# Study of Phyto Diversity And Conservation Aspects on Private Nursery At Coastal Purba Medinipur

Manika Das<sup>1</sup>, Dr. Debabrata Das<sup>2</sup>

<sup>1</sup>Assistant Teacher <sup>2</sup>Associate Professor <sup>1</sup>Gokulnagar G.J. Sikshaniketan (H.S.), Nandigram, W.B. <sup>2</sup>Govt. General Degree College, Lalgarh, Jhargram, W.B.

Abstract- Coastal area of Medinipur is unique for its nature with diverse floral and faunal composition. It is a treasure of many wild and valuable plants in different small pockets. The use and value based plant diversity focuses the empirical value that broadcasts economic importance in addition to its ecological value. Not only has the local and natural vegetation, the area harboured many valuable exotic as well as semi exotic plants. Owing to its landmass with natural flora alien species act directly on natural vegetation and shows negative impact on the local environment. Local nursery and private conservatory play a crucial role to conserve the species and develop immense economic growth of the area. In this communication authors have been documented some value based plant stocks in private nurseries which need attention to know the present situation of exotic phytodiversity in addition to the natural phyto-diversity. It attains a good view to manage the ecosystem as well as to use the resource of local kind in addition to the foreign elements to manage the ecosystem. It will draw an opaque idea to the researchers to manage and protect phyto-diversity as a whole. Hope that coastal people, migratory people, authority and Government departments would take proper steps to restore the environment soon. Society people would be benefitted immediately to earn money through the manipulation of nursery stock which has immense value on nature and environment.

*Keywords*- Purba Medinipur; Private nursery, Phyto-diversity; Conservation.

# I. INTRODUCTION

Purba Medinipur is an administrative unit of West Bengal state in India. The district is situated in the southern part of the Medinipur division. The head quarter of this district is Tamluk famous as Tamralipta. It is adjacent to Balasore district of Odisha state in the southwest; Bay of Bengal in the south; Hooghly river and 24 Parganas (S) district to the east. The geographical location of the district is  $21^{\circ}36' 35''$  N to  $22^{\circ}$ 57' 10'' N latitude and  $86^{\circ} 33'$  E to  $88^{\circ} 12' 40''$  E longitude. The elevation of the district is nearly 10 mt above mean sea level. It has 65.5 km long coastal line along its southern and south-eastern boundary. The same district has its six coastal blocks, namely Nandigram-I, Khejuri-II, Contai-I, Contai-II, Ramnagar-I and Ramnagar-II. The soil of coastal area is alluvial, sandy and saline. Strong wind erosion, high evaporation, salinity and scarcity of soil nutrients are the characteristic features of the coastal area of Purba Medinipur. This area is occasionally affected by cyclones and high tide. Tidal floods are regular phenomenon of these areas. Therefore, the area is under threat to cultivation. Coastal areas of this district are full of different flora and fauna. Majority of plant species are wild and natural type. Different cultivable mesophytes and halophytic species are also present here. Due to different natural and anthropogenic cause, the natural habitat of the area is destroying day by day. Remembering these as a whole it is very important to restore the ecosystem to save the habitat of these flora as well as fauna people create nursery on high land. Local people engage in nursery and develop nursery stocks to earn money as the stocks are highly demandable. Therefore, present paper has been made based on some nurseries, their status, uses and the conservation strategies. It will help to survive habitat of the plants of different categories as well as medicinal kinds including ornamentals to save eco-degradation process.

# **II. AREA UNDER STUDY**

Purba Medinipur district has Contai sub-division which consists of Contai-I and Contai-II community development blocks. Contai II or Deshapran community development block consists of Aurai, Amtolia, Dhobaberia, Sarda, Basantia, Chalti, Dariapur and Bamunia with the head quarter of Basantia. Conati I community development block has 8 gram panchayets namely Haripur, Badalpur, Raipur, Paschimbar, Dulalpur, Mahisagote, Nayaput, Sabajput, Majilapur and Contai municipality. Study area included in Contai-II Community development block as case study under some special conditions.

Geographically Contai-II (Desapran) is 170.30 sq. km with an elevation 3 m above mean sea level. The area of

coastal Medinipur is plain but affect under regular tidal influence. There are numerous wet or dried salt pans. Various types of micro habitats of the area, and water bodies make a diverse phyto-diversity of the area under varied physiognomic situations. Long dike have been made to prevent the entrance of saline water into the land. Villages, canal sides, dike side, open grazing land, waste land, pond side, wet land, shrubberies, agricultural land and local gardens of coastal area are taken into consideration for the vegetation study along with their ecological status. But for the study of nursery only 3 specific private gardens were selected and demarcated for regular study at Contai of Purba Medinipur.

# **III. MATERIALS AND METHODS**

Contai and nearby areas were selected randomly to study vegetation as a whole and similarly some private nursery and commercial gardens were selected for study of plants raised for conservation purposes. These were mainly at Chalti and in Basantia under conati II community development block. In total 3 case studies were done to record the overall importance of private nursery at Contai-sub divisional areas of Purba Medinipur. Nearby nursery at distal place were taken in to consideration to know the management strategies in various community development blocks.

Knowledge also gathered from local people about different techniques adopted during seedling or stock development. Management regimes and economic background also studied on such plants along with medicinal and ornamental kinds.

Specimens were collected and collected specimens were studied and preserved for further study. Photographs and soils were collected for field to know the nutrient status as well as different salinity conditions of the sites. Plant materials, herbarium specimens and museum specimens were treated with 4% formaldehyde solution. 4-5% copper sulphate solution was used to keep material free from insect and fungi attack. Similarly, Naphthalene balls were used to preserve dry plant parts and herbarium specimens. During survey, field notes were also recorded. Identification of specimens were done with the help of standard literature (Duthie, 1960; Hooker 1892-1897, Haines, 1921-1925; Prain, 1963; Das 2007, Anonymous, 1997, 2005, 2010, 2012, 2017) The names of plants were crossed checked following Bennet, 1987. Publications consulted for last few years were Chakraborty et al. 2012; Das and Das, 2014; Das, 2013; Das, 2015; Das and Ghosh, 2018; and Das and Das, 2019. Wetland plant species were indentified with the help of fresh water vegetation of Rimer, 1984. The specimens of medicinal plants were indentified with the help of museum specimens and herbarium

specimens of CAL. Herbarium specimens were prepared as per the methodology of Jain and Rao, 1977. To study use pattern of medicinal plants, different books of Government sections have been consulted. But for general consideration the common book used for medicinal plants was Kirtikar and Basu, 1918. Herbarium specimens were collected as per the manual published by Rao and Sharma, 1990. Halophytic species have been identified with the help of manual on mangroves in India (Banerjee et al. 1986). Other literature used were Blasco (1975), Banerjee (1987), Dwivedi et al (1974), Mukherjee (1978), Naskar et al. (1978), Rao et al. (1972), Sanyal et al. (1984), Sidhu (1960), Thothatri (1981), Wahead Khan (1959), Walson (1928), Gul and Khan (1995), Subhanian et al. (2010), Jha et al. (2011), Ahmed et al. (2011), and Das and Ghosh (2017, 2018). Salty marsh species were identified with the help of museum specimen and Herbarium specimen of CAL. To study the botany of plants medicinal plants, different books of Government sections have been used. Book used to know the propagation and management techniques of some ornamental plants in nursery (Roychowdhury and Mishra, 2001). All references are tagged <sup>1-42</sup> as record references.

# IV. RESULTS AND DISCUSSION

Purba Medinipur of West Bengal is very proximal to the Bay of Bengal. It has a long coast line that filled with many canals and rivers flooded by seasonal high tides. Margin of the nullah and rivers have many pockets of vegetation that shows many valuable plants round the year. Most of the plants found here are medicinal. People use these plants but the frequency of the collection and use of these plants are so high that makes the vegetation fragile and some of the species become threatened locally. Remembering the theme in mind people use nursery in their own premises and grow plants of various kind. Not only the local plants, due to high demand of exotic plants and ornamentals, they culture plant propagules round the year and sale them in local as well as in national market. Some nursery men use the plants in global international market. Ornamentals, plams, medicinal plants and spices are highly demandable plants. The uses of stocks of more than 5 years are highly valuable because these plants establish quickly on ground in compare to the other age old plants. Remembering the theme in mind people ser up nursery and develop almost all plants. Forest department, local gram panchayat, private sectors, local people are the feeder group of these plants. So, it is unique that local nursery and private nursery act a key role to conserve the species. Not only have that, the nursery served better placement of people and acts as a source of income generation.

In case study 1, we see many plants like akashmoni, adenium, Chinise evergreen, giant taro, anthurium, Burmese bamboo, rattle snake plant, papaya, ornamental croton, song of India, rudrakashya/rudraksha, magnolia and prayer plant (Table 1). These are used for various purposes starting from wood to ornamental purpose through edible form also. As a whole the point is income generation as well as conservation of species abroad.

# Case study 1:

Name of the Nursery: K G N Raj Nursery Owner's Name: Akhtar Hossain Place: Durgapur-Chalti Area: 1.5 acre

Table 1. Plants available at K G N Raj Nursery, Chalti,
Purba Medinipur, W.B.

S1 No.	Name	Family	Common Name	Mode of Propagation
1.	Acacia auriculiformis A.Cun. ex Benth.	Mimosaceae	Akashmoni	Seeds.
2.	Adenium multiflorum Klotasch	Apocynaceae	Adenium	Propagateed through seeds.
3.	Aglaonema sp.	Araceae	Chinise evergreen	Propagated through cuttings and by dividing the basal shoots.
4.	Alocasia sp.	Araceae	Giant taro	Propagation through division of rhizome.
5.	Anthurium sp.	Araceae	Anthurium	Young rooted shoot cuttings.
6.	Bambusa polymorpha Munro	Poaceae	Burmese bamboo	Culm split into one node cuttings
7.	Calathea lancifolia Boom. (40 varieties)	Marantaceae	Rattle snake plant	Propagated through bulb, side brachings.
8.	Carica papaya L.	Caricaceae	Papaya	Through seeds
9.	Croton sp.	Euphorbiaceea	Ornamnetal croton	Propagated through stem cuttings.
10.	Dracaena sp. (25-30 varieties)	Asparagaceae	Song of India	Stem cuttings
11.	Elaeocarpus ganitrus Roxb.	Elaeocarpaceae	Rudrakshya	Through seeds and airlayering.
12.	Euphorbia milii Des Moul.	Euphorbiaceae	Crown of thorn	Stem cuttings
13.	Magnolia champaca (L.) Baill ex Pierre	Magnoliaceae	Magnolia	Propagated through seeds, stem cuttings
14.	Maranta leuconeura E. Morren	Marantaceae	Prayer plant	Propagated by side branch/bulb

N.B.: All plants are transported to contain market and markets all over India. Market demand is high. Locally plants are available directly from the nursery.

#### Case study 2:

In case study 2, we see plants of various kinds i.e. from medicinal to ornamental. The demand is high in international market. Local people use these plants. The high tide ruins the species and create high demand to re-vegetate the land mass after flood. These are bael, edible amaranth, betel tree, satvari, patilebu, areca palm/butterfly palm/golden cane palm, chin rose, water spinach, Indian Jasmine, Small knot weed, guava, wax apple, pointed gourd and coconut tree (Table 2).

# Case Study 2:

Name of the Nursery: Bera Nursery Owner's Name: Haripada Bera Place: Basantia Area: 0.5 acre

Table 2. Plants available at Bera Nursery, Basantia, Purba
Medinipur, W.B.

S1 No.	Name	Family	Common Name	Mode of Propagation
1.	Aegle marmelos L.	Rutaceae	Bael	Through seeds
2.	Amaranthus tricolor L.	Amaranthaceae	Edible amaranth	Propagated through seeds
3.	Areca catechu L.	Arecaceae	Betel tree	Propagated through seeds
4.	Asparagus sp.	Asparagaceae	Satavari	Stem cuttings, seeds
5.	Citrus x aurantifolia (Christm.) Swignle		Patilebu	Through air layering
6.	Dypsis lutescens (H. Wendl.) Bentje & J. Dransf.	Arecaceae	Areca palm, butterfly palm, golden cane palm.	
7.	Hibiscus rosa- sinensis L.	Malvaceae	China rose	Stem cuttings
8.	Ipomoea aquatic Forssk.	Convolvulaceae	Kalmisak, water spinach	Seeds
9.	Jasminum multiflorum (Burm. f.) Andrews	Oleaceae	Star/Indian Jasmine	Propagated through stem
10.	Polygonum plebeium R. Br.	Polygonaceae	Chikunisak/Small knot weed	Seeds, it is a least concern species as per IUCN.
11.	Psidium guajava L.	Myrtaceae	Guava	Through air layering
12.	Syaygium samarangense (Blume) Merr. & L.M. Perry	Myrtaceae	Wax apple	Through air layering
13.	Tricosanthes dioica Roxb.	Cucurbitaceae	Pointed gourd	Through seeds

N.B.: Marketed in Contai, transported to Odisha and in different parts of India.

In a case study 3, we see many plants. Here the site it is essential to record the species in wild condition, but the plants nearby nursery and in nursery study is more essential because they can interact with others and make hostile conditions. Remembering these in mind, case study 3 has been included and recorded many valuable plants. These are wood apple, chatin, cashew nut, jack fruit, margosa, snowy orchid tree, bay leaf, Ceylon cinnamon, patilebu, coconut, temple plant, pilkhan, Chinise banyan, litchi, mango, champak, Spanish cherry, curry leaf plant, native mock orange, rose, debdaru, guava, bayur, lliipe, wild mango, American Mahogany, Black Jam and Chinise date palm (Table 3).

## Case study 3:

Name of the Nursery: Adhikary Nursery Owner's Name: Debkumar Adhikary Place: Basantia thakurbari, Basantia. Area: 2.5 acre

Table 3. Plants available at Adhikary Nursery, Basantia,Purba Medinipur, W.B.

SI. No.         Name         Family         Common Name         Mode Propagation           1.         Asigle marmales L.         Nutaceae         bael         spple.         Seeds           2.         Alstonia scholaris (L.)         Apocynaceae         Chatin         Through seed           3.         Anacardium occidentala L.         Anacardiaceae         Cashew tree         Seeds           4.         Antocargua heatorophylka Lam.         Moraceae         Jackfruit         Propagated fit           5.         Anadirackia indica A. Juss.         Meliaceae         Margosa         Seeds           6.         Baukinia asuminate L. flows.         Fabaceae         Snowry orchid         Seeds           7.         Cinnamomum tamala (BuchHam) T. Nees.         Lauraceae         Daylesf         Cuttings, layering           8.         Cinnamomum strunds         Lauraceae         Ceylon         Stem cuttings           9.         Cinnamomum strunds         Rutaceae         Pathebu         Air layering           10.         Conconuctifera L.         Arecaceae         Coconut         Fruits           11.         Contanew religious G.         Capparidacae         Temple plant         Grafting           12.         Ficus infectoria (Miq.)         Mor	
1.       Asgle marmalos L.       Nutaceae       Wood apple.       Seeds         2.       Alstonia scholariz (L.)       Apocynaceae       Chatin       Through seeds         3.       Anacardium       Anacardiaceae       Cashew tree       Seeds         4.       Artocardium       Anacardiaceae       Cashew tree       Seeds         5.       Anadirachta indica A.       Meliaceae       Margosa       Seeds         6.       Baukinia acuminate L.       Fabaceae       Baomy orchid       Seeds         7.       Cinnamomum tamala       Lauraceae       Bay leaf       Cuttings, layering         8.       Cinnamomum tamala       Rutaceae       Ceylon       Stem cuttings         9.       Cinnamomum tamala       Rutaceae       Ceylon       Stem cuttings         10.       Cataesia religiosa G.       Capparidaceae       Pailebu       Air layering         11.       Contaesia religiosa G.       Capparidaceae       Pailebu       Fruits         11.       Gutaesia religiosa G.       Capparidaceae       Dishie banyan       Seeds         12.       Ficur infectoria (Miq.)       Moraceae       Margo       Seeds         13.       Ficur infectoria (Miq.)       Moraceae       Seeds	0
Image:         Image: <thimage:< th=""> <thimage:< th=""> <thimage:< td="" th<=""><td>4</td></thimage:<></thimage:<></thimage:<>	4
2.       Alstonig scholarij (L.)       Apocynaceae       Chatin       Through seed         3.       Anacardium occidentale L.       Anacardiaceae       Cashew tree       Seeds         4.       Antocarjus       Moraceae       Jackfruit       Progagated th seeds         5.       Anadirachia indica A.       Meliaceae       Margosa       Seeds         6.       Bauhinia acuminate L.       Fabaceae       Bay leaf       Outlings, layering         7.       Cinnamonium tamala (Buch-Ham) T. Nees, & C.H. Eberm       Lauraceae       Bay leaf       Outlings, layering         8.       Cinnamonium tamala (Duch-Ham) T. Nees, & C.H. Eberm       Lauraceae       Paulebu       Air layering         9.       Citrus x aurantifolia (Christin) Smigale       Nataceae       Paulebu       Air layering         10.       Cocon modifera L.       Ancacardiaceae       Diate       Grafting         11.       Crataeva religioua G.       Capparidaceae       Diate       Grafting         12.       Ficus reluces (Miq.)       Moraceae       Lichi       Seeds         13.       Ficus reluces (L.)       Anacardiaceae       Mago Grafting, layering       Seeds         14.       Lichi chinensui Sonn       Sapotaceae       Lichi Grafting, layering       Seeds <td></td>	
R.Br.         Anacardiaceae         Cashew tree         Seeds           3.         Anacardiaceae         Cashew tree         Seeds           4.         Artocargus kettrophyliku Lam.         Moraceae         Jackfruit         Propagated th seeds           5.         Anadirachta indica A Jass.         Meliaceae         Margosa         Seeds           6.         Baukinia acuminate L         Fabaceae         Snowry orchid Seeds         Seeds           7.         Cinnamemum tamala (Buch Ham) T. Nees.         Lauraceae         Bay leaf         Outlings, layering           8.         Cinnamemum tamala (Buch Ham) T. Nees.         Lauraceae         Desiber         Air layering           9.         Cinna x aurantifolia (Christm) Swignle         Rutaceae         Patibou         Air layering           10.         Cataes x aurantifolia (Christm) Swignle         Rutaceae         Contings         Fruits           11.         Cristaes religiona G.         Capparidaceae         Temple plant         Grafting           12.         Fatae reliaa L         Moraceae         Mango         Seeds           13.         Fatae reliaa L         Moraceae         Mango         Grafting           14.         Linki chinensii Sona         Sapindaceae         Chinis banyan	
R.Br.       Anacardiacese       Cashew tree       Seeds         3.       Anacardiane       Cashew tree       Seeds         4.       Artocargus       Moraceae       Jackfruit       Propagated the seeds         5.       Anadirachta indica A.       Meliaceae       Margosa       Seeds         6.       Baukinia acuminate L.       Fabaceae       Somry orchid Seeds       tree         7.       Cinnamomum temala       Lauraceae       Bay leaf       Cutings, layering         8.       Cinnamomum temala       Lauraceae       Ceylon       Stem cutings         9.       Cinnamomum temala       Nataceae       Ceylon       Stem cutings         10.       Contactsus religious       G.       Capparidacae       Patilebu       Air layering         10.       Cotactsus religious       G.       Capparidacae       Patilebu       Air layering         11.       Cratactsus religious       G.       Capparidacae       Patileban       Seeds         12.       Ficus religious       G.       Capparidacae       Patileban       Seeds         13.       Ficus religious       G.       Capparidacae       Cibinis banyan       Seeds         13.       Ficus religious       La <t< td=""><td>eds</td></t<>	eds
3.         Anacardium occidentale L.         Anacardiaceae         Cashew tree         Seeds           4.         Anacardium occidentale L.         Moraceae         Jackfruit         Propagated the seeds           5.         Anadirachta indica A.         Meliaceae         Margota         Seeds           6.         Baukinia acuminate L.         Fabaceae         Snowy orchid         Seeds           7.         Cinnamonum tamala (Boch-Ham) T. Nees.         Lauraceae         Day leaf         Outlings, layering           8.         Cinnamonum verum J.         Lauraceae         Paulebu         Air layering           9.         Cinnamonum verum J.         Lauraceae         Paulebu         Air layering           10.         Cecconnucifera L.         Arecaceae         Cocount         Fruits           11.         Crataeva religioua G.         Capparidacae         Paulebu         Fruits           12.         Ficur reluci< L.	
eccidentale L.       Moraceae       Jackfruit       Propagated the seeds         4.       Artocaryus       Moraceae       Jackfruit       Propagated the seeds         5.       Acadirachta indica A.       Meliaceae       Margosa       Seeds         6.       Baukinia acuminate L.       Fabaceae       Saomy orchid       Seeds         7.       Cinnamomum tamala       Lauraceae       Bay leaf       Outlings, layering         8.       Cinnamomum varum J.       Lauraceae       Day leaf       Outlings, layering         8.       Cinnamomum varum J.       Lauraceae       Paulebu       Air layering         9.       Citrus x aurantifolia       Rutaceae       Paulebu       Air layering         10.       Cocon modifera L.       Arecaceae       Coconut       Fruits         11.       Crataeva religious G.       Capparidacae       Paulebu       Air layering         12.       Fictur relucea L.       Moraceae       Chinite banyan       Seeds         13.       Fictur relucea L.       Moraceae       Chanes Bango       Iayering         14.       Litchi chinenuis Sonn.       Sapidaceae       Mago Grafhing, layering       Seeds, cutting         15.       Margifera indica L.       Sapotaceae <td< td=""><td></td></td<>	
4.       Antocarpus heterophyllus Lam.       Moraceae       Jackfruit       Propagated th seeds         5.       Anadirschis indica A. Juss.       Meliaceae       Margosa       Seeds         6.       Baukinia acuminate L. Baukinia acuminate L.       Fabaceae       Showy orchid seeds       Seeds         7.       Cinnamomum temala (Buch-Ham) T. Nees. & C.H. Ebern       Lauraceae       Bay leaf       Cutings, layering         8.       Cinnamomum temala (Datasta religious (Christen) Swigale       Arecaceae       Coonst       Fruits         9.       Citru x aurantifolis (Datasta religious G. Forst       Arecaceae       Coconst       Fruits         11.       Cratasta religious G. Ficus infectoria (Miq.)       Moraceae       Plikhan       Seeds         13.       Ficus infectoria (Miq.)       Moraceae       Mangoi Grafting Iayering       Seeds         15.       Mangifera indica L.       Moraceae       Mangoi Grafting Iayering       Seeds         15.       Mangifera indica L.       Maracardisceae       Campak       Seeds         17.       Minusops elengi L.       Sapotaceae       Campak       Seeds         18.       Kitelis champaca (L.)       Maracardisceae       Mangoi Grafting Iayering       Seeds         17.       Minucops elengi L. <td< td=""><td></td></td<>	
Reterophyllus Lam.     Meliaceae     Margosa     seeds       3.     Aradivachta indica A.     Meliaceae     Margosa     Seeds       6.     Baukinia acuminate L.     Fabaceae     Snowy orchid     Seeds       7.     Cinnamomum tamala     Lauraceae     Bay leaf     Cuttings, layering       8.     Cinnamomum tamala     Lauraceae     Day leaf     Cuttings, layering       8.     Cinnamomum verum J.     Lauraceae     Patilebu     Air layering       9.     Citrus x aurantifolia     Rutaceae     Patilebu     Air layering       10.     Coccus nuclifora L.     Arecaceae     Coccust     Fruits       11.     Cratacva religiona G.     Capparidacae     Patilebu     Air layering       12.     Ficus religiona G.     Capparidacae     Patilebu     Grafting       13.     Ficus religiona L.     Moraceae     Diaise banyan     Seeds       14.     Litchi chinennii Sonn.     Spindaceae     Lichi     Seeds, cuting       15.     Mangifera indica L.     Macaediaceae     Mango     Iayering       16.     Mickella champaca L.)     Mascardiaceae     Caring, layering     Iayering       17.     Minaujifera indica L.     Macaediaceae     Speak, cuting       18.     Lithi chinennis Son	
1.       Azadirazhia indica A. Meliaceae       Margosa       Seeds         6.       Bauhinia acuminate L.       Fabaceae       Snowy orchid       Seeds         7.       Cinnamomum tamala       Lauraceae       Bay leaf       Outlings, layering         8.       Cinnamomum verum I.       Lauraceae       Bay leaf       Outlings, layering         8.       Cinnamomum verum I.       Lauraceae       Petal       Stem cuttings         9.       Cirus x auranti/folia       Rutaceae       Patilebu       Air layering         10.       Oncour mueifera L.       Arecaceae       Cocoust       Fruits         11.       Crataeva religiona G.       Capparidacae       Temple plant       Grafting         12.       Fircus religiona G.       Capparidacae       Patiban       Seeds         Miq.       Moraceae       Dishis banyan       Seeds       Iayering         13.       Fircus religiona L.       Anacardiaceae       Mango       Grafting, layering       Seeds         14.       Linki chimenpaca (L.)       Magnoliacaea       Champak       Seeds       Seeds         15.       Margoita L.       Sapotaceae       Spanith cherry       Seeds         15.       Marenya koenigii (L.)       Nataceae <td>through</td>	through
Juss.     Juss.       6.     Baukinia acuminate L.     Fabaceae     Shorny orchid     Seeds       7.     Cinnamomum tamale (Buch -Ham) T. Nees.     Lauraceae     Bay leaf     Cuttings, layering       8.     Cinnamomum varum J.     Lauraceae     Ceylon     Stem cuttings       9.     Cinnamomum varum J.     Lauraceae     Ceylon     Stem cuttings       10.     Corear nucyfera L.     Arecaceae     Ceonut     Fruits       11.     Corear nucyfera L.     Arecaceae     Coonut     Fruits       12.     Ficus infectoria (Miq.)     Moraceae     Pilkhan     Seeds       13.     Ficus infectoria (Miq.)     Moraceae     Dikhan     Seeds       14.     Litchi chinarais Sonn.     Spindaceae     Lichi Seed, air layering       15.     Mangifera indica L.     Anacardiaceae     Champak       16.     Mirayi achampaca (L.)     Magnoliaceae     Corry leaf plant       17.     Mimusops elengi L.     Spotaceae     Corry leaf plant     Seeds       18.     Murraya paniculata     Nutaceae     Spainth cherry     Seeds       19.     Murraya paniculata     Nutaceae     Corry leaf plant     Seeds       19.     Murraya paniculata     Nutaceae     Davar Jase     Seeds	
Juss.     Juss.       6.     Baukinia acuminate L.     Fabaceae     Shorny orchid     Seeds       7.     Cinnamomum tamale (Buch -Ham) T. Nees.     Lauraceae     Bay leaf     Cuttings, layering       8.     Cinnamomum varum J.     Lauraceae     Ceylon     Stem cuttings       9.     Cinnamomum varum J.     Lauraceae     Ceylon     Stem cuttings       10.     Corear nucyfera L.     Arecaceae     Ceonut     Fruits       11.     Corear nucyfera L.     Arecaceae     Coonut     Fruits       12.     Ficus infectoria (Miq.)     Moraceae     Pilkhan     Seeds       13.     Ficus infectoria (Miq.)     Moraceae     Dikhan     Seeds       14.     Litchi chinarais Sonn.     Spindaceae     Lichi Seed, air layering       15.     Mangifera indica L.     Anacardiaceae     Champak       16.     Mirayi achampaca (L.)     Magnoliaceae     Corry leaf plant       17.     Mimusops elengi L.     Spotaceae     Corry leaf plant     Seeds       18.     Murraya paniculata     Nutaceae     Spainth cherry     Seeds       19.     Murraya paniculata     Nutaceae     Corry leaf plant     Seeds       19.     Murraya paniculata     Nutaceae     Davar Jase     Seeds	
6.       Baukinia acuminate L.       Fabaceae       Snowy orchid       Seeds         7.       Cinnamomum tamala       Lauraceae       Bay leaf       Outlings, layering         8.       Cinnamomum varum J.       Lauraceae       Ceylon       Stem cuttings         8.       Cinnamomum varum J.       Lauraceae       Ceylon       Stem cuttings         9.       Citnut x aurantifolia       Rutaceae       Patilebu       Air layering         10.       Cecco nucifera L.       Arecaceae       Cocout       Fruits         11.       Crataeva religioua G.       Capparidacae       Temple plant       Grafting         12.       Ficus infectoria (Miq.)       Moraceae       Patilebu       Seeds         13.       Ficus infectoria (Miq.)       Moraceae       Dialaea       Seeds         14.       Litchi chinensis Sonn.       Spindaceae       Litchi       Seeds, cuting         15.       Mangifera indica L.       Anacardiaceae       Mango       Grafting, layering         16.       Michalla champaca (L.)       Magnoliaceaa       Champak       Seeds, cuting         16.       Mineuopu clengi L.       Sapotaceae       Cariting faant       Seeds         17.       Minuopu clengi L.       Sapotaceae	
1.       Cinnamomum tamala       Lauraceae       Bay leaf       Cutings, layering         2.       Cinnamomum verum I.       Lauraceae       Bay leaf       Cutings, layering         3.       Cinnamomum verum I.       Lauraceae       Ceylon       Stem cutings         9.       Cinnamomum verum I.       Lauraceae       Patilebu       Air layering         10.       Cocon mucificat       Arecaceae       Patilebu       Air layering         10.       Cocon mucificat       Arecaceae       Coconut       Fruits         11.       Crataeva religioua       G.       Capparidacae       Temple plant       Grafting         12.       Ficus religious       G.       Capparidacae       Lichi       Seeds         13.       Ficus religious       L.       Moraceae       Lichi       Seeds         14.       Lichi chinanuis Sonn       Sapindaceae       Lichi       Seeds, cutting         15.       Margjiera indica L.       Macacardiaceae       Mago       Jayering         16.       Mickelia champaca (L.)       Magnoliaceae       Curry leaf plant       Seeds         17.       Mimacopa clangit (L.)       Rutaceae       Curry leaf plant       Seeds         18.       Murraya paniculate <td></td>	
7.       Cinnamomum ismala (Buch-Ham) T. Nees, & C.H. Eberm       Lauraceae       Bay leaf       Outlings, layering         8.       Cinnamomum varum J.       Lauraceae       Ceyton cinnamomum       Stem cuttings         9.       Cinnamomum varum J.       Lauraceae       Ceyton cinnamomum       Air layering         10.       Caccu nuclifue       L.       Arecaceae       Coconst       Fruits         11.       Crataceae       Coconst       Fruits       Grafting         12.       Ficus infectoria (Miq.)       Moraceae       Plikhan       Seeds         13.       Ficus infectoria (Miq.)       Moraceae       Lichi sead, air layering         14.       Licki chinerusi Sonn.       Sapindaceae       Lichi       Seeds, air layering         15.       Mangifera indica L.       Anacardiaceae       Campak       Seeds, cutting         15.       Mangifera indica L.       Sapotaceae       Campak       Seeds, cutting         16.       Minedua paniculata       Rutaceae       Carry leaf plant       Seeds         17.       Mimusopa elengi L.       Sapotaceae       Carry leaf plant       Seeds         18.       Ex Plerce       Sapotaceae       Carry leaf plant       Seeds         19.       Marraya panicu	
(Buch-Ham) T. Nees.     Iayering       & C.H. Elberm     Stem cuttings       S. Cinamomum verum J. Laucaceae     Ceylon       Presl     Cinux x aurantifolia       Rutaceae     Pathebu       R. Cinux x aurantifolia     Rutaceae       Presl     Consum       O. Corus x aurantifolia     Rutaceae       Pathebu     Air layering       O. Corus x aurantifolia     Rutaceae       Pathebu     Air layering       I. Crataeva religious G. Capparidacae     Funits       Forst     Ficur infectoria (Miq.)       Miq     Moraceae       H. Linchi chinestai Sonn.     Spindaceae       I. Ficur infectoria (L. Moraceae     Mango       Ball Ex Pierre     Anacardiaceae       Mangojera indica L.     Maccardiaceae       Mangojera indica L.     Anacardiaceae       Mangojera indica L.     Anacardiaceae       Mango leve indica L.     Anacardiaceae       Mango leve indica L.     Spotaceae       Speciag     Corry leaf glast       Seeds, cutting       Ball Ex Pierre     Sapotaceae       Murraya paniculata     Rutaceae       Speciag     Annonaceae       O. Polyabilia Langifolia     Annonaceae       O. Polyabilia Longifolia     Annonaceae       Bayer Karnika	
àr C. H. Eberm     Image: State of the state	38
8.         Cinnamomum varum J.         Lauraceae         Ceylon cinnamomum         Stem cuttings           9.         Citru x auvantifolia (Christen) Swignle         Nataceae         Patilebu         Air layering           10.         Caccu nucjfora L.         Arecaceae         Coconst         Fruits           11.         Caccu nucjfora L.         Arecaceae         Coconst         Fruits           12.         Ficus infectoria (Miq.)         Moraceae         Pikhan         Seeds           13.         Ficus infectoria (Miq.)         Moraceae         Chinise banyan         Seeds           14.         Linchi chinensui Sonn.         Sapindaceae         Lichi         Seed, air layering           15.         Mangifera indica L.         Anacardiaceae         Mango         Seeds, cutting           15.         Mangifera indica L.         Magnoliaceae         Champak         Seeds, cutting           16.         Miredua koempaca (L.)         Magnoliaceae         Corry leaf plant         Seeds           17.         Mimusopa alengi L.         Sapotaceae         Corry leaf plant         Seeds           18.         Ruterea         Nataceae         Carry leaf plant         Seeds           19.         Marraya paniculata         Rutaceae         Carry	
Presl         cinnamom           9.         Citrus x aurantifolia         Rutaceae         Pathebu         Air layering           10.         Coccas mucifera L.         Arecaceae         Coconst         Fruits           10.         Coccas mucifera L.         Arecaceae         Coconst         Fruits           11.         Cratacia religiona G.         Capparidacae         Temple plant         Grafting           12.         Ficus infectoria (Miq.)         Moraceae         Pilkhan         Seeds           13.         Ficus infectoria L.         Moraceae         Dilkhan         Seeds           14.         Linkit chinerasii Sonn.         Sapindaceae         Lichi         Seed, air layer           15.         Manggilera indica L.         Anacardiaceae         Mango         Grafting,           15.         Manggilera indica L.         Anacardiaceae         Mango         Iayering           16.         Michelia champiaca (L.)         Nagooliaceae         Spanish cherry         Seeds           17.         Mimucopu elengi L.         Sapotaceae         Carry leaf glant         Seeds           18.         Murraya         paniculais         Rutaceae         Carry leaf glant         Seeds           18.         Murraya	
Presl         cinnamom           9.         Citrus x aurantifolia         Rutaceae         Pathebu         Air layering           10.         Coccas mucifera L.         Arecaceae         Coconst         Fruits           10.         Coccas mucifera L.         Arecaceae         Coconst         Fruits           11.         Cratacia religiona G.         Capparidacae         Temple plant         Grafting           12.         Ficus infectoria (Miq.)         Moraceae         Pilkhan         Seeds           13.         Ficus infectoria L.         Moraceae         Dilkhan         Seeds           14.         Linkit chinerasii Sonn.         Sapindaceae         Lichi         Seed, air layer           15.         Manggilera indica L.         Anacardiaceae         Mango         Grafting,           15.         Manggilera indica L.         Anacardiaceae         Mango         Iayering           16.         Michelia champiaca (L.)         Nagooliaceae         Spanish cherry         Seeds           17.         Mimucopu elengi L.         Sapotaceae         Carry leaf glant         Seeds           18.         Murraya         paniculais         Rutaceae         Carry leaf glant         Seeds           18.         Murraya	
9.         Clinut x auvantifolia         Rutaceae         Patileto         Air layering           10.         Createva rezifera L.         Arecaceae         Coconut         Fruits           11.         Crataeva religioua G.         Capparidacae         Temple plant         Grafting           12.         Fictur infectoria (Miq.)         Moraceae         Plizhan         Seeds           13.         Fictur religioua L.         Moraceae         Chinite banyan         Seeds           14.         Litchi chinenzii Sonn         Sapindaceae         Lichi         Seeds, air layering           15.         Margifera indica L.         Macacardiaceae         Mago         Grafting, layering           16.         Michelia champaca (L.)         Magnoliaceae         Champak         Seeds           17.         Mirauoga elengi L.         Sapotaceae         Campak         Seeds           18.         Muraya elengi L.         Sapotaceae         Curry leaf plant         Seeeds           19.         Murraya paniculate         Nutaceae         Native mock         Air-layering           19.         Murraya borniculate         Nutaceae         Debdaru         Seeds           19.         Murraya borniculate         Myrtaceae         Bayur Karnikara	
(Christen) Swignle     Arecaceae     Cocoust     Fruits       10.     Ceccar nucrifiera L.     Arecaceae     Cocoust     Fruits       11.     Crattaria religious G.     Capparidacae     Temple plant     Grafting       12.     Firsus infectoria (Miq.)     Moraceae     Plikhan     Seeds       13.     Firsus infectoria (Miq.)     Moraceae     Plikhan     Seeds       13.     Firsus infectoria (Miq.)     Moraceae     Chinise banyan     Seeds       14.     Litchi chinerusi Sonn.     Sapindaceae     Lichi     Seed, air layer       15.     Mangifera indica L.     Anacardiaceae     Mango     Grafting.       16.     Michalia champaca (L.)     Magnoliaceae     Champak     Seeds, cutting       17.     Minusops clengi L.     Sapotaceae     Spanish cherry     Seeds       18.     Murraya koenigii (L.)     Ratceae     Carry leaf plant     Seeds       19.     Murraya paniculata     Rutaceae     Native mock     Air-layering       10.     Polyathia     Iongifolia     Annonaceae     Debdaru     Seeds       11.     Phidium guagiava L.     Myrtaceae     Guava     Through graft       12.     Pherogemmum     Mahvaceae     Bayur Karnikara     Grafting       13.	
10.     Coccos mucifica L.     Arecaceae     Coccosut     Fruits       11.     Cratacia religiona G.     Capparidacae     Temple plant     Grafting       12.     Fixus reluca G.     Moraceae     Pikhan     Seeds       13.     Fixus reluca L.     Moraceae     Pikhan     Seeds       14.     Lite hi chineruis Sonn.     Sapindaceae     Lichi     Seeds       15.     Mangoifera indica L.     Anacardiaceae     Lichi     Seeds       16.     Michalia champaca (L.)     Magnofiaceae     Champak     Seeds, cutting       17.     Minucapu clengi L.     Sapotaceae     Campak     Seeds       18.     Murraya clengi L.     Sapotaceae     Curry leaf plant     Seeds       19.     Murraya paniculata     Rutaceae     Orange     Orange       20.     Polyalshia longifolia     Annonaceae     Debdaru     Seeds       21.     Paridum guajava L.     Mataceae     Bayur Karnikara     Grafting       22.     Pherosperman     Malvaceae     Bayur Karnikara     Grafting       23.     Shewa bornaensis     Dipterocarpaceae     Lipe     Seeds       24.     Spendias pinnata (L.f.)     Anacardiaceae     Wild mango     Seeds       25.     Swinternia     mukagoni <td>5</td>	5
II.         Crasseva religious G.         Capparidacae         Temple plant         Grafting           II.         Fixes infectoris (Miq.)         Moraceae         Pilchan         Seeds           Miq.         Statu infectoris (Miq.)         Moraceae         Pilchan         Seeds           II.         Fixes retura L.         Moraceae         Chinite banyan         Seeds           II.         Fixes retura L.         Moraceae         Lichi         Seeds, air layer           II.         Mangjöra indica L.         Anacardiaceae         Mago         Grafting, layering           II.         Minekella champaca (L.)         Magnoliaceae         Champak         Seeds, cutting           II.         Mineacege allongi L.         Supotaceae         Spanith cherry         Seeds           II.         Mineacege allongi L.         Supotaceae         Cutry leaf plant         Seeds           II.         Mineacege allongi L.         Nutaceae         Native mock         Air-layering           II.         Jack         Annonaceae         Debdaru         Seeds           II.         Paidium guagiava L.         Myrtaceae         Bayur Karnikara         Grafting           II.         Paindum guagiava L.         Myrtaceae         Bayur Karnikara <t< td=""><td></td></t<>	
Forst         Forst           12.         Ficus infectoria (Miq.)         Moraceae         Pilkhan         Seeds           13.         Ficus retura L.         Moraceae         Chinke banyan         Seeds           14.         Litchi chinaruis Sonn.         Sapindaceae         Lichi         Seed, air laye           15.         Mangifera indica L.         Anacardiaceae         Lichi         Seed, air laye           15.         Mangifera indica L.         Anacardiaceae         Mango         Grafting, layering           16.         Michella champaca (L.)         Magnoliaceae         Speeds         Seeds           17.         Mimuzogu elengi L.         Sapotaceae         Speak henrigi (L.)         Rapotaceae         Corry leaf plant         Seeds           18.         Murraya         paniculata         Nutaceae         Corry leaf plant         Seeds           19.         Murraya         paniculata         Nutaceae         Orange         Orange         Seeds           20.         Polyalthia         longjorius         Annonaceae         Bayur Karnikara         Grafting           21.         Paterogramman         Mivaceae         Bayur Karnikara         Grafting           22.         Piterogramman         Bivaceae	
Forst         Forst           12.         Fixus infectoria (Miq.)         Moraceae         Pikhan         Seeds           13.         Fixus retura L.         Moraceae         Chinke banyan         Seeds           14.         Litchi chinaruis Sonn.         Sapindaceae         Lichi         Seeds, air laye           15.         Mangifera indica L.         Anacardiaceae         Lichi         Seeds, air laye           15.         Mangifera indica L.         Anacardiaceae         Mango         Grafting, layering           16.         Michelia champaca (L.)         Magnoliaceae         Seeds, cutting         Seeds           17.         Mimuzopa elengi L.         Sapotaceae         Spanith cherry         Seeds           18.         Murraya         paniculate         Rutaceae         Carry leaf plant         Seeds           19.         Murraya         paniculate         Rutaceae         Orange         Orange         Seeds           10.         Polytahia         Longjonia         Annonaceae         Debdaru         Seeds           19.         Murraya         paniculate         Myrtaceae         Guava         Through graft           12.         Piteroptermam         Malvaceae         Bayur Karnikara         Grafting<	
Miq.         Miq.         Moraceae         Chinise banyan         Seeds           13.         Ficus retura L.         Moraceae         Chinise banyan         Seeds           14.         Linki chimerais Sonn.         Sapindaceae         Linki         Seeds           15.         Mangjéra indica L.         Anacardiaceae         Mango         Grafting, layering           16.         Michalia champaca (L.)         Magnoliaceae         Spanish cheery         Seeds           17.         Minusopu clargi L.         Sapotaceae         Spanish cheery         Seeds           18.         Murraya         paniculata         Rutaceae         Curry leaf plant         Seeeds           19.         Murraya         paniculata         Rutaceae         Native         mock           (L.) Jack         Jark         Inngjóbia         Annonaceae         Debdaru         Seeds           20.         Polyalikia         Iongjóbia         Annonaceae         Debdaru         Seeds           21.         Paidium guajava L.         Myrtaceae         Bayur Karnikara         Grafting           22.         Storaa         bornaensis         Dipterocarpaceae         Llipe         Seeds           22.         Storaa         bornadensis	
Miq.         Miq.         Moraceae         Chinise banyan         Seeds           13.         Ficus retura L.         Moraceae         Chinise banyan         Seeds           14.         Linki chimerais Sonn.         Sapindaceae         Linki         Seeds           15.         Mangjéra indica L.         Anacardiaceae         Mango         Grafting, layering           16.         Michalia champaca (L.)         Magnoliaceae         Spanish cheery         Seeds           17.         Minusopu clargi L.         Sapotaceae         Spanish cheery         Seeds           18.         Murraya         paniculata         Rutaceae         Curry leaf plant         Seeeds           19.         Murraya         paniculata         Rutaceae         Native         mock           (L.) Jack         Jark         Inngjóbia         Annonaceae         Debdaru         Seeds           20.         Polyalikia         Iongjóbia         Annonaceae         Debdaru         Seeds           21.         Paidium guajava L.         Myrtaceae         Bayur Karnikara         Grafting           22.         Storaa         bornaensis         Dipterocarpaceae         Llipe         Seeds           22.         Storaa         bornadensis	
13.     Ficus return L.     Moraceae     Chinise banyan     Seeds, air layer       14.     Lincki chinerusi Sonn.     Sapindaceae     Lichi     Seed, air layer       15.     Mangifera indica L.     Anacardiaceae     Mango     Grafting, layering       16.     Michalia champaca (L.)     Magnoliaceae     Champak     Seeds, cutting       17.     Minucops clangi L.     Sapotaceae     Spanish cherry     Seeds       17.     Minucops clangi L.     Sapotaceae     Spanish cherry     Seeds       18.     Murraya keenigii (L.)     Rutaceae     Carry leaf plant     Seeds       19.     Murraya paniculata     Rutaceae     Native mock     Air-layering       10.     Polyathia     Iongifolia     Annonaceae     Debdaru     Seeds       21.     Pistima gaugiava L.     Myrtaceae     Guava     Through graft       22.     Pisteragtermum     Mahvaceae     Bayur Karnikara     Grafting       accrifolium (L.) Willd.     Shorea     Boreadarib Dipterccarpaceae     Wild mango       24.     Spondias pinnata (L.f.)     Anacardiaceae     Wild mango     Seeds       25.     Switchnia makagoni     Meliaceae     American     Seeds       26.     Syryglum cumuni (L.)     Myrtaceae     Back jam, Java <td< td=""><td></td></td<>	
14.     Litchi chinanui Sonn.     Sapindaceae     Lichi     Seed, air laye:       15.     Manggilera indica L.     Anacardiaceae     Mango     Grafting, layering       16.     Michalia champaca (L.)     Magnoliacaea     Champak     Seed, cutting       Ball.     Ex. Pherre     Sapotaceae     Corry leaf plant     Seeds       17.     Minucops clangi L.     Sapotaceae     Corry leaf plant     Seeds       18.     Murraya     paniculata     Rutaceae     Corry leaf plant     Seeds       19.     Murraya     paniculata     Rutaceae     Orange     Native mock     Air-layering       10.     Polyalthia     Impgifulia     Annonaceae     Debdaru     Seeds       11.     Parosparmum     Malvaceae     Grava     Through graft       21.     Pathing taginata     Dipterocarpaceae     Grava     Through graft       22.     Pterosparmum     Malvaceae     Bayur Karnikara     Grafting       23.     Showa bornaansis     Dipterocarpaceae     Wild mango     Seeds       24.     Spondias pinnata (L.f.)     Anacardiaceae     Matvago     Seeds       25.     Swindamia makagoni     Meliaceae     American     Seeds       26.     Syngigium cumuni (L.)     Myrtaceae     Bla	
15.     Manggiéra indica L.     Anacardiaceae     Mango     Grafting, layering       16.     Michalis champuca (L.)     Magnoliaceae     Champak     Seeds, cutting       Baill Ex Pierre     Sapotaceae     Spanith cherry     Seeds, cutting       17.     Minusopie alengi L.     Sapotaceae     Spanith cherry     Seeds       18.     Murraya     paniculata     Rutaceae     Carry leaf plant     Seeds       19.     Murraya     paniculata     Rutaceae     Native     mock       (L.)     Jack     Inngjólia     Annonaceae     Debdaru     Seeds       20.     Polyalikia     longjólia     Annonaceae     Debdaru     Seeds       21.     Psidium gugieva L.     Myrtaceae     Bayur/Karnikara     Grafting       22.     Plarougerman     Mahvaceae     Bayur/Karnikara     Grafting       23.     Shorae     borndensis     Dipterocarpaceae     Lilipe     Seeds       24.     Spondias pinnais (L.f.)     Anacardiaceae     Makogany     Seeds       25.     Swidtania     makagoni     Meliaceae     American       26.     Syrgium cumuni (L.)     Myrtaceae     Black jam, Java     Seeds	
16.     Mickelia champaca (L.)     Magnoliacaea     Champak     Seeds, cutting       13.     Minusops elengi L.     Sapotaceae     Spanith cherry     Seeds, cutting       17.     Minusops elengi L.     Sapotaceae     Spanith cherry     Seeds       18.     Murraya keenigii (L.)     Rutaceae     Curry leaf plant     Seeds       19.     Murraya paniculata     Rutaceae     Native mock     Air-layering       10.     Polyathia     longifolia     Annonaceae     Debdaru     Seeds       20.     Polyathia     longifolia     Annonaceae     Debdaru     Seeds       21.     Pistdium guagiava L.     Myrtaceae     Guava     Through graft       22.     Pistongermum     Malvaceae     Bayur/Karnikara     Grafting       23.     Shorea     Borneanini     Dipterccarpaceae     Llipe     Seeds       24.     Spondias pinnata (L.f.)     Anacardiaceae     Wild mango     Seeds       25.     Swittenia     makagoni     Meliaceae     American     Seeds       25.     Synghian cumumi (L.)     Myrtaceae     Black jam, Java     Seeds	yering
16.     Mickelis champaca (L.)     Magnoliacaea     Champak     Seeds, cutting:       Ball Ex Pierre     Sapotaceae     Spanith cherry     Seeds       17.     Minnaops elengit L.     Sapotaceae     Spanith cherry     Seeds       18.     Murraya keningii (L.)     Rutaceae     Corry leaf plant     Seeds       19.     Murraya paniculata     Rutaceae     Native mock     Air-layering       10.     Jack     Orange     Orange     Seeds       20.     Polyalthia longifulia     Annonaceae     Debdaru     Seeds       21.     Paidium guajava L.     Myrtaceae     Guava     Through graft       22.     Plarosparmum     Malvaceae     Bayur Karnikara     Grafting       23.     Shonaa     bornaansis     Dipterocarpaceae     Llipe     Seeds       24.     Spondias pinnata (L.f.)     Anacardiaceae     Wild mango     Seeds       25.     Swistania     makagoni     Meliaceae     American     Seeds       25.     Swistania     makagoni     Meliaceae     Back jam, Java     Seeds       26.     Synygium cumuni (L.)     Myrtaceae     Black jam, Java     Seeds	ai
16.     Mickelis champaca (L.)     Magnoliacaea     Champak     Seeds, cutting:       Ball Ex Pierre     Sapotaceae     Spanith cherry     Seeds       17.     Minnaops elengit L.     Sapotaceae     Spanith cherry     Seeds       18.     Murraya keningii (L.)     Rutaceae     Corry leaf plant     Seeds       19.     Murraya paniculata     Rutaceae     Native mock     Air-layering       10.     Jack     Orange     Orange     Seeds       20.     Polyalthia longifulia     Annonaceae     Debdaru     Seeds       21.     Paidium guajava L.     Myrtaceae     Guava     Through graft       22.     Plarosparmum     Malvaceae     Bayur Karnikara     Grafting       23.     Shonaa     bornaansis     Dipterocarpaceae     Llipe     Seeds       24.     Spondias pinnata (L.f.)     Anacardiaceae     Wild mango     Seeds       25.     Swistania     makagoni     Meliaceae     American     Seeds       25.     Swistania     makagoni     Meliaceae     Back jam, Java     Seeds       26.     Synygium cumuni (L.)     Myrtaceae     Black jam, Java     Seeds	
Baill Ex Pierre         Sapotaceae         Spanith Cherry         Seeds           17.         Minuacyu slamgi L.         Sapotaceae         Spanith Cherry         Seeds           18.         Murraya kaenigii (L.)         Rutaceae         Carry leaf plant         Seeeds           19.         Murraya paniteulata         Rutaceae         Native mock         Air-layering           19.         Murraya paniteulata         Rutaceae         Native mock         Air-layering           20.         Polyalihia longjibila         Annonaceae         Debdaru         Seeds           21.         Psidium guajava L.         Myrtaceae         Bayur/Karnikara         Grafting           22.         Piarozpierman         Molvaceae         Bayur/Karnikara         Grafting           23.         Shoraa bornaanzia         Dipterocarpaceae         Llipe         Seeds           24.         Spendiaz pinnazia (L.f.)         Anacardiaceae         Wild mango         Seeds           25.         Swiatania makagoni         Meliaceae         American         Seeds           25.         Swiatania makagoni         Myrtaceae         Black jam, Java         Seeds           26.         Syrygium cumuni (L.)         Myrtaceae         Black jam, Java         Seeds <td>085</td>	085
17.         Mimuzopu elengi L.         Sapotaceae         Spanish cherry         Seeds           18.         Murraya kaenigii (L.)         Rutaceae         Carry leaf plant         Seeds           19.         Murraya paniculata         Rutaceae         Oarry leaf plant         Seeds           19.         Murraya paniculata         Rutaceae         Native mock         Air-layering           20.         Polyathia         Iongjolia         Annonaceae         Debdaru         Seeds           20.         Polyathia         Iongjolia         Annonaceae         Debdaru         Seeds           21.         Pathangtemum         Matvaceae         Guava         Through graft           22.         Pathangtemum         Matvaceae         Bayur/Karnikara         Grafting           accrifolium (L.) Willd.         Dipterccarpaceae         Llipe         Seeds           Pierce         Spondias pinnata (L.f.)         Anacardiaceae         Wild mango         Seeds           23.         Subtania makagoni         Meliaceae         American         Seeds           23.         Syryglum cumuni (L.)         Myrtaceae         Black jam, Java         Seeds	
18.     Murraya kaenigii (L.)     Rutaceae     Curry leaf plant     Seeeds       19.     Murraya paniculata     Rutaceae     Native mock     Air-layering       10.     Jack     orange     Orange       20.     Polyalikia longifolia     Annonaceae     Debdaru     Seeds       21.     Paidium guajava L.     Myrtaceae     Guava     Through graft       22.     Pierosparmum     Malvaceae     Bayur Karnikara     Grafting       23.     Shonaa     bornaansis     Dipterocarpaceae     Liipe     Seeds       24.     Spondias pinnata (L.f.)     Anacardiaceae     Wild mango     Seeds       25.     Suistania     makagoni     Meliaceae     American     Seeds       25.     Sveistania     makagoni     Meliaceae     American     Seeds       25.     Sveistania     makagoni     Meliaceae     Black jam, Java     Seeds       25.     Sveistania     makagoni     Myrtaceae     Black jam, Java     Seeds	
Spreng         Interpretation         Interpretation           19.         Murraya paniculata         Rutaceae         Native mock carage           (L.) Jack         Paniculata         Rutaceae         Native mock carage           20.         Polyatikia         Iongjöbla         Annonaceae         Debdaru         Seeds           21.         Psidilum guajava L.         Myrtaceae         Guava         Through graft           22.         Psterogermann         Malvaceae         Bayur/Karnikara         Grafting           23.         Shonca         borneansis         Dipterocarpaceae         Llipe         Seeds           Pierre         Spondias pinnata         L.f.         Anacardiaceae         Wild mango         Seeds           24.         Spondias pinnata         L.f.         Anacardiaceae         Wild mango         Seeds           25.         Swittenia         makagoni         Meliaceae         American         Seeds           25.         Swittenia         mukagoni         Myrtaceae         Black jam, Java         Seeds           26.         Syrygium cumuni (L.)         Myrtaceae         Black jam, Java         Seeds	
19.         Murraya         paniculata         Rutaceae         Native mock         Air-layering orange           20.         Polyathia         longifulia         Annonaceae         Debdaru         Seeds           20.         Polyathia         longifulia         Annonaceae         Debdaru         Seeds           21.         Patidum guagiava L.         Myrtaceae         Guava         Through graft           22.         Patidum guagiava L.         Matvaceae         Bayur/Karnikara         Grafting           22.         Shoraa         bornaansis         Diptercocarpaceae         Llipe         Seeds           23.         Shoraa         bornaansis         Diptercocarpaceae         Llipe         Seeds           24.         Spondias pinnata (L.f.)         Anacardiaceae         Wild mango         Seeds           25.         Swideniai         makagoni         Meliaceae         American         Seeds           25.         Syrygium cumuni (L.)         Myrtaceae         Black jam, Java         Seeds	
(L.) Jack     orange       20.     Polyalihia longifolia       (Sona), Thwaites     Debdaru       21.     Paidiam gaagiwa L.       Myrtaceae     Guava       22.     Pierosparmum       23.     Shoraa       Pierce     Dipterocarpaceae       24.     Spondias pinnata (L.f.)       25.     Suistania       26.     Synygium cumumi (L.)       26.     Synygium cumumi (L.)       Myrtaceae     Black jam, Jawa       26.     Synygium cumumi (L.)	
20.         Polyalikia         Iongjódia         Annonaceae         Debďaru         Seeds           (Sonn.) Thwaites         Myrtaceae         Guava         Through graft           21.         Psidium guajava L.         Myrtaceae         Guava         Through graft           22.         Psirologiermam         Malvaceae         Bayur/Karnikara         Grafting           23.         Skorea         bornacensis         Dipterocarpaceae         Llipe         Seeds           Pierre         Spondias pinnais         L.f.)         Anacardisceae         Wild mango         Seeds           24.         Spondias pinnais         L.f.)         Anacardisceae         Wild mango         Seeds           25.         Suidannia         makagoni         Meliaceae         American         Seeds           26.         Syrygium cumuni         L.)         Myrtaceae         Black jam, Java         Seeds	8
20.         Polyalikia         Iongjódia         Annonaceae         Debďaru         Seeds           (Sonn.) Thwaites         Myrtaceae         Guava         Through graft           21.         Psidium guajava L.         Myrtaceae         Guava         Through graft           22.         Psirologiermam         Malvaceae         Bayur/Karnikara         Grafting           23.         Skorea         bornacensis         Dipterocarpaceae         Llipe         Seeds           Pierre         Spondias pinnais         L.f.)         Anacardisceae         Wild mango         Seeds           24.         Spondias pinnais         L.f.)         Anacardisceae         Wild mango         Seeds           25.         Suidannia         makagoni         Meliaceae         American         Seeds           26.         Syrygium cumuni         L.)         Myrtaceae         Black jam, Java         Seeds	_
(Sonn.) Thwaites     Myrtaceae     Guava     Through graft       21.     Pitichun guuginus L.     Myrtaceae     Guava     Through graft       22.     Pitichun guuginus L.     Malvaceae     Bayur Karnikara     Grafting       23.     Shorea     bornedeniii     Diptercocarpaceae     Lilipe     Seeds       24.     Spondias pinnata (L.f.)     Anacardiaceae     Wild mango     Seeds       25.     Switzenia makagoni     Meliaceae     American     Seeds       26.     Synygium cumumi (L.)     Myrtaceae     Black jam, Java     Seeds	
21.         Psidium guajava L.         Myrtaceae         Guava         Through graft           22.         Pstronjofmum         Malvaceae         Bayur/Karnikara         Grafting           23.         Shorea         Borneachnin         Diptercocarpaceae         Llipe         Seeds           24.         Spondias pinnata (L.f.)         Anacardiaceae         Wild mango         Seeds           25.         Swistenia         makagoni         Meliaceae         American         Seeds           25.         Swistenia         makagoni         Meliaceae         American         Seeds           26.         Syrygium cumuni (L.)         Myrtaceae         Black jam, Java         Seeds	
Pterospermum acceptolium (L.) Willd.         Malvaceae         Bayur/Karnikara         Grafting           23.         Showaa         bornaansis         Dipterocarpaceae         Liipe         Seeds           24.         Spondias pinnata (L.f.)         Anacardiaceae         Wild mango         Seeds           25.         Suidaania         makagoni         Meliaceae         American         Seeds           25.         Suidaania         makagoni         Meliaceae         American         Seeds           26.         Syrygium cumuni (L.)         Myrtaceae         Black jam, Java         Seeds	
acarjólium (L.) Willd. 23. Skora bornaanii Dipterocarpaces Llipe Seeds Pierre 24. Spondias pinnata (L.f.) Anacardiaceae Wild mango Seeds Kurz 25. Swidenia makagoni Meliaceae American Seeds (L.) Jacq. 26. Syrygium cumuni (L.) Myrtaceae Black jam, Java Seeds Sizeels	arting
23.         Skona         bornaansis         Dipterocarpacese         Llipe         Seeds           Pierre         Spondias pinnata (L.f.)         Anacardiaceae         Wild mango         Seeds           25.         Swistenia         makagoni         Meliaceae         American         Seeds           25.         Swistenia         makagoni         Meliaceae         American         Seeds           26.         Syrygium cumuni (L.)         Myrtaceae         Black jam, Java         Seeds	
Pierre         Anacardiaceae         Wild mango         Seeds           24.         Spondias pinnata (L.f.)         Anacardiaceae         Wild mango         Seeds           25.         Suistania makagoni         Meliaceae         American         Seeds           25.         Suistania makagoni         Meliaceae         American         Seeds           26.         Spryghum cumuni (L.)         Myrtaceae         Black jam, Java         Seeds	
Pierre         Pierre           24. Spondias pinnata (L.f.) Anacardiacese         Wild mango           25. Swistania makagoni Meliaceae         American Seeds           25. Swistania makagoni Meliaceae         American Seeds           26. Syrygium cumuni (L.) Myrtaceae         Black jam, Java Seeds           Sizels         Stack jam, Java Seeds	
Kurz         Kurz           23. Swietania makagoni Meliaceae         American Seeds           (L.) Jacq.         Mabogany           26. Syrygium cumuni (L.)         Myrtaceae           Bick jam, Java Seeds         Slock jam, Java Seeds	
Kurz         Kurz           23. Swietania makagoni Meliaceae         American Seeds           (L.) Jacq.         Mabogany           26. Syrygium cumuni (L.)         Myrtaceae           Bick jam, Java Seeds         Slock jam, Java Seeds	
25. Swistenia makagoni Meliaceae American Seeds     (L.) Jacq. Malogany     26. Syrygium cumuni (L.) Myrtaceae Black jam, Java Seeds     Sicels	
(L.) Jacq. Mahogany 26. Syzygium cumuni (L.) Myrtaceae Black jam, Java Seeds Skeels plum	
26. Syrjejium cumuni (L.) Myrtaceae Black jam, Java Seeds Skeels plum	
Skeels plum	
Skeels plum	
and any set of the set	ing .

Not only the plants mentioned above, other ornamentals have been found in Case study 3. These are golden trumpet, red ginger, herbal aralia, cook pine, fish tail palm, Kerala coconut, garden croton, cycas, red palm, song of India, golden cane palm, outdoor plant, silky oak, china rose and flame of the wood (Table 4). Red palm and golden cane palm is highly priced and now old stock available in the market with price amounting rupees 1500 to 1700. These are exported quality plants sale outside the state.

Other plants available here are latina, Malabar Melastoma, yellow oleander, phoenix palm, pine, pagoda tree, red frangipani, Christmas flower, lady palm, hybrid garden rose, crepe Jasmine, Madagascar almond, yellow oleander, fox tail palm etc.

SL.	Name	Family	Common Name	Mode o
No.	avenue.	ranny	Contribut Ivalue	Propagation
1.	Allamanda cathartica	Apocynaceae	Golden trumpet	Cuttings
2.	Alpinia purpurata K.	Zingiberaceae	Red ginger	Rhizome
	Schum.	-		
3. 4.	Aralia cordata Thunb.	Araliaceae	Herbal araka	Cuttings
4.	Araucaria columnaria J.R. Frost Hook.	Araucariaceae	Cook pine	Seeds
5.	Caryota urens L.	Arecaceae	Fish tail palm	Seeds, divisions o clums and suckers
6.	Cocos nucifera L.	Arecaceae	Kerala coconst	Fruits
7.	Codiacum variegatum		Garden croton	Stem cuttings
	(L.) A. Juss.	•	Garden croibs	
8.	Cycas revolute Thurb.	Cycadaceae	Cycas, sago paim	Seeds, basal offset
9.	Cyrtostackys renda	Arecaceae	Red	Separating sid
	Blume		palmLipstick palm	shoot, Seed dividing sucker
10.	Dracaena sp.	Asparagaceae	Song of India	Stem cuttings
n.	Dypsis lutescens (H.		Golden care	Seeds
•••	Wendl.) Bentje & J. Dransf.	Alecaceae	paim	accus
12.	Forkeria sp.	Agyaceae	Outdoor plant	Rooted plant
13	Grivelia robusta A.	*	Silver calcSilley	Through seeds
	Conn. Ex R. Br.		oak	-
14.	Hibis-rosa-sinensis L.	Malvaceae	China rose	Cuttings
15.	Ixora coccinia L.	Rubiaceae	Red, yellow, pink flame of the woods	Stem cuttings
16.	Latina rubra	Arecaceae	Latina	Side stock
17.	Melastoma malabathricum L.	Melastomataceae	Malabar melastome	Seeds
18	Nerium indicum L.	Apocynaceae	White, pink,	Air layering
	Nertan Dalcan D.	reportanceae	yellow cleander	An ayering
19.	Phoenix dactylifera L.	Arecaceae	Dtae/Phoenix paim	Seeds
20.	Piezz sp.	Pinaceae	Pine	Seeds
20. 21.	Phonesia alba L.	Apocynaceae	Pagoda tree	Stem cuttings
22	Plumeria rubra L.	Apocynaceae	Red frangipani	Stem cutting
22. 23.	Poinsettia pulcherrima	Euphorbiaceae	Christmas	Stem cuttings
	(Willd. ex Klotzsch) Graham		flower	
24.	Rhapis excelse (Thunb.) A. Henry	Arecaceaea	Lady paim	Stem cuttings
25.	Rosa sp.	Rosaceae	Garden Rose (Hybrid)	Stem cuttings
26.	Tabarnaamontana divaricata (L.) R. Br. ex Roem. & Schult.	Apocynaceae	Crepe Jasmine	Stem cuttings
27.	Terminalia mantaly H.	Combretaceae	Madagascar	Ornamental thous
	Perrier		almond	back and wood a
				astringent.
28.	Thevetia peruviana (Pers.) K. Schum.	Apocynaceae	Yellow Oleander	Seeds, cuttings.
29.		Arecaceae	Fox tail paim	Seeds
	A.K. Irvine		a sea was present	

Table 4. Ornamental plants available at Adhikary Nursery, Basantia, Purba Medinipur, W.B.

N.B.: Transported to different offices in various parts of Odisha state, company like Infosys, IT sectors, Bhusan Steel plant, Sambalpur and other national markets abroad the country.

# Photo Plate 1

# Photographs

# ISSN [ONLINE]: 2395-1052



Fig. 1 Coastal zone with saline soil hinder plant growth



Fig. 2 Coastal canal in Contai Sub-Division filled with casuarinas



Fig. 3 Bay leaf plant in nursery



Fig. 4 Author taking data in Nursery



Fig. 5 Thevetia sp. in bed



Fig. 6 Mimusops elengi seedlings

# ISSN [ONLINE]: 2395-1052



Fig. 7 Pinus sp. in nursery



Fig. 8 Azadirachta indica in nursery



Fig. 10 Papaya seedlings in nursery



Fig. 11 Large scale seedling preparation in nursery



Fig. 9 Silver oak in nursery



Fig. 12 Acacia auriculiformis in nursery



Fig. 13 Michelia champaca in garden

#### ISSN [ONLINE]: 2395-1052



Fig. 16 Rudraksha plant in nursery

# V. CONCLUSION



Fig. 14 Anthurium sp. in nursery (Flamingo flower)



Fig. 15 Private nursery (top view)

Ecosystem damage and soil erosion including flood are general phenomena of Purba Medinipur. The soil loss and vegetation loss need high demand of plants to re-vegetate the land mass in local area as well as other areas. This means there is a high demand of agricultural crops, ornamentals, economic plants, medicinal plants as well as timer yielding plants. Some people are reluctant to grow valuable exotic in their garden or home premises that makes them majestic. The land is acidic to alkaline but most of the places high alkalinity and salinity postpone the growth of the seedlings. Therefore, there is a high demand of seedlings and saplings. Remembering the theme in mind people create nursery which supply the demandable stocks as well as generate income. So, the present study demands a thorough study along the coastline to know the present position of conservation of plants in addition to know the value of biodiversity in such rural coastal Medinipur in West Bengal.

## VI. ACKNOWLEDGEMENTS

Authors are thankful to Milan Kumar Barik, Asst. Teacher, Gokulnagar G.J. Sikshaniketan, who helped us to make it complete in all aspects. Thanks specially for the nursery owners for our case study. Local people of Chalti and Basantia village are thankful as they assist us in field. Authors also acknowledge the administrative offices, Panchayat, Contai, Forest department for their cordial help. Library authority, Vidyasagar University, different libraries of Colleges and BSI, Kolkata are also well acknowledged for time based help. We convey our acknowledgements to all our well wishers and family members who helped us in various ways during study.

#### REFERENCES

- [1] Ahmed, M. Z.,Gilani, S.A.,Kikuchi, A; Gulzar, S; Khan,M.A. and Watanabe,K.N. 2011. Population diversity of *Aleuropus lagopoides*: A potential cash crop for saline land, *Pak. J. Bot.*,43(1):595-605.
- [2] Anonymous. 1997. Flora of West Bengal, Vol.-1, Flora of India, Series -2, BSI, Kolkata.
- [3] Anonymous. 2005. Medicinal Plant resources of south West Bengal, Vol.-I, Research Wing, Directorate of forests, Govt. of West Bengal.
- [4] Anonymous. 2010. Medicinal Plant Resources of South West Bengal, Vol.-II, Research Wing, Directorate of forests, Govt. of W.B.
- [5] Anonymous. 2017. Medicinal Plant Resources of South West Bengal, Research Wing, Directorate of forests, Govt. of W.B.
- [6] Anonymous. 1987. Mangrove in India: Status Report, Government of India, Ministry of Environment & Forests, New Delhi.
- [7] Anonymous. 2012. Medicinal plant Resources of Kolkata, A Photo Guide, Research Circle, Forest Directorate, Govt. of West Bengal, pp.1-200.
- [8] Arun,A.B.,Beena,K.R.,Raviraja,N.S and Sridhar,K.R.1999. Coastal sand dunes-a neglected ecosystem, *Current science*, 77:19-22.
- [9] Bandyopadhyay, K B. 2009. Amader Rajya (Bengali Version for West Bengal), Kishore Gyan Vigyan Prakashani, Spectrum Offset, Kolkata-37, pp. 76.
- [10] Banerjee, L.K. 1987. Ecological studies on the mangals of Mahanadi estuarine delta, Orissa, *Trop. Ecol.*, 82:117-125.
- [11] Banerjee, L.K. 1994. Conservation of coastal plant communities in India, *Bull.Bot.Suvr.India*, 36(1-4):160-165.
- [12] Banerjee, L. K; Sastry, A. R. K. and Nayar, M. P. 1989. Mangroves of India-Identification Manual, BSI, Kolkata-1.
- [13] Banerjee, L.K., Rao, T.A., Sastry, A.R.T. and Ghosh. 2002. Diversity of Coastal Plant Communities in India, *Bot.Surv.India*, Kolkata, pp. 233-237 & 319-320.
- [14] Bennet, S. S. R. 1987. Name changes in Flowering Plants of India and Adjoining Regions, Triseas Publishers, Dehra Dun.
- [15] Blasco, F. 1975. Mangroves of India, Inst. Francais, Pondicherry, *Trav. Sect. Sci. Tech.*,14:117-125.
- [16] Chakraborty, S.K.2010. Coastal Environment of Midnapore, West Bengal : Potential Threat and Management, *Jour. Coast. Env.*, 1(1): 27-40.
- [17] Chakraborty, T., Mondal, A.K. and Parui, S., 2012. Studies on the Phytoresources of Coastal Dune Flora at West Bengal and adjacent Orissa, India, *Int., Jour. of Sc. and Nature*, 3(4): 745-752.

- [18] Corre Jean-Jacques.1991. The Sand dunes and their vegetation along the Mediterranean coast of France. Their likely response to climate change, *Landscape Ecology* 6(1&2):65-75.
- [19] Das, D. 2013. Pedalium murex L. (Pedaliaceae)–A New Record of Purba Medinipur District to the state of West Bengal, IOSR Journal of Business and Management, 13(4): 54-56.
- [20] Das, D. and Ghosh, R.B. 1999. Mangroves and other phanerogams growing at Nayachar , Haldia, Midnapore, West Bengal, *Environment and Ecology*, 17(3): 725-727.
- [21] Das, D and Das, M. 2014. Vegetation ecology of coastal belt of Khejuri area of Purba Medinipur District with special reference to Hijli coast, West Bengal, India, *IOSR Journal of Pharmacy* 4(2):56-77.
- [22] Das, D.C, Pati, M., Mahato, G. and Das, M. 2015. Study of tidal vegetation of Purba Medinipur district of West Bengal, India, *International Journal Of Bioassays*, 4(5): 3915-3921.
- [23] Das, D.C., Mahato, G., Das, M. and Pati, M.K. 2015. Investigation of Ethnomedicinal plants for the treatment of Carbuncles from Purulia District of West Bengal, *International Journal of Bioassay*, 4(5): 3896-3899.
- [24] Desai, K.N. (2000) Dune vegetation: Need for a reappraisal, Coastain: A Coastal Policy Research Newsltter, 3:6.
- [25] Dey, M.K., Hazra, A, K. and Chakraborty, S.K. 2010. Functional Role of Microarthropods innutrient cycling of Mangrove- estuary ecosystem of Midnapore coast of West Bengal, India, *Int. Jour. of Environment Technology* and Management, 12(1) 67-84.
- [26] Duthie, J. F. 1960. Flora of Upper Gangetic plains, Vol. I , II, Botanical Survey of India, Calcutta.
- [27] Haines, H. H. 1921-1925. The Botany of Bihar and Orissa, Vol. I-IV, BSI, Calcutta.
- [28] Hooker, J. D. 1892-1897. Flora of British India, Vol. 1-7, BSI, Calcutta.
- [29] Jain, S. K. and Rao, R. R. A.1977. Hand book of Field Herbarium Methods, Oxford and IBH Publishing Company, New Delhi.
- [30] Jha ,B.,Gontia,I. and Hartmann,A.2011. The roots of halophytes *Salicornia brachiata* are a source of new halotolerant diazotrophic bacteria with plant growth – promoting potential, Plant Soil, Regular article, 1-13.
- [31] Kirtikar, K. R. and Basu, B .D. 1918. Indian Medicinal Plants, I-IV, International Book Distributors, Dehra Dun.
- [32] Mandal, M., Dandapath, P.K. and Bhusan, S. 2013. Digha Sankarpur Littoral Tract – A Geographical case study, *Int.J. Applied & Humanities and Social Science Invention*, 2(4):46-54.

- [33] Mukherjee, B.B. and Mukherjee, J.1978. Mangroves of Sundarbans, India, *Phytomorphology*, 28(2):217-229.
- [34] Naskar, K and Guha Bakshi, D. N. 1987. Mangroves swamps of the Sunderbans, Naya Prakash, Calcutta.
- [35] Prain, D.1963. Bengal Plants (Vol-I, II), Bishen Singh and Mahendra Pal Singh, Dehradun. Revised Edn, BSI, Kolkata
- [36] Rao, T.A., Sastry, A.R.K. 1974. An Ecological approach towards classification of Coastal Vegetation of India –II, Estuarine vegetation, ibid. 100:438-452.
- [37] Rimer, D. N. 1984. Introduction to Fresh water vegetation, AVI Publishing Company, INC, Westport, Connecticut.
- [38] Sanyal, P. Banerjee, L.K. and Chowdhury, M.K. 1984. Dancing Mangals of Indian Sunderbans, *Jour. Ind. Soc. Coastal Agri. Res.* 2(1): 10-16.
- [39] Waheed Khan ,M.A. 1959. Ecological studies on the mangrove forests in India, In. Proc. Mangs. Symposium, Faridabad, 97-113.
- [40] Das, D and Ghosh, P. 2017. Some important Medicinal Plants used widely in Southwest Bengal, *IJESI*, 6(6): 28-50.
- [41] Das, D and Ghosh, P. 2018. Ecosystem study on some plants of Coastal Purba Medinipur, *IJSART*, 4(11): 102-106.
- [42] Das, M and Das, M and Das, D. 2019. Medicinal plants of home gardens in Hijli coast of Purba Medinipur in Westn Bengal, *IJSART*, 5(5): 840-846.
- [43] Roychowdhury, N and Mishra, H.P. 2001. Text Book on Floriculture and Landscaping, Raja Infotech Enterprise, Kolkata, 70056.