Proceedings of the National Stakeholders Initiation workshop for BID project of "Mobilization of data on non- timber forest products' species in Zimbabwe's five biodiversity hotspots: towards the enhancement of food security and human health" held at Mayfair Lodge, Bindura, Zimbabwe, from 01-02 March 2017.

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Disclaimer

This Workshop Report is a project output in the Financial Assistance provided by the European Union through the Global Biodiversity Information Facility to Bindura University and its partners: National Herbarium and botanic gardens, and the Forestry Commission. The views and conclusions herein are those of the workshop participants and the authors, and should not be taken to correspond to the policies, procedures, opinions, and views of the European Union, GBIF, BUSE or Government of Zimbabwe.

Executive Summary

The overall objective of the initiation workshop was to familiarize stakeholders with the objectives of the project, consolidate the lists of priority NTFPs species (Food and medicinal) from representative communities in and around the five biodiversity hotspots, identify additional information holding institutions and develop a plan of action and to share knowledge and skills acquired from the BID capacity enhancement workshop with all stakeholders. The Workshop also sought to lay the foundation for subsequent work on the mobilisation and digitisation of biodiversity data in Zimbabwe with specific activities described in the approved project proposal. The initiation workshop was a formal review of information gathered during some community meetings held in five biodiversity hotspot areas: Hwange, Chipinge, Chimanimani, Nyanga and the Great dyke. The community meetings were organised by Forestry Commission and the meetings were facilitated by all partners except in Chimanimani were Forestry commission was not present during the community meetings. The European Union funded the activities through the GBIF and was organised by the Lead Implementer, the Bindura University. This initiative on biodiversity information strongly builds on government programmes to build a strong and viable biodiversity database and network supplying quality information for use by scientists, scholars providing a platform for monitoring status of forest biodiversity in the five hotspots of Zimbabwe. Furthermore, the information is important for evidence based policy and decision making for conservation of natural resources. A total of 42 participants attended the 2 day workshop. Workshop participants included representatives from the five communities, and representatives from government and non- governmental organisations. The workshop started with some opening remarks from the Dean of the faculty of Agriculture and Environmental Science and was officially opened by a representative from the office of the resident minister for Mashonaland central province. The objectives of the project and of the workshop were given by the project team. Presentation on overview of NTFP species in Zimbabwe and of other BID projects in Zimbabwe were given by representatives from National Botanic Gardens and National Museums and Monuments of Zimbabwe respectively. Discussion were divided into two categories and workshop participants went into groups divided according to biodiversity hotspot area with Chimanimani and Chipinge merged into one group because of the similarities in their culture and environments. The groups were led by community representatives. The initial discussions were on prioritisation of food plants followed by prioritisation of medicinal plants. Each group prioritised and ranked the species in each area with a final presentation in the plenary session. Participants were however, sceptical on the publicity of information on medicinal plants and it was resolved that only a checklist will be made for medicinal plant species.

The Workshop also discussed the issue of being a node and the representatives from the ministry of environment proposed an interim committee to start the process. The communication from GBIF was circulated to the selected people for consideration. Additional discussions were done to list biodiversity data holding institutions and a list of organisations was produced.

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About the Project partners

Bindura University of Science Education (BUSE), Department of Natural Resources (DNR)(Project Lead)- The Department of Natural Resources represented by Drs L. Mujuru, L. Jimu, A. Mureva, J Muvengwi and IW Nyakudya.

The department deal with research, teaching and extension in all issue related to natural resource conservation and management. DNR strives to be a centre of excellence in natural resources research, training and extension. As educators and researchers with broad concerns about the future of the earth, and concerns about the multiple aspects of human/society/nature interactions, the departmental values are centered on a commitment to the stewardship of nature.

National herbarium and Botanic Gardens (NHBG) (Partner 1)- Led by Mr C. Chapano and represented by Mr A. Mapaura

The NHBG is a center for research and information on the indigenous plants of Zimbabwe and is responsible for information on Zimbabwean flora in order to promote its conservation, development and sustainable use. Its mission is to increase knowledge and appreciation of Zimbabwean plants. It fulfils this mission by looking after the plant specimens that are the essential resource material required in studying plant characters in order to arrive at their identity and names. The National Herbarium stores preserved plant specimens while the living specimens are grown in the National Botanic Garden. The Herbarium has about 500 000 plant specimens. It is the main reference center for research on identifying and naming plants of the Flora Zambesiaca Region. This project will digitise most of the specimens in the herbarium.

Forestry Commission (Partner 2)- Led by Mr Zingwena and **r**epresented by Forestry extension officers from the hotspot areas: Mr C Karimanzira (Chipinge), Ms T Mufandaedza (Chimanimani), Mr R Dembaremba (Nyanga) Ms O Maganda (Hwange) and Mr P Mukudo (Zvimba district).

The Forestry Commission as a parastatal under the Ministry of Environment, Water and Climate, contributes to national socio-economic development through regulation and capacity enhancement in the utilisation and management of forest resources. The Forest Extension services promote the sustainable management and development of the nation's forest and have worked on projects that support biodiversity conservation, research, management, collection and training over a period of more than twenty years. The Forestry Commission officers mobilise local communities and contribute the required data for the implementation of this project.

Acknowledgements

We are sincerely grateful to the Dean of Faculty of agriculture and Environmental Science, the bursary and the Research and post graduate centre. We are truly grateful for the work that they do in facilitating the project activities. Special thanks to the Ministry of Environment, Water and Climate represented by Mr Matiza and his team. Thank you to all participants who made the workshop a success.

Introduction

This report gives a detailed account of the project initiation workshop for the BID project No. BID-AF2017-0237-NAC"Mobilization of data on non- timber forest products' species in Zimbabwe's five biodiversity hotspots: towards the enhancement of food security and human health". The project is led by Bindura University of Science education, partnering with the National herbarium and Botanic gardens and Forestry Commission. The Workshop was funded by the European Union through BID.

Project Overview

Proper policy formulation needs to be informed by empirical evidence. Zimbabwean forests and woodlands are rich in biodiversity, supplying both timber and non-timber forest products (NTFPs) for subsistence and commercial gains. NTFPs contribute >35% of household incomes in Zimbabwe, supplying food, medicinal, construction, fodder, environmental and cultural values. Data about biodiversity are either scattered in many databases or reside on paper or other media not amenable to interactive searching. Therefore, policy makers and other development agents working on NTFPs in biodiversity hotspots are confounded by the lack of accessible, relevant and reliable biodiversity data to help in decision making. Although the National Herbarium and Botanic Gardens (NHBC) has archives of biodiversity information, mainly in the form of un-digitized herbarium specimens, this data format is not easily accessible for key decision making and research. In this project, we aim to work with the Forestry Commission, the custodians of forest resources and the NHBC, the holder of biodiversity data, to create databases of NTFPs species used for food and medicinal purposes in Zimbabwe. We specifically target to collect data on NTFPs in the National Herbarium and Botanic Gardens, after which we will digitize, clean and publish it using the Global Biodiversity Information Facility (GBIF). By so doing, we will make the data easily accessible for evidence-based policy formulation, management plans and decision-making for sustainable utilization of these resources in line with the Zimbabwe Agenda for Socio-Economic transformation (ZIMASSET) and the sustainable development goal (SDG) 15. The European Union supports developing countries to mobilise and digitise biodiversity data through the Global Biodiversity Information facility.

Initiation Workshop Overview

Main Objectives of the Workshop

- familiarize stakeholders with the objectives of the project,
- consolidate the lists of priority NTFPs species (Food and medicinal) from representative communities in and around the five biodiversity hotspots.

- identify additional information holding institutions and develop a plan of action.
- share knowledge and skills acquired from the BID capacity enhancement workshop with all stakeholders.

Expected Outcomes

- Stakeholder input into the list of medicinal and food plants
- Set into motion processes leading to the knowledge on biodiversity information mobilisation and digitisation
- Strengthening of national biodiversity network and proposal for biodiversity node

Workshop Participants

The initiation workshop brought together experts from Government of Zimbabwe, Academia, Research, Non-Governmental organisations, Community representatives (2 from each representative community- male and female), herbalists and other Organizations, working in the field of forestry and natural resources.

Organization of the Report

The Report is organised into four chapters. **Chapter 1** gives the details about the Opening Ceremony of the Workshop. **Chapter 2** highlights the presentations and the main key points of the workshop. **Chapter 3** gives a summary of discussions on food and medicinal plants **Chapter 4** gives other deliberations and the conclusions of the Workshop.

CHAPTER 1 Opening Session

Session Facilitator – Prof George Nyamadzawo, Department of Environmental Science (BUSE)

The workshop started with the registration of participants at 0830 hrs-0900 hrs.

The workshop was opened by Dr L. Jimu, Chairman of the Natural Resources Department. The officials who were supposed to do the opening remarks and official opening of the workshop were delayed and he started the programme with discussion on workshop objectives and a run - down of the two day programme. This was followed by self-introductions of participants.

Welcome remarks

The dean of Faculty of agriculture and Environmental Science gave the opening remarks before the guest of honour.

The Dean welcomed all participants to Bindura and stressed the importance of biodiversity for the wellbeing of all Zimbabweans.

Official opening speech

The resident Minister for Mashonaland central was supposed to officially open the workshop and he sent a representative as he could not come.

The representative, welcomed everyone to Bindura and assured participants that they were here for a worthy cause. The speech outlined the challenges facing humanity such as inequality, poverty, climate change, land degradation, and biodiversity loss. He emphasised the importance of protecting biodiversity and ensuring that our use of nature is sustainable to support global initiatives such as UN Sustainable Development Goals (SDGs), UN Framework Convention on Climate Change (UNFCCC), the UN Convention to Combat Desertification (UNCD), and the Convention on Biological Diversity (CBD). For any system to function properly, biodiversity is the pillar for ecosystem persistence, adaptation and transformations. The CBD's Aichi targets strengthen the need for a mainstreaming biodiversity across government and society, reducing the direct pressures on biodiversity and promoting sustainable use, improving the status of biodiversity by safeguarding ecosystems, species and genetic diversity, enhancing the benefits to all from biodiversity and ecosystem services and enhancing implementation through participatory planning, knowledge management and capacity building. Biodiversity provides for food security, human health, the provision of clean air and water, contributes to local livelihoods, and economic development, and is essential for sustainable development, including poverty reduction. He concluded by stating that the government of Zimbabwe, was prepared to be informed and to work with participants in matters affecting the loss of biodiversity in the nation.

Chapter 2: Highlights of the Presentations

2.1 Project background

The project background was given by Dr L Mujuru who highlighted the activities of GBIF and what it means. This project on -**"Mobilization of data on non- timber forest products' species in Zimbabwe's five biodiversity hotspots: towards the enhancement of food security and human health"** focused on mobilising and digitising food and medicinal plants in five biodiversity hotspots in Zimbabwe. The project partners have already held meetings with selected communities adjacent to the biodiversity areas and a list of species will be used as a basis for the workshop discussions. She gave highlights of the three main goals of the project and associated activities for each i.e.

GOAL 1 - Establish or strengthen national biodiversity information facilities- Includes activities of:

- Registration with GBIF

- BID capacity enhancement- BID training sessions
- Data management Training
- Community meetings
- Initiation workshop
- Data collection – mainly from National herbarium
- Database uploading
- Database access

GOAL 2 - Increase available biodiversity data, within and beyond the grant period- Includes activities of:

- Data increase -specimens of damaged and priority species not deposited in the herbarium from the five biodiversity hotspots. New specimens deposited in the herbarium.
- Database updating - continuously update the database and
- Networking- National biodiversity data sharing platform

GOAL 3 - Apply biodiversity data in response to national priorities

- Activities include drafting of data sharing agreements - data sharing agreements with at least five stakeholders
- Project feedback for decision makers- stakeholder meeting outlining the results of the data mobilization process and informing policy makers on how to use the GBIF database for evidence-based policy and decision making. Includes strategies and actions to protect and conserve NTFPs species and forest ecosystems.
- Database publicity – broadcasting of deliverables via diverse media

2.2 Overview of other BID projects in Zimbabwe

By Ms K. Mafuwe and Ms K Dhlakama from the National Museums and Monuments of Zimbabwe.

Ms K. Mafuwe gave a brief presentation on the regional project she is doing in collaboration with other in museums of Botswana, Madagascar, Kenya, Mozambique and South Africa. The objectives of the project are to train museum staff in specimen digitisation and geo-referencing techniques, digitise, geo-reference and share over 150 000 specimen records from African insect collections, to guide institutions in choosing appropriate database software and develop network of leaders focused on insect data mobilisation.

2.2.1 Other BID projects by Ms K. Dhliwayo

She gave an overview of her project entitled "Freshwater biodiversity of the Eastern highlands of Zimbabwe: assessing conservation priorities using primary species-occurrence data". This is a 2 year project ending in 2019. The objectives are to mobilise data on freshwater biodiversity in eastern highlands of Zimbabwe, making use of biodiversity informatics tools to identify the important sites for conservation of the freshwater biodiversity (mainly fish, invertebrates, amphibians and bird species in the region. The outputs from the project will therefore help to inform policy makers, wildlife managers researchers etc. where to put conservation efforts. The team has four museum departments of entomology, ornithology, herpetology and ichthyology

2.3 Overview of food and Medicinal plants in Zimbabwe

Mr A. Mapaura – National herbarium and Botanic Gardens

Mr Mapaura stated that Zimbabwe had approximately 6000 indigenous plant species with about 10% of them are used as medicines and food. Indigenous plants provide dependable and affordable sources of medicine and food and are often the primary healthcare system for rural communities and other resource poor communities. Zimbabwe has a long history of using indigenous plants collected from the wild for both food and medicine. However, this knowledge is not adequately documented and resides with individuals and communities. With the current drive towards the use of modern medicines and consumption of more productive cultivated foods, there is a real risk of losing this knowledge.

He highlighted that medicinal plants were for several reasons including disease prevention, curing diseases and other conditions and managing diseases and other conditions. The plants are however threatened by issues to do with habitat loss due to population growth, need for more agricultural land and other developments and over utilisation. For example, Muranga (*Warburgia salutaris*) is now locally extinct in Zimbabwe due to over harvesting. Uncontrolled harvesting has also destroyed the resource base. Traditionally, harvesting used to be controlled through various methods such as not harvesting a plant that has been harvested by someone else, harvesting only from one side of a plant (roots and bark were typically harvested from the east facing side), and returning the soil after harvesting roots and only collecting ripe fruits so as not to anger the spirits. He ended by encouraging all participants to focus on issues of conservation and sustainable use.

Chapter 3 Discussions on prioritising food and medicinal plants

3.1 Session 2: Group discussions Food and medicinal Plants

Session Facilitator – Dr Justice Muvengwi, Department of Natural Resources (BUSE)

Participants voluntarily went into groups of their choice with except community representatives who had to work on species lists from their communities. Four groups were formed; Great Dyke, Hwange, Nyanga and Chipinge/Chimanimani. A list of species from the communities was circulated and groups were to prioritise and confirm the species names. Some species in areas such as Hwange and great dyke where communities are mixture of more than two languages had the species lists reduced because of repetitions caused by different naming. Some additional species were also given. Some of the species required correct identification and translation from vernacular to scientific names. More than 400 species were in the initial list but these were reduced to 89 food plants and 151 medicinal plants (Appendix 3 and 4) after realising that the same plant were given several names depending on language used. This mainly applied to species such as *Vangueria infausta, Adansonia digtata, Vitex payos* and *Lannea discolor*.

Table 1: Summary of the number of food and medicinal plants from the five hotspot areas

Area	**No of Food plant species**	**No of medicinal plant species**
Great Dyke	36	34
Hwange	34	34
Chipinge	34	40
Chimanimani	26	60
Nyanga	26	53

3.2 Biodiversity data holding institutions

Each working group was assigned to list possible data holding institutions. The following biodiversity data holding institutions were identified:

1. Forestry Commission
2. Fambidzanai Permaculture centre
3. WWF
4. BirdLife Zimbabwe
5. Institutions of higher learning
6. Southern Alliance for Indigenous Resources
7. National Parks and Wildlife
8. UNDP
9. FAO

3.3 Discussion on the possibility of having Zimbabwe as a node for GBIF

The proposal for Zimbabwe to become a node was given by Dr. L Mujuru and was supported by Biodiversity office in the Ministry of Environment, Water and Climate. An interim committee was formed to work on the issue with members form BUSE, national Museums and Monuments, Forestry Commission Ministry of Environment and Environmental Management Agency.

APPENDIX 1 Workshop Programme

Project Title:	**BID-AF2017-0237-NAC: Mobilization of data on non- timber forest products' species in Zimbabwe's five biodiversity hotspots: towards the enhancement of food security and human health.**
Venue:	**Mayfair Lodge - Bindura**
Date:	**1-2 March 2018**
Organizers	**Bindura University of Science Education/ National herbarium and Botanic Gardens/ Forestry Commission**

WORKSHOP AGENDA

Time	Activities	Responsibility
Day 1: Thursday – 1 March, 201		
08:30–09:00	Registration of workshop participants	Mrs Tsambatare/ G.Ncube
Session I: Opening session **Chairperson:** G Nyamadzawo		
09:00–09:15	• Welcome Remarks – Dean FAES • Opening speech – Guest of Honour	
09:15–09:30	• Workshop objectives and programme • Introductions of participants	L Jimu
09:30–09:45	Project background	L. Mujuru
09:45–10:00	Overview of other BID projects in Zimbabwe	K. Mafuwe
10:00:10:20	Overview of food and Medicinal plants in Zimbabwe	A Mapaura
10:20–10:35	***Coffee break***	
10: 35- 12: 45	Prioritisation of Food plants for digitisation	L Mujuru
12:45–14:00	***Lunch***	
Session II: Continued **Chairperson: J. Muvengwi**		
14:00–15:15	Prioritisation of Food plants continued	L. Mujuru
15:15–15:30	***Coffee/Tea break***	
15:30-16:30	Prioritisation of medicinal plants for digitisation	A. Mureva
Day 2: Friday – March 2, 2018		
Chairperson: I.W Nyakudya		
08:30–09:00	Registration	Mrs Tsambatare/ G Ncube
09:00-10:00	Feedback on priority species by hotspot	L. Jimu
10:30–11:00	***Coffee Break***	
11:00-11:45	Feedback on priority species by hotspot	A. Mureva

Time	Activities	Responsibility
11:45 -12:00	Discussion on Data holding institutions	L. Mujuru
12:00-12:30	Discussion on possibility of establishing a biodiversity node in Zimbabwe	MEWC and Project members
12:30- 12:45	Workshop evaluation	Mrs Tsambatare / G Ncube
12:45-13:00	Closing Remarks	Dr Jimu
1300	Lunch and departure	

APPENDIX 2 – Guest of honour speech

Speech delivered by the Minister of State for Mash-Central Province, Honourable Advocate Dr MT Dinha at the BID project initiation workshop on 1 March 2018 at the Mayfair Lodge, Bindura

The Vice Chancellor of the Bindura University of Science Education, Professor Eddie Mwenje;
The Dean of the Faculty of Agriculture and Environmental Science, Dr IW Nyakudya;
Delegates from the Forestry Commission;
Delegates from the National Herbarium & Botanical Gardens;
Members of the Conference Organising Committee;
Distinguished Participants;
Members of the media fraternity;
Ladies and gentlemen,

A very good morning to all of you.

Thank you for that kind introduction, and thank you for inviting me to grace this occasion on "Mobilisation of data on non-timber forest products' species in Zimbabwe's five bio-diversity hotspots: towards the enhancement of food security and human health," today. I wish to first of all express my sincere thanks to the organizers, Bindura University of Science Education, National Herbarium and Botanical Gardens and, the Forestry Commission for the dedication and vision in organising this important forum on bio-diversity conservation and utilisation.

Ladies and gentlemen, the protection of biodiversity and ensuring that our use of nature is sustainable is a global mission. Many meetings were held and the result are the global agreements on the adoption of the UN Sustainable Development Goals (SDGs), UN Framework Convention on Climate Change, the UN Convention to Combat Desertification, and the Convention on Biological Diversity (CBD). All these emphasise the critical role of biodiversity conservation and utilization. Functional ecosystems are relevant for the achievement of all the SDGs. But, humanity now faces challenges of inequality, poverty, climate change, land degradation, and biodiversity loss.

One of the global agreements, the CBD focuses on the conservation of biodiversity; sustainable use of biodiversity; fair and equitable sharing of benefits arising from the use of genetic resources. In any system bio-diversity is the pillar for ecosystem persistence, adaptation and transformations. The CBD was further strengthened by the development of five strategic goals and 20 Aichi biodiversity targets. The biodiversity targets strengthen the need for:

- Addressing the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society,
- Reducing the direct pressures on biodiversity and promoting sustainable use, improving the status of biodiversity by safeguarding ecosystems, species and genetic diversity,
- Enhancing the benefits to all from biodiversity and ecosystem services,
- Enhancing implementation through participatory planning, knowledge management and capacity building.

The importance of biodiversity lies in the fact that biodiversity underpins ecosystem functioning and the provision of ecosystem services essential for human well-being. It provides for food security, human health, the provision of clean air and water; it contributes to local livelihoods, and economic development, and is essential for sustainable development, including poverty reduction. In most countries the implementation of national biodiversity strategy action plans (NBSAPs) are mechanisms to support the implementation of Convention on Biological Diversity.

We are gathered here to initiate a project on '***Mobilization of data on non- timber forest products' species in Zimbabwe's five biodiversity hotspots: towards the enhancement of food security and human health'.*** Project activities support one of the CBD goals of enhancing implementation through participatory planning, knowledge management and capacity building. As long as information is available, policy makers, researchers and the public can easily access it.

I know here we have people representing communities from Hwange, Chipinge, Chimanimani, Nyanga, Great dyke and Centenary. We are aware that these are areas where some households depend on biodiversity utilization for survival. We want this workshop to address issues on biodiversity information accessibility through its mobilization.

In this case we are just looking at plant biodiversity for non-timber forest products' species in Zimbabwe's five biodiversity hotspots. Information will help in planning for the enhancement of food security and human health. It's all about sustaining the natural areas made up of a communities of plants, animals, and other living things that are now being reduced through human activities such as habitat destruction. Our natural resource base is under threat from our own activities. We therefore need to be informed about the status of our important plant biological species, significantly important to our people. As the government of Zimbabwe, we are prepared to be informed and to work with you in matters affecting the loss of biodiversity in our nation.

Ladies and gentlemen, I want to thank you for taking your time and for sharing your ideas, experience and knowledge. The collective wisdom gathered here will greatly contribute to the quality of deliberations and outcomes of this workshop.

I wish you all a most productive workshop and look forward to the recommendations coming out of your deliberations. I hope that when you leave this place you will continue to value biodiversity, contribute to improve their management and to take actions that implement the Convention of Biological Diversity, and ensure the achievement of the 20 Aichi targets.

We want to thank the European Union through Global Biodiversity Information facility for making the event possible

I thank you.

Appendix 3: List of Food Plants by hotspot area

Family	Species	Chimanimani	Chipinge	Great Dyke	Hwange	Nyanga
		Presence	Presence	Presence	Presence	Presence
Acanthaceae	Thunbergia lancifolia Oliv					√
Amaranthaceae	Amaranthus thunbergi Moq	√				
Anacardiaceae	Lannea discolor (Sond.) Engl.			√		√
Anacardiaceae	Rhus lancea L,f			√		
Anacardiaceae	Sclerocarya birrea subsp. caffra (A. Rich.) Hochst.		√			√
Annonaceae	Annona senegalensis Pers		√	√		
Annonaceae	Annona spp. L	√				
Annonaceae	Annona stenophylla Engl. & Diels		√	√	√	
Annonaceae	Friesodielsia obovata (Benth.) Verdc.			√		
Apocynaceae	Carissa edulis Vahl	√				√
Apocynaceae	Landolphia kirkii (Hallier f.) Stapf	√				√
Apocynaceae	Landolphia buchananii (Hallier f.) Stapf	√				
Apocynaceae	Momordica foetida Schumach					√
Arecaceae	Phoenix reclinata Jacq.			√		
Asclepiadaceae	Mondia whitei (Hook.f.) Skeels		√	√		
Asphodelaceae	Aloe excelsa A. Berger		√			
Asphodelaceae	Aloe spp.			√		
Asteraceae	Ageratum conyzoides L		√			
Asteraceae	Bidens pilosa L	√				
Bombacaceae	Adansonia digitata L			√	√	√
Cactaceae	Opuntia megacantha Salm Dyck.					√
Capparaceae	Cleome gynandra L.	√				
Celtidaceae	Celtis gomphophylla Baker					√
Chrysobalanaceae	Parinari curatellifolia Planch. ex Benth.	√	√	√		√
Clusiaceae	Garcinia buchananii Baker	√				
Clusiaceae	Garcinia huilensis Welw.	√				
Combretaceae	Combretum imberbe Wawra		√		√	
Combretaceae	Combretum zeyheri Sond.					√
Cucurbitaceae	Coccinia adoensis (A. Rich.) Cogn.		√			
Dioscoreaceae	Dioscorea steriscus Burkill			√		
Ebenaceae	Diospyros kirkii Hiern			√		
Ebenaceae	Diospyros mespiliformis Hochst. ex A. DC.		√		√	
Ebenaceae	Euclea divinorum Hiern				√	
Euphorbiaceae	Bridelia micrantha (Hochst.) Baill.		√			√
Euphorbiaceae	Euphorbia ingens E.Mey. ex Boiss.					√

Family	Species	Chimanimani Presence	Chipinge Presence	Great Dyke Presence	Hwange Presence	Nyanga Presence
Euphorbiaceae	Fluggea virosa (Roxb. ex Willd.) Voigt		√			
Euphorbiaceae	Uapaca kirkiana Müll. Arg.	√	√	√	√	
Fabaceae-Caesalpinioideae	Piliostigma thonningii (Schumach.) Milne-Redh.			√		√
Fabaceae-Mimosoideae	Senegalia spp. Mill			√		
Fabaceae-papilionoideae	Eriosema pauciflorum Klotzsch var	√	√			√
Fabaceae-papilionoideae	Eriosema shirense Baker f.	√	√	√		
Fabaceae-papilionoideae	Ormocarpum kirkii S. Moore	√				
Flacourtiaceae	Flacourtia indica (Burm. f.) Merr.			√	√	√
Hypoxidaceae	Hypoxis spp. L	√				
Lamiaceae	Plectranthus esculentus N.E. Br.		√			√
Lamiaceae	Vitex payos (Lour.) Merr.	√	√	√	√	√
Loganiaceae	Strychnos cocculoides Baker		√	√	√	√
Loganiaceae	Strychnos madagascariensis Poir.			√	√	
Loganiaceae	Strychnos spinosa Lam	√	√	√	√	
Loganiaceae	Strychnos spp. L				√	
Malvaceae	Azanza garckeana (F. Hoffm.) Exell & Hillc.			√	√	√
Meliaceae	Ekebergia benguelensis Welw. ex C.DC.		√			
Meliaceae	Trichilia dregeana Sond.		√			
Meliaceae	Trichilia emetica Vahl		√			
Moraceae	Ficus natalensis Hochst		√		√	
Moraceae	Ficus spp.					√
Moraceae	Ficus sycomorus L	√				
Moraceae	Ficus thonningii Blume Moraceae	√				
Musaceae	Musa spp. L.	√				
Myrtaceae	Psidium guajava L		√	√		
Myrtaceae	Syzgium cordatum Hochst. ex C. Krauss	√		√		√
Myrtaceae	Syzygium guineense (Willd.) DC.			√		
Myrtaceae	Syzygium spp. (P. Beauv.) Benth		√			
Olacaceae	Schrebera alata (Hochst.) Welw.	√				
Olacaceae	Ximenia americana L		√			
Olacaceae	Ximenia caffra L	√		√	√	√
Passifloraceae	Adenia cissampeloides (Planch. ex Hook.) Harms		√			
Passifloraceae	Passiflora edulis Sims		√			
Pedaliaceae	Dicerocaryum zanguebarium (Lour.)					√

Family	Species	Chimanimani Presence	Chipinge Presence	Great Dyke Presence	Hwange Presence	Nyanga Presence
Ptaeroxylaceae	Ptaeroxylon obliquum (Thunb.) Radlk.				√	
Rhamnaceae	Berchemia discolor (Klotzsch) Hemsl.		√	√	√	
Rhamnaceae	Berchemia zeyheri (Sond.) Grubov				√	
Rhamnaceae	Ziziphus mauritiana Lam.			√		
Rhamnaceae	Ziziphus mucronata Willd.			√		√
Rosaceae	Prunus persica L		√			
Rubiaceae	Vangueria infausta Burch.		√	√	√	
Rubiaceae	Vangueria apiculata K. Schum.			√		
Rubiaceae	Vangueriopsis lanciflora (Hiern) Robyns	√		√	√	
Salicaceae	Dovyalis caffra Warb			√		
Salicaceae	Dovyalis zeyheri (Sond.) Warb.				√	
Salicaceae	Flacourtia indica (Burm. f.) Merr.			√		
Sapindaceae	Zanha africana (Radlk.) Exell		√			
Sapotaceae	Englerophytum magalismontanum (Sond.) T.D. Penn.			√		
Solanaceae	Solanum anguivi L	√			√	
Tiliaceae	Grewia pachycalyx K. Schum					√
Verbanaceae	diospyros discolor Willd.			√		
Vitaceae	Cissus integrifolia (Baker) Planch.	√				
Vitaceae	Rhoicissus tomentosa (L.f.) Wild & R.B. Drumm.		√			
Zingiberaceae	Aframomum angustifilum (Sonn.) K. Schum.		√			
Total Species		**26**	**34**	**36**	**22**	**26**

Appendix 4: List of medicinal plants by hotspot area

Family	Species	Chimanimani Presence	Chipinge Presence	Great Dyke Presence	Hwange Presence	Nyanga Presence
Acanthaceae	Thunbergia lancifolia Oliv					√
Amaranthaceae	Amaranthus thunbergi L	√				
Anacardiaceae	Lannea discolor (Sond.) Engl.			√	√	√
Anacardiaceae	Lannea edulis (Sond.) Engl.	√		√		
Anacardiaceae	Mangifera indica L	√				
Anacardiaceae	Ozoroa reticulata (Baker f.) R. & A. Fern.	√				
Anacardiaceae	Sclerocarya birrea (A. Rich.) Hochst.	√				√
Annonaceae	Annona senegalensis Pers	√				√
Annonaceae	Annona stenophylla Engl. & Diels	√				√
Annonaceae	Friesodielsia obovata (Benth.) Verdc.			√		
Apiaceae	Alepidea peduncularis Steud. ex A. Rich.	√				
Apiaceae	Steganotaenia araliacea Hochst					√
Apocynaceae	Carissa edulis Vahl					√
Apocynaceae	Diplorhynchus condylocarpon (Müll. Arg.) Pichon				√	
Apocynaceae	Holarrhena pubescence (Buch. - Ham.) Wall. ex G. Don	√	√			
Apocynaceae	Momordica foetida Schumach		√			
Araliaceae	Cussonia Spicata Thunb.		√			√
Aristolochiaceae	Aristolochia albida		√			
Asclepiadaceae	Mondia whitei (Hook.f.) Skeels	√	√	√		√
Asphodelaceae	Aloe excelsa A. Berger	√				√
Asphodelaceae	Aloe spp.		√	√		
Asteraceae	Bidens pilosa L	√				
Asteraceae	Vernonathura polyanthes (Spreng.) Vega & Dematteis	√				
Asteraceae	Vernonia amygdalina Delile		√			
Asteraceae	Vernonia adoensis Sch. Bip. ex Walp.		√			
Bignoniaceae	Jacaranda mimosifolia D. Don			√		
Bignoniaceae	Kigelia africana (Lam.) Benth.	√		√		√
Bombacaceae	Adansonia digitata L	√	√			√
Cactaceae	Opuntia megacantha Salm Dyck.					√
Capparaceae	Boscia angustifolia (Gilg) DeWolf				√	
Capparaceae	Cleome gynandra L			√		
Caricaceae	Carica papaya L	√				
Celastraceae	Gymnosporia buxifolia (L.) Szyszyl.			√		
Celastraceae	Gymnosporia senegalensis Lam Loes			√		

Family	Species	Chimanimani Presence	Chipinge Presence	Great Dyke Presence	Hwange Presence	Nyanga Presence
Celtidaceae	Celtis gomphophylla Baker					√
Celtidaceae	Trema orientalis (L.) Blume	√	√			
Chenopodiaceae	Chenopodium ambrosioides L					√
Chrysobalanaceae	Parinari curatellifolia Planch. ex Benth.	√		√		√
Clusiaceae	Garcinia buchananii Baker					√
Clusiaceae	Hypericum roeperianum Schimp. ex A. Rich.					√
Colchicaceae	Gloriosa superba L. - sub-Saharan	√				
Combretaceae	Combretum adenogomium Steud. ex A. Rich.	√				
Combretaceae	Combretum imberbe Wawra				√	
Combretaceae	Combretum molle R.Br ex G. Don	√				√
Combretaceae	Terminalia sericea Burch. ex DC.		√		√	√
Crassulaceae	Kalanchoe lanceolata (Forssk.) Pers.	√				
Cucurbitaceae	Cocumis anguria L	√				
Ebenaceae	Diospyros mespiliformis Hochst. ex A. DC.	√	√			
Ebenaceae	Euclea divinorum Hiern	√	√			
Euphorbiaceae	Bridelia micrantha (Hochst.) Baill.	√				
Euphorbiaceae	Euphorbia ingens E.Mey. ex Boiss.	√		√		√
Euphorbiaceae	Ricinus communis L	√		√		
Fabaceae	Brachystegia boehmii Taub			√	√	√
Fabaceae	Pterolobium stellatum (Forssk.) Brenan					√
Fabaceae	Bolusanthus speciousus (Bolus) Harms				√	
Fabaceae	Xeroderris stuhlmannii (Taub.) Mendonça & E.P. Sousa	√	√			
Fabaceae	Brachystegia spiciformis Benth.	√				
Fabaceae	Cassia abbreviata Oliv.	√	√	√	√	√
Fabaceae	Colophospermum mopane (Benth.) J. Léonard				√	√
Fabaceae	Peltophorum africanum (Vogel) Benth.		√			√
Fabaceae	Piliostigma thonningii (Schumach.) Milne-Redh.	√				√
Fabaceae	Vachellia karoo Mill			√	√	
Fabaceae	Vachellia tortilis (Forssk.) Hayne		√			
Fabaceae	Dichrostachys cinerea (L.) Wight & Arn.			√	√	√
Fabaceae	Elephantorrhiza elephantina (Burch.) Skeels	√		√	√	√
Fabaceae	Afzelia quanzensis Welw.			√		
Fabaceae	Dalbergia nitidula Welw. ex Baker			√		
Fabaceae	Eriosema pauciflorum Klotzsch var	√				

Family	Species	Chimanimani Presence	Chipinge Presence	Great Dyke Presence	Hwange Presence	Nyanga Presence
Fabaceae	Eriosema shirense Baker f.	√				√
Fabaceae	Erythrina abyssinica Lam. ex DC.		√	√		√
Fabaceae	Erythrina lysistemon Hutch.	√				
Fabaceae	Mucuna coriacea Baker, (Burtt Davy) Verdc.	√				√
Fabaceae	Ormocarpum kikii S. Moore	√				
Fabaceae	Otholobium foliosum (Oliv.) C.H. Stirt.		√			
Fabaceae	Pterocarpus angolensis DC	√	√	√	√	√
Fabaceae	Senegalia ataxacantha (DC) Kyal. & Boatwr				√	
Flacourtiaceae	Flacourtia indica (Burm. f.) Merr.			√	√	
Hypoxidaceae	Hypoxis spp. L	√				
Iridaceae	Babiana hypogaea Burch	√				
Lamiaceae	Pycnostachys urticifolia Hook	√				
Lamiaceae	Vitex payos (Lour.) Merr.				√	√
Lauraceae	Persia americana Mill.	√				
Loganiaceae	Strychnos cocculoides Baker	√	√		√	√
Loganiaceae	Strychnos pungens Soler.		√			
Loganiaceae	Strychnos senegalensis L	√	√	√	√	√
Loganiaceae	Strychnos spp. L				√	√
Malvaceae	Azanza garckeana (F. Hoffm.) Exell & Hillc.			√	√	√
Meliaceae	Ekebergia benguelensis Welw. ex C.DC.		√			
Meliaceae	Ekebergia capensis Sparrm.	√				√
Meliaceae	Fagaropsis angolensis (Engl.) Dale	√				
Meliaceae	Khaya anthotheca (Welw.) C.DC.	√	√			
Meliaceae	Lovoa swynnertonii Baker f.	√	√			
Meliaceae	Melia azedarach L			√	√	√
Meliaceae	Trichilia emetica Vahl		√			
Meliaceae	Turraea nilotica Kotschy & Peyr.			√		
Moraceae	Ficus burkei (Miq.) Miq.				√	
Moraceae	Ficus spp.					√
Moraceae	Ficus sycomorus L	√				
Moraceae	Ficus thonningii Blume Moraceae	√				
Moringaceae	Moringa oleifera Lour.		√			
Musaceae	Ensete ventricosum (Welw.) Cheesman	√		√		
Musaceae	Musa spp. L.	√				
Myrothamnaceae	Myrothamnus flabellifolius Welw					√
Myrtaceae	Eucalyptus camaldulensis Dehnh	√		√	√	

Family	Species	Chimanimani Presence	Chipinge Presence	Great Dyke Presence	Hwange Presence	Nyanga Presence
Myrtaceae	Eucalyptus grandis Maiden	√				
Myrtaceae	Psidium guajava L	√				
Myrtaceae	Syzygium cordatum Hochst. ex C. Krauss					√
Olacaceae	Schrebera alata (Hochst.) Welw.		√			
Olacaceae	Ximenia americana L		√			
Olacaceae	Ximenia caffra Sond.			√	√	√
Passifloraceae	Adenia cissampeloides (Planch. ex Hook.) Harms	√	√			
Pedaliaceae	Dicerocaryum senecioides Lour.					√
Pedaliaceae	Dicerocaryum zanguebarium (Lour.)	√		√		
Pittosporaceae	Pittosporum viridiflorum Sims	√				
Poaceae	Phragmites mauritianus Kunth	√				
Poaceae	Phragmites australis (Cav.) Trin. ex Steud.	√				
Poaceae	Phragmites spp.					√
Polygalaceae	Securidaca longepedunculata Fresen.			√		
Proteaceae	Faurea saligna Harv	√				
Proteaceae	Protea spp.					√
Ranunculaceae	Clematis stanleyi (Hook.) Kuntze				√	
Rhamnaceae	Berchemia discolor (Klotzsch) Hemsl.				√	
Rhamnaceae	Ziziphus mucronata Willd.				√	
Rosaceae	Prunus persica (L.) Batsch	√				
Rubiaceae	Catunaregium spinosa Thunb				√	
Rubiaceae	Crossopteryx febrifuga (Afzel. ex G. Don) Benth.		√			
Rubiaceae	Fadogia ancylantha Hiern			√		
Rubiaceae	Gardenia resiniflua Hiern	√				
Rubiaceae	Gardenia volkensii K.Schum.	√		√		
Rubiaceae	Pavetta schumanniana F.Hoffm. ex K.Schum	√				
Rubiaceae	Pentas angustifolia		√			
Rubiaceae	Pentas purpurea		√			
Rubiaceae	Psydrax livida (Hiern) Bridson	√			√	
Rubiaceae	Vangueria infausta Burch.	√	√		√	√
Rubiaceae	Vangueria apiculata K. Schum.					√
Rubiaceae	Vangueriopsis lanciflora (Hiern) Robyns				√	
Rutaceae	Clausena anisata (Willd.) Hook. f. ex Benth		√			
Rutaceae	Toddalia asiatica (L.) Lam.	√	√			
Salicaceae	Dovyalis zeyheri (Sond.) Warb.				√	
Sapindaceae	Zanha africana (Radlk.) Exell		√			
Smilacaceae	Smilax anceps Willd.	√	√			

Family	Species	Chimanimani Presence	Chipinge Presence	Great Dyke Presence	Hwange Presence	Nyanga Presence
Solanaceae	Lycopersicon esculentum L	√				
Solanaceae	Physalis peruviana L	√				
Solanaceae	Physalis angulata L	√				
Solanaceae	Solanum campylacanthum A. Rich					√
Solanaceae	Solanum incanum L	√		√	√	√
Solanaceae	Solanum nigrens L	√				
Urticaceae	Pouzolzia mixta Solms					√
Verbanaceae	Lippia javanica (Burm.f.) Spreng.	√			√	√
Vitaceae	Rhoicissus tridentata (L.f.) Wild & R.B. Drumm.		√			
Zingiberaceae	Aframomum angustifilum (Sonn.) K. Schum.	√				
Zingiberaceae	Zingiber officinale Roscoe.	√				
Total		**60**	**40**	**34**	**34**	**53**

Appendix 5 List of Participants

Name	Place/ Organisation
1. Mujuru L	Bindura BUSE NRM
2. Jimu L	Bindura BUSE NRM
3. Muvengwi J	Bindura BUSE NRM
4. Mapaura A	Harare- National herbarium & botanic Gardern
5. Mureva A	Bindura BUSE NRM
6. Chidaya I	Hwange Community rep
7. Munkombwe R	Hwange Community rep
8. Karimanzira C	Chipinge Forestry Commision
9. Ngadziore T	Chipinge Community Rep
10. Mlambo	Chipinge Community Rep
11. Mapundo W	Nyanga Community Rep
12. Mangwarara	Nyanga Community Rep
13. Mufandaedza T	Chimanimani Forestry Commission
14. Tapomwa N	Chimanimani Community Rep
15. Khulumani S	Chimanimani Community Rep
16. Mukudo P	Great Dyke Forestry Commission
17. Nyeleti W	Graet Dyke Community Rep
18. Nicholo E	Great Dyke Community Rep
19. Chikarakate	Concession Herbalist
20. Mafuwe K	Bulawayo Mentor
21. Dhlakama K	Bulawayo BID project
22. Nondo N	Harare- Environmental management Agency
23. Ngoshi B	Harare- Ministry of Environment, Water and Climate
24. Chimanikire A	Harare – Mukuvisi woodlands
25. Mawire B	Harare- WWF
26. Mutete P	Harare- Forest Research centre
27. Tsele	Harare- Fambidzanai Permaculture centre
28. Mamombe	Harare - National Herbarium and Botanic Gardens
29. Matsvimbo F	Harare- BirdLife Zimbabwe
30. Mavhunzi F	Harare- National Biotechnology Authority (NBA)
31. Nyabadza R	Harare- Ministry of Environment, Water and Climate
32. Matiza A	Harare- Ministry of Environment, Water and Climate
33. Majuru/Uzande	Bindura- EMA
34. Chiweta M	Bindura- BUSE NRM
35. Tafirei A	Bindura- Forestry Commission
36. Mwanza E	Bindura- BUSE Health Sciences

37. Nyakudya IW	Bindura- BUSE FAES
38. Masona C	Bindura- BUSE NRM
39. Ncube G	Bindura-BUSE NRM
40. Tsambatare E	Bindura- BUSE NRM
41. Gotosa J	Bindura- BUSE NRM
42. Nyamadzawo G	Bindura- BUSE-ES