PEOPLES' BIODIVERSITY REGISTER (PBR)

KOLKATA MUNICIPAL CORPORATION WARD NO. 26




DOCUMENTED & PREPARED

BY

BETHUNE COLLEGE KOLKATA-700006

MARCH, 2020

CONTRIBUTORS

TEACHERS

Department of Botany:

Dr. Sritama Mukherjee, Dr. Smita Ray, Dr. Seemanti Ghosh

Department of Zoology:

Dr. Samiran Ghosh, Sm. Srinjana Ghosh

STUDENTS

Department of Botany: PG Semester IV (18 Students)

Department of Zoology: UG Sem-III (02 Students); UG Sem-V (07 Students); PG Sem-III (01 Student); PG Sem-IV (02 Students)

1. Introduction

Ward-Number: 26 [22.58725°N 88.365028°E]

Borough: 4

District: KOLKATA

State: WEST BENGAL

Location: It is an administrative division of Kolkata Municipal Corporation in Borough No. 4, covering parts of Ramdulal Sarkar Street and Hedua Park neighbourhoods in North Kolkata, in the Indian state of West Bengal.

Habitat and topography

It is bordered on the north by Beadon Street; on the east by Bidhan Sarani; on the south by Vivekananda Road and Nanda Mallick Lane; and on the west by Rabindra Sarani and Chittaranjan Avenue. The ward is served by Girish Park, Jorasanko and Burtolla police stations of Kolkata Police.

- Agriculture: Nil
- Forests: Nil
- Climate: Kolkata has a Tropical wet-and-dry climate. The annual mean temperature is 24.8 °C (80 °F); monthly mean temperatures range from 15 °C to 30 °C (59 °F to 86 °F). Summers are hot and humid with temperatures in the low 30's and during dry spells the maximum temperatures often exceed 40 °C (104 °F) during May and June. Winter tends to last for only about two and a half months, with seasonal lows dipping to 9 °C – 11 °C (48.2 °F – 51.8 °F) between December and January. The highest recorded temperature is 43.9 °C (111 °F) and the lowest is 5 °C (41 °F). Often during early summer, dusty squalls followed by spells of thunderstorm and heavy rains lash the city, bringing relief from the humid heat. These thunderstorms are convective in nature, and is locally known as *Kal baisakhi* . Rains brought by the Bay of Bengal branch of South-West monsoon lash the city between June and September and supplies the city with most of its annual rainfall of 1,582 mm (62.3 inches). The highest rainfall occurs during the monsoon in August (306 mm). The city receives 2,528 hours of sunshine per annum, with the maximum sunlight occurring in March. Pollution is a major concern in Kolkata, and the Suspended Particulate Matter (SPM) level is high when compared to other major cities of India, leading to regular smog and haze. Severe air pollution in the city has caused rise in pollution-related respiratory ailments such as lung cancer.

- Demography: As per 2011 Census of India Ward No. 26, Kolkata Municipal Corporation, had a total population of 25,371, of which 13,692 (54%) were males and 11,679 (46%) were females. Population below 6 years was 1,674. The total number of literates in Ward No. 26 was 19,513 (82.34% of the population over 6 years).

- Major livelihoods: Business (Markets, Hardware Shops, Plumber shops, Vegetable shops, Fruit stall, Tea stall, Grocery Shop, Hotel, Footpath shops, Fish stall, Chicken stall, Tea shop); Culture (Theatres), Education (Institutes, Colleges); Sports (Lakes)



Fig. Glimpses of Bethune College and School

2. Methodology

Landscape, lifescape and peoplescape data were collected by collected by 30 students of two departments (Botany and Zoology) of Bethune College, Kolkata.

The PBR work has been initiated on 29/02/2020 from Ward No. 26 Bethune College area.

Images were taken using Nikon Camera and mobile phones

3. Landscape Diversity

- Introduction about landscape of Ward with map



Fig. Ward No. 26 in Kolkata

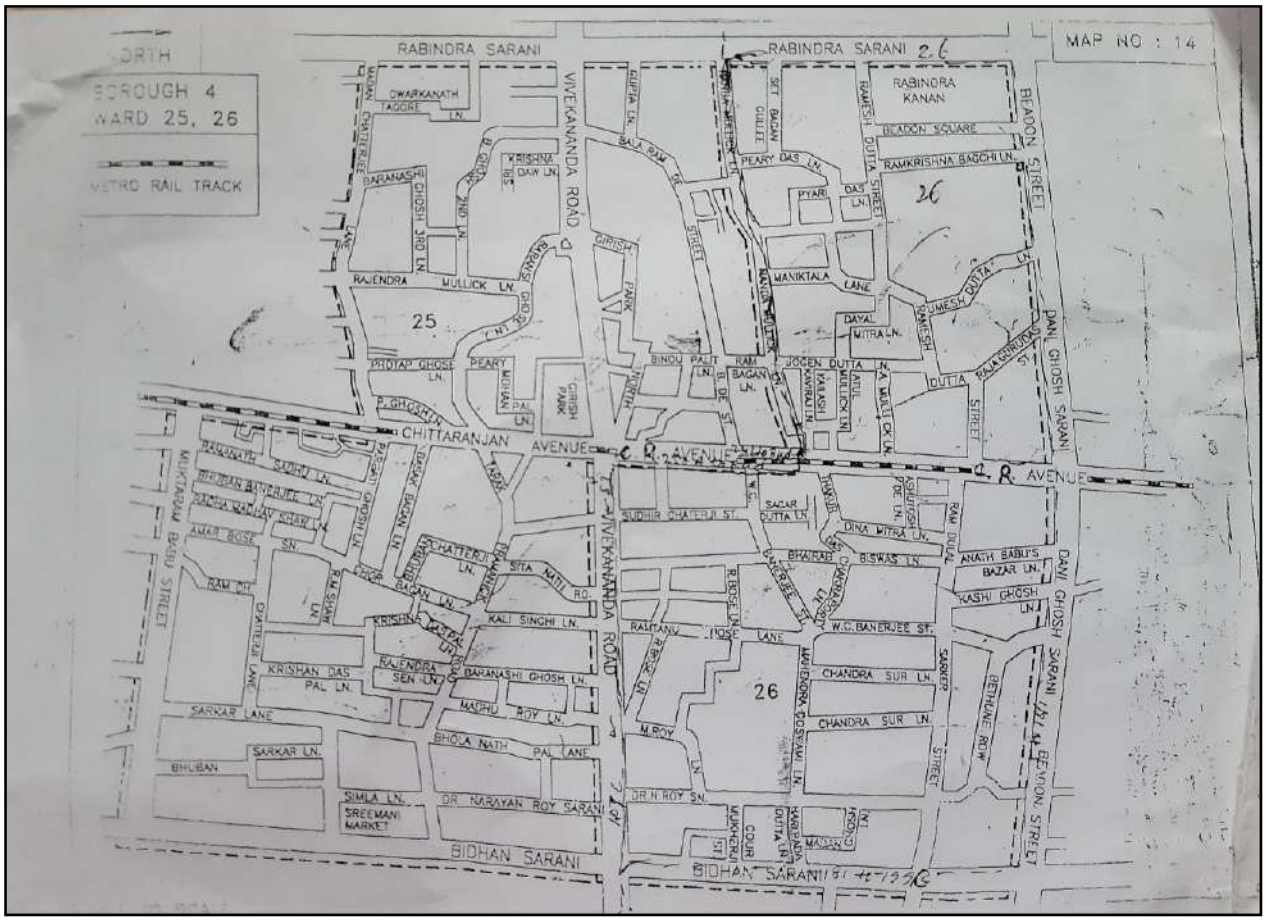


Fig. Map of Ward no. 26, KMC



Fig. Landscape biodiversity of Bethune College (A-C, E), Bethune School (D,F) and students and teacher interactions (F)



Fig. Different views of College Gardens

3. Landscape Diversity

Sl. No.	Types / specification of Landscape elements	Area	Ownership	Feature of the landscape elements	use pattern	History of change of ownership (if any)
1.	Bethune College, Kolkata 181, Bidhan Sarani Kolkata 700 006 West Bengal, India		Govt. of West Bengal	11 buildings including staff quarter and canteen	Established in 1879, Bethune College ushered in, for the women of the nineteenth century, a new era of enlightenment and edification through education. This college has been a flagship in the journey of Higher Education, being the first women's college in Asia.	
2.	Bethune School, Kolkata 181, Bidhan Sarani Kolkata 700 006 West Bengal, India		Govt. of West Bengal	4 large buildings including hostel	It was established as Calcutta Female School in 1849 by John Elliot Drinkwater Bethune.	The government took it over in 1856, renaming it Bethune School after its founder in 1862–63
3.	The Christ Church 182/B, Bidhan Sarani Kolkata 700 006 West Bengal, India			One large prayer hall one two storied building for the priest and one house for the caretaker.	The Christ Church is an old and historical place built by Bishop Wilson and dedicated in 1839. The first Presbyter-in-Charge of this church was Rev. Krishna Mohan	

					Banerjee and he served this Church from 1839 to 1852.	
4.	Ramakrishna Mission Swami Vivekananda's Ancestral House and Cultural Centre 105 Vivekananda Road	22,000 square feet	Ramkrishna Mission		A museum, a research centre, a memorial shrine, a library, an English centre, a computer training centre, and a charitable dispensary	In 1962,Ramakrishna Mission authorities decided to acquire the property and turn it into a museum. In May 1999, the Ramakrishna Mission acquired the land and the adjacent plot through the Govt. of West Bengal. In 2004, after renovation, the house was turned into a museum and cultural centre
5.	Rabindra Kanan 9, Beadon St.	14,084.10 square feet	KMC		Playground, Children's Park, Religious Centre, CMC building, Club Temple	
6.	Minerva Theatre 6, Utpal Dutta Sarani, Abhedananda Rd,				A Theatre	It was initially owned by Nagendra Bhusan Mukhopaddhaya. In course of time, it witnessed several

	Ram Bagan, Kolkata – 700006					transfers of ownership
7.	Beadon Street Head Post Office Abhedananda Road , Beadon Street, Kolkata – 700006		Govt. of India		Post Office	
8.	Chatu Babu Market 67/1, Chittaranjan Ave, Maniktala, Girish Park, Manicktala, Darjipara, Kolkata, West Bengal 700006				Vegetable, fruit and fish market	
9.	Girish Park Metro StationGate-3 Chittaranjan Avenue, Kolkata, 700006		Govt. of India		Metro Railway Station	
10.	Tram lines (Bidhan Sarani) Lanes					



Fig. Landscape Diversity in Ward 26, A-B: Christ Church; C-D: Vivekananda House; E-F: Bidhan Sarani



Fig. Landscape Diversity in Ward 26 contd.A-C: Rabindra Kanan; D-E Minerva Theatre and associated area; F: Girish Park metro Station



Fig. Landscape Diversity in Ward 26 contd. A: Chittaranjan Avenue showing *Nerium odorum* plants on road dividers; B,E-F: Vivekananda Road; C : Girish Park metro Station; D-G: Bidhan Sarani

4. Lifescape Diversity

4.1. Agricultural Diversity (Paddy) [If any]: NIL

4.2. Agricultural Diversity (Other than paddy) [If any] / Horticultural Diversity/Kitchen Garden/Ornamental diversity:

Sl. No.	Name of the variety	Characteristics	Method of cultivation/ plantation	Advantages and disadvantages of the variety	Present status of cultivation (with reason)	Availability at present (Locality)	Remarks
1.	Chili *Capsicum annuum*	Leaves smooth, greenish white flowers , elipsoidal fruits grow erect, perennial	From seeds and seedlings	Plants are grown in less water & shady areas with care	Very small area at Bethune School campus	Bethune School campus, houses of local people	Fruits are edible used in cooking
2.	Cauliflower *Brassica oleracea*	Annual plants , large leaves , floral crown on the top , white in colour	From seeds and seedlings	Plants are grown with care and frequent watering	Very small area at Bethune School campus	Bethune School campus	Floral crown is edible
3.	*Petunia sp.*	Wide ranges of coloured tubular flowers (purple , white , and pink)	Planted from seedlings	Plants are grown with care and frequent watering during winter and spring season	Very small area at Bethune College campus, Vivekananda house,	Bethune College campus, Vivekananda house, houses of local people	Used popularly in house gardening
4.	Cockscom***b*** *Celosia argentea*	Flower heads composed of 100s of tiny flowers	Planted from seedlings	Plants are grown with care and frequent watering during winter and	Very small area at Bethune College campus,	Bethune College campus, Vivekananda house,houses of local people	Garden plant , food , leaves used as vegetable, flowers used in bouquet preparation

				spring season	Vivekananda house,		
5.	Sage plant *Salvia* sp.	Hollow square stem , leaves are entire, flowers arranged in inflorescence showing bright display of flowers	Planted from seedlings	Plants are grown with care and frequent watering during winter and spring season	Very small area at Bethune College campus, Vivekananda house	Bethune College campus, Vivekananda house, houses of local people	Ornamental plant , leaves used as spice, seeds edible , rich in protein
6.	Marigold *Tagetes* sp.	Herbaceous plant , severally lobed green leaves , flowers yellow and orange, compact	Planted from seedlings	Plants are grown with care and frequent watering	Very small area at Bethune College campus, Vivekananda house, Christ Church	BethuneSchool, College campus, Vivekananda house, Christ Church, houses of local people	Antibacterial property in root , florets are used as food color,flowers widely used in decorative and holy purpose,
7.	Purple heart *Setcreasea purpurea*	Purple coloured leaves , each flower with three petals , flower colour purplish to whitish pink, flowers are sterile.	Propagated through root cutting	Plants are grown with care	Very small area at Bethune College campus	Bethune College campus, Road dividers(Vivekananda road & C.R. Avenue)	Ornamental indoor house plant , have medicinal properties
8.	Moses-in-the-cradle *Rhoeo discolor*	Flowers white, each with three petals, rosettes of leaves with violet upper surface and green lower surface	Propagated through root cutting	Plants are grown with care	Very small area at Bethune College campus	Bethune College campus	Mainly ornamental plant, antiinflamatory , antidysentric , antimicrobial & anticancerous properties observed

9.	Coriander *Coriandrum sativum*	Aromatic herb , pinnate leaves , profusely branched	Planted from seeds	Plants are grown with care and frequent watering during winter and spring season	Very small area at Bethune School campus	Bethune School campus, houses of local people	Leaves and seeds used as flavouring agent in various types of food and cooking preparations , seeds are used as spices
10.	*Bryophyllum pinnatum*	thick fleshy leaves with curved & serrated margin, red-orange tube like flowers forming a terminal cluster	Propagated through leaves	Plants are grown with care	Very small area at Bethune College campus	Bethune College campus, houses of local people	grown as indoor ornamental plant,can cause cardiac poisoning, tradially used to treat inflamation and antimicrobial infection , ulcer , gastritis
11.	Mother-in- law's tongue *Sansevieria trifasciata*	Basal rosette arrangement of long,stiff, dark green leaves on creeping stem	Propagated through root cutting	Plants are grown with care	Very small area at Bethune College campus	Bethune College campus, houses of local people	Strong plant fibre used for bowstrings , indoor house ornamental plant
12.	Sunflower *Helianthus annuus*	Erect hairy stem , bright yellow flowers with dark brown centre, consisting of many florets coloured	Planted from seeds	Plants are grown with care	Very small area at Bethune College campus	Bethune College campus	Flowers used for ornamental purpose in domestic gardens, edible oil obtained from seeds, roasted whole seeds or fruits used as snack
13.	Kalanchoe *Kalanchoe blossfeldiana*	Fleshy succulent leaves, petals of flowers fused into a tube-like structure	Propagated through leaves	planted and grown with care	decreased (due to constructions)	beautiful ornamental plant	common indoor plant, used in treatment of cancer

14.	*Dieffenbachia seguine*	Herbaceous plant with large green leaves often with variegated white patterns, showy white flowers	Propagated through stem cuttings	Plants are grown with care	Very small area at Bethune College & school campus, Vivekananda house	Bethune College & school campus, Vivekananda house, houses of local people	Ornamental, leaves highly poisonous, popular for their tolerance of shade
15.	Sweet alyssum *Lobularia maritima*	Branched stem with clusters of sweet smelling flowers showing a wide range of bright colors	Planted from seedlings	Plants are grown with care	Very small area at Bethune College campus,	Bethune College campus	Garden plant with many horticultural varieties, petals leaves and tender stems eaten raw or cooked
16.	*Dahlia* sp.	Large colorful flower head with central disc and surrounding florets	Planted from seedlings	Plants are grown with care	Very small area at Bethune College & school campus, Vivekananda house	Bethune College & school campus, Vivekananda house, houses of local people	Widely cultivated ornamental plant in winter season
17.	Bengal clock vine *Thungbergia grandiflora*	Evergreen vine with stalked opposite leaves having rough surface, blue to mauve flowers with a long tube which is pale yellow inside	Planted from seedlings	Plants are grown with care	Very small area at Bethune College & school campus,	Bethune College & school campus	Cultivted as house plant,root used for treating rheumatic arthralgia, swelling pain caused by falls or fractures, also used for green manure, fuelwood

18.	Banana *Musa paradisiaca*	Above ground part is pseudostem consisting of leaves and fused bases , compact arrangement of flowers	Planted from seedlings	Plants are grown with care	Very small area at Bethune College campus	Bethune College campus	Flowers, fruits , and stem is edible Every part of the plant body is used
19.	Tomato *Solanum lycopersicum*	Leaves compound , flowers yellow, fruits rounded, bright orange or red coloured	Planted from seedlings	Plants are grown with care	Very small area at Bethune School campus	Bethune College campus, houses of local people	Widely used vegetable and condiment
20.	*Cactus sp.*	Stem fleshy &thick, covered with sharp spines, leaves absent	Planted from stem stocks	Plants are grown with care	Very small area at Bethune College & school campus, Vivekananda house	Bethune College & school campus, Vivekananda house, houses of local people	Ornamental plant type 2 diabates treatment , reduces alcohol hang over
21.	Pink rain lily *Zephyranthes rosea*	Perennial herbs, small, leaves flattened & dark green, single funnel shaped flower & bright pink in color	Planted from roots stocks	Plants are grown with or without care	Very small area at Bethune College & school campus, Vivekananda house	Bethune College & school campus, Vivekananda house, houses of local people	Ornamentals contain potentially lethal toxins
22.	Brinjal *Solanum melongena*	Stem spiny. large, coarsely lobed leaves.flowers purple 5-lobed, yellow showy stamens. fruit glossy & purple	Planted from seedlings	Plants are grown with care	Small area at Bethune school campus	Bethune school campus houses of local people	Fruit used extensively as cuisine, various plant parts are used in decoction as powder for curing of diabetes, cholera,bronchities,

							dysuria, dysentery, otitis, etc.popularly used vegetable
23.	*Bougainvillea glabra*	With thorny stems , tiny white flowers with colorful pinkish, white, papery bracts, which itself look like flowers	Planted from seedlings	Plants are grown with care	Small area at Bethune school campus	Bethune school campus houses of local people	Beautiful garden plant, used for gardening , beneficial for diabetes , cough sore throat
24.	*Rosa* sp.	Thorny shrubs, leaves alternate with serrated margin, flowers pink, red, white and different colors with sweet aroma	Propagated through stem cuttings	Plants are grown with care	Very small area at Bethune College & school campus, Christ church Vivekananda house	Bethune College & school campus, Vivekananda house, Christ church, houses of local people	Ornamental , used in commercial perfume flower used widely in decoration purpose and also for fragrance
25.	Red bird flower / devil's backbone *Euphorbia tithymaloides*	Woody shrub , leaves oppositely arranged, bright red flowers arranged on two sides of a floral branch	Planted from seedlings	Plants are grown with care	Very small area at Bethune College & school campus, Christ church Vivekananda house	Bethune College & school campus, Vivekananda house, Christ church, houses of local people	Ornamental , used in breathing disorders
26.	Hibiscus *Hibiscus rosa-sinensis*	Woody branched stem , solitary red flower, exerted stamen with yellow powdery pollen	Propagated through stem cuttings	Plants are grown with or without care	Very small area at Bethune College & school	Bethune College & school campus, Vivekananda house, Christ church, houses of	Ornamental as well as religious use alongwith haircare

					campus, Christ church Vivekananda house	local people	
27.	Champa *Plumeria acutifolia*	Large shrub with rounded canopy of long & pointed leaves, richly fragrant flowers white with a yellow flushed centre and overall matte appearance	Planted from seedlings	Plants are grown with or without care	Very small area at Bethune College medicinal garden & school campus, Christ church Vivekananda house	Bethune College & school campus, Vivekananda house, Christ church, houses of local people	Great ornamental value, branches with poisonous milky sap
28.	Song of India *Dracaena reflexa*	Upright evergreen plant with spirally arranged sword-shaped, reflexed dark green leaves; small clustered white extremely fragrant flowers appear in mid winter	Propagated through stem cuttings	Plants are grown with or without care	Very small area at Bethune College & school campus, Christ church Vivekananda house	Bethune College & school campus, Vivekananda house, Christ church, houses of local people	Ornamental Used to cure malarial symptoms, poisoning, dysentery, diarrhea, dysmenorrhea, fever. also used as hemostatic agent. leaves, bud & bark used in herbal mixtures. decorating plant as well.
29.	Nilmoni *Petrea volubilis*	Evergreen flowering vine to small rounded shrub with beautiful display of blue flowers	Planted from seedlings	Plants are grown with or without care	One plant at Bethune College campus house	Bethune College campus	Ornamental, used for fencing; flowers used to make infusion with other traditional herbs to treat diarrhoea, leaves used in

							treatment of diabetes and soothing wounds
30.	Chandraprabha *Tecoma stans*	Pinnate green leaves sharply toothed, large showy bright golden yellow trumpet-shaped flowers; seeds yellow with papery wings	Planted from seedlings	Plants are grown with or without care	Very small area at Bethune College & school campus, Christ church Vivekananda house	Bethune College & school campus, Vivekananda house, Christ church, houses of local people	Ornamental shrub, flowers attract a variety of bees, butterflies and hummingbirds, whole plants act as desirable fodder for livestock
31.	Firebush *Hamelia patens*	Small bushy plant, orangish-red tubular flowers of varying length, small dark red berry-like fruit turning black at maturity	Planted from seedlings	Plants are grown with or without care	Very small area at Bethune College & school campus	Bethune College & school campus	Flowers and fruits attract hummingbirds which also feed on insects of close vicinity to keep down pests, cultivated as garden plant, fruits edible, also used in folk medicine
32.	Shrub vinca *Kopsia fruticosa*	Tall evergreen bush with elliptical leaves, bright pink flowers occur in clusters	Planted from seedlings	Plants are grown with or without care	Very small area at Bethune College campus	Bethune College campus	Ornamentally cultivated mainly, some medicinal properties as well

33.	Mogra *Tabernaemontana divericata*	Lanceolate shiny leaves , waxy blossoms found in clusters , flowers white, shrub	Planted from seedlings	Plants are grown with or without care	Very small area at Bethune College & school campus, Christ church Vivekananda house	Bethune College & school campus, Vivekananda house, Christ church, houses of local people	Flowers used for worshipping used in ayurvediuc medicine
34.	Rongon *Ixora coccinia*	Oblong leaves , flowers in clusters , reddish orange, white, pink flowers , shrub	Planted from seedlings	Plants are grown with or without care	Very small area at Bethune College & school campus, Christ church Vivekananda house	Bethune College & school campus, Vivekananda house, Christ church, houses of local people	Ornamental, leaves and flowers used in fever and tuberculosis
35.	Christ Thorn *Carissa carandas*	Flowering shrub , fruits berry-like , reddish colored ripened fruits	Planted from seedlings	Plants are grown with or without care	Very small area at Bethune College campus	Bethune College campus	Fruits are edible rich in vitamin A, C, iron, calcium, used to treat fever, ulcer, acidity, infected wounds
36.	Indian shot *Canna indica*	Long and erect stems, leaves are alternately arranged, flowers red, yellow or orange	Planted from root stocks	Plants are grown without care	Small area at Bethune college and school campus	Bethune college & school campus, Rabindra kanan park, bare lands	Ornamental

37.	Wax plant *Hoya carnosa*	They have simple entire leaves, arranged in an opposite pattern, that are typically succulent. The flowers appear in axillary umbellate clusters at the tip of peduncles	Planted from seedlings	Plants are grown with care	Small area	Vivekananda road	Ornamental
38.	Morning glory *Ipomea nil*	Short-lived perennial, with twining to decumbent-creeping, slender stem, large purple-blue flowers	Planted from seedlings	Plants are grown with care	Large area	Vivekananda road, Beadon street, Chittaranjan avenue, houses of local people	Ornamental
39.	White cedar/Jhau *Thuja occidentalis*	Gynosperm, small tree with highly dissected leaves forming a crown, small cones are present	Planted from seedlings	Plants are grown with care	Small area	Bethune College garden, Christ Church, houses of local people	Ornamental, used to extract essential oil
40.	Christ plant/ Milii *Euphorbia milii*	Pink-red blooms are borne in clusters on and off throughout the year. Large drooping foliage atop the thick stiff canes gives the appearance of a small thorny palm tree	Planted from seedlings	Plants are grown with care	Small area	Bethune College garden, Vivekananda house, Christ church, houses of local people	Ornamental

41.	Desert rose *Adenium obesum*	A succulent, deciduous shrub, branched, large pink flowers	Planted from seedlings	Plants are grown with care	Small area	Bethune College garden, Vivekananda house, Christ church, houses of local people	Famous as a pot plant , latex is applied to decaying teeth and septic wounds
42.	Caricature plant *Graptophyllum sp.*	Small plants with large colorful leaves	Planted from root cuttings	Plants are grown with care	Small area	Houses of local people	Ornamental
43.	Juniper	Coniferous plants with highly dissected leaves, crown generally depressed	Planted from seedlings	Plants are grown with care	Small area	Houses of local people	Ornamental
44.	Money plant *Epipremnum aureum*	Epiphytic on large trees, big yellow green leaves	Planted from root cuttings	Plants are grown with care	Small area	Vivekananda road, Chittaranjan avenue, Beadon street, Houses of local people	Ornamental

45.	Pencil cactus *Euphorbia tirucalli*	Shrub or small tree with pencil-thick, green, smooth, succulent branches and minute leaves	Planted from stem cutting	Plants are grown with care	Small area	Bethune college & school campus, t, Houses of local people	Ornamental
46.	*Euphorbia tithymaloides*	Succulent, perennial shrub , red cyathium inflorescence, white green leaves	Planted from stem cutting	Plants are grown with care	Small area	Bethune school campus	Ornamental, the latex has been used topically to treat calluses, **ear** ache, insect stings, ringworm,
47.	*Callisia fragrans*	Succulent colorful leaves	Planted from stem cutting	Plants are grown with care	Small area	Vivekananda road, Beadon street, Chittaranjan avenue, road dividers, houses of local people	Ornamental
48.	*Haworthiopsis limifolia*	Succulent leaves with dots, small plants	Planted from stem cutting	Plants are grown with care	Small area	Vivekananda road, Beadon street, Chittaranjan avenue, road dividers, houses of local people	Ornamental

49.	*Gardenia jasminoides*	Shrubs or trees with large , fragrant, white flowers	Planted from seedling	Plants are grown with care	Small area	Bethune College campus, Vivekananda road, Beadon street, Chittaranjan avenue, houses of local people	Ornamental, medicinally important, used for anxiety, agitation, and liver diseases
50.	*Gardenia coronata*	Shrubs or trees with large , fragrant, yellow flowers	Planted from seedling	Plants are grown with care	Small area	Bethune school campus	Ornamental



Fig. Vegetable garden showing A: Kohlrabi; B: Cauliflower; C: Tomato and D: Chili plants



Fig: Horticulture gardens at Bethune College (A-B; D-E) and School © showing seasonal flowers and Students taking PBR data



Fig. Plants of Horticultural importance, A-B: *Dracaena* sp; C: *Diefenbacchia* sp. D:*Rhoeo discolor;* E: *Coleus* sp.*;* F: *Setcreasea purpurea*

4. Lifescape Diversity

4.3. Plant Diversity: MEDICINAL PLANTS

Sl. No.	Local name of the plant	Scientific identity	Indicative Characteristic features / folk description	Habitat	Use	Planted/ natural but grow with care/ wild	Present status	Local Distribution
1.	Tulsi	*Ocimum sanctum*	Strongly scented, somewhat toothed, green, simple leaves, arranged oppositely on much branched hairy erect stem. Inflorescence at the top of the branches.	Grow in wet soil	High religious value, strong medicinal properties. Used in treatment of isorders , malaria, diarrhea, dysentery, skin disease, isorders,eye disease, etc.	Plants are grown with care	Plenty	Bethune college & school campus, houses of local people
2.	Ram tulsi	*Ocimum basilicum*	Erect much branched perennial plant with richly green ovate leaves and terminal long segment atop the stem containing numerous small flowers	Grow in wet soil	Range of culinary and medical applications like treating feverish illnesses, indigestion, nausea, abdominal cramps. An essential oil is extracted	Plants are grown with care	2-4 seen	Bethune college medicinal garden
3.	Krishna tulsi	*Ocimum tenuiflorum*	Erect many branched plant with purplish dark green hairy stem, strongly scented leaves green or purple with a long blade and slightly toothed margin,	Grow in wet soil	Used in hindu religious worshipping, medicinally used in several diseases, dried leaves act as insect-repellant in stored	Plants are grown with care	2-4 seen	Bethune college medicinal garden campus, houses of

			4.purplish flowers pl5.aced in closed whorls		grains			local people
4.	Kalmegh	*Andrographis paniculata*	Dark green coloured square stem , leaves sessile, flowers purplish white, arranged in a specialized cluster	Grow in dry and wet soil	Potent traditional medicinal value, leaves used for it's antiviral, antibacterial & antiinflamatory properties , antioxidant properties	Plants are grown with or without care	Plenty	Bethune college medicinal garden & school campus, houses of local people
5.	Galanga	*Kaempferia galanga*	Propagation by rhizomes, large green leaves with slight purplish flower,	Grow in wet soil	Leaves, rhizomes and root tubers posses number of medicinal propertihave anti-inflammatory, analgesic, insecticidal properties	Planted and grown with care	Endangered herb	Bethune college medicinal garden
6.	False daisy/ bhringraj	*Eclypta alba*	White flower, solitary, terminal flower head, herb	Grow in dry and wet soil	Traditional use in ayurveda specially for skin , hair	Wild, grows naturally	Plenty	Bethune college medicinal garden & school campus, houses of local people, bare lands
7.	Shatavari	*Asparagus sp.*	Needle like branches,	Grow in dry	Used in ayurveda for	Planted and	3-4 in	Bethune

			minute white flowers, bl9.ackish purple globular berry-like fruits	and wet soil	treating upset stomach, anxiety and also for hormonal issues	grown with care	number	college medicinal garden & houses of local people
8.	Amal lata	*Cayratia trifolia*	Tendrils found opposite to leaves, leaves trifoliate, flowers are small, greenish white	Grow in dry and wet soil	Used in traditional herbal medicine as astringent	Wild	Plenty	Bethune college & school campus, rabindra kanan park, bare lands
9.	Bisholyakoroni	*Barleria lupulina*	Much branched erect evergreen plant with axillary spines, yellow flowers	Grow in dry and wet soil	Ornamental plant, leaves & roots used to bring relief from toothache, leaves isorders on ory	Wild, also grown with care	3-4 in number	Bethune college medicinal garden
10.	Henna	*Lawsonia inermis*	Tall, multi-branched shrub with spine-tipped branchlets and oppositely arranged elliptical leaves	Grow in dry and wet soil	Source of dye henna used to dye skin, hair and fingernails as well as fabrics including silk, wool & leather	Wild, also grown with care	5-6 in number	Bethune school medicinal garden
11.	Sarpagandha	*Rauvolfia serpentina*	Erect evergreen herb with long irregularly nodular yellowish rootstock, flowers white often tinged with violet	Grow in wet soil	Used in treatment of hypertension	Grown with care	2-3in number	Bethune school medicinal garden

			present in clusters					
12.	Vasak	*Justicia adhatoda*	Shrub with opposite ascending branches, large dull brownish-green coloured leaves oppositely arranged, flowers usually white & arranged in clusters	Grow in wet soil	Used extensively in treatment of cough & other respiratory ailments, liquid extract used in several pharmaceutical formulations as expectorant	Grown with care	3-4in number	Bethune school & college medicinal garden
13.	Periwinkle	*Catharanthus roseus*	Leaves arranged in opposite pair, white to dark pink flowers with a darker centre	Grow in wet soil	Medicinal property in root extract, anti cancer property.	Grown with care	Plenty in number	Bethune school & college medicinal garden, Vivekanada house, Rabindra kanan park, Christ church, houses of local people
14.	Datura	*Datura stramonium*	Foul smelling erect plant, flower white to creamy or violet coloured, trumpet shaped	Grow in wet soil	Used as traditional medicine, leaves used in cigarettes	Grown with care , wild	4-5 in number	Bethune school medicinal garden, of local people
15.	Black-honey shrub	*Kirganelia sp.*	Large shrub , reddish brown hairy stem	Grow in wet soil	Fruits used as astringent , leaves	Grown with care , wild	2-3 in number	Bethune college

					contain beta sitosterol			campus
16.	Diamond burbark	*Triumfetta rhomboidea*	Stamens 8-15 in number, fruit slightly ovoid, stems covered in hairs	Grow in wet soil	Used in isorders o medicine for tumor, leprosy, ulcers	Grown with care , wild	2-3 in number	Bethune college campus
17.	Ashwagandha	*Withania somnifera*	Short, tender perennial subshrub, leaves dull green, flowers small, green, bell shaped	Grow in wet soil	Used in ayurvedic medicine o enhance stamina and capacity, to cope with fatigue and physical stress	Grown with care	2-3 in number	Bethune college and school campus
18.	Ashoka	*Saraca asoca*	Small erect evergreen tree with clusters of dark-green leaves, lush bunches of bright orange-yellow to red flowers	Grow in wet soil	Religiously attached to isorder and isorder, bark used in preparing cosmetics to improve skin complexion	Grown with care	2-3 in number	Bethune college and school campus
19.	Mahua	*Madhuca longifolia*	Deciduous tree with thick grey bark; flowers pink & musky scented, appear in close bunches at the end of branchlets	Grow in wet soil	Fat or oil extracted from seeds used in soap or detergent manufacturing, fuel oil and as vegetable butter, flowers used in making alcoholic drink in tribal areas	Grown with care	1-2 in number	Bethune college and school campus
20.	Amla	*Phyllanthus emblica*	Deciduous small to medium sized tree with light green subsesile leaves closely set along branchlets; light greenish-yellow spherical fruits	Grow in wet soil	Fruits eaten raw or cooked into various dishes especially a sweet dish name murabbah; all parts are used in polyherbal ayurvedic medicine	Grown with care	1-2 in number	Bethune college and school campus

			having.smooth surface with six vertical ridges or furrows		preparations ,astringent properties, also used in making chyawanprash			
21.	Neem	*Azadiracta indica*	Tree, leaves are opposite, petioles short; white , fragrant flowers , axillary in position, bisexual flower	Grow in wet soil	In medicinal purpose , paste used for isorders on and antiseptic property , used on wound and used in paste in pox	Grown with care	Plenty	Bethune school & college medicinal garden, Vivekanada house, Rabindra kanan park, Christ church, houses of local people
22.	Poros pipul	*Thespesia populnea*	Large tree , yellow flowers , apple shaped fruits	Grow in wet soil	Leaves applied on isorders on and swelling , young fruits are applied on cut	Grown with care	1-2 in number	Bethune college medicinal garden

23.	Glory tree	*Clerodendron splendens*	Twining ever green climber, flowers are brilliant scarlet, stems inhabited by ants	Grow in wet soil	Aqueous leaf extract used in traditional medicine to alleviate symptoms of diabetes, obesity and hypertension	Grown with care	1-2 in number	Bethune college garden, houses of local people
24.	Guest tree	*Kleinhovia hospita*	Evergreen tropic tree, dense rounded crown, flowers and fruits pink in color	Grow in wet soil	Bark and leaves used as hairwash for lice, Used in traditional medicine	Grown with care	1-2 in number	Bethune college garden, houses of local people
25.	Spanish cherry	*Mimusops elengi*	Leaves glossy, dark green, flowers cream coloured, hairy and scented, bark thick	Grow in wet soil	Used in ayurvedic medicines as astringent, tonic, antihelmintic	Grown with care	4-5 in number	Bethune college garden, Vivekananda road
26.	Figs	*Ficus hispida*	Large tree, oblong, large leaves, fruits spherical,green,red when ripe	Grow in wet soil	Used in traditional medicines for ulcers,anemia	Grown with care	4-5 in number	Bethune college garden, Vivekananda road

27.	Thankuni	*Centella asiatica*	Slender creeping green to reddish-green stem with long stalked palmate leaves having toothed margin, flowers white or crimson coloured born in small rounded bunches near the soil	Grow in dry & wet soil	Leaves used in regional cuisines and traditional medicines to treat various disorders & minor wounds. Also helps in purification of soil contaminated with heavy metals	Wild	plenty	Bethune college medicinal garden, houses of local people
28.	Punarnava	*Boerhaavia diffusa*	Perennial diffuse herb, with stout root stock and many branches, opoosite leaves unequally paired, pale rose coloured small flowers	Grow in wet soil	Anti-inflammatory and expectorant properties, used to treat heart & skin isorders, cataract, roots used as laxative, anticonvulsant & analgesic	Wild	Plenty	Bethune college & school campus, bare lands
29.	Stinkvine	*Paederia foetida*	Creeper with strong, sulphurous odour exuded when its leaves or stems are crushed or bruised	Grow in dry & wet soil	Sometimes planted as an ornamental, and has virtue in folk medicine	Wild	Plenty	Bare lands, hoses of local people
30.	Porcupine flower	*Barleria prionitis*	An erect, prickly shrub, usually single-stemmed, yellow flowered	Grow in dry & wet soil	Used in toothache, swellings, arthritis, and gout pains	Planted with care	2-3 in number	Bethune college medicinal garden

31.	Bisalwakarani	*Barleria lupulina*	An erect, prickly shrub, branched with long deep green leaves and red mid-rib, yellow flowered	Grow in dry & wet soil	Used as tonic, and for treatment of dermatitis, sexual disorder, cough, fever, body ache, eczema, itches, and scabies.	Planted with care	2-3 in number	Bethune college medicinal garden
32.	Drumstick tree	*Moringa oleifera*	Tree with pinnately compound leaves, small white flowers and fruits as long pods	Grow in dry & wet soil	Used as an antioxidant, to prevent spasms, boost the immune system	Wild	4-5 in number	Bethune college & school campus, Vivekanda road, Beadon street
33.	Limonia plant	*Ravenia spectabilis*	Shrubs with pink flowers	Grow in dry & wet soil	Used in traditional medicine	Planted with care	4-5 in number	Bethune college campus

*availability/ siting of the plant and change over time (if any) with reasons



Fig. Medicinal plants at Bethune College and School A: Kalmegh; B: Ramtulsi; C: Galanga; D: Tulsi and E: Sarpagandha

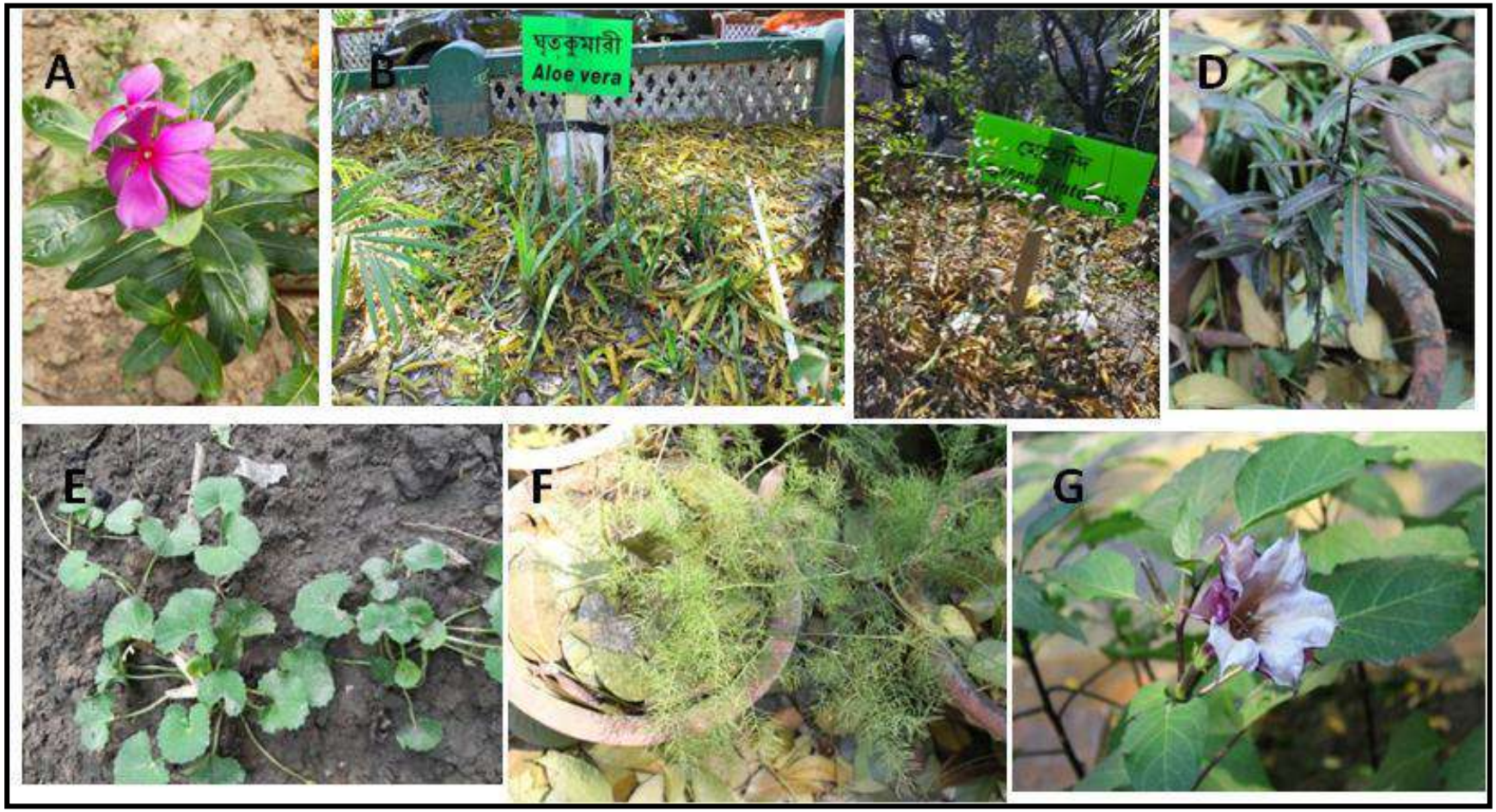


Fig. Medicinal plants at Bethune College and School contd. A: *Catharanthus roseus;* B: *Aloe vera;* C: *Lawsonia inermis*; D: *Barleria lupulina*; E: *Centella asiatica*; F: *Asparagus* sp.; G: *Datura stramonium*

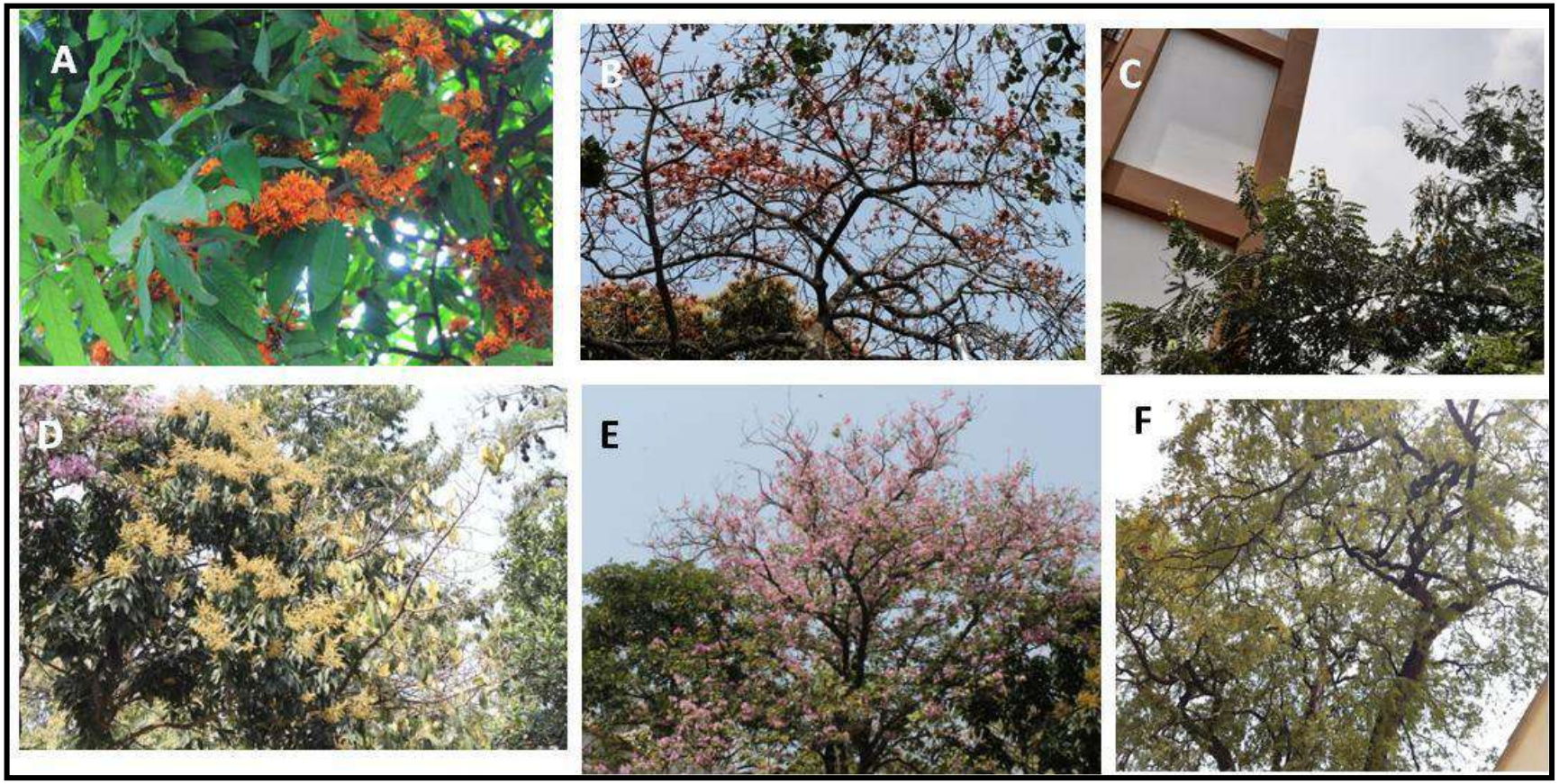


Fig: Tree biodiversity at Bethune College Campus, A: *Saraca asoca*; B: *Bombax ceiba* ; C: *Peltophorum pterocarpum*; D: *Mangifera indica;* E: *Bauhinia purpurea*; F: *Tamarindus indica*

4. Lifescape Diversity

4.4. TREES

Sl. No.	Local name of the plant	Scientific identity	Indicative Characteristic features / folk description	Habitat	Use	Planted/ natural but grow with care/ wild	Present status	Local Distribution
1.	Batabi lebu	*Citrus decumana* (Rutaceae)	Flower- single or in cluster, fragrant & yellow-white in color, fruit large	Grow in dry & wet soil	Edible fruit, rich in citric acid	Planted with care	2-3 plants	Bethune school campus, houses of local people
2.	Tamarind	*Tamarindus indica* (Fabaceae)	Leaves are alternately arranged & lobed, leaflets green, elliptic-ovular, elongated brown pod-like fruit with many seeds in a row	Grow in dry & wet soil	Fruit pulp edible, used in traditional medicine, metal polishing. seed kernel used to extract oil and also in jute/textile processing, gum industry. wood used in furniture making and other small speciality wood items. also used as a bonsai species in horticultural practices	Plants are grown without care	8-10 plants	Large trees at Bethune school & college campus, houses of local people, Vivekanada road, Beadon street, Chittaranjan avenue
3.	Harshringar/Shiuli	*Nyctanthes arbor-tristis*	A small tree, oppositely arranged		Used in traditional medicine metal	Plants are grown	8-10 plants	Trees at Bethune

		(Oleaceae)	broad leaves with hairy surface, fragrant white flowers with a orange-red centre		polishing. seed kernel used to extract oil and also in jute/textile processing, gum industry. wood used in furniture making and other small speciality wood items. also used as a bonsai species in horticultural practises	without care		school and college campus, Vivehkananda road, houses of local people
4.	Papa.ya .	*Carica papaya* (Caricaceae)	Small tree, separately branched mainly at the top, leaves deeply lobed in 7 lobes.flowers sweetly scented, open at night. fruit green coloured when unripe	Grow in dry & wet soil	Used as vegetable and nutritous fruit. traditional medicinal property as well	Plants are grown with care	Plenty	Trees at Bethune school and college campus ,Christ church, houses of local people
5.	Wax apple	*Syzygium samarangense* (Myrtaceae)	Tropical tree growing tall. leaves elliptical & rounded at the base, fruits fleshy	Grow in dry & wet soil	Fruit frequently used in salads & also eaten as a fruit full of water content	Plants are grown with or without care	3-4 in number	Bethune college campus
6.	Indian almond	*Terminalia catappa* (Combretaceae)	Tall upright tree with symmetrical crown, vas shaped crown forms when stem becomes older. leaves glossy dark-brown colored, corky light fruit	Grow in dry & wet soil	Seed when fully ripe tastes like almond, leaves used in herbal medicine & water purification in aquariums, wood used for making water resistant	Plants are grown with or without care	1-2 in number	Bethune college & school campus

					structures			
7.	Large Mahogany	*Swietenia macrophylla* (Meliaceae)	Large leaves, leaflets in even number, connected by a central midrib. bark of the stem smooth & greyish when young but become darker & furrowed with age; flowers small white or green, fruits brown with winged seeds	Grow in dry & wet soil	Wood used in the construction of furnitures & decoration and also for making modern musical instruments, helpful in increasing blood circulation	Plants are grown with or without care	4-5 in number	Trees at Bethune college & school campus
8.	Mahogany	*Swietenia mahogany* (Meliaceae)	An evergreen or briefly deciduous tree that can grow up to 30 metres tall with a large, spherical crown and many heavy branches that cast a dense shade	Grow in dry & wet soil	Planted around garden boundaries where it provides deep shade, wood is the choice for high-quality furniture and cabinetwork, joinery, boats and pattern work, stem bark is considered to be antiseptic, astringent and febrifuge	Plants are grown with or without care	Plenty	Bethune college & school campus, Vivekanada Road, Beadon Street, Rabindra Kanan Park, Chittaranja n avenue
9.	Jackfruit	*Artocarpus heterophyllus* (Moraceae)	Trees, leaves thin leathery, elliptic in shape, dark green & shiny above. male and female flowers remain in aggregated form. ellipsoidal to roundish fruit with a	Grow in dry & wet soil	Rich in nutrients (carbohydrate,protein, vitamin,mineral) both the fruit & seeds used in different food preparations. Several parts used in traditional medicine.	Plants are grown with or without care	Plenty	Bethune college & school campus, Vivekanada Road, Beadon Street, Rabindra

			hard gummy shell actually is an aggregation of several individual fleshy fruits, each containing a seed		termite-proof wood used for furniture making & constr uction			Kanan Park, Chittaranjan avenue
10.	Gulmohar	*Delonix regia* (Fabaceae)	Trees, Leaves compound , have leathery appearance. flowers bright pinkish red, large with five petals	Grow in dry & wet soil	Ornamental and shade tree. seed purifies and enriches blood	Plants are grown without care	Plenty	Bethune college & school campus, Vivekanada Road, Beadon Street, Rabindra Kanan Park, Chittaranjan avenue
11.	Wood apple	*Aegle marmelos* (Rutaceae)	Trilobed aromatic leaves , sweetly scented bisexual flower borne in clusters, medium sized trees, globose fruit with smooth and tough covering	Grow in dry & wet soil	Edible fruit pulp is sweet, fruit used in treatment of diarrhea , peptic ulcer , constipation. religious beliefs in traditional practice	Plants are grown without care	8-10 in number	Bethune college & school campus, Vivekanada Road, Beadon Street, Rabindra Kanan Park, Chittaranjan avenue, Jagannath temple
12.	Shimul	*Bombax ceiba* (Bombacaceae)	Stem develops umbrella shaped	Grow in dry & wet soil	Flower buds used as spice and in herbal	Plants are grown	4-5 in number	Bethune college &

			crown on straight tall trunk , flowers cup shaped and red in color		medicine. treatment of cholera, toothache	without care		school campus, Vivekanada Road, Beadon Street, Chittaranjan avenue
13.	Palmyra palm	*Borassus flabellifer* (Arecaceae)	Straight solitary grey trunk with globose crown of elaborate fan-shaped leaves. male & female flowers grow on separate trees, fruits black to brown with sweet fibrous pulp and each fruit contains two or three or four seeds	Grow in dry & wet soil	Fruit pulp sugary, dense & edible. seeds contain watery fluid inside edible fleshy white body. leaves used as writing material	Plants are grown without care	8-10 in number	Bethune college & school campus
14.	Royal palm	*Roystonea regia* (Arecaceae)	Slender , fast growing, long ever green palm	Grow in dry & wet soil	Ornamental, leaves used for thatching and wood for construction. seed serves as source of oil. root serves as diuretic & also used in treatment of diabetes	Plants are grown without care	2-3 in number	Bethune college & school campus
15.	Amaltas	*Cassia fistula* (Fabaceae)	Trees with spreading branches that form an open crown of yellow flower	Grow in dry & wet soil	Popular ornamental plant, also used in folk medicine, leaves as cattle supplement-	Plants are grown without care	2-3 in number	Bethune college & school campus

					diet, cleaning agent , for ulcer, herbal laxative			
16.	Kanchon	*Bauhinia variegate* (Fabaceae)	Flowers white with five petals, fruit is long pod-like containing many seeds, leaves cleft	Grow in dry & wet soil	Popular ornamental tree, flowers used in indian cuisine & pickle, flowers also show antioxidant & anticancerous activity	Plants are grown without care	Plenty	Bethune college & school campus, Vivekananda road, Beadon street
17.	Purple bauhinia	*Bauhinia purpurea* (Fabaceae)	Small to medium sized deciduous tree, long & broad rounded leaves bilobed at the base & apex; conspicuous, pink, Grow in dry & wet soil fragrant flowers with five petals; fruits long, pod-like	Grow in dry & wet soil	Popular ornamental tree, flowers used to make pickles & curries and regarded as laxative, leaves used to treat coughs, bark used for glandular disease and antidote for poisons	Plants are grown without care	1-2 in number	Bethune college & school campus
18.	Yellow bauhinia	*Bauhinia tomentosa* (Fabaceae)	Small tree with srambling stem & drooping slender branches, greyish bark hairy, greenish leaves deeply divided into two lobe-like stuctures, bell-shaped flowers with large yellow petals with a dark maroon patch at the base	Grow in dry & wet soil	Popular ornamental tree, bark used for treating skin problems	Plants are grown without care	1-2 in number	Bethune college campus

19.	Krishnochura	*Caesalpinia pulcherrima* (Fabaceae)	Small tree with bright green feather-like leaves, large flowers with 4 spreading scarlet or orange-red petals stay in groups	Grow in dry & wet soil	Popular ornamental tree	Plants are grown without care	Plenty	Bethune college & school campus, Christ church, Vivekananda road, beadon street, houses of local people
20.	Radhachura	*Peltophorum pterocarpum* (Fabaceae)	Fast-growing deciduous tree usually reaching a height of about 15 (-24) m with orange-yellow fragrant flowers	Grow in dry & wet soil	Popular ornamental tree	Plants are grown without care	Plenty	Bethune college & school campus, Vivekananda road, beadon street
21.	Oleander	*Nerium indicum* (Apocynaceae)	Tall erect tree with whorls of thick, leathery, dark-green, long & narrow leaves; whitish-pink flowers grow in clusters	Grow in dry & wet soil	Ornamental, pollution adsorber, Drug for treatment of cancer has been investigated	Plants are grown without care	Plenty	Bethune college & school campus, Christ church, Vivekananda road, beadon street, houses of local people, road dividers
22.	Yellow oleander	*Cascabela thevetia* (Apocynaceae)	Ever-green small tree, leaves are willow-like, linear-lanceolate, glossy green in color, yellow flower	Grow in dry & wet soil	Cultivated as an ornamental plant, useful in biological pest control	Plants are grown with or without care	Plenty	Bethune College & school campus, houses of

								local people, Vivekananda road
23.	Banyan	*Ficus benghalensis* (Moraceae)	Very large tree, large canopy coverage, aerial roots present which when reach ground, grow woody structure	Grow in dry & wet soil	Gives shelter to passerby and also used for religious purposes, in treatment of ulcers, vomitting fever, it has also folk history as it is being worshiped by local peoples for last few years	Plants are grown without care	Plenty	Bethune college & school campus, Vivekananda road, Beadon street, Chittaranjan avenue
24.	Rubber tree	*Ficus elastica* (Moraceae)	Large tree growing upto 30-40 m tall with a trunk upto 2 m in diameter, long & broad leaves, aerial roots from trunk anchors in soil to support heavy branches	Grow in dry & wet soil	Commercial importance, milky white latex used in manufacture of commercial rubber	Plants are grown without care	1-2 in number	Bethune college campus
25.	Dumur	*Ficus glomerata* (Moraceae)	Deciduous tree with irregular crown , fruit greenish , grows in clusters	Grow in dry & wet soil	Fruits edible, cultural as well as religious significance, fruits have astringent property , antioxidants. bark used against insect bite	Plants are grown without care	6-8 in number	Bethune college & school campus, Vivekananda road, Beadon street
26.	Pepal	*Ficus religiosa* (Moraceae)	Large tree leaves cordate , extended	Grow in dry & wet soil	Gives shelter to passerby and also	Plants are grown	Plenty	Bethune college &

			drip tip leaves		used for religious purposes, Traditional medicine for 50 types of disorders including asthma, diabetes, diarrhea, epilepsy, gastric problems	without care		school campus, Vivekananda road, Beadon street, Chittaranjan avenue
27.	Chhatim	*Alstonia scholaris* (Apocynaceae)	Evergreen tree, whorled arrangement of leaves, leaves ovate	Grow in dry & wet soil	Wood is recommended to make pencils, has therapeutic uses	Plants are grown without care	Plenty	Bethune college & school campus, Vivekananda road, Beadon street, Chittaranjan avenue
28.	Weeping fig	*Ficus benjamina*	Erect evergreen medium sized tree, dense growth, crown of compactly arranged green leaves, few aerial roots emerge from thick branches, inconspicuous flowers, small fig-like fruits	Grow in dry & wet soil	Suitable for avenue planting, versatile pot plants for indoor decoration	Plants are grown without care	1-2 in number	Bethune college campus
29.	Betel nut palm	*Areca catechu* (Arecaceae)	Long palm tree with straight trunk, long leaves with numerous crowded leaflets	Grow in dry & wet soil	Popular landscaping plant, leaves & nut of local cultural and traditional value	Plants are grown without care	Plenty	Bethune college & school campus,

								Christ church, Vivekananda road, Beadon street, houses of local people
30.	Chinese fan palm	*Livistona chinensis* (Arecaceae)	Long palm trees with slender trunk attaining height of 9-15m, large fan shaped coarse textured leaves of green color	Grow in dry & wet soil	Ornamental tree, leaves used for manufacture of hand fans, coats, hats & brooms; fibres also used	Plants are grown without care	2-3 in number	Bethune college & school campus, Christ church
31.	Areca palm	*Dypsis lutescens* (Arecaceae)	Medium sized palm tree with small trunk varying from 10 cm-15 cm in diameter, leaves green, fruit oval shaped & orange colored	Grow in dry & wet soil	Indoor house plant, nut traditionally used in treating sore throats, leaves beneficial in arthritis treatment	Plants are grown without care	Plenty	Bethune college & school campus, Christ church, Vivekananda house, houses of local people
32.	Orange jasmine/Kamini	*Murraya paniculata* (Rutaceae)	Small tree with smooth pale to whitish bark, compound leaf with upto seven egg-shaped glossy green leaflets, white to cream coloured fragrant flowers arranged in loose groups	Grow in dry & wet soil	Cultivated as ornamental tree or hedges, flowers attract bees & fruits attract small fruit-eating birds	Plants are grown without care	Plenty	Bethune college & school campus, Christ church, Beadon street, Chittaranjan avenue houses of local people
33.	Kanak champa	*Pterospermum acerifolium*	Bark of the stem grey colored whereas	Grow in dry & wet soil	Leaves used for making dinner plates,	Plants are grown	4-5 in number	Bethune college &

		(Malvaceae)	young branches show rusty brown colour, rough and drooping large dark green leaves with toothed margin and hairy lower surface, large white finger-shaped flowers bloom in spring		as packing or wrapping material, wood used in planking, bark used in treatment of scabies	without care		school campus
34.	Debdaru	*Polyalthia longifolia* (Annonaceae)	Tree trunk symmetrical pyramidal shaped, long narrow leaves with wavy edges, younger leaves show coppery brown colour while older leaves become light to dark green	Grow in dry & wet soil	Decorative tree, leaves used for ornamental decoration in festivals, wood used for manufacturing small articles like pencils, boxes	Plants are grown without care	Plenty	Bethune college & school campus, Beadon street, Chittaranjan avenue houses of local people
35.	Acacia/Akash moni	*Acacia auriculiformis* (Fabaceae)	Long evergreen tree with crooked trunk & vertically fissured bark; thick, leathery, curved leaves; creamy yellow sweet scented flowers born in pairs; fruits flat cartilaginous with undulate margins, like pods which initially stays straight but at	Grow in dry & wet soil	Ornamental & shade tree, wood & charcoal used for fuel, gum from tree sold commercially as 'gum arabic', flowers are source of honey in apiculture, bark yields a natural dye and also used as tanning material	Plants are grown without care	Plenty	Bethune college & school campus, Beadon street, Chittaranjan avenue

			maturity becomes twisted					
36.	Charcoal tree	*Trema orientalis* (Cannabaceae)	Short evergreen tree with heavy branching and rounded to spreading crown, branchlets covered with white velvetty hairs, grey or brown bark with corky spots, leaves with short grey hairs on the lower surface, small greenish white flowers in clusters; fruit small round and fleshy, glossy black when ripe	Grow in dry & wet soil	High ecological significance, wood used in paper & pulp production and to make charcoal as a good fire starter; leaves & bark used in treatment of sore throat, asthma bronchitis, bark used in making waterproof fishing-lines, string or ropes	Plants are grown without care	4-5 in number	Bethune college & school campus
37.	Shwet shimul	*Ceiba pentandra* (Malvaceae)	Long tree with thick trunk and supporting buttress roots, trunk and many larger branches often crowded with thorns, leaves in form of crown, seeds surrounded by fluffy yellowish fibre	Grow in dry & wet soil	Flowers act as important source of nectar for honey bees, seed-fibre used in stuffing mattresses, pillows, stuffed toys	Plants are grown without care	4-5 in number	Bethune college & school campus
38.	Putranjiva	*Drypetes roxburghii* (Putranjivaaceae)	Medium sized evergreen tree with long drooping branches, motted	Grow in dry & wet soil	Wood used in turnery work, seeds used as tribal ornaments important medicinal	Plants are grown without care	1-2 in number	Bethune college campus

			bark, elliptic dark green glossy leaves, tiny male & female flowers born on different plants, fruits small nearly round		tree in Indian traditional system			
39.	Sishu	*Dalbergia sisso* (Fabaceae)	Medium to large deciduous tree with a light crown and leathery, alternate leaves, fragrant whitish to pink flowers present in dense clusters, fruits flat,thin, pod-like and of light brown colour	Grow in dry & wet soil	Wood used as commercial timber and for fuel, tender twigs used for brushing, used in siddha medicine practise for skin disorders & stomach related issues	Plants are grown without care	8-10 in number	Bethune college campus
40.	Aurocaria	*Aurocaria* sp. (Aurocariaceae)	Tall pine-like coniferous plants, commonly known as christmass tree, gymnosperm	Grow in dry & wet soil	Ornamental	Plants are grown with care	1-2 in number	Bethune school & campus, houses of local people
41.	Cycas	*Cycas* sp. (Cycadaceae)	Shrub or small tree with pinnately compound leaves, unisexual, large male cone or megasporophyll present, gymnosperm	Grow in dry & wet soil	Ornamental	Plants are grown with care	5-6 in number	Bethune school campus, Vivekananda house, Christ church
42.	Ber/Kul	*Ziziphus mauritiana* (Rhamnaceae)	Much-branched, evergreen but rather thorny tree, green berries	Grow in dry & wet soil	Fruits edible, possess hair growth stimulating, anti-platelet aggregating	Plants are grown without care	4-5 in number	Bethune school & college campus,

								Vivekananda road, beadon street
43.	Custard apple	*Annona squamosa* (Annonaceae)	Shrub or small tree with a rounded or spreading, open crown, green fruits, multiseeded	Grow in dry & wet soil	Fruits edible, as an insecticidal, an anti-tumor agent, anti-diabetic, anti- oxidant	Plants are grown without care	1-2 in number	Vivekananda road
44.	Curry leaf	*Murraya koenigii* (Rutaceae)	Small or medium sized tree, pinnate aromatic leaves	Grow in dry & wet soil	Famous for its aromatic leaves that provide curry spice	Plants are grown with care	8-9 in number	Bethune College garden houses of local people
45.	Powder puff	*Calliandra tergemina* (Fabaceae)	Small tree with branched pinnate, silky leaves and powder-puff-like balls of conspicuous dark crimson stamens	Grow in dry & wet soil	Ornamental	Plants are grown with care	Plenty	Vivekananda road, Beadon street, Chittaranjan avenue, road dividers, houses of local people
46.	Java plum/Jamun	*Syzygium cumini* (Myrtaceae)	An evergreen tropical tree, 50 to 100 ft. tall, with oblong opposite leaves having a terpentine smell, fragrant white flowers and purplish-black oval edible berries	Grow in dry & wet soil	The fruit and seeds are sweet, acrid, sour, tonic, and cooling, and are used in diabities, diarrhoea and ringworm. The bark is astringent, sweet sour, diuretic, digestive and anthelmintic	Plants are grown without care	4-5 in number	Vivekananda road, Beadon street
47.	Traveller's tree	*Ravenala madagascariensis*	Large tree, the enormous paddle-	Grow in dry & wet soil	Ornamental	Plants are grown	1-2 in number	Vivekananda' s house

		(Arecaceae)	shaped leaves are borne on long petioles, in a distinctive fan shape aligned in a single plane			with care		
48.	Indian cedar	*Toona ciliate* (Meliaceae)	Large tree, timber red in colour, leaflets are opposite, fruits reddish brown, oblong	Grow in dry & wet soil	Timber is extensively used for making furnitures, wood panelling and other construction purposes	Plants are grown without care	4-5 in number	Bethune college & school campus, Vivekananda road
49.	Champa	*Michelia champaca* (Magnoliaceae)	Large tree, flowers strongly fragrant, cream to yellow-orange in color	Grow in dry & wet soil	Flowers used in religious purposes, for decorating, for making fragrant hair and massage oils	Plants are grown without care	1-2 in number	Bethune college & school campus, Vivekananda road, Beadon street
50.	Saal	*Shorea robusta* (Dipterocarpaceae)	Evergreen tree , leaves are ovate in shape , tree with smooth bark with few long vertical furrows	Grow in dry & wet soil	Commercially important, used as astringent in ayurveda , resin collected from tree wound called dhuna are used in hindu ceremonies	Plants are grown without care	8-10 in number	Bethune college & school campus, Beadon street, Vivekananda road, Chittaranjan avenue
51.	Guava	*Psidium guajava* (Myrtaceae)	Ever-green shurb or small tree. leaves grow in pair, oppositely, flowers	Grow in dry & wet soil	Guava is an edible fruit & can be eaten raw or cooked	Plants are grown without care	8-10 in number	Bethune college & school campus,

			white, solitary or 2-3 clusters-borne					Beadon street, Vivekananda road, Chittaranjan avenue, houses of local people
52.	Longan tree/Aansfol	*Dimocarpus longan* (Sapindaceae)	Large tree, leaves are oblong, light yellow flowers, fruit circular	Grow in dry & wet soil	Fruit edible and juicy,used in soups	Plants are grown without care	2-3in number	Bethune college & school campus, Vivekananda road
53.	Banyan fig	*Ficus rumphii* (Moraceae)	Deciduous tree, epiphyte when young, independent when older, large pointed leaves, fruits spherical and black	Grow in dry & wet soil	Pollinated by wasps, leaves are boiled and steam of it is used to induce sweating in target patients	Plants are grown without care	2-3in number	Bethune college & school campus, Vivekananda road
54.	Kamranga	*Averrhoea carabala* (Oxalidaceae)	Small tree, 10-12 meter, redish-purple flower,star shaped fruit	Grow in dry & wet soil	Fruit is edible, fruit juice also used for removing stains	Plants are grown without care	1-2in number	Bethune college campus
55.	Kadam	*Neolamarickia cadamba* (Rubiaceae)	Large tree, flowers round-shaped, red to yellow, slightly fragrant	Grow in dry & wet soil	Fruit and inflorescence are edible by few people	Plants are grown without care	8-10in number	Bethune college & school campus, Beadon street, Chittaranjan avenue
56.	Mango	*Mangifera indica* (Anacardiaceae)	Large tree, terminal cluster of flowers,	Grow in dry & wet soil	Fruit consumed as food, tradional use in	Plants are grown	Plenty	Bethune college &

			fleshy greenish to yellowish fruit , leaves long & narrow with wavy margin at times		worship of god , wood used in few music instruments	without care		school campus, Christ church, Beadon street, Vivekananda road, Chittaranjan avenue
57.	Indian coral tree	*Erythrina indica* (Fabaceae)	Thorny, deciduous tree, leaves trilobed, flowers red-orange	Grow in wet soil	Extracts have antihelmintic, antiulcer activity	Grown with care	4-5 in number	Bethune college garden, Vivekananda road



Fig: Students of Bethune College working for PBR



Fig: Tree biodiversity in Ward 26, A: *Ficus glomerata;* B: *Delonix regia* C: *Cassia fistula;* D: *Madhuca longifolia,* E: *Mimusops elengi*; F: Swietenia macrophylla; G: *Gardenia jasminoides;* H: *Alstonia scholaris*

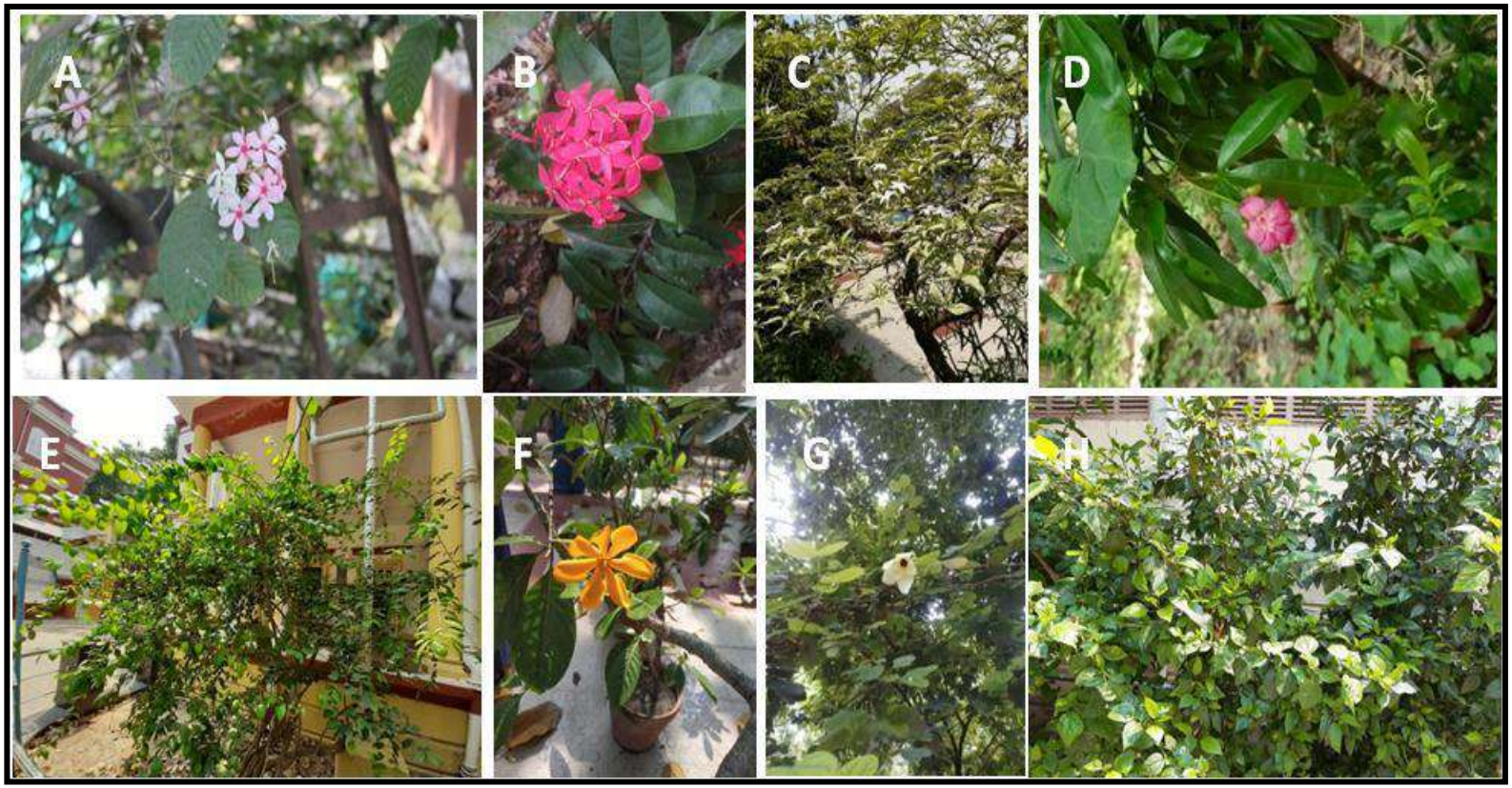


Fig: Shrub Biodiversity, A: ***Kopsia fruticosa*** **B:***Ixora coccinia***; C:** ***Tabernaemontana divaricata;*** **D:** ***Ravenia spectabilis;*** **E:** ***Petrea volubilis;*** **F:** ***Gardenia coronate;*** **G:** ***Bauhinia tomentosa*** **and H:** ***Hibiscus rosa-sinensis***

4. Lifescape Diversity

4.5. HERBS

Sl. No.	Local name of the plant	Scientific identity	Indicative Characteristic features / folk description	Habitat	Use	Planted/ natural but grow with care/ wild	Present status	Local Distribution
1.	Wireweed	*Sida acuta* (Malvaceae)	Erect, cylindrical sem, simple leaves, flowers small , yellow	Grow in dry & wet soil	Effective emollient, analgesic and diuretic herb	Wild	Plenty	Bethune college & school campus, Rabindra kanan park, bare lands
2.	Bon-dhoney	*Scoparia dulcis* (Scrophulariaceae)	Herbs, small leaves and white axillary flowers	Grow in dry & wet soil	Used in the treatment for digestive problems, pulmonary conditions, fever, skin disorders, hypertension	Wild	Plenty	Bethune college & school campus, Rabindra kanan park, bare lands
3.	Malaysian false pimpernel	*Lindernia crustacean* (Scrophulariaceae)	Perennial herb, branched prostrate stems, rooting at lower nodes, flowers purplish white	Grow in dry & wet soil	Used to treat diabetes mellitus, diarrhea, and syphilis	Wild	Plenty	Bethune college & school campus, Rabindra

								kanan park, bare lands
4.	Feverfew	*Parthenium hysterophorous* (Asteraceae)	White coloured small flower head, serrated leaves, herb	Grow in dry & wet soil	It causes toxicity in human , causes respiratory malfunction in human	Wild	Plenty	Bethune college & school campus, Rabindra kanan park, bare lands
5.	Hatisur	*Heliotropium indicum* (Boraginaceae)	Annual herb,branched hairy stem , ovate to oblong leaves , purple flower , scorpoid fashion of floret arrangement	Grow in dry & wet soil	Used to treat inflammations and tumours	Wild	Plenty	Bethune college & school campus, Rabindra kanan park, bare lands
6.	Japanese mazus	*Mazus pumilus* (Scrophulariaceae)	Trailing herbs, flower puple with yellow spots at throat , lower leaves opposite , closely arranged , ovate , obtuse	Grow in dry & wet soil	Used as a tonic, the juice of the plant is used in the treatment of typhoid	Wild	Plenty	Bethune college & school campus, Rabindra kanan park, bare lands
7.	Yellow cress	*Rorippa indica* (Brassicaceae)	Floral arrangement of mustard like flowers ,	Grow in dry & wet soil	Used to relieve exterior syndrome and dispersing cold,	Wild	Plenty	Bethune college &

			hermaphrodite, herb		promoting blood circulation and detoxifying, inhibiting dampness and removing jaundice.			school campus, Rabindra kanan park, bare lands
8.	Indian nettle	*Acalypha indica* (Euphorbiaceae)	Annual herb, cup shaped involucre, long structural cluster of florets	Grow in dry & wet soil	Folk medicines for jaundice remidies	Wild	Plenty	Bethune college & school campus, Rabindra kanan park, bare lands
9.	Black nightshade	*Solanum nigrum* (Solanaceae)	Perrenial herb, whitish flower , greenish or blackish flowers	Grow in dry & wet soil	Used as food and recorded as femine food , fruits have laxative properties	Wild	Plenty	Bethune college & school campus, Rabindra kanan park, bare lands
10.	Green amaranth	*Amaranthus viridis* (Amaranthaceae)	Branches arise from base , terminal cluster of flowers , greenish flower, herb	Grow in dry & wet soil	Used in traditional medicines for fever, asthma used as food supplement,	Wild	Plenty	Bethune college & school campus, Rabindra kanan park,

								bare lands
11.	Cinderella weed	*Synedrella nodiflora* (Asteraceae)	Small herb, yellow coloured flower, capitulum inflorescence	Grow in dry & wet soil	anticonvulsant and other neuropharmacological effects	Wild	Plenty	Bethune college & school campus, Rabindra kanan park, bare lands
12.	Goat weed	*Ageratum conyzoides* (Asteraceae)	Herb with ovate leaves, white to mauve clustered teeminal flowers	Grow in dry & wet soil	Used as traditional medicine against diarrhoea and dysentery, has insecticidal & nematicidal properties	Wild	Plenty	Bethune college & school campus, bare lands
13.	Bitter vine	*Mikania micrantha* (Asteraceae)	Ribbed creeping vine or stem with long leaves with heart-shaped base & pointed apex, white flowers grow in clusters	Grow in dry & wet soil	Popular local antiseptic medicine, also used to stop bleeding	Wild	Number has decreased	Bethune college & school campus, bare lands
14.	Minnieroot	*Ruellia tuberose* (Acanthaceae)	Small biennial plant with thick fusiform root and striking violet coloured funnel-shaped flowers, fruits long sessile pods, dry pods pop when	Grow in dry & wet soil	Used in folk and ayurvedic medicine as diuretic, anti-pyretic, analgesic, anti-diabetic and gastroprotective, also used as natural dye in textile industry	Wild	Number has decreased	Bethune college & school campus, bare lands

			rubbed with water					
15.	Shortleaf spike sedge	*Kyllinga brevifolia* (Cyperaceae)	Perennial creeping herb with several erect stems with slender long grass-like leaves, small round flower heads consisting of tiny florets	Grow in dry & wet soil	Leaves, stems and rhizomes used as anti-inflammatory, anti-malarial, decongestant, diuretic	Wild	Plenty	Bethune college & school campus, Rabindra kanan park, bare lands
16.	Amrul	*Oxalis corniculata* (Oxalidaceae)	Creeping stem, roots from nodes , trilobed leaves, yellow coloured flower	Grow in dry & wet soil	Leaves are edible, rich source of vitamin C	Wild	plenty	Bethune college & school campus, Christ church, Rabindra kanan. Road dividers, bare lands
17.	Durba ghash	*Cynodon dactylon* (Poaceae)	Slightly flattened creeping slender stems, short grey-green colored leaves with sharp edges	Grow in dry & wet soil	Leaves religiously offered in hindu worshipping traditionally, leaves used in ayurveda practises	Wild	plenty	Present everywhere on bare lands
18.	Apang	*Achyranthes aspera* (Amaranthaceae)	Erect or sometimes sprawling coarse herb, leaves hairy, long upright cluster of small flowers;	Grow in dry & wet soil	Juice of plant a potent mixture for wall plaster according to ancient sanskrit scriptures,	Wild	Number has decreased	Bethune college & school campus, bare lands

			fruits small, orange to reddish-purple coloures with pointed tip		traditionally used as medicine in treating dropsy, scorpion bite, post-partum bleeding and inducing labor in times of child birth, plant ash used in washing clothes			
19.	Honeyweed	*Leonurus sibricus* (Lamiaceae)	Annual plant, leaves ovate or heart-shaped, deeply cut lobes, flowers are white	Grow in dry and wet soil	Antibacterial, antioxidant and reduces intracellular reactive oxygen species	Wild	Number has decreased	Bethune college & school campus, rabindra kanan park, bare lands
20.	Nut sedge	*Cyperus rotundus* (Cyperaceae)	Small clump, dark green basal leaves. leaves sprout in ranks of 3 from the base	Grow in dry & wet soil	Mentioned in ancient indian ayurvedic medicine charaka samhita. used in modern medicine as musta moola churna for fever & digestive system disorders. antibacterial used for treating toothache, might serve as famine food	Wild	plenty	Present everywhere on bare lands
21.	Ban tulsi	*Croton bonplandium* (Euphorbiaceae)	Leaves slender with a sharp end and toothed margin ,	Grow in dry & wet soil	Cures skin disease , swelling , bronchitis	Wild	plenty	Bethune college & school

			flower small & white					campus, Vivekananda road bare lands
22.	Asthma-plant	*Euphorbia hirta* (Euphorbiaceae)	Erect and prostrate annual plants,cluster of flowers at nodes herb	Grow in dry and wet soil	Used traditionally for female disorders, respiratory ailments (cough, coryza, bronchitis, and asthma)	Wild, grows naturally	Plenty	Bethune college & school campus, rabindra kanan park, houses of local people, bare lands, road dividers
23.	Bon taamak	*Nicotiana plumbaginifolia* (Solanaceae)	Annual herb, stems slender , basal leaves are sessile , wavy margin of flower	Grow in dry and wet soil	Used in the treatment of cuts, wounds, toothache, rheumatic swelling in the traditional system of medicines	Wild, grows naturally	Plenty	Bethune college & school campus, rabindra kanan park, houses of local people, bare lands
24.	Snake needle grass	*Oldenlandia corymbosa* (Rurbiaceae)	Erect stem , linear oblong almost stalkless leaves ,	Grow in dry and wet soil	Leaves soaked in warm water and liquid drunk to treat	Wild, grows naturally	Plenty	Bethune college & school

			whitish flower , herb		stomach disorders			campus, rabindra kanan park, houses of local people, bare lands, road dividers
25.	Spider flower	*Cleome rutidospermum* (Cleomaceae)	Angular stem , trifoliate leaves , flowers , herb, very small purple , solitary , fruit long pod-like	Grow in dry and wet soil	Useful in auditory ailments	Wild, grows naturally	Number has decreased	Bethune college & school campus, rabindra kanan park, bare lands
26.	Dudhmor	*Pouzolzia indica* (Urticaceae)	Perennial herb, erect, hairy plant, leaves opposite, flowers pale green	Grow in dry and wet soil	Anti helmintic, antibacterial, antifungal	Wild	Number has decreased	Bethune college & school campus, rabindra kanan park, bare lands
27.	Shining bush	*Peperomia pellucid* (Piperaceae)	Annual shallow rooted herb with succulent stem, leaves shiny heart-shaped fleshy, several dot-shaped	Grow in dry and wet soil	Grown for ornamental foliage, also used as food item and medicinal herb especially for antibiotic effects	Wild	Plenty	Bethune college & school campus, Christ church, Rabindra

			seeds attached to fruiting clusters					kanan park, road dividers, bare lands
28.	Indian goosegrass	*Eleusine indica* (Poaceae)	Annual grass with strong roots growing in tufts, wide & folded flat leaves, leaf sheaths contains hair at the margins, 4-5 spike-like terminal flower heads containing small individual florets	Grow in dry and wet soil	Seeds used as famine food, mostly present in cultivated lands, lawns or golf courses as weeds	Wild	Plenty	Bethune college & school campus, Christ church, Rabindra kanan park, road dividers, bare lands
29.	Joyweed	*Alternanthera sessilis* (Amaranthaceae)	Small herb , white coloured flower, leaves ovate	Grow in dry and wet soil	Used as vegetables, used to treat hepatitis, tight chest, bronchitis, asthma and other lung troubles, to stop bleeding and as a hair tonic	Wild	Plenty.	Bethune college & school campus, Christ church, Rabindra kanan park, road dividers, bare lands
30.	Bitter leaf	*Vernonia cinerea* (Asteraceae)	Annual herb , flowers pinkish, purplish flower head	Grow in dry and wet soil	Used to treat cold	Wild	Plenty	Bethune college & school campus, Christ church, Rabindra kanan park, road dividers, bare lands

31.	Ivy gourd	*Coccinia grandis* (Cucurbitaceae)	Perrenial climber with single tendrill , smooth leaves	Grow in dry and wet soil	Local people use them for food	Wild	Plenty	Bethune college & school campus, Christ church, Rabindra kanan park, road dividers, bare lands
32.	Lovegrass	*Erogrostis tenella* (Poaceae)	Small density tufted, annual grass , smooth	Grow in dry and wet soil	Large area at Bethune college and school campus	Wild	Plenty	Bethune college & school campus, Christ church, Rabindra kanan park, road dividers, bare lands
33.	Crowfoot grass	*Dactyloctenium aegyptium* (Poaceae)	Grass commonly growing at damp sites, has a straight shoot and creeps	Grow in dry and wet soil	Used as food to improve nutrition	Wild	Plenty	Bethune college & school campus, Christ church, Rabindra kanan park, road dividers, bare lands
34.	Bilati Dhania	*Eryngium foetidum* (Apiaceae)	Small herbs with long serrated leaves with a fine odour	Grow in dry and wet soil	Used as a vegetable, used in traditional medicine in tropical regions for burns, earache, fevers	Wild	Number has decreased	Houses of local people

35.	Touch me not	*Mimosa pudica* (Fabaceae)	Shrubs Leaves pinnately compound, ,showing sysmonastic movement, pink heads	Grow in dry and wet soil	Ornamental, antidepressant	Wild	Number has decreased	Bare lands along Vivekananda road
36.	Green amaranths	*Amaranthus viridis* (Amaranthaceae)	Small herbs with brown spikes at the apex	Grow in dry and wet soil	Used as a vegetable, used in treatment of fever, pain, asthma, diabetes	Wild	Number has decreased	Bethune school & college campus, bare lands
37.	Malabar spinach/Pui sak	*Basella alba* (Basellaceae)	Creeper with large green leaves	Grow in dry and wet soil	Common vegetable, young leaves are used as a laxative, and the red fruit juice as eye-drops to treat conjunctivitis	Wild	Number has decreased	Bethune school campus, houses of local people



Fig. Biodiversity of naturally occurring herbs A: ***Alternanthera sessilis;*****B:** ***Acalypha indica*** **C:** ***Euphorbia hirta*** **D:** ***Eclipta prostrata*** **E:** ***Oldenlandia corymbosa*** **and F:** ***Oxalis corniculata***



Fig. Lifecsape biodiversity at different areas of ward 26 and students getting informations for PBR



Fig. Tree biodiversity showing C: Banyan tree; D: Jackfruit and F: Palmyra palm trees

4. Lifescape Diversity

4.6. FERNS

Sl. No.	Local name of the plant	Scientific identity	Indicative Characteristic features / folk description	Habitat	Use	Planted/ natural but grow with care/ wild	Present status	Local Distribution
1.	Shield fern	*Christella sp.* (Thelypteridaceae)	Fern with large fronds with dissected pinnae and prominent circinnate ptyxis, fronds bear circular sori on the underside of fronds, found in the crevices of old buildings and walls, , marshy areas	Grow in wet soil	Ornamental, have ecological significance	Wild	Number has decreased	Bethune college & school campus, Vivekananda road, Chittaranjan avenue, Beadon street, Houses of local people
2.	Chinese brake	*Pteris vittata* (Pteridaceae)	Fern with large fronds with dissected pinnae and prominent circinnate ptyxis, fertile fronds bear sori on the underside of fronds, found in the crevices of old buildings and walls	Grow in wet soil	Ornamental, have ecological significance	Wild	Number has decreased	Bethune college & school campus, Vivekananda road, Chittaranjan avenue, Beadon street, Houses of local people
3.	Maiden hair	*Adiantum sp*	Fern with large fronds	Grow in wet	Ornamental, have	Wild	Number has	Bethune

	fern	(Pteridaceae). .	with fan shaped pinnae s, fertile fronds bear sori on the underside of fronds, found in the crevices of old buildings and walls, marshy areas	soil	ecological significance		decreased	college & school campus, Vivekananda road, Chittaranjan avenue, Beadon street, Houses of local people



Fig: Herb biodiversity A: *Nicotiana plumbaginifolia*; B: *Synedrella nodiflora*; C: *Pouzolzia indica*; D: *Kyllinga brevifolia*; E: *Coccinea indica* and F: *Parthenium hysterophorous*

4. Lifescape Diversity

4.7. Bryophyte/Moss diversity

Sl. No.	Local name of Moss	Scientific identity	Characteristic features	Habitat	Use	Cultivated/ natural but grow with care/ wild	Present status/ *	Local Distribution	Remarks
1.	-	*Cyathoidum* sp.	Rosette like structure	Surfaces & crevices	Ecological significance	Natural	Plenty	Bethune School and College campus	-
2.	Moss	*Semibarbula* sp.	Plant body are differentiated into gametophyte and sporophyte	Surfaces & crevices, brick walls	Ecological significance	Natural	Plenty	Bethune School and College campus	



Fig: Moss and Fern Biodiversity

4. Lifescape Diversity

4.8. Mushroom / Macro Fungi Diversity

Sl. No.	Local name of the mushroom (Macro Fungi)	Scientific identity	Characteristic features	Habitat	Use	Cultivated/ natural but grow with care/ wild	Present status/ *	Local Distribution	Remarks
1.	----	*Polyporus* sp.	Blackish-brown fruiting body with numerous pores on ventral side	On fallen woods	Poisonous	Natural	1-2 seen	Bethune School and College campus on fallen wood	
2.		*Ganoderma* sp.	Blackish-brown fruiting body.	On tree trunk	Poisonous	Natural	2-3 seen	Bethune School and College campus on trunk of betel nut palms	
3.		*Schizophyllum commune*	Grey-white fruiting body	On fallen tree trunk	poisonous	Natural	A small population seen.	Bethune School and College campus	

*availability/ siting of the plant and change over time (if any) with reasons

4. Lifescape Diversity

4.9. Algal Diversity

Sl. No.	Local name of Alga	Scientific identity	Characteristic features	Habitat	Use	Cultivated/ natural but grow with care/ wild	Present status/ *	Local Distribution	Remarks
1.	Green alga	*Rhizoclonium* sp.	Microscopic, cells are large, long and cylindrical, each with a single, netlike green chloroplast with several pyrenoids	Surfaces & crevices near the taps	-	Natural	Plenty	Bethune School and College campus	-

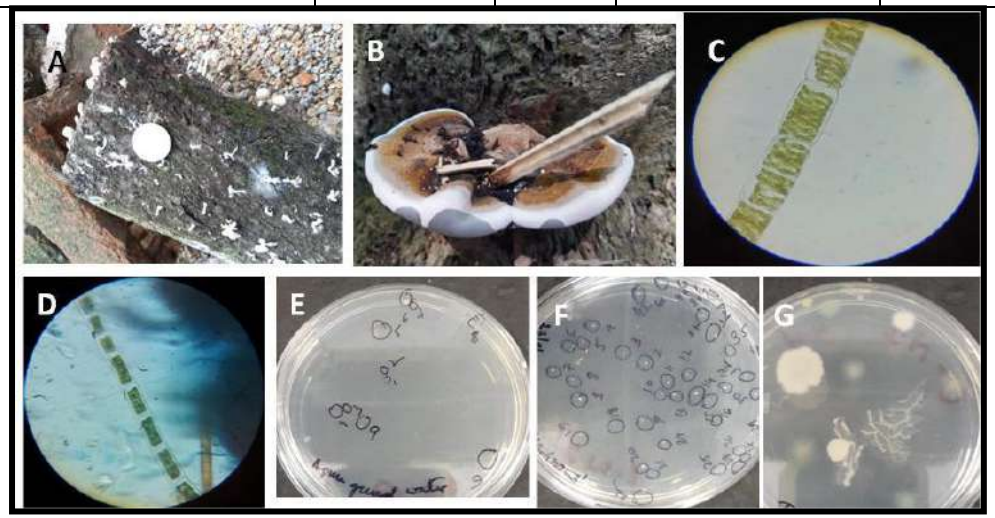


Fig. Fungal, Agal and Microbial biodiversity

4. Lifescape Diversity

4.10. Microbiological Diversity

Sl. No.	Local name	Scientific identity	Characteristic features	Habitat	Use	Cultivated/ natural but grow with care/ wild	Present status/ *	Local Distribution	Remarks
1.	-	Unidentfied (Water sample collected from Hedua park)	Multiple bacterial and fungal colonies appeared on Nutrient Agar plates	Water sample from Hedua park	-	Natural	Plenty	Opposite to Bethune School and College campus	-
2.	-	Unidentfied (Water sample collected from tap water)	Multiple bacterial and fungal colonies appeared on Nutrient Agar plates	Water sample from tap water	-	Natural	Plenty	Bethune School and College campus Tap water	-
3.	-	Unidentfied (Water sample collected from aquaguard water)	Multiple bacterial and fungal colonies appeared on Nutrient Agar plates	Water sample from aquaguard water	-	Natural	Plenty	Bethune School and College campus Tap water	



Fig. Plant Biodiversity A: ***Aurocaria*** **sp.; B:** ***Sansevieria*** **sp.; C:** ***Cleome rutidosperma*****; D:** ***Nerium rcaindicum*****; E:** ***Averrhoa carambola*****; F:** ***Solanum indicum***

4. Lifescape Diversity

4.11. Animal Diversity: Wild

Sl. No.	Local name	Scientific Identity	Indicative Characteristic features / folk description	Habitat	Importance	Present status*	Local Distribution	Remarks
1.	Kathberali	Three striped palm Squirrel *Psittacula krameri*	Grey body with three striped.	Large canopy-trees and ground level	Pollination, seed dispersal, nutrient recycling	common	in and around Bethune College Campus throughout Ward No. 26.	
2	Kak (House Crow)	*Corvus splendens*	Entirely black body	Very common on all habitats. Nests seen on big old trees.	visiting dead & rotten bodies as "Scavengers"	Plenty	throughout college campus and Ward no. 26.	
3.	Pecha (Owl)		Grey body with white mouth	Old building tree holes; Nests seen on old trees	significant role in local pest control, for e.g., lowering the mouse population by	not seen very frequently	Bethune college Campus; Throughout other areas	

					feeding on them		especially on the old buildings and large trees of Ward No. 26.	
4.	Cheel/Black Kite	*Milvus migrans*	Pale-Black body.	Large trees, roadside lamp strands	Scavenger; top predator	numerous	Throughout Ward No. 26.	
5.	Kokil/Asian Koel	*Eudynamys scolopacea*	Entirely Black Body.	Often seen in tree canopy during February-March.	As pollinator and scavengers. Adds aesthetic value also	numerous	throughout college campus and Ward no. 26.	
6.	Spotted Dove/ Chhite Ghughu	*Sreptopelia chinensis*	Greyish-brown body	Tree branches and ground	Graminivore, occasional insectivore; maintains ecosystem balance	numerous	Mostly in college campus	
7.	House sparrow/ Chorai	*Passer domesticus*	Pale brown	Almost everywhere	Seed eaters, plays role in seed dispersal	numerous	Almost everywhere	

8.	Red-Vented Bulbul/Bulbul	*Pycnonotus cafer*	Black body with red vent	On tree branches	omnivore	numerous	Mostly inside Bethune College, also on some road side trees.	
9.	Common Myna/ Salik	*Acidotrheres tristris*	Grey-brown body	Almost everywhere	omnivore	numerous	Throughout ward no.26	
10.	Asian Pied Starling/Guye Salik	*Gracupica contra*	Greyish brown	On tree branches	omnivore	rare	in college campus, also on some road side trees.	
11.	Woodpecker	*Dinopium benghalense*	red, yellow, brown, golden body colour	On tree branches	Mainly insectivore, occasionally seed eater	Not much common	in college campus, also on some road side trees.	
12.	Moutusi/ Purple sunbird/ Durga	*Cinnyris*	purple coloured , metallic shine in	On shrubs	Nectarivore, plays	common	in college campus, also	

	Tuntuni	*asiaticus*	males		role as pollinator		on some road side trees.	
13.	Magpie Robin	*Copsychus saularis*	Black and white body colour	On tree branches	Mostly insectivore, occasionally seed eater, plays role as pollinator	Moderately numerous	throughout college campus and Ward no. 26.	
14.	Bat / *Megachiroptera* (Frugivorous)	*Pteropus* sp.	Brown body	On tree branches	Pollinator and seed disperser; their fecal matter contribute productivity to the ecosystem they exist and provide soil fertility being rich source of nitrogen and phosphorus	numerous	in college campus, also on some road side trees.	
15.	Tiktiki (House Gecko)	*Hemidactylus* sp	Yellowish brown body	College garden and constructions	Pest, control of insect population		Throughout ward26	
16.	Garden Lizard	*Calotes versicolor*	Variable colour	College campus	Seed disperser, pollinator	common	College campus and	

							gardens	
17.	Dhere Indur (Rat)	*Rattus* sp	Black or ashy black	Garbage dumps	Pest, transmission of parasites	common	Throughout ward 26	
18.	Kecho/ Earthworm	*Lumbricus* sp.	Variable morphology	Moist soil, sub surface level	Nutrient recycling	common	College campus and moist patches throughout ward no. 26	
19.	Cockroach	*Periplaneta* sp.	brown	Variable places	pest	common	College campus and moist patches throughout ward no. 26	
20.	Dragonfly	Anisoptera	Variable in forms	Vegetation patches	pollinator	common	College campus and moist patches throughout ward no. 26	
21.	Damsefly	Zygoptera	Variable in forms	Vegetation patches	pollinator	common	College campus and moist patches throughout	

							ward no. 26	
22.	Honey bees	*Apis* sp.	Brownish yellow	Floral units, fruit shops, organic debris	pollinator	common	College campus and moist patches throughout ward no. 26	
23.	Grasshopper	Orthoptera	greenish	Grassy patches, herbs	Pollinator, nutrient recycler	common	College campus and moist patches throughout ward no. 26	
24.	Toad	*Bufo* sp.	variable	Garden, vegetation patch, aquatic sites	Occupies mid-level in food chain, vital role in energy transfer in multiple ecosystem hierarchies, plays vital role in controlling insect population	common	College campus and moist patches throughout ward no. 26	
25.	Prajapati/ Butterflies	Lepidoptera	diverse	Floral units, fruit shop, organic debris	Vital pollinators, nutrient recycler	common	College campus and moist patches throughout ward no. 26	

*availability/ siting of the animal and change over time (if any) with reasons

- **Bat (*Megachiroptera sp.*):** The bat population greatly contributes to the lifescape biodiversity of Bethune College. They are pollinator and seed disperser; their fecal matter contribute productivity to the ecosystem they exist and provide soil fertility being rich source of nitrogen and phosphorus; bat guano is a reservoir of multiple array of organisms depending on the habitat distribution and dietary preference of bats, again bat guano provides primary producer level in different ecological backdrops which lack the primary producers like mountain caves and burrows in tree stems; being a reservoir of diverse array of parasites, they often remain responsible for spread of zoonotic disease like , rabies, Ebola, leptospirosis, histoplasmosis, and pseudotuberculosis; bat guano may contain a potentially infectious fungus *Histoplasma capsulatum* that causes lung infection known as histoplasmosis; this nocturnally active species often play role as pests by feeding on fruits; on the other hand, preying upon nocturnal insects they also control insect pests; unique adaptive feature of echolocation; remain responsible in organic material and nutrient distribution, and recycle; potentiality for bat watching tourism having aesthetic value; their population size declines by the threat factors like depletion of food resources, habitat destruction by anthropogenic intervention in forms of over use of chemicals, overexposure to automobile exhaust etc; potential bioindicator species; bat meat used as direct human food in many countries; an anticoagulant compound called salivary plasminogen activator (DSPA) found in the saliva of bat is used to treat strokes as alternative medicine; Bats contributed into the field of biomimetics, i.e., modeling cutting-edge technologies based on natural forms. The anticlotting chemicals in the saliva of bats are being investigated as potential anticoagulant for treatment of blood clots and strokes. The development of sonar for ships and ultrasound was partly inspired from echolocation that bats use as navigation orientation without crashing on obstructions like trees, buildings etc.

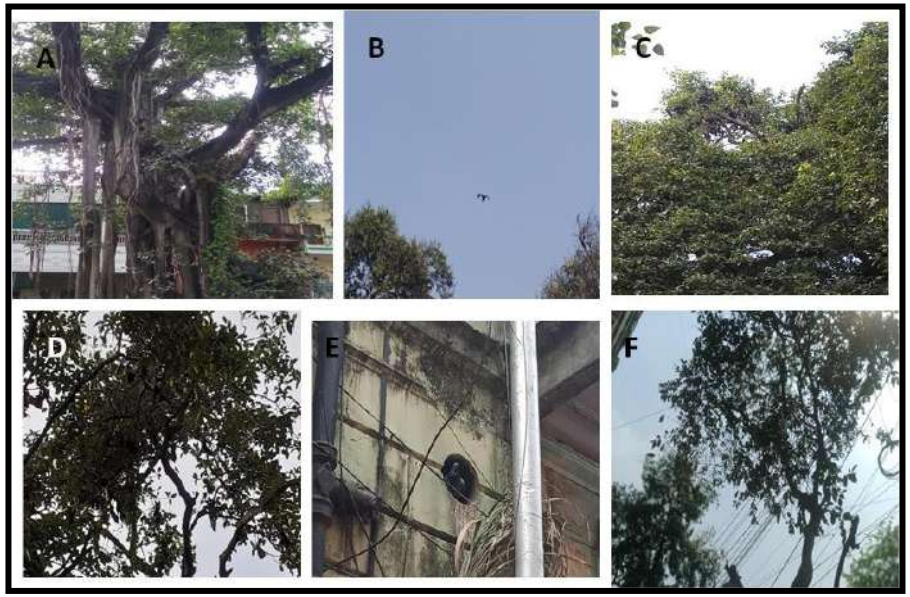


Fig.A-D Bat diversity of Bethune College and school; E-F: Birds

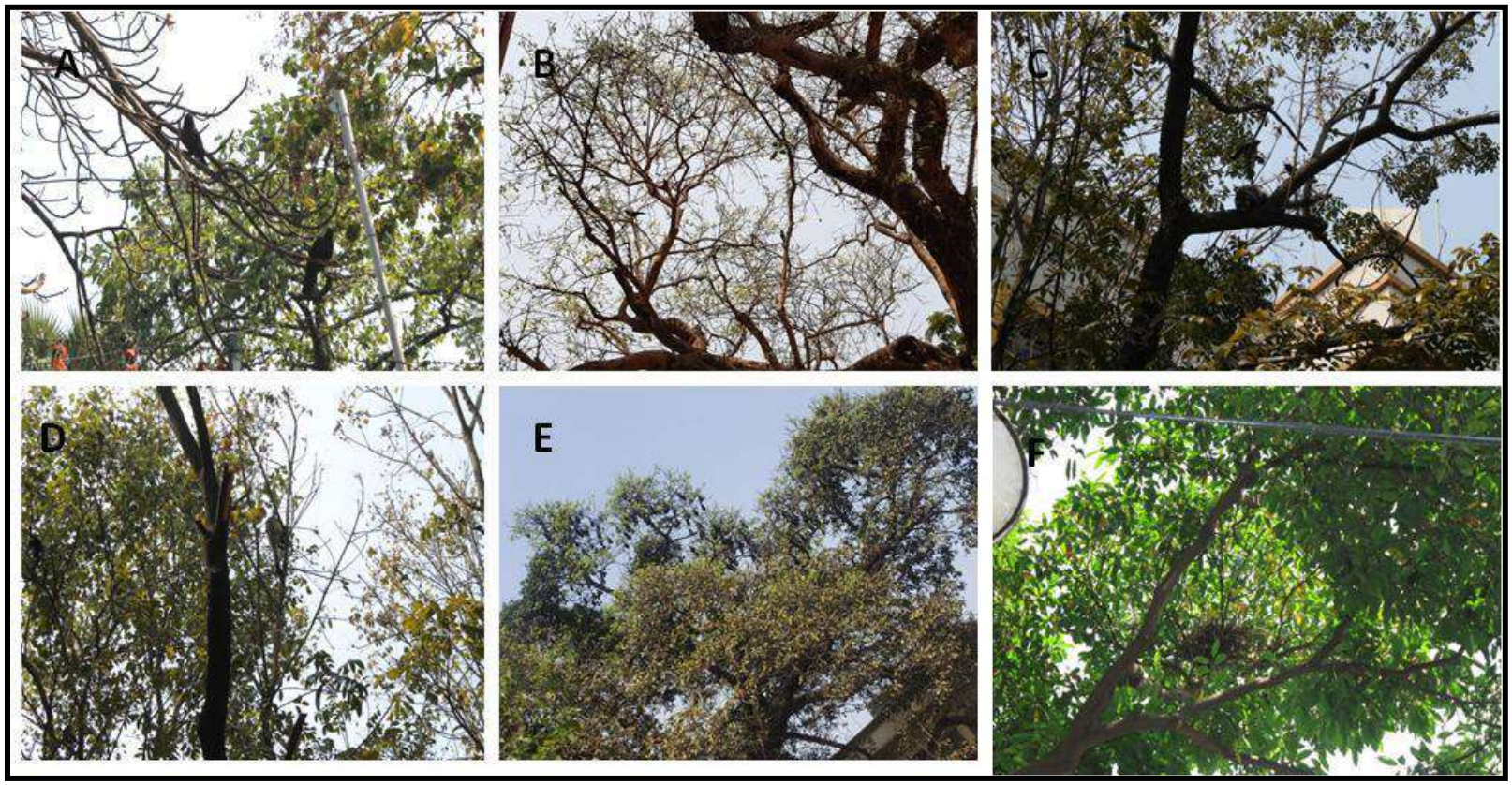


Fig. Bird biodiversity of Ward 26, KMC



Fig. Glimpses of animal biodiversity

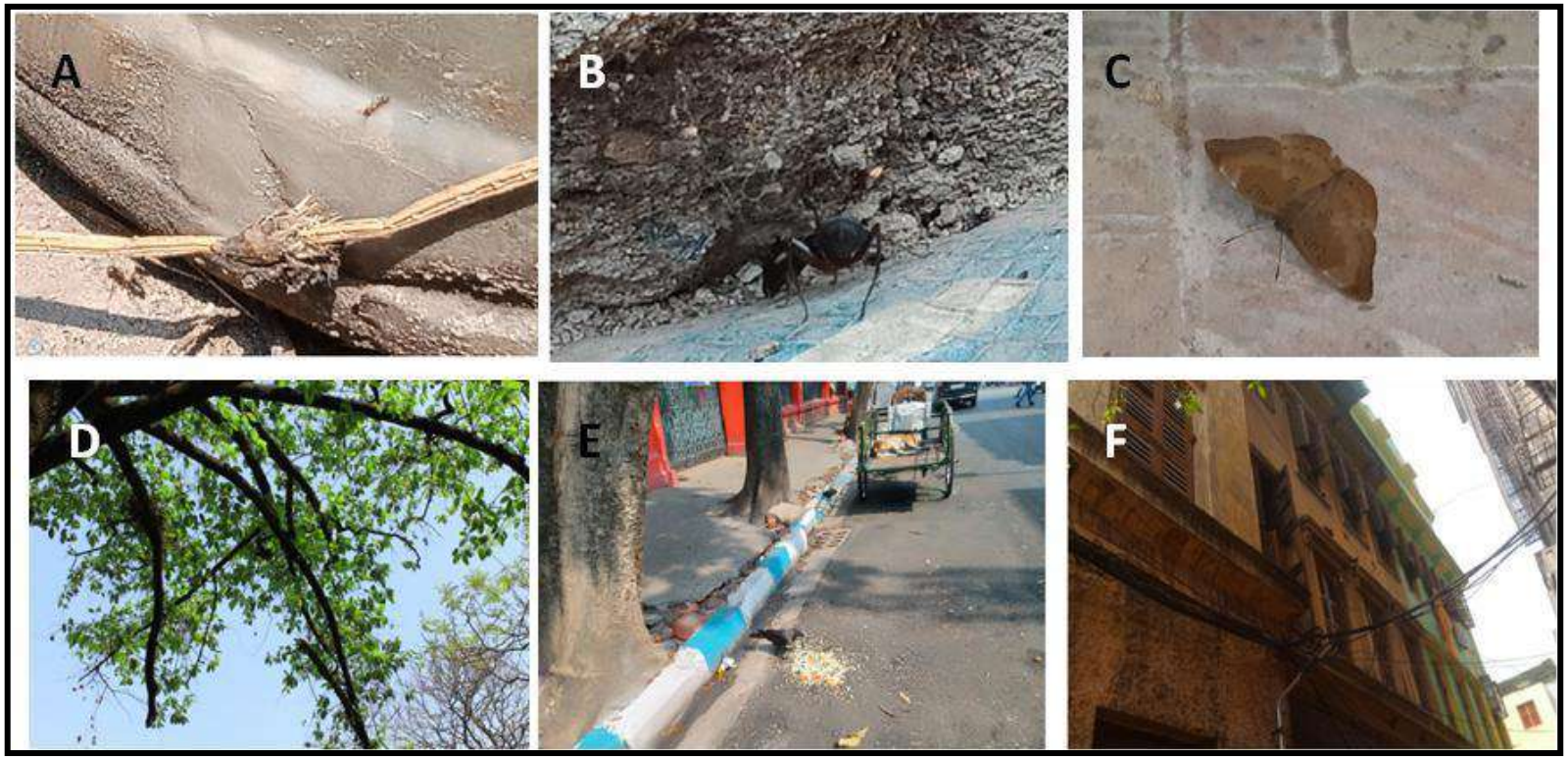


Fig. Insect and bird biodiversity

4. Lifescape Diversity

4.12. Animal Diversity (Domesticated)

Sl. No.	Name of the breed	Indicative characteristics	Importance: advantages and disadvantages of domestication of breed	Source of the breeds	Opinions(if any) of the locals on changing pattern of domestication	Availability	Remarks
1.	Kukur (Dog) *Canis familiaris*	Neri/Road side sheltered	Mainly act as "scavengers", night guard for a particular area	Desi/domesticated	Their number is increasing day by day	Plenty, throughout ward 26	
2.	Beral (Cat) *Felis catus*	Strong flexible body; sharp teeth & Claws; usually white in colour, rarely black.	Decreasing rat Population, disturbs local people by eating their foods	Stray/Feral	Their number is increasing day by day	Plenty, throughout ward 26	
3.	Murgi (Hen) *Gallus gallus domesticus*	i.Poultry—Small compact light body. ii.Desi—small head with well set comb.	These are main protein food for local people	i.Poultry ii.Desi	Number remained same	Available at street , every Chicken Meat Shop ; inside cage of Chicken Shop	
4.	Chhagal (Goat) *Capra aegagrus hircus*	i.Jumnapari—long ears with short horns, upward curved tail, various colours—black, white and brown	These are domesticated for their meats and milk	i.Jumnapari ii.Nabad	Due to high price market demand is going to be less	Earlier Desi Goat was domesticated at every house, but recently due to	

		ii.Nabad—Long hairs with short horns but but body hairs are long				high maintaining cost, people are not interested to rear goats at their house	
5.	Tia (Roseringed Parrot) *Psittaciformes*	Rose-ringed—green coloured body with red beak and rose-ring neck	Domesticated inside cage by very few people	Rose-ring	Number decreased	People are not interested in domestication of birds.	
6.	Badri (Parrot)	Yellow, blue, green with black stripes, greywhite	Domesticated At the house of Sanjay Dey, Bethune College Campus Quarter	yellow, blue, green with black stripes, grey-white	Number decreased	Breed	



Fig. View of domesticated and roadside cats and dogs



Fig. Animal diversity at Ward 26, KMC

5. Peoplescape Diversity

5.1. Primary user group

Sl. No.	Primary user group	Biodiversity resources used for livelihood
1.	Mantu:Age 48 years (Vivekananda Road)	1. Tea seller- Source: Barabazar (M.G. Road)
2.	Mayra Community (Ram dulal street)	2. Famous sweet shops

5.2. Demographic Pattern*

Sl. No.	Caste (SC/ST/OBC)	Number of families/ households	Ancestral occupation related to Biodiversity, if any	Remarks if any
1.	Dome Community (around 100 people) from Ramesh Datta Street (Name: Sunil Baral)	~100	Bamboo works and handicrafts	Famous all over the state-

*Data may be available from KMC



Fig.A-B: Dome community famous for bamboo works; C: Students taking data; D-E: Ramdulal street with the famous sweet shops



Fig. Lifescape biodiversity and students taking reports

5. Peoplescape Diversity

5.3. Knowledgeable persons (traditional knowledge holders related to biodiversity)

Sl. No.	Name and address	Occupation	Nature of their knowledge	Whether this knowledge/ information is being transferred to others
1.	Dr. Siddhartha Gupta Saptaparni, 40/A Shimla Street, Kolkata-700006	Doctor	1. Medicinal plants and their uses 2. A well maintained garden at the roof-top 3. Use tulsi during puja purpose	Yes. He conveyed to young generations.
2.	Rev. Lopamudra Mistry Christ Church, Bidhan Sarani, Kolkata-700006	Priest of Christ Church , family legacy, school teacher	1. She knows about the importance of medicinal plants in Christian rituals 3. She loves animals and has pets- dog, cats and parrots 4. A well maintained garden and wild plants inside the church campus	Yes. She conveyed to young generations.
3.	Dilip Mahato Bethune School 181, Bidhan Sarani, Kolkata-700006	Staff of Bethune School, lives in school quarter Hometown :Muzaffarpur	1. They worship *Ocimum sanctum* 2. They have planted *Chrysanthemum* sp., Marigold for puja purpose	Yes. He and his family members conveyed to young generations.
4.	Sanjoy Kumar Dey Bethune College 181, Bidhan Sarani,	Gateman of Bethune College , lives in college quarter Hometown :Boubazar, Kolkata	1. He loves plants and animals 2. He planted and worship *Aurocaria* sp.	Yes. He and his family members conveyed to young generations.

	Kolkata-700006		3. He has pets, various kinds of birds(badri)	



Fig. Students and Teachers of Bethune College talking to local peoples for peoplescape diversity

5. Peoplescape Diversity

5.4. Rituals and festivals related to biodiversity

Sl. No.	Name of the ritual/ festival	Communities who perform/participate in/ celebrate the ritual/ festival	Time period of ritual/ festival	Bioresources utilized in ritual/ festival	Socio-cultural significance of the bioresource	Remarks
1.	Rathayatra at Jagannathbari (Shimla Street)	Hindu festival Informant:Madan Mohan Mukherjee Shimla Street(Opposite to Vivekanada house)	In the bengali month of Asad(June/July)	Mango leaves, tulsipata, sandal, fruits, rice, apple,Durba grass banana, musambi lebu, Flowers etc	Local people celebrate irrespective of caste and community	The idol of Jagannath is placed in a chariot and goes for a parikrama with all the devotees
2.	Kali puja at Basa Kalibari (Ramdulal Sarkar Street) and Icchamoyi kali mandir (Bethune Row)	Hindu festival Informant:Subhasis Raha Ray Bidhan Sarani(Opposite to Vivekanada house)	In the bengali month of Kartick(October/November)	All seasonal fruits and flowers, Jaba, Aparajita, Belpata, Durba grass, Shyama grass, sandal, Rice, milk, turmeric, salt, vegetables	Local people celebrate irrespective of caste and community	The puja is celebrated for whole night and Kichdi bhog is distributed among the devotees
3.	Christmas at Christ Church	Christian Community	25th December	Flowers, Christmas tree (Aurocaria/Thuja)	Local people celebrate irrespective of caste and	People assemble at church for the morning prayer

					community	



Fig. Sacred spots showing the relationship of people, plants and rituals



Fig. Places of worship and peoplescape diversity, A: Christ Church; B: Jagannath Bari; C: Kali mandir and D: Jora shiv Mandir

6. Traditional folklore/ lyrics/ songs related to biodiversity

NIL



Fig. Peoplescape and Lifescape biodiversity of Ward 26; KMC

7. Problems, Planning, Recommendations and Aspirations of the local people regarding biodiversity of the Ward

- Local People has complained about increasing dog population
- Local people are suffering from skin and lung diseases due to increased pollution

1. Annexures

List of *Vaids*, *Hakims* and traditional health care (human and livestock) practitioners residing and/or using bio resources occurring within Ward, if any

Name	Age	Gender	Address	Area of specialization	Location from which the person accesses biological material	Perception of the practitioner on the resource status	Medicinal use



Fig. Glimpses of Market Survey (ChatuBabu Bazar)

2. Annexures

Market Survey

Sl. No.	Bioresource	Use(s)	Cultivated/ wild and source area	Range of selling price	Remarks
1.	Fruit seller: Seasonal fruits (Grapes) near Girish Park Metro station Name: Md Mansur from Bihar	Eaten raw by the local people	M.G. road, Barabazar		-
2.	Fruit Seller: Coconut water at Girish Park Name: Zahis Abbas from Titagarh	Eaten raw by the local people	M.G. road, Barabazar	20/- to 25/- per piece	-
3.	Potato Seller: Chatu Babu market area Ganesh Mandal	Eaten as vegetable	M.G. road, Barabazar		
4.	Grape Seller – Girish Park area Name: Md Mansur	Eaten raw by the local people	M.G. road, Barabazar		