinal plant assessment is the difference between generalist and specialist knowledge holders within a community. Practitioners who do not recognize this distinction risk either missing the depth of specialist knowledge or placing unfair expectations on generalist participants to speak to things they do not know.

Generalist knowledge is held broadly across a community. Many community members, particularly adults who have grown up in the area, will be able to identify commonly used medicinal plants, describe general harvesting practices, speak to changes they have observed in plant availability over time, and comment on whether certain plants are becoming harder to find. This kind of knowledge is valuable and accessible, and generalist participants can contribute meaningfully to Phase 2 assessment activities.

Specialist knowledge is held by practitioners who have invested years or a lifetime developing expertise in medicinal plant identification, ecology, preparation, dosage, and application. Traditional healers are the most prominent example, but specialist knowledge may also be held by herbalists, midwives, community health workers with traditional training, elders with land stewardship roles, or others depending on local context. Specialist practitioners often possess knowledge that generalist community members do not: detailed understanding of where specific species grow and what habitat conditions they favour, how populations have changed over long time periods, which parts of the plant are used and in what quantities, and how traditional protocols around harvest are maintained or have changed.

For conservation assessment, both types of knowledge matter. Generalist knowledge provides a broad, community-wide picture of plant availability and use. Specialist knowledge provides depth, ecological detail, and long-term perspective that no secondary data source can replicate. A well-designed community-based assessment engages both, typically through different methods and in different phases of the community dialogue process.

Specialist knowledge holders may have their own protocols around what they are willing to share, with whom, and under what conditions. Healing knowledge, preparation methods, and spiritual dimensions of plant use may be subject to customary restrictions. Practitioners should approach specialist knowledge holders with particular care for these boundaries, the Phase 2 protocols in the

Rapid Community-Based Assessment Guide provide specific guidance on how to engage appropriately.

8.6.4 Ecological Knowledge and the Conservation Assessment

Conservation assessment requires not only knowledge of how medicinal plants are used, but also knowledge of where they grow, how they interact with other species and habitats, how their populations have changed over time, and what conditions support or threaten their regeneration. This ecological knowledge is often most richly held by specialist practitioners who have spent their lives working with plants.

Secondary data sources are generally weak on local ecological knowledge. IUCN assessments describe habitat types at a broad level; GBIF provides occurrence records where collectors have been active; ethnobotanical literature documents uses but rarely captures detailed habitat observations. The ecological dimensions of the Environmental Security Framework, particularly availability and stability, can be partially assessed from secondary data but cannot be fully assessed without locally grounded ecological knowledge. Access can be partially signalled through formal legal mechanisms such as protected area status and harvest restrictions, but the institutional, governance, and social dimensions of access require community engagement to assess meaningfully. Perception cannot be assessed from secondary data at all. This is why the Secondary Data Guide functions as Phase 1, producing a baseline that the RCBA Guide then verifies, updates, and completes in Phase 2.

In Phase 2 of the assessment, the Rapid Community-Based Assessment Guide includes protocols for capturing ecological knowledge, where specific plants are found within the community's territory, what vegetation associations they occur in, how their abundance and distribution have changed, and what harvesting practices communities recognize as sustainable or harmful. This ecological knowledge from specialist and generalist participants alike is what allows the secondary data picture from Phase 1 to be verified, updated, and completed.

9.0 METHODOLOGICAL LIMITATIONS AND APPROPRIATE USE

This section summarises the limitations covered in greater depth in Section 1.1.2, provided here as a quick reference for practitioners who need a concise overview during implementation. Understanding these limitations is not optional, they directly affect how findings should be interpreted and communicated to communities.

9.1 IUCN Red List Limitations

The IUCN Red List is the most widely used global conservation database and an essential starting point for any secondary data assessment. However, its application to local or district-level medicinal plant assessment has well-documented structural constraints that practitioners must understand before interpreting results.

The Red List evaluates species across their full global range, not at local or national scales. A species assessed as Least Concern globally may have a restricted, declining, or locally rare population in the assessment area. Conversely, a globally Vulnerable species may be locally abundant, but local abundance does not negate global vulnerability, and a locally thriving population may represent one of the last significant remaining populations for the species.

Coverage is highly uneven. Species with wider ranges, larger populations, or higher commercial profile are disproportionately represented among assessed species. Herbaceous plants, which frequently include the most heavily harvested medicinal species, particularly those harvested by destructive root or whole-plant collection, are dramatically underrepresented. In data-scarce regions including much of sub-Saharan Africa, over half of documented medicinal plant species may carry no formal IUCN evaluation. Absence of assessment is not evidence of safety; it is evidence of an unaddressed knowledge gap.

The central interpretive principle for IUCN data is this: a Least Concern classification or the absence of a threat classification is not evidence that a species is secure. It is, in the majority of cases, evidence that the species has not yet been assessed in depth, or that its assessment does not capture local conditions. Communicate this clearly to any partners or stakeholders who will use the findings.

9.2 Local Sources That May Be More Reliable

Where IUCN data is limited or absent, practitioners should prioritize local and regional sources that may hold more contextually relevant information. The following source types often provide better coverage of medicinal plants at national or regional scales:

National herbaria and university collections: specimens collected by local botanists and students often capture species and localities that international databases miss. University departments of botany, pharmacognosy, or natural resources in the target country may hold unpublished student theses with detailed regional data, as well as ongoing research datasets. These are often the most reliable sources for local frequency, distribution, and phenological data.

National flora databases: where available, national or regional flora databases reflect local botanical knowledge and may contain distribution data, frequency assessments, and ecological notes not held in global databases.

Regional ethnobotanical literature: published and grey literature produced by researchers working in the target region often contains the most contextually specific data on medicinal plant use, harvesting practices, and observed population changes. This literature should be treated as primary data for the purposes of the species list and use documentation.

Direct expert consultation: researchers and practitioners with first-hand field experience in the target region may know which species are considered locally threatened or sensitive even where no formal assessment exists. Their knowledge should be sought and documented, and they can also identify additional literature or data sources.

Key Principle: *The multi-source approach described in Step 2 of this guide is specifically designed to compensate for IUCN's uneven coverage by drawing on a range of source types. The wider the range of sources consulted, the more complete and locally relevant the species list and assessment will be. Document all sources searched and their outcomes so that the limits of the secondary data search are transparent to communities and to future practitioners who may build on this work.*

9.3 Other Limitations to Note

Traditional knowledge may be incompletely or inaccurately recorded in published sources. Where ethnobotanical literature documents plant names, uses, or practices, treat this information as a starting point for community dialogue rather than as authoritative documentation. Communities retain the right to confirm, correct, or decline to engage with what external sources say about their knowledge.

Species identification may not align with local naming systems. Local nomenclature often groups several accepted species together or subdivides them in ways that reflect local perceptions and ecological knowledge. These differences are not errors; they may reflect meaningful distinctions that have conservation significance. Record all local names and naming variants encountered in the literature and treat taxonomic alignment as something to verify with communities rather than to impose from scientific nomenclature.

Access and perception data are poorly captured in secondary sources. The two ESF dimensions that most require community knowledge, access and perception, are the dimensions that secondary data is least able to address. For these dimensions, Phase 1 can identify questions; only Phase 2 community engagement can provide answers.

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APPENDICES

Appendix I: Assessment Templates

Template A1: Database Search Record

Purpose: Track which databases you searched and what you found

When to use: During Step 2 (Data Collection Phase)

Instructions: Complete one row for each database searched. Keep this log to show the comprehensive search process.

Database Name	Search Date	Search Terms Used	Total Results	Relevant Records	Download/Export	Notes
GBIF					☐ Yes ☐ No	
IUCN Red List					☐ Yes ☐ No	
Plants of the World Online					☐ Yes ☐ No	
Zimbabwe Flora					☐ Yes ☐ No	
National Herbarium					☐ Yes ☐ No	
Google Scholar (ethnobotany)					☐ Yes ☐ No	
Local university repository					☐ Yes ☐ No	
Government reports					☐ Yes ☐ No	
[Other - specify]					☐ Yes ☐ No	

Search terms examples:

- Species scientific names
- Medicinal plants + [region name]
- Traditional medicine + [region name]
- Ethnobotany + [region name]
- Local plant names + Zimbabwe

Tips:

- Record exact search terms for duplicability
- Note if the database had technical issues
- Save search results with clear file names
- Keep links to data sources

Template A2: Species Prioritization Matrix

Purpose: Score species on multiple criteria to guide preliminary prioritization based on secondary data analysis.

When to use: During Step 3 (Data Verification Phase)

***Important Note:** This scoring is based entirely on what external databases and published literature document. You are not asking communities about uses, values, or knowledge to complete this matrix.*

Scoring Criteria Explained:

1. **Medicinal Importance (1-5):** Based on frequency of mention in published literature
 - 5 = Mentioned in 10+ studies
 - 3 = Mentioned in 5-9 studies
 - 1 = Mentioned in 1-4 studies
2. **Conservation Status (1-5):** Based on existing IUCN/CITES assessments
 - 5 = Critically Endangered or CITES Appendix I
 - 3 = Vulnerable/Near Threatened or CITES Appendix II
 - 1 = Least Concern or Not Assessed
3. **Trade and Harvest Pressure (1-5):** Based on documented market presence evidence of commercial harvesting pressure at any scale, local, national, or international
 - 5 = Listed under CITES Appendix I or II, or documented as subject to intensive commercial harvest
 - 3 = Documented in regional or national trade, or subject to moderate documented harvest pressure
 - 1 = No documented commercial trade or harvest pressure

***Important Note:** International and national/regional trade are weighted equally, what matters is the level of documented harvest pressure, not the geographic scale of trade.*

4. **Harvest Intensity (1-5):** Based on documented collection pressure
 - 5 = Overharvesting documented in multiple sources
 - 3 = Moderate harvest pressure mentioned
 - 1 = Minimal or no harvest pressure documented
5. **Ecological Role (1-5):** Based on documented ecosystem functions
 - 1 = no ecological role documented in external sources

- 2 = incidentally mentioned but no specific function described
- 3 = ecosystem role mentioned but not well documented
- 4 = important role described such as pollinator support or seed dispersal
- 5 = critical role well documented such as keystone species status

Instructions: Rate each species on a 1-5 scale for each criterion. Sum scores to determine preliminary priority.

Species Name	Medicinal Importance	Conservation Status	Economic Value	Harvest Intensity	Ecological Role	Total Score	Priority Rank
[Species]	[Score 1-5]	[Score 1-5]	[Score 1-5]	[Score 1-5]	[Score 1-5]	[Total]	[Rank]

Interpreting Total Scores (5–25 possible points):

- 21–25 points: High priority for community dialogue
- 16–20 points: Moderate priority for community dialogue
- 11–15 points: Lower priority for community dialogue
- 5–10 points: Minimal priority or relatively abundant external data

Note: These bands are a guide for organising where to begin community dialogue. They reflect patterns in external documentation only, not community observations or values. Communities may identify entirely different priorities based on their own knowledge and concerns.

Template A3: Environmental Security Framework Assessment

Purpose: For each analyzed species, summarize findings according to the four ESF dimensions and determine overall dialogue preparation level.

When to use: During Step 4 (Conservation Status Analysis)

Connection to Other Templates:

- Input: This template uses data compiled in Steps 2–3 (from databases and literature)
- Output: Findings from this template transfer into the Template A4 column "Data to Return to Community"

***Important Note:** This template documents what external sources say. It does not contain community knowledge. All four ESF dimensions require a community perspective for accurate assessment*

Environmental Security Assessment Summary Table:

Species	Availability Status	Stability Status	Access Status	Perception Status	Dialogue Preparation Level
[Species]	[Status and Concern Level]	[Status and Concern Level]	[Status and Concern Level]	[Status and Concern Level]	[Level]

How to Complete This Template:

Step 1: Assess Each ESF Dimension

For each dimension, document:

1. Status: Brief description of what external sources document
2. Concern Level: Rate as HIGH, MODERATE, LOW, NONE, or UNKNOWN

Concern Level Definitions:

Rating	When to Use
HIGH	External sources document significant threats, decline, barriers, or loss
MODERATE	External sources document some concerns or emerging issues
LOW	External sources document stable or positive conditions
NONE	External sources explicitly confirm no concerns
UNKNOWN	No information available in external sources for this dimension, community knowledge is the only potential source

Note: UNKNOWN is not the same as LOW. A species with no documented information about a dimension has an information gap that requires community input. It should not be treated as stable or unproblematic simply because data is absent.

Example:

Dimension	Status	Concern Level
Availability	Populations are declining across the range, with few individuals remaining	HIGH
Access	Mining activities are blocking traditional harvest areas	HIGH
Stability	Habitat clearing is accelerating, no regeneration observed	HIGH
Perception	Still highly valued, youth learning traditional uses	LOW

Example with UNKNOWN:

Dimension	Status	Concern Level
Availability	Not assessed by IUCN; zero GBIF records	UNKNOWN
Access	No information on harvest areas or legal restrictions	UNKNOWN
Stability	No threat data documented in the literature	UNKNOWN
Perception	Mentioned in 8 ethnobotanical studies as highly valued	LOW

Step 2: Determine Dialogue Preparation Level

The following grouping is an internal planning tool to help structure community dialogue efficiently. It does not assign conservation status or determine conservation outcomes. It indicates how much clarification community knowledge would need to provide, given the gaps in external sources.

Suggested Dialogue Preparation Groupings:

These groupings are flexible planning guidance rather than fixed calculations. Professional judgment should be applied to each species, and reasoning should be documented clearly so the basis for dialogue preparation is transparent to communities and colleagues alike.

If...	Then Dialogue Preparation Level Is...	Rationale
3–4 dimensions are HIGH	Extensive clarification needed	Multiple severe information gaps or threats require urgent community input
1–2 dimensions are HIGH	Focused discussion needed	Significant concerns or gaps present, community assessment recommended
No HIGH, but 2 or more MODERATE	Targeted clarification	Emerging concerns warrant community consultation
3–4 dimensions are UNKNOWN	Extensive clarification needed	Complete absence of external data, community knowledge is the only source
1–2 dimensions UNKNOWN, remainder LOW or MODERATE	Focused discussion needed	Significant information gaps require community input to interpret
1 dimension UNKNOWN, remainder LOW	Targeted clarification	Partial information gap warrants focused community input
Mostly LOW, mixed with MODERATE	Brief confirmation	Monitor trends, community information-sharing appropriate
All dimensions LOW or NONE	Monitoring or optional discussion	Stable status, periodic check-ins sufficient

Key Principle: UNKNOWN ratings indicate an absence of external data, not an absence of concern. Species with multiple UNKNOWN ratings require community input precisely because external sources cannot speak to those dimensions at all. When information is limited or ambiguous, document the uncertainty clearly and ensure questions are framed openly so communities can interpret the situation in their own terms.

Special Considerations:

- 1. Perception Status:** If Perception = HIGH concern, elevate priority one level
- 2. Access Status:** If Access = HIGH concern due to legal restrictions, consider carefully whether community engagement is appropriate
- 3. Multiple HIGH concerns:** If 3–4 dimensions are HIGH, dialogue preparation level is Extensive clarification needed regardless of which dimensions.

Example Assessments:

Example 1: Extensive Clarification Needed

Species: Sausage Tree (Kigelia africana)

- Availability: Rare, declining rapidly (HIGH)
- Access: Mining blocking traditional harvest areas (HIGH)
- Stability: Habitat loss, no regeneration observed (HIGH)
- Perception: Highly valued, youth learning traditional uses (LOW)

Dialogue Preparation Level: Extensive clarification needed (3 HIGH information gaps or concerns)

Example 2: Focused Discussion Needed

Species: Wild Grape (Lannea edulis)

- Availability: Uncommon, slowly declining (MODERATE)
- Access: Some restrictions, longer travel required (MODERATE)
- Stability: Overharvesting documented in some areas (HIGH)
- Perception: Still valued, knowledge maintained (LOW)

Dialogue Preparation Level: Focused discussion needed (1 HIGH + 2 MODERATE)

Example 3: Targeted Clarification

Species: Common Wild Currant (Searsia pyroides)

- Availability: Common, stable populations (LOW)
- Access: Generally open access (LOW)
- Stability: Some localized threats documented (MODERATE)
- Perception: Moderately valued, some youth learning (MODERATE)

Dialogue Preparation Level: Targeted clarification (2 MODERATE)

Example 4: Brief Confirmation

Species: [Common widespread species, e.g. species with recent LC assessment and multiple GBIF records]

- Availability: Common, stable populations (LOW)
- Access: Open access, no documented restrictions (NONE)
- Stability: No significant threats documented (LOW)

- Perception: Well, documented in literature, actively used (LOW)

Dialogue Preparation Level: Brief confirmation (all LOW or NONE, external data suggests stable conditions, community confirmation recommended)

Template A4: Community Engagement Priorities Framework

Purpose: Organize species by dialogue preparation level based on external information gaps, select relevant questions from Appendix II, and plan overall engagement approach.

When to use: During Step 5 (Prioritizing Community Engagement) — Sections 7.3–7.5

***Important Note:** This prioritization identifies which species warrant community dialogue, not which interventions to implement. Communities determine whether concerns exist and what responses, if any, are appropriate*

***Note:** Throughout this template, "dialogue" refers to an open-ended conversation where communities share observations and perspectives freely. "Consultation" refers to a more structured discussion focused on specific questions or topics. Both involve communities leading and controlling what they share. The distinction is one of format and depth, not of community authority, communities retain full control in both cases.*

1. How to Complete This Template

1.1 Steps

- Step 1: Transfer species from Template A3 (ESF Assessment) and list by dialogue preparation level
- Step 2: Group into Categories 1–5 (from Section 7.2) — determine why each species needs community dialogue
- Step 3: Assign to Priority Levels A–D (from Section 7.3) — organize by dialogue preparation level based on the extent of external information gaps
- Step 4: Select questions from Appendix II — for each priority level, identify which Appendix II sections apply
- Step 5: Prepare data repatriation materials — document what external sources say about each species
- Step 6: Plan assessment focus — identify what to discuss first and guide conversation priorities

1.2 How to Read the Table Below

The table has two functions that work together.

The pre-filled rows (Why Community Perspective is Needed, Appendix II Question Sections, and Community Assessment Focus) provide guidance that applies to all species at that priority level. You do not need to change these; they are there to guide you.

The Data to Return to Community column must be customized for each individual species using your actual findings from Template A3. The bullet points shown are prompts, not pre-filled content. For each species at that priority level, replace the prompts with your actual data.

Species names should be listed within each priority level row. The Species Count column records how many species fall into each level, which helps with resource planning.

2. Priority Framework Table

Priority Level	Species Count	Why Community Perspective is Needed	Appendix II Question Sections to Use	Data to Return to Community	Community Assessment Focus
A. Extensive Clarification Dialogue	List species names here	Category 1: No external data exists OR Extensive clarification needed: 3–4 HIGH or UNKNOWN concerns	Availability: Presence and Basic Status Questions; Stability: General Threats; Trade: Non-documented Species; Access: Basic Physical and Legal; Perception: Conservation Concern	For each species: No IUCN assessment; Zero or minimal records; Literature: minimal; Gaps: all dimensions	First: Species ID and presence; Then: Basic status; Focus: Any concerns?
B. Focused Discussion Dialogue	List species names here	Category 2–3: Data Deficient or outdated over 10 years OR Focused discussion needed: 1–2 HIGH concerns	Availability: High Priority Verification; Stability: Threat Verification; Trade: CITES and Pressure Check; Access: Legal and Physical Barriers; Perception: Knowledge Status	For each species: IUCN status (DD or old LC); Last data date; Documented threats; Gaps: current status unknown	First: Share external data; Then: Validate and update; Focus: Current reality
C. Targeted Clarification	List species names here	Category 4: Regional data exists, local context unknown OR Targeted clarification: 2 or more MODERATE concerns	Availability: Regional Comparison; Stability: Early Warning Signs; Access: Local Conditions; Perception: Future Concerns	For each species: Global or regional status; Note that local data is limited or absent; Context from other regions	First: Regional versus local; Then: Early warnings; Focus: Local differences
D. Brief Confirmation	List species names here	Category 5: Data appears sufficient OR Brief confirmation: Mostly LOW concerns	Availability: Confirm Stability; Stability: Ongoing Monitoring; Perception: Hidden Concerns	For each species: Recent assessment status; External data suggests stable; Question whether this is still accurate	First: Confirm stability; Then: Any concerns; Focus: Validation

3. Column Descriptions

- **A. Priority Level:** Matches Section 7.3 exactly (A. Extensive Clarification Dialogue, B. Focused Discussion Dialogue, C. Targeted Clarification, D. Brief Confirmation)
- **B. Species Count:** Total number of species in this priority level, helps with resource planning. List individual species names within each row
- **C. Why Community Dialogue is Needed:** Links to Categories 1–5 from Section 7.2 or dialogue preparation level from Template A3. Pre-filled, do not change
- **D. Appendix II Question Sections to Use:** References which sections of Appendix II to review when selecting questions. Select only those relevant to your specific data gaps, do not copy all questions
- **E. Data to Return to Community:** Information from external sources that you will share with the community (data repatriation). This is not information to extract from the community. Customize this column with your actual species-specific data from Template A3
- **F. Community Assessment Focus:** Guides facilitators on conversation flow, what to discuss first, what comes next, and overall emphasis. Pre-filled, adapt as needed for your specific context

4. How to Fill Out This Template

1. List all species from Template A3 grouped by their dialogue preparation level (A, B, C, or D)
2. Count how many species are in each priority level and enter the number in the Species Count column
3. The Why, Appendix II sections, and Assessment Focus columns are pre-filled as guidance, review them but do not change them unless your specific context requires it
4. Customize the Data to Return column with actual data from your Step 4 analysis for each specific species
5. Use the Appendix II Question Sections column to know which parts of Appendix II to review
6. Select the appropriate number of questions per species based on the priority level guidance in Section 7.3

Example: Completed Data to Return entry for a Priority A species:

Species: *Securidaca longipedunculata* (Violet tree)

- IUCN: Not assessed
- Records: Zero GBIF occurrences
- Threats: None documented in literature
- Gaps: No information on local presence, abundance, or threats

5. Key Reminders

- This template identifies dialogue preparation levels, not conservation interventions
- Communities control which questions they address, what they share, and whether concerns exist

- The Appendix II reference column is not a checklist, select only the most relevant questions
- Data to Return means sharing information with the community, not extracting information from them
- These groupings may help facilitators prepare for dialogue sequencing. However, communities may choose to begin with any species they consider important

APPENDIX II: QUESTIONS FOR COMMUNITY DIALOGUE

Purpose: This appendix consolidates questions identified during Phase 1 analysis for potential community dialogue. These questions focus exclusively on conservation status and do not request information about plant uses, preparation methods, or cultural and spiritual knowledge.

***Important Note:** This assessment is designed to support conservation planning, not to document traditional knowledge. Questions about detailed medicinal uses, preparation methods, secret or ceremonial knowledge, spiritual significance beyond conservation relevance, and traditional harvest rules are not included unless community members volunteer this information.*

How This Appendix is Organized

Questions are structured in three levels:

1. By ESF Dimension: Availability, Stability, Access, Perception, Trade
 - Each dimension contains subsections organized by dialogue preparation level
2. By Dialogue Preparation Level: Extensive Clarification, Focused Discussion, Targeted Clarification, Brief Confirmation
 - Matches Template A4 priority categories (A, B, C, D)
3. By Topic: General questions, species-specific questions, cross-cutting themes

How to Use This Appendix

General questions versus species-specific questions

Each dimension contains two types of questions. General questions apply across all species at a given priority level and provide broad context for the conversation. Species-specific questions are tailored to individual species based on your Template A3 findings. Both types count toward the recommended question total for each species. You do not need to ask all general questions, select the most relevant ones for your specific context alongside the species-specific questions.

Step-by-step guidance:

1. Complete Template A4 to identify each species' dialogue preparation level (A, B, C, or D)
2. The Template A4 column "Appendix II Question Sections to Use" tells you which sections of this appendix to review
3. Select the appropriate number of questions per species from both general and species-specific subsections combined:
 - Priority A (Extensive Clarification): 5–8 questions focusing on basic presence and status
 - Priority B (Focused Discussion): 8–12 questions focusing on validating external data

- Priority C (Targeted Clarification): 5–8 questions focusing on local versus regional context
 - Priority D (Brief Confirmation): 3–5 questions focusing on confirming stability
4. Translate all selected questions into local languages before engagement
 5. Organize selected questions by species in natural dialogue order, not by ESF dimension
 6. Remember: these are topics for dialogue, not information to extract

Data repatriation focus: Many questions return external data to communities for validation. Before each dialogue session, prepare summaries of what external sources document for each species so communities have something concrete to respond to.

Example workflow: For a species with no external data (Template A4 Level A, *Securidaca longipedunculata*):

- Review: Availability Dimension → Extensive Clarification subsection
- Review: Stability Dimension → General Stability Questions subsection
- Review: Trade Section → For Species with No Trade Documentation subsection
- Select: 5–8 questions total focusing on: Does this plant exist locally? How common? Any threats?

AVAILABILITY DIMENSION

Focus: Plant presence, population status, and trends based on IUCN analysis (Section 6.1)

General Questions:

1. External databases document [X number] of medicinal plants in this area. Does this match what you know exists here?
2. Published sources from [year] reported these plants as [status]. Is this still accurate?
3. Are there medicinal plants you know about that external sources do not mention?
4. Are medicinal plants easier or harder to find than 10–20 years ago?
5. Have you noticed changes in how common certain plants are?
6. Are there areas where plants used to grow but no longer do?
7. Do plant populations seem stable, increasing, or declining?

Species-Specific Questions — Extensive Clarification (No external data):

Data repatriation note: External sources have no information on these plants. Community knowledge is the only source.

1. Does [species name] grow in this area?
2. Have you seen this plant recently? Where?
3. How would you describe how common this plant is, abundant, common, uncommon, or rare?

Facilitator Note: Allow the community to use their own terms for abundance. If they use different descriptors than those listed, record their exact language rather than mapping it onto these categories.

4. Has its abundance changed over time?
5. Do you have any concerns about whether this plant will still be available in the future?

Species-Specific Questions — Focused Discussion (Data Deficient or outdated assessment):

Data repatriation: External sources have limited or old information. These questions return that data for validation. **Facilitators note:** Before asking communities to confirm an assessment, clarify whether it is global, regional, or national in scope. A global status may differ significantly from local conditions without either being incorrect, a globally Least Concern species may be locally scarce, and a globally threatened species may be locally abundant. Make this distinction explicit when sharing the assessment with communities.

1. External sources last assessed [species] in [year] and documented it as [status]. Does this still match what you observe?
2. Published data suggest [species] is [common/rare/declining]. Is this accurate based on current conditions?
3. Scientific literature says [species] occurs in [habitat type or location]. Is this correct for this area?
4. Are there populations of this plant that external sources do not know about?
5. Has the status of this plant changed since it was last documented externally?

Facilitator Note: If community observations differ from the external assessment, note whether the assessment was global, regional, or national in scope. A locally abundant population does not contradict a global assessment; both perspectives are valid and should be recorded separately.

Species-Specific Questions — Targeted Clarification (Regional context needed):

Data repatriation: Global or regional data exists but may not reflect local conditions.

1. Global assessments say [species] is [status] based on data from [region]. Is the local situation different?
2. External sources document [X threat] for this plant in other areas. Do you observe this threat here?
3. Published literature suggests this plant is [abundant or declining]. Does this match local reality?
4. Are local conditions affecting this plant differently than what is documented for other regions?

STABILITY DIMENSION

Focus: Threats, pressures, and regeneration capacity based on threat analysis (Section 6.3.1)

General Questions:

1. What threatens medicinal plants in this area?
2. Are threats getting worse, staying the same, or improving?
3. Have threats changed over the past 10–20 years?
4. Do plant populations generally recover after harvesting, or do they struggle to regenerate?

5. Are young plants growing to replace older ones, or are populations aging?

Habitat Loss and Degradation:

Data repatriation: External sources may document habitat threats. These questions validate and update that information.

1. External sources document [deforestation/habitat clearing/land conversion] as a threat. Do you observe this locally?
2. Has agricultural expansion, logging, or development affected plant populations?
3. How has land use changed in areas where medicinal plants grow?
4. Are there new infrastructure projects such as roads, dams, or mines affecting plant habitat?

Harvest Pressure:

1. Is collection pressure on medicinal plants increasing, decreasing, or staying the same?
2. Are more people or collectors harvesting than in the past?
3. Are commercial or external harvesters affecting local plant availability?

***Note on harvest practices:** If community members voluntarily offer observations about how certain harvest methods affect plant recovery, this information can be noted. Do not ask directly about traditional harvest rules, ceremonial restrictions, or cultural protocols. The focus is on conservation impacts as communities observe and choose to describe them*

Climate and Environmental Changes:

1. Have rainfall patterns changed? How does this affect plants?
2. Are droughts or floods more common? What impact do these have on plants?
3. Have you noticed changes in when plants flower or produce fruit?

Species-Specific Stability Questions:

Data repatriation: These questions return documented threats from external sources for validation.

1. External sources identify [threats] for [species]. Do you observe these?
2. Published literature suggests [species] is threatened by [X]. Is this accurate here?
3. Are there threats to [species] that external sources have not documented?
4. Does [species] recover quickly or slowly after disturbance?
5. Have you observed [species] declining due to any specific pressure?

TRADE AND HARVEST PRESSURE

Focus: Commercial trade patterns based on available trade data and literature (Section 6.2). Note that CITES covers only legal and reported international trade for listed species and relatively few medicinal plants are CITES-listed. This section covers both listed and unlisted species facing trade pressure.

General Trade Questions:

1. External trade databases show [X species] being traded commercially or internationally. Are you aware of commercial collection of these plants?

2. Published sources document [market demand or commercial harvest] for these plants. Do you observe this locally?

For CITES-Listed Species:

Data repatriation: Return regulatory information and trade data to the community.

1. [Species] is listed under CITES Appendix [I/II/III], which means [plain language explanation of restriction]. Were you aware of this regulation?
2. International trade records show legal and reported trade in [species]. Do you observe commercial collection locally?
3. Are there enforcement challenges with trade regulations for this plant?

For Species with Documented Trade Pressure:

1. External sources document commercial demand for [species]. Is commercial harvesting affecting local availability?
2. Market data shows [price or demand trends]. Is this creating collection pressure here?
3. Are external buyers or commercial collectors active in this area?

For Species with No Trade Documentation:

1. External databases show no recorded trade in [species]. Is this accurate, or is there local or regional trade that is not documented?
2. Is there commercial demand for this plant that external sources may not know about?

ACCESS DIMENSION

Focus: Legal and physical barriers to plant availability based on regulatory and spatial analysis (Section 6.3.2)

General Questions:

1. Can people still reach places where medicinal plants grow?
2. Are there new restrictions or barriers affecting access to harvest areas?
3. Do you travel farther than before to collect plants? If so, why?
4. Are mining, development projects, or protected areas affecting access to plants?

Legal and Regulatory Access Questions:

Data repatriation: Many communities are unaware of regulations affecting their access. These questions share that information.

1. Zimbabwe's Statutory Instrument 61 of 2009 requires permits for commercial harvest of certain plants. Were you aware of this regulation?
2. External sources indicate [species] is protected under [specific law or regulation]. Were you aware of this protection?
3. Do you need permits to harvest certain plants? Are permits accessible if needed?
4. Have laws or policies changed regarding plant collection in recent years?
5. Do protected areas or forest reserves restrict access to traditional harvest sites?
6. Are plant protection regulations enforced in this area?

7. Do regulations create barriers to traditional access for subsistence use?

Physical Barrier Questions:

1. Are traditional paths or access routes to plant populations blocked or restricted?
2. How far do you currently travel to harvest [species] compared to the past?
3. Has infrastructure development such as roads, fences, or buildings blocked access to areas?
4. Are there seasonal restrictions on access due to weather, flooding, or fire?

Species-Specific Access Questions:

Data repatriation: Return location and legal data for validation.

1. External sources say [species] occurs in [location]. Can you access this area for harvest if needed?
2. Published data suggest [species] grows in [protected area or restricted zone]. Is this creating access issues?
3. Are there legal restrictions on harvesting [species] that affect availability?
4. Has access to [species] changed over time due to regulations or physical barriers?

PERCEPTION DIMENSION

Focus: Conservation awareness and outlook (Section 6.3.3), not cultural knowledge documentation.

General Questions:

1. Are medicinal plants still valued in the community?
2. Are younger people learning to identify medicinal plants?

Facilitator Note: This question asks only whether younger community members can identify plants for conservation monitoring purposes, not about how traditional knowledge is transmitted, who holds it, or how it is learned.

3. What do you think will happen to medicinal plant availability in 10–20 years?
4. Are younger people aware of which plants might need protection?

Important Boundary: Do not ask about specific healing knowledge transmission, spiritual or ceremonial aspects, detailed preparation methods, or who holds specialized traditional knowledge. The focus is on whether communities are aware of and concerned about plant availability, not on documenting knowledge systems.

Botanical Identification Questions:

Data repatriation: Communities validate whether published botanical literature accurately identifies plants.

1. Published botanical literature identifies [species] by these characteristics: [description]. Is this identification correct?
2. External sources document [species] occurring in [habitat type]. Is this accurate?
3. The scientific name recorded is [X] — are we talking about the same plant you know as [local name]?

Species-Specific Perception Questions:

1. Is [species] a plant that people feel should be protected for future generations?
2. Do people still recognize and identify [species]?
3. Is concern about [species] availability growing or decreasing?
4. Are there reasons related to the plant's place in local life that would make it a priority to protect?

CROSS-CUTTING QUESTIONS

Relevant across multiple ESF dimensions

Conservation Priority Questions:

1. Which plants do you think most need attention from a future availability perspective?
2. Are there plants we have not discussed that you are concerned about?
3. What actions would be most helpful from your perspective?
4. Are there plants that seem fine now but that you are concerned about for the future?

Data Verification Questions:

This is a core function of Phase 1, returning information that may have originated from communities back to them.

1. External databases document [X total species, Y threatened, Z data deficient]. Does this match what you observe?
2. Published assessments from [year] reported [findings]. Is this information still accurate?
3. Here is what external sources say about plant populations in this area: [summary]. What matches reality and what does not?
4. Are there conflicts between what databases say and what you observe on the ground?
5. What information in external sources is inaccurate, outdated, or missing?
6. External sources have no data on [X species]. Do you have observations about this plant?

Community Direction Questions:

1. Are there conservation concerns you want to address?
2. What responses would be appropriate from your perspective?
3. What support, if any, would be helpful?
4. Are there concerns you prefer to address internally without external involvement?
5. Would you like to be involved in ongoing monitoring or conservation planning?

SELECTING QUESTIONS BY DIALOGUE PREPARATION LEVEL

Level	Dimensions to Draw From	Focus
A — Extensive Clarification	Availability (all), Stability (basic), Access (basic), Perception (basic)	Does this plant exist locally? Basic status understanding
B — Focused Discussion	All dimensions, emphasizing verification	Does external data match local reality?
C — Targeted Clarification	Stability, Access, Perception	Local context and emerging concerns
D — Brief Confirmation	Perception, future concerns	Confirm stability, identify early warnings

Key Reminders

Before using these questions:

1. Translate into local languages and test comprehension with non-participant community members
2. Select only relevant questions, do not overwhelm the community
3. Organize by species in natural dialogue order, not by ESF dimension
4. Prepare to share what external sources document for each species before asking questions
5. These are topics for dialogue, not a data extraction instrument

During community dialogue:

- Communities may identify entirely different priorities, follow their lead
- Follow community direction, not the prepared question list
- Silence, "I don't know," and "prefer not to say" are all valid responses
- Communities determine what is documented and how
- Questions can be adapted based on community feedback at any point

These questions prepare you for dialogue. Communities control the conversation.

APPENDIX III: Medicinal Plant Database (Sample Entries)

To support the conservation assessment of medicinal plants, a reference database was compiled linking botanical names, local names, primary uses, conservation status, and photo sources. This table format enables the RCBA Guide to remain lightweight while providing users with direct access to reliable plant images and references through online databases, such as the Zimbabwe Flora, Plants of the World Online (POWO), and the *IUCN*.

The sample entries below illustrate the database's structure. The full table of 250 species is provided as a supplementary Excel file.

Medicinal Plant Database

Scientific Name (Spp)	Local Name (Shona)	English Name	Photo Reference	Date Accessed	Database Source
<i>Mimusops zeyheri</i> <i>var. laurifolia</i> Engl	Hlatsva/ Chechete	Red milkwood	https://www.zimbabweflora.co.zw/speciesdata/images/14/143790-5-t.jpg	9/26/2025	Zimbabwe Flora
<i>Parinari</i> <i>curatellifolia</i> <i>Planch. ex Benth</i>	Mushumwi	Hissing tree, Mobola plum	https://www.zimbabweflora.co.zw/speciesdata/images/12/125510-1-t.jpg	9/26/2025	Zimbabwe Flora
<i>Piliostigma</i> <i>thonningii</i> <i>(Schumach). Milne-Redh</i>	Musekesa	Monkey bread, Camel's foot tree	https://www.zimbabweflora.co.zw/speciesdata/images/12/126830-3-t.jpg	9/26/2025	Zimbabwe Flora
<i>Salvadora persica</i> L	Dhungulu pokwe	Mustard tree/Arak	https://www.zimbabweflora.co.zw/speciesdata/images/14/144280-8-t.jpg	9/26/2025	Zimbabwe Flora
<i>Sclerocarya birrea</i> <i>(A. Rich)</i>	Mapfaru/ Marufa/ Ukanyi	Marula	https://www.zimbabweflora.co.zw/speciesdata/images/13/136510-1-t.jpg	9/26/2025	Zimbabwe Flora
<i>Strychnos</i> <i>madagascariensis</i> <i>Poir</i>	Mukwakwa	Black monkey orange	https://www.zimbabweflora.co.zw/speciesdata/images/14/144380-1-t.jpg	9/26/2025	Zimbabwe Flora

<i>Strychnos madagascariensis</i> Spreng, ex Baker	Mutamba	Shiny-leaved monkey orange	https://www.zimbabweflora.co.zw/speciesdata/images/14/144380-16-t.jpg	9/26/2025	Zimbabwe Flora
<i>Uapaca Kirkiana</i> Mull.Arg	Mushuku	Wild loquat	https://www.zimbabweflora.co.zw/speciesdata/images/13/134580-1-t.jpg	9/26/2025	Zimbabwe Flora
<i>Ximenia americana</i> L.	Munhengeni	Small sour-plum	https://storage.googleapis.com/powop-assets/PPA/3001_3025/h3023g_fullsize.jpg	9/26/2025	POWO
<i>Commiphora schlechteri</i> Engl.	Mukwendekwen de & Munyera	Glossy-leaved corkwood	https://www.zimbabweflora.co.zw/speciesdata/images/17/171590-1-t.jpg	9/26/2025	Zimbabwe Flora
<i>Lannea discolor</i> (Sond.) Engl.	Mushamba	Tree grape, Live Long	https://www.zimbabweflora.co.zw/speciesdata/images/13/136520-1-t.jpg	9/26/2025	Zimbabwe Flora
<i>Searsia chirindensis</i> (Baker f.) Moffett	Mubikasadza, Mutsodzo	Red currant rhus	https://www.zimbabweflora.co.zw/speciesdata/images/13/136660-1-t.jpg	9/26/2025	Zimbabwe Flora
<i>Searsia lancea</i> (L.f) F. A. Barkley	Mufokosiana	Bastard willow, African sumac, Willow rhus	https://www.zimbabweflora.co.zw/speciesdata/images/13/136700-1-t.jpg	9/26/2025	Zimbabwe Flora
<i>Searsia pyroides</i> (Burch.) Moffett	Mufokosiana	Common wild currant,	https://www.zimbabweflora.co.zw/speciesdata/images/13/136790-1-t.jpg	9/26/2025	Zimbabwe Flora
<i>Khaya anthotheca</i>	Mubarwa	African Mahogany	https://www.zimbabweflora.co.zw/speciesdata/images/13/133440-2-t.jpg	9/26/2025	Zimbabwe Flora
<i>Allophylus chirindensis</i>	Muti unotunga mbeva	Lowveld false currant.	https://d2seqvvy3b8p2.cloudfront.net/911e47623feff6abc12adbcbfb94a85a.jpg	9/26/2025	POWO

<i>Bersama swynnertonii</i>	No information	Bersama swynnertonii	https://www.zimbabweflora.co.zw/speciesdata/images/13/137580-1-t.jpg	9/26/2025	Zimbabwe Flora
<i>Encephalartos concinnus</i>	No information	Runde cycad	https://www.zimbabweflora.co.zw/speciesdata/images/10/102940-3-t.jpg	9/26/2025	Zimbabwe Flora
<i>Lovoa swynnertonii</i>	Muwawa	Brown Mahogany	https://inaturalist-open-data.s3.amazonaws.com/photos/1932802/square.JPG	9/26/2025	IUCN Red List
<i>Euphorbia lividiflora</i>	No information	Euphorbia lividiflora	https://www.zimbabweflora.co.zw/speciesdata/images/13/136120-9-t.jpg	9/26/2025	Zimbabwe Flora
<i>Vitellariopsis ferruginea</i>	Muunga or Muhunga	Vitellariopsis ferruginea	https://www.zimbabweflora.co.zw/speciesdata/images/14/143830-4-t.jpg	9/26/2025	Zimbabwe Flora
<i>Dichrostachys cinerea</i>	Mupangara	Sicklebush	https://www.zimbabweflora.co.zw/speciesdata/images/12/126320-2-t.jpg	9/26/2025	Zimbabwe Flora
<i>Boscia albitrunca</i>	Mugaragora	Shepherd's Tree	https://www.zimbabweflora.co.zw/speciesdata/images/12/124480-1-t.jpg	9/26/2025	Zimbabwe Flora
<i>Azadirachta indica</i>	Mukundanyoka	Neem	https://www.zimbabweflora.co.zw/speciesdata/images/18/185120-1-t.jpg	9/26/2025	Zimbabwe Flora
<i>Combretum imberbe</i>	Mutsviri	Leadwood	https://www.zimbabweflora.co.zw/speciesdata/images/14/141940-1-t.jpg	9/26/2025	Zimbabwe Flora
<i>Zingiber officinale Roscoe</i>	Tsangamidzi	Ginger	https://storage.googleapis.com/powop-assets/kew_profiles/PPCONT_009116_fullsize.jpg	9/26/2025	POWO
<i>Lantana rugosa (camara) Thunb.</i>	Ubuhobe, Mubanda	Small lantana	https://www.zimbabweflora.co.zw/speciesdata/images/14/148650-2-t.jpg	9/26/2025	Zimbabwe Flora

<i>Sclerocarya birrea</i>	Mupfura, Mufuna, Mushomo	Marula	https://www.zimbabweflora.co.zw/speciesdata/images/13/136510-1-t.jpg	9/26/2025	Zimbabwe Flora
<i>Adansonia digitata</i> L	Muwu/ Mabuwu	Baobab Tree	https://www.zimbabweflora.co.zw/speciesdata/images/13/139770-3-t.jpg	9/26/2025	Zimbabwe Flora
<i>Adenia gummifera</i> (Harv.) Harms	Deveramvumi, Dovoza, Muboori Muhore	Monkey rope, Snake climber	https://www.zimbabweflora.co.zw/speciesdata/images/14/141030-2-t.jpg	9/26/2025	Zimbabwe Flora
<i>Aloe globuligemma</i> Pole Evans	Gavakava	Knob Aloe	https://d2seqvvy3b8p2.cloudfront.net/c77879c07af59793a3b57e1f65bf21c3.jpg	9/26/2025	POWO
<i>Annona stenophylla</i> Engl. & Diels subsp. <i>nana</i> (Exell) N. Robson	Muroro	Dwarf custard- apple	https://www.zimbabweflora.co.zw/speciesdata/images/12/123920-1-t.jpg	9/26/2025	Zimbabwe Flora
<i>Bauhinia</i> <i>fassoglensis</i> Schweinf.	Gwangwandiza, Mubopo, Mudamura, Mutukutupasi	Creeping bauhinia, Marama bean, Tamani berry	https://www.zimbabweflora.co.zw/speciesdata/images/12/126840-10-t.jpg	9/26/2025	Zimbabwe Flora
<i>Caralluma</i> spp	Chizezepasi	Caralluma	https://d2seqvvy3b8p2.cloudfront.net/8503cb391a83470cc9d2fa37c1b491ae.jpg	9/26/2025	POWO
<i>Carica papaya</i> L.	Mupopo	Melon-tree Papaya Pawpaw	https://www.zimbabweflora.co.zw/speciesdata/images/16/164730-2-t.jpg	9/26/2025	Zimbabwe Flora

<i>Cleodendrum ternatum</i> Schinz	Mutsakatadza, Umalanjana, Umqotshanja (Ndebele)	Dwarf cat's whiskers	https://www.zimbabweflora.co.zw/speciesdata/images/14/149050-1-t.jpg	9/26/2025	Zimbabwe Flora
<i>Cissampelos mucronata</i> A. Rich.	Nyakuta, Ruzambu	Hairy heartleaf/ Heart-leaved vine	https://www.zimbabweflora.co.zw/speciesdata/images/12/123670-1-t.jpg	9/26/2025	Zimbabwe Flora
<i>Combretum platypetalum</i> Laws. subsp. <i>oatesii</i> (Rolfe) Exell	Bepu	Dwarf red combretum, red wings	https://www.zimbabweflora.co.zw/speciesdata/images/14/142030-1-t.jpg	9/26/2025	Zimbabwe Flora
<i>Crabbea cirsioides</i> (Nees)	Mutudza and Mutunguru	Prickle Head, Snake Climber	https://www.zimbabweflora.co.zw/speciesdata/images/15/153470-1-t.jpg	9/26/2025	Zimbabwe Flora
<i>Crinum macowanii</i> Baker	Dururu	Common vlel-lily	https://www.zimbabweflora.co.zw/speciesdata/images/11/115020-1-t.jpg	9/26/2025	Zimbabwe Flora
<i>Cryptolepis oblongifolia</i> Schltr. <i>Ectadiopsis oblongifolia</i> (Meisn.) Bullock	Bokhoring	Red-stemmed milk rope	https://www.zimbabweflora.co.zw/speciesdata/images/14/145320-7-t.jpg	9/26/2025	Zimbabwe Flora
<i>Datura stramonium</i> L.	Chowa	Jimson weed, Thorn apple	https://www.zimbabweflora.co.zw/speciesdata/images/15/150830-4-t.jpg	9/26/2025	Zimbabwe Flora
<i>Dicoma anomala</i> Sond	Chifumuro	Fever bush, stomach bush	https://www.zimbabweflora.co.zw/speciesdata/images/16/161880-2-t.jpg	9/26/2025	Zimbabwe Flora

<i>Elaeodendron matabelicum</i> Loes.	Murunganyama, Murungamunya	Condiment saffron	https://www.zimbabweflora.co.zw/speciesdata/images/13/137050-1-t.jpg	9/26/2025	Zimbabwe Flora
<i>Entandoragma caudatum</i> (Sprague) Sprague	Mubhanana	Wooden banana	https://www.zimbabweflora.co.zw/speciesdata/images/13/133450-3-t.jpg	9/26/2025	Zimbabwe Flora
<i>Grewia bicolor</i> Juss.	Mutetwa Mutongoro	White-leaved raisin	https://www.zimbabweflora.co.zw/speciesdata/images/13/138390-1-t.jpg	9/26/2025	Zimbabwe Flora
<i>Hibiscus cannabinus</i> L.	Sosoori	Decan hemp Kenaf, Wild stockrose	https://www.zimbabweflora.co.zw/speciesdata/images/13/139320-20-t.jpg	9/26/2025	Zimbabwe Flora
<i>Hyparrhenia filipendula</i> (Hochst.) Stapf	Jeni, Murosha	Tambookie grass	https://d2seqvvy3b8p2.cloudfront.net/a50a6b5a8d10f13d2e7da1144f8d8c5c.jpg	9/26/2025	POWO
<i>Indigofera arrecta</i> A. Rich.	Mukaranga	African indigo	https://www.zimbabweflora.co.zw/speciesdata/images/12/128630-2-t.jpg	9/26/2025	Zimbabwe Flora
<i>Inula glomerata</i> Oliv. & Hiern	Zeveratsuro, Zheveratsuro	Hare's ears	https://www.zimbabweflora.co.zw/speciesdata/images/16/160010-2-t.jpg	9/26/2025	Zimbabwe Flora
<i>Lannea edulis</i> (Sond.) Engl	Mutsambatsi	Wild grape lish	https://www.zimbabweflora.co.zw/speciesdata/images/13/136530-1-t.jpg	9/26/2025	Zimbabwe Flora
<i>Pleurostyliia africana</i> Loes.		Northern coffee-pear	https://www.zimbabweflora.co.zw/speciesdata/images/13/137100-2-t.jpg	9/26/2025	Zimbabwe Flora
<i>Persicaria decipiens</i> (R. Br.) K.L. Wilson		Snake-root, Slender Knotweed	https://www.zimbabweflora.co.zw/speciesdata/images/12/121850-1-t.jpg	9/26/2025	Zimbabwe Flora

<i>Sansevieria hyacinthoides</i> (L.) Druce	Masavamhanda	Mother-in-law's tongue, Pile's root, Bowstring hemp	https://www.zimbabweflora.co.zw/speciesdata/images/11/114680-1-t.jpg	9/26/2025	Zimbabwe Flora
<i>Schkuhria pinnata</i> (Lam) Thell	Ruhwahwa	Dwarf marigold	https://www.zimbabweflora.co.zw/speciesdata/images/16/160770-2-t.jpg	9/26/2025	Zimbabwe Flora
<i>Securidaca longipedunculata</i> Fresen.	Mutungahove, Chipvufanana, Mufufu, Munyapunyapu, Munyazvirombo, Mutangeni	Violet tree	https://www.zimbabweflora.co.zw/speciesdata/images/13/133960-1-t.jpg	9/26/2025	Zimbabwe Flora
<i>Senecio latifolius</i> DC.	Chirema, Mudonhi	Noxious ragwort lish	https://www.zimbabweflora.co.zw/speciesdata/images/16/161230-2-t.jpg	9/26/2025	Zimbabwe Flora
<i>Sphedamnocarpus pruriens</i> (A. Juss) Szyszyl.	Muchambati, Muchati	Canary nettle, Lesser moth-fruit creeper	https://www.zimbabweflora.co.zw/speciesdata/images/13/133640-3-t.jpg	9/26/2025	Zimbabwe Flora
<i>Terminalia brachstemma</i> Welw. ex Hiern	Mukonono, Mususu, Mangwe, Mutabvu	Kalahari cluster-leaf	https://www.zimbabweflora.co.zw/speciesdata/images/14/142130-1-t.jpg	9/26/2025	Zimbabwe Flora
<i>Trichodesma ambacense</i> Welw.	Gwiramwaka	Blue Bells of St Mary's	https://www.zimbabweflora.co.zw/speciesdata/images/14/148440-1-t.jpg	9/26/2025	Zimbabwe Flora

<i>subsp. hockii</i> (DeWild) Brummitt					
<i>Turrea nilotica</i> Kotschy & Peyr.	Chipindura, Mudyakuwe	Bushveld honey suckle tree, Miombo honey suckle tree, small mahogany	https://www.zimbabweflora.co.zw/speciesdata/images/13/133490-1-t.jpg	9/26/2025	Zimbabwe Flora
<i>Vernonia amygdalina</i> Del	Dembezeko, Musikavakadzi, Muzhozho, Nyareru	Tree Vernonia, Bitter tea vernonia	https://www.zimbabweflora.co.zw/speciesdata/images/15/158120-1-t.jpg	9/26/2025	Zimbabwe Flora
<i>Vernonia glabra</i> (Steetz) Vatke	Murosha	Cornflower vernonia	https://www.zimbabweflora.co.zw/speciesdata/images/15/158300-3-t.jpg	9/26/2025	Zimbabwe Flora
<i>Xeroderris stuhlmannii</i> (Taub.) Mendonca & E.P. Sousa	Muchemavanhu, Mudzugu, Mumwambizi, Muriravanhu, Murumanyama	Wing pod	https://www.zimbabweflora.co.zw/speciesdata/images/13/131220-5-t.jpg	9/26/2025	Zimbabwe Flora
<i>Ximenia caffra</i> Sond	Munhengeni, Mutsvanzva	Sourplum	https://www.zimbabweflora.co.zw/speciesdata/images/12/121590-1-t.jpg	9/26/2025	Zimbabwe Flora
<i>Zanha africana</i> (Radlk) Excell.	Muchenya	Velvet-fruit zanha	https://www.zimbabweflora.co.zw/speciesdata/images/13/137510-2-t.jpg	9/26/2025	Zimbabwe Flora

<i>Zornia glochidiata</i> <i>C. Rchb. ex DC.</i>	Mungurawu, Dengo, Dengeere	Burb Caterpillar Bean	https://www.zimbabweflora.co.zw/speciesdata/images/13/130740-2-t.jpg	9/26/2025	Zimbabwe Flora
<i>Phyllogeiton</i> <i>discolor (Klotzsch)</i> <i>Herzog</i>	Munyi	Bird plum	https://www.zimbabweflora.co.zw/speciesdata/images/13/137700-2-t.jpg	9/26/2025	Zimbabwe Flora
<i>Hyphaene</i> <i>pesersiana Klotzsch</i> <i>ex Mart</i>	Murara	Illala palm	https://www.zimbabweflora.co.zw/speciesdata/images/11/111940-1.jpg	9/26/2025	Zimbabwe Flora
<i>Thepesia garckeana</i> <i>F. Hoffin</i>	Mutohwe	Snot apple	https://www.zimbabweflora.co.zw/speciesdata/images/13/139720-4-t.jpg	9/26/2025	Zimbabwe Flora
<i>Xantherocerus</i> <i>zambesiaca (Baker)</i> <i>Dumaz le-Grand</i>	Muhlaru/mushar o	Nyala berry	https://www.zimbabweflora.co.zw/speciesdata/images/13/131230-1-t.jpg	9/26/2025	Zimbabwe Flora
<i>Ximenia americana</i> <i>caffra Sond</i>	Munhengeni	Large sour-plum	https://www.zimbabweflora.co.zw/speciesdata/images/12/121580-6-t.jpg	9/26/2025	Zimbabwe Flora
<i>Barleria spinulosa</i> <i>Klotzsch</i>	No information	Spiny Barleria	https://www.zimbabweflora.co.zw/speciesdata/images/15/153710-1-t.jpg	9/26/2025	Zimbabwe Flora
<i>Lannea edulis</i> <i>(Sond.) Eng</i>	Intakubomvu (Ndebele), Mutsambatsi, Tsombori, Chizhenje,	Wild Grape	https://www.zimbabweflora.co.zw/speciesdata/images/13/136530-4-t.jpg	9/26/2025	Zimbabwe Flora

	Mugan'acha, Mupuri, Mushamba,				
<i>Tulbaghia leucantha</i> <i>Baker</i>	Mhondya	Wild Garlic	https://www.zimbabweflora.co.zw/speciesdata/images/11/115190-1-t.jpg	9/26/2025	Zimbabwe Flora
<i>Ocimum</i> <i>gratissimum</i>	Muchemedzamb uya	Wild basil /Scent Leaf	https://www.zimbabweflora.co.zw/speciesdata/images/15/150360-1-t.jpg	9/26/2025	Zimbabwe Flora
<i>Kigella africana</i>	Muvhumati	Sausage tree	https://www.zimbabweflora.co.zw/speciesdata/images/15/152450-2-t.jpg	9/26/2025	Zimbabwe Flora
<i>Sclerocarya birrea</i>	Mutsomo	Marula	https://www.zimbabweflora.co.zw/speciesdata/images/13/136510-2-t.jpg	9/26/2025	Zimbabwe Flora



Conservation Assessment Guide: Medicinal Plants in Zimbabwe

A Framework for Assessing Conservation Status Through Rapid Community-Based Method

About This Guide

This guide is intended to provide conservation practitioners, NGOs, and research partners with a systematic framework for assessing the conservation status of medicinal plants in Zimbabwe. While the methodology presented is universally applicable, the case studies and examples are drawn from work in the Mwenezi District of Southern Zimbabwe.

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LIST OF ABBREVIATIONS

EMA	Environmental Management Agency (Zimbabwe)
ESF	Environmental Security Framework
FPIC	Free, Prior, and Informed Consent
NGO	Non-Governmental Organization
RCBA	Rapid Community-Based Assessment
SI 61	Statutory Instrument 61 of 2009 (Zimbabwe)
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples

QUICK START: USING THIS GUIDE

Who is this guide for?

NGOs, researchers, and conservation organizations assessing the conservation status of medicinal plants in partnership with communities.

What does this guide do?

Provides a community-led rapid assessment framework to identify which medicinal plants need conservation attention.

The assessment has four stages (general discussion → habitat → species → locations) that communities can progress through or stop at any point.

How long does it take?

- Most common: 1 day (Stage 1 only - 60-70% of assessments)
- If community continues: +1 day per additional stage
- Maximum: 2-5 days (if community completes all 4 stages)

What's the output?

Priority list of medicinal plants and/or habitats needing conservation action, based on community assessment and validated by communities.

Key principles:

- ✓ Legal compliance FIRST (Section 11)
- ✓ Communities control what they share
- ✓ All stopping points are successful outcomes
- ✓ Rapid assessment (not a comprehensive survey)

Where to start:

- Understanding the approach → Section 10.0
- Ready for fieldwork → Section 13.0 (Four-Stage Process)
- Consent forms → Appendix V
- Field scripts → Appendix IV

Most important section:

Section 13.0 (Four-Stage Process) - Read this first to understand the assessment approach and decision tree.

Note: This methodology has not been field-tested. Follow Section 17.0 pilot testing protocol.

PHASE 2: RAPID COMMUNITY-BASED ASSESSMENT

10.0 INTRODUCTION TO COMMUNITY-BASED ASSESSMENT

Terminology Note: Throughout this guide, the terms 'Stage 1,' 'Stage 2,' 'Stage 3,' and 'Stage 4' refer to the four stages of this Community-Based Assessment. References to the preceding Secondary Data Assessment (the companion workbook) will always use its full title or the abbreviation 'SDA.' If you are reading this guide without first completing the Secondary Data Assessment, see Section 19.0 for guidance.

Audience Note: This guide is designed for NGOs, conservation practitioners, and assessment teams working with communities to support community-led medicinal plant assessments. While communities lead and control the assessment process, external teams act as facilitators, supporting dialogue and decision-making rather than conducting research or extracting data. The guide provides step-by-step support to help facilitators uphold ethical, community-driven assessment practices.

Development Status Note: This rapid assessment guide has been developed through literature review, stakeholder consultation, and legal analysis, but has not undergone field testing. A pilot testing protocol is provided in Section 17.0 for organizations planning to implement and validate this methodology. Implementers should approach this as a theoretical framework requiring adaptation and field validation in their specific contexts.

What This Phase Offers: Phase 2 creates space for communities to share their perspectives and observations about medicinal plants in their area. Where Secondary Data Assessment (SDA) identified topics and questions from existing literature and databases, Phase 2 supports communities in determining which topics matter to them and what responses, if any, are appropriate.

Important Reframing: This phase facilitates community dialogue about observations and experiences that communities choose to share. It allows communities to identify conservation concerns from their perspective and determine their own priorities.

Data Repatriation Opportunity: The Secondary Data Assessment (SDA) may have identified information originally collected from communities through previous studies. Phase 2 provides an opportunity to return this information to communities, allowing them to assess its current relevance and decide whether and how to use it to support their own priorities and projects.

This is a RAPID assessment designed to answer ONE question: Are there conservation issues with medicinal plants that the community wants to address?

Why This is Called "Rapid": This assessment is rapid in a specific sense, the time communities spend in active discussion and facilitated sessions is short compared to comprehensive ethnobotanical surveys. "Rapid" refers to **field time only** and does not mean the full project can be completed in 2–5 calendar days.

- **Field/discussion time:** Stage 1 alone typically takes 1 day (a single workshop session). If communities choose to continue, each additional stage adds 1–2 field days. The maximum total field time across all four stages is 2–5 days.

- **Total elapsed time is longer:** Stages 2, 3, and 4 each require new legal permissions or permits that must be obtained before proceeding. Permit processing timelines vary, plan for at least **2–4 weeks between stage** where permits are required (see **Section 11.0**).
- **Total project duration (if all stages completed):** Approximately **2–4 months**, determined by community decisions and permit processing. Most assessments (60–70%) conclude at Stage 1 in a single day, this is a successful outcome.
- **Communities decide stage by stage:** No subsequent stage should be planned or assumed until the previous stage is complete, and the community has chosen to continue. The overall project timeline is community-driven, not predetermined.
- **Comparison point:** Even a full four-stage RCBA, including 2–4 weeks of permit processing between stages, typically takes **2–4 months**. This is significantly shorter and less extractive than comprehensive ethnobotanical surveys, which take months to years.

Field Days:

- Stage 1 only: **1 day** (*most common outcome — 60–70% of assessments*)
- All four stages: **2–5 days** total field time
- *Field days do not include permit processing time between stages*

Total Project Timeline: Variable and community-driven, typically **1 day** (Stage 1 only) to **2–4 months** (all four stages, including permit processing).

***Typical Reality:** Most assessments conclude after Stage 1 (1 day). This is a successful and complete outcome, not a partial result.*

10.1 Core Principles

This assessment is built on five principles that guide all stages:

1. **Community-Led Assessment:** Communities determine what topics to discuss, which observations to share, what priorities to identify, and what responses (if any) are appropriate. The assessment team's role is to facilitate and support, not to validate.
2. **Progressive Trust-Building:** Each stage requires a new signed consent form before proceeding (Forms A, B, C/E, and D respectively, see Section 11.2 and Appendix V). Information sharing increases only if communities choose to continue. Communities may stop at any point, and this decision is respected without question.
3. **Valid Stopping Point:** All stages are optional. Stopping at any point represents a successful outcome, not a partial or failed assessment.
4. **Data Repatriation:** External information from the Secondary Data Assessment is shared with communities for their evaluation and use, not used to validate external findings or fill researcher knowledge gaps.
5. **Legal Protection:** Full compliance with traditional knowledge protection laws is mandatory at every step of the assessment. Legal requirements exist to protect communities, not to facilitate external research

Note on Legal Requirements: The legal compliance requirements discussed in **Section 11.0** reflect Zimbabwe's legal framework under Statutory Instrument 61 of 2009. Organizations working in other countries should refer to **Section 19.0** for guidance on adapting these requirements to their local legal context. All assessment activities must comply with applicable traditional knowledge protection laws and genetic resource access regulations in your

10.2 Understanding the Assessment Structure

What This Assessment Is:

- Community-led dialogue using the Environmental Security Framework (ESF) (Davidson-Hunt *et al.*, 2016) to organize observations that communities choose to share.
- A process where communities decide at each step whether to continue, what to discuss, and what to document.
- Designed to provide communities with enough information to determine if conservation issues exist and whether they wish to respond.

What This Assessment Is Not:

- A comprehensive ethnobotanical survey, detailed population study, or external validation exercise
- Data collection designed to fill the researcher's knowledge gaps
- A process of extracting information from communities for external use

What Success Looks Like: All the following represent successful outcomes, regardless of which stage communities reach:

Community Decision	Why This Represents Success
No conservation issues identified	Community exercised autonomy: resources can focus elsewhere
Issues identified, assessment stops at Stage 1	Community chose appropriate boundaries; valuable information obtained
Assessment continues through Stage 2 or 3	Community has information to guide their own conservation priorities
Assessment stops before Stage 4	Community protected sensitive information while providing valuable context
Community stops at any stage but identifies specific concerns	Assessment generated actionable priorities: community can seek targeted support from NGOs or government for those specific issues.

***Note on Next Steps:** When a community stops before completing all stages, this does not mean the process ends without value. Communities that identify specific conservation concerns, even in early stages, can use those findings to seek targeted support from NGOs, government agencies, or conservation organizations for the issues they have identified. The guide does not prescribe what happens after assessment; that decision belongs to the community.*

10.3 Assessment Stages Overview

The assessment follows a fixed sequence, with communities deciding at each step whether to continue. Stages cannot be reordered or skipped; each stage builds on the consent, legal permissions, and community decisions established in the previous stage. Communities may stop at any point but must progress through stages in order if they choose to continue. For the complete sequence rules and decision framework, see **Section 13.1**.

Stage 1: General Discussion

- Central question: Are there conservation concerns?
- Expected outcome: Yes or No answer
- Typical duration: 2-3 hours
- Decision point: Does the community want to discuss specific habitats?

Stage 2: Habitat Discussion

- When it occurs: If concerns exist AND the community chooses to continue
- Central question: Where do concerns occur?
- Expected outcome: Priority habitats identified (if any)
- Typical duration: 3-4 hours
- Decision point: Does the community want to discuss specific plant species?

Stage 3: Species Discussion

- When it occurs: If priority habitats are identified AND the community chooses to continue
- Central question: Which specific plants face concerns?
- Expected outcome: Priority species identified (if any)
- Typical duration: Varies by method chosen (2-4 hours)
- Decision point: Does the community want to document locations?

Stage 4: Location Mapping

- When it occurs: If the priority species is identified AND the community chooses to continue
- Central question: Where exactly are these plants found?
- Expected outcome: Community-created map (if community approves)
- Typical duration: 3-5 hours
- This stage has the highest legal requirements and sensitivity

Expected Patterns: Research on similar community-based assessments suggests that most assessments conclude at Stage 1 or 2 (approximately 60-90% of cases). This pattern is expected and provides valuable conservation information. See **Section 13.4** for the complete decision tree showing when communities typically choose to stop or continue.

10.4 Workshop-Informed Development

Development Context: This guide was developed through collaboration with Score Against Poverty, Environmental Management Agency (EMA), and Forestry Commission in Mwenezi District, Zimbabwe (July 2025; Figure 3).

What the Workshop Provided: Partner review and feedback on the draft rapid assessment methodology. The workshop participants, including NGO practitioners, government representatives, and research partners, reviewed the proposed approach and provided input on:

- Cultural appropriateness for Zimbabwe context
- Practical feasibility for NGO implementation
- Legal compliance requirements under SI 61 of 2009
- Clarity and usability of proposed procedures

No field implementation occurred. The methodology was discussed theoretically to gather stakeholder input for refinement.

What Requires Field Testing: ALL stages of this rapid assessment (Stages 1-4) represent theoretical frameworks requiring field validation before widespread adoption. This guide is based on:

- Literature review of community-based conservation methods
- Partner consultation with conservation practitioners
- Legal framework analysis (SI 61 of 2009)
- Best practices from participatory mapping and traditional knowledge documentation

Note on Adaptation: While this guide was developed in Zimbabwe, Section 19.0 provides guidance on adapting the approach to other legal and cultural contexts. The core principles, community-led assessment, progressive trust-building, valid stopping point, data repatriation, legal protection, remain constant across contexts, while specific procedures may be adapted to local requirements. Organizations implementing this methodology should follow the pilot testing protocol in Section 17.0 and document lessons learned.

Before seeking consent: Communities must understand the potential benefits and limitations of participation before any consent forms are introduced. This is a mandatory element of the informed consent process, see **Section 11.0** and **Section 18.0 (Community Benefits Framework)**.

Figure 3: RCBA methodology review workshop with SCORE Against Poverty staff and Forestry Commission representatives in Mwenezi (July 2025). Partners reviewed the draft guide and provided feedback on cultural appropriateness, legal compliance, and practical implementation considerations.



11.0 LEGAL COMPLIANCE - DO THIS FIRST

MANDATORY: Complete ALL legal requirements BEFORE contacting any community.

Why These Requirements Exist: Legal compliance requirements protect communities and their traditional knowledge. These protections exist under Zimbabwe law (specifically SI 61 of 2009 (Government of Zimbabwe, 2009), which implements the Environmental Management Act's provisions on genetic resources and traditional knowledge).

For implementers working in other countries, **Section 19.3** provides guidance on identifying equivalent legal frameworks in your context. The principle remains the same: communities must have full legal protection before any assessment activities begin.

Purpose of Legal Compliance: Legal compliance enables communities to participate with full legal protection and understanding of their rights. The assessment team's responsibility is to ensure communities can exercise these rights effectively, not merely to obtain required permits.

11.1 Before You Start

Required Actions (Zimbabwe Context):

These steps must be completed before any community contact:

1. Contact the Environmental Management Agency (EMA)
2. Obtain Authorization Under SI 61 of 2009
3. Contact Genetic Resources Protection Committee
4. Prepare Legal Documentation
5. Train Your Team on Legal Requirements

For Non-Zimbabwe Contexts:

See **Section 19.3** for guidance on identifying and complying with equivalent legal frameworks in your country or region. Key elements to identify:

- Laws protecting traditional knowledge
- Requirements for community consent
- Genetic resources access regulations
- Benefit-sharing provisions (if applicable)

Implementation Note: Legal compliance is operationalized through the Free, Prior, and Informed Consent (FPIC) process described in **Section 14.0**. This is not a one-time checkpoint but an ongoing responsibility throughout the assessment. At each stage, the assessment team supports communities in understanding their legal rights and how to exercise them.

11.2 Stage-Specific Legal Requirements

Note on Legal Requirements (Zimbabwe Context): The legal requirements below reflect Zimbabwe's SI 61 (2009) framework. Organizations working in other contexts should use this table as a model and substitute local legal equivalents — see Section 18.0 for adaptation guidance.

Note on Community Rights: At all stages, communities retain the right to say NO, stop at any time, skip questions, and withdraw information previously shared. These rights apply universally across all stages and are not stage specific

Stage	What Changes	Additional Legal Requirements	Forms and Signatures Required	Community Rights Focus
Stage 1	General discussion only	- Community consent - No permits required	Form A (before) Form F (after). Minimum signatures: 3 community members must sign Form A for consent to be valid. Additional signatures welcomed, no maximum.	- Community owns all knowledge shared - Right to say NO at any point - Right to stop at any time - Right to skip any question <i>These rights apply at all stages.</i>
Stage 2	Habitat types discussed + Rough sketch mapping only <i>(Note: Stage 2 may involve rough sketch maps of habitat areas only, precise GPS)</i>	- Community consent - Sacred sites protection - Photo permissions (if sketch mapping occurs)	Form B (before) Form G (after) Minimum signatures: 5 community members must sign	- Right to choose discussion-only (no mapping) - Right to control who sees any sketch maps - Right to designate sacred sites as off-limits - Right to revoke permissions at any time

Stage	What Changes	Additional Legal Requirements	Forms and Signatures Required	Community Rights Focus
	<i>location mapping occurs in Stage 4 only)</i>		Form B for consent to be valid. Additional signatures welcomed, welcomed. There is no maximum.	
Stage 3	Species names shared Knowledge holder interviews	• Community consent • Individual consent (MANDATORY) • Research permits are likely required • Check EMA/Forestry before proceeding	Form C before (group) Form E individual Form H after Minimum signatures: 5 knowledge holders must each sign Form E individually for Stage 3 to proceed. Additional participants may also sign, no maximum.	• Right to choose anonymous or attributed documentation • Right to set boundaries on knowledge shared • Right to withdraw information after giving • Right to benefit-sharing if commercial use develops

Stage	What Changes	Additional Requirements	Legal	Forms and Signatures Required	Community Rights Focus
Stage 4	Specific locations mapped (GPS coordinates)	FULL compliance, do not proceed if any requirement is uncertain • Community consent • Individual consent (MANDATORY) • EMA approval required • Benefit-sharing agreement • Legal officer verification required	61	Form D before (community) + Form E before (each individual) · Form I after Minimum signatures: 10 community members must sign for consent to be valid. Form E signed by every individual participant. Additional signatures welcomed, no maximum.	• Right to control all precise location map sharing • Right to designate sacred sites as off-limits • Right to revoke map permissions at any time • Right to legal representation if commercial use develops

Optional External Observers: With explicit community consent, organizations may invite external observers such as EMA representatives, institutional ethics monitors, or partner NGO staff to observe the process for learning or oversight purposes. Their presence must be disclosed to and approved by the community before the session begins. They may not participate in facilitation or community dialogue

Legal Uncertainty Note (Stage 1): Permit requirements for facilitated general discussions vary within Zimbabwe depending on district, land tenure type, and activity scope. Organizations working outside Zimbabwe should consult their local equivalent to EMA before Stage 1 — see **Section 19.0** for adaptation guidance.

Before Proceeding to Each Stage:

1. **Stage 2:** If creating maps, confirm permit requirements with EMA. If uncertain, conduct as discussion-only.
2. **Stage 3:** Contact EMA with protocol. Request written confirmation of permits needed. Budget 2-4 weeks for processing. Ensure communities understand legal protections and rights.
3. **Stage 4:** Contact EMA and legal officer. Verify FULL SI 61 compliance. If ANY doubts, DO NOT PROCEED.

11.3 What Communities Control Under SI 61

Communities have the legal right to:

- Say NO to assessment completely
- Choose what information to share
- Change their mind anytime
- Remove information they shared
- Receive benefits if knowledge used commercially
- Own their traditional knowledge

Assessment Team Responsibility: Communities should be advised of risks before proceeding to document plant locations. Assess what rights the community holds to harvest locations and plants themselves. If rights are unclear or government doesn't uphold them, advise community of risks. At minimum, information should be retained by community and not made public. **If risks cannot be mitigated, locations should not be documented.**

11.4 What's Illegal Without Authorization

Never do these without proper authorization:

- Document traditional knowledge without community approval
- Collect plant samples without permits
- Use traditional knowledge commercially without benefit-sharing
- Ignore when communities say NO

Penalties: Criminal charges under SI 61 of 2009

11.5 If Commercial Use Develops

If traditional knowledge shared leads to commercial use:

- Communities **MUST** receive fair compensation (legal requirement)
- Benefit-sharing agreements made **BEFORE** using knowledge
- Communities control approval of all commercial applications
- Communities negotiate terms of benefit-sharing
- Assessment team ensures communities have legal support for negotiations

11.6 Understanding Location Documentation Risks (Stage 4)

Before communities agree to Stage 4, they must fully understand the following risks associated with documenting precise plant locations. Facilitators must communicate all these clearly before seeking consent:

- **GPS precision is permanent** — once coordinates are recorded digitally, the data is exact and cannot be made approximate again
- **Data access risks** — digital location data can be accessed by third parties through device theft, hacking, or institutional data breaches
- **Unauthorized harvesting** — precise plant locations could enable outsiders to harvest plants without community permission
- **Loss of practical control** — once location data exists digitally, communities may lose the ability to fully control who accesses it over time
- **Legal exposure** — documenting locations of protected or commercially valuable species may create legal complications for communities

Communities must explicitly confirm they understand and accept these risks before Stage 4 begins. If any community member has unresolved concerns, Stage 4 should not proceed.

11.7 Data Management Requirements

All community information collected during the assessment must be managed as follows:

Storage: Digital files on password-protected devices only. Physical documents in locked storage. No personal devices or public cloud services without explicit community consent.

Access: Only team members named in the MOU may access community information. Maintain an access log.

Community Rights: Communities may request correction, deletion, or return of their information at any time. Assessment team must respond within 2 weeks and confirm any destruction in writing.

Sharing: No information shared beyond named partners without explicit written community consent.

After Assessment: Community receives all original documentation. Assessment team retains only copies the community has explicitly authorized.

12.0 BUILD YOUR ASSESSMENT TEAM

Your team should grow as the assessment progresses through stages. Don't assemble a large scientific team if you're only supporting community-led conversation.

REALITY CHECK: Most NGOs lack access to botanical experts, GIS specialists, or conservation scientists. You can still support effective assessment with a minimal core team. This guide assumes limited resources.

12.1 Core Team (Required from Start)

Minimum 3-4 people required:

Role	Primary Responsibility	Essential Skills	Can Combine With
Project Lead/Facilitator (MANDATORY)	Coordinates support for community-led assessment; manages FPIC implementation; supports communities in deciding when to proceed/stop	Listening, respecting boundaries, following community decisions; workshop facilitation	Legal Officer (if has legal knowledge)
Legal Compliance Officer (MANDATORY)	Ensures activities meet SI 61/equivalent requirements; monitors when permits are needed; can halt activities if protections are inadequate; advises the community on risks	Understanding of genetic resources laws; ability to explain legal rights to communities in an accessible language	Project Lead (if Project Lead has legal training)
Community Facilitators/Translators (MANDATORY)	Ensures community understands choices and rights in their own language; facilitates culturally appropriate dialogue	Fluency in local languages (Shona/Ndebele/Shangani for Zimbabwe); cultural knowledge; community trust	None - this must be a separate person
Community Advocate (MANDATORY)	Protects community interests; monitors that boundaries are respected; can stop the process if community interests are not respected	Appointed by the community - must be someone the community trusts completely	None - must be independent to protect the community

MINIMUM VIABLE TEAM: 3-4 people:

- Project Lead (with legal knowledge)
- Translator
- Community Advocate (community's choice)

Critical Principle: Team members are facilitators and supporters of community-led assessment, not researchers collecting data or experts validating community knowledge.

12.2 When to Add Additional Expertise (Progressive Team Building)

Don't bring everyone at once. Add expertise only when the assessment reaches stages needing it AND the community wants support. Most assessments never need additional expertise.

Match Team to Stage:

Stage	Minimum Team	Optional Additions	Can Proceed Without Specialists?	Rationale
Stage 1-2	Core team only (3-4 people)	None needed	Yes - Always	Facilitating discussion, not technical assessment. No plant identification needed. 60-90% of assessments stop here.
Stage 3	Core team	Local plant expert (to support community plant ID) Traditional healer advisor (if community approves)	Yes - Community knowledge is a primary source	External botanists are optional support, not requirements. Community knowledge holders are the most reliable source for plant identification.
Stage 4	Core team	GIS specialist (if the community chooses digital mapping) Botanist (if community requests verification) Conservation specialist (if the community wants external connections)	Yes - Paper maps created by communities work fine	Simple paper maps are sufficient for rapid assessment. Proceed with the core team supporting community-led mapping.

If specialists are unavailable: Don't delay or cancel the assessment. Your role is to facilitate community dialogue and support community decision-making, not to provide technical expertise. Communities are the experts on their plants and landscapes.

Cost Implications:

Scenario	Cost Implications	Notes
Core team only (Stages 1-2)	Minimal costs	2-3 days staff time, transport, workshop materials
Extended team (Stages 3-4)	Higher costs if hiring external experts	Consider daily rates for external specialists (e.g., botanists, GIS technicians) only if the community requests specialist support AND they are not already on your staff
Budget-Constrained Approach	Proceed with the core team	Support community-led assessment with the resources you have. Engage specialists later if conservation projects develop based on community-identified priorities.

Key Principle: Don't let budget constraints prevent you from supporting community assessment. Communities can effectively assess their own medicinal plants with facilitation support from a minimal core team. External expertise is an optional enhancement, not a requirement.

13.0 THE FOUR-STAGE ASSESSMENT PROCESS

This section outlines the progressive structure of the rapid assessment. Each stage builds trust while allowing communities to control what information they share.

13.1 Understanding the Sequence

13.1.1 You *CANNOT* skip stages. Trust builds progressively:

1. Start at Stage 1-Always begin here
2. Only proceed to Stage 2 if the community identifies topics for further discussion AND agrees to continue
3. Only proceed to Stage 3 if needed, AND the community agrees
4. Only proceed to Stage 4 if essential, AND the community agrees

Each stage requires fresh consent and reveals progressively more information only if communities choose to share it. Practically, this means a new signed community consent form must be obtained before each stage, verbal agreement to continue is not sufficient.

13.1.2 Why stages must follow this order:

The sequence from general discussion (Stage 1) to habitats (Stage 2) to species names (Stage 3) to GPS locations (Stage 4) is not arbitrary. Each Stage reveals progressively more sensitive information. General conservation concerns are the least sensitive, many communities are comfortable discussing whether plants are harder to find than before. Habitat types are moderately sensitive. Specific species names are more sensitive, since they identify what is commercially or culturally valuable. Exact GPS coordinates are the most sensitive of all, they could enable unauthorised harvesting or violate sacred site protections.

Communities cannot skip Stage 2 and go directly to Stage 3, nor can they reorder the stages, because each stage also builds the legal and consent foundation required for the next. Stage 4 requires full SI 61 compliance that depends on prior stages having established this groundwork. Stage 2 may involve rough sketch maps of general habitat areas only; precise GPS coordinate mapping is reserved for Stage 4.

13.2 How these Stages Work

Table 2: Stage Comparison Reference

This table provides a complete comparison across all four stages. Use it as a reference before fieldwork to understand how each stage differs, what it requires, and what to expect. Start at Stage 1 (left column) and move right only if the community chooses to continue.

Element	Stage 1	Stage 2	Stage 3	Stage 4
What's Discussed	General observations about medicinal plants	Locations or habitat types where changes were observed	Specific plant species affected	Exact sites with GPS coordinates
Information Shared	Broad trends (easier/harder to find plants)	"Near river," "Mountain areas," general zones	Plant names (local and scientific if known)	Precise locations, mapped sites, and coordinates
Documentation Level	Workshop notes, general themes, summary findings	Area descriptions, rough sketch maps of habitat areas only, precise GPS mapping occurs in Stage 4	Species lists, photographs, and identification notes	GPS coordinates, detailed maps, site documentation
Consent Required	Basic community consent (Form A)	Enhanced consent - location data (Form B)	High level - species-specific (Form C)	Maximum - precise locations (Form D)

Element	Stage 1	Stage 2	Stage 3	Stage 4
Legal Requirements	Community consent only: Form A (before) + Form F (after). No permits required	Form B (before) + Form G (after). Sacred sites protocols. Confirm permit requirements with EMA before proceeding	Form C (group) + Form E (individual, each participant) + Form H (after). Research permits likely required, verify with EMA/Forestry before proceeding	Form D (community) + Form E (individual, each participant) + Form I (after). ALL permits required and verified. EMA approval mandatory. Legal officer verification required: DO NOT PROCEED if any doubt
Typical Duration	3-4 hours (single workshop session)	+1 additional day	+1-2 additional days	+1-2 additional days
How Often Communities Stop Here	60-70% of assessments	20-25% of assessments	~10% of assessments	~5% complete all stages
Valid Stopping Condition	Community doesn't identify specific topics for further discussion	Community identifies general areas but prefers not to specify which plants	Community identifies species but not exact locations	Community chooses full documentation with precise locations, assessment complete at Stage 4 regardless
Assessment Team Role	Facilitate general discussion	Support area identification if requested	Assist with species identification if the community requests	Provide mapping support if the community requests

Element	Stage 1	Stage 2	Stage 3	Stage 4
Community Decides	What observations to share, whether to continue	Whether to share location information	Whether to name specific plants	Whether to document exact sites

How to Use This Table:

- Use this table for quick reference and comparison across stages
- Start at Stage 1 (left column)
- Only move right if the community decides to share more detailed information
- Stopping at any stage is a successful outcome
- Most assessments (60-70%) end at Stage 1
- Requirements increase as you move right across the table

For detailed implementation guidance, see **Sections 13.5-13.8** below.

For complete ESF question banks and facilitation scripts, see **Appendix IV of this guide** and **Appendix II of the Secondary Data Assessment Guide** (the companion workbook to this guide, if you do not have access to it, see Section 19.0) (Questions for Community Dialogue).

For consent forms referenced in the table, see *Appendix V*.

13.3 Standard Stage Structure

All stage follows this consistent pattern:

Element	What It Means
Purpose	What this stage explores
Time	Typical duration (2-4 hours per session), field time only, not including permit processing
Participants	Who participates (community decides)
Information Shared	What community may choose to share
Documentation	What gets recorded (only if the community approves)
Decision Point	Community's options (continue, stop, pause, or request time to deliberate)

Your Role Throughout: Facilitate community dialogue. Communities lead; you support.

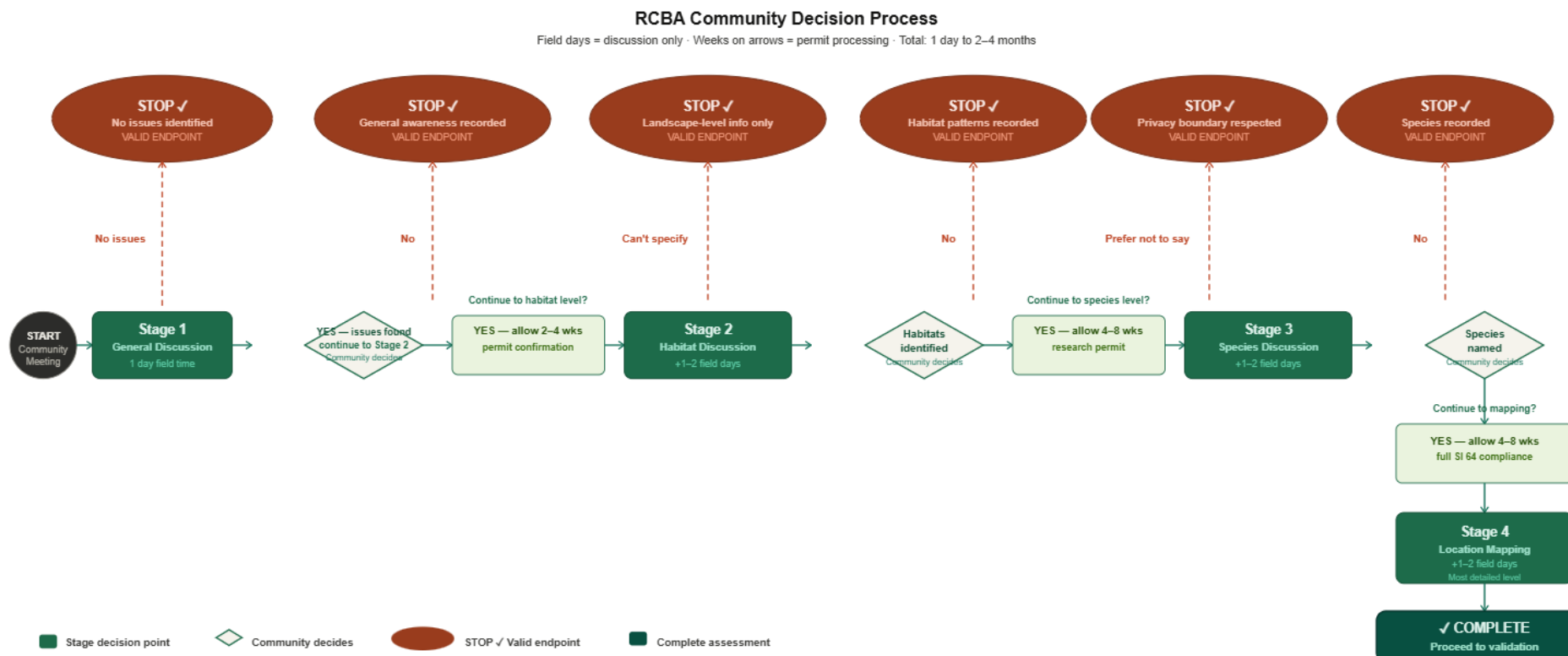
Community's Role Throughout: Determine what observations to share, decide what topics merit further discussion, and control all documentation.

***Note:** Each stage section below (13.5-13.8) follows this standard structure, highlighting only what makes that stage unique. This reduces repetition while ensuring you have the implementation details you need.*

13.4 Community Decision Points

At the end of each stage, communities make decisions about whether to continue. The flowchart below shows these decision points:

Note on Percentages: Figures shown in the STOP boxes of this decision tree (e.g., 60–70%, 20–25%) indicate the approximate proportion of assessments that conclude at each stage based on field experience with similar community-led assessment methodologies. They are estimates intended to help facilitators set realistic expectations, not targets or benchmarks. Every community's decision about where to stop is equally valid regardless of how common or uncommon that stopping point is.



How to Read This Flowchart

Note on Timing: The weeks shown in the **white pill labels on arrows** between stages ("allow 2–4 weeks", "allow 4–8 weeks") refer to the time required for permit processing and community deliberation, not field discussion time. Field discussion time per stage is measured in hours and days. A full four-stage assessment including all permit processing typically takes 2–4 months. See Section 10.0 for the complete timeline explanation.

Stage Nodes (Dark Green Rectangles) These are the core assessment discussions at each stage:

- Stage 1: "Are there issues with medicinal plants?"
- Stage 2: "Where are issues occurring?"
- Stage 3: "Which plants are affected?"
- Stage 4: Map specific locations with community approval (action step — requires full SI 61 compliance)

Continue Decision Points (Cream Diamonds with Green Border) After each stage, the community decides whether to share more detailed information. Fresh consent is required before proceeding. Choosing not to continue leads directly to a valid stop point, this is never a failure.

White Pill Labels on Green Arrows (Permit Processing) Every YES path between stages shows the minimum time needed to obtain new legal permissions before the next stage can begin. No subsequent stage should be planned until permits are confirmed and the community has chosen to continue.

Valid Stop Points (Red-Orange Ovals — STOP ✓) These represent successful assessment outcomes at every stage. Stopping early is not a failure; it reflects community autonomy and appropriate boundaries:

- 60–70% stop after Stage 1 — most common outcome
- 20–30% stop after Stage 2
- 5–10% stop after Stage 3
- Less than 5% complete Stage 4

Note on Percentages: These figures are estimates based on experience with similar community-led methodologies, they are not targets or benchmarks. Every community's decision about where to stop is equally valid.

Complete Assessment (Deep Green Box — ✓ COMPLETE) The rarest outcome. Specific locations are documented with community approval under the highest level of legal protection and community control.

Key Principle: Every STOP ✓ point represents a successful outcome. Whether a community stops at Stage 1 or progresses through all four stages, the assessment has achieved its purpose of supporting community-led, community-controlled knowledge sharing.

For legal requirements at each decision point, see Section 11.2.

13.5 Stage 1: General Discussion

For quick comparison with other stages, see Table 1 in *Section 13.2* above.

For the complete facilitation script and ESF question bank, see Appendix IV, Part A

For legal compliance requirements, see *Section 11.2*

Purpose: Determine IF medicinal plant conservation concerns exist from the community's perspective.

Prerequisites:

- Section 11 legal compliance completed.
- Form A (Basic Community Consent) prepared - see *Appendix V*

Standard Structure: Follows the pattern outlined in *Section 13.3* above.

What Makes Stage 1 Unique:

Element	Stage 1 Approach
Sensitivity Level	Lowest - general discussion only
Information Shared	General conservation concerns across 4 ESF dimensions
What's NOT Discussed	Plant names, locations, uses, preparation methods, and spiritual knowledge
ESF Framework	Apply all 4 dimensions (Availability, Access, Stability, Perception)
Discussion Time	15 minutes per ESF dimension = ~60 min total
Documentation	Minimal OR nothing (community chooses)
Typical Outcome	Community determines: "Yes, concerns exist" OR "No concerns."

ESF Questions for Stage 1

Complete facilitation script: *See Appendix IV, Section A.3* for the full question bank, prompts, and facilitation guidance

Quick summary - Community discusses:

1. **Availability:** Are plants easier or harder to find than before?
2. **Access:** Can people reach where plants grow? Any new restrictions?
3. **Stability:** Are plant populations stable, increasing, or decreasing?
4. **Perception:** Are plants still valued? Knowledge transmitted to youth.

Decision Point Outcomes:

If NO concerns identified:

- Assessment COMPLETE (this is success)

- Document: "No significant conservation concerns identified."
- Community addresses any issues internally if they wish

If YES, concerns identified: Community chooses:

1. **Stop here** → Document: "Concerns identified in [ESF dimensions affected]" → Assessment complete
2. **Continue to Stage 2** → Requires new consent (Form B - see *Appendix V*)
3. **Think about it** → No pressure, community contacts team when ready

What Gets Documented (Community's Choice):

Option 1 - Minimal (Most Common): "Conservation concerns identified in [list affected ESF dimensions: Availability/Access/Stability/Perception]. General themes: [2-3 sentence summary]. No plant names or locations documented."

Option 2 - Nothing (Also Valid): "Workshop conducted [date]. Community chose not to document findings."

Critical Principle: Even if participants mention specific plant names or locations during discussion, DO NOT document them unless the community explicitly authorizes this in writing.

For validation procedures, see *Section 16.0* (Confirming Community Assessment and Sharing Results).

13.6 Stage 2: Habitat-Level Discussion

For quick comparison with other stages, see Table 1 in *Section 13.2* above.

For the complete facilitation script, see *Appendix IV, Section B.3*.

For legal compliance requirements, see *Section 11.2*

Purpose: Identify WHICH habitat types have the most significant conservation concerns.

Prerequisites:

- Stage 1 identified concerns (see *Section 13.5* above)
- Community chose to continue
- New consent obtained (Form B - see *Appendix V*)

Standard Structure: Follows the pattern outlined in *Section 13.3* above.

What Makes Stage 2 Unique:

Element	Stage 2 Approach
Sensitivity Level	Moderate - habitat types, not species
Community Choice	Discussion only OR create a simple habitat map

Element	Stage 2 Approach
Information Shared	Habitat types (forests, grasslands, wetlands, rocky areas, etc.) and those that have the greatest concern
What's NOT Discussed	Specific plant names, exact coordinates, sacred sites (beyond protection discussion)
ESF Framework	Apply by HABITAT TYPE
Sacred Sites	MANDATORY protection discussion before any mapping
Documentation	Habitat concern list ± simple map (if community approves)

Sacred Sites Protection (MANDATORY if Mapping):

Before ANY mapping activity:

1. **Facilitator asks:** "Are there sacred or spiritually important areas that should not be discussed or shown on maps?"
2. **Community decides** (private discussion, 15-20 min):
 - Don't mention sacred sites at all
 - Mark as "off limits" on the map (no detail)
 - Other protection method the community prefers
3. **Assessment team follows community decision STRICTLY**
 - Never ask "where are sacred sites."
 - Never document beyond what the community authorizes
 - If uncertain, err on the side of NOT documenting

ESF Questions for Stage 2

Complete facilitation script: See *Appendix IV, Section B.3* for full question bank and facilitation guidance.

Quick summary - For EACH habitat type, the community discusses:

1. **Availability:** Are plants abundant or scarce in this habitat?
2. **Access:** Can people reach this habitat? Any restrictions?
3. **Stability:** Are populations stable? What threatens this habitat?
4. **Perception:** Is this habitat valued as a medicinal plant source?

Community identifies: Which 1-3 habitats have the highest conservation concern?

Decision Point Outcomes:

If specific habitats are prioritized, Community chooses:

1. **Stop here** → Document habitat priorities → Assessment complete
2. **Continue to Stage 3** → Discuss which SPECIES in priority habitats → Requires new consent (Forms C + E - see *Appendix V*)
3. **Think about it** → No pressure, the community may contact the facilitator team when and if they are ready to proceed

If no clear priorities OR the community wants to stop:

- Assessment COMPLETE
- Document: Habitat types discussed, general patterns observed

What Gets Documented (Community's Choice):

If Discussion Only: "Priority habitats identified: [forest/grassland/wetland]. Conservation concerns: [brief description]. No map created."

If Map Created:

- Simple sketch showing general habitat distribution
- Priority habitats highlighted
- Sacred sites protection method noted, but sites NOT shown
- Photo permissions obtained (Form G- see *Appendix V*)

For validation procedures, see *Section 16.0*.

13.7 Stage 3: Species-Level Discussion

For quick comparison with other stage, see Table 1 in *Section 13.2* above.

For the complete facilitation script, see *Appendix IV, Section C.3*.

For legal compliance requirements, see *Section 11.2*.

Purpose: Document WHICH species have conservation concerns and WHY.

Prerequisites:

- Stage 2 identified priority habitats (see *Section 13.6* above)
- Community chose to continue
- **CRITICAL:** Individual consent from EACH participant (Forms C + E - see *Appendix V*)
- Research permits likely required (verify with EMA/Forestry Commission - see *Section 11.2*)

Standard Structure: Follows the pattern outlined in *Section 13.3* above

What Makes Stage 3 Unique:

Element	Stage 3 Approach
Sensitivity Level	HIGH - species names and knowledge shared
Legal Requirement	Individual consent MANDATORY (Form E for EACH participant)
Permits	Research permits likely required - check before proceeding
Community's Method Choice 1	Individual interviews, focus group OR both
Community's Method Choice 2	Anonymous documentation OR attributed (with names)
Information Shared	Species names, abundance, trends, conservation concerns, and general habitat preferences
What's NOT Discussed	Specific coordinates, preparation methods, spiritual/medicinal uses (unless community volunteers)
ESF Framework	Apply by SPECIES

Method Selection (Community Decides):

Option 1: Individual Interviews (1-2 hours each)

- Best for: Sensitive knowledge, older knowledge holders, attribution desired
- Privacy: One-on-one conversations
- Documentation: Can be anonymous or attributed (holder chooses)

Option 2: Focus Group Discussion (3-4 hours)

- Best for: Collaborative knowledge building, consensus
- Interactive: Multiple knowledge holders discuss together
- Documentation: Usually anonymous (unless all agree to attribution)

Option 3: Both Methods

- Use individual interviews for sensitive knowledge
- Use a focus group for collaborative validation

Documentation Style (Community/Individual Chooses):

Anonymous: "Participants identified violet tree (*Securidaca longipedunculata*) as declining. Previously common in miombo forests, now uncommon. Habitat clearing cited as main threat."

Attributed: "Mr. Shava identified the violet tree (*Securidaca longipedunculata*) as declining. He reports it was previously common in miombo forests but is now uncommon due to habitat clearing for agriculture."

***Note:** Individual participants can choose attribution for their specific knowledge even if the community chose anonymous as the default.*

ESF Questions for Stage 3:

Complete facilitation script: *See Appendix IV, Section C.3* for full question bank and interview protocols.

Quick summary - For EACH priority species, gather:

1. **Availability:**
 - Abundance level (abundant/common/uncommon/rare)
 - Has this changed over time?
2. **Access:**
 - Can people reach where this species grows?
 - Are there restrictions?
3. **Stability:**
 - Population trend (increasing/stable/declining)
 - What threatens this species?
4. **Perception:**
 - Is this species still valued?
 - Is knowledge about it being transmitted?

What Gets Documented:

Minimum Required for Conservation Assessment:

- Species identification (local name, scientific name if known)
- Abundance category (abundant/common/uncommon/rare)
- Population trend (increasing/stable/declining)
- Primary conservation concerns
- General habitat preferences

Optional (If Community Volunteers):

- Traditional uses (medicinal, spiritual, cultural)
- Preparation methods
- Seasonal availability
- Cultural significance

NEVER Document (Unless Explicitly Authorized in Writing):

- Exact locations or coordinates

- Sacred/spiritual knowledge not volunteered
- Restricted cultural information

Decision Point Outcomes:

Community chooses:

1. **Stop here** → Species list with ESF assessment complete → Assessment ends
2. **Continue to Stage 4** → Map specific locations → Requires FULL SI 61 compliance verification (Forms D + E + legal officer approval- see *Section 11.2*)
3. **Think about it** → No pressure, the community may contact the facilitator team when and if they are ready to proceed

For validation procedures, see *Section 16.0*.

13.8 Stage 4: Location Mapping

For quick comparison with other stages, see Table 1 in *Section 13.2* above.

For the complete facilitation script, see *Appendix IV, Section D.3*.

For legal compliance requirements, see *Section 11.2*

Purpose: Document specific locations of priority species (IF the community determines this benefits conservation).

Prerequisites

- Stage 3 identified priority species (see *Section 13.7* above)
- Community chose to continue
- **STOP:** Legal compliance officer MUST verify ALL requirements met (see checklist below)

Standard Structure: Follows the pattern outlined in *Section 13.3* above.

What Makes Stage 4 Unique:

Element	Stage 4 Approach
Sensitivity Level	MAXIMUM - specific coordinates documented
Legal Requirement	FULL SI 61 compliance + EMA approval + individual consent (Form E, EACH participant)
Rarely Reached	~5% of assessments reach this stage (stopping earlier is normal and appropriate)
Community Control	Community creates and owns the map; decides what to share and with whom
Sacred Sites	NEVER documented; marked off-limits
Mapping Method	Community chooses paper maps, ground materials, or digital tools

Before Starting - ALL Must Be Verified ✓:

Legal Compliance Checklist (Legal officer confirms):

- FULL SI 61 compliance documented
- Written consent from ALL participants (Forms D + E - see *Appendix V*)
- Environmental Management Agency (EMA) approval obtained
- Benefit-sharing agreement in place (if applicable - see *Section 18.0*)
- Community understands who will see maps and how they'll be used
- Sacred sites discussion completed; protection method agreed
- All necessary research permits obtained
- Legal compliance officer's signature on authorization

If ANY box is unchecked: STOP. Cannot proceed to Stage 4.

Community-Led Mapping Process:

Community's Role:

- Community members lead the mapping
- Community marks ONLY locations they choose to share
- Community decides precision level (general area vs. exact coordinates)
- Community controls who see the map

Assessment Team's Role:

- Provide materials (paper, GPS if requested, markers)
- Facilitate process only
- Follow the community's lead
- Record what the community authorizes ONLY

Sacred Sites:

- Marked as "OFF-LIMITS" on the map
- NO detail documented
- NEVER asked about
- Community decision on protection method is final

Mapping Methods (Community Chooses):

Method	When to Use	Precision	Materials Needed
Paper Maps	General locations, the community prefers non-digital	Low to moderate	Large paper, markers, reference landmarks
Ground Materials	Cultural preference, immediate collaborative mapping	Low	Sticks, stones, and local materials arranged on the ground
Digital Mapping	Precise coordinates needed, community agrees	High	GPS unit or smartphone, community training
Combination	Best of multiple methods	Variable	All the above

ESF Questions for Stage 4:

Complete facilitation script: See *Appendix IV, Section D.3* for full question bank and mapping protocols.

At this stage, ESF is applied to SPECIFIC LOCATIONS:

1. **Availability:** How many individuals are at this location?
2. **Access:** Can community members reach this location safely?
3. **Stability:** Are conditions at this location stable? Threats?
4. **Perception:** Does the community want this location protected? How?

What Gets Documented:

Maps Include (Community authorizes):

- Priority species locations (precision level community chooses)
- Habitat types at each location
- Access routes (if community shares)
- Threat observations (clearing, development, etc.)
- Conservation priorities

Maps NEVER Include:

- Sacred sites (marked off-limits only)
- Locations the community chose not to share
- More precision than community authorized
- Information obtained informally ("I heard that...")

Metadata Documented:

- Date of mapping
- Who participated (with consent)
- Mapping method used
- Intended use of maps
- Who is authorized to see maps
- Community's access restrictions

Decision Point:

After Stage 4:

- Assessment COMPLETE (Stage 4 is final stage)
- Community receives:
 - All maps created
 - Full documentation
 - Digital copies if created
 - Statement of intended use
- Community decides future use of information

Critical Principle: Community can withdraw authorization for map use at any time. If the community withdraws consent, all maps and location data must be destroyed or returned.

For validation procedures, see *Section 16.0*.

For community benefits and next steps, see *Section 18.0* (Community Benefits Framework)

14.0 FREE, PRIOR, AND INFORMED CONSENT (FPIC)

Legal Foundation: FPIC is grounded in international law, including the United Nations Declaration on the Rights of Indigenous Peoples (United Nations, 2007), and is operationalized here through the legal requirements in Section 11.0.

Critical Principle: Consent happens at EACH stage, not just once. Each stage requires fresh community decision-making.

14.1 Four-Step Consent Process (For Each Stage).

Use this process BEFORE starting each stage:

STEP 1: Explain Rights (15 min)

What to Cover:

- Communities control all decisions about participation and information sharing
- Can say NO at any point or change their mind at any time
- Legal protections under traditional knowledge protection laws (Zimbabwe: Statutory Instrument 61 of 2009 (Government of Zimbabwe, 2009); see Section 19.0 for other jurisdictions)
- How to report violations or concerns
- Right to consult with anyone before deciding
- No consequences for declining or stopping

How to Deliver:

- Use the community's language
- Provide written copies of rights in the local language
- Allow time for questions
- Ensure everyone present understands

STEP 2: Explain THIS Stage Only (20 minutes)

Before beginning Step 2: Ensure you have already explained the community benefits framework to the community (see **Section 18.0**). Communities must understand what they may gain from participation, and what the assessment cannot provide, before you explain the specific stage. This is a prerequisite for genuinely informed consent.

What to Cover:

- What happens specifically in THIS stage (not future stages)
- What kinds of observations or information community might choose to share
- What, if anything, may be documented (only if the community approves)
- What will NOT be asked for in this stage
- What the assessment team's role will be (facilitation only)
- How long this stage typically takes
- What happens after this stage

How to Deliver:

- Be specific about this stage only
- Don't describe future stages yet
- Show examples of consent forms for this stage

- Explain how community can review all documentation before approving

Critical: Do not assume communities will continue to later stages. Each stage stands alone.

STEP 3: Community Discusses Privately (30+ minutes minimum)

What Happens:

- Assessment team LEAVES the area
- Community decides without any external presence
- No time pressure - community takes as long as needed
- Community may consult elders, leaders, traditional authorities, or other members
- Community may decide to postpone decision

Assessment Team Actions:

- Leave completely - do not linger nearby
- Make clear you'll return when called
- Provide phone number or way to contact you
- Do not set time limits
- Be prepared for the community to need hours or days to decide

Common Outcomes:

- Community decides YES → Proceed to Step 4
- Community decides NO → Thank them, respect decision, leave
- Community needs more time → Arrange to return later
- Community wants clarification → Answer questions, then leave again for discussion

STEP 4: Document Decision (10 minutes)

If YES:

- Complete consent form for THIS stage only
- Read form aloud in community's language
- Ensure everyone understands what they're agreeing to
- Collect signatures (minimum required varies by stage - see forms)
- Give copies to the community IMMEDIATELY before any assessment activities begin
- Explain they can withdraw consent at any time during the stage

If NO:

- Thank the community for their time and consideration
- Respect their decision completely
- Do not ask for reasons or try to change their mind
- Leave promptly and respectfully
- Maintain relationship - they may reconsider later

If NEED MORE TIME:

- Schedule return date (community chooses timing)
- Provide contact information
- Leave all explanatory materials with the community
- Do not pressure for a faster decision

14.2 What Consent Looks Like at Each Stage

Standard Process (same for all stages): See *Section 14.1* above for the four-step process.

(Explain Rights → Explain This Stage → Private Discussion → Document Decision).

What changes between stages: The CONTENT of consent (what you're asking permission for), not the PROCESS.

Table 3: Consent Content by Stage

Stage	Asking Permission For	Key Information to Share	Consent Forms	Decision After	Minimum Signatures
Stage 1	General discussion about whether conservation concerns exist	• 2-3 hours discussion • No plant names/locations documented • Can stop anytime • Minimal or no documentation	Form A (before) + Form F (after stage completion)	Continue to Stage 2? Stop here? Think about it?	Min. 5 from those present, session requires minimum 5 attendees
Stage 2	Discussing habitat types ± creating a simple map	• 2-3 hours discussion • Habitat types only, not species • Sacred sites protected • Optional: simple map	Form B (before) + Form G (after stage completion)	Continue to Stage 3? Stop here? Think about it?	Min. 5 from those present, session requires minimum 5 attendees
Stage 3	Sharing species names and knowledge	• Individual consent required for each participant • 3-4 hours (may span sessions) • Species names documented • Research permits likely needed • Choose: anonymous or attributed	Form C (group, before) + Form E (EACH individual, before) + Form H (after stage completion)	Continue to Stage 4? Stop here? Think about it?	Group: min. 5 + Individual: EACH participant signs Form E separately
Stage 4	Mapping specific locations	• FULL legal compliance required • Multiple sessions possible • Precise locations documented • EMA approval needed • Community controls map access	Form D (before) + Form E (EACH individual, before) + Form I (after stage completion)	Assessment complete	Min. 10 community signatures + EACH participant signs Form E individually, both requirements are mandatory

14.3 What Always Stays the Same:

Regardless of stage:

- Community has 10-15 minutes minimum for private discussion
- Assessment team leaves the room during community discussion
- "No" is always an acceptable answer
- Community can stop at any time, even mid- stage
- Forms are read aloud in the local language
- Everyone understands before anyone signs
- Copies given to the community IMMEDIATELY after signatures
- Community can withdraw consent at any point

14.4 Special Consent Considerations

Stage 3 & 4: Individual Consent

Why Individual Consent Matters: Once species-specific or location-specific information is shared, individual participants may have different comfort levels. Some may wish to share certain knowledge while others prefer not to.

How It Works:

1. **Group consent first** (Form C or D) - the community agrees to proceed
2. **Then individual consent** (Form E for EACH person who will share knowledge)
3. Each individual:
 - Discusses privately with family if desired
 - Decides what they will/won't share
 - Signs only if comfortable
 - Can participate in discussion without sharing specific knowledge

No Pressure: It's completely acceptable for some community members to participate in general discussion while others share specific knowledge.

14.5 Consent Violations and Community Rights

If Community Feels Pressure or Coercion:

Communities have the right to:

- Stop immediately
- Report concerns to relevant authorities
- Withdraw all consent retroactively
- Demand the destruction of any documentation

Assessment Team Responsibilities:

- Never pressure for consent
- Accept "no" immediately
- Never threaten consequences for declining
- Never suggest benefits depend on participation

- Maintain respectful relationships regardless of decision

Reporting Mechanisms: [Jurisdiction-specific - adapt per *Section 19.0*]

- Zimbabwe: Environmental Management Agency (EMA)
- Other jurisdictions: See *Section 19.3* for equivalent oversight bodies

14.6 Cross-Reference Guide

For detailed forms referenced here:

- All consent and validation forms → *Appendix V*
- Form selection guidance → *Section 15.2*
- Legal requirements by stage → *Section 11.2*
- Community benefits framework → *Section 18.0*

15.0 IMPLEMENTATION QUICK REFERENCE

This section provides rapid orientation for field implementation. For complete step-by-step guides with detailed instructions and question banks, see Appendix IV.

15.1 Before You Start (All Stages)

Complete ALL items on this checklist before beginning any field work:

Prerequisites checklist:

Requirement	Where to Find It	Complete?
Legal compliance completed	Section 11.0	☐
Core team assembled and trained.	Section 12.0	☐
FPIC protocol reviewed and understood	Section 14.0	☐
Community leaders contacted, preliminary agreement obtained	Section 18.0 (explain benefits first)	☐
All forms translated into the local language and pilot tested	Appendix V	☐

If ANY item is unchecked: STOP and return to that section. Do not proceed to fieldwork until all prerequisites are met.

Why This Matters: Inadequate preparation can harm communities, violate legal requirements, and undermine trust. Take time to prepare properly.

15.2 Stage-by-Stage Quick Reference

This table provides at-a-glance guidance for each stage. For detailed procedures, see *Appendix V*.

What You Need Ready	Stage 1	Stage 2	Stage 3	Stage 4
Legal Compliance	Community consent, notify authorities	Community consent, sacred sites discussed	Individual consent: EACH participant likely needs permits	FULL SI 61 compliance, EMA approval
Team Role	Facilitate dialogue	Support chosen method (discussion or mapping)	Support chosen method (interviews or groups)	Provide materials while the community leads

What You Need Ready	Stage 1	Stage 2	Stage 3	Stage 4
Community Decides	Whether concerns exist	Which habitats, whether to map	Which species, anonymous or attributed	What locations to share, who sees maps
Documentation	Minimal summary OR nothing	Habitat list, map (if created/approved)	Species list with ESF	Maps (if created/approved)
NOT Appropriate	Asking plant names, locations, and mapping	Asking species names, GPS coordinates	Asking for exact locations, detailed traditional knowledge	Documenting sacred sites (EVER)

Time Investment:

- Stage 1 preparation: 1-2 weeks
- Stage 1 implementation: 1 day (3-4 hours workshop)
- Time between stages: 1-2 weeks (community deliberation)
- Each subsequent stage: +1-day implementation

Most Common Outcome: 60-70% stop after Stage 1 (normal and indicates methodology working).

15.3 Form Selection Quick Reference

Which form do I need?

Situation	Form	Who Signs	When
Starting Stage 1	Form A	All participants (min 5)	Before workshop
Ending Stage 1	Form F	All participants (min 3)	After workshop, before leaving
Starting Stage 2	Form B	All participants (min 5)	Before workshop
Ending Stage 2	Form G	All participants (min 3)	After workshop, before leaving
Starting Stage 3 (group)	Form C	All participants (min 5)	Before workshop
Starting Stage 3 or 4 (each person)	Form E	EACH individual	Before their participation

Situation	Form	Who Signs	When
Ending Stage 3	Form H	All participants (min 3)	After workshop, before leaving
Starting Stage 4	Form D	All participants (min 10)	Before mapping
Ending Stage 4	Form I	All participants (min 10)	After mapping, before leaving

All forms located in Appendix V.

16.0 CONFIRMING COMMUNITY ASSESSMENT AND SHARING RESULTS

Key Principle: Validate AFTER EACH STAGE, not just at the end

Why this matters: This is the community's assessment. Validation ensures that what's documented accurately reflects what the community wanted to share - nothing more, nothing less.

16.1 Quick Validation Process (After Each Stage)

Use this 3-step process after EVERY stage, in the same session, before participants leave.

STEP 1: Show What You Documented (5 min)

- Read back exactly what was recorded
- Show any maps or notes created
- Use the community's language
- Make everything transparent
- Do this in the same session, before people leave

STEP 2: Ask for Corrections (10 min)

- Is this accurate?
- Did I miss anything you wanted included?
- Is there anything to remove or change?
- Does this reflect what you wanted to share?

Give community time to discuss privately if needed.

STEP 3: Get Approval (5 min)

- Make any corrections requested
- Read back the corrected version
- Get signatures on the appropriate Validation Form (see *Section 16.2*)
- Give copies to the community IMMEDIATELY

Never leave with forms until the community has their copies

Total Time: 20 minutes maximum per stage

16.2 Validation Forms by Stage

After Stage	What Community Validates	Form	Who Signs
1	General conservation concerns OR "no documentation."	Form F (Appendix V)	All participants (minimum 3)
2	Habitat priority list ± map + photo permissions (if map created)	Form G (Appendix V)	All participants (minimum 3)
3	Species list with ESF assessment (anonymous or attributed)	Form H (Appendix V)	All participants (individual consent holders -minimum 3)
4	Maps + metadata + access restrictions	Form I (Appendix V)	All participants (minimum 10)

Forms Location: See *Appendix V* for all validation forms with legal language.

Form Selection Flowchart: See *Section 15.3* for quick reference on which forms to use when.

16.3 Final Validation (End of Assessment)

When: Within one week after assessment concludes (whichever stage community stops at)

What Community Receives:

Package Contents:

1. **All documentation** created during the assessment
 - Notes organized by ESF dimension
 - Maps (if any were created)
 - Species lists (if Stage 3 reached)
2. **All signed forms:**
 - Consent forms (originals or copies as agreed)
 - Validation forms (copies)
3. **One-page summary:**
 - What was discussed (by stage)
 - What was documented (by stage)
 - Community's decisions at each decision point
 - Next steps (if any)

Delivery Method:

- In person (preferred)
- Registered mail if in-person not possible
- Community leader confirms receipt

Community's Rights After Assessment:

The community can:

- Request corrections to documentation (at any time)
- Request removal of specific information
- Withdraw consent for information use
- Request additional copies of materials
- Ask questions about how information will be used

Assessment team must respond to requests within 2 weeks maximum.

16.4 If the Community Says Information is Wrong?

When This Happens:

During validation OR after delivery, the community may say:

- "That's not what we said."
- "We didn't mean to share that."
- "Please remove this information."
- "This is inaccurate."

What to Do:

STEP 1: Listen and Document

- Write down exactly what the community says is wrong
- Don't argue or defend
- Ask: "What should it say instead?" OR "Should we remove this entirely?"

STEP 2: Make Changes Immediately

- Correct or remove information as requested
- Don't ask the community to justify the change
- If removal requested, destroy (don't just set aside)

STEP 3: Re-Validate

- Show corrected version to community
- Get new signatures on validation form
- Give community new copies immediately

STEP 4: Update All Copies

- If information was shared with others (partner organizations, etc.), notify them of correction
- Provide corrected version to all who received original
- Request destruction of incorrect versions

Critical Principle: The community is ALWAYS right about their own knowledge. If they say documentation is wrong, it is wrong - no debate needed.

17.0 PILOT TESTING PROTOCOL

Important Context: The Rapid Community-Based Assessment (RCBA) methodology described in this guide has not been field-tested. It was developed through:

- Literature review of established participatory conservation methods
- Stakeholder consultation workshop with Zimbabwe-based partners (July 2025)
- Legal framework analysis (Statutory Instrument 61 of 2009)
- Best practices from community-based conservation and traditional knowledge documentation

What the July 2025 Workshop Provided: Partners from Score Against Poverty, Environmental Management Agency (EMA), Forestry Commission, and other stakeholders reviewed the draft methodology and provided feedback on:

- Cultural appropriateness for Zimbabwe context
- Practical feasibility for NGO implementation with limited resources
- Legal compliance requirements under SI 61 of 2009
- Clarity and usability of proposed procedures
- Ethical considerations for community engagement

No field implementation occurred. The methodology was discussed theoretically to gather expert input for refinement.

Purpose of This Section: This section provides guidance for organizations planning to pilot test the RCBA methodology in their contexts. Rigorous pilot testing is essential before widespread adoption. Organizations undertaking pilot implementation have a responsibility to:

- Protect communities during initial implementation
- Document what works and what needs adjustment
- Share findings to strengthen community-based conservation practice
- Contribute to the evidence base for methodology refinement

17.1 Why Pilot Testing is Essential

17.1.1 This Guide is Untested

While the RCBA methodology is grounded in established participatory approaches, including participatory rural appraisal (Chambers, 1994), this specific integrated framework has not been validated through field implementation. Pilot testing will determine:

- Whether the four- stage progressive structure works in practice
- If communities find the Environmental Security Framework useful for organizing their observations
- Whether the consent protocols adequately protect community rights
- If the assessment can genuinely be "rapid" (2-5 days) while maintaining ethical standard
- How the methodology performs across different cultural contexts

17.1.2 Communities Deserve Tested Methodologies

Ethical Responsibility: Communities should not be subject to untested approaches. Pilot testing allows:

- Early identification of potential harms or burdens

- Refinement based on community feedback
- Verification that legal protections work as intended
- Confirmation that benefits to communities justify their time investment

17.1.3 Building the Evidence Base

Community of Practice: Documented pilot testing contributes to collective learning. Your pilot findings can:

- Help other NGOs avoid mistakes
- Identify context-specific adaptations needed
- Demonstrate what works across diverse settings
- Strengthen participatory conservation methods generally

17.2 Pilot Testing Framework

17.2.1 Staged Pilot Approach

DO NOT attempt to pilot all stages at once. Use this staged approach:

Stage 1: Pilot Stage 1 Only (Recommended First Step)

Why Stage 1 first:

- Lowest risk to communities (general discussion only)
- Tests foundational elements (FPIC, ESF framework, facilitation approach)
- Respects community autonomy (genuine decision whether to continue)
- Provides useful conservation information even if the assessment stops here
- Most assessments stop at Stage 1 anyway (60-70%)

What to test:

- FPIC four-step process (Section 14.1)
- ESF framework for structuring community dialogue (Section 13.5)
- Whether 3-4 hours is realistic for Stage 1
- Community understanding of their rights and choices
- Form A and Form F usability
- Whether "general discussion" provides valuable conservation insights

Minimum pilot sample: 2-3 communities to identify patterns

Stage 2: Pilot Stage 2 (Only if Stage 1 Successful AND Communities Consent)

Prerequisites:

- Stage 1 pilot completed and evaluated
- Same communities from Stage 1 genuinely choose to continue, new communities must begin at Stage 1 (Stage 1) and cannot join at Stage 2
- Legal compliance verified for Stage 2 activities

What to test:

- Habitat-level ESF application
- Sacred sites protection approach, test whether the protocol works in practice and refines it based on community responses. This is an item being evaluated and improved during Stage 2, not a prerequisite that must be finalised before beginning

- Choice between discussion-only vs. mapping
- Community control of map content and access
- Forms B and G usability

Stage 3: Pilot Stage 3 (Only if Stage 2 Successful AND Communities Consent)

Prerequisites:

- Stages 1 and 2 completed and evaluated
- Individual consent protocols tested
- Research permits obtained (if required in your context)

What to test:

- Species-level ESF application
- Individual vs. focus group methods
- Anonymous vs. attributed documentation choices
- Forms C, E, and H usability
- Whether minimum information needed for conservation can be gathered without detailed traditional knowledge

Stage 4: Pilot Stage 4 (Only if Stage 3 Successful AND Communities Consent)

Prerequisites:

- ALL previous stages completed successfully
- Full legal compliance verified
- Communities understand and accept location documentation risks — see **Section 11.6** for the full explanation that must be communicated before proceeding
- Benefit-sharing framework in place (if applicable)

What to test:

- Community-led mapping processes
- Community control of map precision and access
- Sacred sites protection in mapping context
- Forms D, E, and I usability
- Long-term community ownership and control of maps

CRITICAL: Stage 4 is highly sensitive. Extensive preparation and legal review required before any pilot testing.

17.3 Pilot Testing Procedures

17.3.1 Before Starting Pilot

Complete ALL items on this checklist:

Requirement	Details	Complete?
Legal Compliance	All permits, authorizations obtained (Section 1.0)	☐
Partnership Established	MOU with community, clear roles defined	☐

Requirement	Details	Complete?
Pilot Protocol Reviewed	Ethics review if required by your organization	☐
Team Trained	All team members understand pilot purpose and procedures	☐
Documentation Plan	Forms for collecting pilot feedback prepared	☐
Community Benefits Explained	Section 18.0 framework communicated to community	☐
Exit Strategy	Plan for if pilot reveals problems or community wants to stop	☐
Data Management	Secure storage protocols in place for all information shared — see Section 11.7 for minimum requirements	☐

If ANY item unchecked: Stop and complete that requirement before proceeding.

17.3.2 During Pilot Implementation

Document Everything

Create pilot implementation log including:

Preparation:

- Time spent on legal compliance (weeks)
- Time spent assembling and training team (days)
- Costs incurred (permits, travel, materials, staff time)
- Challenges encountered in preparation

Community Engagement:

- FPIC process: How long did each step actually take?
- Community questions or concerns raised
- Modifications made to procedures during implementation
- Community feedback on clarity of explanations
- Consent rate (how many signed vs. declined)

Assessment Activities:

- Actual time spent (vs. estimated in guide)
- Which ESF questions worked well, which were confusing
- Community comfort level with different topics
- Technical challenges (forms, documentation, language)
- What information communities chose to share

Outcomes:

- Where did assessment stop and why
- What conservation insights were gained

- Community satisfaction with process
- Whether assessment served community interests

Collect Feedback from Multiple Sources

From Communities:

- Post-assessment debriefs (Section 16.0 validation process doubles as pilot feedback)
- What worked well in their view
- What was confusing or uncomfortable
- Whether process felt respectful and community-led
- Whether they would recommend process to other communities
- What should be changed

From Assessment Team:

- What was difficult to implement
- Where guide instructions were unclear or inadequate
- What took longer/shorter than expected
- What would they do differently next time
- What additional training or resources are needed

From Observers (if present):

- Legal compliance officer assessment
- Community advocate observations
- External observers' notes on process adherence (e.g., EMA representatives, ethics board monitors, or partner NGO staff — included only with full community consent and only if community agrees to their presence)"

17.3.3 After Pilot Implementation

Debrief and Document Lessons Learned

Conduct a debriefing session within 2 weeks of pilot completion to document:

What Worked:

- Which procedures were effective as written
- Positive community responses
- Successful adaptations
- Conservation insights gained

What Didn't Work:

- Procedures that were confusing, impractical, or burdensome
- Community concerns or discomforts
- Time/cost overruns
- Technical failures
- Unexpected challenges

Recommendations:

- Specific changes to guide procedures
- Additional training needs identified
- Context-specific adaptations required
- Areas requiring further pilot testing

Share Findings

Pilot testing findings should be shared with:

1. **The Communities** who participated (first and foremost)
 - Summarize what was learned
 - Thank them for their contribution
 - Explain how their feedback will improve the methodology
2. **Your organization**
 - Internal report on pilot outcomes
 - Decision on whether to continue, modify, or discontinue use
3. **Broader Conservation Community** (recommended)
 - Share lessons learned through appropriate channels — see **Section 17.4** for reporting mechanisms (for example: practitioner reports to EMA or Forestry Commission, NGO partner briefings, conservation network meetings, or published case studies with full community consent)
 - Contribute to collective improvement of participatory methods
 - Acknowledge communities' contribution to methodology development

Note: Any public sharing of pilot findings must:

- Protect community confidentiality
- Have community approval for what is shared
- Not reveal sensitive information about locations or traditional knowledge

17.4 Pilot Testing in Different Contexts

17.4.1 Adapting for Your Context

If implementing this guide in a different country, region, or cultural context:

Step 1: Review Section 19.0 (Adapting This Guide to Other Contexts)

- Identify equivalent legal frameworks
- Adapt forms to local legal language
- Modify procedures for cultural appropriateness

Step 2: Conduct Local Consultation

- Meet with relevant government authorities (environmental, forestry, cultural heritage)
- Consult with community leaders about appropriate engagement protocols
- Engage local NGOs with community relationships
- Verify translations with native speakers

Step 3: Modify Pilot Protocol

- Adjust pilot procedures for your context
- Identify context-specific risks

- Plan for cultural and legal differences

Step 4: Start with Stage 1 Pilot

- Begin with lowest-risk stage regardless of context
- Test foundational elements before progressing
- Allow communities to genuinely decide whether to continue

17.4.2 Documenting Context-Specific Adaptations

Create adaptation documentation that includes:

What You Changed and Why:

- Legal compliance procedures (to match local laws)
- FPIC process (to match cultural norms)
- ESF questions (for language and relevance)
- Forms (for local legal requirements)
- Team composition (based on available expertise)

What You Kept the Same:

- Core principles ((community-led assessment, progressive trust-building, valid stopping point, data repatriation, legal protection)
- Four-stage structure (general → habitat → species → location)
- Progressive trust-building approach
- Community control of documentation

Lessons Specific to Your Context:

- What worked differently in your setting
- Unique challenges encountered
- Adaptations that improved effectiveness
- Insights valuable for similar contexts

17.4.3 Contributing to Methodology Development

Your pilot findings are valuable. Consider sharing through:

- Academic publications (with community consent)
- NGO networks and practitioner forums
- Conservation conferences and workshops
- Direct communication with methodology developers
- Online platforms for conservation practitioners

When sharing:

- Protect community identity and sensitive information
- Obtain community approval for what is shared
- Acknowledge community contributions to learning
- Make findings accessible to other practitioners (not just academic audiences)

17.5 Ethical Considerations for Pilot Testing

17.5.1 Pilot Testing is Still Real

Critical Principle: Just because it's a "pilot" doesn't reduce your ethical obligations.

Communities participating in pilots deserve:

- Full FPIC as described in Section 14.0
- All legal protections outlined in Section 11.0
- Genuine community benefits (Section 18.0)
- Respect for their knowledge and time
- Honest communication about pilot status
- Right to withdraw without consequences

You must still:

- Obtain all necessary permits and authorizations
- Follow legal requirements for traditional knowledge
- Protect sacred sites and restricted knowledge
- Maintain data security and confidentiality
- Provide communities with copies of all documentation

17.5.2 Transparency About Pilot Status

Tell communities this is a pilot test:

Explain:

- This methodology has not been used before
- You are testing whether it works well
- Their feedback will help improve it for other communities
- They are contributing to developing better conservation approaches
- They can still say no or stop at any time

Do not:

- Present pilot as a proven methodology
- Minimize risks because "it's just a test"
- Pressure participation because "we need pilot data"
- Suggest communities are obligated to help test the methodology

17.5.3 What if Pilot Reveals Problems?

Be prepared to:

Stop Immediately if:

- Communities express discomfort or distrust
- Legal protections prove inadequate
- Assessment team cannot implement procedures properly
- Unexpected harms or risks emerge
- Community decides they want to stop

Modify Procedures if:

- Minor adjustments would improve effectiveness
- Communities suggest better approaches
- Cultural adaptations are needed
- Technical problems have solutions

Abandon Methodology if:

- Fundamental flaws cannot be corrected
- Risks to communities cannot be adequately mitigated
- Assessment does not serve community interests
- Resources required exceed what most NGOs can provide

Your responsibility: Protect communities first, methodology development second.

17.6 Pilot Testing Checklist

Before Pilot

- Legal compliance completed (Section 11.0)
- Local consultation conducted
- Adaptations documented (if applicable)
- Team trained on pilot procedures
- Pilot implementation plan written
- Feedback collection tools prepared
- Ethics review completed (if required)
- Community partnership established
- Exit strategy defined

During Pilot

- Implementation log maintained daily
- Feedback collected from all participants
- Challenges documented as they arise
- Modifications noted with rationale
- Community comfort is monitored continuously
- Legal compliance verified at each stage
- Time and cost data tracked

After Pilot

- Debrief session held within 2 weeks
- Findings documented comprehensively
- Community feedback incorporated
- Lessons learned report written
- Results shared with communities first
- Organizational decision made (continue/modify/stop)
- Broader community of practice informed (if appropriate)
- Adaptations incorporated into local version of guide

17.7 Cross-Reference Guide for Pilot Testing

If you need...	See...
Legal compliance requirements	Section 11.0
Team composition guidance	Section 12.0
Stage -by-stage procedures	Section 13.0

If you need...	See...
FPIC protocols	Section 14.0
Quick reference for implementation	Section 15.0
Validation procedures	Section 16.0
Community benefits framework	Section 18.0
Adaptation guidance for other contexts	Section 19.0
All consent and validation forms	Appendix V
Complete facilitation scripts	Appendix IV

17.8 Contact and Support

For organizations piloting this methodology:

If you would be willing to share your pilot testing experiences to help refine this guide, or if you need support adapting the methodology for your context, please consider connecting with:

- **Methodology developers:** [Contact information if available]
- **Zimbabwe pilot workshop participants:** Score Against Poverty, Environmental Management Agency
- **Conservation practitioner networks:** [Relevant networks in your region]

Remember: Your pilot testing contributes to collective learning. Sharing both successes and challenges strengthens community-based conservation practice globally.

18.0 COMMUNITY BENEFITS FRAMEWORK

Communities must clearly understand the benefits BEFORE deciding to participate. This is both a legal requirement under SI 61 and an ethical imperative.

ZIMBABWE-SPECIFIC: This section references SI 61 benefit-sharing requirements. For other jurisdictions, see Section 19.3 for equivalent frameworks (e.g., Nagoya Protocol provisions (CBD, 2010)).

18.1 When and How to Explain Benefits

Timing: Before the FPIC process begins (*Section 14.0*)

1. Meet with community leaders
2. Explain what the assessment involves
3. Explain benefits clearly and honestly (*Section 18.2*)
4. Answer questions thoroughly
5. Leaders consult with the broader community privately
6. Community decides whether to proceed
7. If yes → FPIC process begins (*Section 14.0*)

Who Explains: Project coordinator or team leader (someone with authority to make commitments)

18.2 Benefits to Explain

Present benefits honestly, including both what IS and IS NOT guaranteed:

What Communities WILL Receive

Immediate Benefits (Stage 1 onwards):

- Complete documentation of their assessment
- All maps/materials created (community owns these)
- Capacity building in ESF framework
- Validation of community knowledge
- Written record for future community use

Information Benefits:

- Understanding of which ESF dimensions show concerns
- Habitat or species prioritization (if assessed)
- Baseline for future community monitoring
- Evidence for community-led conservation planning

Recognition Benefits (If community chooses):

- Attribution in any reports/publications (with permission)
- Recognition as co-researchers (if appropriate)
- Documentation of traditional knowledge (if authorized)

What Is NOT Guaranteed

Be honest about:

- No immediate payment for participation (unless your organization's policy differs - be specific)
- No guaranteed follow-up projects (depends on funding, community interest, and organizational capacity)
- No guaranteed conservation outcomes (assessment identifies priorities; action depends on many factors)
- No guaranteed benefit-sharing unless commercial use develops (rare - see Section 18.3)

Why honesty matters: False expectations undermine trust and can invalidate consent.

18.3 If Commercial Use Develops (RARE but Legally Significant)

When This Applies:

- A company wants to commercialize knowledge shared
- A pharmaceutical interest develops
- Bioprospecting occurs based on assessment
- Any profit-generating use of community knowledge

Legal Requirement (SI 61):

- Community must be contacted BEFORE commercialization
- Written benefit-sharing agreement required
- Agreement must specify:
 - What will be commercialized
 - How profits will be shared
 - Who represents the community
 - How long the agreement lasts
 - Community's right to refuse

Assessment Team Responsibility:

- Notify the community immediately if a commercial interest arises
- Connect the community with legal support
- Do NOT negotiate on the community's behalf
- Ensure the community has independent advice

Reality Check: >99% of assessments never lead to commercial use. Mention this possibility, but don't overemphasize.

18.4 Assessment Team Responsibilities

Before Assessment:

- Explain benefits honestly (*Section 18.2*)
- Don't overpromise future projects
- Be clear about organizational capacity limits
- Provide written summary of benefits if requested

During Assessment:

- Remind community they can stop anytime
- Benefits don't obligate community to continue
- Community can access materials even if they stop early

After Assessment:

- Deliver all materials promised (within 1 week)
- Follow through on any specific commitments made
- Notify community of any additional benefits (publications, presentations, etc.)
- Seek permission before using information beyond original agreement

If Benefits Change:

- Notify the community immediately
- Explain why change occurred
- Offer options (withdraw information, continue with revised benefits, etc.)
- Get new consent if benefits increase significantly

19.0 ADAPTING THIS GUIDE TO OTHER CONTEXTS

This guide was developed for Zimbabwe's legal framework. Adaptation is required for use elsewhere.

Quick Check: Do You Need to Adapt This Guide?

You are using this guide outside Zimbabwe → YES, you must adapt

What Must Change:

1. All legal references (SI 61, EMA, etc.) → Your country's laws
2. Permit requirements → Your jurisdiction's requirements
3. Benefit-sharing framework → Your legal/policy context
4. Forms (Appendix V) → Your legal language

What Cannot Change: *See Section 19.1*

19.1 What CANNOT Change (Universal Principles)

These principles apply regardless of jurisdiction:

Ethical Requirements:

- Free, Prior, and Informed Consent (FPIC) (United Nations, 2007)
- Community ownership of knowledge
- Right to refuse/stop at any time
- Progressive sensitivity (Stage 1 → Stage 4)
- Community-controlled documentation
- Sacred site protection
- Individual consent for sensitive knowledge

Methodological Requirements:

- Staged approach (1 → 2 → 3 → 4)
- ESF framework (all 4 dimensions)
- Validation after each stage
- Community decision points between stages
- Community can stop at any stage

Moral Absolutes:

- Never document what community doesn't authorize
- Never share information beyond community's consent
- Never pressure community to continue
- Never exploit knowledge for commercial gain without benefit-sharing

19.2 What CAN Change (Adaptable Elements)

These elements should be adapted to the local context:

Legal Framework:

- Replace SI 61 with your country's legal framework
- Update permit requirements

- Modify forms to meet local legal language
- Adjust consent procedures to legal standards

Cultural Context:

- Translation to local languages
- Adaptation of facilitation approaches
- Gender considerations for participation
- Age/status protocols for consent
- Spiritual/sacred site protocols

Organizational Context:

- Team composition requirements
- Timeline and resource allocation
- Documentation formats
- Reporting requirements

19.3 Legal Framework Equivalents by Region

Country/Region	Zimbabwe Equivalent	What to Replace
Zimbabwe	Statutory Instrument 61 of 2009 (SI 61)	N/A - this guide is based on SI 61
South Africa	Bioprospecting, Access and Benefit-Sharing Regulations (BABS, 2008)	All SI 61 references → BABS EMA → Department of Environment, Forestry and Fisheries
Kenya	Environmental Management and Coordination Act (EMCA, 1999) Traditional Knowledge and Cultural Expressions Act (2016)	SI 61 → EMCA + TK Act EMA → National Environment Management Authority (NEMA)
Tanzania	Environmental Management Act (2004) Access to Genetic Resources and Benefit Sharing Regulations (2018)	SI 61 → EMA 2004 + ABS Regulations EMA → Tanzania Commission for Science and Technology (COSTECH)
Uganda	National Environment Act (2019) Uganda Wildlife Act (2019)	SI 61 → NEA + Wildlife Act EMA → National Environment Management Authority (NEMA)
Namibia	Access to Biological and Genetic Resources and Associated Traditional Knowledge Act (2017)	SI 61 → ABGR Act EMA → Ministry of Environment, Forestry and Tourism

Country/Region	Zimbabwe Equivalent	What to Replace
Zambia	Environmental Management Act (2011) Traditional Knowledge Bill (pending)	SI 61 → EMA EMA → Zambia Environmental Management Agency (ZEMA)
Malawi	Environment Management Act (2017) Access and Benefit Sharing regulations (in development)	SI 61 → EMA 2017 EMA → Environmental Affairs Department
Botswana	Environmental Assessment Act (2010) Herbal Medicine Practice Act (2013)	SI 61 → EA Act + Herbal Medicine Act EMA → Department of Environmental Affairs
International	Nagoya Protocol on Access and Benefit-Sharing (CBD, 2010)	SI 61 → Nagoya Protocol + national implementing legislation Check if the country is a signatory

Note Legal frameworks change. Always verify current legislation before field implementation

19.4 Step-by-Step Adaptation Process

STEP 1: Identify Your Legal Framework (Allow 2-4 weeks)

Actions:

1. Research national legislation on:
 - Traditional knowledge protection
 - Access to genetic resources
 - Benefit-sharing requirements
 - Indigenous peoples' rights
 - Environmental permits
2. Consult:
 - National environmental authority
 - Traditional knowledge office (if it exists)
 - Legal counsel familiar with biodiversity/IP law
 - Community representatives

3. Document:

- Exact legal citations (act names, year, sections)
- Permit requirements and processes
- Consent requirements
- Benefit-sharing provisions

STEP 2: Adapt Forms (Appendix V)

Actions:

1. Replace all Zimbabwe legal references:
 - SI 61 → [Your country's law]
 - Environmental Management Agency → [Your authority]
 - Genetic Resources Protection Committee → [Your body]
2. Update consent language to match legal requirements
3. Translate to local language(s)
4. Have native speakers verify translations
5. Have legal counsel review adapted forms

Timeline: Allow 4-6 weeks for form adaptation and review

STEP 3: Update Throughout Document

Use find-and-replace for:

- "Statutory Instrument 61 of 2009" or "SI 61" → [Your law]
- "Environmental Management Agency" or "EMA" → [Your authority]
- "Zimbabwe" → [Your country]
- "Forestry Commission" → [Your forestry/natural resource agency]

Critical Sections to Review:

- Section 11 (Legal Compliance) - update all requirements
- Section 13.7, 13.8 (Stages 3 & 4) - update permit references
- Section 18 (Benefits) - update benefit-sharing framework
- Appendix V (Forms) - complete rewrite with local legal language

STEP 4: Pilot Test in Local Context

Before full implementation:

1. (The 2–3 community minimum in Section 17.0 applies to initial piloting of this methodology before any implementation. The 1–2 figure here applies only when adapting an already-piloted methodology to a new legal or linguistic context)
2. Verify forms meet legal requirements
3. Check cultural appropriateness

4. Adjust based on feedback
5. Get legal sign-off

See Section 17.0 for pilot testing protocol

19.5 Integration Throughout This Document

To help non-Zimbabwe users, this guide includes:

Adaptation Callout Boxes: Throughout this guide, shaded boxes marked "ZIMBABWE-SPECIFIC" flag content that applies only to Zimbabwe's legal framework. If you are working outside Zimbabwe, replace the Zimbabwe-specific content with your local equivalent. See Section 19.3 for guidance on identifying your local legal framework.

Format:

ZIMBABWE-SPECIFIC: *[What's Zimbabwe-specific]*

For other jurisdictions, see Section 19.3 for equivalent legal frameworks.

Quick Start for Non-Zimbabwe Users:

1. Read Section 19 FIRST (this section)
2. Identify your legal framework (Section 19.3)
3. Adapt forms (Section 19.4, Step 2)
4. Look for callout boxes throughout
5. Replace Zimbabwe references as you read
6. Pilot test before full implementation

20.0 METHODOLOGICAL CONSIDERATIONS AND APPROPRIATE USE

This assessment approach supports community-controlled knowledge sharing at whatever level communities choose. It does not replace comprehensive scientific inventories or long-term conservation planning, but it can inform both when communities decide that external support would be valuable.

20.1 Understanding the Approach

The Secondary Data Assessment serves to:

- Inform questions for community dialogue
- NOT prescribe what communities should think or do

The Community-Based Assessment recognizes:

- Communities are primary knowledge holders
- Community perspective is most important
- Different participation levels reflect different community decisions (all valid)
- Community priorities matter most, external priorities secondary

Success depends on:

- Assessment team's ability to support (not direct) community processes
- Respecting cultural protocols absolutely
- Centering community control, not extracting maximum information

20.2 Appropriate Use

This guide is appropriate for:

- ✓ Supporting communities in assessing medicinal plant conservation status from their perspective
- ✓ Facilitating community dialogue about conservation concerns they identify
- ✓ Creating space for communities to determine their own conservation priorities
- ✓ Informing conservation planning that communities want to pursue
- ✓ Connecting communities to resources they request

This guide **does not provide permission for:**

- Extracting traditional knowledge without community benefit
- Any activity where external priorities override community decision

This guide is NOT a substitute for:

- Comprehensive ethnobotanical surveys (unless the community wants this)
- Detailed population ecology studies (unless community requests this)
- IUCN Red List assessments (though it can support community input if requested)
- Long-term monitoring programs (unless community-designed and led)
- Traditional knowledge documentation projects (unless community-controlled)
- "Validating" external findings using the community as a data source

REFERENCES

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APPENDICES

Appendix IV: Rapid Assessment Facilitation Guide

How to use this appendix: This is your condensed field reference for use during implementation. It assumes you have read and understood the main guide body (Sections 10–20). For full background, decision frameworks, and legal requirements, refer to the relevant main body sections. Legal compliance is covered in full in Section 11.0. FPIC procedures are in Section 14.0. Stage decision frameworks are in Section 13.0. This appendix contains only what you need in the field — facilitation scripts and ESF question banks for Stages 1–4.

ENVIRONMENTAL SECURITY FRAMEWORK (ESF)

Used in all stages to assess medicinal plants:

1. **AVAILABILITY** → Are plants present? Trends?
2. **ACCESS** → Can people reach them? Restrictions?
3. **STABILITY** → Populations/quality stable? Threats?
4. **PERCEPTION** → How valued? Knowledge transmitted?

QUICK QUESTION REFERENCE BY ESF DIMENSION

Use this reference to quickly find appropriate questions for each stage:

AVAILABILITY Questions (Use in All Stages)

Stage	Key Questions
Stage 1	• Are medicinal plants easier or harder to find than 10-20 years ago? • Have you noticed changes in how common plants are? • Are there areas where plants used to grow but don't anymore?
Stage 2	• In [habitat type], are plants abundant or harder to find? • Which habitats have seen the biggest changes in plant availability?
Stage 3	• How abundant is [species] now? (Abundant/Common/Uncommon/Rare) • Is [species] becoming more common, staying the same, or less common?
Stage 4	• At [location], how many plants are present? • Has the abundance at this location changed over time?

ACCESS Questions (Use in All Stages)

Stage	Key Questions
Stage 1	• Can people still reach places where medicinal plants grow? • Are there new restrictions or rules? • Do you travel farther than before to collect?
Stage 2	• Can people access [habitat]? Any restrictions? • Are mining, development, or protected areas affecting access to [habitat]?
Stage 3	• Can you harvest [species] when you need it? • Are there restrictions on accessing [species]? (Keep general - no specific locations)
Stage 4	• Can people access [specific location]? • What barriers exist at this site?

STABILITY Questions (Use in All Stages)

Stage	Key Questions
Stage 1	• Are plant populations stable or changing? • What threatens plants? • Has plant quality or effectiveness changed?
Stage 2	• Are populations in [habitat] stable? What threatens them? • Has [habitat] quality changed? How?
Stage 3	• Is [species] population stable, declining, or increasing? • What threatens [species]? • Has the quality/effectiveness of [species] changed?
Stage 4	• Is [species] population at [location] stable? • What site-specific threats exist here?

PERCEPTION Questions (Use in All Stages)

Stage	Key Questions
Stage 1	• Are medicinal plants still important in this community? • Are younger people learning about plants? • What do you think will happen in 10-20 years?
Stage 2	• Is [habitat] valued as a source for medicinal plants? • Has the importance of [habitat] changed over time?
Stage 3	• Is [species] still valued in community? • Are younger people learning about [species]? • What's the future for [species]?
Stage 4	• Is [location] culturally significant? • Are there sacred sites near [location]? (Protect these!)

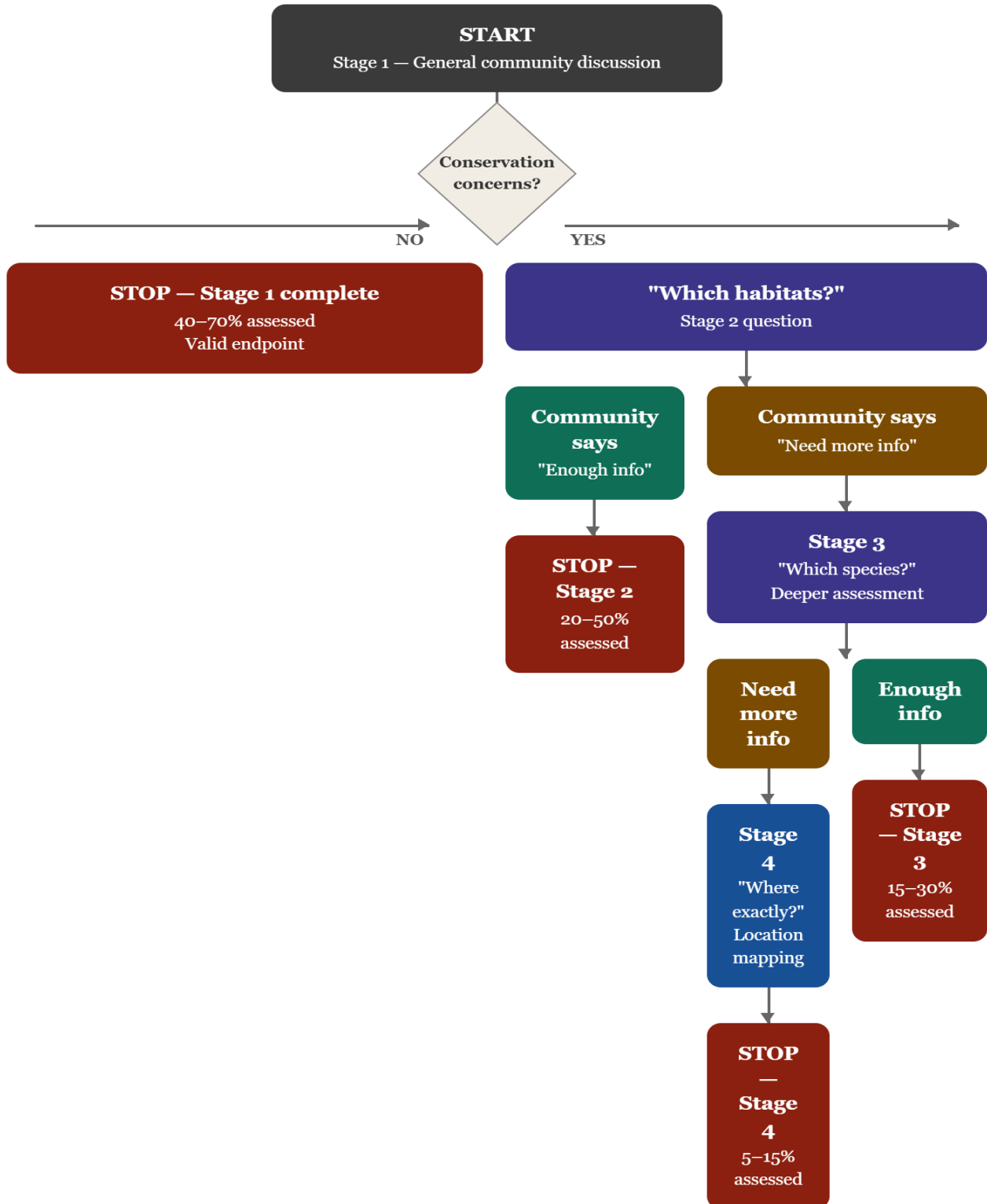
THE DECISION TREE

How to use this decision tree: Start with the most general questions (**Stage 1**). Communities can stop at any level and still contribute valuable information. Each YES leads to more detailed questions. Each NO or decision to stop is a valid endpoint.

Every exit is a success - no "failed" assessments, only different levels of information shared as community decides.

***Note on percentages:** Figures in STOP boxes indicate the approximate proportion of assessments that typically conclude at each stage, based on similar community-based assessment approaches.*

RCBA — Community Stage Overview



At every stage the community decides whether to continue or stop — all STOP points are valid, meaningful outcomes of the assessment process.

■ Stage / question
 ■ STOP — valid endpoint
 ■ "Enough info"
 ■ "Need more info"

RAPID ASSESSMENT QUICK REFERENCE

STAGE 1: GENERAL DISCUSSION (THEORETICAL)

TIME: 2-3 hours | PARTICIPANTS: 5-15 people | MATERIALS: ESF visual, Forms A & F

GOAL: Are there concerns? Yes/No?

DOCUMENT: One sentence

TYPICAL OUTCOME: 60-70% stop here

STAGE 2: HABITAT DISCUSSION (THEORETICAL)

TIME: 2-3 hours | PARTICIPANTS: 5-15 people | MATERIALS: Forms B & G, mapping materials

GOAL: Which habitats have issues?

DOCUMENT: Habitat + ESF assessment ± map

TYPICAL OUTCOME: 20-30% stop here

STAGE 3: SPECIES DISCUSSION (THEORETICAL)

TIME: 3-4 hours | PARTICIPANTS: 1-10 knowledge holders | MATERIALS: Forms C/E/H

GOAL: Which species are priorities?

DOCUMENT: Species list + ESF assessment

TYPICAL OUTCOME: 5-10% stop here

STAGE 4: LOCATION MAPPING (THEORETICAL)

TIME: 3-4 hours | PARTICIPANTS: 5-15 people | MATERIALS: Forms D/E/I, legal documents

GOAL: Where do species grow?

DOCUMENT: Maps + ESF symbols

REQUIREMENT: Full SI 61 compliance

TYPICAL OUTCOME: Less than 5% reach here

KEY REMINDERS:

- Sequential progression (cannot skip stages)
- Fresh consent is required at each stage
- Community can stop at any point, and all stopping points provide useful information
- ESF structures all discussions
- See Section 12 for complete decision framework

PART A: STAGE 1 — GENERAL DISCUSSION

Refer to Section 13.5 for methodology overview, decision framework, and outcomes.

Before You Start — Checklist:

Item	Reference	Ready?
Legal compliance completed	Section 11	☐
Team trained on ESF	Section 10.1	☐
Forms A & F ready	Appendix V	☐

STEP 1: WELCOME & RIGHTS (15 min)

Key points to cover: "Thank you for coming. I'm [name] from [organization]. You control this conversation."

Your rights under SI 61:

- Say NO to any question
- Stop anytime
- Skip questions
- You own your knowledge

"One question today: Are there concerns with medicinal plants in this area?"

"We will NOT ask about: plant names, locations, uses, preparations, or spiritual knowledge."

"This takes about 2 hours. At the end, you decide continue to the next stage or stop here."

STEP 2: CONSENT (10 min)

"Please take 10 minutes to discuss privately whether you want to participate. We will step outside."

ACTION: Leave the room for 10–15 minutes.

Return and ask: "Have you decided?"

Response	What to Do
NO	"Thank you. We respect your decision." Leave immediately.
YES	Read Form A aloud in local language. Get signatures. Give copies immediately.

CRITICAL: Do not pressure. Silence is an answer.

STEP 3: ESF DISCUSSION (60 min)

YOUR ROLE: Facilitate dialogue among participants. They talk to each other. You listen and write general themes only.

Structure: 15 minutes per dimension.

ESF ASSESSMENT: GENERAL MEDICINAL PLANTS

Dimension	Questions to Ask	Do NOT Ask	Action
AVAILABILITY	Are medicinal plants easier or harder to find than 10–20 years ago? Have you noticed changes in how common plants are? Are there areas where plants used to grow but don't anymore?	Which specific plants?	Listen. Write themes on flip chart under AVAILABILITY.
ACCESS	Can people still reach places where medicinal plants grow? Are there new restrictions or rules? Do you travel farther than before to collect? Are mining, development, or protected areas affecting access?	Specific locations	Listen. Write themes.
STABILITY	Are plant populations stable or changing? What threatens plants? Has plant quality or strength changed? Have you noticed changes in when plants flower or fruit?	Species names	Write themes.
PERCEPTION	Are medicinal plants still important in this community? Are younger people learning about plants? What do you think will happen in 10–20 years? Do you think plants need protection?	Individual knowledge holders	Write themes.

After each dimension: "I heard you say [summary]. Is that accurate?"

YOUR ROLE: Get confirmation before moving to the next dimension.

STEP 4: SYNTHESIS (10 min)

"Let's look at all 4 ESF dimensions together." [Point to flip chart]

Read aloud each dimension's key themes, then ask: "Looking at ALL FOUR dimensions together, do you think there are conservation concerns with medicinal plants? Yes or No?"

YOUR ROLE: Let participants discuss among themselves. They may disagree, that is fine.

Summarize the outcome:

Outcome	Summary Statement
General agreement YES	"There are conservation concerns identified across [list dimensions]."
General agreement NO	"No significant conservation concerns identified at this time."
Mixed views	"Some participants see concerns, others do not: both perspectives are documented."

STEP 5: DECISION (15 min)

See Section 13.5 for the complete decision framework.

IF NO CONCERNS IDENTIFIED:

"Thank you for this discussion. The assessment is complete. We will document: 'Rapid assessment conducted on [date]. No significant conservation concerns identified for medicinal plants in [community name]. Community confirms plants remain available, accessible, stable, and valued.' This is valuable information."

ACTION: Skip to Step 6.

IF YES, CONCERNS IDENTIFIED:

"You've identified there ARE concerns. Looking at our notes, I see concerns in: [read key themes from each ESF dimension where concerns exist]. You now have three choices:"

Choice	What It Means	What Happens Next
CHOICE 1: Stop here	Assessment is complete. Concerns are documented. This is a successful outcome.	Skip to Step 6.

Choice	What It Means	What Happens Next
CHOICE 2: Continue to Stage 2	Meet again to discuss which habitat types have issues. No plant names required. Takes 2–3 hours. Requires fresh consent.	Schedule Stage 2.
CHOICE 3: Think about it	No pressure to decide today. Community contacts team when ready.	Leave contact details.

ACTION: Give the community time to discuss privately. Leave the room if they request privacy.

STEP 6: CLOSE (10 min)

Complete Form F (validation form), get signatures, give copies immediately.

"You will receive within one week: notes organized by ESF dimension, signed forms, and a one-page summary."

For documentation options and what must never be recorded, see **Section 13.5**.

PART B: STAGE 2 — HABITAT DISCUSSION

Refer to Section 13.6 for methodology overview, decision framework, and outcomes.

Before You Start — Checklist:

Item	Reference	Ready?
Stage 1 completed with concerns identified	Section 13.5	☐
Community decided to continue	—	☐
Community chose method	☐ Discussion only ☐ Mapping	☐
Stage 1 ESF summary available	—	☐
Forms B & G ready	Appendix V	☐
Mapping materials ready (if mapping chosen)	—	☐

Ideal timing: Allow days or weeks between Stage 1 and Stage 2 for community deliberation.

STEP 1: WELCOME & RECAP (15 min)

"Welcome back. Thank you for continuing. You have the same rights as Stage 1 — you can stop anytime, say NO, or skip any question."

Read Stage 1 ESF summary aloud, then: "Today we will identify WHERE issues occur — which habitat types. We are still NOT asking for specific plant names or exact locations."

CONSENT: "Please take 10 minutes to discuss privately. We will step outside."

ACTION: Leave the room. Return for Form B signatures. Give copies immediately.

STEP 2: IDENTIFY HABITATS (20 min)

"Let's list types of places where medicinal plants grow in this area."

YOUR ROLE: Write each habitat on a flip chart using the community's own words.

Common habitat types to prompt if needed: forests, grasslands, wetlands, rocky areas, mountains, fields, home gardens.

STEP 3A: DISCUSSION METHOD (45 min) *(If community chose discussion without mapping)*

ESF ASSESSMENT BY HABITAT TYPE

For each habitat (7–10 min each):

Dimension	Question	Concern Level
AVAILABILITY	Are plants abundant or harder to find in [habitat]?	HIGH / MODERATE / LOW / NONE
ACCESS	Can people reach [habitat]? Any restrictions?	HIGH / MODERATE / LOW / NONE
STABILITY	Are populations stable? What threatens [habitat]?	HIGH / MODERATE / LOW / NONE
PERCEPTION	Is [habitat] valued as a source for medicinal plants?	HIGH / MODERATE / LOW / NONE

After each habitat: "I heard [summary]. Is that accurate?"

YOUR ROLE: Get confirmation before moving to the next habitat.

STEP 3B: MAPPING METHOD (50 min) *(If community chose to create a habitat map)*

FIRST — Sacred Sites Discussion (10 min) — MANDATORY

"Before mapping, we must discuss sacred or sensitive areas. Are there areas that should not be marked on any map?"

Community Decision	Your Role
Don't mention these areas at all	Respect completely — do not reference again
Mark as off-limits only	Place OFF-LIMITS marker — no detail documented
Other protection method	Follow community's chosen method strictly
Need to consult elders	STOP. Reschedule the session.

CRITICAL: Document community's choice in Form G. Follow their decision strictly. Never ask where sacred sites are.

A. Base Map (10 min)

"Please create a base map showing major features of your area: rivers, mountains, roads, villages."

ACTION: Pause and ask: "Are there any areas that should be marked off-limits on this map?"

YOUR ROLE: Community creates the map. You provide materials only.

B. Habitats (15 min)

"Please show where different habitats are located. Suggest using different colors or materials."

Habitat	Suggested Color/Material
Forests	Green
Grasslands	Yellow
Wetlands	Blue
Rocky areas	Stones/Gray

Let's create a legend together.

ACTION: Pause and ask: "Are there any areas that should be marked off-limits?"

C. ESF Symbols (20 min)

"Now let's mark WHERE concerns exist in each habitat using symbols."

Symbol	Meaning
(A)	AVAILABILITY issues
(C)	ACCESS issues
(S)	STABILITY issues
(P)	PERCEPTION issues / Sacred sites

For each habitat area on the map:

Question	If YES
Any AVAILABILITY issues here?	Community places (A) and explains
Any ACCESS issues here?	Community places (C) and explains
Any STABILITY issues here?	Community places (S) and explains
Any PERCEPTION issues or sacred site?	Community places (P) or marks OFF-LIMITS

YOUR ROLE: Write brief notes for each symbol placed. Community controls where symbols go.

D. Map Review (5 min)

"Let's review the map together to make sure it is accurate."

Check	Complete?
All habitats shown correctly?	☐
ESF symbols placed where community intended?	☐
All off-limits areas clearly marked?	☐
Anything to add or change?	☐

BREAK (10 min)

STEP 4: SYNTHESIS (15 min)

"Looking at our discussion [or map], which habitats have the most concerns?"

YOUR ROLE: Summarize: "Priority habitat: [X] has concerns in [Y] ESF dimensions."

"Is this summary accurate?"

ACTION: Get community confirmation before moving to Step 5.

STEP 5: MAP PERMISSIONS (10 min) *(Only if community created a map)*

"This map belongs to the community. You control what happens with it."

Question	Community Decision
Does the community want to keep a copy?	
Share with Forestry Commission?	☐ Yes ☐ No
Share with EMA?	☐ Yes ☐ No
Share with conservation NGOs?	☐ Yes ☐ No
Any restrictions on use?	

YOUR ROLE: Document all decisions in Form G. Community controls all map sharing.

STEP 6: DECISION (15 min)

See Section 13.6 for the complete decision framework.

"You've identified priority habitats. You now have three choices:"

Choice	What It Means	What Happens Next
CHOICE 1: Stop here	Habitat priorities documented. Valuable outcome for habitat conservation work.	Skip to Step 7.
CHOICE 2: Continue to Stage 3	Identify specific plants in priority habitats. More sensitive, individual consent required. Takes 3–4 hours.	Schedule Stage 3.
CHOICE 3: Think about it	No pressure to decide today. Community contacts team when ready.	Leave contact details.

ACTION: Give the community time to discuss privately. Leave the room if requested.

STEP 7: CLOSE (15 min)

Complete Form G (validation and map permissions), get signatures, give copies immediately.

"You will receive within one week: habitat notes organized by ESF dimension, signed forms, and copy or photo of map if created and approved."

For documentation options and what must never be recorded, see **Section 13.6**.

PART C: STAGE 3 — SPECIES DISCUSSION

Refer to Section 13.7 for methodology overview, decision framework, and outcomes.

CRITICAL REMINDER: Stage 3 involves sharing species names, more sensitive information requiring individual consent from each participant.

Before You Start — Checklist:

Item	Reference	Ready?
Stage 2 completed with priority habitats identified	Section 13.6	☐
Community decided to continue	—	☐
Stage 2 ESF summary prepared	—	☐
Forms C, E, and H ready	Appendix V	☐
Method chosen	☐ Interviews ☐ Focus group ☐ Both	☐

Two Decisions the Community Must Make Before Starting:

Decision	Options
METHOD	A. Individual interviews (1–2 hrs each, private) B. Focus group (3–4 hrs, collaborative) C. Both
DOCUMENTATION STYLE	A. Anonymous — no names attached B. Attributed — knowledge holders named for recognition

YOUR ROLE: Present both options clearly. Community decides. Document their choices before proceeding.

C1: INTERVIEW METHOD *(If community chose individual interviews)*

Select 3–10 knowledge holders. Community decides who participates. Conduct one interview at a time in a private location.

INTERVIEW FLOW (per person: 1–2 hours)

STEP 1: OPENING (15 min)

"Thank you for agreeing to speak with me. Your individual rights are separate from the community consent already given."

Review with participant:

Point	Script
Stage 2 findings	"In Stage 2 we identified these priority habitats: [list]"
Today's focus	"Which specific plants from those habitats concern you most?"
Documentation style	"We agreed to document: [ANONYMOUS / ATTRIBUTED]"
What will NOT be asked	"We will not ask for exact locations, detailed preparation methods, secret or spiritual knowledge"

"You control what you share. You can skip any question. You can stop anytime."

STEP 2: CONSENT (10 min)

Read Form E aloud. Emphasize:

- Anonymous vs attributed choice
- Right to refuse any question
- Right to stop anytime
- Right to withdraw information after giving it

ACTION: Get signature. Give copy immediately before interview begins.

STEP 3: MAIN INTERVIEW (60–90 min)

"Which medicinal plants from [priority habitats] are you most concerned about?"

YOUR ROLE: Write each plant name as pronounced. Typical range: 5–15 plants.

For each plant mentioned, apply the ESF:

ESF ASSESSMENT: [PLANT NAME]

Dimension	Questions to Ask	Do NOT Ask	Document
AVAILABILITY	How abundant is [plant] now? (Abundant / Common / Uncommon / Rare) Is it becoming common?	Specific locations	Abundance category and trend
ACCESS	Can you harvest [plant] when you need it? Are there restrictions?	Exact harvest sites	Restrictions only: keep location general
STABILITY	Is the population stable, declining, or increasing? What threatens [plant]? Has quality or effectiveness changed?	Preparation methods	Threats and population status
PERCEPTION	Is [plant] still valued in the community? Are younger people learning about it? What is its future?	Spiritual or ceremonial detail	Community value and knowledge transmission

If ATTRIBUTED documentation chosen — also document:

- Who is sharing this knowledge: [participant name]
- Why this plant is important to the community (general statement only)

NEVER document:

- Detailed preparation methods
- Specific medicinal uses
- Secret or spiritual knowledge
- Exact locations or coordinates

After all plants discussed:

"Which 2–3 plants are you most concerned about?"

YOUR ROLE: Note top priorities.

STEP 4: VALIDATION (20 min)

"I will read back what I have documented. Please stop me if anything is wrong, should be changed, or removed."

Read back for each plant:

Element	Read Back
Plant name	As recorded
AVAILABILITY	Abundance level and trend

Element	Read Back
ACCESS	Any restrictions mentioned
STABILITY	Population status and threats
PERCEPTION	Community value and knowledge transmission
Attribution	If applicable

YOUR ROLE: Make any corrections immediately as requested. No debate: community is always right about their own knowledge.

STEP 5: CLOSE (10 min)

Complete Form H, get signature, give copy immediately.

"You have identified [number] plants. Your top priorities are: [list 2–3]. You will receive complete notes within one week. You can contact us at [number] anytime to add, change, or remove information."

For documentation options and community rights after assessment, see **Section 13.7** and **Section 16.0**.

C2: FOCUS GROUP METHOD *(If community chose group discussion)*

Participants: 5–10 knowledge holders together.

STEP 1: WELCOME & GROUND RULES (20 min)

Review Forms C (community consent) and E (individual consent: each person signs separately).

Ground rules:

Rule	Script
Everyone's knowledge is valued	"There are no wrong answers here."
Okay to disagree	"Different perspectives are all valuable."
Can skip any question	"You never have to answer anything."
Can stop anytime	"We stop immediately if you ask us to."
Privacy of discussion	"What is shared here is only documented with your permission."

YOUR ROLE: Facilitate respectful discussion. Ensure every participant sign Form E individually before proceeding.

STEP 2: CREATE SPECIES LIST (30 min)

"Let's list medicinal plants from [priority habitats] that you are concerned about."

YOUR ROLE: Write each plant name on a separate card or flip chart as participants call them out. Use their local names. Do not judge or edit. Typical result: 15–30 plants.

STEP 3: PRIORITIZE (20 min)

"We have many plants listed. Let's identify which are highest priority."

Method — Dot Voting:

- Each participant gets 5 marks
- Place marks on plants they are most concerned about
- Can place multiple marks on one plant

YOUR ROLE: Count votes. Community decides priorities. Typical result: 5–10 priority plants.

STEP 4: DETAILED DISCUSSION (60–90 min)

For each priority plant (10–15 min each):

ESF ASSESSMENT: [PLANT NAME]

Dimension	Facilitation Prompt	Do NOT Ask	Document
AVAILABILITY	"Show of hands — who thinks [plant] is abundant? Common? Uncommon? Rare? Is it becoming common?"	Specific locations	Consensus or range of observations
ACCESS	"Are there restrictions on harvesting [plant]? Can people access it when needed?"	Exact harvest sites	Restrictions mentioned, keep location general
STABILITY	"Is the population of [plant] changing? What threatens it? Has quality changed?"	Preparation methods	Threats and population status
PERCEPTION	"Is [plant] still valued in the community? Are younger people learning about it? What is its future?"	Spiritual or ceremonial detail	Community value and knowledge transmission

If ATTRIBUTED documentation chosen:

"Who would like to be recognized for sharing knowledge about [plant]?"

YOUR ROLE: Document names of those who want recognition.

NEVER document:

- Detailed uses or preparation methods
- Secret or spiritual knowledge
- Exact locations or coordinates

ACTION: Take a 10-minute break after every 3–4 plants.

STEP 5: SYNTHESIS (20 min)

"Looking at all the plants we discussed, what patterns do you see?"

Discussion Point	Notes
Common threats across multiple plants?	
Which habitats are most concerning?	
Top 2–3 priority plants?	

YOUR ROLE: Facilitate discussion. Document consensus.

STEP 6: VALIDATION & CLOSE (30 min)

Read back ESF assessment for each plant:

"Is this accurate? Any corrections?"

YOUR ROLE: Make changes immediately as requested.

Complete Form H, get signatures from all participants, give copies immediately.

For documentation options and community rights after assessment, see **Section 13.7** and **Section 16.0**.

PART D: STAGE 4 — LOCATION MAPPING

Refer to Section 13.8 for methodology overview, decision framework, and outcomes.

CRITICAL: Stage 4 is the most sensitive stage. Full SI 61 legal compliance must be verified before proceeding. Only approximately 5% of assessments reach this stage, stopping earlier is normal and appropriate.

Before You Start — Legal Compliance Checklist:

ALL items must be checked before proceeding. If ANY box is unchecked: STOP.

Requirement	Reference	Verified?
Full SI 61 compliance documented	Section 11.2	☐
Written consent from ALL participants (Forms D + E)	Appendix V	☐
EMA approval obtained	Section 11.1	☐
Benefit-sharing agreement in place (if applicable)	Section 17.0	☐
Community understands who will see maps and how they will be used	Section 11.6	☐
Sacred sites discussion completed and protection method agreed	—	☐
All research permits obtained	Section 11.2	☐
Legal compliance officer signature on authorization	—	☐

STEP 1: WELCOME & RIGHTS (15 min)

"Welcome back. Thank you for continuing to this stage. This is the most sensitive part of the assessment. The same rights apply — you can stop anytime, say NO, or skip anything."

Review location documentation risks with community:

Risk	Script
GPS precision is permanent	"Once coordinates are recorded digitally, they cannot be made approximate again."
Data access risks	"Digital location data can potentially be accessed by others."
Unauthorized harvesting	"Precise locations could enable outsiders to harvest without permission."

Risk	Script
Loss of practical control	"Once location data exists digitally, controlling who accesses it becomes harder over time."

"Do you understand and accept these risks and wish to continue?"

ACTION: Wait for explicit community confirmation before proceeding.

STEP 2: CONSENT (15 min)

Two consent forms required at this stage:

Form	Who Signs	When
Form D (community consent)	All participants — minimum 10 signatures	Before mapping begins
Form E (individual consent)	EACH participant individually	Before their participation

CRITICAL: If fewer than 10 participants are present, Stage 4 must be postponed.

ACTION: Read both forms aloud in local language. Give copies immediately before any mapping begins.

STEP 3: SACRED SITES (10 min) — MANDATORY

"Before mapping begins, we must confirm sacred sites protection."

Community Decision	Your Role
Do not mark or reference	Respect completely — never reference again
Mark as OFF-LIMITS only	Place marker — no detail documented ever
Other protection method	Follow community's chosen method strictly

CRITICAL: Sacred sites are NEVER documented. NEVER ask where they are. NEVER map beyond what community authorizes.

STEP 4: MAPPING METHOD SELECTION (10 min)

"You choose how you want to create this map."

Method	When to Use	Precision	Materials
Paper maps	Community prefers non-digital	Low to moderate	Large paper, markers, reference landmarks

Method	When to Use	Precision	Materials
Ground materials	Cultural preference, immediate collaborative mapping	Low	Sticks, stones, local materials
Digital mapping	Precise coordinates needed, community agrees	High	GPS unit or smartphone
Combination	Best of multiple methods	Variable	All of the above

YOUR ROLE: Provide materials. Community leads the mapping. You support only.

STEP 5: COMMUNITY-LED MAPPING (60–90 min)

YOUR ROLE throughout: Provide materials. Follow community's lead. Record only what community authorizes.

For each location the community chooses to map, apply the ESF:

ESF ASSESSMENT: [SPECIFIC LOCATION]

Dimension	Question	Document
AVAILABILITY	How many plants are present at this location? Has abundance here changed over time?	Population estimates and trend
ACCESS	Can community members reach this location safely? Any barriers?	Access conditions
STABILITY	Are conditions at this location stable? What threatens it specifically?	Site-specific threats
PERCEPTION	Does the community want this location protected? How?	Community priorities for this site

Maps ALWAYS include (only what community authorizes):

- Priority species locations at precision level community chooses
- Habitat types at each location
- Access routes (if community shares)
- Threat observations
- Conservation priorities

Maps NEVER include:

- Sacred sites (marked OFF-LIMITS only)
- Locations community chose not to share
- More precision than community authorized
- Information obtained informally

STEP 6: MAP REVIEW (15 min)

"Let's review the map together before we finalize it."

Check	Complete?
All locations shown correctly?	☐
Precision level matches what community authorized?	☐
Sacred sites marked OFF-LIMITS only — no detail?	☐
Anything to add, change, or remove?	☐

YOUR ROLE: Make any corrections immediately as requested.

STEP 7: MAP PERMISSIONS & METADATA (20 min)

"This map belongs entirely to the community. You decide what happens with it."

Document the following in Form I:

Item	Community Decision
Who is authorized to see this map?	
How may the map be used?	
Any time limits on sharing?	
Any areas to be blurred or removed for sharing?	
Who holds the original?	

CRITICAL: Community can withdraw authorization for map use at any time. If consent is withdrawn, all maps and location data must be destroyed or returned immediately.

STEP 8: DECISION & CLOSE (15 min)

Stage 4 is the final stage. Assessment is complete.

"The assessment is now complete. Thank you for your participation and trust throughout this process."

Complete Form I (validation and map permissions), get signatures from all participants (minimum 10), give copies immediately.

Community receives:

- All maps created
- Complete documentation
- Digital copies if created
- Statement of intended use

"You will receive everything within one week. You can contact us at [number] anytime to add, change, remove, or withdraw any information."

For documentation options and community rights after assessment, see **Section 13.8** and **Section 16.0**.

APPENDIX V: CONSENT AND LEGAL COMPLIANCE FORMS

Appendix V provides all consent and validation forms referenced in this field guide. All forms must be translated into local languages before use and comply with Statutory Instrument 61 of 2009.

HOW TO USE THESE FORMS

Legal Requirements

- All forms must comply with SI 61 of 2009
- Forms must be read aloud in a language that participants understand
- Participants must have time to discuss privately before signing
- Signed copies must be provided to the community immediately
- Original forms retained securely by the assessment team

Translation Protocol

- Translate forms before fieldwork begins
- Have translations verified by native speakers
- Test translations with non-participant community members
- Keep the English version available for legal reference

Form Completion Checklist

- Form read aloud in the local language
- Questions answered
- Private discussion time provided (10-15 min minimum)
- Voluntary participation confirmed
- All signatures obtained
- Copies provided to participants immediately
- Original stored securely

BENEFITS OF PARTICIPATING IN THIS STAGE

By taking part in Stage 1, your community may benefit from:

- Receiving information gathered in the secondary data review (Stage 1) about medicinal plants in your area, this information belongs to you
- Having your conservation observations and concerns formally documented and recognized
- Connecting to conservation support and resources if your community decides it wants them
- Legal protection of your traditional knowledge under Statutory Instrument 61 of 2009 at every step
- The right to negotiate benefit-sharing if your knowledge is ever used commercially in future

We cannot guarantee any specific outcomes. Participating in Stage 1 does not commit your community to any further stages, actions, or obligations.

RISK OF PARTICIPATING IN THIS STAGE

You should understand the following before agreeing to participate:

- Information shared in Stage 1 (general discussion) will be seen by: [list named partner organizations]
- Even general observations, once written down, may be harder to keep fully confidential over time
- There is no obligation to answer any question. You may decline to discuss any topic at any time
- There are no negative consequences for declining to participate or stopping at any point
- This is a pilot methodology that has not yet been fully field-tested. You are helping to develop and improve it

You have the right to ask questions about any of these risks before signing. You may withdraw from the assessment at any time, for any reason, without explanation.

Additional Risk Language for Forms B and C (Stages 2– Habitat Discussion)

- Stage 2 - If habitat sketch maps are created, even rough maps showing approximate areas may reveal sensitive site locations to parties who later access the documentation

Additional Risk Language for Forms C (Stages 3 – Species Discussion)

- Knowledge about specific medicinal plant species is more sensitive than general habitat observations and carries greater risk of misuse if shared beyond agreed partners
- Individual attribution of knowledge (if chosen) permanently links your name to specific plant knowledge in the written record
- Research permits may be required before this stage can proceed; your community's knowledge may not be shared until legal protections are confirmed

Additional Risk Language for Forms D and E (Stages 4- Location Mapping)

Stage 4 carries the highest risk. The Benefits section remains the same. Add the following to the Risks section in Forms D and E:

Risk of Participating in Stage 4 (Location Mapping)- Must Read before Signing

- GPS coordinates are permanent: once precise plant locations are recorded digitally, the data is exact and cannot be made approximate again
- Digital location data can be accessed by third parties through device theft, institutional data breaches, hacking, or government requests
- Precise plant locations could enable outsiders to harvest plants without community permission
- Once location data exists digitally, communities may lose full practical control over who accesses it over time, even with legal protections in place
- Documenting locations of protected or commercially valuable species may create legal complications for communities under some national laws
- Full Statutory Instrument 61 of 2009 compliance is mandatory before any location mapping begins; this stage cannot proceed if any requirement is uncertain

If any community member has concerns about these risks that cannot be resolved, Stage 4 must not proceed. Stopping at Stage 3 is always a successful outcome.

SECTION 1: CONSENT FORMS (Before Each Stage)

FORM A: STAGE 1 COMMUNITY CONSENT (GENERAL DISCUSSION)

RAPID ASSESSMENT OF MEDICINAL PLANTS

Stage 1: General Discussion - Community Consent Form

Date: _____ **Location:** _____

Assessment Organization: _____

PURPOSE OF THIS STAGE

We are conducting a rapid assessment to understand if there are any conservation concerns related to medicinal plants in your community. This first stage involves a general discussion only.

What we will discuss:

- General observations about medicinal plants
- Whether plants are easier or harder to find than before
- Whether there are any concerns that need attention

What we will NOT ask about:

- Specific plant names
- Exact locations where plants grow
- How you use plants
- Traditional preparation methods

YOUR RIGHTS UNDER SI 61 OF 2009

You have the following rights:

- ✓ **Right to Say NO:** You can refuse to participate without any consequences
- ✓ **Right to Stop:** You can stop the discussion at any time
- ✓ **Right to Skip Questions:** You can choose not to answer any question
- ✓ **Right to Your Knowledge:** You own your traditional knowledge
- ✓ **Right to Privacy:** We will not share your personal information
- ✓ **Right to Withdraw:** You can withdraw from the study at any time

THIS IS THE COMMUNITY'S ASSESSMENT

This assessment belongs to the community:

- This is the community's assessment of medicinal plants from the community's perspective
- The community determines whether conservation issues exist
- The community decides whether to address any concerns identified
- The community controls what (if anything) gets documented
- All information shared belongs to the community
- The assessment team is here to support the community's assessment process

The goal is to support the community in identifying concerns and actions you want to undertake to ensure you, and future generations can continue to harvest medicinal plants important to you.

BENEFITS OF PARTICIPATING

By participating in Stage 1, the community may benefit by:

- Gaining a clearer picture of whether medicinal plant conservation concerns exist in your area
- Identifying issues that can inform community-led conservation decisions
- Retaining full ownership and control of all information shared
- Contributing to conservation knowledge that serves your community's own priorities
- Accessing support for conservation actions the community decides to pursue

RISKS OF PARTICIPATING

The community should be aware of the following:

- Stage 1 involves general discussion only: no plant names or locations are documented, risk level is low
- General themes from the discussion will be documented if the community consents to this
- Even general documentation creates a record that exists beyond the session
- Proceeding to later stages increases the sensitivity of information shared: each stage has its own separate consent process, and you decide at each stage whether to continue

WHAT WILL BE DOCUMENTED

We will document:

- General themes from the discussion
- Environmental Security Framework observations (Availability, Access, Stability, Perception)
- Whether conservation concerns exist: Yes or No

We will NOT document:

- Specific plant names
- Individual statements (unless you give permission)
- Locations
- Traditional uses or preparation methods

HOW INFORMATION WILL BE USED

Information from this assessment will be used to:

- Understand if medicinal plants need conservation attention
- Guide decisions about whether to conduct further assessment
- Inform conservation planning (if concerns are identified)

Information will be shared with (check those that apply):

- Community participants
- Environmental Management Agency (EMA)
- Forestry Commission
- [Other - specify]: _____

WHAT HAPPENS NEXT

At the end of today's discussion, the community will decide:

- **Option 1: STOP HERE** - No further assessment needed
- **Option 2: CONTINUE TO STAGE 2** - Discuss which habitats have concerns (requires new consent)
- **Option 3: THINK ABOUT IT** - Take time to decide

There is no pressure to continue beyond Stage 1.

CONTACT INFORMATION

Assessment Team Contact: _____

To Report Concerns:

Environmental Management Agency: _____

Genetic Resources Committee: _____

COMMUNITY CONSENT

We, the undersigned community members, have:

- Had this form read to us in [language]: _____
- Been given time to discuss privately
- Had our questions answered
- Understand our rights under SI 61 of 2009
- Agree to participate in Stage 1 General Discussion

We understand that:

- Participation is voluntary
- We can stop at any time
- We will decide whether to continue after Stage 1
- We will receive copies of this form and all findings

SIGNATURES

Name (Print)	Signature	Role in Community	Date

Minimum 3 signatures required from those present — if fewer than 3 people attend, reschedule the session before proceeding

Assessment Team Leader:

Name: _____

Signature: _____

Date: _____

Community Advocate/Witness:

Name: _____

Signature: _____

Date: _____

COPIES PROVIDED:

- ☐ Community representative (Date: _____)
- ☐ Assessment team file (Date: _____)
- ☐ Legal compliance officer (Date: _____)

Note for Ethics Approval Contexts: Organizations applying for university or institutional research ethics approval should supplement this form with their institution's standard consent form requirements. This form addresses SI 61 of 2009 legal compliance. Ethics boards may require additional sections or documentation specific to their institution.

FORM B: STAGE 2 COMMUNITY CONSENT (HABITAT DISCUSSION)

RAPID ASSESSMENT OF MEDICINAL PLANTS

Stage 2: Habitat Discussion - Community Consent Form

Date: _____ **Location:** _____

Assessment Organization: _____

STAGE 1 SUMMARY

In Stage 1, we learned: [Summarize Stage 1 findings - general concerns identified]

The community decided to continue to Stage 2.

PURPOSE OF THIS STAGE

Stage 2 will identify WHERE concerns occur by discussing different habitat types.

What we will discuss:

- Types of habitats where medicinal plants grow (forests, grasslands, wetlands, etc.)
- Which habitats have concerns
- General threats to each habitat type

What we will NOT ask about:

- Specific plant names (still not asking)
- Exact locations or coordinates
- Traditional uses

BENEFITS OF PARTICIPATING IN THIS STAGE

By participating in Stage 2, the community may benefit by:

- Identifying which habitat types are most important for medicinal plant conservation from the community's own perspective
- Creating a formal record of habitat concerns that serves the community's own conservation priorities
- Retaining full ownership and control of all habitat information shared, including any sketch maps created
- Legal protection of all information shared under Statutory Instrument 61 of 2009
- The right to stop at any time without consequences: stopping at Stage 2 is a valid and complete outcome

RISKS OF PARTICIPATING IN THIS STAGE

The community should be aware of the following:

- Stage 2 involves discussing habitat types (e.g., forests, grasslands, wetlands): risk level is moderate, particularly if sketch maps are created
- Even a rough sketch map showing general habitat areas creates a record that could reveal where communities have conservation concerns

- Sketch maps will only be shared with parties the community explicitly approves in the consent section below, community controls all access
- Sacred sites will not appear on any maps unless the community explicitly chooses to mark their general location as off-limits
- Proceeding to Stage 3 (species names) or Stage 4 (GPS locations) involves progressively more sensitive information, each later stage has its own separate consent process, and the community decides at each stage whether to continue

THE COMMUNITY LEADS THIS ASSESSMENT

The community decides:

- Which habitats to discuss
- Whether to create maps or discuss only
- What goes on any maps created
- Who (if anyone) sees any maps
- When to continue or stop

The assessment team provides facilitation and materials. The community provides knowledge, decisions, and direction.

COMMUNITY CHOOSES METHOD

The community must choose how to conduct Stage 2:

- **Option 1: Discussion Only** - Talk about habitats without creating maps
- **Option 2: Simple Mapping** - Create a basic habitat map showing general areas

If mapping is chosen:

- Community members will create a map
- Community controls what goes on the map
- Sacred sites will be marked off-limits or not mentioned at all
- Community decides if the map can be photographed or shared

SACRED SITES PROTECTION

Before any mapping activity:

Question: Are there sacred areas that should not be marked on any map?

Community selects one (✓)

- Do not mention these areas at all
- Mark as off-limits but show the general location
- No sacred site concerns for Stage 2

Sacred sites discussed: _____

Protection method chosen: _____

MAPPING PERMISSIONS (If Mapping Chosen)

If the community chooses to create a habitat map:

Can we photograph the map?

☐ YES ☐ NO

Please check (✓) all parties the community agrees may receive this map:

- ☐ Community participants (always YES)
- ☐ Environmental Management Agency
- ☐ Forestry Commission
- ☐ Conservation NGOs
- ☐ Other: _____

Please check (✓) all restrictions that apply:

- ☐ No restrictions
- ☐ Blur certain areas
- ☐ Time-limited permission (expires: _____)
- ☐ Other restrictions: _____

COMMUNITY CONSENT

We, the undersigned community members, have:

- Reviewed Stage 1 findings
- Had Stage 2 explained in [language]: _____
- Chosen our method: ☐ Discussion ☐ Mapping
- Discussed sacred sites protection
- Understand our rights
- Agree to participate in Stage 2

SIGNATURES

Name (Print)	Signature	Role in Community	Date

Minimum 5 signatures required from those present — if fewer than 5 people attend, reschedule the session before proceeding

Assessment Team Leader:

Name: _____

Signature: _____

Date: _____

Community Advocate/Witness:

Name: _____

Signature: _____

Date: _____

COPIES PROVIDED:

- ☐ Community representative
- ☐ Assessment team file
- ☐ Legal compliance officer

FORM C: STAGE 3 GROUP CONSENT (SPECIES DISCUSSION)

RAPID ASSESSMENT OF MEDICINAL PLANTS

Stage 3: Species Discussion - Group Consent Form

Date: _____ **Location:** _____

Assessment Organization: _____

STAGES 1 & 2 SUMMARY

Stage 1: We confirmed that conservation concerns exist

Stage 2: We identified priority habitats: _____

The community decided to continue to Stage 3.

PURPOSE OF THIS STAGE

Stage 3 will identify WHICH SPECIFIC PLANTS are priorities for conservation attention.

What we will discuss:

- Names of medicinal plants from priority habitats
- How abundant each plant is (common, uncommon, rare)
- Whether plant populations are stable or declining
- What threatens each plant

What we will NOT ask about:

- Exact locations where plants grow (Stage 4 only, if community chooses)
- Secret preparation methods
- Spiritual or ceremonial details (unless you choose to share)

BENEFITS OF PARTICIPATING IN THIS STAGE

By participating in Stage 3, the community may benefit by:

- Identifying which specific medicinal plants are priorities for conservation from the community's own perspective
- Creating a formal record of species-level concerns that serves the community's own conservation priorities
- Retaining full ownership of all species knowledge shared, the community controls how information is used, stored, and shared
- Choosing anonymous or attributed documentation to protect individual privacy or to recognise knowledge holders as the community prefers
- Legal protection of all traditional knowledge shared under Statutory Instrument 61 of 2009, including benefit-sharing rights if information is ever used commercially
- The right to withdraw information after giving it, or to correct information at any time

RISKS OF PARTICIPATING IN THIS STAGE

The community should be aware of the following:

- Stage 3 involves sharing specific plant names, this is more sensitive than habitat discussions in Stage 2
- Species names combined with the habitat information from Stage 2 could help outsiders identify collection sites even without exact coordinates
- If attributed documentation is chosen, knowledge holders' names will be linked to the information they share in assessment records
- All information will only be shared with parties the community explicitly approves in the consent section below
- Each knowledge holder who participates will also sign an individual consent form (Form E) before any species discussion begins
- Proceeding to Stage 4 (GPS location mapping) is the most sensitive step, Stage 4 has its own separate consent process

COMMUNITY REMAINS IN CONTROL

At Stage 3, the community decides:

- Which plants to name (if any)
- How information is documented (anonymous or attributed)
- What information to share about each plant
- How knowledge is used
- All next steps

This assessment helps the community understand conservation status from the community's perspective. The assessment team supports the process the community designs.

COMMUNITY MAKES TWO CHOICES

CHOICE 1: METHOD

How should we conduct Stage 3?

- **Individual Interviews** - Talk to knowledge holders separately (1-2 hours each)
- **Focus Group Discussion** - Knowledge holders discuss together (3-4 hours)
- **Both Methods** - Some individual, some group

Community chooses: _____

CHOICE 2: DOCUMENTATION STYLE

How should knowledge be documented?

- **ANONYMOUS** - No names attached to any information
Example: Community members report that [plant name] is becoming rare due to mining activities.

- **ATTRIBUTED** - Knowledge holders named for recognition
Example: Mr. [Name] reports that [plant name] is becoming rare. He uses [plant part] for [general use].

Community chooses: _____

INCREASED SENSITIVITY - IMPORTANT

Stage 3 is MORE SENSITIVE than Stages 1-2 because:

- You will share specific plant names
- Information could be linked to specific knowledge holders (if attributed)
- Information has higher value to outsiders

Additional protections in Stage 3:

- ✓ Each participant signs an individual consent (Form E) beyond this group consent
- ✓ You can withdraw specific information after giving it
- ✓ Legal compliance officer reviews before any external sharing
- ✓ SI 61 protections apply fully

WHAT WILL BE DOCUMENTED

We will document:

- Names of priority medicinal plants (local names)
- Environmental Security Framework assessment for each plant:
 - AVAILABILITY: How abundant? Trend over time?
 - ACCESS: Can people harvest when needed?
 - STABILITY: Population stable? What threatens it?
 - PERCEPTION: Still valued? Youth learning?

If ATTRIBUTED documentation is chosen, we will also document:

- Name of knowledge holder sharing information
- General uses of plants (not secret preparations)
- Which plant parts are used

We will NOT document:

- Exact locations or coordinates
- Secret preparation methods
- Spiritual/ceremonial details (unless explicitly shared)
- Harvesting techniques (unless explicitly shared)

COMMUNITY GROUP CONSENT

We, the undersigned community members, have:

- Reviewed findings from Stages 1-2
- Had Stage 3 explained in [language]: _____

- Chosen our method: _____
- Chosen our documentation style: _____
- Understand the increased sensitivity of Stage 3
- Understand each participant will sign an individual consent (Form E)
- Understand our rights under SI 61
- Agree to participate in Stage 3

SIGNATURES

Name (Print)	Signature	Role in Community	Date

Minimum 5 signatures required from those present — if fewer than 5 people attend, reschedule the session before proceeding

Assessment Team Leader:

Name: _____
 Signature: _____
 Date: _____

Legal Compliance Officer:

Name: _____
 Signature: _____
 Date: _____

Community Advocate/Witness:

Name: _____
 Signature: _____
 Date: _____

COPIES PROVIDED:

- Community representative
- Assessment team file
- Legal compliance officer

FORM D: STAGE 4 COMMUNITY CONSENT (LOCATION MAPPING)

RAPID ASSESSMENT OF MEDICINAL PLANTS

Stage 4: Location Mapping - Community Consent Form

MOST SENSITIVE STAGE - FULL SI 61 COMPLIANCE REQUIRED

Date: _____ **Location:** _____

Assessment Organization: _____

STAGES 1-3 SUMMARY

Stage 1: Conservation concerns confirmed

Stage 2: Priority habitats identified: _____

Stage 3: Priority species identified: _____

The community decided to continue to Stage 4.

PURPOSE OF THIS STAGE

Stage 4 will map the exact locations where priority species grow.

What we will do:

- Create maps showing where priority plants are found
- Mark collection areas
- Document the Environmental Security Framework for each location
- Identify site-specific threats

What we will not record or document:

- Sacred sites (will NOT be documented or will be marked OFF-LIMITS)
- Sensitive locations the community wants to remain undisclosed
- Any areas the community designates as off-limits for documentation

BENEFITS OF PARTICIPATING IN THIS STAGE

By participating in Stage 4, the community may benefit by:

- Creating a precise, community-owned map of priority medicinal plant locations that supports conservation actions the community chooses to take
- Producing documentation that can support community land rights, conservation planning, or benefit-sharing negotiations, if the community chooses to use it in these ways
- Retaining full ownership and control of all maps created, the community decides who sees them, how they are used, and can revoke permissions at any time
- Legal protection under the full provisions of Statutory Instrument 61 of 2009, including formal benefit-sharing rights if information is ever used commercially

RISKS OF PARTICIPATING IN THIS STAGE

The community should be aware of the following:

- Stage 4 is the most sensitive stage, exact GPS coordinates have the highest value to outsiders, including commercial harvesters
- Once locations are mapped and recorded, it becomes harder to keep them confidential even with strong data security protocols
- Maps could be misused if they are accessed by unauthorised parties or if copies are made without the community's knowledge
- Sacred sites could be accessed by outsiders if they are not properly and explicitly excluded from all maps and documentation
- This stage requires full compliance with Statutory Instrument 61 of 2009, do not proceed unless all legal requirements are confirmed
- Each participant must sign both this community consent form (Form D) and an individual consent form (Form E) before any mapping begins

THE COMMUNITY CREATES AND OWNS THE MAP

At Stage 4, the community:

- Leads the mapping process
- Decides what locations to mark (if any)
- Controls who sees the maps and how the maps are used
- Sacred sites not recorded or mapped, never documented
- Can revoke all permissions at any time

The assessment team provides materials and facilitation support. The community creates the map. The community decides everything about the map. This assessment exists to support the community in conservation actions the community wants to undertake, not to extract information for external use.

CRITICAL WARNING - READ CAREFULLY

Stage 4 is the MOST SENSITIVE Stage because:

- Exact locations have the highest value to outsiders
- Information could lead to unauthorized harvesting
- Sacred sites could be violated if not properly protected
- Maps could be misused if permissions are not explicit
- Once mapped, harder to keep locations confidential

Community has discussed these questions: ☐ YES ☐ NO

Community decision: We understand the risks and choose to proceed because:

LEGAL REQUIREMENTS - MANDATORY CHECKLIST

BEFORE PROCEEDING, FACILITATOR MUST INITIAL EACH LINE. Stage 4 cannot begin until all boxes are confirmed.

☐	Requirement	Confirmed by	Initials / Date
☐	Legal compliance officer has confirmed FULL Statutory Instrument 61 of 2009 compliance for all Stage 4 activities	Legal officer	
☐	Written consent obtained from ALL community members present (minimum required — see Fix 3)	Facilitator	
☐	Benefit-sharing agreement is in place — OR confirmed in writing that it is not applicable	Legal officer	
☐	Community has been clearly told who will have access to the maps	Facilitator	
☐	Community has been clearly told exactly how the maps will be used and stored	Facilitator	
☐	Community has been clearly told they may stop mapping at any point without consequence	Facilitator	
☐	Community has been clearly told they may revoke map-sharing permissions at any time	Facilitator	
☐	Sacred sites have been identified, and an agreed protection method is documented on this form	Facilitator + Community rep	
☐	All specific documentation permissions (who may see maps, what maps may be used for, restrictions) have been confirmed in writing	Facilitator	
☐	Location documentation risks (Section 11.6) have been read aloud and explained to all participants	Facilitator	

Facilitator declaration: I confirm all boxes above have been checked and initialled before Stage 4 mapping began.

Facilitator Name: _____
Signature: _____
Date: _____

SACRED SITES PROTECTION - MANDATORY

Sacred sites discussion completed: ☐ YES ☐ NO

Sacred sites identified: ☐ YES ☐ NO ☐ Cannot disclose

Protection method chosen:

- ☐ Do not mention at all in any mapping activity
- ☐ Mark as OFF-LIMITS - DO NOT DOCUMENT
- ☐ General location shown but marked SACRED - NO DETAIL
- ☐ Other protection method: _____

MAP SHARING PERMISSIONS - EXPLICIT CONSENT REQUIRED

CRITICAL: Each question requires an explicit YES or NO

1. Can we photograph the map?

☐ YES ☐ NO

If YES, what can be photographed:

- ☐ Entire map
- ☐ Map with sacred sites removed first
- ☐ Map with certain areas blurred
- ☐ Other restrictions: _____

2. Who can see the map? (Check all that apply)

- ☐ Community participants ONLY
- ☐ Assessment team
- ☐ Environmental Management Agency (EMA)
- ☐ Forestry Commission
- ☐ Zimbabwe Parks and Wildlife Management Authority
- ☐ Conservation NGOs (specify): _____
- ☐ Research institutions (specify): _____
- ☐ District authorities
- ☐ Other (specify): _____

3. What can the map be used for?

- ☐ Conservation planning
- ☐ Protected area establishment
- ☐ Community-based management plans
- ☐ Habitat restoration planning

- Other (specify): _____

4. Are there restrictions on map use?

- No restrictions (within approved uses above)
- Time-limited permission (expires: _____)
- Must blur/remove certain areas before sharing
- Requires community approval before EACH use
- Other restrictions: _____

RIGHT TO REVOKE PERMISSIONS

IMPORTANT: Community can change map permissions at ANY TIME

To revoke or change permissions:

- Contact: _____
- Phone: _____

When permissions are revoked:

- All map copies destroyed (if possible)
- Map not shared with any new parties
- Current holders are notified to stop using
- Community decision documented

COMMUNITY CONSENT

We, the undersigned community members, have:

- Reviewed findings from Stage 1-3
- Had Stage 4 explained in [language]: _____
- Discussed the risks of location mapping
- Decided to proceed with Stage 4
- Chosen our mapping method
- Discussed sacred sites protection
- Provided explicit permissions for map use
- Understand we can revoke permissions anytime
- Understand this is the end of the rapid assessment
- Understand our rights under SI 61
- Agree to participate in Stage 4 Location Mapping

We understand this is the MOST SENSITIVE Stage and have made an informed decision.

SIGNATURES

Name (Print)	Signature	Role in Community	Date

Minimum 10 signatures required. If fewer than 10 participants are present, Stage 4 must be postponed until minimum attendance is met.

Assessment Team Leader:

Name: _____

Signature: _____

Date: _____

Legal Compliance Officer (MANDATORY):

Name: _____

Signature: _____

Date: _____

Confirmation: I verify FULL SI 61 compliance

COPIES PROVIDED:

- Community representative
- Assessment team file
- Legal compliance officer
- EMA
- Genetic Resources Committee (if applicable)

LEGAL COMPLIANCE VERIFICATION:

Date legal compliance confirmed: _____

Legal officer: _____

SI 61 requirements met: ☐ YES ☐ NO

If NO → DO NOT PROCEED

FORM E: INDIVIDUAL PARTICIPANT CONSENT (STAGES 3-4)

RAPID ASSESSMENT OF MEDICINAL PLANTS

Individual Participant Consent Form

Required for Stages 3 and 4 in addition to community consent

Date: _____ **Location:** _____

Stage: ☐ Stage 3 (Species Discussion) ☐ Stage 4 (Location Mapping)

YOUR PARTICIPATION

You have been identified as someone with knowledge about medicinal plants. We would like to include your knowledge in this assessment.

Important: Even though the community has agreed to this stage, YOU must decide for yourself whether to participate.

BENEFITS OF PARTICIPATING

By sharing your knowledge in this assessment, you may benefit by:

- Having your personal knowledge formally recognised and protected under Statutory Instrument 61 of 2009
- Choosing whether your name is attached to the information you share (attributed) or kept anonymous, you decide
- Retaining the right to withdraw your information or correct it at any time after giving it
- The right to benefit-sharing if any knowledge you share is ever used commercially in the future
- Contributing to community-controlled conservation that serves your community's own priorities, not external agendas

RISKS OF PARTICIPATING

You should be aware of the following before agreeing to participate:

- Sharing specific plant knowledge may identify you as a traditional knowledge holder to others in the community or to the assessment team
- If attributed documentation is chosen, your name will be linked to the information you share in all assessment records
- Even anonymous documentation creates a record that exists beyond this session
- Your information will only be shared with parties the community has approved in the group consent form (Form C or D): but you should understand who those parties are before signing
- You have the right to set any limits on what you share and to stop at any time without any negative consequences

INDIVIDUAL CONTROL WITHIN COMMUNITY ASSESSMENT

Even though the community has agreed to this stage, each participant individually decides:

- Whether you participate at all
- What information do you share (if any)
- Whether your name is attached to information
- What boundaries to set on sharing
- Their right to withdraw information later

This is about supporting the community's assessment, not extracting your knowledge for external purposes. Each participant shares only what they choose to share, for the community's own use in conservation planning.

YOUR CHOICE

I choose:

- **ANONYMOUS** documentation - Do not use my name
- **ATTRIBUTED** documentation - You can use my name

I can change this choice later: ☐ YES, I understand

YOUR RIGHTS

- ✓ **Right to Refuse:** You can say NO without any negative consequences
- ✓ **Right to Stop:** You can stop the interview/discussion anytime
- ✓ **Right to Skip:** You can skip any question
- ✓ **Right to Privacy:** You control what information you share
- ✓ **Right to Withdraw:** You can withdraw your consent and information later
- ✓ **Right to Recognition:** You can choose to be named (attributed)
- ✓ **Right to Anonymity:** You can choose not to be named (anonymous)
- ✓ **Right to Correction:** You can correct information after giving it
- ✓ **Right to Benefit-Sharing:** If commercial use develops, you have rights under SI 61

BOUNDARIES YOU SET

You can set limits on what you share. Mark what applies:

- I will share general plant names
- I will share traditional uses (general)
- I will NOT share secret preparation
- I will NOT share spiritual/ceremonial information
- I will share plant locations (Stage 4 only)
- I will NOT share sacred site information
- Other boundaries: _____

These boundaries will be respected.

CONSENT STATEMENT

I, _____ (print name), have:

- Had this form read to me in [language]: _____

- Had my questions answered
- Made my own decision to participate
- Chosen my documentation style: ☐ Anonymous ☐ Attributed
- Set my boundaries for what I will share
- Understood my rights under SI 61
- Understood I can withdraw consent later

I voluntarily agree to participate in:

- Stage 3 Species Discussion
- Stage 4 Location Mapping

SIGNATURES

Participant:

Name (Print): _____

Signature or Mark: _____

Date: _____

If the participant cannot write, witness signature:

Witness Name: _____

Witness Signature: _____

Date: _____

Relationship to participant: _____

Assessment Team Member:

Name: _____

Signature: _____

Date: _____

COPIES PROVIDED:

- Participant
- Assessment team file

WITHDRAWAL OF CONSENT (Complete if participant withdraws later)

Date of withdrawal: _____

Information to be removed: _____

Participant signature: _____

Assessment team signature: _____

Action taken: Information deleted ☐ Name removed (if attributed)

☐ Other: _____

SECTION 2: VALIDATION FORMS (After Each Stage)

FORM F: STAGE 1 VALIDATION

RAPID ASSESSMENT OF MEDICINAL PLANTS

Stage 1: General Discussion - Validation Form

Date: _____ Location: _____

PURPOSE

This form validates that our documentation of Stage 1 accurately reflects the community discussion.

WHAT WE DOCUMENTED

Environmental Security Framework Findings:

1. AVAILABILITY:

Key points documented:

- _____
- _____

2. ACCESS:

Key points documented:

- _____
- _____

3. STABILITY:

Key points documented:

- _____
- _____

4. PERCEPTION:

Key points documented:

- _____
- _____

OVERALL FINDING

Conservation concerns identified: ☐ YES ☐ NO

Summary statement: _____

COMMUNITY VALIDATION

We confirm:

- Documentation accurately reflects our discussion

- We approve this summary
- No corrections needed

OR

- We request the following corrections: _____

CORRECTIONS MADE

Corrections requested: _____

Corrections made: _____

Date corrections made: _____

SIGNATURES

Name (Print)	Signature	Role in Community	Date

Minimum 3 signatures required from those present — if fewer than 3 people attend, reschedule the session before proceeding

Assessment Team Leader:

Name: _____

Signature: _____

Date: _____

COPIES PROVIDED:

- Community representative (Date: _____)
- Assessment team file (Date: _____)

FORM G: STAGE 2 VALIDATION

RAPID ASSESSMENT OF MEDICINAL PLANTS

Stage 2: Habitat Discussion - Validation Form

Date: _____ Location: _____

PURPOSE

This form validates that our documentation of Stage 2 accurately reflects the community discussion and any maps created.

WHAT WE DOCUMENTED

Method Used: ☐ Discussion Only ☐ Mapping

HABITATS IDENTIFIED

List of habitat types discussed:

- 1) _____
- 2) _____

ENVIRONMENTAL SECURITY FRAMEWORK ASSESSMENT BY HABITAT

Habitat 1: _____

- AVAILABILITY: ☐ No concern ☐ Low ☐ Moderate ☐ High concern

Notes: _____

- ACCESS: ☐ No concern ☐ Low ☐ Moderate ☐ High concern

Notes: _____

- STABILITY: ☐ No concern ☐ Low ☐ Moderate ☐ High concern

Notes: _____

- PERCEPTION: ☐ No concern ☐ Low ☐ Moderate ☐ High concern

Notes: _____

(Repeat for each habitat)

PRIORITY HABITATS IDENTIFIED

Based on ESF assessment, priority habitats are:

- 1) _____ (Concerns in _____ ESF dimensions)
- 2) _____ (Concerns in _____ ESF dimensions)

MAP VALIDATION (If Mapping Was Done)

Map created: ☐ YES ☐ NO

If YES:

Sacred sites not recorded or mapped: ☐ YES ☐ N/A

Can a photo be taken of map? ☐ YES ☐ NO

The map can be shared with:

- ☐ Community participant
- ☐ EMA
- ☐ Forestry Commission
- ☐ Conservation NGOs
- ☐ Other: _____

Restrictions: _____

COMMUNITY VALIDATION

We confirm:

- ☐ Habitat list is accurate
- ☐ ESF assessments reflect our discussion
- ☐ Priority habitats correctly identified
- ☐ Map (if created) accurately represents our discussion
- ☐ Sacred sites not recorded or mapped (if applicable)
- ☐ Map permissions as stated above
- ☐ We approve this documentation

OR

- ☐ We request the following corrections: _____

SIGNATURES

Name (Print)	Signature	Role in Community	Date

Minimum 3 signatures required from those present — if fewer than 3 people attend, reschedule the session before proceeding

Assessment Team Leader:

Name: _____

Signature: _____

Date: _____

COPIES PROVIDED:

- Community representative
- Assessment team file
- Map copy (if created and approved)

FORM H: STAGE 3 VALIDATION

RAPID ASSESSMENT OF MEDICINAL PLANTS

Stage 3: Species Discussion - Validation Form

Date : _____ Location : _____

Documentation Style : ☐ Anonymous ☐ Attribute

PURPOSE

This form validates that our documentation of Stage 3 accurately reflects the information shared about specific medicinal plants.

PARTICIPANT INFORMATION

Method Used: ☐ Individual Interview ☐ Focus Group

Number of participants: _____

If ATTRIBUTED, list participants:

1) _____

2) _____

If ANONYMOUS: Participant names not recorded

SPECIES DOCUMENTED

Total number of priority species identified: _____

ENVIRONMENTAL SECURITY FRAMEWORK ASSESSMENT BY SPECIES

Species 1:

Local Name: _____

Scientific Name (if known): _____

AVAILABILITY:

- Abundance: ☐ Abundant ☐ Common ☐ Uncommon ☐ Rare
- Trend: ☐ Increasing ☐ Stable ☐ Declining
- Notes: _____

ACCESS:

- Can harvest when needed: ☐ YES ☐ NO ☐ Sometimes
- Restrictions: _____
- Notes: _____

STABILITY:

- Population status: ☐ Stable ☐ Declining ☐ Uncertain

- Threats: _____
- Quality changes: ☐ No change ☐ Declining ☐ Improving
- Notes: _____

PERCEPTION:

- Still valued: ☐ YES ☐ NO ☐ Less than before
- Youth learning: ☐ YES ☐ NO ☐ Some
- Notes: _____

IF ATTRIBUTED, additional information:

- Shared by: _____
- General importance: _____
- Why this is a conservation priority: _____
- Traditional harvest rules (if shared for conservation planning): _____

(Repeat for each documented species)

TOP PRIORITY SPECIES

Based on ESF assessment, the highest priority species are:

1. _____ (Concerns: _____)
2. _____ (Concerns: _____)

COMMON THREATS IDENTIFIED

Threats affecting multiple species:

- 1) _____
- 2) _____

PARTICIPANT VALIDATION

For INDIVIDUAL INTERVIEWS:

Each participant validates their own information:

Participant 1:

Name: _____

- Information accurately reflects what I shared
- I approve this documentation
- Corrections needed: _____

Signature: _____ Date: _____

(Repeat for each participant)

For FOCUS GROUPS:

Group validates collectively:

- Species list is accurate
- ESF assessments reflect our discussion
- Priority species correctly identified
- Attributed information correctly assigned (if applicable)
- We approve this documentation

OR

We request the following corrections: _____

CORRECTIONS MADE

Corrections requested: _____

Corrections made: _____

Date corrections made: _____

If ATTRIBUTED information corrected:

Original attribution: _____

Corrected attribution: _____

Participant approval: _____ Date: _____

SIGNATURES

For ANONYMOUS documentation:

Community Representative	Signature	Date

For ATTRIBUTED documentation:

Participant Name	Signature	Date

Assessment Team Leader:

Name: _____

Signature: _____

Date: _____

COPIES PROVIDED:

- Community representative
- Each participant (if attributed)
- Assessment team file
- Legal compliance officer

FORM I: STAGE 4 VALIDATION

RAPID ASSESSMENT OF MEDICINAL PLANTS

Stage 4: Location Mapping - Validation Form

Date: _____ **Location:** _____

MOST SENSITIVE - HIGHEST VALIDATION STANDARDS

PURPOSE

This form validates that:

1. Maps accurately reflect community input
2. Sacred sites are kept confidential and will not be documented
3. Map permissions are correctly documented
4. All participants approve final maps before any use

MAP INFORMATION

Mapping Date: _____

Mapping Method Used: ☐ Paper ☐ Ground ☐ Digital ☐ Combination

Number of priority species mapped: _____

Total number of locations marked: _____

SPECIES AND LOCATIONS DOCUMENTED

Species 1: _____

Number of locations marked: _____

Location 1:

- General description: _____
- AVAILABILITY: ☐ Many plants ☐ Some plants ☐ Few plants
Estimated number: _____
- ACCESS: ☐ Open access ☐ Restricted ☐ No access
- Restrictions: _____
- STABILITY: ☐ Stable ☐ Declining ☐ Threatened
Threats: _____

- PERCEPTION: ☐ Valued ☐ Sacred ☐ Ordinary

Notes: _____

(Repeat for each documented species)

PRIORITY LOCATIONS IDENTIFIED

Based on the ESF assessment, the locations needing most urgent attention:

1) _____

Species: _____ Concerns: _____

2) _____

Species: _____ Concerns: _____

SACRED SITES PROTECTION VERIFICATION

CRITICAL VERIFICATION

Sacred sites discussed: ☐ YES ☐ NO ☐ Cannot disclose

Protection method used: _____

Sacred sites on the map:

- Not shown at all (correctly protected)
- Marked OFF-LIMITS with no details
- Shown as a general off-limits zone only
- Other: _____

Sacred site details documented anywhere: ☐ YES ☐ NO ✓

If YES → IMMEDIATELY REMOVE AND DESTROY

MAP ACCURACY VALIDATION

Community confirms:

- The map accurately shows where priority species grow
- ESF symbols correctly placed
- Sacred sites not recorded or mapped
- No sensitive information was inadvertently included

MAP PERMISSIONS VALIDATION

CRITICAL : Verify explicit permissions

1. Photo of a map:

- Photo taken with approval
- Photo NOT taken (community said NO)

- Photo taken, but certain areas removed/blurred first

2. Map sharing permissions - EXPLICIT CONFIRMATION:

The map can be shared with:

- Community participants ONLY
- Environmental Management Agency
- Forestry Commission
- Other: _____

Each box checked has explicit written permission: ☐ YES

3. Restrictions confirmed: _____

COMMUNITY VALIDATION - FINAL APPROVAL

THIS IS THE FINAL CHECKPOINT BEFORE ANY MAP USE

We, the community, confirm:

- Map accurately reflects our input
- Sacred sites not recorded or mapped
- We understand who will see this map
- We understand how the map will be used
- We approve the permissions documented above
- We understand we can revoke permissions anytime
- We approve this map for use as specified

OR

- We request the following corrections: _____

SIGNATURES - HIGHEST STANDARD

Community Participants:

Name (Print)	Signature	Role	Date

Minimum 10 signatures required. If fewer than 10 participants are present, Stage 4 must be postponed until minimum attendance is met.

Assessment Team Leader:

Name: _____

Signature: _____

Date: _____

Legal Compliance Officer (MANDATORY):

Name: _____

Signature: _____

Date: _____

Confirmation: Maps comply with SI 61, and permissions are documented

COPIES PROVIDED:

- Community representative
- Assessment team file
- Legal compliance officer
- Map copy (if community approved)

SECTION 3: LEGAL COMPLIANCE TOOLS

SI 61 COMPLIANCE CHECKLIST

RAPID ASSESSMENT OF MEDICINAL PLANTS

Statutory Instrument 61 of 2009 Compliance Checklist

Project: _____ **Location:** _____

Date: _____

BEFORE STARTING ANY FIELDWORK

Legal Framework Understanding:

- Assessment team trained on SI 61 requirement
- Legal compliance officer identified
- Team understands penalties for non-compliance
- Team understands community rights under SI 61

Permits and Approvals:

- Environmental Management Agency (EMA) contacted
- Required permits identified for each stage
- Permits obtained (specify): _____
- Genetic Resources Committee consulted
- Local authorities notified

FPIC Protocol:

- FPIC protocol developed
- FPIC protocol reviewed by legal officer
- Consent forms prepared in local languages
- Translation accuracy verified

STAGE-SPECIFIC COMPLIANCE

Stage 1: General Discussion

- Community-level consent sufficient (verified)
- No individual permits required (verified)
- Form A consent obtained
- Form F validation completed
- Community received all copies

Legal Officer Verification: _____ **Date:** _____

Stage 2: Habitat Discussion

- Community-level consent obtained (Form B)
- Photo permissions explicit (if mapping)
- Sacred sites discussion completed

- Form G validation completed

Legal Officer Verification: _____ Date: _____

Stage 3: Species Discussion

- Group consent obtained (Form C)
- Individual consent from EACH participant (Form E)
- Documentation style chosen (anonymous/attribution)
- SI 61 requirements for species documentation met
- Form H validation completed

Legal Officer Verification: _____ Date: _____

Stage 4: Location Mapping

HIGHEST COMPLIANCE STANDARD

- All Stage 1-3 compliance verified
- Full SI 61 compliance confirmed by legal officer
- Community consent (Form D)
- Individual consent from ALL participants (Form E)
- Benefit-sharing agreement in place (if applicable)
- Sacred sites protection verified
- Map sharing permissions are explicit and documented
- EMA approval obtained
- Form I validation completed

Legal Officer Final Verification: _____ Date: _____

IF ANY BOX IS UNCHECKED → STAGE 4 CANNOT PROCEED

FINAL COMPLIANCE VERIFICATION

Legal Compliance Officer Certification:

I certify that this assessment complies with Statutory Instrument 61 of 2009 and all applicable laws for:

☐ Stage 1 ☐ Stage 2 ☐ Stage 3 ☐ Stage 4

Legal Officer Name: _____

Signature: _____

Date: _____

RAPID ASSESSMENT OF MEDICINAL PLANTS

Consent Withdrawal Form

Date of Withdrawal: _____

COMMUNITY DECISION

We, the community of _____,

Withdraw our consent for:

- ☐ Entire project (all stages)
- ☐ Specific stage: ☐ Stage 1 ☐ Stage 2 ☐ Stage 3 ☐ Stage 4
- ☐ Specific information: _____

WHAT HAPPENS TO EXISTING DATA

Community decides:

- ☐ Destroy all data
- ☐ Return all data to the community
- ☐ Keep data but don't share externally
- ☐ Remove specific information only: _____

ASSESSMENT TEAM COMMITMENT

We acknowledge:

- ☐ Community has withdrawn consent
- ☐ All activities have stopped immediately
- ☐ We will follow the community's decision regarding data

Assessment Team Leader:

Name: _____

Signature: _____

Date: _____

COMMUNITY CONFIRMATION

We confirm our decision to withdraw consent.

Community Representatives:

Name (Print)	Signature	Date

--	--	--

Minimum 3 signatures required from those present at validation — if fewer than 3 present, reschedule validation session

COPIES PROVIDED:

- Community representative
- Assessment team file
- Legal compliance officer

CHAPTER 4: DELIVERABLE 3 – PILOT SECONDARY DATA REPORT

This chapter presents findings from the pilot implementation of the secondary data assessment methodology for medicinal plants in Mwenezi District, Zimbabwe. The pilot serves dual purposes: (1) establishing a conservation baseline for 202 documented medicinal plant species, and (2) testing and refining the Assessment Guides developed as Deliverable 2.

The assessment drew on a multi-source secondary data strategy consistent with the guide's Step 2 protocol. Species data were compiled from multiple source types: global biodiversity databases (GBIF, IUCN Red List, IUCN Species Information System, CITES, Plants of the World Online); national and regional sources (Zimbabwe Flora); published ethnobotanical literature accessed through Google Scholar, Web of Science, PubMed, and African Journals Online; grey literature including NGO reports and government publications; and direct expert consultation with researchers and institutions working on medicinal plants in Zimbabwe. This multi-source approach was necessary because, as the guide anticipates, no single database provides sufficient coverage for medicinal plants in data-scarce contexts.

The assessment applied the Environmental Security Framework (access, availability, stability, perception) to evaluate conservation status using the compiled secondary data. Results are organized by assessment component, taxonomic diversity, conservation status, growth forms, habitat distribution, population trends, and threat analysis, to systematically document both findings and data gaps. The Discussion (Section 5.0) interprets these findings, evaluates framework effectiveness, and identifies what the pilot experience reveals about the guide's performance in practice.

4.0 RESULTS

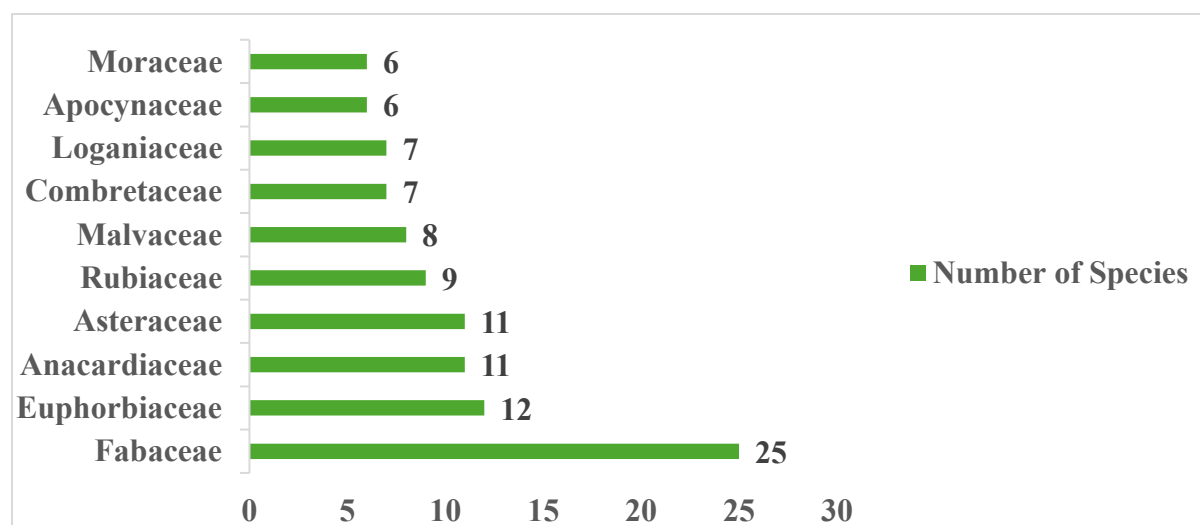
4.1 Taxonomic Diversity

A total of 202 medicinal plant species were documented from published literature for Mwenezi District, southern Zimbabwe. The identified medicinal species are distributed across 72 plant families (Figure 4.1). The most species-rich families were Fabaceae (25 species, 12.4%), Euphorbiaceae (12 species, 5.9%), Anacardiaceae (11 species, 5.4%), and Asteraceae (11 species, 5.4%). These four families collectively accounted for 58 species (28.7% of the total documented flora). Ten families contributed 6 or more species each, representing 50.5% of all documented medicinal plants, while 48 families (66.7% of families) were represented by only 1–2 species each, indicating high taxonomic diversity but uneven species richness across families (Table 4.1, Appendix III). Fabaceae dominance in Mwenezi District aligns with broader Zimbabwe ethnobotanical patterns. Of the estimated 665 Fabaceae species documented in Zimbabwe's flora, 101 species (15.2%) are utilized as ethnomedicines (Maroyi, 2023), with 25 of these documented in this study. This high representation is consistent with previous regional reviews (Nyagumbo *et al.*, 2022, 2023), which identified Fabaceae as the most frequently used family in traditional medicine across multiple therapeutic categories.

Table 4.1: The ten most species-rich medicinal plant families documented in Mwenezi District, Zimbabwe ($n = 202$ total species across 72 families)

Families	Number of Species	Percentage (%)
Fabaceae	25	12%
Euphorbiaceae	12	6%
Anacardiaceae	11	5%
Asteraceae	11	5%
Rubiaceae	9	4%
Malvaceae	8	4%
Combretaceae	7	3%
Loganiaceae	7	3%
Apocynaceae	6	3%
Moraceae	6	3%

Figure 4.1 – Family-level Distribution of Medicinal Plants



4.2 Conservation Status Assessment

4.2.1 IUCN Red List Status Distribution

Of the 202 documented medicinal plant species, only 96 (47.5%) have formal IUCN assessments, while 106 species (52.5%) remain unassessed. Among assessed species ($n = 96$), the majority are

classified as Least Concern (89 species, 93%), followed by Vulnerable (3 species, 3%), Near Threatened (2 species, 2%), and Data Deficient (2 species, 2%). As the Secondary Data Assessment Guide (Section 1.1.2) makes clear, these figures must be read with caution. The IUCN Red List was designed for species across their full global range, not for local or district-level assessments. For medicinal plants in data-scarce regions such as Mwenezi District, coverage is partial and uneven, a pattern well-documented in the conservation literature and a core limitation acknowledged in the guide's methodology. The apparent dominance of Least Concern classifications reflects assessment architecture more than conservation reality: species with broader ranges, larger populations, or higher commercial profile are disproportionately represented among assessed species, while the herbaceous species most subject to destructive harvesting in southern African systems remain overwhelmingly unassessed. The IUCN data used here therefore serves as one indicator among several, not as a standalone conservation verdict.

Table 4.2 – IUCN Red List Conservation Status Distribution

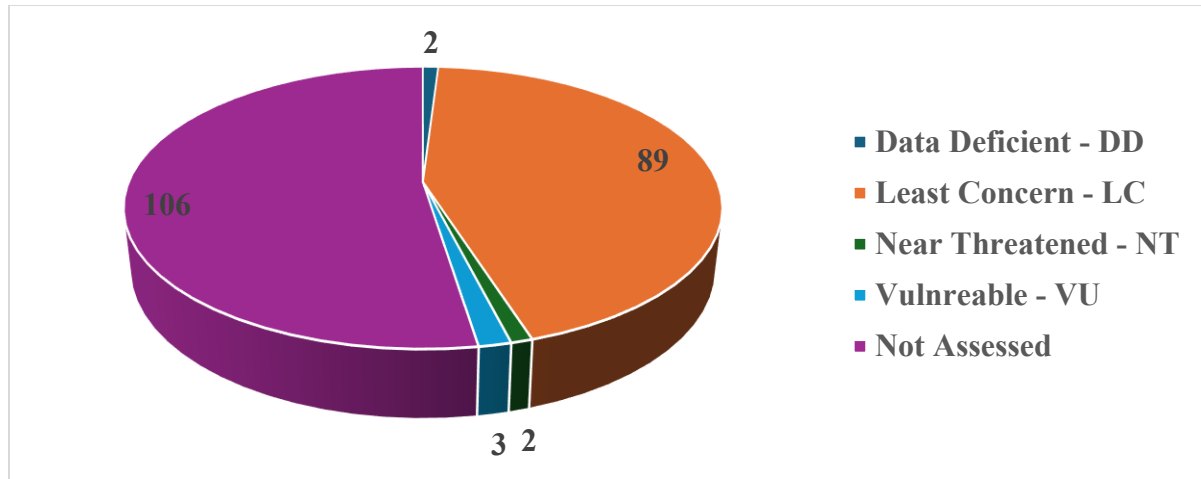
IUCN Category	Number of Species	% of Total (n=202)	% of Assessed (n=96)
Data Deficient - DD	2	1.0%	2%
Least Concern - LC	89	44.1%	93%
Near Threatened - NT	2	1.0%	2%
Vulnerable - VU	3	1.5%	3%
Not Assessed	106	52.5%	0%
Grand Total	202	100%	100%

Conservation status summary:

- **Threatened species (VU):** 3 species (1.5% of total; 3% of assessed)
- **Near Threatened:** 2 species (1.0 % of total; 2% of assessed)
- **Overall conservation concern (VU + NT):** 5 species (2.5% of total; 5% of assessed)
- **Least Concern:** 89 species (44.1% of total; 93% of assessed)

- **Data Deficient:** 2 species (1.0% of total; 2% of assessed)
- **Assessment gap (Not Assessed):** 106 species (52.5% of total)

Figure 4.2 – IUCN Conservation Status Distribution



4.2.2 Threatened and Near Threatened Species

Five species (2.5%) were categorized as threatened or near threatened, requiring conservation attention.

Table 4.3 – Threatened and Near Threatened Medicinal Plant Species

Family Name	Scientific Name (Spp)	Local Name (Shona)	Red List - IUCN Status	Date Assessed	Population Trend/ Frequency	Zimbabwe Frequency/ Population	IUCN Threats
Anacardiaceae	<i>Thepesia garckeana</i> <i>F. Hoffin</i>	Musvimwa	Near Threatened - NT	1998-01-01	Unknown	Not Found	None
Sapindaceae	<i>Combretum imberbe</i>	Muti unotunga mbeva	Near Threatened - NT	2021-08-23	Unknown	Local	Habitat loss from settlement and cultivation
Meliaceae	<i>Khaya anthotheca</i>	Mururu	Vulnerable - VU	1998-01-01	Unknown	Common	Heavy timber exploitation; poor regeneration; genetic erosion
Polygalaceae	<i>Polygala gazensis</i> <i>Bak. f.</i>	Mugaragunguwo, Murungu, Mudyamombe	Vulnerable - VU	1998-01-01	Unknown	Common	Timber exploitation; fire-induced woodland decline
Meliaceae	<i>Ocimum gratissimum</i>	Mubarwa	Vulnerable - VU	1998-01-01	Unknown	Common	Heavy exploitation; poor regeneration; genetic erosion

4.2.3 Data Deficient Species

Two species (0.8%) were classified as Data Deficient (DD) by the IUCN Red List, indicating insufficient information to make a reliable assessment of extinction risk against Red List criteria (Table 4.4).

Zingiber officinale Roscoe (Tsangamidzi; Zingiberaceae) was assessed as Data Deficient with no threat data recorded and no habitat classification available in the IUCN database. The species was not found in Zimbabwe Flora records, indicating a complete absence of documented local occurrence or population status data for this species in Mwenezi District.

Cassia singueana Del. (Mupopo; Caricaceae) was assessed as Data Deficient with habitat fragmentation identified as the primary recorded threat in its subtropical and tropical moist lowland forest habitat. However, the threat information available in the IUCN database pertains to populations in Central America (Costa Rica and Mexico) rather than to African populations. No Zimbabwe-specific population or frequency data was available for this species in any secondary source reviewed.

The two DD species represent distinct data gap scenarios. *Zingiber officinale* reflects a complete data absence, with no threat, habitat, or local occurrence information available. *Cassia singueana* reflects a geographic data mismatch, where threat information exists but applies to populations on a different continent, leaving the conservation status of African and specifically Zimbabwean populations entirely unknown.

Under the precautionary principle, both species should be treated as potentially threatened until field assessments determine their actual local conservation status.

Table 4.4 – Data Deficient Species

Family Name	Scientific Name (Spp)	Local Name (Shona)	Red List - IUCN Status	IUCN Threats	IUCN Habitat	Zimbabwe Status
Zingiberaceae	<i>Zingiber officinale</i> <i>Roscoe</i>	Tsangamidzi	Data Deficient - DD	No threat data available; insufficient population information	Not Found	Not Found
Caricaceae	<i>Cassia singueana Del.</i>	Mupopo	Data Deficient - DD	Habitat fragmentation in native tropical range; limited population data	Forest - Subtropical/Tropical Moist Lowland	Not Found

4.3 Growth Form Distribution

Growth form data was available for all 202 documented medicinal plant species. Woody vegetation dominated, with trees constituting the largest proportion (83 species, 41.1%), followed by shrubs (70 species, 34.7%). Combined, woody species accounted for 153 species (75.7% of total), reflecting the semi-arid woodland ecology of Mwenezi District where woody perennial vegetation predominates.

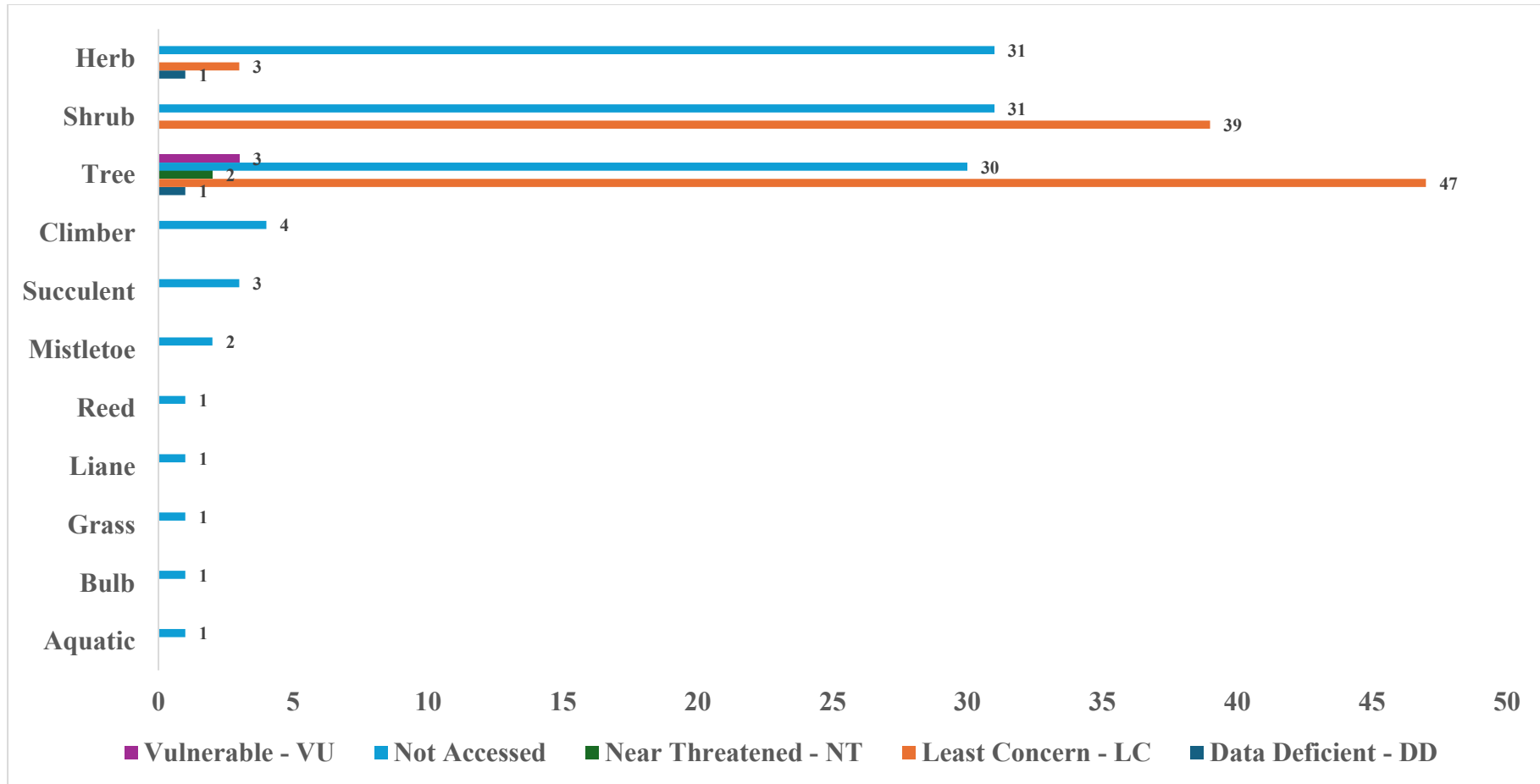
Herbaceous species represented 39 species (19.3%), comprising herbs (35 species, 17.3%), grasses (1 species, 0.5%), reeds (1 species, 0.5%), bulbs (1 species, 0.5%), and aquatic plants (1 species, 0.5%). Other growth forms included climbers (4 species, 2.0%), succulents (3 species, 1.5%), mistletoe (2 species, 1.0%), and lianes (1 species, 0.5%) (Table 4.5, Figure 4.3).

Conservation status differed markedly across growth forms. Among trees, five species were categorized as conservation priorities: three Vulnerable (VU), two Near Threatened (NT), and one Data Deficient (DD), accounting for 7.2% of tree species. No threatened species were identified among shrubs or herbs. However, this pattern likely reflects assessment bias rather than genuine absence of conservation concern, as 88.6% of herbs (31 of 35 species) lack IUCN evaluation compared to only 36.1% of trees (30 of 83 species), indicating systematic underrepresentation of herbaceous species in global conservation databases. This is precisely the pattern the Secondary Data Assessment Guide's multi-source approach is designed to compensate for, by drawing on ethnobotanical literature and expert consultation to document species that IUCN assessment processes have not yet reached.

Table 4.5 – Growth Form Composition

Growth Form	Data Deficient - DD	Least Concern - LC	Near Threatened - NT	Not Accessed	Vulnerable - VU	Grand Total	Percentage (%)
Tree	1	47	2	30	3	83	41.1%
Shrub		39		31		70	34.7%
Herb	1	3		31		35	17.3%
Climber				4		4	2.0%
Succulent				3		3	1.5%
Mistletoe				2		2	1.0%
Aquatic				1		1	0.5%
Bulb				1		1	0.5%
Grass				1		1	0.5%
Liane				1		1	0.5%
Reed				1		1	0.5%
Grand Total	2	89	2	106	3	202	100%

Figure 4.3 – Growth Form Distribution



4.4 Habitat Distribution

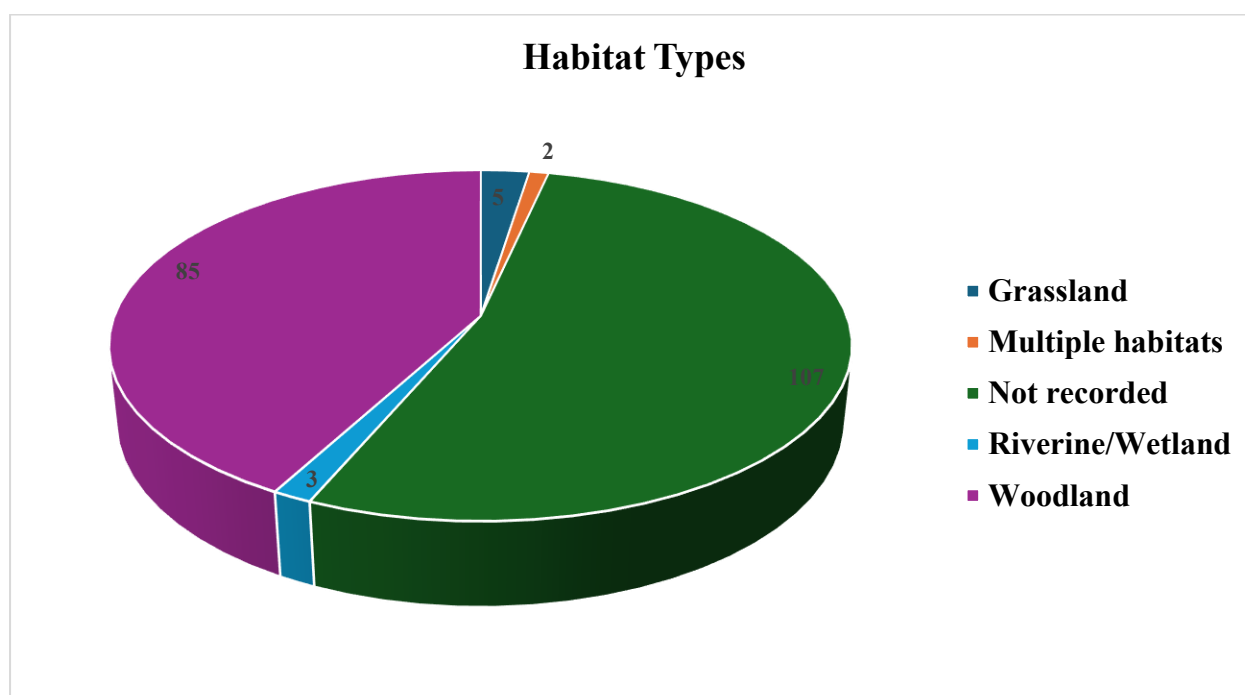
Habitat data was available for 95 of the 202 documented medicinal plant species (47.0%), while 107 species (53.0%) had no habitat information recorded in available secondary sources (Table 4.6, Figure 4.4). Among species with documented habitat associations, woodland was the overwhelmingly dominant habitat type, encompassing 85 species (42.1% of total; 89.5% of species with known habitat). The predominance of woodland species reflects the characteristic semi-arid savanna woodland ecology of Mwenezi District, where Mopane (*Colophospermum mopane*) woodland and mixed bushland constitute the primary vegetation types.

The most significant finding is the absence of habitat data for 107 species (53.0%), representing the largest single category in the habitat distribution. This data gap substantially limits habitat-based conservation planning and prevents comprehensive assessment of habitat-specific threats and species vulnerabilities. It is also a finding that secondary data sources alone cannot resolve, the guide explicitly acknowledges that habitat knowledge at the local level, including where specific plants grow and what habitats they favour in Mwenezi specifically, is a dimension that community-based assessment in Stage 2 is positioned to address.

Table 4.6 – *Habitat distribution of medicinal plants documented in Mwenezi District, Zimbabwe (n = 202 species)*

Habitat Types	Number of Scientific Name (Spp)
Grassland	5
Multiple habitats	2
Not recorded	107
Riverine/Wetland	3
Woodland	85
Grand Total	202

Figure 4.4 – Habitat Type Distribution



4.5 Zimbabwe-Specific Population Status

Local frequency and abundance data from Zimbabwe Flora and published literature was available for all 202 documented medicinal plant species. Local status categories were consolidated into five classifications: Common, Not Found, Frequent, Local, and Occasional. Common species constituted the largest proportion, with 117 species (57.9%) recorded as common across Zimbabwe. The dominance of commonly occurring species suggests that most medicinal plants documented for Mwenezi District retain broad local distributions.

However, 71 species (35.1%) were recorded as Not Found in Zimbabwe Flora or relevant published literature, representing the second largest local status category. This indicates either absence from documented Zimbabwean distribution records, occurrence restricted to regions outside Mwenezi District, or consistent with the guide's warning about documentation limitations, insufficient secondary documentation of local populations. As the guide's Step 2 protocol makes clear, a species not appearing in Zimbabwe Flora does not confirm its absence

from the district; it may simply reflect that local populations have not been documented in accessible sources. This is a key reason the guide recommends supplementing national flora databases with ethnobotanical literature and expert consultation, and why Stage 2 community engagement is designed to verify local presence and abundance for species that secondary data cannot confirm.

Cross-referencing local frequency with global IUCN conservation status revealed important discordances (Table 4.7). Of the 89 Least Concern species with local data, 24 species (27.0%) were recorded as Not Found in Zimbabwe despite their globally non-threatened classification. This indicates that species considered secure at the global scale may have restricted, absent, or undocumented local distributions in Zimbabwe, representing cryptic local conservation concerns invisible to global assessment frameworks. Conversely, three Vulnerable species were recorded as locally Common, suggesting that global threat assessments do not consistently reflect local abundance conditions. These discordances are interpreted further in Section 5.3.

A critical double data gap was identified for 44 species recorded as both globally Not Assessed and locally Not Found. These species represent the highest conservation uncertainty in the dataset, as neither global nor local population status can be determined from available secondary sources.

Table 4.7 – Local Frequency/Abundance in Zimbabwe

Local Status	Data Deficient - DD	Least Concern - LC	Near Threatened - NT	Not Assessed	Vulnerable - VU	Percentage (%)
Common		59		55	3	57.9%
Frequent		4		5		4.5%
Local		1	1	1		1.5%
Not Found	2	24	1	44		35.1%
Occasional		1		1		1.0%
Grand Total	2	89	2	106	3	100%

Note: Common" consolidates species recorded as common, very common, or common under varied ecological conditions in source literature. "Not Found" indicates absence from Zimbabwe Flora records and does not necessarily confirm species absence from Zimbabwe but rather reflects documentation gaps in available secondary sources.

4.6 Population Trends (Assessed Species Only)

Population trend data was available for all 96 IUCN assessed species (47.5% of the total 202 species). The remaining 106 species (52.5%) lacked formal IUCN assessments and therefore had no population trend data available (Table 4.8, Figure 4.5).

Among the 96 assessed species, the majority demonstrated stable population trends, with 67 species (69.8% of assessed; 33.2% of total) showing no significant population change. A further 21 species (21.9% of assessed; 10.4% of total) had unknown population trends, indicating insufficient monitoring data despite having formal IUCN assessments. Eight species (8.3% of assessed; 4.0% of total) showed decreasing population trends: *Cassia singueana* Del., *Combretum imberbe*, *Euclea crispa*, *Indigofera melanadenia* Cecilli, *Pterocarpus angolensis*, *Sphedamnocarpus pruriens* (A. Juss) Szyszyl., *Vernonia colorata*, and *Zanthoxylum humile* (E.A. Bruce).

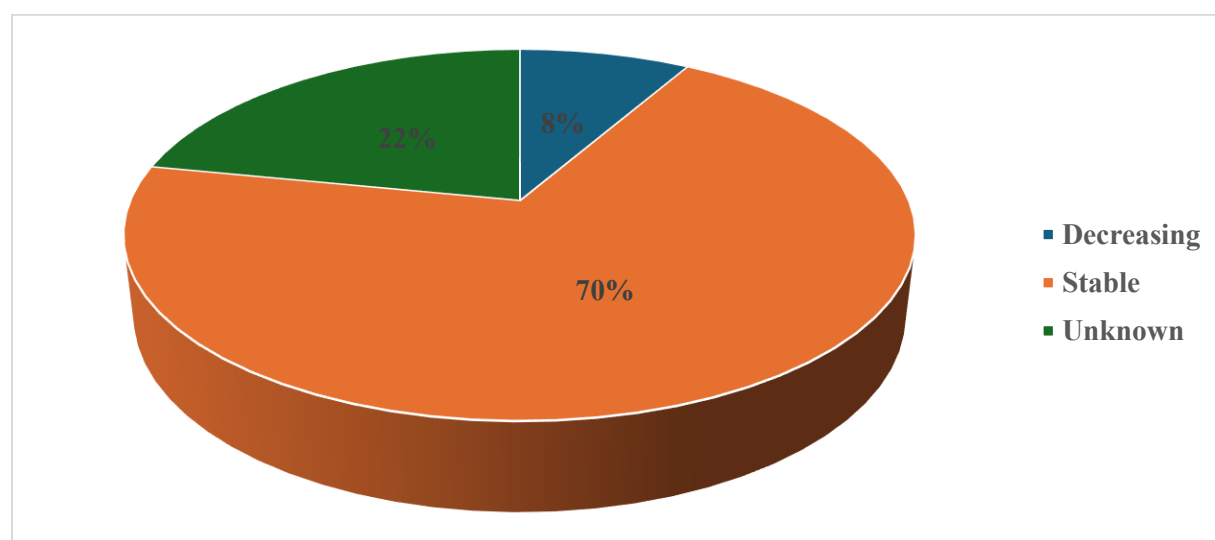
Population trend data gaps are substantial. When unknown trends (21 species) and unassessed species (106 species) are combined, population trajectory remains undetermined for 127 species (62.9% of total documented medicinal plants). This represents a critical limitation for stability assessment under the Environmental Security Framework and is a direct consequence of the well-documented incompleteness of IUCN coverage for medicinal plants in data-scarce contexts, a limitation that the guide's use of multiple source types partially addresses but cannot fully overcome from secondary data alone.

Table 4.8 – Population Trends (for assessed species with trend data)

For the 96 assessed species, population trend information was available for 75 species (78% of assessed).

Population Trend	Number of Species	(%) of Species with Trend Data
Decreasing	8	8%
Stable	67	70%
Unknown	21	22%
Grand Total	96	100%

Figure 4.5 – Population trends of 96 IUCN assessed species. Trend data unavailable for 106 unassessed species (52.5% of total 202 species).



4.7 Assessment Coverage

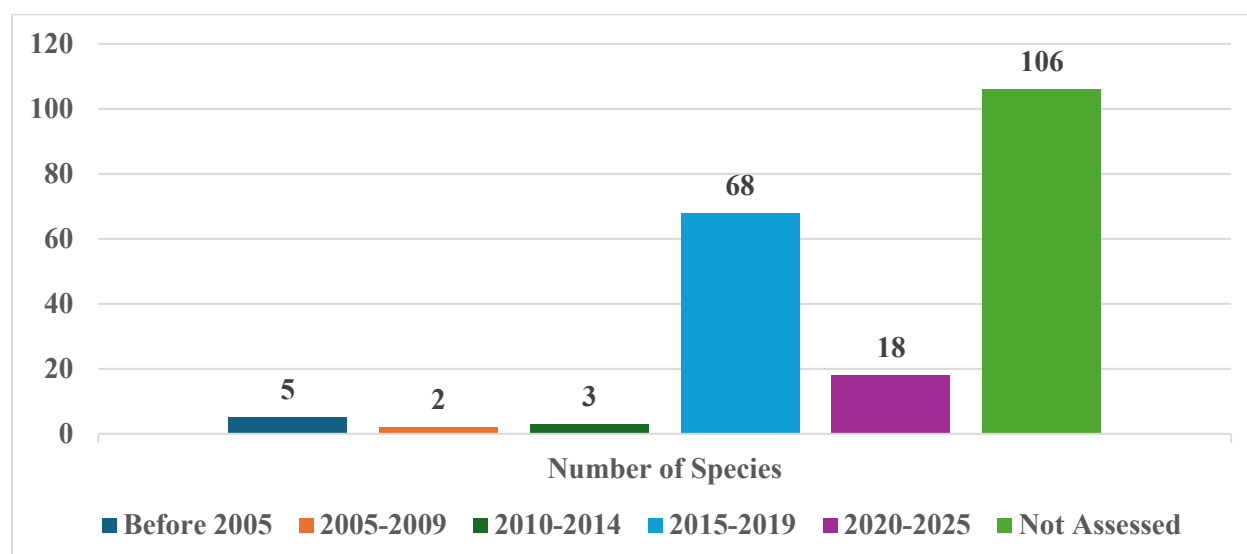
Assessment period data were examined for all 96 IUCN assessed species. Most assessments were conducted within the last decade: the 2015–2019 period accounted for 68 species (70.8% of assessed; 33.7% of total), and assessments from 2020 to 2025 covered 18 species (18.8% of assessed; 8.9% of total). Combined, assessments from 2015 to 2025 covered 86 species (89.6% of assessed). The mean assessment age across all 96 assessed species was 8.2 years, indicating moderate overall currency.

However, this apparent currency is overshadowed by the complete absence of assessments for 106 species (52.5% of total). Assessment absence rather than assessment age is therefore the primary data currency challenge for medicinal plant conservation planning in Mwenezi District, a finding that underscores the guide's emphasis on treating unassessed species as high-priority targets for community-based verification rather than as species confirmed safe.

Table 4.9 – IUCN Red List Assessment Period and Coverage for Medicinal Plants in Mwenezi District, Zimbabwe (n=202)

Assessment Period	Number of Species	(%) of Assessed Species (n=96)	% of Total (n=202)	Age Range (years)
Before 2005	5	5.2%	2.5%	>20 years
2005-2009	2	2.1%	1.0%	16-20 years
2010-2014	3	3.1%	1.5%	11-15 years
2015-2019	68	70.8%	33.7%	6-10 years
2020-2025	18	18.8%	8.9%	0-5 years
Not Assessed	106	0.0%	52.5%	—
Grand Total	202	100%		

Figure 4.6 – Distribution of IUCN Red List Assessment Periods for Medicinal Plants Documented in Mwenezi District, Zimbabwe (n=202)



4.8 CITES Status

None of the 202 documented medicinal plant species are currently listed under CITES Appendices I, II, or III. As the guide makes clear, absence from CITES does not indicate freedom from harvesting pressure, CITES covers only international export and import trade for listed species and does not address local or domestic harvest management. Many medicinal plant species are traded primarily within domestic or regional markets, remaining entirely outside the scope of international monitoring mechanisms. The absence of CITES listings, when considered alongside documented population declines and significant assessment gaps, highlights a governance blind spot in which locally important and potentially vulnerable medicinal species remain invisible within global trade regulation frameworks.

4.9 Threat Analysis

Documented threat information was recorded for 31 of the 202 documented species (15.3%), comprising species with formal IUCN Red List assessments that included threat documentation. Most assessed species (171 species, 84.7%) had either "None" recorded in the IUCN threats field or explicit statements indicating no major threats for the species.

It is critical to note that this figure conflates two substantially different situations: species with formal assessments that confirmed low or absent threats, and the 106 unassessed species for which no threat evaluation has ever been conducted. The 84.7% figure therefore does not represent 84.7% of species confirmed as safe, it represents a mixture of assessed species with clean bills and unassessed species whose threat status is entirely unknown. Older IUCN assessments (particularly pre-2010) frequently contain limited threat documentation, and global assessment scales routinely fail to capture localised pressures, including community and commercial harvesting, operating at the district level. This is a known limitation of IUCN data for this type of assessment, documented in Section 2.4.1.1 of the guide.

Among the 31 species with documented threats, biological resource use was the most frequently recorded threat category, affecting 12 species (38.7%). This category encompasses intentional harvesting for medicinal use, timber exploitation, and subsistence collection. Threatened species in this category include *Khaya anthotheca* and *Ocimum gratissimum* (both Vulnerable), reflecting dual pressures from commercial timber extraction and traditional medicinal use. Agriculture and land conversion threatened 4 species (12.9%), livestock grazing and browsing affected 4 species (12.9%), intrinsic biological vulnerabilities were documented for 2 species (6.5%), and fire regime changes, habitat loss, and urbanization each affected 1 species (3.2%).

The 106 unassessed species (52.5% of total) have no threat documentation of any kind, and this gap cannot be addressed through any secondary data source. Field-based threat identification through structured community assessment is therefore not merely complementary to this pilot, it is essential for any credible threat profile of medicinal plants in Mwenezi District.

Table 4.10 – *IUCN Threat Categories and Conservation Status for Medicinal Plants in Mwenzi District (n=202)*

Threat Category	DD	LC	NT	Not Assessed	VU	Total
Agriculture & land conversion		3	1			4
Biological resource use		9			3	12
Fire regime changes		1				1
Habitat loss & degradation		1				1
Intrinsic biological factors		2				2
Livestock grazing	1	3				4
No major threats documented	1	63	1	106		171
Other/Unclassified		6				6
Urbanization & settlement		1				1
Total	2	89	2	106	3	202

Note: Threat information was available for 31 species (15.3%). The 171 species with "no major threats documented" include 65 assessed species with minimal threats and 106 unassessed species lacking IUCN threat data. Some species experience multiple threats; therefore, individual threat category counts may exceed 31 total species with documented threats.

5.0 DISCUSSION

5.1 Conservation Status: Interpreting the IUCN Findings

The IUCN Red List status distribution documented in this pilot must be interpreted with significant caution. The apparent picture, 93% of assessed species classified as Least Concern, with only 2.5% (five species) formally threatened or near threatened, risks conveying a false sense of security if taken at face value.

This is not a limitation unique to this assessment. As the Secondary Data Assessment Guide documents in Section 1.1.2, IUCN data has well-recognised structural constraints when applied to local conservation planning: it is designed to assess species across their full global ranges, not at district or national scales; it systematically underrepresents species in data-scarce regions; and coverage among medicinal plants, particularly herbaceous species subject to destructive harvesting, is dramatically incomplete. These are features of how the Red List is built, not deficiencies in the data it holds. Understanding this is essential for interpreting the findings correctly.

The most consequential finding is not what the assessed species show, but what the unassessed majority conceals. Of 202 documented medicinal plant species, 106 (52.5%) have no formal IUCN evaluation. For these species, conservation status is entirely unknown. The dominance of Least Concern classifications among assessed species is therefore partly an artefact of selection bias: species that have been evaluated are disproportionately those with wider ranges, larger populations, or higher commercial value, precisely the species most likely to be classified as non-threatened (Rodrigues *et al.*, 2006). Herbaceous species, which are frequently harvested through destructive root or whole-plant collection, are dramatically underrepresented, with 88.6% lacking any IUCN assessment compared to only 36.1% of trees.

The guide's Step 2 protocol, which goes beyond IUCN to draw on ethnobotanical literature, herbarium records, grey literature, and expert consultation, is specifically designed to compensate for these gaps. In practice, this multi-source approach yielded the 202-species list and the Zimbabwe Flora frequency data that allowed local-global discordance to be identified. However, even this expanded strategy cannot generate data where none exists, and the 106-species assessment gap remains the primary unresolved finding of this pilot.

Among the five formally threatened and near-threatened species, *Khaya anthotheca* (VU), *Polygala gazensis* (VU), *Ocimum gratissimum* (VU), *Thepesia garckeana* (NT), and *Combretum imberbe* (NT), dual-use pressures from simultaneous timber exploitation and medicinal harvesting drive the most severe conservation concerns. These five species constitute immediate conservation priorities requiring active monitoring and protection under any forthcoming district-level conservation plan. *Pterocarpus angolensis*, though not formally classified as threatened, appears among the eight species with actively decreasing population trends (Table 4.8) and faces documented intrinsic biological vulnerabilities, and warrants the same management attention as formally listed species.

In summary, the Least Concern-dominated IUCN distribution reflects assessment architecture rather than conservation reality. The absence of a formal threat classification for a species documented in Mwenezi District is not evidence of its security, it is, in most cases, evidence of an unaddressed knowledge gap. This is the central interpretive principle that the Secondary Data Assessment Guide is designed to instil in its users.

5.2 Assessment Coverage and Data Gaps

The scale and distribution of data gaps identified in this pilot constitute the primary analytical finding of the assessment. Of the 202 documented species, 106 (52.5%) have no IUCN assessment, 107 species (53.0%) have no habitat information, and 71 species (35.1%) could

not be confirmed as present in Zimbabwe Flora or published literature. These gaps are concentrated precisely where conservation risk may be highest, among herbaceous species, locally occurring taxa, and species reliant on community knowledge as the primary documentation source.

It is important to describe the secondary data search process followed in this pilot, as the steps taken and their outcomes are themselves findings relevant to the guide's performance. The search followed the full Step 2 protocol: global databases (GBIF, IUCN Red List, IUCN SIS, CITES, POWO) were queried for all 202 species; Zimbabwe Flora was consulted for local frequency data; ethnobotanical literature was accessed through Google Scholar, Web of Science, PubMed, and African Journals Online; grey literature including NGO and government reports was reviewed; and direct outreach was made to researchers and organizations working on medicinal plants in Zimbabwe.

This outreach included a visit to Bindura University, where meetings were held with Dr. Luke Jimu and Dr. Admore Mureva of GBIF Zimbabwe. They were generous with their time and shared relevant documents and materials. However, the documents they provided were drawn from the same publicly available secondary literature already compiled during the database searches, and access was not granted to unpublished student theses or internal institutional research. This experience is significant: it confirms that the data limitation encountered in this pilot was real and unavoidable. The National University of Science and Technology (NUST) in Bulawayo was identified as another potential institutional source but was not accessible for consultation within the project timeline; practitioners working in Matabeleland or southwestern Zimbabwe may find this institution worth contacting directly.

Even when a local academic institution is consulted directly, the accessible secondary data in Zimbabwe often mirrors what is already available through international databases. The depth

of data scarcity in this field is not a product of insufficient search effort; it is a structural feature of the research landscape for medicinal plants in this region.

This finding has direct implications for other practitioners using the guide. The guide's Step 2 recommends contacting researchers and NGOs who work on medicinal plants to identify data that may not be easily accessible through internet searches. This pilot confirms that such outreach is worth undertaking, but also that it may not yield information beyond what databases provide. Practitioners should document their outreach efforts and their outcomes transparently, as this pilot has done, so that the limits of the secondary data search are on record and can inform the scope and priorities of Stage 2 community engagement.

Assessment currency adds a secondary layer of concern. While 89.6% of assessed species carry evaluations from the past decade, ten species (10.4% of assessed) hold evaluations older than ten years. The mean assessment age of 8.2 years is acceptable, but this figure conceals the 106 species for which no temporal baseline exists at all. Assessment absence, not assessment age, is the primary data currency challenge. It is also worth noting that the availability of secondary data will differ for each country and region, in some contexts, more robust local ethnobotanical literature or national databases may exist, while in other researchers may need to rely heavily on international databases supplemented by expert consultation. Practitioners adapting the guide to other contexts should conduct their own preliminary database queries to understand actual data availability before finalizing their methodology.

5.3 Local-Global Status Discordance

One of the most significant methodological findings of this pilot is the extent of discordance between global IUCN conservation status and locally documented population status in Zimbabwe. Twenty-four of the 89 globally Least Concern species (27.0%) could not be confirmed as present in Zimbabwe Flora or available published literature. Conversely, three

Vulnerable species were recorded as Common locally, suggesting that global threat assessments do not consistently reflect local abundance conditions.

This local-global discordance operates in both directions and has different conservation management implications in each case. The 24 Least Concern species absent from Zimbabwe Flora records represent cryptic local conservation priorities: species that appear secure at the global scale may have restricted, declining, or undocumented populations within Zimbabwe. Without local verification, these species are effectively invisible to district-level conservation planning despite their documented use in Mwenezi traditional medicine. The three Vulnerable species recorded as locally Common present the opposite interpretive challenge, global vulnerability classifications may not translate directly into local management urgency if populations remain abundant within the district. However, local abundance does not negate global vulnerability status, and these species still warrant monitoring given documented threats from timber exploitation and medicinal harvesting.

The discordance findings confirm a well-recognised limitation of global Red List frameworks when applied to local conservation planning: IUCN assessments are conducted at species-range scales and cannot substitute for local or national population assessments (Rodrigues *et al.*, 2006). This is precisely the limitation the Secondary Data Assessment Guide is designed to surface, by presenting both global and national data, triangulating across sources, and using discordances as prompts for community dialogue in Stage 2 rather than treating any single source as definitive. The guide's Section 1.1.2 explicitly flags this as an interpretation challenge, and the 27% discordance rate observed in this pilot validates the importance of that warning.

This scale mismatch also underscores the importance of community-based knowledge as a validation tool. Local communities and traditional healers frequently possess fine-grained,

location-specific knowledge of plant abundance, seasonal availability, and population change that is not captured in either global IUCN databases or national flora records. The access and perception dimensions of the Environmental Security Framework, which cannot be assessed through secondary data, may reveal local conservation priorities that remain entirely invisible to global and national frameworks. This reinforces the complementary role of the Rapid Community-Based Assessment Guide as a necessary follow-on to secondary data assessment.

5.4 Threat Analysis

Documented threat information was available for only 31 of 202 species (15.3%), with the remaining 171 species (84.7%) recorded under "no major threats documented." As discussed above, this figure conflates assessed species with confirmed low threats and unassessed species with no threat data at all. The low documented threat rate must be understood as a product of assessment architecture and monitoring gaps rather than as evidence of a broadly threat-free flora. Older IUCN assessments frequently contain limited threat documentation, and global assessment scales routinely fail to capture localised pressures operating at the district or communal land level (Hamilton, 2004).

Among the 31 species with documented threats, biological resource use was the predominant threat category, affecting 12 species (38.7%), including the two most severely threatened taxa, *Khaya anthotheca* and *Ocimum gratissimum*. This reflects the compounding nature of harvesting pressure in Mwenezi District, where commercial timber exploitation and traditional medicinal use operate simultaneously on the same species. Agriculture and land conversion (4 species, 12.9%) and livestock grazing and browsing (4 species, 12.9%) represent the next most significant threat categories, consistent with the land-use pressures characteristic of communal farming areas in southern Zimbabwe.

Intrinsic biological vulnerabilities, poor germination rates, low seedling survival, and susceptibility to fungal disease, were documented for *Pterocarpus angolensis* and *Sphedamnocarpus pruriens*. These factors are particularly significant because they limit natural regeneration capacity even in the absence of direct harvesting pressure, meaning population recovery following disturbance may be substantially slower for these species. The absence of CITES listings for all 202 species does not indicate freedom from domestic or regional commercial harvesting pressure, which operates largely outside international monitoring frameworks (Hamilton, 2004).

5.5 Implications Under the Environmental Security Framework

The Environmental Security Framework (ESF) organises conservation assessment around four dimensions: availability, stability, access, and perception (Davidson-Hunt *et al.*, 2016). This pilot assessed only the availability and stability dimensions from secondary data, as the access and perception dimensions require primary data collection through community-based methods. The findings across both secondary-data dimensions reveal a framework facing substantial incompleteness that constrains its conservation planning utility at this stage.

On the availability dimension, local frequency data from Zimbabwe Flora suggested that 64.9% of documented species retain some level of confirmed local presence, 117 species Common, 9 Frequent, 3 Local, and 2 Occasional. However, 35.1% of species could not be confirmed as locally present, and the coarse categorical nature of frequency classifications does not provide the population density, distribution, or abundance data needed for rigorous availability assessment.

On the stability dimension, population trend data for the 96 assessed species showed 67 species (69.8%) with stable trends. However, eight species show actively declining populations, and population trajectories remain unknown for 127 species (62.9% of total). The stability

dimension of the ESF cannot be meaningfully evaluated for most documented medicinal plants from secondary sources alone.

The ESF's access and perception dimensions represent the most significant gaps for conservation planning in Mwenezi District. Secondary data cannot determine whether harvesting areas are accessible to communities, whether land tenure arrangements restrict access, whether travel distances or seasonal water availability affect collection, or how communities themselves prioritise and value different medicinal species. These dimensions require the structured interview and participatory mapping protocols outlined in the Rapid Community-Based Assessment Guide. Without access and perception data, conservation plans risk prioritising species that communities do not consider threatened while overlooking species of highest cultural and medicinal importance that face localised access restrictions.

Together, the ESF findings confirm that secondary data assessment provides a necessary but incomplete foundation for medicinal plant conservation planning. It efficiently screens large inventories (202 species documented and analyzed), identifies high-priority species for immediate action, and maps data gaps requiring field verification. Rapid community-based assessment must follow to complete the ESF profile across all four dimensions.

CONCLUSION

This pilot secondary data assessment documented 202 medicinal plant species across 72 plant families in Mwenezi District, Zimbabwe, establishing the first comprehensive conservation baseline for the district. Fabaceae, Euphorbiaceae, Anacardiaceae, and Asteraceae were the most species-rich families. The assessment confirms both the feasibility of secondary data approaches in data-limited contexts and their inherent limitations as standalone conservation tools.

Three findings carry direct implications for conservation planning in Mwenezi District. First, the assessment gap is critical: 52.5% of documented medicinal species lack formal IUCN evaluation, herbaceous species are dramatically underrepresented with 88.6% unassessed, and 44 species face a double data gap, simultaneously unassessed globally and unconfirmed locally. For these species, conservation status cannot be determined at any geographic scale from currently available data. Second, the threat picture is incomplete rather than reassuring: while only five species are formally classified as threatened or near threatened, eight species show actively declining populations, 62.9% have unknown population trajectories, and 106 species have no threat documentation whatsoever. These figures reflect monitoring gaps and the known structural limitations of global IUCN data, not confirmed safety. Third, local-global status discordance is significant: 27% of globally Least Concern species could not be confirmed as present in Zimbabwe Flora records, confirming that global IUCN assessments are insufficient proxies for local conservation status and that district-level planning requires locally grounded data.

The pilot also confirms one practical finding relevant to practitioners who follow the guide's search protocol: even when local academic institutions are consulted directly, the secondary data accessible in Zimbabwe often mirrors what is available through international databases.

This does not mean outreach is not worth doing, it confirms the depth of the data gap, and that confirmation is itself a finding. Practitioners should document their search process transparently, as this pilot has, so the limits of what secondary data can provide are on record before Stage 2 community engagement begins.

The pilot validates the core rationale of this project: secondary data assessment is an essential but incomplete first step. It cost-effectively screens large inventories, identifies priority species for immediate conservation action, and systematically maps the data gaps that field-based methods must address. It cannot, however, assess community access to harvesting areas, quantify harvest pressure, evaluate cultural significance, or verify local population presence for the 71 species unconfirmed in Zimbabwe records. These gaps define the scope of the Rapid Community-Based Assessment Guide as a necessary complement to this pilot.

By reframing data scarcity as a basis for prioritisation rather than a barrier to action, this study offers a practical and scalable pathway for evidence-based conservation planning in Mwenezi District and similar data-limited contexts across southern Africa. For Zimbabwe specifically, this assessment identifies five species requiring immediate conservation action, 44 species requiring urgent field verification, and 106 species requiring inclusion in national Red List processes.

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CHAPTER 5: CRITICAL REFLECTION

Introduction

My MNRM practicum experience from September 2024 to August 2025 has been a transformative journey that fundamentally reshaped how I understand conservation work, project management, and cross-cultural research collaboration. What began with an unexpected email from my supervisor about a potential project in Zimbabwe evolved into a comprehensive year-long endeavor filled with challenges I had not anticipated, lessons I did not expect to learn, and growth I could not have predicted. This reflection examines what worked, what did not, what surprised me, and what I would do differently if I could start over. More importantly, it explores how this experience changed me as a practitioner and researcher.

Project Genesis and Early Planning

The project's origins trace back to December 2023, when Prof. Iain Davidson-Hunt first approached me with a brief email: "I have been approached by a colleague about a potential project in Zimbabwe regarding biodiversity. I'm just wondering, would you be open to a project in Zimbabwe, either a practicum or thesis?" This opportunity immediately resonated with my background in biodiversity conservation, though at that moment I had no idea what I was really signing up for.

Initially, project planning felt completely overwhelming. I still vividly remember walking into the first day of the Project Management class, seeing that colorful practicum planning diagram with all its interconnected phases and thinking, "I will never understand this." The complexity seemed incomprehensible, project charters, work breakdown structures, risk registers, stakeholder matrices, critical path calculations. It all blurred together into what felt like an impossibly complicated puzzle. But Sheldon McLeod reassured us early on: "This will make sense by the end. Trust the process." He was right, though I did not believe him at the time.

The weekly exercises in the Project Management course served as scaffolding for developing my Integrated Project Plan (IPP). What made this progression particularly valuable was that each exercise used my actual project topic, I was not learning project management in the abstract, I was learning it by applying it immediately to real challenges I was facing. By the time I submitted my IPP for approval, I had a document I believed in. More importantly, I had internalized a systematic way of thinking about project work that would prove invaluable when things inevitably went sideways during implementation.

Early Assumptions That Proved Wrong

Coming from an African context where I had conducted previous research in Nigeria, I made several early assumptions that turned out to be incorrect.

Choosing Practicum Over Thesis

The decision to pursue a practicum rather than a thesis was shaped by my goals for the work and the nature of the project I was stepping into. I chose the practicum stream because it aligned better with my desire to work with real-world partners, apply the project management principles I was learning, and produce immediately usable outputs that would have an impact beyond academia. The thesis route would have generated new empirical knowledge, original data on medicinal plant populations, traditional knowledge documentation, conservation status assessments based on field surveys, but that knowledge might have remained in a thesis that few people beyond my committee ever read.

The practicum route allowed me to create tools that organizations could use. The assessment guides, once refined and tested, could support conservation work across multiple African contexts, not just Mwenezi District. This felt more aligned with my values and goals.

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An important feature of the project I joined was that it was embedded within an existing long-term partnership. CMU and MCC Zimbabwe had built relationships with communities in Zimbabwe over many years, developed through sustained presence in the region. Working as a practicum student within that existing collaborative framework gave me a concrete model for what responsible cross-cultural partnership looks like in practice, something I could not have learned from reading alone. This is a standard I will carry forward in my own work. Seeing CMU and MCC Zimbabwe teams maintain accountability to communities across years, not just across the duration of a single research visit, shaped my understanding of what responsible partnership really means. This is a standard I will carry forward in my own work. The practicum route produced tools that organizations can use immediately, but this came with an important trade-off addressed in my What I Would Do Differently section below.

Data Availability Assumptions

Another critical early assumption concerned data availability. I initially assumed that GBIF (the Global Biodiversity Information Facility) would contain comprehensive occurrence data for medicinal plants in Mwenezi District. This assumption seemed entirely reasonable, GBIF is the world's largest aggregator of species occurrence data with over 1.5 billion records globally. I had used GBIF successfully in previous work and knew its interface well. I built my entire initial methodology around the assumption that I would query GBIF, download georeferenced occurrence records for medicinal plants in Mwenezi, analyze distribution patterns, assess conservation status based on range and abundance, and generate clear conservation priorities.

When I began data collection and ran my first GBIF queries for Mwenezi District, I was shocked to find very limited georeferenced occurrence records, far fewer than needed for any kind of robust assessment. The data simply was not there. This was not a minor inconvenience requiring a slight adjustment. It fundamentally undermined my planned methodology. I had built an entire approach assuming comprehensive data availability, and that assumption proved spectacularly wrong.

This data gap highlighted a critical issue in biodiversity conservation that I had understood intellectually but had not really grasped viscerally: the profoundly uneven distribution of scientific documentation across different regions. GBIF's 1.5 billion records sound comprehensive until you realize they are heavily concentrated in North America, Europe, and parts of Australia. For many African regions, particularly rural semi-arid areas like Mwenezi, scientific documentation remains scattered, incomplete, and often locked away in individual researchers' files or institutional collections that have not been digitized.

The limited data availability for Mwenezi forced me to completely reconsider my approach. Rather than the database-driven methodology I had envisioned, I needed to systematically compile species lists from ethnobotanical studies, traditional medicine surveys, herbarium records, and expert consultations. This meant reaching out to researchers I had never met, requesting access to unpublished data, spending hours in digital herbarium collections looking for any specimen records from the region, and piecing together a species list from fragments. This labor-intensive process required establishing new partnerships and significantly extended my timeline, but ultimately generated assessment data for 202 medicinal plant species. The experience proved invaluable, it demonstrated that the methodology could work even in severely data-poor contexts, though it also revealed just how challenging medicinal plant conservation assessment using secondary data really is.

The experience taught me a critical lesson about the importance of conducting preliminary data availability assessments before finalizing methodologies. I should have done exploratory GBIF queries during the planning phase, not after my IPP was approved. If I had discovered the data limitations earlier, I could have designed my methodology from the start to work with incomplete data rather than having to completely pivot mid-project. Future projects should conduct exploratory database queries during planning phases to understand actual data availability before finalizing methodologies. When working in data-poor contexts, methodologies should be designed from the outset to work with limited data rather than assuming comprehensive databases exist.

Understanding Who the Community Is

One assumption I carried into the project that proved more complex than expected was my understanding of who constitutes "the community" when conducting community-based conservation assessments. I had initially thought of the community in relatively straightforward terms, the people living in and around Mwenezi District who use medicinal plants. Through the project experience and feedback from committee members, I came to appreciate that defining the community is far more nuanced than this.

Communities are not uniform. Within any given community there are different knowledge holders, traditional healers who have spent a lifetime accumulating deep knowledge of medicinal plants, women who hold specific knowledge about plants used for maternal and child health, elders who understand long-term trends in plant availability, and younger community members who may interact with plants differently. These different groups do not always share the same knowledge, and accessing their knowledge requires different approaches and different levels of trust.

Furthermore, working within a community requires navigating both formal and customary governance systems. There may be traditional authorities, chiefs, headmen, elders, whose permission and involvement are essential before any research or assessment work can begin. There may also be formal government structures at the district or national level that need to be engaged. The right people to approach first, and the right sequence for those conversations, will differ significantly from one context to another. No single guide can prescribe exactly how to navigate this; users will need to understand their specific context and figure out the right approach for their project. What the guide can do is alert users to these dynamics and encourage them to think carefully about who they need to engage and in what order before beginning any community-based assessment. I have addressed this in the guides by including guidance notes on community authority and governance, along with references to further resources for those who want to think more deeply about this issue.

Critical Project Decisions and Their Outcomes

Several pivotal decisions shaped the trajectory and ultimate success of my practicum, each involving difficult trade-offs between competing priorities.

Investing in Relationship Building

One of the most important decisions I made involved how much time to invest in relationship building with partners. Early in the project, I made a conscious choice to prioritize regular communication and relationship development with the CMU team, Score Against Poverty staff in Zimbabwe, and GBIF Zimbabwe researchers. This meant maintaining consistent contact even when I did not have major updates to report, scheduling monthly video calls with Zimbabwe partners to maintain connection and share progress, and investing time in informal conversations to build genuine relationships rather than treating partners simply as sources of feedback.

This relationship-building proved incredibly time-intensive. There were weeks when maintaining all these communication channels felt like it was consuming time I desperately needed for developing the guides. However, this investment proved crucial and ultimately worthwhile. Partners became genuine collaborators rather than passive recipients of my drafts. They provided substantive input that fundamentally improved the guides' quality and cultural appropriateness, not just surface-level comments on grammar or formatting.

The workshop in Mwenezi represents the clearest example of why relationship investment mattered. Since we had built genuine trust and connection over months of regular communication, participants felt comfortable telling me things I did not want to hear, that my "clear" guides were not clear to local users, that my assumptions about plant identification did not match local practice, and that my ethical guidance missed critical dimensions. If the workshop had been our first real interaction, I suspect the feedback would have been much more polite and much less useful.

Looking back, I would absolutely make the same choice again, but I would plan for it differently. Future projects should build relationship-building time explicitly into project timelines and budgets rather than treating it as overhead that somehow must squeeze around "real work." Relationship building is real work, perhaps the most important work when you are doing cross-cultural conservation collaboration.

The Guide Format Evolution

The decision about how to structure and present the assessment guides evolved significantly throughout the project, teaching me important lessons about design iteration. Initially, I planned to develop the Secondary Data Assessment Guide and Rapid Community-Based Assessment Guide as separate, standalone documents. My reasoning was straightforward: organizations would choose one approach or the other based on their resources and needs.

However, after early drafts and initial partner feedback, several people suggested that organizations would use both approaches sequentially rather than choosing between them. The logic made sense: you would first gather available secondary data to understand what is already known about medicinal plant populations in your area, then identify gaps requiring new data collection through community assessment. Based on this feedback, I made the decision to integrate both guides into one comprehensive workflow document that showed how the approaches complemented each other.

After substantial development work, the integrated document exceeded 150 pages. At that point, what had seemed like comprehensive thoroughness started feeling like an overwhelming bulk. When I shared this with my supervisor, his feedback was direct: this is too long for practical use. Organizations with limited capacity will take one look at a 150-page document and put it aside for "when we have time," which means never.

Following his guidance, I separated the guides back into two standalone documents, each maintaining clear cross-references to the other so users could see the connections without being forced to read everything at once. This final format balances comprehensiveness with accessibility; users can start with whichever guide matches their immediate needs and capacity, then expand to the complementary approach as resources allow.

This iterative design process taught me that the best design often emerges through trial and adjustment rather than getting it right the first time. I had to be willing to substantially revise work I had already invested considerable time developing. This required letting go of ego and attachment to design choices. Being willing to make major revisions late in the project, when it would have been easier to just push forward with what I had, ultimately produced better outputs.

Prioritizing Partner Feedback Over Timeline Adherence

After the workshop in July 2025, feedback was consistent and clear: the guides needed to incorporate Shangaan and Ndebele plant names alongside botanical and English names. One participant captured it perfectly: 'The guide is clear but needs local language.' Multiple participants emphasized this same point; methodological soundness matters little if the tools are not linguistically accessible to intended users.

At that moment, I faced a choice. My timeline called for submitting final guides to my committee by late July. I could proceed with the guides as written, note the linguistic accessibility limitation in my reflection, and stay on schedule. Or I could take the feedback seriously and substantially revise the guides, which would delay completion but fundamentally improve their cultural appropriateness and usability. The timeline pressure was real, I had other deadlines approaching, I was exhausted from months of intensive work, and the prospect of major revisions felt overwhelming.

I chose to prioritize quality and cultural responsiveness over timeline adherence. I spent July and early August systematically incorporating local language names, working with Zimbabwe partners to ensure accurate translations and culturally appropriate framing. The experience reinforced a fundamental principle: quality and cultural responsiveness should take precedence over arbitrary timeline adherence. When stakeholders tell you something fundamental is missing, you listen and adapt, even if it disrupts your plans. However, this experience also highlighted the importance of incorporating cultural review earlier in development cycles so that major revisions are not needed late in the process when timeline pressures are greatest.

Effectiveness of Formal Project Management Plans

The Integrated Project Plan I developed during the Project Management course provided essential structure throughout the project. However, the relationship between planning and reality proved more complex and nuanced than I had anticipated.

Schedule Management: What Worked and What Did Not

The overall project duration and major milestone sequencing in my schedule proved realistic. The phased approach, literature review informing methodology development, which then guided pilot implementation, which then led to refinement based on testing, provided a logical progression that made sense both conceptually and practically. The buffer periods I built into the schedule proved valuable. When the literature review phase extended beyond my initial estimates, having buffer time prevented complete schedule collapse.

However, the literature review phase extended significantly beyond initial estimates. What initially appeared as a straightforward synthesis required integrating disparate knowledge systems and methodological traditions that do not always communicate clearly across disciplinary boundaries. This kind of cross-disciplinary synthesis takes longer than a straightforward literature review within a single discipline. I should have recognized this during planning and allocated more time.

Risk Management: Prescience and Blind Spots

My risk management planning proved both prescient and blind in interesting ways. I correctly identified several risks that did materialize partner communication challenges due to time zones and internet connectivity, timeline pressure from literature review extending longer than planned, and potential for scope creep as partners suggested additional elements to include in guides.

However, I completely missed what turned out to be one of the most significant project challenges: linguistic accessibility. This was not in my risk register at all. In retrospect, this represents a significant oversight. When developing conservation tools intended for use by traditional healers and community members in Zimbabwe, language should have been an obvious consideration. The fact that I did not identify this as a risk reflects my own cultural blind spots and assumptions that scientific terminology would be universally accessible with appropriate training.

The lesson here is not that risk management is useless because you cannot predict everything. Rather, the lesson is that risk identification benefits enormously from diverse perspectives. If I had conducted risk assessment workshops with Zimbabwe partners during planning, linguistic accessibility would have surfaced immediately as a critical consideration. Risk management conducted solely from my perspective as a Canadian graduate student inevitably reflected my blind spots and assumptions.

Quality Management and Communication

The multiple review layers I built into quality management worked extremely well. Having both academic committee members and Zimbabwe organizational partners review drafts at different stages caught different kinds of issues. Academic reviewers focused on methodological rigour, appropriate citation, and alignment with conservation science frameworks. Zimbabwe partners focused on practical implementation, cultural appropriateness, and linguistic accessibility. Neither group alone would have caught all the issues; together they produced much stronger outputs.

Regular stakeholder communication-maintained alignment throughout the project. Consistent communication with my academic committee kept me accountable and allowed timely course

corrections. Monthly updates with Zimbabwe partners ensured everyone remained informed and created opportunities to surface concerns before they became major problems.

Underlying this entire quality management process was a commitment to continual improvement, constantly seeking feedback, adapting approaches, and refining outputs based on what I learned. Rather than defending initial designs, I embraced iteration as the path to creating practical tools. This willingness to repeatedly revise and refine, even when it extended timelines, proved essential to producing guides that worked in practice rather than remaining theoretical exercises.

What I Would Do Differently

Earlier and More Systematic Linguistic Planning

The linguistic accessibility issues that emerged from the Mwenezi workshop should have been identified and addressed during initial design, not discovered during final review. Future projects should include structured questions about language use in initial stakeholder consultations: What languages do target users speak? What technical terms exist in local languages? How are plant names typically communicated locally? Do written forms exist for these languages? These questions should not be afterthoughts addressed during final review; they should shape design from inception.

More Robust Data Contingency Planning

I should have conducted exploratory GBIF queries during the planning phase to discover data limitations before finalizing my methodology. When working in data-poor contexts, the default assumption should be that comprehensive baseline data does not exist, and methodologies should be designed accordingly from the start rather than assuming data availability and adapting later when assumptions prove wrong.

Phased Stakeholder Engagement Throughout Development

Rather than circulating polished drafts for final review, I would structure engagement in distinct phases. **Early activities** might focus on conceptual frameworks and design principles, asking: Does this overall approach make sense? Are we prioritizing the right elements? What potential problems do you foresee? **Mid-development activities** might involve sharing rough drafts of specific sections or protocols, asking: Is this level of detail appropriate? Is the sequence logical? Are instructions clear? **Later activities** might focus on refinement, asking: What needs clarification? Where might users get stuck? What is missing? This phased approach would produce better outputs and stronger partner ownership. When stakeholders help shape tools from inception rather than just reviewing finished products, they own those tools in ways that make successful implementation far more likely.

Community-Level Pilot Implementation

If I could redesign the project with the knowledge I have now, I would narrow the scope significantly. Rather than developing two guides with only organizational-level review, I would focus on one guide with full community-level validation. This would produce fewer deliverables, one fully validated guide rather than two partially validated guides, but the outputs would be more credible and immediately usable. The Rapid Community-Based Assessment Guide remains untested with the people who would use it, representing a significant validation gap. A more focused scope would have allowed proper testing.

Personal and Professional Development

Cross-Cultural Collaboration Competence

I developed the ability to recognize when my assumptions do not match local realities, to question whose knowledge is centred in design decisions, and to build genuine partnerships across enormous differences in context, culture, language, and power. The linguistic

accessibility lesson crystallized this understanding: tools designed from my perspective, using my language and my reference systems, inevitably reflect my cultural positioning. Genuine accessibility requires centring the perspectives, languages, and knowledge systems of intended users from the beginning, not retrofitting accessibility after tools are already built.

Practical Project Management Capabilities

The Project Management course concepts came alive through application to a real project with actual stakeholders, genuine deadlines, and real consequences. Skills in stakeholder management, risk assessment, schedule development, and deliverable management transitioned from classroom exercises to embodied capabilities that I now use almost instinctively. When challenges emerged during implementation, I found myself naturally reaching for project management tools and frameworks without consciously thinking about what the textbook said.

Adaptive Thinking and Comfortable Improvisation

I developed confidence in making significant methodological pivots when original plans proved unworkable. The data availability challenge required fundamentally rethinking my approach mid-project. The linguistic accessibility feedback required major revisions late in the timeline. The guide format evolved through multiple iterations. Initially, these kinds of changes felt threatening, like admissions of failure or evidence of poor planning. Through experience, I came to see them as normal parts of complex project work. The ability to distinguish between changes requiring formal IPP amendment versus adjustments within the approved scope became an important judgment skill.

Ethical Complexity Navigation

I learned to recognize power dynamics in international research partnerships, to question whether my work serves communities or just advances my own academic interests, and to

grapple with difficult questions about knowledge ownership, benefit-sharing, and the risk of extractive research practices. Working within CMU and MCC Zimbabwe's established ethical frameworks gave me a concrete model for what ongoing, relational ethical practice looks like in international conservation work. These ethical considerations are not boxes to check at the start of a project; they are commitments that should shape every aspect of research design and implementation, and that require sustained attention throughout.

Writing for Different Purposes and Audiences

This practicum required writing for multiple distinct audiences: academic committee members evaluating scholarly merit, international NGO practitioners assessing practical utility, government officials concerned with policy alignment, and traditional healers who would implement assessments. Each audience required a different language, structure, and emphasis while maintaining core message integrity. Learning to write the same content in multiple registers, academic, practitioner-focused, and accessible to non-specialists, represents a capability that will serve me throughout my career.

Partner Feedback and How It Shaped the Work

Partner feedback fundamentally improved the guides in four keyways that I could not have achieved working alone.

Validation of Core Methodological Approach

Zimbabwe partners confirmed that the Environmental Security Framework made sense for medicinal plant assessment and that the guides addressed real gaps in conservation practice. This validation mattered enormously. I had invested months developing these approaches based on literature review and theoretical reasoning, but I did not know whether they would make sense to practitioners working in actual conservation contexts. Partner confirmation that the approaches were sound and useful provided crucial validation.

Critical Gaps in Linguistic and Cultural Accessibility

The Mwenezi workshop revealed that my guides, while methodologically sound, lacked linguistic accessibility. I had prioritized scientific naming conventions, operating from the assumption that botanical nomenclature provided universal reference points that anyone could use with appropriate training. What I failed to appreciate was that for traditional healers and community members who would apply these assessments, local names constitute the primary plant identification system. By defaulting to scientific nomenclature, I was implicitly privileging Western scientific knowledge over traditional knowledge frameworks, a design choice with real consequences for accessibility and cultural appropriateness.

Enhancement of Ethical Dimensions

Partners highlighted benefit-sharing questions I had underemphasized. If conservation assessments incorporating traditional knowledge lead to commercial opportunities, research publications, or funding opportunities, how should benefits flow back to knowledge holders? This is not just an ethical refinement; it is essential for maintaining community trust and ensuring continued willingness to share knowledge. Without clear benefit-sharing protocols, communities reasonably hesitate to share knowledge that might be extracted without reciprocal benefit.

Realism About Implementation Requirements

Partners provided honest assessments of what resource-limited organizations could realistically implement. Some methodological elements I had included were too sophisticated or time-intensive for organizations with limited capacity. Partner feedback helped me distinguish between elements that add comprehensiveness but are not essential, and elements that truly make the difference between useful and useless assessment. This feedback improved the guides by making them more realistic and implementable.

What I Learned About Medicinal Plant Conservation

The Methodological Gap Between Global Frameworks and Data-Poor Contexts

I learned about the profound disconnect between how global conservation frameworks are designed and the realities of conservation work in most of the world. Global frameworks like the IUCN Red List work brilliantly for species and regions with strong research infrastructure. But for most medicinal plants in the Global South, comprehensive data simply does not exist and realistically will not be generated given resource constraints. The result is that huge numbers of culturally and economically important plants remain essentially invisible to formal conservation planning, not because they are unimportant, but because the tools we have for assessment assume data that does not exist.

This realization fundamentally changed how I thought about conservation methodology. The question is not "How can we apply existing frameworks to data-poor contexts?" but rather "What would conservation frameworks look like if they were designed from the start for data-poor contexts?" This requires genuinely creative methodological work, not just simplifying existing approaches.

Traditional Knowledge as Primary Data, Not Supplementary Information

I learned that traditional ecological knowledge holds sophisticated information about plant distributions, population trends, seasonal availability patterns, and sustainable harvest practices accumulated over generations of careful observation and experimentation. Traditional healers often know which plants are becoming harder to find, which locations still have good populations, which harvesting practices maintain populations versus depleting them, and how climate patterns affect availability.

However, incorporating traditional knowledge into formal conservation frameworks raises complex questions about intellectual property, cultural appropriation, and epistemological

power. Conservation science has historically treated Indigenous knowledge as data to be collected and validated against scientific standards, perpetuating colonial patterns where Indigenous knowledge is valuable only insofar as it confirms scientific knowledge. The relationship between scientific and traditional knowledge requires careful negotiation in each specific context, questions about what counts as valid evidence, whose knowledge is treated as authoritative, and what knowledge can be shared and under what conditions do not have simple answers that a guide can prescribe.

The Intersection of Healthcare Security and Biodiversity Conservation

Finally, I learned that medicinal plants occupy a unique position as both biodiversity requiring conservation and healthcare infrastructure essential for community wellbeing. Most conservation frameworks treat human use as a threat to be managed or minimized. But for medicinal plants that serve as primary healthcare for communities with limited access to formal medical services, this logic becomes problematic. Eliminating or severely restricting harvest is not just a conservation measure, it is a healthcare intervention with immediate consequences for human wellbeing.

The Environmental Security Framework that I adapted for this project offers one way to think about this dual role. By explicitly examining access, availability, stability, and perception, the framework acknowledges that conservation success requires both maintaining species and ensuring communities can continue accessing plants they need for healthcare. Conservation cannot succeed by protecting plants from people, it must succeed by supporting sustainable relationships between communities and plant resources.

Contributions to the Field and Future Directions

Key Contributions

This project offers several meaningful contributions to medicinal plant conservation practice, though I hold these contributions with appropriate humility about their limitations.

The guides provide what I believe is the first practical framework for systematically integrating Environmental Security Framework principles into medicinal plant assessments. This framework bridges conservation science and community healthcare needs in ways that conventional conservation frameworks do not. Unlike existing IUCN or FairWild tools that require specialized expertise, these guides are explicitly designed for resource-limited NGOs to use without conservation specialists on staff, with step-by-step protocols, template forms, worked examples, and clear explanations of underlying rationale.

The Mwenezi pilot demonstrates that these approaches work in real-world contexts, not just in theory. The pilot generated conservation information on 202 medicinal plant species and demonstrated that systematic secondary data assessment is feasible even where comprehensive databases are unavailable. Just as importantly, the pilot documented challenges and adaptive strategies, providing realistic expectations for other organizations.

Future Research Directions

Most immediately, testing the Rapid Community-Based Assessment Guide with traditional healers and community members would validate whether the protocols work as intended when implemented in community contexts.

Integrating climate projections with medicinal plant distribution data could identify species most at risk from climate change. Developing clear, fair protocols for benefit-sharing when traditional knowledge contributes to conservation outcomes remains largely unresolved and is

essential for maintaining community trust. Applying these tools across multiple African districts beyond Mwenezi would test their transferability and identify necessary adaptations for different contexts. Finally, understanding the economic value of medicinal plant resources could strengthen conservation arguments for policymakers and funders.

Conclusion

This practicum experience has been transformative in ways I genuinely could not have anticipated when I nervously opened that first email from Iain asking if I would be interested in a Zimbabwe project. What began as uncertainty about whether I could even understand that colorful practicum planning diagram evolved into real confidence in managing complex, multi-stakeholder international projects with all their inevitable complications and surprises.

The experience reinforced that effective conservation work requires far more than technical knowledge. It demands cultural sensitivity to recognize when your assumptions do not match local realities. It requires strong project management skills to navigate complexity without losing direction. It needs ethical awareness to constantly question power dynamics and ensure work serves communities, not just researchers. Most of all, it requires the ability to build meaningful partnerships across enormous differences in context, culture, language, and power, partnerships based on genuine respect rather than instrumental use of partners as facilitators or validators.

Perhaps the most important lesson is that professional growth occurs not despite challenges and uncertainties, but because of them. The moments of discomfort, discovering my data assumptions were wrong, hearing that my guides were not accessible, realizing major revisions were needed late in the project, generated the most significant learning. The willingness to step into unfamiliar territory, to acknowledge when you do not know something, to remain open to

being wrong and learning from mistakes, creates learning opportunities that would never exist if you only did work you already knew how to do well.

The limitations of this project are as instructive as its successes. The linguistic accessibility improvements came late in the process rather than being built in from inception. The secondary data assessment revealed significant data gaps, but it could not generate comprehensive new data to fill those gaps. These limitations do not represent project failure. They indicate directions for future work, my own future work and work that other students or practitioners might undertake.

As I move forward in my conservation career, I carry not just the technical deliverables from this practicum but a set of capabilities and understandings that will shape everything I do. The confidence that comes from successfully navigating complexity and uncertainty. The humility that comes from recognizing my assumptions and oversights. The systematic thinking from project management practice. The relationships built through genuine partnership across cultures and organizations. The commitment to accessibility and cultural responsiveness in conservation practice.

This practicum represents a chapter ending, but also a beginning. The guides exist now as resources that organizations can use and adapt. The relationships built through this work continue. The questions raised about medicinal plant conservation, cultural accessibility in conservation tools, and integration of traditional knowledge will occupy researchers and practitioners for years to come. The journey from that first email to this completed practicum document has been filled with far more complexity, challenge, and growth than I imagined possible. This experience made me a better researcher, a more thoughtful practitioner, a humbler collaborator, and a more capable professional. That transformation, as much as the guides themselves, represents the real success of this practicum.

APPENDIX A: INTEGRATED PROJECT PLAN (IPP)

This Integrated Project Plan serves as a consolidated document encompassing all project components, including a background information report, and defines a structured set of objectives alongside the steps required to fulfill the project's overarching goal.

Conservation Status of Medicinal Plants in Mwenezi District, Zimbabwe

Janet Olanrewaju

An Integrated Project Plan submitted to Iain Davidson-Hunt, the Faculty of Graduate Studies
of The University of Manitoba, in partial fulfilment of the requirements of the degree of

MASTER OF NATURAL RESOURCES MANAGEMENT

Clayton H. Riddell Faculty of Environment, Earth, and Resources

Natural Resources Institute

University of Manitoba

Winnipeg

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Executive Summary

Medicinal plants play a crucial role in ecosystems and human health, particularly in regions like the Mwenezi District of Zimbabwe where traditional medicine is integral to healthcare. Understanding the conservation status of these plants is essential for maintaining biodiversity, preserving traditional knowledge, and ensuring sustainable use of natural resources. The "Conservation Status of Medicinal Plants in Mwenezi District, Zimbabwe" project aims to address this need by developing practical tools and methodologies for NGOs to evaluate and conserve medicinal plant biodiversity effectively.

The project prioritizes leveraging existing secondary data to create user-friendly guidance documents for assessing the conservation status of medicinal plants. The environmental security framework (access, availability, stability, and perception) serves as a foundational element, helping to identify critical factors affecting medicinal plant use and conservation.

Objectives

1. Conduct a comprehensive literature review on methodologies for both secondary data and rapid community-based assessments.
2. Develop a guide for secondary data assessment and rapid community-based assessment of medicinal plants using the environmental security framework
3. Conduct a pilot implementation of Zimbabwe's secondary data assessment methodology for medicinal plants.

Deliverables

1. Literature review report on secondary data assessment methodologies and community-based assessment methodologies (due February 28, 2025)
2. Secondary data assessment guide and rapid community-based assessment guide (due June 30, 2025)
3. Pilot secondary data assessment report for medicinal plants in Zimbabwe (due August 31, 2025)

The project involves collaboration between Canadian Mennonite University, MCC-Zimbabwe, Arramat Partners, LINCZ Score Against Poverty, and research partners Luke Jimu and Admore Mureva. The methodology emphasizes respect for traditional knowledge and cultural appropriateness. It leverages existing databases (e.g., IUCN Red List, GBIF) and frameworks

while tailoring approaches to Zimbabwe's context. Regular feedback sessions with stakeholders will ensure the tools meet local and global conservation needs.

A budget of \$38,772.07 has been allocated for personnel, software licenses, data acquisition, and travel for workshops and meetings in Zimbabwe. Partnerships will be leveraged to maximize resource utilization and minimize costs. The funding, supported by Global Affairs Canada and Canadian Mennonite University, will enable the successful delivery of this initiative.

I, Janet Olanrewaju, will be the project manager, supported by academic advisors Dr. Rachel Krause, Prof. Iain Davidson-Hunt, Arramat Partners, and local partners in Zimbabwe. The project team's expertise in biodiversity conservation and local knowledge ensures the successful completion of the project.

This research is supported by funding from Global Affairs Canada and Canadian Mennonite University. The project's outcomes will contribute significantly to conserving medicinal plants, preserving traditional knowledge, and informed decision-making for conservation strategies in the Mwenezi District, with broader implications for similar conservation efforts globally.

By August 2025, this project will produce comprehensive tools that empower NGOs to conserve medicinal plants sustainably while respecting cultural and ecological nuances. These tools will inform conservation strategies in the Mwenezi District, with broader applications for similar regions globally.

This initiative will contribute to preserving medicinal plant biodiversity and enhance understanding of traditional knowledge's role in conservation. It represents a significant step toward addressing the critical challenges facing medicinal plant conservation in Zimbabwe.

Project Charter

The Project Charter is a document developed as a product of several meetings to outline the whole project. The original Project Concept served as the basis for its development. It is an agreement that I, Janet Olanrewaju, as the project manager, Dr. Rachael Krause and Prof. Iain Davidson-Hunt (my advisors), and our project partners in Zimbabwe have signed to affirm the goals and deliverables that have been agreed upon. It gives a general summary of the entire project, explains why it is necessary, and offers a rough estimate for completion dates.

This agreement serves as the foundation for all subsequent project documents, such as the scope, schedule, budget, and quality management. The charter will act as a live document during the project's execution, allowing me and the partner organizations to document and approve any changes to the project's plans.

Project Name: Conservation Status of Medicinal Plants in Mwenezi District, Zimbabwe

Sponsor/Partner Name: Global Affairs Canada and Canadian Mennonite University

Date: September 2024

Project Overview

This project seeks to develop practical tools and methodologies to support NGOs and local partners in evaluating and preserving medicinal plant biodiversity in the Mwenezi District, Zimbabwe. By leveraging secondary data and creating guidance documents, the project aims to address key conservation challenges, inform policy decisions, and provide actionable strategies for sustainable resource management.

The project applies the environmental security framework (access, availability, stability, and perception) to guide its methodologies and ensure cultural appropriateness while respecting traditional knowledge.

Justification/Need

Assessing and addressing the conservation status of medicinal plants is essential for biodiversity preservation, maintaining ecosystem health, and supporting traditional healthcare practices. Without intervention, there is a risk of losing vital plant species and associated knowledge, leading to negative impacts on both ecosystem resilience and local healthcare. This project addresses these challenges by:

- Providing NGOs with tools to assess conservation needs effectively.
- Offering frameworks that respect cultural and ecological nuances while aligning with global conservation standards, such as the IUCN Red List and FairWild factors.
- Bridging gaps in current methodologies with guidance tailored to local contexts.

Objectives

1. Conduct a comprehensive literature review on methodologies for both secondary data and rapid community-based assessments.
2. Develop a guide for secondary data assessment of medicinal plants and rapid community-based assessment of medicinal plants using the environmental security framework
3. Conduct a pilot implementation of Zimbabwe's secondary data assessment methodology for medicinal plants.

Deliverables

1. Literature review report on secondary data assessment methodologies and community-based assessment methodologies (due February 28, 2025)
2. Secondary data assessment guide and rapid community-based assessment guide (due June 30, 2025)
3. Pilot secondary data assessment report for medicinal plants in Zimbabwe (due August 31, 2025)

Requirements

1) Literature/Data Sources (for Deliverable 1)

- a) Comprehensive review of existing methodologies for secondary data assessment and rapid community-based assessment of medicinal plants
- b) Identify gaps in the IUCN Red List and CITES frameworks for their application to medicinal plant conservation.
- c) Use the FairWild Standards to inform sustainable harvesting practices

2. Secondary Data Assessment Guide Development (for Deliverable 2)

- a) Provide a framework for NGOs to analyze conservation challenges using existing data.

- b) Include practical steps for accessing and utilizing global databases like GBIF and IUCN Red List.

Rapid Community-Based Assessment Guide Development (for Deliverable 2)

- a) Integrate local ecological knowledge (LEK) into conservation planning.
- b) Ensure cultural sensitivity and practicality for community-level implementation.
- c) Incorporate access, availability, stability, and perception concepts into both methodologies.

3. Pilot Implementation Requirements for Secondary Data Assessment (for Deliverable 3)

- a) Apply the secondary data assessment guide to analyze medicinal plant conservation in Zimbabwe.
- b) Collect stakeholder feedback through workshops and virtual meetings to evaluate the guide's practicality.
- c) Refine the tools based on pilot results and stakeholder input, ensuring alignment with NGO needs.

Roles and Responsibilities

Janet (Project Manager)

- Develop and execute the project plan.
- Responsible for communication between project partners.
- Conduct a literature review, develop methodologies, data collection tools, analysis techniques, and implementation guidelines for the secondary data assessment and rapid community-based assessment guides.
- Organize and facilitate a workshop in Zimbabwe to gather feedback on the developed guides
- Track time spent on the project activities

Dr. Rachel Krause (Canadian Mennonite University Research Team)

- Contributing to the overall coordination and communication between the university and the project in Zimbabwe, ensuring smooth collaboration and information flow.
- Obtain any software licenses or technology required for the project.

Dr. Jodi Dueck-Read (Canadian Mennonite University Research Team)

- Managing the grant application process and collaboration between stakeholders, ensuring the project aligns with the university's overall mission and objectives.
- Allocate \$15,000 for personnel expenses/costs.

Alrika Rojas (Canadian Mennonite University Research Team)

- Arrange introductions and travel from CMU's end for workshops and meetings.
- Assist in coordinating logistics for project-related activities and travel.
- Support communication and collaboration between CMU and Zimbabwe partners.

Arramat Project (Funding Partner)

- Co-fund the project with a contribution of \$19,000.
- Collaborate with other project partners in developing assessment guides, providing expertise and insights.
- Review and provide feedback on project deliverables, including assessment guides.
- Co-publish the final guides and project outcomes.

MCC-Zimbabwe (Local Partners)

- Coordinate local travel logistics.
- Cover necessary field costs (e.g. in-country transportation, accommodations, and meals)
- Participate in reviewing draft guides and attend relevant workshops and meetings.

Score Against Poverty (LINCZ Local Implementing Partner)

- Provide local input and expertise.
- Participate in reviewing draft guides and attend relevant workshops and meetings.

Dr. Luke Jimu & Dr. Admore Mureva - Research Partners (Global Biodiversity Information Facility, Zimbabwe)

- Provide input, feedback, and support for the project's objectives, deliverables, and methodologies.
- Share relevant data, species lists, and coordinates to facilitate data collection and analysis.

- Confirm changes and updates to project direction and ensure alignment with organizational goals

Iain Davidson-Hunt - Professor & Associate Director, Natural Resources Institute, University of Manitoba, Student's Advisor

- Oversee the project, provide guidance and supervision
- Evaluate progress and ensure successful implementation.

Kirit Patel – Committee Member, Associate Professor & Chair, Department of Environmental Studies and Sciences, University of Winnipeg

- Advise on integrating cultural relevance and local insights into the project's deliverables.
- Provide feedback on methodologies to ensure practical applicability for NGOs.
- Support refining the environmental security framework's application to project tools.
- Assist in planning and executing stakeholder workshops to gather and incorporate feedback effectively.

Danna Leaman - Committee Member and Conservation Specialist

- Offer expertise on conservation methodologies, including integrating IUCN Red List and FairWild Standards into project deliverables.
- Guide aligning project tools with global conservation frameworks and local ecological knowledge (LEK).
- Review guidance documents for scientific accuracy and cultural sensitivity.
- Advise on methodologies for assessing medicinal plant populations and threats.

Sheldon McLeod - Committee Member and Strategic Advisor

- Provide high-level guidance on project scope, objectives, and deliverables to ensure alignment with academic and practical goals.
- Review project documents and outputs for consistency and logical structure.
- Assist in identifying gaps in methodology or resources that require adjustment.
- Offer feedback on stakeholder engagement strategies, ensuring their relevance and effectiveness.

Resource and Cost Estimates

1. Personnel - \$38,772.07 allocated for internal expertise within the organization for a student stipend covering IPP development, data analysis, interpretation, and reporting. This amount is broken down as follows:

- \$11,772.07 from January to August 2024 (including approximately \$3,800 for Summer 2024 tuition)
- \$19,000 from the Arramat Project
- \$15,000 from the CMU Project starting September 2024 to August 2025

2. Technology – Utilize existing software licenses within the organization will be utilized for data analysis, minimizing additional technology expenses.

3. Data Acquisition – Utilize existing partnerships and agreements will be leveraged to access relevant databases without incurring substantial costs.

4. Travel Expenses – Cover expenses for reviewing draft guides, holding workshops, and meetings with project partners in Zimbabwe.

5. Miscellaneous Expenses - \$1,000 for unforeseen costs or additional resources needed during the project.

Total estimated budget: \$39,772.07 (subject to refinement as the project progresses)

Readiness for Next Steps

Essential Contacts

1. Dr. Rachel Krause – confirm the timing and expectations for the project in Zimbabwe.
2. Dr. Jodi Dueck-Read and Alrika Rojas – confirm the resources and provide support.
3. Dr. Luke Jimu and Dr. Admore Mureva – Provide information on the current project at Mwenezi District
4. Prof. Iain Davidson-Hunt - confirm the plan details, the list of deliverables, and the project requirements.

Other Resource Needs or Supports

1. Access to relevant databases and literature repositories for comprehensive literature reviews.

2. Collaboration with local partners in Zimbabwe for workshop organization and facilitation.
3. Potential need for specialized software for data analysis and mapping.

Project Scope

This document outlines the boundaries and expectations for Zimbabwe's medicinal plant conservation project. It defines what will be accomplished, clarifies assumptions, and sets parameters for project execution. The project team, advisors, and Zimbabwean partners have agreed upon these scope elements, which align with the project charter.

Inclusions:

- 1) The project will develop comprehensive methodologies for assessing the conservation status of medicinal plants using a) Secondary data sources b) Rapid community-based approaches
- 2) The project will produce the following deliverables: a) Literature review report on secondary data assessment and community-based assessment methodologies b) Secondary data assessment and Rapid community-based assessment guide c) Pilot secondary data assessment report for medicinal plants in Zimbabwe
- 3) The project will incorporate the environmental security framework into the methodologies.
- 4) The project will involve collaboration with all Zimbabwe partners, including Luke Jimu, Admore Mureva, MCC-Zimbabwe, Arramat partners, and Score Against Poverty.
- 5) The project will include workshops and meetings (both virtual and in-person) to review draft guides with project partners in Zimbabwe.
- 6) The project will compile a comprehensive list of medicinal plants in Zimbabwe, including scientific names, local names, and geo-coordinates/locations from documented sources.
- 7) The project will produce a detailed report on the conservation status of key medicinal plants in Zimbabwe based on secondary data.

Exclusions from Scope:

- 1) This project will not include the implementation of the rapid community-based assessment methodology in the field. Only the secondary data assessment will be piloted.
- 2) The project will not involve the collection of primary data on medicinal plants in Zimbabwe, as it focuses on secondary data analysis and methodology development.
- 3) The project will not involve the cultivation or propagation of medicinal plants.

Assumptions:

- 1) It is assumed that sufficient secondary data sources are available for the assessment of medicinal plants in Zimbabwe.
- 2) It is assumed that project partners in Zimbabwe will be available and willing to participate in review processes and workshops.
- 3) It is assumed that the environmental security framework is applicable and relevant to the assessment of medicinal plants in this context.
- 4) It is assumed that existing software licenses and technology within the organization will be adequate for data analysis and project implementation.
- 5) It is assumed that travel to Zimbabwe will be possible and safe for conducting workshops and meetings.

Constraints:

- 1) The project is constrained by the budget allocation of \$38,772.07 for personnel expenses.
- 2) The project timeline is constrained, with specific deadlines for each deliverable as outlined in the project charter.
- 3) The project is geographically constrained to the Mwenezi District of Zimbabwe for its focus area.
- 4) The assessment methodologies are constrained by the need to respect and protect traditional knowledge.

Acceptance Criteria:

- 1) All deliverables must be completed and submitted by their respective due dates as specified in the project charter.
- 2) Project partners in Zimbabwe will review the secondary data assessment guide and rapid community-based assessment guide as they will provide comments, and changes will be made based on their feedback.
- 3) The pilot secondary data assessment report for medicinal plants in Zimbabwe must include a comprehensive list of medicinal plants, their conservation status, and recommendations for conservation measures.
- 4) All methodologies developed must incorporate the environmental security framework and respect traditional knowledge.

- 5) The literature review reports must provide a comprehensive overview of existing methodologies for both secondary data and community-based assessments of medicinal plants.

Scope Management:

The project's core leadership team, comprising Janet (Project Manager), Dr. Rachel Krause (Canadian Mennonite University Research Team), Dr. Jodi Dueck-Read (Canadian Mennonite University Research Team), and Prof. Iain Davidson-Hunt (Student's Advisor), will oversee the scope management process. This team will carefully evaluate and authorize any proposed modifications to the project scope. Suggested changes will be assessed promptly, with decisions made within two days, focusing on alterations crucial for project success and quality enhancement.

When a scope modification is proposed:

- 1) A thorough analysis of the proposed change's impact on project feasibility and budget will be conducted by Janet in consultation with Dr. Krause and Dr. Jodi Dueck-Read.
- 2) Based on the feasibility analysis, Janet, Dr. Krause, Dr. Jodi Dueck-Read, and Prof. Davidson-Hunt will convene to discuss the proposed changes and their implications for the project charter.
- 3) If approved, all changes will be formally documented in the charter by Janet, including the date of the decision meeting.
- 4) Janet will update the project charter to reflect the new scope elements, particularly those affecting deliverables or project goals. The revised charter will then be distributed to all team members.
- 5) Clear communication channels will be maintained by Janet to ensure that all stakeholders, including our Zimbabwean partners (Luke Jimu, Admore Mureva, MCC-Zimbabwe, and Score Against Poverty), are informed of any significant scope adjustments that may influence their participation or the project's outcomes.

Project Schedule

The Project Schedule for the Conservation Status of Medicinal Plants in Mwenezi District, Zimbabwe has been meticulously crafted through the development of Project Activities, a Work Breakdown Structure, the Sequence Diagram, a definition of Milestones, and the calculation of the Critical Path. Detailed schedule information will be provided in Appendix B. Janet, as the project manager and graduate student, will employ this schedule as a daily time-tracking tool, updating task progress throughout the project's duration. While the schedule is presented as shown below, it should be considered a living document, subject to modifications as the project advances. Float tasks may be completed on different dates, provided the project's critical path remains unaltered. When deemed necessary, and with the agreement of Janet, Dr. Rachel Krause, and Dr. Jodi Dueck-Read, additional tasks may be incorporated into the project timeline. Significant changes will be tracked using the Change Management Plan and Change Log, ensuring appropriate management.

➤ Deliverable 1: Literature review reports (Due: February 28, 2025)

Task/Activity:

1) Review methodologies for secondary data assessment

- Review existing methodologies
- Analyze IUCN Red List framework
- Study CITES frameworks
- Examine FairWild Standards

2) Review methodologies for community-based assessment

- Review existing methodologies
- Identify cultural considerations
- Analyze local ecological knowledge integration

3) Compile literature review reports

- Draft comprehensive report
- Review with advisors
- Submit final literature review

➤ **Deliverable 2: Assessment Guides (Due: June 30, 2025)**

Task/Activity:

1) Develop a secondary data assessment guide

- Create a framework for NGOs
- Develop database access protocols
- Design analysis templates

2) Develop a community-based assessment guide

- Create LEK integration framework
- Design cultural sensitivity protocols
- Develop assessment tools

3) Review process with partners

- Distribute guides for feedback
- Conduct internal review
- Gather partner feedback
- Hold workshops and meetings
- Incorporate revisions
- Finalize guides

➤ **Deliverable 3: Pilot Implementation Report (Due: August 31, 2025)**

Task/Activity:

1) Conduct pilot implementation

- Apply assessment guide in Zimbabwe
- Document implementation process
- Gather stakeholder feedback

2) Analysis and reporting

- Analyze pilot results
- Draft pilot assessment report
- Review with project partners

- Incorporate feedback
- Submit final pilot implementation report

The project commences on September 1, 2024, and concludes by August 31, 2025. This timeline is crucial to meet all involved parties' schedules, including grant deadlines and academic requirements, leaving no float time beyond the allocated calendar. As a living document, this schedule will be accessible to all project partners, including those in Zimbabwe, such as Luke Jimu, Admore Mureva, Arramat partners, MCC-Zimbabwe, and Score Against Poverty, as well as the academic advisor, Prof. Iain Davidson-Hunt. Regular updates and revisions will ensure its continued relevance and accuracy throughout the project's lifecycle.

Medicinal Plant Project

Gantt ★ Table Board Workload Overview

Export & Share Segments Custom fields AI Assistant

STATUS
On Time

START DATE
Sep 02 2024

OWNER
Janet Olanre...

PRIORITY
High

RISK
Medium low

Free trial status
6 days left

Upgrade

	Search tasks...	SUB	ASSIGNEE	TAGS	EH	AH	EC	AC	START	WD	CD	DUE	PR	RI	DPD	STATUS	%	
-	Literature Review Report:	2			-	-	-	-	02/Sep	130d	180d	28/Feb	-	-			0%	
1	Review of Secondary Data Assessment		JO, ID		-	-	-	-	02/Sep	130d	180d	28/Feb	-	-		Started	0%	ID
2	Review of Rapid Community-Based Assessment		JO, ID		-	-	-	-	02/Sep	130d	180d	28/Feb	-	-		Started	0%	ID
	+ Add task + Add section																	
-	Assessment Guides Development:	3			-	-	-	-	01/Mar	86d	122d	30/Jun	-	-			0%	
5	Draft Methodology		JO, ID		-	-	-	-	01/Mar	86d	122d	30/Jun	-	-		Not started	0%	ID
6	Review Process from Stakeholders		DL, ID, KP, SM		-	-	-	-	01/Mar	86d	122d	30/Jun	-	-		Not started	0%	ID KP SM
7	Finalize the Guides		DL, ID, JO, KP, RK, SM		-	-	-	-	01/Mar	86d	122d	30/Jun	-	-		Not started	0%	ID JO KP RK SM
	+ Add task + Add section																	
-	Pilot Implementation:	5			-	-	-	-	01/Jul	44d	62d	31/Aug	-	-			0%	
10	Application of Secondary Data Assessment Methodology		ID, DL, SA, LJ		-	-	-	-	01/Jul	44d	62d	31/Aug	-	-		Not started	0%	ID DL SA LJ
11	Validation of Community-Based Assessment Guide		ID, LJ, SA, AM		-	-	-	-	01/Jul	44d	62d	31/Aug	-	-		Not started	0%	ID LJ SA AM
12	Data Analysis and Interpretation		ID, JO, LJ, AM		-	-	-	-	01/Jul	1d	1d	01/Jul	-	-		Not started	0%	ID JO LJ AM
13	Consolidation of Pilot Findings		LJ, AM, ID, SA		-	-	-	-	01/Jul	44d	62d	31/Aug	-	-		Not started	0%	LJ AM ID SA
14	Stakeholder Review and Input		DL, KP, RK, SM, LJ, ID, AM, SA, JO		-	-	-	-	01/Jul	44d	62d	31/Aug	-	-		Not started	0%	DL KP RK SM LJ ID AM SA JO

Medicinal Plant Project

Gantt Table Board Workload Overview

Export & Share Baselines Options Columns Segments AI Assistant

STATUS

On Time

START DATE

Sep 02 2024

OWNER

Janet Olanre...

PRIORITY

High

RISK

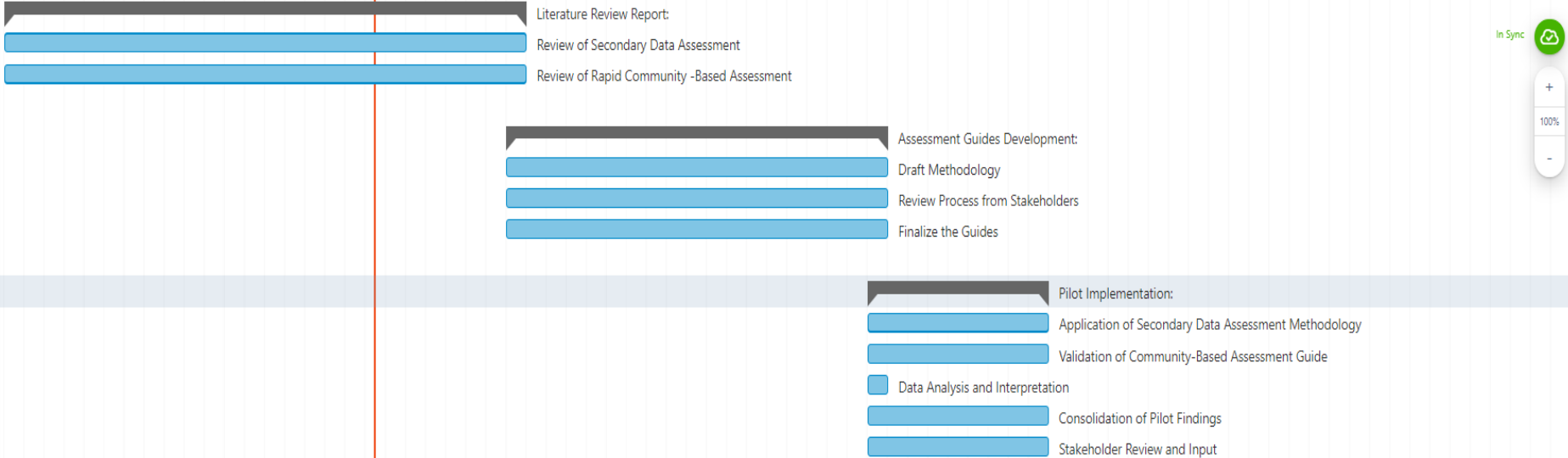
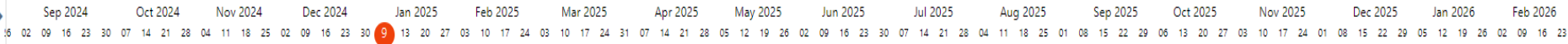
Medium low

Free trial status

6 days left

Upgrade

Invite



In Sync

+

100%

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Resources Plans

The successful execution of this project hinges on the careful allocation and management of various resources. This comprehensive resource plan delineates the skills, knowledge, materials, and equipment required for each project phase. It identifies existing resources within the project team and partner organizations and additional resources that need to be acquired. By meticulously outlining these requirements, we ensure that all project objectives can be met efficiently and to the highest quality standards.

Skills and Knowledge:

The multifaceted nature of this project demands a diverse set of skills and expertise. While our project team and partners bring significant capabilities to the table, it's crucial to identify any potential gaps and strategies to address them. The following is a detailed breakdown of the essential skills and knowledge required for each project component:

1) Literature Review and Research Skills:

- a. Required for: Comprehensive review of existing methodologies
- b. Provided by: Graduate Student/Project Manager
- c. Specific skills: Academic database navigation, critical analysis, synthesis of information

2) Methodology Development for Secondary Data Assessment:

- a. Required for: Creating the secondary data assessment guide
- b. Provided by: Graduate Student/Project Manager
- c. Specific skills: Data source identification, assessment criteria development, analytical framework design

3) Methodology Development for Rapid Community-Based Assessment:

- a. Required for: Creating the community-based assessment guide
- b. Provided by: Graduate Student/Project Manager
- c. Specific skills: Participatory research methods, survey design, qualitative data analysis

4) Environmental Security Framework Knowledge:

- a. Required for: Incorporating the framework into both assessment methodologies
- b. Provided by: Graduate Student/Project Manager, Prof. Iain Davidson-Hunt
- c. Specific skills: Understanding of access, availability, stability, and perception concepts

5) Data Analysis and Interpretation:

- a. Required for: Analyzing secondary data and community-based assessment results
- b. Provided by: Graduate Student/Project Manager, internal expertise
- c. Specific skills: Statistical analysis, qualitative data interpretation, data visualization

6) GIS and Mapping Skills:

- a. Required for: Spatial analysis of medicinal plant distribution (if needed)
- b. To be determined if needed, GIS expertise will be provided by Dr. Natalia Wiederkehr, the postdoctoral researcher for LINCZ
- c. Specific skills: GIS software proficiency, spatial data management, map creation

7) Project Management and Coordination:

- a. Required for: Overall project execution and stakeholder management
- b. Provided by: Graduate student/Project Manager, Dr. Rachel Krause
- c. Specific skills: Timeline management, resource allocation, stakeholder communication

8) Grant Management:

- a. Required for: Ensuring proper use and reporting of project funds
- b. Provided by: Dr. Jodi Dueck-Read
- c. Specific skills: Budgeting, financial reporting, compliance with funding regulations

9) Travel and Logistics Coordination:

- a. Required for: Arranging workshops, meetings, and travel between CMU and Zimbabwe partners
- b. Provided by: Alrika Rojas (CMU), Bulisani Mlotshwa (MCC-Zimbabwe)
- c. Specific skills: Travel planning, cross-cultural communication, logistical problem-solving

10) Academic Supervision:

- a. Required for: Academic Supervision
- b. Provided by: Dr. Rachel Krause and Prof. Iain Davidson-Hunt
- c. Specific skills: Research methodology expertise, academic writing guidance, quality assurance

11) Academic Committee Expertise:

- a. Required for: Project oversight, guidance, and quality assurance
- b. Provided by: Dr. Rachel Krause, Prof. Iain Davidson-Hunt, Dr. Kirit Patel, Danna Leaman, and Sheldon McLeod

Specific skills: Research methodology expertise, subject matter expertise in respective fields, academic writing guidance, quality assurance, review practicum, and defense preparation support

Materials, Supplies, Equipment

The successful implementation of this project relies on a combination of readily available resources and specialized equipment. This section provides a comprehensive inventory of the materials, supplies, and equipment required for each project phase and procurement strategies for items not currently at our disposal.

- 1) Personal laptops with essential software (Word, Excel, PowerPoint) - provided by Canadian Mennonite University
- 2) Access to university libraries and research databases - provided by Canadian Mennonite University and University of Manitoba

- 3) Software licenses for data analysis - to be provided by Dr. Rachel Krause through Canadian Mennonite University
- 4) Transportation for the potential workshop in Zimbabwe - to be coordinated by MCC-Zimbabwe

Managing Relationships

Effective relationship management is the cornerstone of successful project execution, particularly in a cross-cultural, multi-stakeholder environment such as the "Conservation Status of Medicinal Plants in Mwenezi District, Zimbabwe" project. This section outlines a comprehensive strategy for maintaining clear lines of communication, fostering collaboration, and ensuring all stakeholders remain engaged and informed throughout the project lifecycle. By carefully managing these relationships, we aim to create a synergistic environment that maximizes the contributions of each partner and drives the project towards its objectives.

Interested Parties Register:

To ensure a holistic approach to relationship management, we have categorized our stakeholders into Internal and External Stakeholders. This categorization allows for tailored communication strategies that address each group's specific needs and roles.

Internal Stakeholders: These individuals and organizations are integral to the core planning, decision-making, and execution processes of the project. Their consistent involvement is crucial for maintaining project momentum and ensuring alignment with academic and organizational goals.

- 1) Janet - Graduate student and Project Manager
 - a. Primary role: Day-to-day project management, research execution
 - b. Key responsibilities: Methodology development, data collection, analysis, report writing
 - c. Communication needs: Regular updates on progress, challenges, and resource requirements
- 2) Dr. Rachel Krause - Canadian Mennonite University Research Team
 - a. Primary role: Project oversight and coordination and Student Co-advisor
 - b. Key responsibilities: Ensure alignment with university objectives, provide academic guidance
 - c. Communication needs: Weekly progress reports, monthly detailed updates

- 3) Dr. Jodi Dueck-Read - Canadian Mennonite University Research Team
 - a. Primary role: Grant and resource management
 - b. Key responsibilities: Budget oversight, ensuring compliance with funding requirements
 - c. Communication needs: Monthly financial updates, quarterly detailed reports
- 4) Prof. Iain Davidson-Hunt - Student's Co-advisor, University of Manitoba
 - a. Primary role: Academic supervision
 - b. Key responsibilities: Ensure academic rigor, provide guidance on research methodology
 - c. Communication needs: Bi-weekly check-ins, review of major deliverables
- 5) Danna Leaman – Committee Member and Conservation Specialist
 - a. Primary role: Academic committee member
 - b. Key responsibilities: Provide subject matter expertise, review deliverables
 - c. Communication needs: Regular progress updates, review of major milestones
- 6) Sheldon McLeod – Committee Member, University of Manitoba
 - a. Primary role: Academic committee member
 - b. Key responsibilities: Provide subject matter expertise, review deliverables
 - c. Communication needs: Regular progress updates, review of major milestones
- 7) Dr. Kirit Patel - Committee Member, Associate Professor & Chair, Department of Environmental Studies and Sciences, University of Winnipeg
 - a. Primary role: Academic committee member & and LINCZ project team member
 - b. Key responsibilities: Provide feedback on methodologies to ensure practical applicability for NGOs; review deliverables for clarity and utility in resource-limited contexts.
 - c. Communication needs: Regular progress updates, review of major milestones

External Stakeholders:

These individuals and organizations play crucial roles in achieving the project's research objectives and ensuring its success and relevance in the local context.

8) MCC-Zimbabwe - Local Partners

- a. Primary role: Logistical support and local coordination
- b. Key responsibilities: Arrange transportation, facilitate local introductions
- c. Communication needs: Monthly updates, detailed briefings before field visits

9) Score Against Poverty - LINCZ Local Implementing Partner

- a. Primary role: Community liaison and translation support
- b. Key responsibilities: Facilitate communication with local communities, provide cultural context
- c. Communication needs: Bi-weekly updates during workshop phases.

10) Dr. Luke Jimu & Dr. Admore Mureva - Research Partners (Zimbabwe)

- a. Primary role: Local scientific expertise
- b. Key responsibilities: Provide insights on local flora, assist in methodology refinement
- c. Communication needs: Monthly scientific consultations, review of draft methodologies and reports

11) Arramat Partners – Funding & Research Partners

- a. Primary role: Local scientific expertise
- b. Key responsibilities: co-publishing, co-funding and reviewing of guides
- c. Communication needs: Monthly scientific consultations, review of draft methodologies and reports

Communication Methods and Timing

To ensure effective information flow and stakeholder engagement, we will employ a multi-faceted communication strategy utilizing various methods tailored to the needs of each stakeholder group:

1) Email Communication:

- a. Purpose: Primary method for professional communication, ensuring all exchanges are documented.
- b. Frequency:
 - i. Weekly progress updates to internal stakeholders
 - ii. Bi-weekly updates to external stakeholders during active project phases
- c. Key content: Project updates, resource requests, scheduling, non-urgent queries
- d. Stakeholders: All internal and external stakeholders

2) Video Conferencing (e.g., Zoom):

- a. Purpose: Used for important project discussions, decision-making, and virtual workshops.
- b. Frequency:
 - i. Monthly team meetings with internal stakeholders
 - ii. Quarterly progress reviews including key external stakeholders
 - iii. Ad-hoc sessions for urgent matters or specific discussions
- c. Key content: In-depth progress reviews, methodology discussions, preliminary findings presentations
- d. Stakeholders: All internal stakeholders, and external stakeholders as required

3) Phone Calls:

- a. Purpose: For urgent communications or matters requiring immediate attention.
- b. Frequency: As needed, typically not more than 1-2 times per week

- c. Key content: Time-sensitive decisions, quick clarifications, emergency communications
- d. Stakeholders: All internal stakeholders, and external stakeholders when necessary

4) In-Person Meetings:

- a. Purpose: For workshops, and critical project phases requiring face-to-face interaction.
- b. Frequency:
 - i. During a workshop in Zimbabwe, if feasible (estimated 1 week)
 - ii. For draft guide reviews (1-2 sessions)
 - iii. Final project presentation
- c. Key content: Community engagement, data collection, intensive collaborative work, results presentation
- d. Stakeholders: Janet (Project Manager), and Zimbabwe-based partners

5) Project Management Software:

- a. Purpose: To track progress, share documents, and manage tasks in a centralized platform.
- b. Frequency: Ongoing, with weekly updates at minimum
- c. Key content: Task assignments, deadlines, document repositories, progress tracking
- d. Stakeholders: Internal stakeholders, with limited access to external partners as needed

6) Formal Reports:

- a. Purpose: To document and communicate major project milestones and findings.
- b. Frequency: As per project timeline
 - i. Literature review reports (February 28, 2025)

- ii. Assessment guides (June 30, 2025)
- iii. Pilot implementation report (August 31, 2025)
- c. Key content: Comprehensive documentation of methodologies, findings, analyses, and recommendations
- d. Stakeholders: All internal stakeholders, and relevant external stakeholders

Detailed Communication Plan

- 1) Project Initiation Phase (September - November 2024):
 - a. Kick-off meeting (video conference) with all stakeholders
 - b. Weekly email updates from Janet to internal stakeholders
 - c. Bi-weekly check-ins (video call) between Janet and Prof. Iain Davidson-Hunt
- 2) Literature Review Phase (September - February 2025):
 - a. Monthly video conferences with internal stakeholders to discuss progress
 - b. Bi-weekly email updates to Dr. Luke Jimu & Dr. Admore Mureva for input on local context
 - c. Final literature review report shared with all stakeholders (December 20, 2024)
- 3) Methodology Development Phase (March - June 2025):
 - a. Bi-weekly video conferences with internal stakeholders
 - b. Monthly consultation calls with Dr. Luke Jimu & Dr. Admore Mureva
 - c. Draft methodology review workshop (video conference) with all stakeholders (May 2025)
 - d. Final assessment guides shared with all stakeholders (June 30, 2025)
- 4) Guide Review Process (July 2025):
 - a. Send guides for review and comment to LINCZ partners and selected Arramat partners via email
 - b. Conduct follow-up video calls or emails to clarify feedback and gather additional insights from all partners
 - c. Weekly update emails to internal stakeholders on feedback received
- 5) Workshop in Zimbabwe (August 2025, if feasible):
 - a. Conduct workshop in Zimbabwe with LINCZ partners only
 - b. Daily check-ins (in-person) with LINCZ partners during the workshop
 - c. Post-workshop review meeting (in-person) with available LINCZ stakeholders

- 6) Data Analysis and Reporting (September - October 2025):
 - a. Bi-weekly progress updates (email) to all stakeholders
 - b. Draft report review session (video conference) with internal stakeholders
 - c. Final report presentation (in-person or video conference) to all stakeholders (October 31, 2025)
- 7) Project Closure (November 2025):
 - a. Final project review meeting (video conference) with all stakeholders
 - b. Individual follow-up calls with key stakeholders for feedback
 - c. Distribution of final project documentation to all parties

Risk Management

For the Conservation Status of Medicinal Plants project in Mwenezi District, Zimbabwe, a comprehensive risk analysis has been conducted. This analysis is crucial for identifying potential challenges that may impact the project's success and for developing strategies to address them. The risk management process involved in-depth discussions with the project advisor and partner organizations to identify risks related to project deliverables, schedules, contractual work, stakeholders, and data requirements.

The Identified risks have been evaluated using a Probability and Impact Matrix to determine their significance to the project. A Risk Register has been created to track these risks throughout the project lifecycle. For high-probability risks, detailed response plans have been developed.

The following table presents the Risk Response Plan for the top identified risks, including the risk description, response strategy (Avoid, Mitigate, or Accept), and the details of the associated strategy:

Risk	Response Strategy	Response Details
Insufficient access to secondary data sources	Mitigate	i. Establish early partnerships with key data providers (e.g., GBIF, IUCN) ii. Develop alternative data collection methods iii. Allocate additional time for data acquisition in the project timeline
Limited engagement from project partners and others in the guide review process	Mitigate	i. Communicate the importance of their input early in the project ii. Offer multiple options for providing feedback (e.g., email, video calls) iii. Set clear deadlines and send reminders

Inconsistencies between secondary data and community knowledge	Accept & Mitigate	i. Acknowledge potential discrepancies in the methodology ii. Develop a framework for reconciling conflicting information iii. Use community validation processes for secondary data findings
Challenges in integrating the environmental security framework	Mitigate	i. Conduct a thorough literature review on framework application ii. Consult with experts in environmental security iii. Develop clear guidelines for framework integration

Quality Management

The following Quality Management Plan demonstrates how quality will be defined and measured throughout the Conservation Status of Medicinal Plants project in Mwenezi District, Zimbabwe. To identify which activities and deliverables create risks to quality, a careful review of all of them was conducted. Although there are no external standards or regulations that directly apply to the analysis, there are several requirements that must be followed to guarantee that the project's feasibility and quality standards are satisfied. This section outlines the biggest threats to the project's quality as well as the precautions we have put in place to ensure that project requirements are met.

Most Significant Risks to Quality:

1. Inaccuracies in the literature review and data collection for both secondary data and community-based assessment methodologies.
2. Inadequate incorporation of the environmental security framework into the assessment guides.
3. Lack of cultural appropriateness and respect for traditional knowledge in the rapid community-based assessment guide.
4. Insufficient engagement with project partners in Zimbabwe during the guide development process.
5. Inaccuracies in the pilot implementation of the secondary data assessment for medicinal plants in Zimbabwe.

Quality Management Procedures:

1. Inaccuracies in the literature review and data collection:
 - a) Conduct comprehensive reviews of existing methodologies for both secondary data and community-based assessments.
 - b) Cross-reference multiple databases (e.g., GBIF, IUCN Red List, ethnobotanical studies, conservation reports).
 - c) Have project partners in Zimbabwe review and validate the collected data and sources.

2. Inadequate incorporation of the environmental security framework:
 - a) Clearly define how the environmental security framework (access, availability, stability, perception) will be integrated into both assessment guides.
 - b) Have the project advisor and partners review the integration of the framework in both guides.
 - c) Conduct workshops to ensure proper understanding and application of the framework.
3. Lack of cultural appropriateness and respect for traditional knowledge:
 - a) Engage local partners (MCC-Zimbabwe, Score Against Poverty) and Arramat partners in the development of the rapid community-based assessment guide to ensure their insights and expertise are incorporated.
 - b) Hold review sessions with project partners, including Arramat partners to ensure cultural sensitivity and appropriateness in the project material
4. Insufficient engagement with project partners in Zimbabwe:
 - a) Schedule regular virtual meetings with all project partners in Zimbabwe, and Arramat partners, throughout the guide development process to facilitate ongoing communication and feedback
 - b) Plan in-person workshops and meetings in Zimbabwe to review draft guides, ensuring that Arramat partners are included in these discussions.
 - c) Establish clear communication channels for ongoing feedback and input from partners.
5. Inaccuracies in the pilot implementation:
 - a) Develop a rigorous methodology for compiling the list of medicinal plants, including scientific names, local names, and geo-coordinates.
 - b) Implement a multi-step verification process based on secondary data for the conservation status assessments.
 - c) Have project partners in Zimbabwe review and validate the pilot implementation results.

Roles and Responsibilities

- 1) Project Manager (Janet): Overall responsibility for quality management, coordination of reviews, and implementation of procedures
- 2) Research Team (Dr. Rachel Krause, Dr. Jodi Dueck-Read): Contribute to quality control, review deliverables, and ensure alignment with project objectives

- 3) Local Partners (MCC-Zimbabwe, Score Against Poverty & Arramat Partners): Provide local context, assist in cultural appropriateness, and participate in reviews
- 4) Research Partners (Dr. Luke Jimu, Dr. Admore Mureva): Offer expertise, validate data, and ensure scientific rigor
- 5) Project Advisor (Iain Davidson-Hunt): Oversee quality management, provide guidance, and evaluate progress
- 6) Committee Team ((Kirit Patel, Danna Leaman and Sheldon McLeod): Provide subject matter expertise and review deliverables

BUDGET SUMMARY

The table below lists the most accurate estimates of associated project costs, grouped by the type of activity/expense. Unforeseen expenses have been worked into the cost estimates and may result from additional resource needs, or price changes. A detailed budget allocation is provided in Appendix F.

Resource Group	Activity / Task	Associated Cost	Total
Personnel	Graduate student salary and Project Management	CAD 38,772.07	CAD 38,772.07
Workshops and Meetings	Materials and supplies for virtual workshops (if needed)	CAD 200	CAD 200
Literature Review	Access to academic journals and publications not provided by CMU or U of M	CAD 300	CAD300
Contingency	Unforeseen expenses	CAD 500	CAD 500
		Total	CAD 39,772.07

CHANGE MANAGEMENT

Given the complex nature of the Conservation Status of Medicinal Plants project in Mwenezi District, Zimbabwe, it is essential to have a robust change management strategy. This section outlines a systematic approach to handle potential adjustments throughout the project lifecycle. We have carefully analyzed the project to identify areas where changes are most likely to occur, ensuring that progress remains steady despite any necessary modifications. Changes may arise from unforeseen circumstances, external stakeholders, or internal parties such as the project manager or partner organizations.

Change Management Plan

Procedure for managing potential changes:

1) Identification of Proposed Changes:

- a. Changes may be proposed by the project manager, committee members, or stakeholders. These could include deliverables, scope, timeline, or resource allocation adjustments.
- b.

2) Evaluation of Proposed Changes:

- a. Analyze the proposed change's potential impact on the project scope, timeline, budget, and quality.
- b. Consult with the project team and committee members to gather feedback and determine feasibility.

3) Approval Process:

- a. Document the proposed change in the Change Request Form, including rationale and anticipated impact.
- b. Submit the proposal for review by the leadership team, comprising the project manager, Dr. Davidson-Hunt, and other committee members.
- c. Obtain formal approval before proceeding.

Implementation of approved changes:

1. Updating Project Documentation:

- Revise project documents (e.g., charter, schedule, and budget) to reflect the approved changes.

- Communicate the changes to all relevant stakeholders to ensure alignment.

2. Execution of Changes:

- Adjust project activities, resource allocations, and timelines to incorporate the changes.
- Monitor the implementation process to ensure it aligns with approved modifications and project goals.

3. Post-Implementation Review:

- Conduct a review to evaluate the impact of the implemented changes on the project's progress and outcomes.
- Document lessons learned and integrated them into future project planning.

Change Documentation and Meetings:

- 1) Update the Project Charter with the date of any meetings and obtain approved signatures from the Project Manager and Partner organization for substantial modifications (those affecting schedule, funds, or personnel).
- 2) Revise other project plan documents impacted by the modification to reflect authorized adjustments.
- 3) Communicate minor adjustments (those not affecting schedule, budget, or personnel) to affected parties by phone or email if deemed necessary.
- 4) Maintain a project Change Log (Active Document) accessible to the project manager, advisor, and partner organizations to record all changes (major and minor).
- 5) Ensure the change log includes details on the change's nature, decision-makers, justifications for accepting or rejecting the change, and recipients of the communication.

Change Control Log:

Project Name: Conservation Status of Medicinal Plants in Mwenezi District, Zimbabwe

Project Manager's Name: Janet Olanrewaju

Project Name: Conservation Status of Medicinal Plants in Mwenezi District, Zimbabwe					
Project Manager's Name:					
No.	Change Request Description	Submit Date	Status/ Comments	Approve/ Reject/ Defer	Implement Date
1	Incorporate the Environmental Security Framework into both secondary and community-based assessments.	12/01/2025			
2	Adjust deliverables from 5 to 3 for a streamlined project scope.	12/01/2025			
3	Modify the guide review process to include virtual feedback sessions instead of in-person community workshops.	12/01/2025			
4	Revise the methodology in the guides to include IUCN Red List categories and FairWild Standards as Danna suggested.	12/01/2025			
5	Reframe risks to focus on data availability and quality rather than reviewer capacity.	12/01/2025			
6	Submission of the final project document with all the deliverables.	03/11/2024			

BACKGROUND INFORMATION REPORT

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Appendix A: Background Information Report

1. Introduction

The use of medicinal plants within traditional cultures in Zimbabwe is regarded as important for primary healthcare (Maroyi, 2013) and has shaped the Indigenous pharmacopoeia. Indigenous systems of medicine are dynamic and adaptive, although firmly rooted in the cultural heritage of local communities (Van Wyk et al., 2013). Research by Gelfand et al. (1985) showed that 234 plant species of medical value in Zimbabwe are also used as sources of traditional medicines in Central, East, and West Africa. About a quarter of these medicinal plant species are employed in other countries to treat the same medical complaints as in Zimbabwe (Gelfand et al., 1985).

Documenting indigenous knowledge about medicinal plants may help to conserve such species and the associated cultural heritage of indigenous peoples for future generations (Mahwasane et al., 2013). Ethnobotanical studies have become increasingly valuable in the development of healthcare and conservation programmes across different parts of the world (Shil et al., 2014). Recent research shows increasing demand for medicinal plants resulting in over-exploitation of wild populations for commercial purposes, leading to habitat degradation and possible extinction of such species (Catarino et al., 2019).

Mwenezi District, located in the southern part of Zimbabwe, is known for its rich diversity of medicinal plants and strong traditional healing practices (Maroyi and Cheikhyyoussef, 2015). Despite the importance of these plants, there is a lack of comprehensive data on their conservation status, which hinders effective management and conservation efforts. In Zimbabwe, over 75% of the population relies on medicinal plants for primary healthcare, as these are easily accessible and affordable to the majority of community members while allopathic and western medicines remain costly or inaccessible (Maroyi, 2013; Mudonhi et al., 2021).

Current global assessment tools, such as the IUCN Red List, often lack sufficient data for many medicinal plant species, particularly at local scales (IUCN, 2023). This gap in knowledge underscores the need for developing comprehensive and locally applicable methodologies for assessing the conservation status of medicinal plants, which is precisely the gap this project addresses.

This research project aims to address this gap by developing methodologies for assessing the conservation status of medicinal plants in Mwenezi District, Zimbabwe, using both secondary data sources and rapid community-based approaches. The specific objectives of this study are:

1. Conduct a comprehensive literature review on methodologies for both secondary data and rapid community-based assessments.
2. Develop a guide for secondary data assessment of medicinal plants and rapid community-based assessment of medicinal plants using the environmental security framework
3. Conduct a pilot implementation of the secondary data assessment methodology for medicinal plants in Zimbabwe.

By achieving these objectives, this research will contribute to the development of evidence-based conservation strategies for medicinal plants in Mwenezi District and potentially serve as a model for similar assessments in other regions.

2.0 Literature Review

2.1 Medicinal Plants in Zimbabwe: An Overview

Zimbabwe boasts a rich diversity of plant species, with an estimated 5,930 species of vascular plants, of which about 214 are endemic (Maroyi, 2013). A significant portion of these plants have medicinal properties and have been used in traditional medicine for generations. In a comprehensive study, (Maroyi, 2023) identified over 93 plant species used for medicinal purposes in south-central Zimbabwe, highlighting the country's wealth of ethnobotanical knowledge.

In Mwenezi District, recent ethnobotanical surveys have documented numerous plant species used for medicinal purposes. Species such as *Adansonia digitata*, have over 300 traditional uses including treating several ailments (Rahul et al. 2015). Furthermore, some species have been utilised commercially for exports in the form of oils, powder, fruit pulp or seeds (Sidibe and Williams 2002). Some communities have incorporated exotic species into their indigenous pharmacopoeia for treating several ailments (Maroyi, 2017).

2.2 Conservation Status and Threats

Species rarity is used to assess the extinction risk of medicinal plants and to identify those species most at risk of extinction, before commencement of conservation efforts (Figueiredo & Grelle, 2009). It is necessary to determine how rare each species is and in which ways rare species differ from one another. Not all medicinal plants are affected in the same way by harvesting pressures (Wagh & Jain, 2013). Moreover, deforestation, overexploitation, overgrazing, habitat loss, degradation, and agricultural land expansion continuously threatened traditional medicinal plants and linked knowledge (Lulekal et al. 2013).

2.3 Current Assessment Methodologies

Several methodologies have been employed globally to assess the conservation status of plant species, including medicinal plants. These can be broadly categorized into two approaches: those based on secondary data analysis and those involving community-based rapid assessments.

2.3.1 Secondary Data Assessment Methodologies

Secondary data assessment methodologies rely on existing data sources to evaluate the conservation status of plant species. These methodologies can be enhanced by integrating Local

Ecological Knowledge (LEK) with established international frameworks (Huntington, 2000; Berkes et al., 2000). Key approaches include:

1. IUCN Red List Criteria Integration with LEK: The International Union for Conservation of Nature (IUCN) Red List provides a comprehensive framework for evaluating species conservation status (IUCN, 2022). While this framework is globally recognized, its effectiveness can be significantly enhanced by systematically incorporating LEK in the following areas (Aswani et al., 2018; Turvey et al., 2014):

Population Assessment: LEK can provide valuable insights into local definitions of "mature individuals" and traditional methods of population monitoring (Ghimire et al., 2004, Maroyi & Mosina, 2023)

Distribution Patterns: Traditional knowledge often includes a detailed understanding of habitat specificity and species distribution across landscapes (Stevenson et al., 2012)

- a) **Population Trends:** LEK holders can provide historical perspectives on species stability, decline, or increase, often incorporating nuanced observations not captured by conventional scientific monitoring (Moller et al., 2004,)
- b) **Threat Assessment:** Local communities may identify novel threat categories beyond those recognized in global frameworks, particularly those specific to medicinal plants in their cultural context (Hamilton, 2004, Chapungu et al., 2020)

2. Species Distribution Modeling: This approach combines environmental variables with occurrence data to predict potential species distribution (Phillips et al., 2006). Integration with LEK can enhance these models by:

- a) Incorporating traditional knowledge of microhabitat preferences (Sobral et al., 2017, Maroyi & Cheikhoussef, 2021)
- b) Validating model predictions against local observations (Anadón et al., 2009, Sibanda & Ndlovu, 2023)
- c) Identifying historically occupied areas that may not be represented in formal records (Ziembicki et al., 2013)

3. Trade Impact Assessment: It is crucial to note that international trade frameworks like CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) base their species listings primarily on the impact of export trade on species sustainability, rather than overall conservation status (Schippmann et al., 2006). This distinction is important because:

- a) Absence from CITES appendices does not indicate a lack of conservation concern (Jenkins et al., 2012)
- b) Local conservation efforts must consider both trade and non-trade threats to species survival (Pierce & Bürgener, 2010)

4. Sustainability Assessment Frameworks: The FairWild Foundation, in collaboration with the IUCN SSC Medicinal Plant Specialist Group, has developed specific criteria for assessing the sustainability of perennial plant harvesting (Timoshyna et al., 2020). These criteria provide valuable indicators for secondary data assessment, including:

- a) Biological factors affecting sustainable harvest: Species resilience, determined by key biological characteristics, influences the sustainability of wild harvest (Bennett & Robinson, 2000).
- b) Ecological parameters relevant to medicinal plant conservation (Schippmann et al., 2002)
- c) Socio-economic factors influencing harvest sustainability (van Andel & Havinga, 2008)

While these methodologies provide valuable frameworks for assessment, they face several challenges when applied to medicinal plants in regions like Mwenezi District (Maroyi, 2013):

- a) Data deficiency in formal scientific records (Willis, 2017)
- b) Limited local-scale applicability of global frameworks (Rodrigues et al., 2006)
- c) Need for systematic integration of traditional knowledge (Brook & McLachlan, 2008)
- d) Variation in local versus international definitions of conservation parameters (Sheil et al., 2015)

To address these limitations, secondary data assessments should:

- a) Actively seek to cross-link LEK categories with formal assessment criteria (Gadgil et al., 2003)
- b) Develop standardized methods for incorporating qualitative traditional knowledge into quantitative assessment frameworks (Huntington et al., 2000)
- c) Consider both global and local perspectives on threat categories and conservation priorities (Raymond et al., 2010)
- d) Acknowledge and document novel threat categories identified through LEK (Berkes et al., 2000)

This integrated approach to secondary data assessment provides a more comprehensive understanding of medicinal plant conservation status, combining the rigor of international frameworks with the depth and specificity of local ecological knowledge (Tengö et al., 2014).

2.3.2 Rapid Community-Based Assessment Methodologies

Recognizing the limitations of purely data-driven approaches, particularly in areas with limited scientific data, researchers have developed rapid community-based assessment methodologies. These approaches aim to integrate local knowledge and perspectives into conservation assessments. Key methodologies include:

1. **Participatory Rural Appraisal (PRA):** Chambers (1992) has defined PRA as an approach and methods for learning about rural life and conditions from, with and by rural people. He further stated that PRA extends into analysis, planning and action. PRA closely involve villagers and local officials in the process. In the context of medicinal plants, PRA has been used to gather information on plant uses, perceived abundance, and local conservation practices.

2. **Rapid Ethnobotanical Appraisal:** This appraisal derives from the Rapid Rural Appraisal (RRA), originally developed to guide and evaluate development initiatives. The techniques are conducted in a short time without requiring expensive tools because participants seek a sketch of local conditions rather than an in-depth study. A small group of local people is selected and interviewed qualitatively about a wide range of topics in a semi-structured way, allowing a comprehensive view of how the community acts. The techniques are highly visual and are carried out by community members, often in collaboration with the researcher (Martin, 1995).

3. **Local Ecological Knowledge (LEK) Surveys:** Local ecological knowledge (LEK) refers to knowledge that local resource users hold about their environment and the species within it. Some scholars define LEK as knowledge gained primarily through individuals' own observations over their lifetimes, distinguishing it from traditional ecological knowledge (TEK), which is a cumulative body of knowledge, practice, and belief about relationships among living beings and their environment that evolves adaptively and is transmitted across generations (Berkes et al. 2000; Gilchrist et al. 2005). Others define LEK more broadly as a people's shared system of knowledge about the environment and ecosystem relationships, developed through direct experience and transmitted between generations, effectively treating LEK, TEK, and indigenous ecological knowledge (IEK) as closely related terms (Berkes 2004, as cited in Davis and Ruddle 2010).

2.4 The Environmental Security Framework

The Environmental Security Framework (Davidson-Hunt et al., 2016) provides a structured way for communities to discuss and articulate their observations about medicinal plants. Although the ESF has broad application beyond medicinal plants, this guide applies it specifically in that context. Rather than being an analytical tool imposed by researchers, it helps communities organize their knowledge according to four dimensions that affect their ability to continue using medicinal plants. The utilization of a species, or a community's capacity to utilize it, is influenced by:

- **Availability of Species:** The presence and relative abundance of a species within a specific landscape. Communities can assess: Are plants still present? Are they abundant or becoming scarce?
- **Stability of Species Populations:** The consistency of a species' availability over time, which can be affected by both short-term factors such as seasonal changes and long-term influences such as shifts in population size. Communities can assess: Are plant populations stable, increasing, or declining over time?
- **Access:** The capability to benefit from a species, including physical access to harvest locations and legal or customary rights to use the resource. Communities can assess: Can we still reach places where plants grow? Are there new restrictions affecting our access?
- **Perception:** How a species is understood and valued within the community, which influences all aspects of its use. Communities can assess: Is this plant still valued? Is knowledge about it being passed on to younger generations?

2.5 Research Gap

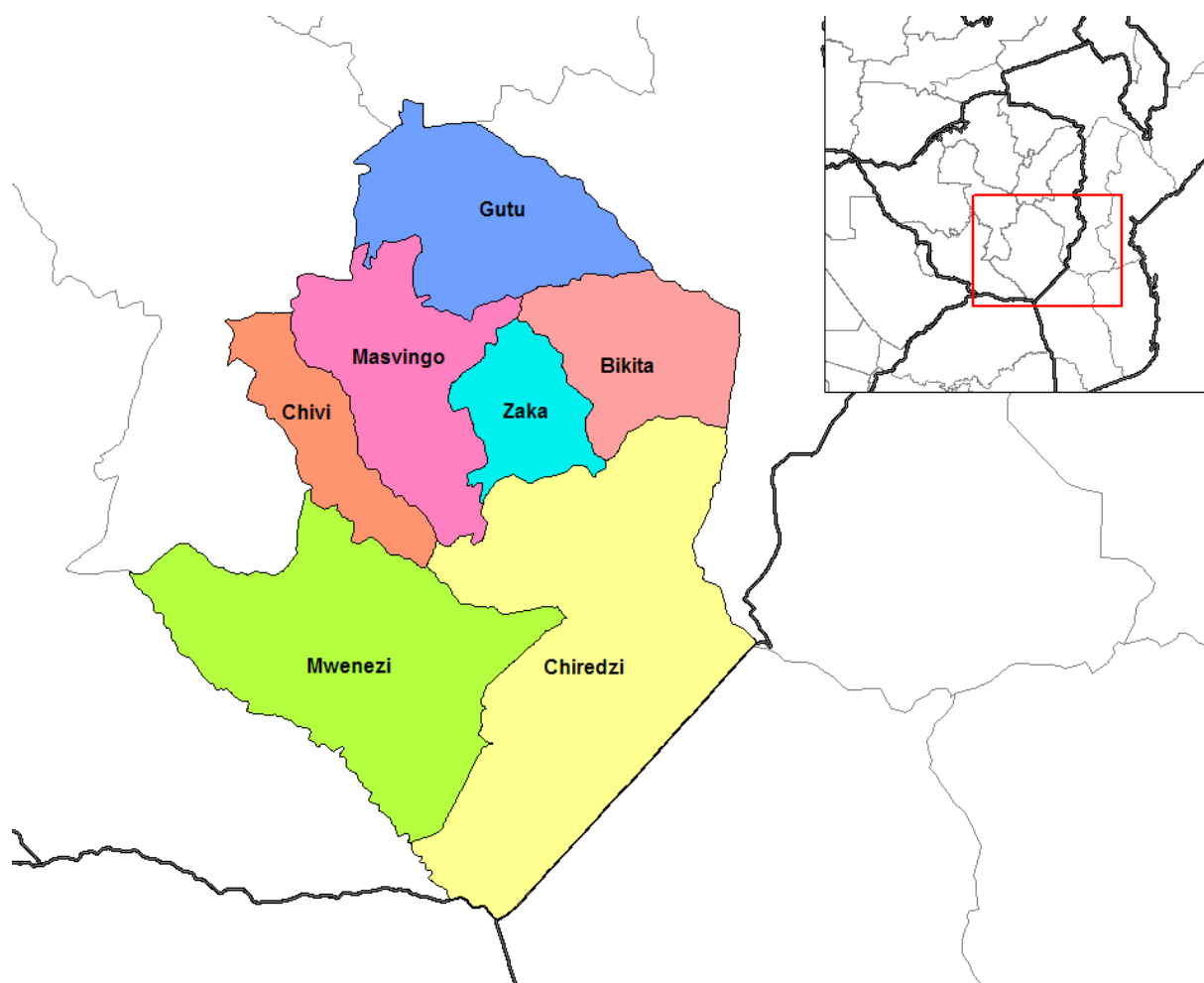
While significant progress has been made in developing methodologies for assessing the conservation status of plant species, there remains a notable gap in approaches specifically tailored to medicinal plants in local contexts like Mwenezi District. The integration of secondary data analysis with rapid community-based assessments, particularly within the environmental security framework, represents a promising but underexplored approach.

This research project aims to address this gap by developing comprehensive guides for assessing medicinal plants using both secondary data sources and rapid community-based approaches, specifically tailored to the context of Mwenezi District, Zimbabwe.

3. Materials and Methods

3.1 Study Area

The study will be conducted in Mwenezi District, located in Masvingo Province, southern Zimbabwe. Mwenezi district is situated 120 km to the south of the provincial capital, Masvingo (Mutopo, 2014) and partly in the agro-ecological regions IV and V (Paenda et al., 2020). The area is dominated by infertile sandy soils, receiving an average rainfall of 540 mm annually with temperatures of above 25°C and a minimum of 15°C in the hot summer (Defiet al., 2024). The most common tree species are marula (*scherocaya birrea*), baobab (*adansonia digitata*), and Mopane (*colophospermum mopane*) (Mamombe, 2017). Mwenezi District is characterized by a flat and undulating area around 300metres altitude (Mando et al., 2019).



Source : http://www.wikiwand.com/en/Mwenezi_District.T

3.2 Research Design

This study will employ a mixed-methods approach, combining qualitative and quantitative data collection and analysis techniques (Creswell, 2014). The research will be conducted in four main phases:

1. Literature review
2. Development of assessment guides
3. Pilot implementation of secondary data assessment
4. Review and refinement of methodologies

3.3 Phase 1: Literature Review

3.3.1 Secondary Data Assessment Methodologies

The literature review methodology will follow the guidelines outlined by Snyder (2019). A comprehensive literature review will be conducted to identify and analyze existing methodologies for secondary data assessment of medicinal plants. This will include:

- a) Systematic search of academic databases (e.g., Web of Science, Scopus, Google Scholar)
- b) Review of reports and publications from relevant organizations (e.g., IUCN, national conservation agencies)
- c) Analysis of case studies applying secondary data assessment methods to medicinal plants

3.3.2 Rapid Community-Based Assessment Methodologies

A similar literature review process will be conducted for rapid community-based assessment methodologies, focusing on:

- a) Participatory research methods in ethnobotany and conservation
- b) Applications of the environmental security framework to plant resources
- c) Case studies of community-based medicinal plant assessments in Africa

3.4 Stage 2: Development of Assessment Guides

3.4.1 Secondary Data Assessment Guide

Based on the literature review, a comprehensive guide for secondary data assessment of medicinal plants will be developed. This guide will include:

- a) Procedures for identifying and accessing relevant databases and literature
- b) Methods for data extraction and standardization
- c) Criteria for assessing conservation status based on secondary data
- d) Approaches for integrating different data sources
- e) Guidelines for data analysis and interpretation
- f) Protocols for addressing data gaps and uncertainties

The guide will be developed in consultation with project partners to ensure its relevance and applicability to the Zimbabwean context.

3.4.2 Rapid Community-Based Assessment Guide

A guide for rapid community-based assessment of medicinal plants will be developed, incorporating the environmental security framework. This guide will include:

- a) Protocols for community engagement and obtaining informed consent
- b) Methods for selecting key informants and conducting semi-structured interviews
- c) Techniques for participatory mapping and resource ranking
- d) Guidelines for assessing availability, access, stability, and utilization of medicinal plants
- e) Approaches for integrating local and scientific knowledge
- f) Data collection
- g) Procedures for data analysis and interpretation

The development of this guide will involve close collaboration with local partners to ensure cultural appropriateness and feasibility of implementation. The participatory methods will be based on the principles Chambers (1992) outlined.

3.5 Phase 3: Pilot Implementation of Secondary Data Assessment

To test and refine the secondary data assessment methodology, a pilot implementation will be conducted for medicinal plants in Zimbabwe, focusing on Mwenezi District. This will involve:

1. Compiling a comprehensive list of medicinal plants used in the district, including scientific names, local names, and reported uses
2. Gathering available secondary data on these species from various sources, including:
 - a) Scientific literature

- b) Herbarium records
 - c) National biodiversity databases
 - d) IUCN Red List assessments (where available)
 - e) GBIF occurrence data
3. Applying the developed assessment criteria to evaluate the conservation status of each species
 4. Identifying data gaps and areas of uncertainty
 5. Producing a detailed report on the conservation status of key medicinal plants based on secondary data

3.6 Phase 4: Review and Refinement of Methodologies

Following the pilot implementation, both assessment guides will be reviewed and refined through:

- 1) Workshops with project partners in Zimbabwe to discuss the applicability and effectiveness of the methodologies.
- 2) Incorporation of suggested improvements and modifications
- 3) Peer review by experts in the fields of ethnobotany and conservation biology

3.7 Data Analysis

Qualitative data from literature reviews and consultations will be analyzed using thematic analysis techniques (Braun & Clarke, 2021). Quantitative data from the pilot implementation will be analyzed using appropriate statistical methods, including descriptive statistics and, where applicable, spatial analysis techniques.

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Appendix B: Project Concept

General Information

Project Name: Conservation Status of Medicinal Plants in Mwenezi District, Zimbabwe

Sponsor/Partner Name: Global Affairs Canada and Canadian Mennonite University

Date: September 2024

Justification/Need: Assessing the conservation status of medicinal plants is crucial for preserving biodiversity, safeguarding traditional knowledge, and ensuring sustainable use of these valuable resources. This project addresses a significant research gap by integrating secondary data analysis with community-based assessments, using the environmental security framework as a guiding principle. Failing to undertake this project would mean a missed opportunity to:

- Develop effective conservation strategies.
- Preserve traditional knowledge associated with medicinal plants.
- Address the underexplored role of the environmental security framework in biodiversity conservation.

The project aims to fill this gap, ensuring that conservation efforts are both scientifically rigorous and culturally relevant. Without these efforts, there is a risk of losing vital medicinal plant species and associated practices in the Mwenezi District, Zimbabwe.

Project Description:

This project focuses on developing tools and methodologies that enable a comprehensive understanding of medicinal plant diversity and conservation needs. The primary deliverables include:

1) Literature Review Report (Due: February 28, 2025)

a) Review of secondary data assessment methodologies through an environmental security lens:

- Access: Data on resource distribution and accessibility
- Availability: Population status and abundance data
- Stability: Historical trends and threat analysis
- Perception: Documented conservation priorities

- b) Review of community-based assessment methodologies through environmental security lens
- c) Analysis of IUCN Red List and CITES frameworks
- d) Review of FairWild Standards
- e) Gap analysis of current frameworks
- f) Synthesis of findings

2) **Assessment Guides (Due: June 30, 2025)**

- a) Secondary Data Assessment Guide
 - Framework for analyzing conservation using environmental security concepts:
 - Access: Methods to assess distribution patterns
 - Availability: Population assessment protocols
 - Stability: Threat analysis frameworks
 - Perception: Stakeholder priority analysis
 - Database access protocols
 - Analysis templates
- b) Rapid Community-Based Assessment Guide
 - LEK integration framework using environmental security concepts
 - Cultural sensitivity protocols
 - Implementation guidelines
 - Community engagement strategies

3) **Pilot Implementation Report (Due: August 31, 2025)**

- a) Application of secondary data assessment using environmental security framework
- b) Stakeholder feedback analysis
- c) Implementation documentation
- d) Guide refinement recommendations
- e) Effectiveness analysis
- f) Final report and conclusions

General resource and cost estimates are as follows:

- 1) Personnel expenses: \$38,772.07
 - \$11,772.07 (January-August 2024)
 - \$19,000 from Arramat Project
 - \$15,000 from CMU Project (September 2024-August 2025)
- 2) Technology (existing software licenses): Covered by the organization
- 3) Data Acquisition: Utilizing existing partnerships and agreements
- 4) Travel Expenses: To be covered for reviewing draft guides, workshops, and meetings in Zimbabwe
- 5) Miscellaneous: \$1000

Total estimated budget: \$39,772.07

Timeframe: The project is anticipated to last from September 2024 until August 2025.

Planning Estimates

- 1) Literature review reports: February 28, 2025
- 2) Secondary data and Rapid community-based assessment guide: June 30, 2025
- 3) Pilot secondary data assessment report: August 31, 2025

How are your organization's other Activities Impacted?

The project will require time commitments from various stakeholders, including:

1. Janet (Graduate student and Project Manager): Significant time allocation for all project activities
2. Dr. Rachael Krause and Jodi Dueck-Read: Coordination and communication
3. Local partners (MCC-Zimbabwe, LINCZ Score Against Poverty & Arramat Partners): Assistance with guide review and potential workshop participation
4. Research partners (Luke Jimu & Admore Mureva): Input, feedback, and data sharing
5. Prof. Iain Davidson-Hunt: Project oversight and supervision
6. Committee Members (Prof. Iain Davidson-Hunt, Danna Leaman, Sheldon McLeod, Associate Prof. Kirit Patel): Offering strategic oversight and expert input.

Essential Contacts

- 1) Dr. Rachel Krause – Co-advisor, Canadian Mennonite University Research Team
- 2) Dr. Jodi Dueck-Read - Canadian Mennonite University Research Team
- 3) Dr. Luke Jimu and Dr. Admore Mureva - Research Partners (GBIF Zimbabwe)

- 4) Prof. Iain Davidson-Hunt - Student's co-advisor advisor, University of Manitoba

Other Resource Needs or Supports:

1. Access to relevant databases and literature repositories.
2. Input from project implementing partners and researchers for guide development and review, with additional review from Arramat partners involved in community-based conservation of medicinal plants
3. Software and technology for data analysis and mapping (as needed for guide development)

Appendix C: Schedule Details

Activity List

The following activity list is the breakdown of activities numerically organized in the Work Breakdown Structure and depicted in the Sequence Network Diagram. The Activity list serves as a living project document, used to document the start and finish of tasks, thus tracking their actual duration compared with their estimated duration.

WBS No.	Deliverable	Work Package	Est'd. Duration	Date Initiated	Date Complete	Actual Duration	Comments
10.1.1	Literature review report	Review secondary data assessment methodologies	12-weeks	Sept 1, 2024	Feb 28, 2025	2weeks	Focus on existing databases such as IUCN Red List and GBIF.
10.1.2		Review community- based assessment methodologies	12 weeks				Explore rapid assessment frameworks suitable for cultural contexts.
10.2.1	Secondary data and Rapid community-based assessment guide	Develop methodology	8 weeks	Mar 1, 2025	June 30, 2025	16 weeks	Incorporate the environmental security framework.
10.2.2		Review process with partners	8 weeks				Include workshops and meetings
10.3.1	Pilot implementation report	Apply secondary data assessment methodology	4 weeks	July 1, 2025	August 31, 2025	8 weeks	Conduct in-field applications and validate methodologies with data from Zimbabwe.
10.3.2		Analyze conservation status	4 weeks				Identify high-conservation concern species and assess threats.

Work Breakdown Structure

This outline view provides a clear hierarchical structure of the project tasks, broken down into major deliverables and their associated work packages. The WBS identifiers (e.g., 10.1.2, 20.2.3) help in easily identifying which tasks belong to which deliverables and sub-deliverables.

10.0 Conservation Status of Medicinal Plants Project

10.1 Literature Review

10.1.1 Secondary Data Assessment Review

10.1.1.1 Review existing methodologies

10.1.1.2 Analyze IUCN Red List Framework

10.1.1.3 Review CITES frameworks

10.1.1.4 Study FairWild Standards

10.1.2 Community-Based Assessment Review

10.1.2.1 Review existing methodologies

10.1.2.2 Identify cultural considerations

10.1.2.3 Analyze local ecological knowledge integration

10.1.3 Literature Review Report

10.1.3.1 Draft report

10.1.3.2 Review with advisors

10.1.3.3 Finalize report

10.2 Secondary Data Assessment Guide

10.2.1 Develop Methodology

10.2.1.1 Create Framework for NGOs

10.2.1.2 Develop database access protocols

10.2.1.3 Design Analysis Templates

10.2.2 Review Process

10.2.2.1 Internal review

10.2.2.2 Partner feedback

10.2.2.3 Revisions

10.3 Community-Based Assessment Guide

10.3.1 Develop Methodology

10.3.1.1 Create LEK integration framework

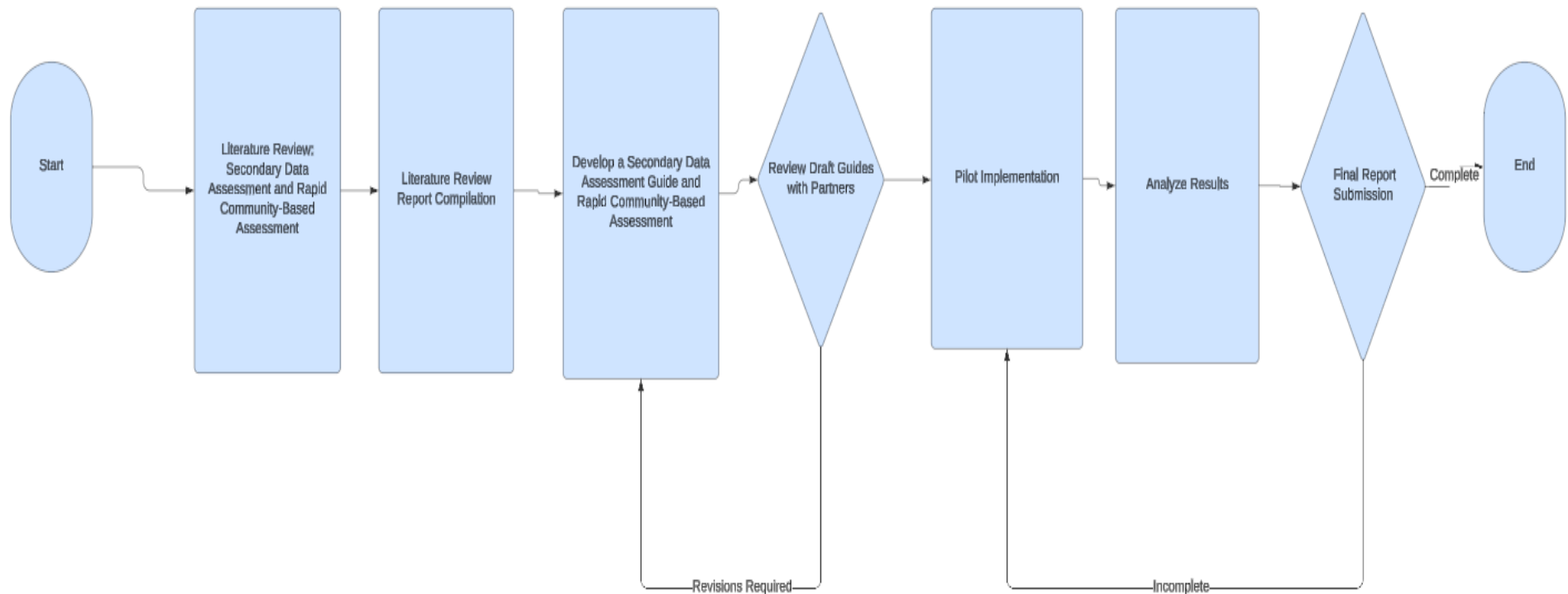
10.3.1.2 Design Cultural Sensitivity Protocols

10.3.1.3 Develop assessment tools

- 10.3.2 Review Process
 - 10.3.2.1 Internal review
 - 10.3.2.2 Partner feedback
 - 10.3.2.3 Revisions
- 10.4 Guide Finalization
 - 10.4.1 Guide Review
 - 10.4.1.1 Distribute guides for feedback
 - 10.4.1.2 Collect written feedback
 - 10.4.2 Workshop (If applicable)
 - 10.4.2.1 Organize workshop
 - 10.4.2.2 Conduct workshop
 - 10.4.3 Final Revision
 - 10.4.3.1 Incorporate feedback
 - 10.4.3.2 Finalize guides
- 10.5 Pilot Implementation
 - 10.5.1 Secondary Data Assessment Pilot
 - 10.5.1.1 Apply Assessment Guide in Zimbabwe
 - 10.5.1.2 Document implementation process
 - 10.5.1.3 Gather stakeholder feedback
 - 10.5.2 Analysis and Reporting
 - 10.5.2.1 Analyze pilot results
 - 10.5.2.2 Prepare pilot assessment report
 - 10.5.2.3 Submit final deliverables

Sequence Network Diagram

A flowchart designed to arrange interdependent tasks inside the project and help with task scheduling is called the Sequence Network Diagram. An arrow designates a work that depends on a preceding task, providing a visual roadmap for the project's development. When one work is finished, another can start, and other tasks can start when others are finished. To ensure the project schedule is completed on time, milestones are employed.



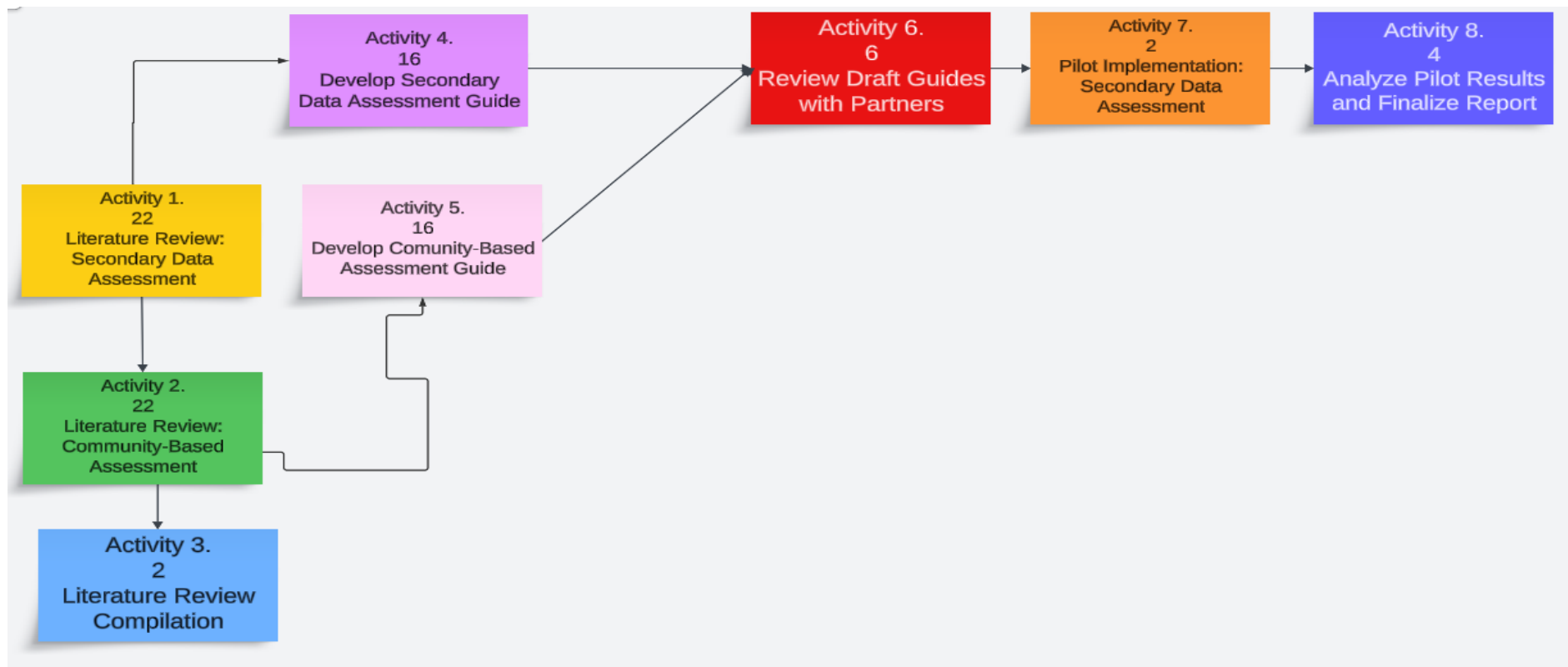
MILESTONES

Ref	Milestone	Completion Expected	Actual Completion
1	Literature Review of Secondary Data Assessment Methodologies Completed	February 12, 2025	
2	Literature Review of Community-Based Assessment Methodologies Completed	February 12, 2025	
3	Literature Review Completed	February 28, 2025	
4	Secondary Data Assessment Guide Draft Completed	May 31, 2025	
5	Secondary Data Assessment Guide Draft Completed	May 31, 2025	
6	Partner Review Process Completed	June 30, 2025	
7	Pilot implementation Completed	August 09, 2025	
8	Results Analysis Completed	August 31, 2025	
9	Final Project Report and Deliverables Submitted	August 31, 2025	

Critical Path Chart and Calculations

The project's Critical Path, determined by adding all dependent project tasks together without adding float time, is the project's lowest potential duration. Zero float time tasks cannot be altered in the schedule and must begin and terminate on the planned dates. A table containing critical path calculations follows the figure, with activity float time in the far-right column. The conclusion of the table calculates the project's early start/early finish dates and late start/late completion dates.

Critical Path Chart:



Critical Path Calculation:

Activity	Activity Description	Dependency	Duration	Early Start	Early Finish	Late Start	Late Finish	Float Time
1	Literature Review: Secondary Data Assessment and Rapid Community-Based Assessment	N/A	22	Sept 1, 2024	Feb 28, 2025	Sep 1, 2024	Feb 12, 2025	0
2	Literature Review Report Compilation	N/A	2	Feb 13, 2025	Feb 28, 2025	Feb 13, 2025	Feb 28, 2025	0
3	Develop a Secondary Data Assessment Guide and Rapid Community-Based Assessment	1,2	12	Mar 1, 2025	May 30, 2025	Mar 1, 2025	May 30, 2025	0
4	Review Draft Guides with Partners	3	4	Jun 1, 2025	Jun 30, 2025	Jun 1, 2025	Jun 30, 2025	0
5	Pilot Implementation	4	6	Jul 1, 2025	Aug 9, 2025	Jul 1, 2025	Aug 9, 2025	0
6	Analyze Results & Final Report Preparation	5	3	Aug 10, 2025	Aug 31, 2025	Aug 10, 2025	Aug 31, 2025	

Appendix D: Resource Needs Assessment & Skills Inventory

Resource (Skills & Knowledge) Needs Acquisition Plan:

The project "Conservation Status of Medicinal Plants in Mwenezi District, Zimbabwe" requires various skills and knowledge to achieve its objectives and deliverables. Most of these needs are met by the project team and partners, as shown in the resource needs assessment below. Additional expertise may be required for specific tasks, such as software use or local knowledge.

Resource (Skills & Knowledge) Needs Assessment:

Activity / Task	Quantity	Skill / Knowledge Requirement	Team Member (Name)	Contract (Name/Company)	Approximate Cost (\$/Time)
Literature review	6 months	Research skills, knowledge of medicinal plants	Janet		Part of the \$38,772.07 personnel budget
Development of assessment guides	4 months	Methodology development, environmental security framework knowledge	Danna Leaman and Janet		Part of the \$38,772.07 personnel budget
Stakeholder Engagement	1 month	Community-based methods, cultural sensitivity	Kirit Patel, MCC-Zimbabwe		
Data Analysis and GIS	1 month	Spatial data management, mapping	Dr. Natalia Wiederkehr, Janet Olanrewaju		
Pilot implementation	1 month	Data analysis, report writing, knowledge of Zimbabwean medicinal plants	Janet		Part of the \$38,772.07 personnel budget

Local expertise input	As needed	Knowledge of local medicinal plants and context	Luke Jimu, and Admore Mureva	LINCZ Score Against Poverty & Arramat Partners	To be determined
Strategic Oversight	Ongoing	Project management, stakeholder engagement	Sheldon McLeod		To be determined

Skills & Knowledge Inventory of Team / Partner / Volunteers:

Person	Job Title	Skills/Training	Years	Education
Janet	Graduate Student and Project Manager	Research, project management, data analysis		Masters in Natural Resource Management
Dr. Rachel Krause	CMU Research Team	Project coordination, communication, student supervision		
Dr. Jodi Dueck-Read	CMU Research Team	Grant management, stakeholder collaboration		
Alrika Rojas	CMU Research Team Member	Project administration, Stakeholder engagement, Travel and logistics coordination		
Dr. Luke Jimu	Research Partner (Zimbabwe)	Local expertise, medicinal plant knowledge		

Dr. Admore Mureva	Research Partner (Zimbabwe)	Local expertise, medicinal plant knowledge		
Prof. Iain Davidson-Hunt	Professor & Associate Director, Student's Advisor	Student supervision, ethnobotany, natural resources management		Ph.D. NREM (2003) M.N.R.M. (1995) B.Sc. Crop Science (1988)
Arramat Partners	External Reviewers	Diverse expertise in the community-based conservation of medicinal plants		
Kirit Patel	Associate Professor	Community-based conservation, stakeholder engagement	15+ years	Ph.D. Environmental Studies
Danna Leaman	Conservation Specialist	IUCN Red List, FairWild Standards		Ph.D. Plant Conservation
Sheldon McLeod	Strategic Advisor	Conservation planning, project management		

Resource Needs (Materials, Supplies & Equipment) and Procurement Plan:

Most of the project can be completed using existing resources within the partner organizations.

Additional resources will be procured as follows:

1. Software licenses: Utilize existing licenses within the organization for data analysis.
2. Travel expenses: Cover costs for reviewing draft guides, workshops, and meetings in Zimbabwe.
3. Local transportation and accommodation: Coordinate through MCC-Zimbabwe.

Resource Needs (Materials, Supplies & Equipment) Assessment:

Activity / Task	Quantity	Materials/Supplies/Equipment	Available/Procure	Approximate Cost (\$/Time)
Literature review	3 months	Computer, internet, and database access	Available	Included in existing resources
Develop assessment guides	6 months	Computer and software	Available	Included in existing resources
Pilot implementation (Guide review and feedback)	2 months	Computer and analysis software	Available	Included in existing resources
Workshop with organizational partners (if travel possible)	As needed	Travel and accommodation	Procure	To be determined from the allocated budget
Email correspondence for guide feedback (if travel not possible)	As needed	Computer and Internet access	Available	Included in existing resources

Appendix E: Managing Relationships – Details

The parties concerned with this project's success and those impacted by its results, whether favorable or bad, are listed in this document. It considers people directly responsible for the project, those crucial to the success of research processes, and stakeholders outside the project interested in the results. The document also discusses how to best manage relationships during the project by addressing communication mechanisms, timing, and frequency.

CONSIDERATIONS FOR ENGAGEMENT WITH YOUR ADVISOR, COMMITTEE, FUNDER, PARTNER, AND TEAM

Name or Office	Nature of Interest	Type of Engagement Needed
Prof. Iain Davidson-Hunt	As the student's co-advisor and Associate Director of the Natural Resources Institute at the University of Manitoba, Iain has committed time, expertise, and resources to this project. He has a personal stake in the project's success.	i. Regular project updates via email or meetings ii. Approval of project documents and deliverables iii. Guidance and supervision throughout the project iv. Evaluation of project progress
Dr. Rachel Krause	As part of the Canadian Mennonite University Research Team, Rachael is responsible for overall coordination and communication between the university and the project in Zimbabwe. Also, as student co-supervisor.	i. Regular communication on project progress ii. Updates on collaboration and information flow iii. Consultation on software and technology requirements iv. Discussion of field costs and logistics.
Dr. Jodi Dueck-Read & Alrika Rojas	As part of the Canadian Mennonite University Research Team, Administrative Support	i. Managing the grant application process and collaboration between different stakeholders, ensuring that the project aligns with the university's overall mission and objectives ii. Allocate \$15,000 for personnel expenses/costs iii. Arrangement of introductions and travel for workshops and meetings with Zimbabwe implementation partners and researchers
Dr. Luke Jimu & Dr. Admore Mureva	As Research Partners in Zimbabwe, they provide crucial local expertise and support.	i. Regular communication for input and feedback ii. Sharing of relevant data and species lists iii. Consultation on project direction and methodologies iv. Participation in guide review processes

Arramat Partners	Co-funders and collaborators interested in the conservation status of medicinal plants in Mwenezi District, Zimbabwe	i. Collaborative development of assessment guides ii. Review and feedback on project deliverables iii. Co-publishing of final guides and outcome iv. Participation in project evaluation
Danna Leaman	Committee member with expertise in IUCN Red List and FairWild Standards.	i. Methodological guidance on integrating global conservation standards. ii. Review of deliverables for scientific accuracy.
Dr. Kirit Patel	Committee member providing expertise in community-based conservation methods	i. Guidance on stakeholder engagement strategies and cultural sensitivity. ii. Participation in workshops and reviews
Sheldon McLeod	Strategic advisor ensuring logical consistency and alignment with stakeholder needs.	i. Oversight of project objectives and risk mitigation strategies. ii. Review of deliverables and alignment with stakeholder expectations.

EXTERNAL INTERESTED PARTY REGISTER

Interested Party	Why they Care	What they Seek from Us	What we Seek from Them	Implications for Managing the Relationships
MCC-Zimbabwe	i. Local partner organizations interested in project success and outcomes	i. Involvement in guide development ii. Project updates iii. Email feedback on the guide if a workshop is not possible	i. Participation in guide reviews and workshops ii. Coordination of local travel logistics	i. Regular email correspondence ii. Inclusion in relevant meetings and workshops iii. Clear communication of expectations and timelines
LINCZ Score Against Poverty	i. Local implementing partner with community connections	i. Project updates ii. Participation in guide review as organizational partners iii. Email feedback on the guide if a workshop is not possible	i. Local expertise and context ii. Participation in guide review workshop or email feedback iii. Coordination of local logistics if needed	i. Regular communication channels ii. Clear definition of roles and responsibilities iii. Inclusion in relevant meetings if possible
Arramat Partners	i. Financial investment in the project ii. Interest in the conservation of medicinal plant	i. Regular project updates ii. Involvement in guide development	i. Financial contribution (\$19,000) ii. Local expertise and context	i. Maintain clear and frequent communication ii. Involve in key decision-making processes

	iii. Commitment to local development in Zimbabwe	iii. Recognition in publications iv. Successful project outcomes	iii. Review and feedback on deliverables iv. Co-publishing support	iii. Ensure their expertise is utilized effectively
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MANAGING RELATIONSHIPS - PLANNING ELEMENTS

Interested Party with whom you need to Engage	Purposes	Mechanism and Fitness	Timing	Responsibility
Iain Davidson-Hunt	i. Project supervision and guidance ii. Approval of deliverables	i. Email: For regular updates and document sharing ii. Zoom: For in-depth discussions and presentations iii. In-person meetings: For critical project stages	i. Weekly ii. More constant if Needed iii. Bi-weekly email updates iv. Monthly Zoom calls v. In-person meetings as needed	Janet (Graduate student and Project Manager)
Dr. Rachel Krause	i. Project coordination ii. Resource allocation iii. Communication facilitation	i. Email: For regular updates and coordination	i. Weekly email updates. ii. Bi-weekly Zoom calls	Janet (Graduate student and Project Manager)

		ii. Zoom: For meetings involving multiple stakeholders		
Luke Jimu & Admore Mureva	i. Local expertise input ii. Data sharing iii. Methodology feedback	i. Email: For regular updates and data sharing ii. Zoom: For collaborative discussions and reviews iii. In-person meetings: During workshop to Zimbabwe.	i. Bi-weekly email updates ii. Monthly Zoom calls iii. In-person meetings during workshop	Janet (Graduate student and Project Manager)
MCC-Zimbabwe & LINCZ Score Against Poverty	i. Local coordination ii. Local expertise iii. Logistical support	i. Email: For regular updates and planning ii. In-person meetings for guide review workshop if travel to Zimbabwe is possible; otherwise, email correspondence for feedback	i. Monthly email updates ii. Guide review workshop or email feedback process at project end	Janet (Graduate student and Project Manager)

Arramat Partner	i. Secure project funding ii. Gain local expertise iii. Ensure project relevance and impact iv. Co-publish project outcomes	i. Regular project meetings (virtual/in-person) ii. Collaborative online platforms for guide development iii. Email updates and reports: Co-authorship on publication	i. Quarterly email updates on project progress. ii. Guide review and feedback at key project milestones. iii. Ad-hoc Zoom calls as needed for specific input iv. Final stages for co-publishing	Janet (Graduate student and Project Manager) And Research Team
Dr. Kirit Patel	i. Guidance on community engagement strategies. ii. Review of deliverables	i. Email updates on progress. ii. Participation in workshops	i. Monthly updates. ii. Workshop participation during key stages.	Janet (Graduate student and Project Manager)
Danna Leaman	i. Review of methodologies. ii. Alignment with IUCN and FairWild frameworks.	i. Feedback through email and virtual meetings.	i. Bi-monthly updates. ii. Virtual meetings during review stages.	Janet (Graduate student and Project Manager)

Sheldon McLeod	i. Strategic alignment of project goals and deliverables.	i. Feedback on project deliverables via email.	i. Regular updates at key milestones.	Janet (Graduate student and Project Manager)
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PRODUCT/SERVICE PROMOTION PLAN

What is the overall Goal of the Project?

To develop methodologies for assessing the conservation status of medicinal plants using secondary data sources and rapid community-based approaches, resulting in comprehensive guides that inform effective conservation strategies and contribute to preserving traditional knowledge.

Why the Promotion Plan is Needed – What is it intended to achieve?

The promotion plan will raise awareness about the project's outcomes, methodologies, and potential benefits among relevant stakeholders in Zimbabwe and the broader conservation community.

Intended Audience(s)

1. Conservation organizations in Zimbabwe
2. Academic and research institutions
3. Government agencies responsible for biodiversity conservation

Key Messages

1. The importance of medicinal plant conservation for both biodiversity and cultural heritage
2. The value of combining secondary data assessment with community-based approaches
3. Usability of the developed guides.

Suggested Communication Vehicles with reasons for choices

1. Workshops in Mwenze District: Workshop with organizational partners in Zimbabwe (if travel is possible): To review and gather feedback on the guide
2. Academic publications: To share methodologies and findings with the broader scientific community
3. Project website or blog: To provide regular updates and resources to a wide audience
4. Presentations at relevant conferences: To disseminate results to conservation practitioners and policymakers
5. Social media channels of partner organizations: To reach a broader audience and provide regular updates
6. Email correspondence: To solicit feedback on the guide from organizational partners if travel to Zimbabwe is not possible.

Timing in relation to project stage or activities

Mid-project workshop: Guide review workshop or email feedback process: To gather input from organizational partners on the developed guide

End-of-project dissemination event: To present results and guides

Ongoing updates through website/blog and social media throughout the project duration

Other?

Appendix F: Risk Management – Details

For the Conservation Status of Medicinal Plants in Mwenezi District, Zimbabwe project, the following comprehensive risk analysis has been developed. A thorough list of potential risks related to this project's deliverables, schedules, contractual or hired work, impacted parties, and essential documentation is presented at the beginning of the risk management plan. The risks are listed in a "Probability and Impact Matrix," where risk probability and impact are carefully assessed on the provided scale to determine the most important risks to the project. The magnitude of each risk is ranked according to its likelihood of occurrence in a Risk Register that the project manager uses to keep track of risks as they develop throughout the project. In this project, each risk with a higher probability has a corresponding response plan listed in the last table.

PROBABILITY AND IMPACT MATRIX

A list of the project's recognized risks for success, completion, and quality is indicated in the table below. Risks are identified as having an impact on or being influenced by one or more of the following: Budget, personnel, or a schedule. The probability and impact scores of the identified risks are multiplied to provide an overall risk score. The next table addresses those that received the highest overall score (values in bold in the Risk Score column), and those will also be given a response plan as specified in the third table.

Very Low 0.05 Low 0.20 Medium 0.40 High 0.60 Very High 0.80

Risk Description	Probability	Impact	Risk Score
Schedule - Delays in literature review completion due to the extensive nature of existing methodologies	0.40	0.60	0.24
Budget - Unexpected travel costs for workshops and meetings in Zimbabwe	0.40	0.40	0.16
Schedule - Delays in obtaining feedback from organizational partners	0.40	0.60	0.24

RISK REGISTER

The following table is the Risk Register, created using the top highest-scoring project risk identified in the first table of this document: Probability and Impact Matrix. It identifies if and where the associated risk response plan is, who owns the risk, and the status of the risk (Pending, In Progress, Dealt With).

Risk	Response Plan Created?	Location of Response Plan	Risk Owner	Status
Schedule - Delays in literature review completion	Y	Risk Response Plan (Table 3 of this document)	Project Manager (Janet)	Pending
Schedule - Delays in obtaining feedback from organizational partners	Y	Risk Response Plan (Table 3 of this document)	Dr. Rachel Krause	Pending
Personnel - Difficulty in coordinating with multiple organizational partners for guide review	Y	Risk Response Plan (Table 3 of this document)	Project Manager (Janet)	Pending

RISK RESPONSE PLAN

The following table is the Risk Response Plan which addresses the top-scoring risk from the Probability and Impact Matrix and the Risk Register. The Risk Response Plan addresses the response strategy (Escalate, Accept, Avoid, Transfer, Mitigate) and the details of the associated strategy.

Risk	Response Strategy	Response Details
Schedule - Delays in literature review completion due to the extensive nature of existing methodologies	Mitigate	i. Break down the literature review into smaller, manageable sections ii. Set interim deadlines for each section
	Accept	i. Adjust the project timeline, keeping stakeholders informed of changes.
Personnel - Difficulty in coordinating with multiple organizational partners for guide review	Mitigate	i. Establish clear communication channels and protocols at the project's outset ii. Schedule the workshop well in advance and provide multiple date options iii. Use project management software to track tasks and deadlines iv. Prepare a detailed agenda and materials for the workshop to maximize efficiency
	Transfer	If travel to Zimbabwe is not possible: i. Transfer the responsibility of collecting feedback to email correspondence. ii. Create a clear, concise feedback form for partners to complete iii. Set specific deadlines for email responses iv. Follow up individually with partners who don't respond by the deadline

Appendix G: Budget Details

The table below details the activities required to successfully complete this project with the highest level of quality. The estimated costs are those most likely and are calculated from careful planning of project progression. The listed costs are accurate at the time of planning. Project costs are supported by allocated funds from Canadian Mennonite University.

Resource Group	Activity / Task	Associated Cost	Total
Personnel	Graduate student salary and Project Management	CAD 34000	CAD 38,772.07
Workshops and Meetings	Materials and supplies for virtual workshops (if needed)	CAD 300	CAD 300
Literature Review	Access to academic journals and publications not provided by CMU or U of M	CAD 200	CAD200
Contingency	Unforeseen expenses	CAD 500	CAD 500
		Total	CAD 39,772.07