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Floral Species Diversity and Ethano-botanical Study of Surendranagar District (Gujarat) Of Western India



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Short Profile

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Hibiscus mutabilis

Hibiscus rosa-sinensis









Hibiscus taiwanensis



Hibiscus tiliaceus

ABSTRACT:

Knowledge of floristic diversity and uses of flora is essential for understanding ecosystem and its functioning. The present paper deals with the floral diversity and ethano-botanical study of the Bandiyabedi forest of Surendranagar district of Gujarat in western India. Total 70 plant species were recorded comprises of grasses (24.28%), herbs (50%), shrubs (14.28%) and trees (11.42%). Most Dominant communities were herbs, followed by grasses. Plants of Poaceae and Fabaceae families were most dominant. Most of the species are used as fodder and all the plants shows medicinal uses. 70 percent of the total species are indigenous and we require maintaining and uplifting this diversity.

Keyword: Grasses, Herbs, Shrubs, Trees, Diversity, Surendranagar District

INTRODUCTION

Plants cover virtually all terrestrial regions of the earth with the exception of ice-covered regions and arid lands. Plant species diversity represents millions of years of evolution and provides an important visible expression of biodiversity, giving character to ecosystems and shape to genetic diversity extremely. India is one of the 12 mega biodiversity countries of the world and consists of 17,000 flowering plant species. It accounts for 8% of the global biodiversity with only 2.4% of the total land area in the world (Hajra, 1997 and Reddy, 2008). The tropical dry forests occupy 38 % of the total forest area in India (Dixit 1997). Tropical forests are often referred to as one of the most species diverse terrestrial ecosystems. About 42% of world forests are dry forest (Joshi, 2012).

The vegetation communities of tropical dry forests have been documented as the most endangered ecosystems in the tropics (Hoekstra et al. 2005). These forests are declining at alarming rates due to deforestation for extraction of timber and other forest produce (Murphy and Lugo, 1986 and Raghubanshi and Tripathi, 2009). Plants form the major structural and functional basis of tropical forest ecosystems and can serve as robust indicators of changes and stresses at the landscape scale. Many tropical forests are under great anthropogenic pressure and require management intervention to maintain the overall biodiversity, productivity and sustainability. These forests are rich in medicinal and economically important plants. Over-exploitation has resulted in a rapid loss of tropical forests which is considered as one of the most serious environmental and economic problems all over the world (Hare et al. 1997). There is a growing interest in guantifying habitat characteristics like forest structure, floristic composition and species richness in Indian forests (Kumar et al. 2002 and Yadav and Yadav 2005). During the study of floristic diversity of Panchmahal total 473 species were found which includes 133 species of trees, 26 species of shrubs, 68 species of grasses, 49 species of climbers and 197 species of herbs. Total 85 families were recorded out of which the main dominating families recorded were Poaceae and Fabaceae (Pilania et al. 2013). It is widely accepted that tropical regions are facing loss of biodiversity. So there is a huge requirement to collect data of different places of vegetation.

A study on tree species diversity of tropical forests is ecologically significant besides its usefulness in forest management. Understanding species diversity and distribution patterns is important for helping managers to evaluate the complexity and resources of these forests. This study investigates species diversity of tropical dry deciduous forest of Bandiyabedi in Surendranagar district of western India.

Materials and Methods

Bandiyabedi forest (22° 52′ lat and 71° 16′ E long) is located in Than tehsil of Surendranagar district of Saurashtra region in western region of Gujarat State of India (Figure 1). The forest is dominated by thorny trees. This scrub forest spreads in a small and isolated area of 1843 ha. Forest is protected from grazing and fuel wood collection. Terrain is undulating and soil is residual derived from basalt rocks. There is considerably thick soil in troughs, whereas elevated tops constituting greater proportion of the forest area have thin soil mixed with pebbles. The analysis of study area of tropical dry deciduous forest was conducted by using randomly placed, 1 x 1m (for grasses and herbs) and 10 x 10 m (for shrubs and trees), quadrates and intensive observation for the collection of samples. The size and the number of quadrates were determined by the species area curve (Misra, 1968) and the running mean method (Kershaw, 1973) respectively. The collected plants were brought to the laboratory, identified and classified to their respective species level (Cook, 1908, Santapau, 1966 and Patel, 1971).

RESULT

During the study of floristic diversity total 70 species were found which includes comprises 17 species of grasses (24.28%), 35 of herbs (50%), 10 of shrubs (14.28%) and 8 species of trees (Table 1) (11.42%). Total 34 families were recorded out of which the main dominating families were Poaceae and Fabaceae and some of the recessive families were Acanthaceae, Arecaceae and Lilliaceae etc. Percentage wise 50% were herbs and 24.28% for grasses which was maximum (Fig. 1) and least was found for trees (11.42%). From the above observation, it can be concluded that among trees Fabaceae is the dominant and leading family, species wise (2) as well as genera (1) wise. For herbs Fabaceae and Poaceae was found to be dominating and families found for shrubs each family consist of single species of genus as well as species. Poaceae was found to be dominating families found for shrubs each family in grasses with 11 genus and 13 species.

All the species are economically important because they either produce edible fruits and seeds which are used as medicine, food, fodder or fuel and are also important ethno botanically (Table 1). Out of all 70 species 16 species are used as fodder 57 species are used medicinally important and rest species are used for other purposes. 70 percent of the plants are indigenous.

Discussion

In the present different areas of Bandiyabedi forest (220 52' lat and 710 16' E long) is located in Than tehsil of Surendranagar district of Saurashtra region in western region of Gujarat State of India were visited for exploration. Its represents relic and unique vegetation of tropical dry deciduous forest. The dominant families were Poaceae and Fabaceae. These families were also found to be dominant in the earlier studies of Panchmahal district of Gujarat ((Pilania *et al.* 2013). Poaceae is the most dominant family comprises of grasses and sedges. It is one of the most diverse communities in the angiosperms. The second most dominant family is Fabaceae dominated mainly due to different species of *Tephrosia senticosa* and *Hippocrepis unisiliquosa* etc. Among trees the most dominating species found were *Bauhinia racemosa, Anogeissus latifolia* and *Acacia leucophloea*.

On account of its economic, nutrional, medicinal and socio-economic importance plant or plant parts are being harvested and sold in the market for livelihood (Alao and Popoola, 2002 and Udo and Udofia, 2006) thereby destroying the biodiversity. Moreover dry deciduous forest are one of the most threatened of all ecosystem, occupying almost 40% of tropical lowland sites (Janzen, 1988 and Murphy and Lugo, 1986a) hence need to be conserved (Pilania *et al.* 2015). During study it was found that each plant species was found to be economically important in one or other way.

Due to over exploitation and deforestation, the forest resources are under severe threat and dwindling diversity of forest trees and availability of non-timber forest products have substantially deprived the rural poor of a supplementary source of both income and food. Deforestation has many ecological, social and economic consequences, one of which is the loss of biological diversity. Although it is widely believed that tropical regions are experiencing losses of biodiversity at unprecedented rates, we lack information about the rate of habitat loss. So it is the prime requirement to have data of the present species diversity of tropical forests

	Table 1: floral doppsate, and ethang-botanical uses of plants at pandyated, forest.						
ār Na	Plant Name	Family	Common Name	Local Name	Nadira	Habir	Une
1	Phyllonibur maderaspaense L	Eugheritisten	Shongghul.	Chaires	Irdia	Note:	The leasts are experiment and displaced The seeds are commissive, limiting, tenic to the liver, disord- displaced and anterpart to the beyong such in banchish remains, griping eghthologies and spripe.
2	Sekina neuron (Ranim) Supi	Restrac.	White grass	Ratal pas	Aurolia	Onus	In India it is an excellent pusture gran It is used for grazing, hay- reaking and cut forage.
3	Enverse course (1)	6 6/079/06	Puple Fleshane	Sahadasi.	India	Notes	The juice of he plant is given a dilition with unionly incontinence. The leaves are even as a potietic. A disordient of it is disorgiven in disordies, exampleshes and for enough and color.
4	denera anacha 8001 (L-)	99950mmm	Kutch tere	Khair	India	Ins	Bask is seningent, advicentic, and consorts, miggentic, pag- indice, influenziants, and them, beamhold, indigentics, there basks, (page/prop. periods, liprory and eliphentics), stemphor the teach.
*	desets fromthing (Reak)	Enhancen	Bervens Aracia	Ne beck	India	Test	The genericant sents are molest and rates as a vegetable Leave tender shoes and peds are reporty consumal by proce shop an earlier. It is apprecised as forward and is available for charmed pedactor Fibres from the immobule are used to make fish nets and mugh rep Ours is used mathematics.
0	Acasia Senegal (L.) WAR	Educous	Oun <mark>appi</mark> s	Osostacia baccal	Ecosian	Tme	The sends are doint and presented for human meangrins a vegenitie for long flowle suffice new yield a story Flow use for configs, upon and follow for the follow for instruction of sufferent boths and take polish well. Row are use to treat dynamics, grouphon, and sock for the only
Sr No	Pant Name	Family	Common Name	Local Name	Native	Habir	Tim
7	dekoransker arres Lane	óren echeraet	Prickly Chall fave	Annhadi. Annhada	India	Note	Flux pacifics visited upps gips multitis, so much pain, dopte intermittent for an examp, hopen, singworm, and elephantian Learner are unaful in comparison in a loss of a loss unaful in mean inflatation, much, partials, lossed and skin disease. Flux passas and exercate gappen, and, in the densit four design demonstration of a concerned gappen, and, in the densit four design demonstration.
3	désana ésmin L	Banksesense,	Upsido-dewn 1955, Baebab	Good ania	Expains	Ins	Fruit is voy sich is vitamin C and B2 and makes a refershing doid. The tens is a searce of fine quality hency. Wild been manage to performe the soft wand and longe that hancy in the holes.
	delucenus lanansalas	-	Mangeeve	Ebatics.ph.	India. Altica	Ones	Unefail to wail highlight and good feddor place
10	ADRIANSINA WARAGANADAR	Estrepet	Red Slave.	Lal access	India	Holes	Madained imposure
11	dedeceraphe periodice (homef)	- Searchaoas	Characteria,	Kolmus.	Sain -	Hote:	Used in the lime of pavelor and descenses to test from appli- endame, the pavelogic hematowile, instantic hematowing particles from the m frame of particular pavelous with descentions instrum allocations for trainmedicately.
12	docence autoia (Bood)	Combactaccas	Butten ma	2bacés	Asia	Ins	In forwars an an important pollar source for bee Weich good dramonal and forware Glauge grows in a post obtained for your apply and a use in call posting. For weatherman, in dy opportance, and as a binding spect pharmonactical. The lines made back are used for appring, he leaves yield a black dy that is used some source of the appring, he leaves yield a black dy that is used some source of the appring.
13	Scenes alconomy	Searce:	30.00968 000000	Vicera gran	America	Rota	A provening gran due to low leaf production. A good plane grans and useful for planting in distanced will
14	dound itselfs allows.	Reasons.	Doard	Latin.	Asia	Notes	Fodder and medicine
Sr No	Plant Name	Pauly	Common Name	Local Name	Nadira	Habir	Tree
15	Japanagus (apportus, Wild	OAD WILL HURSE	Butter mik met	Şatar, ari	led a	Kaba	The bealing qualities of Response are useful to a wide array or allowers Appropriate Stammars memory porces, intelligence and physics stronge and maintening synchronic and the work of the or offer on the formula operature very store. Being a spray again relation both, in researchive arrive to beneficial in working or opplaints. The memory of planthar theory enforced as biomesevers, combined, and the proprior, taming amongoing, spherelinia, date by provide, taming amongoing, spherelinia, date by antinegrine.
10	denocouse coase (R.Br.)	Bearras.	Carloserev Spear-grass	dau's grass	Aria	Gran	Forsp for ground solution and a groundary or for spontation travel land
17	Balantone executiones. Debin	Zogaghalloose.	Desatt date	inantos.	Alim	Sheek	The finite poly of both unego and sign facinits addels and miner data or finit. The facinity processed into addeds and symmetry as in Chem- ur, Naphala Space in Napria, a way impediate it Solar. I provide a structure is compared their is produced from the struct it such and the structure when firsts. It is used as a given for tables, further some answer shall and greateneds and is the repair of transf context and some of the structure and as in the repair of transfe
18	Baukinia (2005)001 Lam	Gacolgisister 5	Bidi, Leaf Test	0000	India	Tops	The plant yields good films for reper. Used as fael wood,
19	Becore a bagada Bechara	Robinson	Theorem of	Services	ledia	Hates.	Leaves applied to head in same of headache, with it acclin effect, somewhat aligning he pair The secold is constrained and devalued in dynamicry and depolyce, Secold consistence by some as aphrodisian.
20	Berkonskika berkondel[12]	Second.	Cana Blucators	jasa kana	America	Grass	Useful as a forage for grazing ationals and a groundcover for group grazing channel land it is very drought resistant.
21	Booburo. Gathar (Reft)	Constant.	Sweet Signal Grass	Merica.	India	Gras	Single meating-start finging gravity, guyy, pain the wayies.

Sr No		Tanity	Common Name	Local Name	Saire	Babir	Une
22	Colorada press	decispiedacces	Davi wa Buit Geleveras	dek te	Service.	Shab	The bask and latin are used in berring and to airdle milk. White, nilly, strang, oplindnical, flocible and datable storn flore used for rationarguegeness, such as for making ropes, to form sheap con- gramy bags, how noting, fishing nats, and in the manufacture of pagen, pulp and deplicating samella.
23	Cappane devide Jm	Geperitese	Bar Caper	Kanla	Ania, Alim	Shab	The field is reliabed by earsels and date, wherever within their reach, by genus. The fields are date constanted by runs in the Datas. It is used for discussed and forwards in its in ratios range. Toketor: The model is very hard and used to reach waterpipes and water templa. The way bitter news are used in first ladian, and Amaightermargories and the reaching is such as one or offen joints.
24	Gardingtomom Astionsciem L	Sezindaette	Balleen Vine	Escénica	Masine.	Softw	Used in the resument of charmonices, nerveus diseases, stiffs as a f the links and molecleis. Leaves we easked and reals into a tes, which air also also fails. Solid leaves are used as a problem on swellings. Young leaves can't conded to vegetables.
29	Cassa exclosionillos	Canalginiseser	Satacan	ðaræl	India	Shark	Bask and most are antisigent to for browch. Zone is used in shin discuss. Lences and builts are applyipping. Sends are used in applyippings, conjunctions, diabetes and oppings using.
24	Cassia paggig Lan	Canalginisme	Dearf Cassia	ionei.	lodia, Australia	Gaus	Pasts, pewdre juice, and domesion for treatment of various informers. The shareform active sale-fraction and fire popperator were investigated for their antimizedeal activity by using micro elivision method.
27	Genekroa lenetypinet (Hazk.)	Reson.	Spiny Bur Gran	landbur		Guas	The burn sling to animal far and the electring of formance, this helps to distribute the reads scenar considerable distances. The sharp spinor of the burn can easily generates the fields, they can cause mechanical injury to the much parts of genering animals and see painful to step on. Appendix, butts in Elizabi make the scenar face scenar. The conlogical value of Sandhar to wildlift is low.
Sr No	Plant Name	Family	Common Name	Local Name	Sains	Babir	Um
23	Galarist bardene Sw.	Reason.	Aigen gaus	Lagán mete	America, Abica, Assemilia, India	Gran	Uncful die fedder vhen ynung, hat minute pan it by vhen old. Fond value high. Plant und in fedder before flevering, hat later entlie de nat reliah it.
29	Chinespheren adareanen (Bash.)	Lünner.	Stati.	Safet masi	ledia, Africa	Notes	Used as a popular tenic and aphrodistan in Appanoide maticine. In nonliner Negeria its takens are crushed to produce a lation used to tenit pulnes-seem.
30	<u>Constitution than the second </u>	Gueschineen.	Line apple	Oscilichi	Asia, Alira	Sinte-	Cologish is vidily used in folk malience these ensuries. The interest in its sectionResensatory properties has been moreced in moden times. Used for different purposes, it can obtar be main or chaleman for further users in malience and as energy source, constituent and biofast.
31	Cinnulas odeum Bauk	Exploritions.	Langian Badak	Nappy pun	3ofia -	Mathe	Young leaves are easen second as a vegetable or prepared into a givey seare. In traditional medicine the leaves are used as a leavaire and as an external treatment of arthma when pounded tagether with a piece of lank.
32	Classe weeksl.	Gappwidwaw	Yellaw Spider Flawer	Teleceti.	India	Sate	Oceasionally a services word
33	Georgian Langhalann L	Constitution	Bengal day Sewer	Si pelos	ladia -	Sate	In China, the plant is used medicinally in a diametic, febridge and anti-influmenancy. In Pakinan it is used as animal fielder and also enter by humans as a regenitic is in also used figure medicinally, but with different gaugested efforts, including as a locative and to care influmenations of the skin as well as lopony.
34	Catchroix anishasa Bacura	Turner.	Juse	Backeti.	Africa	Sints.	The plant is used in indigenous gapping f medicine as a toppe, and as excling medicine in forms, also user, in gappings,
34	Plant Name	Family	Common Name	Local Nome	Same	Babie	Das
35	Coppa contral	Consolution	Literal bind	Dandi. Badrovali	héa, Alim	Robs	Papular halogings plant and is used in folkher medicine for alments soluting distance, ulters, untrea, applements, sumable trade and aphendistar paperse, moders for blocd, and is useful consequents, lapars, and uniony distance. The plant is medicinenally used in Dahmin as experiment and applying ages.
a	Ganna esectore	L Capasson	Rod nut migs	Same chips	India	0mm	Many dronginal tobor frat live in the Areasenian respirat minibrane beliave frat bje bjegrane har maginal pashice and hav used i to same disease head varies, reliferorpsis, and a frat. The Basenabus Indiana, dare he Areasen ever basis, have used Cognese, adjustants in help pregnant varies induse 14975, or even form an analy seen doorsin.
37	Ciperas montas Lina	Саранные	Сене-длан	Mess (b)(p)	bán.	Onus	Caminative, animpers, anti-inflavoratory, autokaosydo bapapapapapapa, diamta, artipersia, analpesia, bapapapapapa anti-antipersianal problema, indiparito, gyg, diamtera, dy antiny vemiling and from the as a hypothelicourbicopic drag and or obtainy
31	Decolociences especies/clima)	Gamiacus	Egyptian an older grass	<u>Values</u>	Egypt	Guas	Scotle usual for making digguing or balance and rates as a scoling agent. In Addies, demonitor of scotle used to relieve pairs in the region of the leading, scores and leaves applied colorably for incomment of decom- in mathemal Their mathematics, use for diversity, and anti-inflammatory and anti-gynetic of feath plant used for forces. Used extended for rescalar and aloces.

Sr No	Real Yours	Family	Common Name	Local Name	Naire	Robie	Une
39	Distra muticas (L.)	ð densskera n	-	Laboura	bein	Rebs	Leaves and young theors of D gopt trajects, we beally used as a vegetable, e.g. in Africa (Ethiopia, Karya) and in India. In Korya dhay ang parkinshing peptihan as a solidali vegetable amongst contact when In India the bases are made into context or the anticeptant is builted in water and some out with wall shall childs a ratio and flowers are used to treat unitary distributes.
40	Digitaria indamiwa L	Reaman.	smooth mitgrass, small onlognas	Small Bambere grass	Lennia.	Quer.	Occurs up and used as $g_{\rm s}, \sqrt{g} p_{\rm s} p$ has excellent lenging qualities and makes $g_{\rm s} g_{\rm s} g_{\rm s}$ while four that can be used for sometime.
41	Digitaria congueralia (L.)	Dewood	nayžure jedz	Runbee grass	Settio.	Ónu+	A fibre detailed from the plant is used in making page A dependent of the plant is used in the watersent of generatives. A fields remedy deventments and debility, it is also said to be exercise
42	Emerania aliasia laik	čewast.	Leve pass	Candy grant	America. Alfora, Ania	Onsex	Auxiliary plants Greeds and palses Films Farsy to Medicinal plants
43	Bongogasia Guonada Sara	Reason	Roma Monking yang	Chakina bains	Alia	Qnux	A very polashing press that is a wild'y achieved poster, and makes pool bay. Because is is an easy to establish and power repidly, it is more for better present for one for a minor (repeatedly in minimization of ore of support and present down).
44	Eupkorba <mark>in rall</mark> i L	Bugherbierree	Estatis Plants	ensis .	Ania	Shub	The miley lates in this place is extremely initiating to the kin and macross and is testin. Contact with kin causar server initiation, redirects and a branching sectation, while while the per may cause servers pair, and in some cause temperary bindrates for several days.
45	Enclosida alconvier. L	Gaasababaaa	Dwaf Maming Olary	Vierseksentt. 15	befa	Set :	The whole plant is used in the Gostembery. It is used extensively as a fibrifuge and ratio With same and ralk it is used for forces normal debiling, and has a frameway the for sphills, see full, etc. it is used to be a seveneign remedy for lowed amplains, especially dynamicary.
3r No	Plant Name	Family	Common Name	Local Name	Native	Robie	U asi
48	Engen an and an lim.	Terretelloom	Center Prickly Clayter	Diameri.	ledia	Rata	Anningunt, gelegsieglegeligenfiguntiller mit fehnligen Applied te sharanan, sonskitus gilande mit wounde, ske given as pergin lande gestet specifiegle geler und for derangenge. Einste eit annal punt meinen, speceptionensis, speceptigelige Plant and- given te thefater sufficient form specifie.
47	Glassaayna glaaaydda DC	Comproint.	Baccases estal	Easther Survey	Asia, Auronita	Rate	Preparation form the most is said to be remody for analys bite and scorplan sings.
43	Heliciene warn L	keen laane.	Indian surew suc	Opobathada Slampbal	India, Aurentia	Shak	Rent bak und so multiche de digentie dianden. Deld Suit set und as ameliaine de samach acht and verwing, Back is she und un multiane fondiatents Raik of nest und new schleit aus inscehelial untivity. Thebrado give annune film and word und for fact.
49	Naznovani verailigueni L	Lahonson	Single Fiewend Homowhee Vetsih	Olgankasje	Letteis.	Mates	Plant use Forage and feddor
40	bidagaface conditation Hayna	Colosses.	hour-loaf indigs	Ossbatica	India, Auropilia	Mates	Food and Dink, Fenge, Medicine
53	Kullinge breghter Basis	Copensions.	Onun vatar solgs	Onum Astilinge	lodia, Accentia	Mathe	Chinese medicine englosing on the whole plant, flat, Wooke, functions eventing fever, aveiling describention attending will and fever, realistic, dynamoy, skin labing, finite bias endourned, ready used to Optimia.
f 2	Manana engenen Wille	Colossecose	Themy staff	Easters	India	Shab	The assume of the plant these quipting effect on some encour. The plant is reported to passes an taparmedic properties
53	Malananasalan Jasawasasin Inde & Snach	Remon.	Languages (A. Cabra Lily	Stalai.	India	Gnax	Common went of dy wandards and altituded fields. And used as fields
54	Minusa putan L	Monaridan.	تعاو الكنحاد	Linni Romai	America	Raba	As Chairmai, less musual for increasing the social potency in man. As Lappropi, its line on and most are used for gravel and other history discuss, also for polling and fauld. The note are used and an emilymakehite normally Leaves are used in pillows to induce slapp in children and the elderly in Ecuador.
Br Na	Plant Name	Family	Common Name	Local Name	Native	Robie	Um
55	Opence dilkes (Har)	Gadacias	Prickly pear	Retrictor	America	Shad	The finite are edible and are mid to be used as field during searchy. The orders of the pulp as well as of the piles is very attentive. The frain have a very good keeping quality even under normal strenge.
20	Phoenia desublidas L	derratur.	Date Kipp	Ebast	Asia, Africa	Tree	In huge guars of Nembons holds the local species of wild desepairs, Phenois, pylogapy, is apped for pulse wine, while in Palaisan and other regional constraints in the region it is now match topped for imagene, and polin syne predication.
\$7	Peògels enpies DC.	Debusiener	Denny	Osigneith	Asia, Adica	Hotes	Appi-hamioultum fodder Bacaning (im, sito in desente in Rajanhan
84	Prozepszyckilen (SW) DC	Slienserrar.	Maguin	Outle Basi	America, Adica, Adia	Sheeb	Be uses include finger, wood and emissionmental management. The plant presence an unusual arminite fifthe (popped) (-)-managing) in its heart-and
89	Environaphie extern Die	Contrast.	Floating and graat	Marion	India, Australia,	State+	Food and medicine
a 0	Solenn sonn 1	Selocacros	Black Nghtshadr	bień. Łokreski	Euroria, America, Auronita	Rope	In Italia, the burnies are manually parton and extent but not exhibited for memoroial use longement ingrations is traditional indian multicities. Infections are used in dynamicy, semanth complians and from The Dynker of the pylots is used on ulters and other skin diseases. The finite survival as a train, herative appepting estimations; and size for treating astrong and "excensive finite". Traditionally the phenome used to exent tobereducit
61	ARREAMAN GRAMANAGUAGUA	Deserves.	Decased	Chaki no bajas	800.000	Hobs	Most sporter of this gous in Otion are folder plays, The cultur are used for verying
d2	(anno la como	Canèncacao	ever dile bak	Seine .	Asia	Ins	The wood is used for furniture, estimatowerk, pincoy, providey, argueiday imma, benebulding, militeat erens-size (trented) and demensive-waterers. Water stand in the stern is often tagged and tand as a season of pothile water in the samerer by forest liste. It is also these aptive value for somethy pince.

citeulike 🕮 EndNote 💱 🚵 Linked in. Coogle

3r No	Plant Name	Toudy	Common Name	Local Name	Native	Habir	Uzes
d3	Тардилин табалт (L.)	Education	Fah Peisen	leanthe.	bda	Hada .	Many sports is the genus are pointeness particularly to fich, for their high concentration of atomic Taphengia point have historically here and by indigeness calculators as the topologically behave control, source Taphengia sports have been mained in annamics with the use depressions as in metricide and particular
64	Colorgeges weeks Deel	Dearcos.	Samah an-	Char paskking	ARies	Gran	Pulatable grass
85	Engeneral representation	Tepaphallowse.	Descriptions	Osisbary.	Esteria, America, Aastrolia	Notes	The plantic wilely naturalised in the Americas and she is doppedia, apple, of its native range. It some states in the United States, it is considered applying wood and an invasive species
d d	Todas prosvodeni L	deurouser.	and buttons and bidge dairy	Bhaten.	America	Notes	Todas, passetters, a known for sound potential freequate anti-size like motioni, and malant antivistic efferacia, wand haning anti-the basetteching mei-sefaremany activity. Some reports from wheal arms in bala state that the long joint and bound to care fresh wantile, to stop blooding, or a hair total.
d 7	Zowenikus, pilowe Rath	Idoese.	Hairy Washeek	las.	Asia, Africa	links	The sum bak is much used for making age and string. In Malayance a barlin favior is doned to been as it and disarbares, whereas in East Africa as estimate of the leaf is recorded to be done to a gaugetime.
62	Zowegiewa ozwodukia Lam	Transa	Bur Bush	lion.	Asia. Ažira	12arbs	The plant is used as a donulent. The deshalle constra of roots shows anti-influenzatory activity and reduced conton pellet generalizes, formation in alloing nats.
d9	Japakerenandara DC	80000000	Date.	etani ber	bda.	Shab	The lawer are collected, doed and stored. The doed leaves, called gain, are used as folder for gasts and once. The folds are eater and when doed are used modelineally in dyacyop. The new are used locally in propagation of when The doed upper wrigs are collected in longs for faming
70	Zecove elphade (Lina)Rep.	Education	Juscilla.	-	bdia	Rates	Hoth used for the treatment of dy tentery. Root given to induce along

Figure 1. Map of Gujarat showing location of study area.





Figure 2: Percentage distribution of vegetation

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