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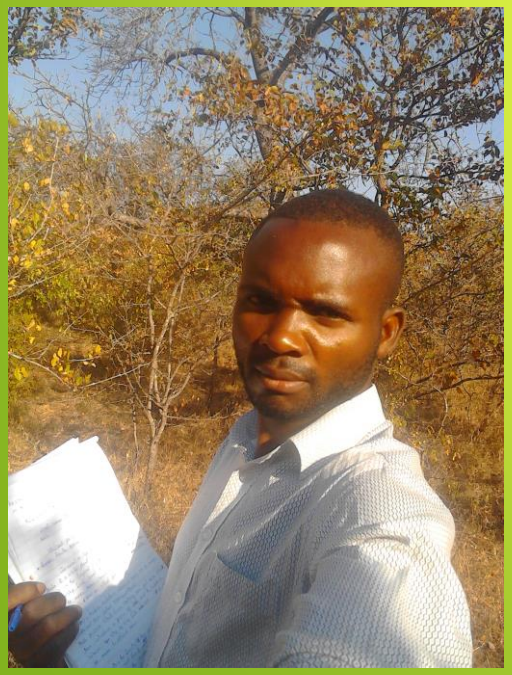
Access and Benefit Sharing (ABS) in Massingir District: a potential case study in the Tradition Knowledge (TK) of ethnobotany



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Access and Benefit Sharing (ABS) support

What is ABS?

It refers to the way in which genetic resources may be accessed, and how the benefits that result from their use are shared between the people or countries using the resources (users) and the people or countries that provide them (providers)

How does ABS work?

It is based on:

- **Prior informed consent being granted by a provider to a user**

- **Negotiations between the provider and the user to develop mutually agreed terms that ensure that the benefits from the use of genetic resources are shared equitably**

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What is prior informed consent (PIC)?

The permission given by the competent national authority of a provider country to a user prior to accessing genetic resources, in line with an appropriate national legal and institutional framework

What are mutually agreed terms (MAT)?

An agreement reached between the providers of genetic resources and users on the conditions of access and use and the benefits to be shared between both parties

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Demographics (2015) (Faostat)	**2015**	**%**
Population	27977.86	
Rural population	18385.00	65,71
Urban population	8737.01	34,29

Land (Faostat)	**2011**
Agricultural area %	62,82
Arable land	10,53
Protected terrestrial areas	15,92

Indexes (Faostat)	**2013**
Political stability and absence of violence/terrorism index (82/141 World Bank, World Governance Indicators 2013)	- 0.27
Access to improved water sources (%)	50,80
Access to improved sanitation facilities (%)	20,30

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Country	NBSAP	NR	BF1	BF2	MEIC1	MEIC2	MEIC3	MEIC4	NB
Angola	x	5	draft	draft	draft	draft	draft	draft	
Botswana	V3	5	draft	draft	draft	draft	draft	draft	x
Republic of Congo	V3	5	draft	draft	draft	draft	draft	draft	x
Lesotho	x	4	N/A	N/A	N/A	N/A	N/A	N/A	
Madagascar	V2	5	x	x	x	x	x	x	x
Malawi	V2	5	x	x	x	x	x	x	
Mauritius	x	5	x	x	x	x	x	x	
Mozambique	V3	5	draft	draft	draft	draft	draft	draft	
Namibia	V2	5	x	x	x	x	x	x	x
Seychelles	V2	5	draft	draft	draft	draft	draft	draft	x
South Africa	V2	5	draft	draft	draft	draft	draft	draft	x
Swaziland	x	5	x	x	x	x	x	x	
United Republic of Tanzania	V2	5	draft	draft	draft	draft	draft	draft	
Zambia	V2	5	draft	draft	draft	draft	draft	draft	x
Zimbabwe	V2	5	draft	draft	draft	draft	draft	draft	

UNCBD

NBSAP: National Biodiversity Strategy and Action (art.6 CBD) - 15 Parties have submitted NBSAPs: 11 Parties submitted revised versions as well
NR: National report (art.26 and art.10a CBD)
BF1: Biodiversity Facts - Status and trends of biodiversity, including benefits from biodiversity and ecosystem services
BF2: Biodiversity facts - Main pressures on and drivers of change to biodiversity (direct and indirect)
MEIC1: Measures to Enhance Implementation of the Convention – Implementation of NBSAP
MEIC2: Measures to Enhance Implementation of the Convention – Actions taken to achieve the 2020 Aichi Biodiversity Targets
MEIC3: Measures to Enhance Implementation of the Convention – Support mechanisms for national implementation
MEIC4: Measures to Enhance Implementation of the Convention – Mechanisms for monitoring and reviewing implementation
NB: National Website
Draft: The content of the biodiversity profile is still draft. The text below has been prepared by Secretariat of CBD (SCBD) and remains subject to final approval by the Party concerned

Access and Benefit Sharing (ABS) support

Country	Signatory	Ratification	Party	Notes	NFP	CNA	MSR	NDB
Angola	No	No	No party		1			
Botswana	No	2013-02-21	2014-10-12	acs	1			
Republic of Congo	2011-09-21	2015-02-04	2015-05-05	rtf	1			
Lesotho	No	2014-11-12	2015-02-10	acs	1			
Madagascar	2011-09-22	2014-07-03	2014-10-12	rtf	1			1
Malawi	No	2014-08-26	2014-11-24	acs	1	1	1	
Mauritius	No	2012-12-17	2014-10-12	acs	1			
Mozambique	2011-09-26	2014-07-07	2014-10--12	rtf	1			
Namibia	No	2014-05-15	2014-10-12	acs	1			
Seychelles	2011-04-15	2012-04-20	2014-10-12	rtf	1			
South Africa	2011-05-11	2013-01-10	2014-10-12	rtf	1	1	3	1
Swaziland	No	2016-09-21	No party	rtf	1			
United Republic of Tanzania	No	No	No party		1			
Zambia	No	2016-05-20	2016-08-18	rtf	1			
Zimbabwe	No	No	No party					

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NFP : ABS National Focal Points
CNA : Competent National Authorities
MSR: Legislative, administrative or policy measures on access and benefit-sharing
NDB : National Databases and Websites

Access and Benefit Sharing (ABS) support

ABS in practise: Who needs to understand the uses of genetic resources?

Providers - important that they understand the value of genetic resources to:

- Creates incentives for conservation and sustainable use
- Ensure that benefits are shared equitably

Users

- Some research institutions and industries depend on improving their understanding of genetic resources to further their work
- End users include anyone who buys or benefits from the commercialized products, or benefits indirectly from the value that genetic resources can have in improving production, such as increasing agricultural yields and food supplies

Access and Benefit Sharing (ABS) support

SECOSUD II aims to….:

- **Development of the complementary rules**
- **Capacity Building**
- **Public Awareness**

A case of ABS implementation within the SECOSUD project mainly oriented to create fruitful conditions in ILCs to define procedures and engagements in developing their own contribution to the exploitation of genetic resources, based on rural development and on sustainable use of biodiversity in a production chain involving both providers and users

Why ABS should work here?

- It is a wild area with a high biodiversity
- It is a rural area where Shangana people live and use TK to take care about illness and for food supply
- It is an area mainly covered by the Limpopo National Park
- It is a transfrontier area
- It is a rural livelihood in which a deep need to enhance is requested
- It is a territory mostly not touristic because of the lack of infrastructures
- It is an area in which still does not exists a «value of chain»
- It is an area with a strong need to develop
- It is a territory with an high number of small villages spread along the river

Socio-economic framework

This area can be well defined as ‘agro-pastoral’, in which households generally depend at least as much on livestock as on crops, and especially on cattle. It is anyway a quite poor zone, and cattle holdings are actually lower than in other more agriculturally-based zones.

The main food crops are maize, cowpeas, groundnuts and sweet potatoes, and there is intercropping also of watermelons and pumpkins. Orange trees are maintained, and there is a small amount of vegetable production.

The population density is very sparse with some 4-5 people per square km, and the natural vegetation offers an abundance wood for processing into charcoal, most of which is destined for urban markets beyond the zone towards Chokwe.
Although Massingir town is connected to Chokwe by an acceptable road, and thus there is a trade route through to the Maputo-Inhambane highway as well as the railway line connecting Maputo to Harare, the zone is relatively isolated from the commercial centers within the country, and the road network beyond the main road to the villages is poor and often impassable in the rainy season.

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Ethnobotany knowledge

Throughout history most medicine has been made from plants. The knowledge of the properties of plants and their uses is the basis of many traditional health care systems and still plays a central role in the discovery and development of new drugs.
In Africa, plants have a long history of use for the treatment of different diseases and complaints and have long been the source of important products with nutritional and therapeutic value.

Traditional medicine is still the most accessible health care system, mainly in rural areas, where national health care systems are scarce, poor or practically non-existent. Plants play a fundamental role in communities, in fact most of the African population not only depends, but largely relies on the use of traditional medicines as well as on the services provided by traditional medical practitioners, whose knowledge about plant species and their ecology is invaluable.

Mozambique is an important repository of vegetal diversity. It is estimated that at least 800 are used for medicinal purposes.
The collaboration between research groups contributes to the preservation of traditional knowledge and practices related to plants and their therapeutic uses.

Moreover, the identification of species with medicinal uses (including the parts of plants used, the preparation processes, the modes of administration and the different pathologies associated with them) is a fertile ground for studies aiming at the scientific validation of their properties as well as the safety, efficacy and quality of traditional medicines.

The ABS sustain to the use of TS in ethnobotany

- 57 species of ethobotanical interest **collected until now** for medicinal purposes and for food supply
- Most of these species are objects to investigation
- At least 5 species are not reported in the international bibliography as medicinal ones

Next steps

- Cross-check with scientific data and information while completing the inventory
- Compare between local and national/international uses of these plants, good practices and existing and potential value-chains
- Organise a two-day meeting for information exchange between local community representatives, facilitators and National Authorities in view of the definition of the two instruments of ABS:
  - PIC (Prior Informed Consent) and MAT (Mutually Agreed Terms)

Next steps

The access system to the genetic resources arising from the bidiversity is itself one way to modulate benefit within the providers and the users.
The access to this knowledge is crucial for keeping the benefits from the resources.
The consequences of this is that it applies both at the scientific investigation and commercial ones.

In the statement of 19/2007 of Moçambique (article 1 (a) e (b): access to the the genetic resouces is

"*a atividade realizada sobre o recurso genético com o objetivo de isolar, identificar ou de utilizar a informação de origem genética ou moléculas e substâncias provenientes do metabolismo dos seres vivos e de extratos obtidos destes organismos, para fins de pesquisa científica, desenvolvimento tecnológico ou bioprospeção, visado a sua aplicação industrial ou de outra natureza*".

While at the same time the access to the traditional knowledge associated is

"*a atividade realizada para a obtenção de informação sobre conhecimento ou prática individual ou coletiva, associada ao recurso genético, de comunidade local, para fins de pesquisa científica, desenvolvimento tecnológico ou bioprospeção, visado a sua aplicação industrial ou de outra natureza*".

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Species	Author	Family	Shangana name
Acalypha indica	L.	Euphorbiaceae	Ntlambissane
Adansonia digitata	L.	Bombacaceae	Ximuvo, Ximuwa
Aloe marlothii	A. Berger	Aloaceae	Mhanga
Aloe zebrina	Baker	Aloaceae	Ximhangani
Androstachys johnsonii	Prain	Euphorbiaceae	Cimbiri
Ansellia africana	Lindl.	Orchidaceae	Phakama
Asparagus africanus	Lam.	Asparagaceae	Kwangwa la tilo
Balanites maughamii	Sprague	Balanitaceae	Nulu
Blepharis diversispina	(Nees) C.B. Clarke	Achantaceae	Nchachacha wa mananga
Boscia albitrunca	(Burch.) Gilg & Gilg-Ben.	Capparaceae	Nxukutsu, nxukutsi
Boscia foetida	Schinz subsp. filipes (Gilg) Lötter	Capparaceae	Xicutso
Cassia abbreviata	Oliv.	Fabaceae	Lumanyama
Cissus cornifolia	(Bak.) Planch	Vitaceae	Mphesani
Cissus quadrangularis	L.	Vitaceae	Covoloti
Colophospermum mopane	(Benth.) Léonard	Fabaceae	Gungwa, Shanazi
Combretum imberbe	Wawra	Combretaceae	Monzou; mondzo
Crinum stuhlmannii	Baker	Amaryllidaceae	Khonwua
Cucumis metuliferus	E.Mey. ex Naudin	Cucurbitaceae	Dema
Cucumis zeyheri	Sond.	Cucurbitaceae	Xiyakayani, xihakahani
Cynodon dactylon	(L.) Pers.	Poaceae	Rintlhangi, rithange, rithangi
Dalbergia melanoxylon	Guill. & Perr.	Fabaceae	Xipaladze
Dichrostachys cinerea	(L.) Wight & Am	Fabaceae	Ndzenga

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Elephantorrhiza elephantina	(Burch.) Skeels	Fabaceae	Xivurayi
Euclea racemosa	Murr.	Ebenaceae	Mulala
Ficus capensis	Thunb.	Moraceae	Nkuwa
Ficus sycomorus	L.	Moraceae	Nkuwa
Flueggea virosa	(Roxb. ex Willd.) Voigt	Euphorbiaceae	Nsangasi
Gardenia volkensii	K. Schum.	Rubiaceae	Xitsalala
Gossypium herbaceum	L.	Malvaceae	Nuba
Grewia flavescens	Juss. var. flavescens	Tiliaceae	Nsihana
Grewia hexamita	Burret	Tiliaceae	Nsihana
Grewia monticola	Sond.	Tiliaceae	Nsihana
Guibourtia conjugata	(Bolle) J. Léonard	Fabaceae	Ntsotso
Gymnosporia heterophylla	(Eckl. & Zeyh.) Loes.	Celastraceae	Xivambulani, xichangwa
Hermannia micropetala	Harv. & Sond.	Sterculiaceae	Sindzambita
Hibiscus meyeri	Harv.	Malvaceae	Kongowa, Kloklonya
Hyphaene natalensis	Kunze	Arecaceae	Nala
Lannea schweinfurthii	(Engl.) Engl.	Anacardiaceae	Xivombo nkanyi, munganikomo
Loeseneriella crenata	(Klotzsch) Wilczek ex N.Hallé	Celastraceae	Lorho, nhlohlo
Maerua edulis	(Gilg & Gilg-Ben.) De Wolf	Capparaceae	Xikolwa
Maerua parvifolia	Pax	Capparaceae	Nongonoko
Manilkara mochisia	(Baker) Dubard	Sapotaceae	Wambo
Moringa oleifera	Lam.	Moringaceae	Muxidji
Olax dissitiflora	Oliv.	Olacaceae	Nondzomuntana
Ptaeroxylon obliquum	Radlk	Ptarerolxylaceae	Ndzari, Ndzharhi

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Sansevieria hyacinthoides	(L.) Druce	Dracenaceae	Xikwenga xa kwhati
Sarcostemma viminale	(L.) R. Br.	Apocynaceae	Neta
Sclerocarya birrea	(A. Rich.) Hochst.	Anacardiaceae	Nkanyi - canhi (tree and fruit), tsula (tree), ditsula (fruit) -
Secamone parvifolia	(Oliv.) Bullock	Apocynaceae	Nyokani
Spirostachys africana	Sond.	Euphorbiaceae	Xilangamahlo
Strychnos madagascariensis	Spreng. ex Baker	Strychnaceae	Nkwankwa
Terminalia sericea	Burch. ex DC.	Combretaceae	Nsunsu, nkonola, kondla
Tinospora caffra	(Miers) Troupin	Menispermaceae	Nyokani ya yikulo,
Trichilia emetica	Vahl subsp. emetica	Meliaceae	Nkuhlu
Ximenia americana	L.	Olacaceae	Ntsengele,
Zanthoxylum humile	(E.A. Bruce) P. G. Waterman	Rutaceae	Manungwani
			Ximintua mintuane
			Tchovoloti, Chovoloti
Limnophyton obtusifolium	(L.) Miq.	Alismataceae	
Chenopodium ambrosioides	L.	Amaranthaceae	Kanunka uncono
Hermbstaedtia odorata	T. Cooke (Burch.)	Amaranthaceae	Chomeli
Ozoroa obovata	(Oliv.) R.Fern. & A. Fern.	Anacardiaceae	Xinungu, chimungumango, chinungo, chinungumafe, chinungumafi
Adenium multiflorum	Klotzsch	Apocynaceae	Chimua
Pergularia daemia	(Forssk.) Chiov.	Apocynaceae	Furana
Stylochiton natalensis	Schott	Araceae	
Ageratum conyzoides	L.	Asteraceae	
Commiphora africana	(A. Rich) Engl.	Burseraceae	

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Boscia mossambicensis	Klotzsch	Capperaceae	Chimapamapane, chicutlu
Cadaba natalensis	Sond.	Capperaceae	Tssatssassana, mejacocone
Capparis tomentosa	Lam.	Capperaceae	Caua, cahu
Cladostemon kirkii	(Oliv.) Pax & Gilg	Capperaceae	Tumangoma, mahuco, maúco, buguane, tambocolata
Thilachium africanum	Lour.	Capperaceae	Compfa, compha
Elaeodendron schlechteranum	(Loes.) Loes.	Celastraceae	Chigugutzo; chigugusse
Maytenus senegalensis	(Lam.) Exell	Celastraceae	Chixangua, Chichangua; chilhangua
Combretum apiculatum	Sond.	Combretaceae	Chivonzôane, samabulile
Combretum microphyllum	Klotszch	Combretaceae	Funté, mumbambanguene pfunte
Combretum molle	R.Br ex G. Don	Combretaceae	Chicucudze, xicucutce
Combretum mossambicense	(Klotzsch) Engl.	Combretaceae	Futé, funté, fute
Combretum zeyheri	Sond.	Combretaceae	
Pteleopsis myrtifolia	(M.A. Lawson) Engl. & Diels	Combretaceae	Ludzane

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