ISSN NO. 2320-5407

Journal homepage: http://www.journalijar.com

INTERNATIONAL JOURNAL OF ADVANCED RESEARCH

RESEARCH ARTICLE

An Assessment of Angiosperm Diversity at Mahadebpur Upazila of Naogaon District, Bangladesh

Smriti Kona, A.H.M. Mahbubur Rahman*

Plant Taxonomy Laboratory, Department of Botany, University of Rajshahi, Rajshahi-6205, Bangladesh

Manuscript Info

Manuscript History:

Received: 15 August 2015
Final Accepted: 16 September 2015
Published Online: October 2015

Key words:
Assessment, Angiosperm Diversity, Mahadebpur, Naogaon, Bangladesh

Corresponding Author

A. H. M. Mahbubur Rahman

Abstract

An assessment of angiosperm diversity at Mahadebpur Upazila of Naogaon District, Bangladesh was carried out from December 2013 to June 2015. A total of 265 species belonging to 204 genera under 94 families were recorded. Magnoliopsida (Dicotyledones) is represented by 81 families, 175 genera and 232 species, whereas Liliopsida (Monocotyledones) by 13 families, 29 genera and 33 species. These comprise of 116 herbs, 48 shrubs, 30 climbers, 71 trees, belong to 94 families. Cucurbitaceae and Amaranthaceae are the largest family in Magnoliopsida represented by 13 species in each and in Liliopsida Poaceae is the largest family with 9 species. Acanthaceae, Amaranthaceae, Asteraceae, Apocynaceae, Brassicaceae, Caesalpiniaceae, Convolvulaceae, Cucurbitaceae, Euphorbiaceae, Fabaceae, Moraceae, Malvaceae, Mimosaceae, Myrtaceae, Polygonaceae, Poaceae, Rutaceae and Solanaceae are the dominant families with high species diversity. For each species botanical name, local name, habit, relative occurrence, phenology, plant population, voucher number and family were provided.

INTRODUCTION

Angiosperms are as important to humans as they are to other animals. Angiosperms serve as the major source of food-either directly or indirectly through consumption by herbivores-and, as mentioned above, they are a primary source of consumer goods, such as building materials, textile fibres, spices, herbs, and pharmaceuticals.

Among the most important food plants on a global scale are cereals from the grass family (Poaceae); potatoes, tomatoes, eggplant, and red or chili peppers from the potato family (Solanaceae); legumes or beans (Fabaceae); pumpkins, melons, and gourds from the squash family (Cucurbitaceae); broccoli, cabbage, cauliflower, radish, and other vegetables from the mustard family (Brassicaceae, or Cruciferae); and almonds, apples, apricots, cherries, loquats, peaches, pears, raspberries, and strawberries from the rose family (Rosaceae). Members of many angiosperm families are used for food on a local level, such as ullucu (*Ullucus tuberosus*) in the Andes and cassava (*Manihot esculenta*) throughout the tropics. Tropical angiosperm trees are an important source of timber in the tropics and throughout the world (Purseglove, 1968a, 1968b).

The importance of studying local floristic diversity has been realized and carried out in Bangladesh by Tutul et al (2010), Khan and Afza (1968), Khan and Banu (1972), Khan and Hassan (1984), Khan and Huq (2001), Moniruzzaman et al (2012), Rahman et al (2006), Rahman et al (2007a, 2007b, 2007c), Rahman et al (2008a, 2008b), Rahman et al (2011), Rahman (2013a, 2013b, 2013c, 2013d, 2013e, 2013f, 2013g), Rahman et al (2013),

Rahman and Akter (2013), Rahman and Khanom (2013), Rahman (2014), Rahman et al (2014a, 2014b, 2014c), Rahman and Debnath (2014a, 2014b), Rahman and Gulshana (2014), Rahman and Keya (2014a, 2014b), Rahman and Rahman (2014), Rahman and Rojonigondha (2014), Rahman and Parvin (2015), Rahman et al (2015a, 2015b, 2015c), Ara et al (2011, 2013), Rahman and Uddin (1997), Rahman and Alam (2013), Arefin et al (2011), Islam et al (2009), Khan and Huq (2001), Khan et al (1994), Rahman et al (2010, 2013), Rahman and Hassan (1995), Uddin and Hassan (2010, 2012), and Uddin et al (2013, 2014). The present study was made an inventory of the angiosperm diversity at Mahadebpur Upazila of Naogaon district, Bangladesh.

Materials and Methods

An assessment of angiosperm diversity at Mahadebpur Upazila of Naogaon District, Bangladesh was carried out from December 2013 to June 2015. A total of 265 species belonging to 204 genera under 94 families were collected and identified. A survey on the determination of the location of different species was made and a list was prepared to be acquainted with the plants available in the selected area. All the species were noted and time to time the areas were visited to see when they flowered. For the morphological study, different types of species were examined again and again in order to see if there was any variation or not. They were collected at flowering stages and herbarium specimens were prepared as vouchers. In this practice standard method was followed. In this regard different types of plant species were collected from different habitats. All the collected plant specimens were kept in the Herbarium, Department of Botany, and University of Rajshahi, Bangladesh.

The major collected materials were identified and described up to species with the help of Cronquist (1981), Hooker (1961), Prain (1963) and Kirtikar and Basu (1987), Ahmed et al (2008-2009) were consulted. For the current name and up-to-date nomenclature Huq (1986) and Pasha and Uddin (2013) were also consulted.

Results and Discussion

An assessment of Angiosperm diversity at Mahadebpur Upazila of Naogaon District, Bangladesh conducted during December 2013 to June 2015. A total of 265 species belonging to 204 genera under 94 families were recorded. Of these, Magnoliopsida (Dicotyledones) is represented by 232 species under 175 genera and 81 families while Liliopsida (Monocotyledones) is represented by 33 species under 29genera and 13 families. Cucurbitaceae and Amaranthaceae are the largest family in Magnoliopsida represented by 13 species and, in Liliopsida; Poaceae is the largest family with 9 species. Habit analysis shows that herbs, shrubs, climbers and trees are represented by 116, 48, 30 and 71 species, respectively **(Table 1, 2).** Amaranthaceae, Asteraceae, Apocynaceae, Caesalpiniaceae, Convolvulaceae, Cucurbitaceae, Euphorbiaceae, Fabaceae, Moraceae, Malvaceae, Mimosaceae, Myrtaceae, Poaceae, Rutaceae and Solanaceae are the dominant families with high species diversity. For each species botanical name, local name, habit, plant population, phenology, status of occurrence voucher number and family were provided **(Table 1).** Of 265 species recorded here, herbs are represented by 116 (43.77%), trees by 71 (26.79%), shrubs by 48 (18.11%) and climber by 30 (11.32%) species. **(Table 3, Figure 1).**

Based on this study, a preliminary list of angiosperm diversity at Mahadebpur upazila of Naogaon district, Bangladesh conducted during December 2013 to June 2015. A total of 265 species belonging to 204 genera under 94 families were recorded. **(Table 1).** The collected information is comparable with the result of other studies in Bangladesh. A total of 243 species belonging to 195 genera under 95 families were recorded in Khagrachhari district (Islam et al, 2009). A total of 374 species belonging to 264 genera under 84 families were recorded in Lawachara National Park (Uddin and Hassan, 2010). A total of 153 species belonging to 120 genera under 52 families were recorded in Runctia Sal Forest (Tutul et al, 2010). A total of 245 species belonged to 183 genera and 72 families are documented in Habiganj district (Arefin et al, 2011). A total of 425 species belonging to 321 genera 108 families are recorded in Rajshahi district (Rahman, 2013d). A total of 302 species belonging to 243 genera 84 families are recorded in Bangladesh Police Academy, Rajshahi (Rahman et al, 2014b). No published information recorded on the diversity of angiosperm plant species at Mahadebpur upazila of Naogaon district, Bangladesh.

Distribution of angiosperm species in the families shows variation. The family Cucurbitaceae and Amaranthaceae are represented by 13 species. The family Solanaceae is represented by 12 species. Euphorbiaceae is represented by 11 species. Fabaceae is represented by 10 species. Asteraceae and Poaceae is represented by 9 species. Moraceae is represented by 8 species. Lamiaceae is represented by 7 species. Each of Apocynaceae, Verbenaceae and Euphorbiaceae is represented by 6 species. A single species in each was recorded by 48 families while two to five species in each was recorded by 34 families **(Table 1).**

According to the data obtained in result of quantitative analysis in the study area 265 plant species were recorded, out of them 116 plant species were herbs, 48 were shrubs, 30 were climbers and 71 were tree species belonging to 94 families **(Table 3).**

Distribution was measured only to indicate the status of occurrence of each species in this area and was based on eye estimation. A species which is distributed every where is called abundant (very common); when it is distributed at certain intervals is called frequent (common). Occurrence of species which is very few is called rare and distribution by one or two plants is called as very rare. Of 265 angiosperm plant species recorded here, very common are represented by 61 (23.01%), common by 116 (43.77%), rare by 77 (29.05%) and very rare by 11 (4.15%) plant species. **(Table 4, Figure 2).**

A total of 265 species belonging to 204 genera under 94 families were recorded. Of the total number of species, *Abelmoschus esculentus, Acacia auriculiformis, Ageratum conyzoides, Alternanthera sessilis, Alternanthera philoxeroides, Amaranthus spinosus, Amaranthus tricolor, Amaranthus viridis, Areca catechu, Argemone mexicana, Artocarpus heterophyllus, Azadirachta indica, Bambusa tulda, Basella alba, Bryophyllum pinnatum, Calotropis procera, Carrica papaya, Catharanthus roseus, Centella asiatica, Chenopodium ambrosioides, Citrus aurantifolia, Clerodendrum viscosum, Coccinia grandis, Cocos nucifera, Colocasia esculenta, Commelina benghalensis, Coriandrum sativum, Croton bonplandianum, Cynodon dactylon, Dendropthoe falcata, Dopatrium junceum, Eucalyptus citrodora, Euphorbia hirta, Ficus hispida, Fumaria indica, Heliotropium indicum, Hibiscus rosa-sinensis, Isachne globosa, Lagenaria sicararia, Lawsonia inermis, Leucas aspera, Leucas lavandulifolia, Lycopersicon esculentum, Mangifera indica, Mimosa pudica, Monochoria hastata, Musa sapientum, Parthenium hysterophorus, Pepromia pellucida, Phoenix sylvestris, Phyllanthus reticulatus, Persicaria hydropiper, Persicaria orientale, Psidium guajava, Rosa centifolia, Scorparia dulcis, Sesbania canabina, Solanum nigrum, Spilanthes calva, Stephania japonica, Syzygium cumini,, Trapa bispinosa, Xanthium indicum, Zizyphus mauritiana* were recorded as abundant (very common)*; Abroma augusta, Acacia nilotica, Achras zapota, Aegle marmelos, Aerva sanguinolenta, Albizia procera, Achyranthes aspera, Allium cepa, Allium sativum, Aloe vera, Alstonia scholaris, Amaranthus dubius, Annanas sativus, Andrographis paniculata, Anthocephalus chinensis, Aphanamixis polystachya, Averrhoa carambola, Baccaurea ramiflora, Benincasa hispida, Bombax ceiba, Borassus flabellifer, Brassica napus, Brassica oleracea var. botrytis, Brassica oleracea var. capitata, Cajanus cajan, Capsicum frutescens, Canna indica, Senna alata, Cassia fistula, Senna sophera, Cestrum nocturnum, Chrozophora rottleri, Citrus grandis, Clerodendrum inerme, Commelina longifolia, Corchorus capsularis, Cucurbita maxima, Curcuma longa, Cuscuta reflexa, Cyanotis axillaris, Cyperus tegetiformis, Dalbergia sissoo, Delonix regia, Diospyros malabarica, Duranta repens, Eclipta alba, Euphorbia thymifolia, Elaeocarpus robustus, Epipremnum aureum, Ficus benghalensis, Ficus religiosa, Gardenia jasminoides, Glinus oppositifolius, Gossypium harbaceum, Hibiscus mutabilis, Herpestis chamaedroides, Hydrolea zeylanica, Imperata cylindrica, Ipomoea alba, Ipomoea aquatica, Ipomoea batatus, Ipomoea fistulosa, Ipomoea quamocli, Ixora coccinia, Justicia gendarusa, Kalanchoe blossfeldiana, Lablab purpureus, Lagerstroemia speciosa, Lannea coromandelica, Lemna perpusila, Leucas cephalotes, Limonia acidissima, Litchi chinensis, Ludwigia adscendens, Manikara achras, Microcos paniculata, Michelia champaca, Mimusops elengi, Mirabilis jalapa, Moringa oleifera, Nelumbo nucifera, Nicotiana plumbaginifolia, Nyctanthes arbor-tristis, Nymphaea nouchali, Nymphoides indicum, Ocimum americanum, Oryza sativa, Oxalis corniculata, Physalis minima, Phyllanthus urinaria, Polyalthia longifolia, Portulaca oleracea, Pouzolzia zeylanica, Polycarpon prostratum, Punica granatum, Raphanus sativus, Saccharum officinarum, Saccharum spontaneum, Senna tora, Sesamum indicum, Sida cordifolia, Solanum ferox, Solanum melongena, Solanum surattense, Solanum tuberosum, Spondius pinnata, Swietenia mahagoni, Syzygium jambos, Syzygium samarangense, Tabernaemontana divaricata, Tagetes erecta, Tagetes patula, Tamarindus indica, Terminalia arjuna, Terminalia chebula, Trichosanthes arguina, Typhonium trilobatum, Vitis trifolia* as frequent (common); *Amaranthus lividus, Annona squamosa, Arachis hypogea, Ardisia paniculata, Artocarpus lacucha, Asparagus*

racemosus, Barringtonia acutangula, Bergia ammannioides, Bougainvillea spectabilis, Cannabis sativa, Calotropis gigantea, Carissa carandas, Celosia cristata, Chenopodium album, Chrysanthamum coronarium, Cinnamomum tamala, Cleome viscosa, Clitoria tarnetea, Coix lacryma, Cucumis melo, Cucumis sativus, Cyathula capitata, Cyanotis cristata, Datura metel, Dendropthoe falcate, Drosera burmannii, Digeria arvensis, Exacum pedunculatum, Euphorbia pulcherrima, Ficus racemosa, Gmelina arborea, Helianthus annuus, Impatiens balsamina, Jasminum grandiflorum, Jatropha gossypifolia, Jatropha integerrima, Justicia adhatoda, Kalanchoe lacinata, Kyllinga monocephala, Leucas lavandulifolia, Litsea monopetala, Luffa acutangula, Luffa cylindrica, Mentha arvensis, Messua nagassarium, Momordica charantia, Momordica cochchinensis, Morinda citrifolia, Morus nigra, Mukia maderaspatana, Murraya paniculata, Nerium indicum, Ocimum sanctum, Passiflora edulis, Piper betle, Pisonia aculeata, Persicaria barbatum, Polygonum plebejum, Pyrus communis, Rananculus scleratus, Ricinus communis, Spathodea campanulata, Spondius purpurea, Streblus asper, Tabebuia aurea, Tabernaemontana coronaria, Tectona grandis, Terminalia catappa, Vandellia multiflora, Vigna sinensis, Vitex negundo, Vitis vinifera, Zea mays, Zingiber officinale were recorded as rare and *Alternanthera paronychioides, Cinnamomum verum, Dillenia indica, Diospyros montana, Diospyros philippensis, Erythrina variegata, Leonuros sibiricus, Solanum torvum, Trichosanthes dioica, Vigna mungo* were recorded as very rare species in the study area **(Table 4).**

In the study area 185 plant species are planted and 80 species are wild, i.e. *Abelmoschus esculentus, Abroma augusta, Acacia auriculiformis, Achras zapota, Aegle marmelos, Albiziaprocera, Allium cepa, Allium sativum, Aloe vera, Alstonia scholaris, Amaranthus dubius, Amaranthus tricolor, Annanas sativus, Annona squamosa, Anthocephalus chinensis, Aphanamixis polystachya, Arachis hypogea, Areca catechu, Artocarpus heterophyllus, Artocarpus lacucha, Averrhoa carambola, Azadirachta indica, Baccaurea ramiflora, Barringtonia acutangula, Bambusa tulda, Basella alba, Benincasa hispida, Bombax ceiba, Borassus flabellifer, Brassica napus, Brassica oleracea Var .botrytis, Brassica oleracea Var .capitata, Cannabis sativa, Cajanus cajan, Capsicum frutescens, Carissa carandas, Carrica papaya, Catharanthus roseus, Celosia cristata, Cestrum nocturnum, Chrysanthamum coronarium, Cinnamomum tamala, Cinnamomum verum, Citrus aurantifolia, Citrus grandis, Cocos nucifera, Colocasia esculenta, Corchorus capsularis, Coriandrum sativum, Cucumis melo, Cucumis sativus, Cucurbita maxima, Curcuma longa, Cynodon dactylon, Dalbergia sissoo, Delonix regia, Dillenia indica, Diospyros malabarica, Diospyros philippensis, Duranta repens, Elaeocarpus robustus, Eucalyptus citrodora, Ficus benghalensis, Ficus racemosa, Ficus religiosa, Gardenia jasminoides, Gmelina arborea, Gossypium harbaceum, Helianthus anuus, Hibiscus mutabilis, Hibiscus rosa-sinensis, Impatiens balsamina, Ipomoea aquatica, Ipomoea batatus, Ixora coccinia, Jatropha integerrima, Justicia gendarusa, Kalanchoe blossfeldiana, Lablab purpureus, Lagenaria sicararia, Lagerstroemia speciosa, Lannea coromandelica, Lawsonia inermis, Limonia acidissima, Litchi chinensis, Litsea monopetala, Luffa acutangula, Luffa cylindrica, Lycopersicon esculentum,Manikara achras, Mangifera indica, Mentha arvensis, Michelia champaca, Mimusops elengi, Mirabilis jalapa, Momordica charantia, Momordica cochinchinensis, Moringa oleifera, Morus nigra, Murraya paniculata, Musa sapientum, Nelumbo nucifera, Nerium indicum, Nyctanthes arbor-tristis, Nymphaea nouchali, Ocimum sanctum, Oryza sativa, Phoenix sylvestris, Piper betel, Polyalthia longifolia, Psidium guajava, Punica granatum, Pyrus communis, Raphanus sativus, Rosa centifolia, Saccharum officinarum, Saccharum spontaneum, Sesamum indicum, Sesbania canabina, Solanum melongena, Solanum tuberosum, Spondius pinnata, Spondius purpurea, Swietenia mahagoni, Syzygium cumini, Syzygium jambos, Syzygium samarangense, Tabernaemontana coronaria, Tabernaemontana divaricata, Tagetes erecta, Tagetes patula, Tamarindus indica, Tectona grandis, Terminalia arjuna, Terminalia catappa, Terminalia chebula, Trichosanthes arguina, Trichosanthes dioica, Typhonium trilobatum, Vigna mungo, Vigna sinensis, Vitis vinifera, Zea mays, Zingiber officinale, Zizyphus mauritiana* were recorded as planted and *Acacia nilotica, Achyranthes aspera, Aerva sanguinolenta, Ageratum conyzoides, Alternanthera philoxeroides, Alternanthera paronychioides, Alternanthera sessilis, Amaranthus lividus, Amaranthus spinosus, Amaranthus viridis, Andrographis paniculata, Ardisia paniculata, Argemone mexicana, Asparagus racemosus, Bergia ammannioides, Biophytum sensitivum, Bougainvillea spectabilis, Bryophyllum pinnatum, Canna indica, Calotropis gigantea, Calotropis procera, Senna alata, Cassia fistula, Senna sophera, Centella asiatica, Chenopodium album, Chenopodium ambrosioides, Chrozophora rottleri, Cleome viscosa, Clerodendrum inerme, Clerodendrum viscosum, Clitoriatarnetea, Coccinia grandis, Coix lacryma, Commelina benghalensis, Commelina longifolia, Croton bonplandianus, Cuscuta reflexa,Cyanotis axillaris, Cyanotis cristata,Cyathula capitata, Cyperus tegetiformis Datura metel, Dendropthoe falcata, Digeria arvensis, Diospyros montana, Dopatrium junceum, Drosera burmannii, Eclipta alba, Epipremnum aureum, Erythrina variegata, Euphorbia hirta, Euphorbia thymifolia, Euphorbia pulcherrima, Exacum pedunculatum, Ficus hispida, Fumaria indica, Glinus oppositifolius, Heliotropium indicum, Herpestis chamaedroides, Hydrolea zeylanica, Imperata cylindrica, Ipomoea alba, Ipomoea fistulosa, Ipomoea quamocli, Isachne globosa, Jasminum grandiflorum, Jatropha gossypifolia, Justicia adhatoda, Kalanchoe lacinata,*

Kyllinga monocephala, Lemna perpusila, Leonuros sibiricus, Leucas aspera, Leucas cephalotes, Leucas lavandulifolia, Ludwigia adscendens, Mesua nagassarium, Microcos paniculata, Mimosa pudica, Monochoria hastata, Morinda citrifolia, Mukia maderaspatana, Nicotiana plumbaginifolia, Nymphoides indicum, Ocimum americanum, Oxalis corniculata, Parthenium hysterophorus, Passiflora edulis, Pepromia pellucida, Phyllanthus reticulatus, Phyllanthus urinaria, Physalis minima, Pisonia aculeata, Persicaria barbatum, Persicaria hydropiper, Polycarpon prostratum, Persicaria orientale, Polygonum plebejum, Portulaca oleracea, Pouzolzia zeylanica, Rananculus scleratus, Ricinus communis, Scorparia dulcis, Senna sophera, Sida cordifolia, Solanum ferox, Solanum nigrum, Solanum surattense, Solanum torvum,Spathodea campanulata, Spilanthes calva, Stephania japonica, Streblus asper, Tabebuia aurea, Trapa bispinosa, Vandelia multiflora, Vitex negundo, Vitis trifolia, Xanthium indicum were recorded as wild **(Table 5).**

Table 1: Showing the families of the plant species recorded

SL. No.	Family	No. of the Herb species	No. of the Shrub species	No. of the Climber species	No. of the Tree species
1	Acanthaceae	1	2	-	-
2	Aloeaceae	1	-	-	-
3	Amaranthaceae	12	1	-	-
4	Anacardiaceae	-	-	-	4
5	Annonaceae	-	-	-	2
6	Apiaceae	2	-	-	-
7	Apocynaceae	2	3	-	1
8	Araceae	2	-	1	-
9	Araliaceae	-	-	-	1
10	Arecaceae	-	-	-	4
11	Asclepiadaceae	-	2	-	-
12	Asteraceae	8	1	-	-
13	Balsaminaceae	1	-	-	-
14	Basellaceae	-	-	1	-
15	Bignoniaceae	-	-	-	2
16	Bombaceace	-	-	-	1
17	Boraginaceae	1	-	-	-
18	Brassicaceae	4	-	-	-
19	Bromeliaceae	1	-	-	-
20	Caesalpiniaceae	-	2	-	3
21	Cannabinaceae	1	-	-	-
22	Cannaceae	1	-	-	-

23	Capparaceae	1	-	-	-
24	Caricaceae	-	-	-	1
25	Caryophyllaceae	1	-	-	-
26	Chenopodiaceae	2	-	-	-
27	Clusiaceae	-	-	-	1
28	Combretaceae	-	-	-	3
29	Commelinaceae	4	-	-	-
30	Convolvulaceae	1	-	4	-
31	Crassulaceae	3	-	-	-
32	Cucurbitaceae	-	-	13	-
33	Cuscutaceae	-	-	1	-
34	Cyperaceae	2	-	-	-
35	Dilleniaceae	-	-	-	1
36	Droseraceae	1	-	-	-
37	Ebenaceae	-	-	-	3
38	Elaeocarpaceae	-	-	-	1
39	Elatinaceae	1	-	-	-
40	Euphorbiaceae	5	5	-	1
41	Fabaceae	4	3	2	1
42	Fumariaceae	1	-	-	-
43	Gentianaceae	1	-	-	-
44	Hydrophyllaceae	1	-	-	-
45	Lamiaceae	7	-	-	-
46	Lauraceae	-	1	-	2
47	Lecythidaceae	1	-	-	1
48	Lemnaceae	1	-	-	-
49	Liliaceae	2	-	1	-
50	Loranthaceae	1	-	-	-

51	Lythraceae	-	1	-	1
52	Magnoliaceae	-	-	-	1
53	Malvaceae	2	2	-	1
54	Meliaceae	-	-	-	3
55	Menispermaceae	-	-	1	-
56	Menyanthaceae	1	-	-	-
57	Mimosaceae	1	-	-	3
58	Molluginaceae	1	-	-	-
59	Moraceae	-	1	-	7
60	Moringaceae	-	-	-	1
61	Musaceae	-	1	-	-
62	Myrtaceae	-	-	-	5
63	Nelumbonaceae	1	-	-	-
64	Nyctaginaceae	1	-	2	-
65	Nymphaeaceae	1	-	-	-
66	Oleaceae	-	1	-	1
67	Onagraceae	1	-	-	-
68	Oxalidaceae	2	-	-	1
69	Papaveraceae	1	-	-	-
70	Passifloraceae	-	-	1	-
71	Pedaliaceae	1	-	-	-
72	Piperaceae	1	-	1	-
73	Plantaginaceae	1	-	-	-
74	Poaceae	4	5	-	-
75	Polygonaceae	4	-	-	-
76	Pontederiaceae	1	-	-	-
77	Portulacaceae	1	-	-	-
78	Punicaceae	-	-	-	1
79	Rananculaceae	1	-	-	-
80	Rhamnaceae	-	-	-	1
81	Rosaceae	-	2	-	-

82	Rubiaceae	-	3	-	1
83	Rutaceae	-	1	-	4
84	Sapindaceae	-	-	-	1
85	Sapotaceae	-	-	-	3
86	Scrophulariaceae	3	-	-	-
87	Solanaceae	6	6	-	-
88	Sterculiaceae	-	-	-	1
89	Tiliaceae	-	2	-	-
90	Trapaceae	1	-	-	-
91	Urticaceae	1	-	-	-
92	Verbenaceae	1	3	-	2
93	Vitaceae	-	-	2	-
94	Zingiberaceae	2	-	-	-
	Total	116	48	30	71

Table 2. Assessment of Angiosperm Taxa at the Mahadebpur upazila of Naogaon District, Bangladesh

SL No.	Botanical Name	Local Name	Family	Habit*	Relative occurrence**	Plant Poputlation ***	Phenology #	Voucher No.
1	*Abelmoschus esculentus*	Dherosh	Malvaceae	H	P	VC	Feb-Aug	S. 12
2	*Abroma augusta*	Ulat kambal	Sterculiaceae	T	P	CN	Jun-Dec	S. 85
3	*Acacia auriculiformis*	Akashmoni	Fabaceae	T	P	VC	TY	S. 157
4	*Acacia nilotica*	Babla	Mimosaceae	T	W	C	May-Dec	S. 98
5	*Achras zapota*	Shofeda	Sapotaceae	T	P	CN	TY	S. 4
6	*Achyranthes aspera*	Apang	Amaranthaceae	H	W	C	April-Nov	S. 212
7	*Aegle marmelos*	Bel	Rutaceae	T	P	CN	Apr-Dec	S. 17
8	*Aerva sanguinolenta*	Nuriya	Amaranthaceae	H	W	C	Dec-Apr	S. 205
9	*Ageratum conyzoides*	Vutraj	Asteraceae	H	W	VC	TY	S. 83
10	*Albizia procera*	Korhigas	Mimosaceae	T	P	CN	May-Jan	S. 166
11	*Allium cepa*	Piyaj	Liliaceae	H	P	CN	Feb-Jun	S. 200
12	*Allium sativum*	Rosun	Liliaceae	H	P	CN	Feb-Apr	S. 148
13	*Aloe vera*	Gritakumari	Aloeaceae	H	P	C	Jan-Dec	S. 262
14	*Alstonia scholaris*	Chatim	Apocynaceae	T	P	CN	Nov-May	S. 159
15	*Alternanthera paronychioides*	Lineclock	Amaranthaceae	H	W	VR	Jan-May	S. 181

16	*Alternanthera philoxeroides*	Malancho	Amaranthaceae	H	W	VC	Feb-Apr	S. 202
17	*Alternanthera sessilis*	Chanshi	Amaranthaceae	H	W	VC	TY	S. 193
18	*Amaranthus dubius*	Daata	Amaranthaceae	S	P	CN	Feb-Oct	S. 77
19	*Amaranthus lividus*	Chaulai	Amaranthaceae	H	W	R	Aug-Jan	S. 202
20	*Amaranthus spinosus*	Kanta natey	Amaranthaceae	H	W	VC	TY	S. 201
21	*Amaranthus tricolor*	Lalshak	Amaranthaceae	H	P	VC	TY	S. 65
22	*Amaranthus viridis*	Gaikhura	Amaranthaceae	H	W	VC	TY	S. 32
23	*Andrographis paniculata*	Kalmegh	Acanthaceae	H	W	C	Jan-Apr	S. 245
24	*Ananas sativus*	Anaras	Bromeliaceae	H	P	C	Jan-Dec	S. 258
25	*Annona squamosa*	Aata	Annonaceae	T	P	R	Mar-Dec	S. 34
26	*Anthocephalus chinensis*	Kodom	Rubiaceae	T	P	CN	July-Nov	S. 42
27	*Aphanamixis polystachya*	Pitraaj	Meliaceae	T	P	CN	Feb-May	S. 37
28	*Arachis hypogea*	Chinabadam	Fabaceae	H	P	R	Mar-Dec	S. 189
29	*Ardisia paniculata*	Aam change	Araliaceae	T	W	R	Apr-Jul	S. 214
30	*Areca catechu*	Shupari	Arecaceae	T	P	VC	TY	S. 118
31	*Argemone mexicana*	Sheyalkata	Papaveraceae	H	W	VC	Feb-Jun	S. 109
32	*Artocarpus heterophyllus*	Kathal	Moraceae	T	P	VC	Mar-Jul	S. 25
33	*Artocarpus lacucha*	Deu	Moraceae	T	P	R	Apr-Jun	S. 16
34	*Asparagus racemosus*	Shotomuli	Liliaceae	C	W	R	Nov-Mar	S. 145
35	*Averrhoa carambola*	Kamranga	Oxalidaceae	T	P	CN	Sep-Mar	S. 1
36	*Azadirachta indica*	Nim	Meliaceae	T	P	VC	Mar-Jul	S. 19
37	*Baccaurea ramiflora*	Notkot	Euphorbiaceae	T	P	CN	Jun-Sep	S. 8
38	*Bambusa arundinacea*	Bash	Poaceae	S	P	VC	TY	S. 125
39	*Barringtonia acutangula*	Hijal	Lecythidaceae	T	P	R	May-Aug	S. 234
40	*Basella alba*	Puishak	Basellaceae	C	P	VC	Nov-Mar	S. 146
41	*Benincasa hispida*	Chalkumra	Cucurbitaceae	C	P	CN	May-Nov	S. 69
42	*Bergia ammannioides*	Not known	Elatinaceae	H	W	R	Jul-Oct	S. 219
43	*Biophytum sensitivum*	Jhalai	Oxalidaceae	H	W	R	Jan-Sep	S. 208
44	*Bombax ceiba*	Shimul	Bombaceace	T	P	CN	Jan-Apr	S. 61
45	*Borassus flabellifer*	Taal	Arecaceae	T	P	CN	Jun-Aug	S. 33
46	*Bougainvillea spectabilis*	Baganbilash	Nyctaginaceae	C	W	R	TY	S. 172

47	*Brassica napus*	Sorisha	Brassicaceae	H	P	CN	Mar-Jul	S. 152
48	*Brassica oleracea Var. botrydis*	Fulkopy	Brassicaceae	H	P	CN	Feb-June	S. 197
49	*Brassica oleracea Var .capitata*	Patacopy	Brassicaceae	H	P	CN	Dec-Mar	S. 199
50	*Bryophyllum pinnatum*	Pathorkuchi	Crassulaceae	H	W	VC	TY	S. 5
51	*Cajanus cajan*	Arhor daal	Fabaceae	S	P	CN	Dec-Apr	S. 196
52	*Calotropis gigantea*	Swetakond	Asclepiadeaceae	S	W	R	TY	S. 217
53	*Calotropis procera*	Akondo	Asclepiadaceae	S	W	CN	SS	S. 142
54	*Canna indica*	Kolaboti	Cannaceae	H	W	C	Jan-De	S. 255
55	*Cannabis sativa*	Ganja	Cannabinaceae	H	P	R	Jan-Apr	S. 199
56	*Capsicum frutescens*	Morich	Solanaceae	H	P	CN	TY	S. 71
57	*Carissa carandas*	Koromcha	Apocynaceae	S	P	R	Mar-Jun	S. 3
58	*Carrica papaya*	Pepe	Caricaceae	T	P	VC	TY	S. 27
59	*Senna alata*	Dadmadan	Caesalpiniaceae	S	W	C	Dec-Mar	S. 226
60	*Cassia fistula*	Badarlathi	Caesalpiniaceae	T	W	C	Apr-Aug	S. 235
61	*Senna sophera*	Kalkashunda	Caesalpiniaceae	S	W	C	Dec-Mar	S. 223
62	*Catharanthus roseus*	Noyontara	Apocynaceae	H	P	VC	TY	S. 20
63	*Celosia cristata*	Morogful	Amaranthaceae	H	P	R	TY	S. 101
64	*Centella asiatica*	Thankuni	Apiaceae	H	W	VC	TY	S. 114
65	*Cestrum nocturnum*	Hasnahena	Solanaceae	S	P	CN	TY	S. 43
66	*Chenopodium album*	Botua	Chenopodiaceae	H	W	R	Dec-Mar	S. 79
67	*Chenopodium ambrosioides*	Chondonbita	Chenopodiaceae	H	W	VC	Mar-Jun	S. 102
68	*Chrozophora rottleri*	Khudi okra	Euphorbiaceae	H	W	C	Mar-Apr	S. 211
69	*Chrysanthemum coronarium*	Chandromollika	Asteraceae	S	P	R	Dec-Mar	S. 170
70	*Cinnamomum tamala*	Tejpata	Lauraceae	T	P	R	Feb-Oct	S. 140
71	*Cinnamomum verum*	Darchini	Lauraceae	T	P	VR	Jan-Mar	S. 165
72	*Citrus aurantifolia*	Lebu	Rutaceae	T	P	VC	Mar-Sep	S. 28
73	*Citrus grandis*	Jambura	Rutaceae	T	P	CN	Feb-Nov	S. 7
74	*Cleome viscosa*	Hurhure	Capparaceae	H	W	R	TY	S. 124
75	*Clerodendrum inerme*	Bamunhati	Verbenaceae	H	W	CN	NK	S. 187
76	*Clerodendrum viscosum*	Vet	Verbenaceae	S	W	VC	Jan-July	S. 63
77	*Clitoria tarnetea*	Oporajita	Fabaceae	H	W	R	Jun-Mar	S. 171
78	*Coccinia grandis*	Telakucha	Cucurbitaceae	C	W	VC	Mar-Dec	S. 97
79	*Cocos nucifera*	Daab	Arecaceae	T	P	VC	Mar-Jul	S. 117
80	*Coix lacryma*	Kuch	Poaceae	S	W	R	May-Aug	S. 111
81	*Colocasia esculenta*	Kochu	Araceae	H	P	VC	TY	S. 87

82	*Commelina benghalensis*	Kanshira	Commelinaceae	H	W	VC	Apr-Nov	S. 134
83	*Commelina longifolia*	Pani-kanchira	Commelinaceae	H	W	C	Sep-Apr	S. 244
84	*Corchorus capsularis*	Pat	Tiliaceae	S	P	CN	Mar-Aug	S. 57
85	*Coriandrum sativum*	Dhonepata	Apiaceae	H	P	VC	Dec-Feb	S. 194
86	*Croton bonplandianum*	Croton	Euphorbiaceae	H	W	VC	TY	S. 31
87	*Cucumis melo*	Bangi	Cucurbitaceae	C	P	R	Mar-Oct	S. 9
88	*Cucumis sativus*	Sosha	Cucurbitaceae	C	P	R	Apr-Oct	S. 81
89	*Cucurbita maxima*	Mishtikumra	Cucurbitaceae	C	P	CN	Mar-Oct	S. 72
90	*Curcuma longa*	Holud	Zingiberaceae	H	P	CN	Mar-Feb	S. 46
91	*Cuscuta reflexa*	Shornolota	Cuscutaceae	C	W	CN	Au-Mar	S. 139
92	*Cyanotis axillaris*	Not known	Commelinaceae	H	W	CN	Jan-Mar	S. 245
93	*Cyanotis cristata*	Dam	Commelinaceae	H	W	R	Jan-Mar	S. 242
94	*Cyathula capitata*	Not known	Amaranthaceae	H	W	R	Nov-Feb	S. 204
95	*Cynodon dactylon*	Durba	Poaceae	H	P	VC	TY	S. 119
96	*Cyperus tegetiformis*	Gola-methi	Cyperaceae	H	W	CN	Oct-Nov	S. 248
97	*Dalbergia sissoo*	Sishu	Fabaceae	T	P	C	Mar-Jun	S. 106
98	*Datura metel*	Dhutura	Solanaceae	S	W	R	Jan-Dec	S. 147
99	*Delonix regia*	Krishnochura	Caesalpiniaceae	T	P	CN	Apr-Sep	S. 91
100	*Dendropthoe falcate*	Loranthus	Loranthaceae	H	W	R	Jan-Oct	S. 229
101	*Digeria arvensis*	Gungatiya	Amaranthaceae	H	W	R	Feb-Jun	S. 210
102	*Dillenia indica*	Chalta	Dilleniaceae	T	P	VR	May-Feb	S. 167
103	*Diospyros malabarica*	Gaab	Ebenaceae	T	P	C	May-Aug	S. 99
104	*Diospyros montana*	Tamal	Ebenaceae	T	W	VR	Mar-Jun	S. 237
105	*Diospyros philippensis*	Bilati gab	Ebenaceae	T	P	VR	Jun-Nov	S. 238
106	*Dopatrium junceum*	Not known	Scrophulariaceae	H	W	VC	Dec-Feb	S. 236
107	*Drosera burmannii*	Surgasishir	Droseraceae	H	W	R	Jan-Feb	S. 232
108	*Duranta repens*	Duranta	Verbenaceae	S	P	CN	TY	S. 130
109	*Eclipta alba*	Kalokesh	Asteraceae	H	W	CN	TY	S. 55
110	*Elaeocarpus robustus*	Jolpai	Elaeocarpaceae	T	P	CN	Mar-Dec	S. 13
111	*Epipremnum aureum*	Moneyplant	Araceae	C	W	CN	TY	S. 105
112	*Erythrina variegata*	Mother	Fabaceae	S	W	VR	Feb-May	S. 133
113	*Eucalyptus citrodora*	Ukaliptas	Myrtaceae	T	P	VC	TY	S. 126
114	*Euphorbia hirta*	Dudhiya	Euphorbiaceae	H	W	VC	TY	S. 47
115	*Euphorbia*	Lalpata	Euphorbiaceae	S	W	R	Dec-Mar	S. 51

	pulcherrima							
116	*Euphorbia thymifolia*	Dudiya	Euphorbiaceae	H	W	CN	Feb-Apr	S. 221
117	*Exacum pedunculatum*	Not known	Gentianaceae	H	W	CN	Feb-Apr	S. 263
118	*Ficus benghalensis*	Bot gas	Moraceae	T	P	CN	May-Aug	S. 92
119	*Ficus hispida*	Khoksha dumur	Moraceae	S	W	VC	Apr-Sep	S. 48
120	*Ficus racemosa*	Dumur	Moraceae	T	P	R	Apr-Sep	S. 36
121	*Ficus religiosa*	Pakur	Moraceae	T	P	CN	Jul-Nov	S. 90
122	*Fumaria indica*	Papra	Fumariaceae	H	W	VC	Apr-Jun	S. 198
123	*Gardenia jasminoides*	Gondhoraj	Rubiaceae	S	P	CN	Mar-Jul	S. 175
124	*Glinus oppositifolius*	Gima shak	Molluginaceae	H	W	CN	TY	S. 116
125	*Gmelina arborea*	Gamar	Verbenaceae	T	P	R	Feb-Jul	S. 44
126	*Gossypium herbaceum*	Karpas	Malvaceae	T	P	CN	Feb-Jun	S. 227
127	*Helianthus annuus*	Surjomukhi	Asteraceae	H	P	R	TY	S. 154
128	*Heliotropium indicum*	Hatishur	Boraginaceae	H	W	VC	TY	S. 30
129	*Herpestis chamaedroides*	Baby jump-up	Scrophulariaceae	H	W	CN	Mar-May	S. 238
130	*Hibiscus mutabilis*	Sthalpadma	Malvaceae	S	P	N	TY	S. 224
131	*Hibiscus rosa-sinensis*	Joba	Malvaceae	S	P	VC	Jan-Dec	S. 18
132	*Hydrolea zeylanica*	Kasschra	Hydrophyllaceae	H	W	C	Dec-Jan	S. 228
133	*Impatiens balsamina*	Dopati	Balsaminaceae	H	P	R	Mar-Oct	S. 176
134	*Imperata cylindrica*	Ullu	Poaceae	H	W	CN	TY	S. 185
135	*Ipomoea alba*	Dudh kolmi	Convolvulaceae	C	W	CN	TY	S. 186
136	*Ipomoea aquatica*	Kalmishak	Convolvulaceae	C	P	CN	Jan-Dec	S. 66
137	*Ipomoea batatus*	Mistialu	Convolvulaceae	C	P	CN	TY	S. 143
138	*Ipomoea fistulosa*	Dholkalmi	Convolvulaceae	H	W	CN	Jan-Dec	S. 195
139	*Ipomoea quamoclit*	Gateful	Convolvulaceae	C	P	CN	Jun-Sep	S. 144
140	*Isachne globosa*	Jhirjhiri ghash	Poaceae	H	W	VC	TY	S. 128
141	*Ixora coccinia*	Rongon	Rubiaceae	S	P	CN	TY	S. 162
142	*Jasminum grandiflorum*	Kathmoni	Oleaceae	S	W	R	Jun-Nov	S. 60
143	*Jatropha gossypifolia*	Lalkundu	Euphorbiaceae	S	W	R	Apr-Aug	S. 138
144	*Jatropha integerrima*	Dottokia	Euphorbiaceae	S	P	R	Apr-Aug	S. 179
145	*Justicia adhatoda*	Basok	Acanthaceae	S	W	R	TY	S. 135
146	*Justicia gendarusa*	Jogotmodon	Acanthaceae	S	P	CN	Dec-May	S. 52
147	*Kalanchoe blossfeldiana*	Lal pathorkuchi	Crassulaceae	H	P	CN	Dec-Apr	S. 207
148	*Kalanchoe*	Himsagar	Crassulaceae	H	W	R	Jan-Jun	S. 210

	lacinata							
149	*Kyllinga monocephala*	Nirbishi	Cyperaceae	H	W	R	Feb-Apr	S. 247
150	*Lablab purpureus*	Shim	Fabaceae	C	P	CN	Nov-Mar	S. 86
151	*Lagenaria siceraria*	Lau	Cucurbitaceae	C	P	VC	Feb-May	S. 68
152	*Lagerstroemia speciosa*	Jarul	Lythraceae	T	P	CN	Apr-Aug	S. 123
153	*Lannea coromandelica*	Jiga	Anacardiaceae	T	P	CN	Apr-Dec	S. 21
154	*Lawsonia inermis*	Mehedi	Lythraceae	S	P	VC	Jun-Dec	S. 156
155	*Leonuros sibiricus*	Roktodron	Lamiaceae	H	W	VR	TY	S. 94
156	*Leucas aspera*	Setodron	Lamiaceae	H	W	VC	TY	S. 53
157	*Leucas cephalotes*	Baro-halkusa	Lamiaceae	H	W	CN	Dec-Jan	S. 246
158	*Leucas lavandulifolia*	Danda-kolos	Lamiaceae	H	W	R	Mar-Oct	S. 240
159	*Lemna perpusila*	Khudi pana	Lemnaceae	H	W	CN	Jul-Dec	S. 251
160	*Limonia acidissima*	Kodbel	Rutaceae	T	P	CN	Feb-Dec	S. 40
161	*Litchi chinensis*	Lichu	Sapindaceae	T	P	CN	Apr-Jun	S. 23
162	*Litsea monopetala*	Pepulte	Lauraceae	S	P	R	Mar-Nov	S. 58
163	*Ludwigia adscendens*	Kesordam	Onagraceae	H	W	CN	Jan-Dec	S. 233
164	*Luffa acutangula*	Jhinga	Cucurbitaceae	C	P	R	Apr-Oct	S. 74
165	*Luffa cylindrica*	Kodor	Cucurbitaceae	C	P	R	Jun-Nov	S. 203
166	*Lycopersicon esculentum*	Tometo	Solanaceae	H	P	VC	Mar-Dec	S. 112
167	*Mangifera indica*	Aam	Anacardiaceae	T	P	VC	Jan-Jun	S. 6
168	*Manikara achras*	Sofeda	Sapotaceae	T	P	CN	TY	S. 207
169	*Mentha arvensis*	Pudina pata	Lamiaceae	H	P	R	July-Sep	S. 144
170	*Mesua nagassarium*	Nageshawar	Clusiaceae	T	W	R	Feb-May	S. 220
171	*Michelia champaca*	Champa	Magnoliaceae	T	P	CN	Mar-Jun	S. 231
172	*Microcos paniculata*	Pisla	Tiliaceae	S	W	CN	Jan-Dec	S. 222
173	*Mimosa pudica*	Lojjaboti	Mimosaceae	H	W	VC	Sep-Dec	S. 107
174	*Mimusops elengi*	Bokul	Sapotaceae	T	P	CN	Mar-Jun	S. 24
175	*Mirabilis jalapa*	Sondhamaloti	Nyctaginaceae	H	P	CN	Mar-Nov	S. 95
176	*Momordica charantia*	Korolla	Cucurbitaceae	C	P	R	May-Oct	S. 70
177	*Momordica cochinchinensis*	Kakrol	Cucurbitaceae	C	P	R	July-Nov	S. 141
178	*Monochoria hastata*	Barunkha	Pontederiaceae	H	W	VC	TY	S. 82
179	*Morinda citrifolia*	Bazrachand	Rubiaceae	S	W	R	May-Nov	S. 59
180	*Moringa oleifera*	Sojna	Moringaceae	T	P	CN	Jan-Aug	S. 29
181	*Morus indica*	Tut	Moraceae	T	P	R	May-Jul	S. 98
182	*Mukia maderaspatana*	Makal	Cucurbitaceae	C	W	R	Jun-Nov	S. 190

183	*Murraya paniculata*	Kamini	Rutaceae	S	P	R	Mar-Jan	S. 49
184	*Musa sapientum*	Kola	Musaceae	S	P	VC	TY	S. 26
185	*Nelumbo nucifera*	Padma	Nelumbonaceae	H	P	CN	Jul-Oct	S. 201
186	*Nerium indicum*	Kobori	Apocynaceae	H	P	R	Jan-Jul	S. 178
187	*Nicotiana plumbaginifolia*	Bontamak	Solanaceae	H	W	CN	Mar-Dec	S. 93
188	*Nyctanthes arbor-tristis*	Shefali	Oleaceae	S	P	CN	Nov-Feb	S. 180
189	*Nymphaea nouchali*	Shapla	Nymphaeaceae	H	P	CN	Jun-Oct	S. 150
190	*Nymphoides indicum*	Panchuli	Menyanthaceae	H	W	CN	Apr-Oct	S. 226
191	*Ocimum americanum*	Rama-tulsi	Lamiaceae	H	W	CN	Oct-Feb	S. 240
192	*Ocimum sanctum*	Tulshi	Lamiaceae	H	P	R	Jun-Feb	S. 108
193	*Oryza sativa*	Dhan gas	Poaceae	H	P	CN	Jul-Oct	S. 78
194	*Oxalis corniculata*	Amrul	Oxalidaceae	H	W	CN	Sep-May	S. 115
195	*Parthenium hysterophorus*	Parthenium	Asteraceae	H	W	VC	TY	S. 88
196	*Passiflora edulis*	Nilmonilata	Passiforaceae	C	W	R	Mar-Jul	S. 197
197	*Pepromia pellucida*	Pepromia	Piperaceae	H	W	VC	TY	S. 263
198	*Phoenix sylvestris*	Khejur	Arecaceae	T	P	VC	Dec-July	S. 64
199	*Phyllanthus reticulatus*	Chitki	Euphorbiaceae	S	W	VC	Mar-Oct	S. 224
200	*Phyllanthus urinaria*	Hazar mani	Euphorbiaceae	H	W	CN	Feb-Mar	S. 55
201	*Physalis minima*	Kopalfotka	Solanaceae	H	W	CN	WS	S. 132
202	*Piper betel*	Paan	Piperaceae	C	P	R	Dec-May	S. 51
203	*Pisonia aculeata*	Baghachra	Nyctaginaceae	C	W	R	TY	S. 49
204	*Polyalthia longifolia*	Debdaru	Annonaceae	T	P	CN	Mar Oct	S. 164
205	*Polycarpon prostratum*	Ghima	Caryophyllaceae	H	W	CN	Dec-Feb	S. 213
206	*Persicaria barbatum*	Bekh-unjubaz	Polygonacaea	H	W	R	Jul-Nov	S. 215
207	*Persicaria hydropiper*	Boro pani morich	Polygonaceae	H	W	VC	TY	S. 67
208	*Persicaria orientale*	Panimorich	Polygonaceae	H	W	VC	TY	S. 89
209	*Polygonum plebejum*	Raniphul	Polygonaceae	H	W	R	Mar-Apr	S. 216
210	*Portulaca oleracea*	Nunia shak	Portulacaceae	H	W	CN	May-Aug	S. 153
211	*Pouzolzia zeylanica*	Not known	Urticaceae	H	W	CN	May-Oct	S. 200
212	*Psidium guajava*	Peyara	Myrtaceae	T	P	VC	SRS	S. 10
213	*Punica granatum*	Dalim	Punicaceae	T	P	CN	Jan-Dec	S. 14
214	*Pyrus communis*	Nashpati	Rosaceae	S	P	R	Jul-Sep	S. 77
215	*Rananculas*	Polic	Rananculaceae	H	W	R	Jan-May	S. 197

	scleratus							
216	*Raphanus sativus*	Mulashak	Brassicaceae	H	P	CN	Jan-May	S. 195
217	*Ricinus communis*	Bherenda	Euphorbiaceae	S	W	R	TY	S. 230
218	*Rosa centifolia*	Golap	Rosaceae	S	P	VC	May-Jul	S. 127
219	*Saccharum officinarum*	Aakh	Poaceae	S	P	CN	TY	S. 110
220	*Saccharum spontaneum*	Kash	Poaceae	S	P	CN	Jun-Aug	S. 168
221	*Scorparia dulcis*	Bondone	Plantaginaceae	H	W	VC	TY	S. 56
222	*Senna sophera*	Kolkasunda	Fabaceae	H	W	CN	Apr-Aug	S. 184
223	*Sesamum indicum*	Til	Pedaliaceae	H	P	CN	Feb-Oct	S. 158
224	*Sesbania canabina*	Dhonche	Fabaceae	S	P	VC	Mar-Aug	S. 113
225	*Sida cordifolia*	Berela	Malvaceae	H	W	CN	Sep-Dec	S. 183
226	*Solanum ferox*	Ram begun	Solanaceae	S	W	CN	Dec-Feb	S. 218
227	*Solanum melongena*	Begun	Solanaceae	S	P	CN	Oct-Mar	S. 76
228	*Solanum nigrum*	Titbegun	Solanaceae	S	W	VC	Jan-Dec	S. 45
229	*Solanum surattense*	Kantakari	Solanaceae	H	W	VC	Oct-Feb	S. 225
230	*Solanum torvum*	Garakada	Solanaceae	S	W	VR	Jan-Dec	S. 62
231	*Solanum tuberosum*	Gol alu	Solanaceae	H	P	CN	Oct-Feb	S. 103
232	*Spathodea campanulata*	Krisno naoka	Bignoniaceae	T	W	R	Feb-Apr	S. 243
233	*Spilanthes calva*	Unknown	Asteraceae	H	W	VC	TY	S. 54
234	*Spondius pinnata*	Aamra	Anacardiaceae	T	P	CN	Feb-Aug	S. 15
235	*Spondius purpurea*	Bilati aamra	Anacardiaceae	T	P	R	Mar-Oct	S. 131
236	*Stephania japonica*	Akunondo	Menispermaceae	C	W	VC	Jan-Dec	S. 104
237	*Streblus asper*	Shewra	Moraceae	T	W	R	Feb-Jun	S. 160
238	*Swietenia mahagoni*	Mehogoni	Meliaceae	T	P	CN	Apr-Nov	S. 39
239	*Syzygium cumini*	Jam	Myrtaceae	T	P	VC	Mar-Jun	S. 11
240	*Syzygium jambos*	Golapjam	Myrtaceae	T	P	CN	Mar-Jun	S. 38
241	*Syzygium samarangense*	Jamrul	Myrtaceae	T	P	CN	Feb-May	S. 35
242	*Tabebuia aurea*	Not known	Bignoniaceae	T	W	R	Jun-Jul	S. 248
243	*Tabernaemontana coronaria*	Togor varigate	Apocynaceae	S	P	R	Apr-Jan	S. 50
244	*Tabernaemontana divaricate*	Togor	Apocynaceae	S	P	CN	May-Jan	S. 192
245	*Tagetes erecta*	Poragada	Asteraceae	H	P	CN	WS	S. 252
246	*Tagetes patula*	Gada	Asteraceae	H	P	CN	WS	S. 129
247	*Tamarindus indica*	Tetul	Caesalpiniaceae	T	P	CN	Jun-Jul	S. 161
248	*Tectona grandis*	Shegun	Verbenaceae	T	P	R	June-Sep	S. 41
249	*Terminalia arjuna*	Arjun	Combretaceae	T	P	CN	Apr-Oct	S. 2
250	*Terminalia catappa*	Kathbadam	Combretaceae	T	P	R	Mar-Dec	S. 91
251	*Terminalia chebula*	Haritaki	Combretaceae	T	P	CN	Apr-Nov	S. 239

252	*Trapa bispinosa*	Panifol	Trapaceae	H	W	VC	RS	S. 137
253	*Trichosanthes arguina*	Dudhkushi	Cucurbitaceae	C	P	CN	Apr-Aug	S. 202
254	*Trichosanthes dioica*	Potol	Cucurbitaceae	C	P	VR	Apr-Sep	S. 73
255	*Typhonium trilobatum*	Ol kochu	Araceae	H	P	CN	May-Nov	S. 96
256	*Vandelia multiflora*	Not known	Scrophulariaceae	H	W	CN	Mar-May	S. 238
257	*Vigna mungo*	Mashkalai	Fabaceae	H	P	VR	Nov-Jan	S. 198
258	*Vigna sinensis*	Borboti	Fabaceae	C	P	R	Apr-Jul	S. 75
259	*Vitex negundo*	Nisinda	Verbenaceae	S	W	R	May-Sep	S. 100
260	*Vitis trifolia*	Bon angur	Vitaceae	C	W	CN	May-Dec	S. 182
261	*Vitis vinifera*	Aangur	Vitaceae	C	P	R	May-Dec	S. 173
262	*Xanthium indicum*	Hagra	Asteraceae	H	W	VC	TY	S. 84
263	*Zea mays*	Vutta	Poaceae	S	P	R	Mar-Jul	S. 80
264	*Zingiber officinale*	Ada	Zingiberaceae	H	P	R	Mar-Feb	S. 120
265	*Zizyphus mauritiana*	Boroi	Rhamnaceae	T	P	VC	Sep-Mar	S. 22

H=Herb, **S**=Shrub, **T**=Tree, **C**=Climber, **P**=Planted, **W**=Wild, **VC**=Very Common, **CN**=Common, **R**=Rare, **VR**=Very rare, **Jan**=January, **Feb**=February, **Mar**=March, **Apr**=April, **Jun**=June, **Jul**=July, **Aug**=August, **Sep**=September, **Oct**=October, **Nov**=November, **Dec**=December, **NK**=Not know, **RS**=Rainy Season, **SRS**=Summer & Rainy Season, **SS**=Summer Season, **TY**=Throughout the year, **WS**=Winter season.

Table 3. Analysis of data based on habit showed the Angiosperm Flora in the study area

SL. No.	Habit	No. of Species	Percentage	Total no. of Species
1	Herb	116	43.77%	265
2	Shrub	48	18.11%	
3	Climber	30	11.32%	
4	Tree	71	26.79%	

Table 4. Analysis of data based on plant population showed the Angiosperm Flora in the study area

SL. No.	Plant Population	No. of Species	Percentage	Total no. of Species
1	Very common	61	23.01%	265
2	Common	116	43.77%	
3	Rare	77	29.05%	
4	Very rare	11	4.15%	

Table 5. Analysis of data based on Relative occurrence showed the Angiosperm flora in the study area

SL. No.	Relative occurrence	No. of Species	Percentage	Total Species
1	Planted	185	69.81%	265
2	Willd	80	30.19%	

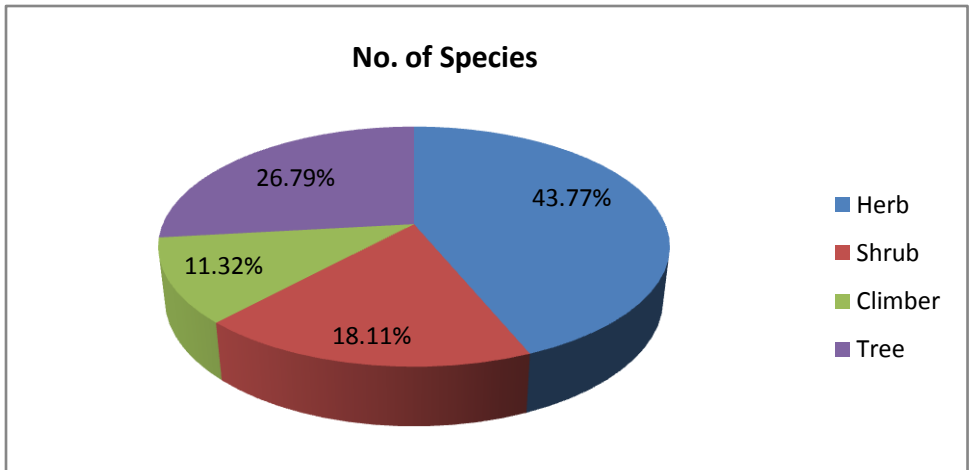

Figure 1: Habit diversity of the recorded species

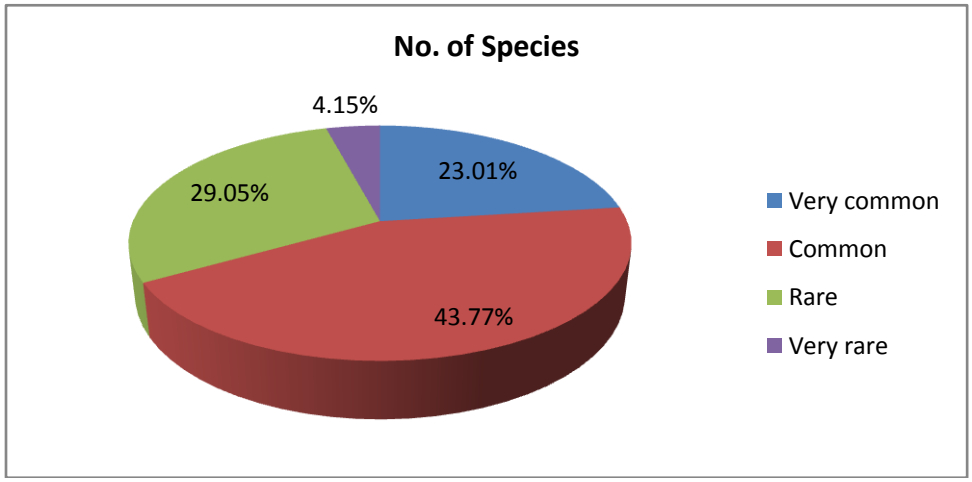

Figure 2: Percentage (%) of status of occurrence

Conclusion

Though the study area has a moderately rich resource of angiosperm flora, it witnesses some threats which might cause this resource to extinct. Observations and group discussion with local people during field works resulted in identifying some major threats which include urbanization, modern agriculture, and lack of awareness, exotic plantation and river erosion. Therefore, efforts should be undertaken to safeguard the plants through ex situ and in situ approaches, public awareness should be built up, and protection of habitats of should be ensured.

Acknowledgements

The authors are grateful to the local people at Mahadebpur Upazila of Naogaon district, Bangladesh for their co-operation and help during the research work.

References

Ahmed, Z.U., Begum, Z.N.T., Hassan, M.A., Khondker, M., Kabir, S.M.H., Ahmad, M., Ahmed, A.T.A., Rahman, A.K.A. and Haque, E.U.(Eds). (2008-20090: Encyclopedia of Flora and Fauna of Bangladesh. 6-10. Angiosperms; Dicotyledons. Asiat. Soc. Bangladesh, Dhaka.

Ara, T., Islam, A.K.M.R. and Rahman, A.H.M.M. (2013): Taxonomy of Solanaceae: Taxonomic Enumeration of the family Solanaceae in the Rajshahi University Campus, Bangladesh. Lambert Academic Publishing AG & CO KG. Germany.

Ara, T., Khokan, E.H. and Rahman, A.H.M.M. (2011): Taxonomic Studies on the Family Solanaceae in the Rajshahi University Campus.Journal of Biodiversity and Environmental Sciences. 4(1):29-34

Arefin, M.K., Rahman, M.M., Uddin, M.Z. and Hassan, M.A. (2011): Angiosperm Flora of Satchari National Park, Habiganj, Bangladesh.Bangladesh J. Plant Taxon. 18(2): 117140.

Cronquist, A. (1981): An Integrated System of Classification of Flowering Plants.Columbia University Press. New York.

Hooker, J.D. (1961): Flora of British India.Vols.1-7. L. Reeve and Co. Ltd.London, U.K.

Huq, A.M. (1986): Plant Names of Bangladesh.Bangladesh National Herbarium, BARC, Dhaka, Bangladesh.

Islam, M.R., Uddin, M.Z. and Hassan, M.A. (2009): An Assessment of the Angiosperm Flora of RamgarhUpazila of Khagrachhari District, Bangladesh.Bangladesh J. Plant Taxon. 16(2): 115-140.

Khan, M.S. and Afza, S.K. (1968): A taxonomic report on the angiospermic flora of Teknaf and St. Martin's Island. Dhaka Univ. Studies, Part B. 16: 35-37.

Khan, M.S. and Banu, F. (1972): A taxonomic report on the angiospermic flora of Chittagong Hill Tracts- 2. J. Asiat. Soc. Bangladesh. 17(2): 63-68.

Khan, M.S. and Hassan, M.A. (1984): A taxonomic report on the angiospermic flora of St. Martin's Island. Dhaka Univ. Studies, Part B. 32(1): 76-78.

Khan, M.S. and Huq, A.M. (2001): The vascular flora of Chunati Wildlife Sanctuary in south Chittagong, Bangladesh.Bangladesh J. Plant Taxon. 8(1): 47-64.

Kirtikar, K.R. and Basu, B.D. (1987): Indian Medicinal Plants. Vols. 1-4. Lalit Mohan Basu, Allahabad, Jayyed Press, New Delhi, India.

Moniruzzaman, M., Hassan, M.A., Rahman, M.M., Layla, S. and Islam, M.R. (2012): A Preliminary Checklist of the Angiospermic Flora of Daulotpur Upazila in Kushtia District, Bangladesh. J. Asiat. Soc. Bangladesh, Sci. 38(1): 53-65.

Pasha, M.K. and Uddin, S.B. (2013): Dictionary of Plant Names of Bangladesh (Vascular Plants).JanokalyanProkashani. Chittagong, Dhaka, Bangladesh..

Prain, D. (1963): Bengal Plants.Vols.1-2.Botanical Survey of India. Calcutta, India.

Purseglove, J.W. (1968a): Tropical Crops Monocotyledones.Longman Group Limited, London, U.K.

Purseglove, J.W. (1968b): Tropical Crops Dicotyledons.Longman Group Limited, London, U.K.

Rahman, A.H.M.M., Anisuzzaman, M., Alam, M.Z., Islam, A.K.M.R. and Zaman, A.T.M.N. (2006): Taxonomic Studies of the Cucurbits Grown in the Northern Parts of Bangladesh. Research Journal of Agriculture and Biological Sciences. Pakistan. 2(6):299-302.

Rahman, A.H.M.M, Anisuzzaman, M., Ahmed, F., Zaman, A.T.M.N. and Islam, A.K.M.R. (2007a): A Floristic Study in the Graveyards of Rajshahi City.Research Journal of Agriculture and Biological Sciences. 3(6): 670-675.

Rahman, A.H.M.M., Islam, A.K.M.R. and Naderuzzaman, A.T.M. (2007b): Studies on the herbaceous plant species in the graveyard areas of Rajshahi city.Plant Environment Development.1(1): 57-60.

Rahman, A.H.M.M., Islam, A.K.M.R., Naderuzzaman, A.T.M., Hossain, M.D. and Afza, R. (2007c): Studies on the Aquatic Angiosperms of the Rajshahi University Campus. Research Journal of Agriculture and Biological Sciences. Pakistan. 3(5): 474-480.

Rahman, A.H.M.M., Alam, M.S., Hossain, M.B., Nesa, M.N., Islam, A.K.M.R. and Rahman, M.M. (2008a): Study of Species Diversity on the family Asteraceae (Compositae) of the Rajshahi Division.Research Journal of Agriculture and Biological Sciences. 4(6): 794-797.

Rahman, A.H.M.M., Alam, M.S., Khan, S.K., Ahmed, F., Islam, A.K.M.R. and Rahman, M.M. (2008b): Taxonomic Studies on the family Asteraceae (Compositae) of the Rajshahi Division. Research Journal of Agriculture and Biological Sciences. 4(2):134-140.

Rahman, A.H.M.M., Isalm, A.K.M.R. and Rahman, M.A. (2011): The Family Asteraceae of Rajshahi Division, Bangladesh. VDM Verlag Dr. Muller e.k. Publishers, Germany.

Rahman, A.H.M.M. (2013a): Assessment of Angiosperm Weeds of Rajshahi, Bangladesh with emphasis on medicinal plants. Research in Plant Sciences. USA. 1(3): 62-67.

Rahman, A.H.M.M. (2013b): Graveyards angiosperm diversity of Rajshahi city, Bangladesh with emphasis on medicinal plants. American Journal of Life Sciences. USA. 1(3): 98-104.

Rahman, A.H.M.M. (2013c): A Checklist of Common Angiosperm Weeds of Rajshahi District, Bangladesh. International Journal ofAgricultural and Soil Science. 1(1): 1-6.

Rahman, A.H.M.M. (2013d): Angiospermic flora of Rajshahi district, Bangladesh. American Journal of Life Sciences. 1(3): 105-112.

Rahman, A.H.M.M. (2013e): Systematic studies on Cucurbitaceae family at Rajshahi division,Bangladesh. Plant. 1(2): 10-15.

Rahman, A.H.M.M. (2013f): Study of Species Diversity on Cucurbitaceae family at Rajshahi Division, Bangladesh. Journal of Plant Sciences. 1(2): 18-21.

Rahman, A.H.M.M. (2013g): Systematic studies on Asteraceae in the northern region of Bangladesh. American Journal of Life Sciences.1(4): 155-164.

Rahman, A.H.M.M. and Akter, M. (2013): Taxonomy and Medicinal Uses of Euphorbiaceae (Spurge) Family of Rajshahi, Bangladesh. Research in Plant Sciences. 1(3): 74-80.

Rahman, A.H.M.M. and Khanom, A. (2013): Taxonomic and Ethno-Medicinal Study of Species from Moraceae (Mulberry) Family in Bangladesh Flora. Research in Plant Sciences.1(3): 53-57.

Rahman, A.H.M.M., Islam, A.K.M.R. and Hossain, M.M. (2013): Taxonomy of Cucurbitaceae: Taxonomic investigation of wild & cultivated cucurbits of Northern parts of Bangladesh. Lambert Academic Publishing AG & CO KG. Germany.

Rahman, A.H.M.M. (2014): Angiosperm Flora in the Graveyards of Rajshahi City, Bangladesh. Lambert Academic Publishing AG & CO KG. Germany.

Rahman, A.H.M.M. and Gulshana, M.I.A. (2014): Taxonomy and Medicinal Uses on Amaranthaceae Family of Rajshahi, Bangladesh. Applied Ecology and Environmental Sciences. 2(2): 54-59.

Rahman, A.H.M.M. and Keya, M.A. (2014a): Angiospperm Diversity of Bogra District, Bangladesh. Lap Lambert Academic Publishing, Germany.

Rahman, A.H.M.M. and Keya, M.A. (2014b): Assessment of Angiosperm Flora at the Village Sabgram under Sadar Upazila of Bogra District, Bangladesh. International Journal of Advanced Research. India. 2(11): 443-458.

Rahman, A.H.M.M. and Rahman, M.M. (2014): An Enumeration of Angiosperm weeds in the Paddy field of Rajshahi, Bangladesh with emphasis on medicinal Plants. Journal of Applied Science And Research. 2(2): 36-42.

Rahman, A.H.M.M. and Rojonigondha. (2014): Taxonomy and Traditional Medicine Practices on Malvaceae (Mallow Family) of Rajshahi, Bangladesh. Open Journal of Botany.1(2): 19-24.

Rahman, A.H.M.M. and Debnath, A. (2014a): Angiosperm Diversity of Pandit Para Village under Palash Upazila of Narsingdi District, Bangladesh. Frontiers of Biological & Life Sciences. USA. 2(4): 98-105.

Rahman, A.H.M.M. and Debnath, A. (2014b): Taxonomy and Ethnobotany of Palash Upazila of Narsingdi, Bangladesh. Lap Lambert Academic Publishing, Germany.

Rahman, A.H.M.M., Afsana, M.W. and Islam, A.K.M.R. (2014a): Taxonomy and Medicinal Uses on Acanthaceae Family of Rajshahi, Bangladesh. Journal ofApplied ScienceAnd Research. 2(1): 82-93.

Rahman, A.H.M.M., Ferdous, Z. and Islam, A.K.M.R. (2014b): A Preliminary Assessment of Angiosperm Flora of Bangladesh Police Academy. Research in Plant Sciences. 2(1):9-15.

Rahman, A.H.M.M., Hossain, M. M. and Islam, A.K.M.R. (2014c): Taxonomy and Medicinal Uses of Angiosperm weeds in the wheat field of Rajshahi, Bangladesh. Frontiers of Biological and Life Sciences.2(1): 8-11.

Rahman, A.H.M.M. and Parvin, M.I.A. (2015): Taxonomic Studies on the family Fabaceae (Weeds) at Rajshahi University Campus. Plant. 3(3): 20-25.

Rahman, A.H.M.M., Akter, S., Rani, R. and Islam, A.K.M.R. (2015a): Taxonomic Study of Leafy Vegetables at Santahar Pouroshova of District Bogra, Bangladesh with Emphasis on Medicinal Plants. International Journal of Advanced Research. India. 3(5): 1019-1036.

Rahman, A.H.M.M., Ferdows, Z., Nitu, S.K. and Islam, A.K.M.R. (2015b): Herbaceous Plant Species in and around Rajshahi Metropolitan City, Bangladesh. International Journal of Advanced Research. India. 3(5): 1002-1018.

Rahman, A.H.M.M., Sultana, Z., Rani, R. and Islam, A.K.M.R. (2015c): Taxonomic Studies of the Family Commelinaceae at Rajshahi, Bangladesh. International Journal of Advanced Research. India. 3(5): 978-989.

Rahman, M.A. and Uddin, S.B. (1997): Assessment of plant diversity of Sitakunda in Chittagong.Bangladesh J. Plant Taxon. 4(1): 17-36.

Rahman, M.O. and Alam, M.T. (2013): A taxonomic study on the angiosperm flora of Trishal Upazilla, Mymensingh. Dhaka Univ. J. Biol. Sci. 22(1): 63-74.

Rahman, M.O. and Hassan, M.A. (1995): Angiospermic flora of Bhawal National Park, Gazipur (Bangladesh).Bangladesh J. Plant Taxon. 2(1&2): 47-79.

Rahman, M.O., Begum, M. and Ullah, M.W. (2013): Angiosperm Flora of SadarUpazila of Munshiganj District, Bangladesh.Bangladesh J. Plant Taxon. 20(2): 213-231.

Rahman, M.O., Uddin, M.Z., Tutul, E., Begum, M. and Hassan, M.A. (2010): Additions to the Angiospermic Flora of Runctia Sal Forest, Bangladesh.Bangladesh J. Plant Taxon. 17(2): 167-182.

Tutul E, Uddin MZ, Rahman MO and Hassan MA. (2010): Angiospermic Flora of Runctia Sal Forest, Bangladesh. II. Magnoliopsida (Dicots). Bangladesh J. Plant Taxon. 17(1): 33-54.

Uddin, K., Rahman, A.H.M.M. and Islam, A.K.M.R. (2014): Taxonomy and Traditional Medicine Practices of Polygonaceae (Smartweed) Family at Rajshahi, Bangladesh. International Journal of Advanced Research. India. 2(11): 459-469.

Uddin, M.Z. and Hassan, M.A. (2010): Angiosperm Diversity of Lawachara National Park (Bangladesh): A Preliminary Assessment. Bangladesh J. Plant Taxon. 17(1): 9-22.

Uddin, M.Z., Alam, M.F., Rahman, M.A. and Hassan, M.A. (2013): Diversity in Angiosperm Flora of Teknaf Wildlife Sanctuary, Bangladesh.Bangladesh J. Plant Taxon. (2013); 20(2): 145-162.

Uddin, S.N. and Hassan, M.A. (2012): Angiosperm Flora of Rampahar Reserve Forest under Rangamati District in Bangladesh. I. Liliopsida (Monocots). Bangladesh J. Plant Taxon. 19(1): 37-44.