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Update To Floral Diversity at Gujarat Institute of Desert Ecology (Guide) Campus Along with New Distribution of Salsola Oppositifolia Desf. in Kachchh

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ABSTRACT:
This study explores the biodiversity dynamics within the prestigious Gujarat Institute of Desert Ecology (GUIDE) campus in Bhuj, India, over the span of eight years. Fieldwork conducted during pre-monsoon and post-monsoon periods revealed a significant increase in plant species, genera, and families compared to previous assessments. The taxonomic diversity analysis revealed 239 plant species representing 180 genera and 62 families, with trees, herbs, and shrubs contributing prominently. Fabaceae appeared as the dominant family, followed by Poaceae and Malvaceae. Comparative analysis with previous studies established changes in species composition, notably an increase in tree species and a decrease in herbs. Of particular interest is the discovery of the second distribution of *Salsola oppositifolia* Desf. on the campus, a plant species first recorded in India in 2022 from Great Rann of Kachchh. The study highlights the crucial role of urban green spaces in supporting biodiversity. With 239 plant species thriving within the campus's urban infrastructure, this study highlights the potential of urban forestry in promotion biodiversity conservation and ecological resilience. Future research directions include exploring the ecological roles of vegetation and development public awareness about the multi-layered benefits of plants beyond oxygen production**.**

Keywords: Floristic, Guide, Bhuj, Kachchh, Campus, Urban

INTRODUCTION

Recently, terms like deforestation and urbanization have become acquainted like nothing else in the world [1]. As the human population is mounting exceptionally, the need for it has also increased dramatically [16]. Sadly, these emerging needs have led the world to the edge of the destruction of many natural habitats for urbanization and industrialization without any stoppage [1]. This trend has been detrimental to our planet's biodiversity, as this is happening at the cost of habitat fragmentation and deforestation [2]. Creating this imbalance in nature will surely acclimatize in a way, as nature has been doing for ages. So far, fragmented biodiversity thriving in human settlements or later on developed by humans has gained a new terminology called ‘urban forestry’. Researchers describe this concept as vegetation resembling forests in or fringe areas of urban settlements [15]. Vegetation in areas like streets, parks, gardens,

industries, educational campuses, and residential areas can be added under urban forestry [17;15]. This can be categorized as an adaptation to this global threat [10]. These green pockets not only add value to the biodiversity and ecology of the areas but also contribute to the appealing values and healthiness of the commonalities [6]. By providing clean air [10]. natural remedies to some extent, and food [19]. Those green open spaces (GOS) within the urban areas provide harmless and supportable space to bloom on [22;3]. Maintaining the diversity of a given area can be a challenging task. When vegetation is cultured differently from the original flora, it fails to preserve the inventive biodiversity of the area, leading to an entirely new diversity [18]. Since different types of patches are being developed, in a way that it should serve the purpose of being present there. On the premises of any religious campus, there will be idol trees that have some importance in that place, Industrial areas, on the other hand, have different types of vegetation which help to maintain their carbon emissions [11]. Gardens and resorts prefer plants that have more appealing values. Botanical gardens and arboretums will recommend the rich diversity to be conserved at once. Not only for appealing values, but also looking forward to the upcoming conditions it becomes a compulsory duty to develop an urban green patch because they are the only sink to the Carbon dioxide and source of Oxygen. It reduces atmospheric carbon dioxide through a process called sequestration [14]. It transforms carbon dioxide into above and below-ground biomass and stores it in its branches, stems, and roots [13;14] It is worth mentioning that urban forestry or green spaces will be the future in the coming times. Communities have started linking health factors to this already [8] In their work, [21] mentioned that Europeans frequently visited nearer forests for relaxation [1]. To incubate these things majorly, educational campuses should be the first preference. Educational campuses must play a vital role in providing a stress-free and hale and hearty environment along with the studies to the young minds of the nations, this milestone can be achieved to some extent by well-developed and designed campuses in terms of biodiversity [6;12;7]. Proudly in India, a new campaign named ‘Trees Outside Forests in India (TOFI) has been launched. A five-year joint venture of the United States Agency for International Development (USAID) and the Ministry of Environment, Forest and Climate Change (MoEFCC) of the Government of India. With the united force of eight consortium partners led by CIFOR-ICRAF. It was launched firmly in Assam in September 2022 to develop green patches in North East regions. This venture seeks to scale up this in seven participating states Andhra Pradesh, Assam, Haryana, Odisha, Rajasthan, Tamil Nadu, and Uttar Pradesh. The main aim is to develop tree patches outside the forest to slow down the dependency on forests by fulfilling all needs through these patches.

Following the trends, to know the status of biodiversity, [20] carried out a study to understand biodiversity at the Gujarat Institute of Desert Ecology, Bhuj campus. This study gathered data on the presence of 226 plants and 76 bird species on the campus itself. Since it has been 8 years, the data hasn’t been updated yet, so the authors found it necessary to update the existing data. Previous studies mentioned some important plant species on the campus. yet some are still preserved, some have disappeared, and some new ones have been added. With this, a distribution patch of the newly recorded plant species *Salsola oppositifolia* was also found in the present study. Which is the second distribution for this plant.

MATERIAL AND METHODS

Study area

The GUIDE campus, a prestigious research institution, situated in the heart of Bhuj city, located in the Kachchh district of Gujarat state, India. The campus is precisely located at geo-coordinates 23°13'04.15" N and 69°39'18.54" E, with a remarkable elevation of 126 meters above sea level. The campus is spread

across an expansive four-acre expanse and is home to a diverse range of flora and fauna, which adds to its charm and beauty. the campus infrastructure was built after the devastating 2001 earthquake, which left the area with sparse vegetation. The campus is classified under the ecological peculiarities of Biotic Province - 3A Kachchh Biogeographic Zone - the Indian Desert, as per the classification system developed by [4], Moreover, the Kachchh district's vegetation is unique and diverse, with various species of plants and animals that thrive in the arid landscape. The mean annual temperature at the campus is 26.3°c, The mean annual rainfall is 358 mm [20].

Floristic Survey

Methods following, Intensive and extensive fieldwork was carried out this year to gather in a period of pre-monsoon and post-monsoon data. Important necessary aspects demanding to be performed in the field were done by taking foremost care. After the field data, collected plant specimens were critically examined using regional and national floras or other pieces of literature available Important and rare findings were passed through the standard method for herbarium preparation developed by [9] and deposited in the Herbarium at Terrestrial Ecology Division at GUIDE, Bhuj.

RESULTS

Taxonomic diversity

The current study revealed 239 plant species belonging to 180 genera and 62 families (Annexure I). In that, the highest contribution was received from trees (66 sps.), herbs (64 sps.), and shrubs (43 sps.). While the least were received from straggling shrubs (4 sps.), sedges (4 sps.), climbers (4 sps.), and creepers (5 sps.) (Figure 1). Fabaceae family was identified as the dominant family among all recorded families with 33 species, followed by Poaceae with 26 species, and Malvaceae with 15 species. Families like Apocynaceae (13 sps.), Convolvulaceae (12 sps.), and Solanaceae (9 sps.) were recorded with a moderate number of species (Figure 2). 31 families were recorded with single species.

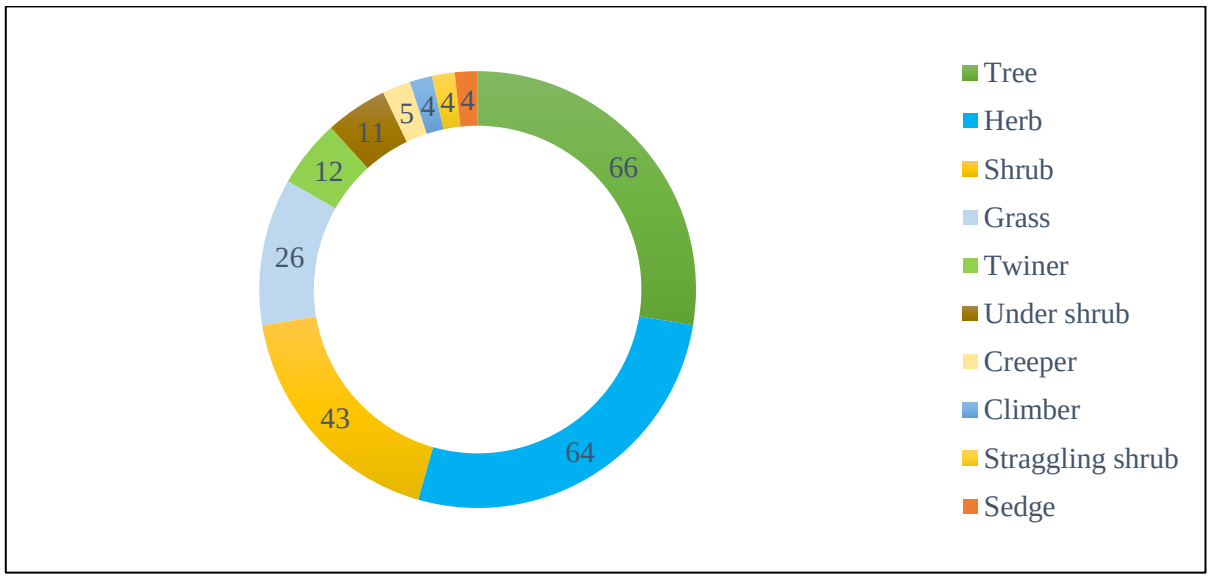

Figure 1: Habit-wise distribution of recorded species from the present study.

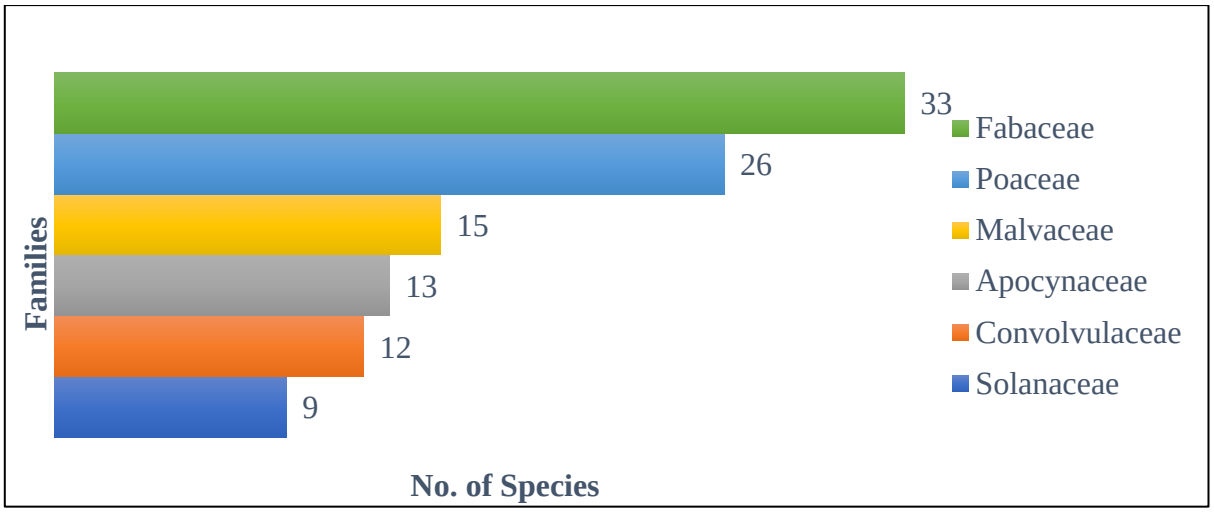

Figure 2: Highest no. of species holding families recorded from the present study.

Comparative analysis

[20] reported 226 species belonging to 169 genera, and 65 families, while the current study reported 241 species belonging to 180 genera and 62 families. While in the present study. 239 species belonging to 180 genera and 65 families. Surely it shows the increase in species over these years. Even the dominant families have been changed also, in previous work Poaceae (25 sps.) was the dominant one followed by Fabaceae (15 sps.), Convolvulaceae (12 sps.), Malvaceae (11 sps.), and Amaranthaceae (10 sps). Currently, Fabaceae turned out as the dominant family (33 sps.) followed by Poaceae (26 sps.), Malvaceae (15 sps.), Apocynaceae (13 sps.), and Convolvulaceae (12 sps.)

The habit-wise comparison revealed the changes that occurred in the composition of habits. There weren't many changes observed in the proportion of climbers, grasses, and shrubs. But drastic changes were observed in Herbs and Trees. The number of Tree species was found to increase, while a decrement was observed in Herbs.

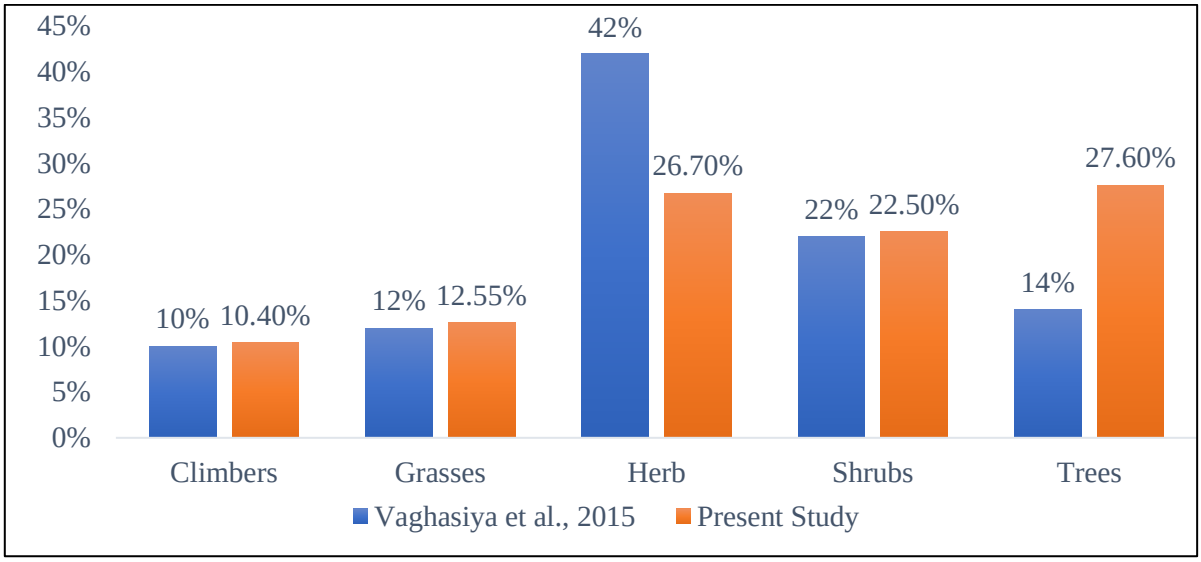

Figure 3: Comparison of recorded species composition between previous and present study.

New distribution of *Salsola oppositifolia*: A newly recorded species from Kachchh, Gujarat.

During the present study, a few colonies of *Salsola oppositifolia* were found on the campus. *Salsola oppositifolia* got its first record in India in 2022 [5].This plant is habitual to the Semi-arid or Arid regions. During the vegetation assessment in the monsoon, this plant was recorded with 2 mature and 4 sprouting on the campus. Strong indications were built about the presence that more distributions must be around the campus. After that Surroundings of the campus which exhibit similarity to its habitat, were explored to find the other individuals. So far, no more individuals have been found from it. Which cleared the fact that seeds must be arrived here with the soil. Greater Rann of Kachchh shows the extreme conditions where this plant got its first record. The current location doesn't exhibit that many extreme conditions like Salinity, which concludes that this plant can thrive across the range of soil conditions in Semi-arid or Arid regions. More research is demanded on this plant regarding its distribution and uses.

A: Inflorescence, B: Fruits, C: Habit

Figure 4: Inflorescence, fruits and habitat view of *Salsola oppositifolia*

DISCUSSION

The updated biodiversity assessment at the Gujarat Institute of Desert Ecology (GUIDE) campus sheds

light on the dynamic changes in the flora over the past eight years. A comparative analysis between the current study and the one conducted by [20] showcases an intriguing increase in species, genera, and families. The shifts in the composition of plant habits, particularly the rise in tree species and a decline in herbs. A notable finding in this study is the identification of the second distribution of *Salsola oppositifolia* on the GUIDE campus. The plant, first recorded in India in 2022.

This study has opened avenues for further exploration into new plant distributions. The identification of the second distribution of *Salsola oppositifolia* on the GUIDE campus sparks interest in understanding the adaptability of plant species to diverse conditions. Currently, the campus hosts 239 plant species with this urban infrastructure, which is a great number recorded in this kind of space. The upcoming pace of this study will be to identify the role of vegetation in ecological services. This kind of study will develop more importance of plants among us. As mentioned above introduction the role of plants is much more than providing us with oxygen.

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Annexure 1: List of recorded plants along with their local name, family, and habit.

Family	Scientific name	Local name	Habit
Acanthaceae	*Dicliptera paniculata* (Forssk.) I.Darbysh.	Kadi anghedi	Under shrub
	Justicia adhatoda L.	Ardusi	Shrub
	Rostellularia procumbens (L.) Nees	Pitpapdo	Herb
	Ruellia patula Jacq.	Dhamandhokli	Herb
	Ruellia prostrata Poir.	Kadi dhamandhokli	Herb
Aizoaceae	*Sesuvium portulacastrum* (L.) L.	Sea purslane	Herb
	Trianthema portulacastrum L.	Satodo	Herb
	Trianthema triquetrum Willd. ex Spreng	Satodi	Herb
	Zaleya pentandra (L.) C.Jeffrey	Five-Stamen Horse Purslane	Herb
Amarantheceae	*Achyranthes aspera* var. *aspera* L.	Anghedo	Under shrub
	Achyranthes aspera var. *porphyristachya* (Wall. ex Moq.) Hook.f.	Moto Anghedo	Under shrub

Family	Scientific name	Local name	Habit
	Aerva javanica var. *javanica*	Bur, Bu	Under shrub
	Alternanthera sessilis (L.) DC.	Matsyakshi	Herb
	Amaranthus viridis L.	Dhimdo	Herb
	Digera muricata (L.) Mart.	Kanjero	Herb
	Pupalia lappacea (L.) Juss.	Jipto	Shrub
	Salsola oppositifolia Desf.	Pink saltwort	Under shrub
Amarylidaceae	*Crinum asiaticum* L.	Lily	Herb
Anacardiaceae	*Mangifera indica* L.	Ambo, Keri	Tree
Annonaceae	*Annona squamosa* L.	Sitafal	Tree
Apiaceae	*Allium cepa* L.	Dungri	Herb
Apocynaceae	*Adenium obesum* (Forssk.) Roem. & Schult	Adenium	Shrub
	Calotropis gigantea (L.) W.T.Aiton	Moto aankdo, Dholo aankdo	Shrub
	Calotropis procera (Aiton) W.T.Aiton	Aankdo	Shrub
	Carissa carandas L.	karamda	Shrub
	Cascabela thevetia (L.) Lippold	Pili karen	Shrub
	Catharanthus roseus (L.) G.Don	Barmasi	Herb
	Cryptostegia grandiflora Roxb. ex R.Br.	Rubber vel	Twiner
	Jasminum grandiflorum L.	Chameli	Straggling shrub
	Jasminum sambac (L.) Aiton	Mogro	Under shrub
	Monoon longifolium (Sonn.) B.Xue & R.M.K.Saunders	Asopalav	Tree
	Nerium oleander L.	Karen	Shrub
	Pentatropis spiralis (Forssk.) Decne.	Shingroti	Twiner
	Plumeria rubra L.	Khad champ, Lal champo	Tree
Araceae	*Alocasia macrorrhizos* (L.) G.Don	Giant taro	Shrub
Arecaceae	*Phoenix sylvestris* (L.) Roxb.	Khajoor, Kharek	Tree
	Roystonea regia (Kunth) O.F.Cook	Bottle Palm	Tree
Asparagaceae	*Agave americana* L.	Ketki	Shrub
	Dracaena reflexa Lam.	Song of India	Shrub
	Dracaena reflexa var. *angustifolia* Baker	Dragon tree	Shrub
	Dracaena trifasciata (Prain) Mabb.	Snake plant	Herb
Asphodelaceae	*Aloe vera* (L.) Burm.f.	Kunvarpathu	Herb
Asteraceae	*Blainvillea acmella* (L.) *Philipson*	Dholu shisoriyu	Herb
	Cyanthillium cinereum (L.) H.Rob.	Sahdevi	Herb
	Eclipta prostrata (L.) L.	Bhangro	Herb

Family	Scientific name	Local name	Habit
	Launaea procumbens (Roxb.) Ramayya & Rajagopal	Bho patri, Gad jibhi	Herb
	Sonchus oleraceus L.	Dudhali sonki	Herb
	Sphagneticola trilobata (L.) Pruski	Trailing daisy	Herb
	Tridax procumbens L.	Dhaburi	Herb
Basellaceae	*Basella rubra* L.	Poi	Twiner
Bignoniaceae	*Millingtonia hortenss* L.f.	Desi Buch	Tree
	Kigelia Africana (Lam.) Benth.	Balam kheera	Tree
	Tecoma stans (L.) Juss. ex Kunth	Soneri	Shrub
	Tecomaria capensis (Thunb.) Spach	Cape Honeysuckle	Shrub
	Tecomella undulata (Sm.) Seem.	Ragat rohido	Tree
Boraginaceae	*Cordia dichotoma* G. Forst.	Moto gundo	Tree
	Cordia sinensis Lam.	Liyar gundi	Tree
	Trichodesma indicum (L.) Sm.	Undhafuli	Herb
Burseraceae	*Commiphora stocksiana* (Engl).	Mitho gugal	Shrub
	Commiphora wightii (Arn.) Bhandari	Gugal	Shrub
Cactaceae	*Opuntia ficus-indica* (L.) Mill.	Fafda thor	Shrub
Cannaceae	*Canna indica* L.	Bajarbatu	Herb
Capparaceae	*Cadaba fruticosa* (L.) Druce	Kalo katkatiyo	Shrub
	Capparis decidua (Forssk.) Edgew.	Kerdo	Shrub
	Cleome viscosa L.	Pili talvani	Herb
	Maerua oblongifolia (Forssk.) A.Rich.	Dudhiyo hemkand	Shrub
Caricaceae	*Carica papaya* L.	Papaya	Tree
Casuarinaceae	*Casuarina equisetifolia* L.	Sharu, Soi doro	Tree
Celastraceae	*Gymnosporia emarginata* (Willd.) Thwaites	Vinkdo, Vinj	Tree
Combretaceae	*Combretum indicum* (L.) DeFilipps	Rangoon creeper	Straggling shrub
	Conocarpus lancifolius Engl.	Conocarpus	Tree
	Terminalia arjuna (Roxb. ex DC.) Wight & Arn.	Arjun sadad	Tree
	Terminalia catappa L.	Desi badam	Tree
Commelinaceae	*Commelina diffusa* Burm.f.	Shish muli	Herb
	Tradescantia pallida (Rose) D.R.Hunt	Purple heart	Herb
Convolvulaceae	*Argyreia nervosa* (Burm.f.) Bojer	Samudrasosh	Twiner
	Convolvulus prostratus Forssk.	Sankhavali	Herb
	Convolvulus rottlerianus subsp. *stocksii* (Boiss.) J.R.I.Wood & Scotland	Ubhi Sankhavali	Herb
	Cressa cretica L.	Un, Bokanu	Herb

Family	Scientific name	Local name	Habit
	Distimake aegyptius (L.) A.R.Simões & Staples	Panch pan ni fudardi	Twiner
	Evolvulus alsinoides (L.) L.	Kadi sankhavali	Herb
	Ipomoea eriocarpa R.Br.	Bodi fudardi	Creeper
	Ipomoea nil (L.) Roth	Kala dana	Twiner
	Ipomoea pes-caprae (L.) R.Br.	Maryadvel	Creeper
	Ipomoea pes-tigridis L.	Vaghpadi	Twiner
	Ipomoea quamoclit L.	Ganeshvel	Twiner
	Ipomoea tuberculata var. *tuberculata*	Dipadvel	Twiner
Crassulaceae	*Kalanchoe pinnata* (Lam.) Pers.	Pan futi	Shrub
Cucerbitaceae	*Coccinia grandis* (L.) Voigt	Gholi	Climber
	Cucumis callosus (Rottb.) Cogn.	Kotimbda	Creeper
	Cucumis maderaspatanus L.	Chanak chibhdi	Climber
	Cucumis prophetarum L.	Kantalu indrayan	Creeper
Cupressaceae	*Thuja occidentalis* L.	Thuja	Shrub
Cycadaceae	*Cycas revoluta* Thunb.	Cycas	Tree
Cyperaceae	*Cyperus compressus* L.	Chiyo	Sedge
	Cyperus difformis L.	Chiyo	Sedge
	Cyperus haspan L.	Chiyo	Sedge
	Cyperus rotundus L.	Moth	Sedge
Ephedraceae	*Ephedra ciliata* Fisch. & C.A.Mey.	Som lata	Straggling shrub
Euphorbiaceae	*Euphorbia heterophylla* L.	Dudheli	Shrub
	Euphorbia hirta L.	Dudheli	Under shrub
	Euphorbia thymifolia L.	Dudheli	Herb
	Euphorbia tirucalli L.	Dandaliyo thor	Tree
	Euphorbia tithymaloides L.	Dandaliyo thor	Shrub
	Phyllanthus fraternus G.L.Webster	Moti bhoyambli	Herb
Fabaceae	*Abrus precatorius* L.	Chanothi	Twiner
	Albizia lebbeck (L.) Benth.	Shirish	Tree
	Alysicarpus monilifer var. *cuddapahensis* S.M.Almeida & M.R.Almeida	Samervo	Herb
	Bahunia purpurea L.	Kanchnar	Tree
	Butea monosperma (Lam.) Kuntze.	Kesudo, Khakhro	Tree
	Cassia fistula L.	Garmalo	Tree
	Ceasalpinia pulcherima (L.) Sw.	Galtoro	Shrub
	Crotalaria hebecarpa (DC.) Rudd	Makhmali adadiyo	Herb
	Delonix regia (Bojer ex Hook.) Raf.	Gulmohar	Tree

Family	Scientific name	Local name	Habit
	Erythrina variegata L.	Panervo, Pandervo	Tree
	Gliricidia sepium (Jacq.) Kunth	Giripushp	Tree
	Guilandina bonduc L.	kaucha	Shrub
	Indigofera cordifolia B.Heyne ex Roth	Gadi	Herb
	Indigofera oblongifolia Forssk.	Jhil	Shrub
	Indigofera tinctoria L.	Gadi	Shrub
	Indigofera tsiangiana Metcalf	Gadi	Herb
	Parkinsonia aculeata L.	Ram baval	Tree
	Peltophorum pterocarpum (DC.) Backer ex K.Heyne	Tamra fali	Tree
	Pithecellobium dulce (Roxb.) Benth.	Mithi ambli, Goras ambli	Tree
	Pongemia pinnata (L.) Pierre	Karanj	Tree
	Prosopis cineraria (L.) Druce	Khijdo	Tree
	Rhynchosia minima (L.) DC.	Daliya vel	Twiner
	Senna auriculata (L.) Roxb.	Aaval	Shrub
	Senna siamea (Lam.) H.S.Irwin & Barneby	Kasid	Tree
	Sesbania sesban (L.) Merr.	Ikad	Shrub
	Sesbania grandiflora (L.) Poir.	Agathiyo	Tree
	Stylosanthes hamata (L.) Taub.	Carribbean stylo	Herb
	Tamarindus indica L.	Khati ambli	Tree
	Tephrosia purpurea (L.) Pers.	Sarpankho	Under shrub
	Tephrosia strigosa (Dalzell) Santapau & Maheshw.	Jinko sarpankho	Herb
	Teramnus labialis (L.f.) Spreng.	Valiya vel	Creeper
	Vachellia leucophloea (Roxb.) Maslin, Seigler & Ebinger	Harmo baval	Tree
	Vachellia nilotica subsp. *indica* (Benth.) Kyal. & Boatwr.	Desi baval	Tree
	Zornia gibbosa Span.	Samrapani	Herb
Gentianaceae	*Enicostema axillare* (Poir. ex Lam.) A.Raynal	Mamejavo	Herb
Lamiaceae	*Coleus amboinicus* Lour.	Pan ajmo	Herb
	Mentha spicata L.	Pudina	Herb
	Vitex negundo L.	Nagod	Tree
Lecythidaceae	*Couroupita guianensis* Aubl.	Kailash pati, Shivlingi,	Tree
Lythraceae	*Lawsonia inermis* L.	Mehendi	Shrub

Family	Scientific name	Local name	Habit
Malvaceae	*Abutilon fruticosum* Guill. var. *fruticosum*	Dabli, Khapat	Under shrub
	Abutilon indicum (L.) Sw. subsp. *Indicum*	Dabli, Khapat	Shrub
	Adenium obesum (Forssk.) Roem. & Schult	Adenium	Shrub
	Corchorus aestuans L.	Chhunchh	Herb
	Corchorus depressus (L.) Peterm.	Chhunchh	Herb
	Corchorus tridens L.	Chhunchh	Herb
	Gossypium herbaceum subsp. *herbaceum*	Vilayati kapas	Shrub
	Grewia tenax (forssk.) Fiori	Gangeti, Bajothiyu	Shrub
	Hibiscus lobatus (Murray) Kuntze	Lobed leaf mallow	Under shrub
	Hibiscus rosa-sinensis L.	Jasud	Shrub
	Sida ovata Forssk.	Bala	Herb
	Sterculia foetida L.	Jungli badam	Tree
	Thespesia populnea (L.) Sol. ex Corrêa	Paras pipdo	Tree
	Tribulus terrestris L.	Bethu gokhru	Herb
	Triumfetta rotundifolia Lam.	Jipto	Shrub
Martyniaceae	*Martynia annua* L	Vichhundo	Shrub
Meliaceae	*Azadirechta indica* A. Juss.	Limdo, Neem	Tree
Menispermaceae	*Tinospora cordifolia* (Willd.) Hook.f. &	Giloi	Twiner
Molluginaceae	*Paramollugo nudicaulis* (Lam.) Thulin	Jharas	Herb
Moraceae	*Ficus amplissima* Sm.	Pipar	Tree
	Ficus benghalensis L.	Vad	Tree
	Ficus microcarpa L.f.	Bonsai fig	Tree
	Ficus religiosa L.	Pipdo, Pipal	Tree
Moringaceae	*Moringa concanensis* Nimmo ex Dalzell & A.Gibson	Kharo saragvo, Jungli saragvo	Tree
	Moringa oleifera Lam.	Mitho saragvo	Tree
Myrtaceae	*Eucalyptus globulus* Labill.	Nilgiri	Tree
	Psidium guajava L.	Jamfal	Tree
	Syzygium cumini (L.) Skeels.	Jambu	Tree
Nyctaginaceae	*Boerhavia diffusa* L.	Satodi, Punarnarva	Herb
	Boerhavia elegans Choisy	Ubhi satodi	Herb
	Bougainvillea spectabilis Willd.	Bogan vel	Straggling shrub
Orobanchaceae	*Striga angustifolia* (D.Don) C.J.Saldanha	Dholo agiyo	Herb
Plumbaginaceae	*Plumbago auriculata* Lam.	Nilo chitrak	Shrub
Poaceae	*Aristida adscensionis* L. subsp. *adscsensionis*	Laanp	Grass
	Aristida funiculata Trin. & Rupr.	Laanp	Grass

Family	Scientific name	Local name	Habit
	Cenchrus ciliaris L.	Dhaman	Grass
	Cenchrus setigerus Vahl	Dhaman	Grass
	Chloris barbata Sw.	Mindadiyu ghas	Grass
	Chloris virgata Sw.	Mindadiyu ghas	Grass
	Chrysopogon zizanioides (L.) Roberty	Vetiver	Grass
	Cymbopogon citratus (DC.) Stapf	Lemon grass	Grass
	Cymbopogon martini (Roxb.) Will.Watson		Grass
	Cynodon dactylon (L.) Pers.	Durva	Grass
	Dactyloctenium aegypticum (L.) P. Beauv.	Chamanchotlo	Grass
	Dichanthium annulatum (Forak.) Stapf	Jhijhvo	Grass
	Digitaria ciliaris (Retz.) Koeler	Tarodiyu	Grass
	Echinochloa colonum (L.) Link	Sau	Grass
	Eleusine compressa (Forsk.) Aschers. & Schweinf.	Nachni	Grass
	Eragrostis ciliaris (L.) R.Br.	Marmar ghas	Grass
	Eragrostis tenella (L.) P. Beauv. ex R. & S.	Chichni	Grass
	Eragrostis tremula Hochst.	Chichni	Grass
	Melanocenchris jacquemontii Jaub. & Spach	Desert black millet	Grass
	Panicum antidotale Retz.	Dhus ghas	Grass
	Phragmites karka (Retz.) Trin. ex Steud.	Nal sari	Grass
	Sporobolus coromandelianus (Retz.) Kunth	Khevai	Grass
	Sporobolus helvolus (Trin.) Th. Dur. et Sch	Dhrabad	Grass
	Sporobolus marginatus Hochst. ex A. Rich.	Khevai	Grass
	Tetrapogon tenellus (J.Koenig ex Roxb.) Chiov	Tender finger grass	Grass
	Tragus racemosus (L.) All.	Vandariyu ghas	Grass
Portulacaeae	*Portulaca grandiflora* Hook.	Vinchhi vel	Herb
	Portulaca oleracea L.	Luni	Herb
Punicaceae	*Punica granatum* L.	Dadam	Tree
Rhamnaceae	*Ziziphus mauritiana* Lam.	Bor	Tree
	Ziziphus nummularia (Burm.f.) Wight & Arn.	Chani bor	Shrub
Rubiaceae	*Ixora coccinea* L.	Ixora	Shrub
	Neolamarckia cadamba (Roxb.) Bosser	Kadam	Tree

Family	Scientific name	Local name	Habit
	Oldenlandia corymbosa L.	Daman papdo	Herb
	Spermacoce articularis L.f.	Sankhlo	Herb
Rutaceae	*Aegle marmelos* (L.) Corrêa	Bilipatra	Tree
	Bergera koenigii L.	Mitho limdo	Tree
	Limonia acidissima L.	Kothu, Koth	Tree
Salvadoraceae	*Salvadora alii* Rajput & Syeda	Adbau jar	Tree
	Salvadora oleoides Decne.	Mithi jar	Tree
	Salvadora persica L.	Khari jar	Tree
Santalaceae	*Santalum album* L.	Sukhad Chandan	Tree
Sapotaceae	*Madhuca longifolia* var. *latifolia* (Roxb.) A.Chev.	Mahudo	Tree
	Manilkara hexandra (Roxb.) Dubard	Rayan, Khirni	Tree
	Manilkara zapota (L.) van. Royen	Chikoo	Tree
	Mimusops elengi L.	Borsali	Tree
Simaroubaceae	*Ailanthus excelsa* Roxb.	Arduso	Tree
Solanaceae	*Capsicum annuum* L.	Mirchi	Herb
	Cestrum nocturnum L.	Raat rani	Shrub
	Datura innoxia Mill.	Dhaturo	Shrub
	Physalis angulata L.	Popti	Herb
	Physalis pruinosa L.	Jungli Popti	Under shrub
	Solanum lycopersicum L.	Tomato	Herb
	Solanum melongena L.	Brinjal	Herb
	Solanum virginianum L.	Bho ringni	Herb
	Withania somnifera (L.) Dunal	Ashwagandha	Shrub
Vitaceae	*Cissus quadrangularis* L.	Hadsankal	Climber
	Cissus rotundifolia Lam.	Hadsankal	Climber
Zinziberaceae	*Elettaria cardamomum* (L.) Maton	Elaichi	Herb
Zygophyllaceae	*Zygophyllum indicum* (Burm.f.) Christenh. & Byng	Dhamaso	Herb
	Zygophyllum simplex L.	Patlani	Herb

A-*Tecomella undulata*, **B**-*Bauhinia purpurea*, **C**-*Santalum album*, **D**-*Thespesia populnea*, **E**-*Kigelia pinnata*, **F**-*Tamarindus indica*, **G**-*Commiphora stocksiana*, **H**-*Martyinia annua*, **I**-*Euphorbia tithymaloides*, **J**-*Pentatropis spiralis*, **K**-*Ipomoea quamoclit*, **L**-*Ipomoea nil*, **M**-*Clitora ternatea*, **N**-*Zaleya pentandra*, **O**-*Launaea procumbens*, **P**- *Convolvulus prostratus*, **Q**-*Cyanthillium cinereum*, **R**-*Solanum virginianum*, **S**-*Alysicarpus longifolius*, **T**-*Cyperus compressus*, **U**-*Commelina benghalensis*, **V**-*Striga angustifolia*, **W**-*Cyperus rotundas*, **X**-*Cymbopogon martini*.

Figure 5: Highlights of some flowers, recorded among the present study