

Integrating Human Empathy with Plantation Practices for Raising Domesticated Vegetation in the Plains of West Bengal, India

Sandip Kumar Dutta¹, Subhra Bandopadhyay^{2*}, Dr. Debnath Palit³

DOI: 10.18811/ijpen.v12i01.15

ABSTRACT

The basics of nature is for stabilizing the conservation of biodiversity, which also acts to maintain equilibrium in ecosystems, being the prerequisite for the survival of organisms on earth. The article is about focusing on an innovative plantation modality where 'emotion to motherhood' is an 'add-on' factor. Conservation of plants is generally accomplished through rigorous planting of saplings/seedlings, especially those of trees. The conservation process can be consolidated for achieving the desired output when the process itself is edged with humane empathy. In this article, the intervening framework of plantation practices, if materialized, will definitely result in unique viability for plant propagations by raising domesticated vegetation. Domesticated vegetation is especially considered a way ahead for the protection and perpetuation of endangered plant species facing the threat of extinction. Moreover, domesticated vegetation can also act as a shield to providing safe abode even to the plants growing wild. Forests and plants are intimately associated with human civilization, and the survival of humankind requires nature to live in health. Conservation is the only procedural option for assuring a definitive protocol for future generations to stay safe on the planet.

Keywords: Conservation, Plantation, Bio-diversity, Humankind, Empathy, Domesticated vegetation.

Highlights:

- Conservation of plants is the Pan-India initiative for the restoration of nature's stability and environmental equilibrium.
- Human instinct attached with motherhood and its reciprocated legacy to motherhood and nature is fundamental for an empathy-driven mode of conservation.
- Raising domesticated vegetation is the best way to practice conservation and is helpful for the multiplication/ perpetuation of endangered plants.
- Flora and fauna mingle to stay in reciprocation, the earth will have the heavenly outfit for future generations.

International Journal of Plant and Environment (2026);

ISSN: 2454-1117 (Print), 2455-202X (Online)

INTRODUCTION

West Bengal is a unique State in India with variations in vegetational habitats ranging from littoral forests in Sundarbans to temperate vegetation, including alpine forests in the Darjeeling Himalayan region. Forest cover in West Bengal is 19% (precisely 18.96%) compared to national coverage of 21.7% (ISFI, 2021). Naturally, West Bengal will have to compensate the shortfall in vegetation coverage to level up with the national average. Here comes the significant role of conservation drive to launch rigorous plantation programme and it is believed that plantation, if practised with human empathy, will viably serve the purposes of conservation and the outcome is likely to generate visible momentum spirited with the involvement of inherited human emotion, dedicatedly reflected in the glorious legacy of motherhood and nature within the meaning of the graceful essence of empathy. Both mother and nature stand as the basic base of life and planting a sapling in the name of the mother creates everlasting and evergreen memory on which one will cherish forever. This is the drive towards achieving conservation of plants in a more meaningful manner, with the venture of plantation being accomplished in empathy mode. The exercise of the kind will not only protect the environmental equilibrium but also build up greening coverage all around and can be religiously applied to strengthen conservation of plants through plantation on dedicated places and neighbourhood arenas as

¹State Civil Servant, Government of West Bengal, West Bengal, India.

²Ph.D. Scholar, West Bengal, India.

³Principal, Krishnagar Government College.

***Corresponding author:** Subhra Bandopadhyay, Ph.D. Scholar, West Bengal, India., Email: banerjeesubhra7@gmail.com

How to cite this article: Dutta, S.K., Bandopadhyay, S., Palit, D. (2026). Integrating Human Empathy with Plantation Practices for Raising Domesticated Vegetation in the Plains of West Bengal, India. *International Journal of Plant and Environment*. 12(1), 122-129.

Submitted: 12/03/2026 **Accepted:** 30/03/2026 **Published:** 31/05/2026

well, for a better reach-out of the targeted goal in the greening process of the environment for stabilizing the health of nature. The initiative thus allows us to fulfill our innate responsibility for a more prosperous future where future generations will stay safe and healthy in a better nature. Plantation of plant seedlings/saplings, especially those of trees, is the only solution for the rapid increase of carbon stock in nature (Liu *et al.*, 2017, Ickowitz *et al.*, 2022 & Burivalova *et al.*, 2023). As trees are more vulnerable to the forces of nature (Angelsen & Dokken, 2018), conservation drive has to take care of the issue through plantation of trees in the neighbourhood as part of raising domesticated vegetation

and this is the central idea that is attempted to cover up in the present article.

Conservation implies planting of saplings/ seedlings, especially of trees (forest conservation) and rarely of herbs and shrubs (non-forest conservation). The general idea behind the act of doing so arises from achieving broadened and visible greening coverage to discard the menace of environmental pollution and restoration of the general health of nature in general and the ecosystem in particular. The plantation procedure leading to conservation is more often a mechanical practice without emotional attachment, and the plantation protocol being followed at present, is often fails to quantify its optimal outcome. The failure to bring overall success to the plantation programme can be substituted with humane emotion for planting saplings/seedlings of not only trees but also those of herbs and shrubs as per the needs of the area/ terrain. When humane emotion requires integration with plantation, there comes no other option, else the inherent and imbibed respect that we have for our mother. Motherhood is cherished and respected with high esteem by all human beings. The eternal belief in motherhood is so consolidated in our mentality that the same, when attached to a plantation (considering the plant as mother), it can boost up visible expansion in plantation coverage, and the process then would be worshipped as 'noble endeavour for nature's sake'. The present study has attempted to represent the conceptual integration of human empathy with plantation practices for conservation purposes.

The pattern of plantation ought to be practised for planting the tree seedlings/ saplings after the name of one's own mother. The mode of plantation is meant to achieve increased green cover and restoration of degraded lands through plantation of indigenous plant saplings, maintenance of previous years' plantations, and protecting endangered plants from the threat of extinction by providing safe shelter under human care. Community participation is considered to be the prerequisite pursuit during the Implementation Phase (July–September, i.e., monsoon period) for the plantation practices. Conservation relates to the protection and perpetuation of plants, especially plants of arborescent habit, to uphold and expand greening on earth and the purpose of sequestration is achieved by the very endeavour (Kumar *et al.*, 2019). This essentially means to keep on sowing, nourishing and raising plants like the way human parents are used to bringing up their own offspring. So, implementational success in plantation is a fundamental mode to the conservation process that depends primarily on the emotional attachment mixed with compassion and respect being shown to nature as one's own mother. This is the underlying principle of the plantation of tree saplings. Domestication of vegetation targeted for plants of arborescent habit can serve the purpose of conserving plants, and thereby, the forests are sustained. Also, the endangered plant genera and species will sustain survival. Human attention clubbed with the humanizing process of plantation is believed to restore global health and vigour to bear with incidental ruining forces to nature and the equilibrium of the environment is maintained. Here is the novelty of the present concept of conservation practices being put forth for the attainment of greening across the environment.

Concept of Conservation

The noblest member of the living world is the plant. If we think beyond confusion, we can well visualize the unbiased contributory impact of the plant on Earth. Humankind sustains and human civilization rolls smart on the sacrifice of the plant. We are even desperately cruel not to spare the merciless felling of arborescent plants to satisfy our immediate greed in the name of modernization. The modernization of human lifestyle is happening through rapid urbanization and infrastructure development involving technological advancement. The plant stands silently patient to the tortures inflicted by human beings upon it (Kabisch *et al.*, 2015). Human beings claim themselves as clever and intelligent over all other living creatures that the earth holds. They claim to be scientifically diligent, too. The irony of fate is that they are knowingly unaware of the associated devastation/ disaster incidental to them if the plant succumbs to human invasion. And its sacrifice to satisfy human needs knows no bounds. But good souls are there in society. They are those whom we call environmentalists, plant lovers, and scientists who survive in the world of wisdom. They warn at the mischievous acts of human beings and advocate for arresting all the misdeeds that the devils in humanhood culminate. The best advocacy that is surfaced is conserving plants, be it in the form of being wild in forests or as an alternative vegetation growth, like domesticated vegetation. So, conservation of plants and in turn, forests brings stability to nature and steady maintenance of health to the environment, leading to the sustainability of livelihood to human beings (Sunderlin *et al.*, 2005). Domesticated vegetation can be optimized to favour community-driven resource management (Adhikari *et al.*, 2004).

Plantation is a regular programme that is implemented, as we feel, in a mechanical mode for decades in the post-independence era. Afforestation, including social forestry and reforestation have been done earlier and are being done today as well. But the outcome as regards the survival of the plants does not meet the desired level. So, the target of greening has not been achieved to its fullest extent so far. The mission mode of the captioned conservation concept this time mixes human emotion with the plantation programme, and the lasting limit of this modality of plantation will definitely continue beyond the scheduled period because the emotional instinct to motherhood is attached to the type of plantation exercise being put forth here.

MATERIAL AND METHOD

Extensive field work has been conducted in 8 (eight) Development Blocks, namely, Bolpur-Sriniketan Block, Dubrajpur Block, Mayureswar-I Block, Mohammad Bazar Block, Rajnagar Block, Rampurhat-I Block, Suri-I Block and Suri-II Block in the district of Birbhum, West Bengal, India, during the summer and monsoon period of 2024 and in early 2025.

Interactions with villagers across the localities covered under study reveal astounding acceptability for growing plants (ranging from trees to herbs) on the domestic land they are in possession. The compassion they have shown for such a plantation they practise is exemplary and notable. Their innate expression shows as if they own the plants as their dear and near ones. Here lies the respectful instinct towards motherhood

to equate with nature. There is also another aspect of the domestication of plants for keeping the supply chain of Non-Timber Forest Products (NTFPs) steady during the lean season, when the collection of NTFPs becomes difficult for them due to inclement weather.

What is also striking to note is that the domestication of plants, as followed by these villagers, is so extensive that a cumulative effect is achieved with many plants growing on homeland to form a distinct vegetational type. The participating communities are so serious about preserving nature that the said plantation practice has become an integral part of their regular life, and it is especially well accomplished in tribal habitations within the study area.

The modality of plantation follows the normal method of digging up soil up to the required depth, filling it up with loose soil mixed with fertilizer available regularly in the market. Fertilizer called NPK is suggested. Watering and nourishing with compassion and respect as to be shown to the mother, will bring desired results of survival of the plantlets sown.

- Precautions on plantation are especially advised for the survival of the plant saplings grown. Sustenance of in-ethos emotion-driven plantation initiative can best be thrived if the following precautionary perception is made pertinent while planting seedlings/ saplings.
- Selection of plant saplings: Since the instant article is dealing with the plantation of tree saplings on plainland, mesophytes (i.e., plants growing on plains) with arborescent habit are suitable, as these plants do grow in a sub-tropical region, being neither too hot (xeric habitat) nor cold enough (temperate zone). A list of recommended tree saplings is given in the Table 1.
- Nature of root system of the saplings: Tree saplings must have an elaborate root system required to hold the weight of the full-grown tree with soil substratum, so that it can withstand tearing stress and able to antagonize the natural forces subsequently it is subjected to.
- Suitable plantation site: Plantation site is especially important to provide the tree sapling a proper substratum where it can grow with its desired comforts with full vigour.
- Removal of container: If the tree sapling is pot-bound, the container needs to be removed to allow it for growing playfully across all directions.
- Proper pit measurement: Plantation to be facilitated with proper measurement of the pit where tree sapling can be suitably seated to acclimatize as its safe shelter.
- Adaptability of plant saplings: Planting of saplings ought not to be beyond the root ball to allow its adaptation in the neighbourhood of the environment.
- Mulching of plant saplings: Plantation of tree sapling is required to be mulched. Mulch helps to promote healthy establishment for the tree sapling. Mulching helps inhibiting growth of weeds around the sapling. It preserves soil humidity, maintains soil temperature, increases soil fertility and prevents soil erosion. Use of organic mulch is suggested for obtaining best of result.
- Staking of plant saplings: Plantation needs to be staked where necessary.
- Watering of plant saplings: Proper watering during the initial phase after sowing is essential and it is to be continued so long the sapling becomes stout enough to have the capability to pursue capillary water through root hairs for its good use.
- Need of basic care for plant saplings: Appropriate nourishing, including proper scouting, is basic care that is to be rendered for the health and vigour of the baby tree/ plant.

RESULT AND DISCUSSION

Plants listed in the Table-1 are wisely useful. Some of them are avenue trees, ornamental in nature. Some are fruit-bearing trees while the rest are shade trees, as shown in the 'Remark' column of Table-1. The selection of these mesophytes are conceptualized based on old practices when people used to cover distant destinations on foot (walking). People in ancient days went out of home for visiting far-off places, fully equipped with dry foods for consumption while travelling. They had roadside shade trees for taking a rest when they got tired of walking. Consumed fruits if accompanying food, got exhausted on intake, enjoyed the beauty of natural ambience manifested by ornamental plants while in bloom, and came out of boredom from the tiring journey.

Present day scenario has changed to a great extent. The old idea may not suit the present perspective, but it has relevance in applicability. People find visual pleasure while staring at the surrounding neighbourhood amidst colourful natural ambience supplemented with ornamental trees on blossom. Children get delighted to have ripe fruits hanging from fruit-trees at reach to consume on free of cost. Vehicle-bound people find a place under the shade trees to cool down their vehicular engines. So, it is evident that all the ancient practices of the modality have extant utility even now in a different reality.

In the context of the modernization drive involving rapid urbanization and infrastructural advancement, nature faces instability simply because of the rapid disappearance of plants that are getting alarmingly on the wane. Time prompts rendering checks on the innate threat and imminent danger to the cause, not only for our own survival but also for the entire life-forms existing on the globe. This has demanded conserving biodiversity and a steady state of the much-disturbed ecosystem that senses drastic disturbances between its biotic and abiotic components.

Forests are natural habitats for wildlife, including plants growing wild. Plants can also be made an integral component through domestication instrumented by the good in human beings. Domestication of vegetation is especially helpful for the sustainable spread of plants, adding ecological niches to the wild fauna. If flora and fauna if mingle to stay in reciprocation, the earth would turn to having heavenly outfit. Forest instability affects environmental equilibrium in ways such as

- Increase in temperature
- Decrease in precipitation
- Soil erosion
- Increase in flood incidence
- Sterility of soil
- Extinction of wild life-forms due to loss of wild habitats
- Scarcity of forest products
- Imbalance in the ecosystem and

Table-1: List of 50 (Fifty) Plants Recommended for Plantation on Plains of West Bengal, India

Sl. No.	Common Name	Scientific Name with Author Citation	Family	Suitability of Plantation			Remarks
				Road-side	Homeland (Domesticated)	Vested/Private Land	
1	Bael	<i>Aegle marmelos</i> (L.) Correa	Rutaceae		+	+	Fruit Tree
2	Indian Siris	<i>Albizia lebbek</i> (L.) Benth.	Fabaceae	+		+	Ornamental Plant
3	Chhatim	<i>Alstonia scholaris</i> (L.) R.Br.	Apocynaceae	+			Ornamental Plant
4	Cashew Nut/ Kajubadam	<i>Anacardium occidentale</i> L.	Anacardiaceae	+	+	+	Fruit Tree
5	Sitaphal	<i>Annona squamosa</i> L.	Annonaceae	+	+	+	Fruit Tree
6	Kadam	<i>Anthocephalus cadamba</i> (Roxb.) Bosser	Rubiaceae	+		+	Ornamental Plant
7	Jackfruit/ Katahal	<i>Artocarpus heterophyllus</i> Lam.	Moraceae	+	+		Fruit Tree
8	Neem	<i>Azadirachta indica</i> A. Juss	Meliaceae	+	+		Medicinal Plant
9	Semal	<i>Bombax ceiba</i> L.	Malvaceae	+		+	Ornamental Plant
10	Palmyra Palm/ Taad	<i>Borassus flabellifer</i> L.	Arecaceae			+	Fruit Tree
11	Piyal	<i>Buchanania lanzan</i> Spreng.	Anacardiaceae	+	+	+	Fruit Tree
12	Palash	<i>Butea monosperma</i> (Lam.) Taub.	Fabaceae	+		+	Ornamental Plant
13	Karando	<i>Carissa carandas</i> L.	Apocynaceae		+	+	Fruit Tree
14	Pomelo/ Chakotra	<i>Citrus maxima</i> (Burm.) Merr.	Rutaceae		+	+	Fruit Tree
15	Lasora	<i>Cordia dichotoma</i> G.Forst.	Boraginaceae	+			Timber Tree
16	Shisham	<i>Dalbergia sissoo</i> Roxb.	Fabaceae	+	+	+	Timber Tree
17	Gulmohar	<i>Delonix regia</i> Raf.	Caesalpiniaceae	+			Ornamental Plant
18	Chalta	<i>Dillenia indica</i> L.	Dilleniaceae	+	+	+	Fruit Tree
19	Tendu	<i>Diospyros melanoxylon</i> Roxb.	Dioscoreaceae	+	+	+	Fruit Tree
20	Banyan tree/ Bargad	<i>Ficus benghalensis</i> L.	Moraceae	+		+	Shade Tree
21	Hairy Fig/ Kala umbar	<i>Ficus hispida</i> L.f.	Moraceae		+	+	Fruit Tree
22	Pilkhan	<i>Ficus infectoria</i> (Miq.) Miq.	Moraceae	+		+	Shade Tree
23	Goolar	<i>Ficus racemosa</i> Wall.	Moraceae	+			Medicinal Plant
24	Pipal	<i>Ficus religiosa</i> L.	Moraceae	+			Religious Tree
25	Kurchi	<i>Holarrhena antidysenterica</i> (L.) Wall. ex A. DC.	Apocynaceae	+		+	Medicinal Plant
26	Jarul	<i>Lagerstroemia speciosa</i> Pers.	Lythraceae	+			Ornamental Plant
27	Kaathbelh	<i>Limonia acidissima</i> L.	Rutaceae		+	+	Fruit Tree
28	Mahua	<i>Madhuca indica</i> J.F.Gmel.	Sapotaceae	+	+	+	Fruit Tree
29	Mango/ Aam	<i>Mangifera indica</i> L.	Anacardiaceae	+	+	+	Fruit Tree
30	Sapodilla/ Chiku	<i>Manilkara zapota</i> (L.) P. Royen	Sapotaceae	+	+	+	Fruit Tree
31	Spanish Cherry/ Bakul	<i>Mimusops elengi</i> L.	Sapotaceae	+	+	+	Fruit Tree

Cont...

Emotion-driven plantation initiative for growing domesticated vegetation in Indian Plains.

32	Sojna	<i>Moringa oleifera</i> Lamk.	Moringaceae		+		Fruit Tree
33	Night Jasmine/ Parijat	<i>Nyctanthes arbor-tristis</i> L.	Oleaceae		+		Ornamental Plant
34	Yellow Poinciana/ Kanakchura	<i>Peltophorum pterocarpum</i> Backer	Caesalpiniaceae	+			Ornamental Plant
35	Pind Khajur	<i>Phoenix acaulis</i> Buch-Ham. ex Roxb.	Arecaceae		+	+	Fruit Tree
36	Amla	<i>Phyllanthus emblica</i> L.	Phyllanthaceae	+	+	+	Fruit Tree
37	Temple Tree/ Golenchi	<i>Plumeria rubra</i> L.	Apocynaceae	+	+		Ornamental Plant
38	Guava/ Amrood	<i>Psidium guajava</i> L.	Myrtaceae	+	+	+	Fruit Tree
39	Rain tree/ Vilaiti Siris	<i>Samanea saman</i> (Jacq.) Merr.	Mimosaceae	+			Ornamental Plant
40	Ahoke	<i>Saraca asoca</i> (Roxb.) Willd.	Fabaceae	+	+		Religious Tree
41	Bhillawa	<i>Semecarpus anacardium</i> L.f.	Anacardiaceae	+		+	Fruit Tree
42	Sal	<i>Shorea robusta</i> C.F.Gaertn.		+	+	+	Timber Tree
43	Indian Hog Plum/ Amra	<i>Spondias pinnata</i> (L.f.) Kurz.	Anacardiaceae	+	+	+	Fruit Tree
44	Black Plum/ Jamun	<i>Syzygium cumini</i> (L.) Skeels.	Myrtaceae	+	+	+	Fruit Tree
45	Tamarind/ Imlī	<i>Tamarindus indica</i> L.	Fabaceae	+		+	Fruit Tree
46	Teak/ Sagun	<i>Tectona grandis</i> L.f.	Lamiaceae	+	+	+	Timber Tree
47	Arjun	<i>Terminalia arjuna</i> W. & A.	Combretaceae	+		+	Timber Tree
48	Baheda	<i>Terminalia bellirica</i> (Gaertn.) Roxb.	Combretaceae	+	+	+	Fruit Tree
49	Harra	<i>Terminalia chebula</i> Retz.	Combretaceae	+	+	+	Fruit Tree
50	Indian Jujube/ Ber	<i>Ziziphus mauritiana</i> Lam.	Rhamnaceae		+	+	Fruit Tree

- Ultimately lead to a darkened environment not only for the future generation of human beings but also the living organisms, which will fall prey to it for succumbing to extinction.

Waning green coverage on Earth is all-pervasive. Awareness is growingly lacking. It is high time to work on plantation practices for the sustenance of life on Earth. Eloping of plants is especially alarming on the plains in India for residency promotion, urbanization, and infrastructure upgradation, and the setting up of road connectivity as well. If this goes on unchecked and in an imbalanced manner, it will have a negative impact on nature and automatically on the environment, leading to the disturbance of the places where we take refuge.

So, the time has come to strengthen the intervening strategy for more and more plants to grow. We ought to concentrate on growing domesticated vegetation to minimize pressure on the forest (Halder Mallick & Chakraborty, 2018). Domesticated vegetation is other way, very meaningful if we replicate/perpetuate endangered plants as an innate component of the same. The devastating effects of deforestation, including

merciless tree felling/ cutting, the awkward incidence of forest-fire and overgrazing, and faulty farming practices, result in the depletion of forest coverage over the earth. The torture on the forest has become so miserable and uncontrolled that drastic changes in climate with ominous effects of global warming and speedy decline in biodiversity stand at having unwarranted eventuality (Lahiri, 2017). As a result, the ecosystem on the planet gets threatened and thus disturbed. The very state of affairs has given rise to the development of the concept of conservation of plants and in turn, of the forest.

50 (Fifty) plants are listed in table-1 and planting of the saplings of these plants is recommended for raising the domesticated vegetation to contribute for conservation of forests and biodiversity.

Raising domesticated vegetation with the endangered plants is a special need of time to conserve through a viable replication process, else they will face extinction. This is one facet of the exercise; the other is that it adds to the setting up of a natural pool of Non-Timber Forest Products (NTFPs) of plant origin, and the scarcity in the supply chain of NTFPs gets

Table 2: Golden Substitutes to Timber

Sl. No.	Substitute Material	Generic Type	Applicability
1.	Plywood	Engineered Wood	Furniture, Structural & Construction Materials
2.	Fibre Board	Engineered Wood	Interior Decoration & Designing
3.	Particle Board (Chipboard)	Engineered Wood	Furniture (Low Cost)
4.	Steel	Metal	Furniture & Frame Manufacturing
5.	Aluminium	Metal	Doors & Windows
6.	Plastic Lumber	Synthetic	Furniture & Outdoor Flooring
7.	Fibre Polymer	Synthetic	Structural & Construction Components
8.	Cement Concrete	Mineral	Construction Components, Manufacture of Poles/ Sleepers
9.	Veneer Lumber (Laminated)	Engineered Wood	Building Materials
10.	Glulam	Laminated Board	Roof/Beams/Columns in Building Construction, Bridges & Architectural Structures

supplemented in affirmation (FAO, 2023). NTFPs-collectors will not be apprehending for depletion in natural resources and the livelihood sustenance in them (de Mello *et al.*, 2020) will be continued from even one's doorstep (Fig. 1, Fig. 2, and Fig. 3 below).

Afforestation on vacant vested land or on private land can be a fruitful attempt to provide plantation for increasing green cover across the nation (Fig. 4 (a), Fig. 4 (b), and Fig. 4 (c) below). Social forestry comes next to act with initiative in the greening venture. Developing grassland is another aspect of greening practices to mitigate as much of 33% of terrestrial carbon stocks globally. Grassland ecosystem is often said to be non-forest conservation and are beneficial to humankind with their biodiversity maintenance, carbon storage, climate regulation, and grazing value of the cattle (Pillar & Overbeck, 2025).

All these are focusing on strengthening nature's stability and environmental equilibrium (Yadav *et al.*, 2024) and, if accomplished thoroughly, will be beneficial not only to the rural people inhabiting the neighbourhood of the forest but also to

humankind in general. So, it is recommended to go green to the greatest extent possible with the aid of domestication of vegetation, afforestation through social forestry initiative and restoration of forests (Wang *et al.*, 2023). The plantation outcome shows eventual dedication to the cause of safe-guarding to the nature. Domesticated vegetation does provide for adding ecological niches for the sustenance of biodiversity (Fig. 5 (a) and Fig. 5 (b) below).

It is evident in the present-day scenario that technological advancement is in full swing. Using trees as timber senses nothing now because the use of timber by felling of the trees stands at a bare minimum with the invention of artificial rubber, moulded plastic fibre, steel, rot-iron, aluminium and other materials in the row as shown in the Table-2 below. These materials are temperature-resistant, water-proof, durable, light-weight, low-cost and available in fanciful fabrication (Faruk *et al.*, 2012, Brandner *et al.*, 2016, & Neitzel *et al.*, 2022). These substitutes are often popularly referred to as "Golden Substitutes" for reasons that

- They are efficient enough to lessen use of natural resources, including practices for the restoration of forestry.
- They allow conservation of forests by ruling out the felling of trees for timber trading.

**Fig. 1: Domesticated tree at home****Fig. 2: Raising saplings domestically**



Fig. 3: Domesticated trees in row



Fig. 4 (a): Practices of raising domesticated vegetation on vacant land



Fig. 4 (b): Practices of raising domesticated vegetation on vacant land



Fig. 4 (c): Practices of raising domesticated vegetation on vacant land

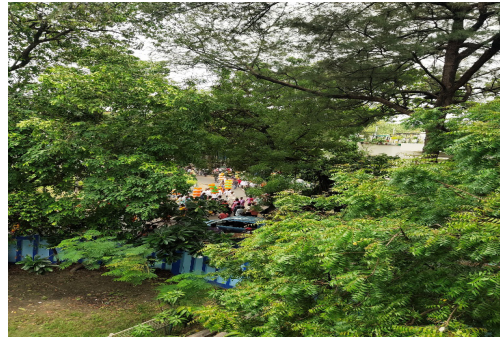


Fig. 5 (a): Domesticated vegetation acts as secure adobe to fauna



Fig. 5 (b): Domesticated vegetation acts as secure adobe to fauna

- They act for the 'grand replacement' in infrastructure development and modernization activity (Pickering *et al.*, 2016).

As is evident, 'modern trending' attracts people to prefer using synthetic materials in place of timber. The prevailing instinct rules out the main menace of deforestation for targeted procurement of timber and is limited by the aid of technology-oriented interventions for the luxury living of human beings. This, at the same time, reiterates that plantation, whatever extent is done, is being done without incidental fear from felling of trees for timber trading, as the taste of human need has obviously changed to opt for the artificial substitutes to timber in the spheres of modernization and infrastructural developments.

CONCLUSION

The concept of the present study refers to the golden principles of stabilizing conservation of biodiversity amidst different life-forms for environmental equilibrium and restoration of routine dynamics in the functioning of the ecosystem. This also adds to providing the viable means for survival of organisms on Earth. The article is conceived to focus on an innovative planning for plantation modality where 'emotion to motherhood' is an 'add-on' factor. The empathy-driven endeavour of plantation practices has now become a compulsion for the citizens of India to pledge explicitly to plant seedlings/saplings after the name of their own mother. The plantation practices if made popular, will result in unique viability for plant propagation by raising domesticated vegetation. Domesticated vegetation is especially recommended for the protection and perpetuation of endangered plant species facing the threat of extinction.

Moreover, domesticated vegetation can also act as a shield to providing safe abode even to the plants growing wild. Forests and plants are intimately associated with the survival of humankind. In all practical purposes, domesticated vegetation for keeping the supply line of NTFPs in a steady state and the natural forest will breathe a sigh of relief for being less pressurized. This initiative will make a significant contribution to the conservation of plants and forests and help restore greenery across the nation. As a result, future generations will breathe cleaner air, enjoy better health, and lead safer and healthier lives. It will also contribute to increasing life expectancy to "sau saal", living for a century.

ACKNOWLEDGEMENT

Authors are grateful to the Department of Botany of Krishnagar Government College, District- Nadia, West Bengal. Authors are also thankful to the Department of Conservation Biology, Durgapur Government College, District- Paschim Bardhaman, West Bengal for the support and co-operation in whatever manner needed.

AUTHORS' CONTRIBUTION

All the authors have contributions in conceiving the objectivity of the article while growing the perception assimilated from the literature available and reality-driven experiences of the methodology involved for deriving prerogatives pertaining to planting of the tree saplings.

Sandip Kumar Dutta

Conceptualization, fieldwork, and writing of the manuscript.

Subhra Bandopadhyay

Conceptualization, field work, monitoring, and editing of manuscript.

Debnath Palit

Overall supervision and guidance during manuscript writing and the necessary correction of errors in the manuscript.

CONFLICT OF INTEREST

There is no conflict of interest while conceiving the present article in any manner whatsoever.

REFERENCE

- Adhikari, B., Falco, S.D., and Lovett, J.C. (2004). Household Characteristics and Forest Dependency: Evidence from Common Property Management in Nepal. *Ecological Economics*, 48(2): 245-257. DOI:10.1016/j.ecolecon.2003.08.008
- Angelsen, A. and Dokken, T. (2018). Climate exposure, vulnerability and environmental reliance: a cross-sectional analysis of structural and stochastic poverty. *Environment and Development Economics*, 23 (3): 257-278. DOI: <https://doi.org/10.1017/S1355770X18000013>.
- Burivalova, Z., Yoh, N., Butler, R., Sagar, H S S.C. and Game, E.T. (2023). Broadening the focus of forest conservation beyond carbon. *Current biology*: CB. 33. R621-R635. DOI: 10.1016/j.cub.2023.04.019.
- De Mello, N.G.R., Gulinck, H., van den Broeck, P. and Parra, C. (2020). Social-ecological sustainability of non-timber forest products: A review and theoretical considerations for future research. *Forest Policy and Economics*, 112 (Article number 102109). DOI: 10.1016/j.forpol.2020.102109.
- Food and Agriculture Organization of the United Nations (FAO). (2023). *Non-wood forest products and sustainable forest management*. Rome: FAO. Retrieved from <https://www.fao.org/sustainable-forest-management-toolbox/modules/management-of-non-wood-forest-products/en>
- Halder Mallick, P. and Chakraborty, S.K. (2018). Forest, wetland and biodiversity: Revealing multi-faceted ecological services from ecorestoration of a degraded tropical landscape. *Ecology & Hydrobiology*, 18, 278-296. DOI: 10.1016/j.ecohyd.2018.04.002.
- Ickowitz, A., McMullin, S., Rosenstock, T., Dawson, I., Rowland, D., Powell, B., Mausch, K., Houria, D., Sunderland, T., Nurhasan, M., Novak, A., Gitz, V., Meybeck, A., Jamnadass, R., Guariguata, M.R., Termote, C. and Nasi, R. (2022). Transforming food systems with trees and forests. *The Lancet Planetary Health*, 6 (7): e632-639. DOI: 10.1016/S2542-5196(22)00091-2.
- Kabisch, N., Qureshi, S. and Haase, D. (2015). Human-environment interactions in urban green spaces: a systematic review of contemporary issues and prospects for future research. *Environ. Impact Assess. Rev.*, 50:25-34. DOI: <https://doi.org/10.1016/j.eiar.2014.08.007>.
- Kumar, M., Singh, M. P., Singh, H., Dhakate, P.M. and Ravindranath, N. (2019). Forest working plan for the sustainable management of forest and biodiversity in India. *Journal of Sustainable Forestry*, 39 (1):1-22. DOI: 10.1080/10549811.2019.1632212
- Lahiri, A. K. (2017). Conservation of Biological Diversity-West Bengal Scenario. *Indian Forester*, 143(9): 773-780. DOI: 10.36808/if/1994/v120i9/7741
- Liu, B.J., Lu, F., Wang, X. and Liu, W. (2017). Greenhouse gas emissions, carbon leakage and net carbon sequestration from afforestation and forest management: A review. *Ying yong sheng tai xue bao=The journal of applied ecology / Zhongguo sheng tai xue hui, Zhongguo ke xue yuan Shenyang ying yong sheng tai yan jiu suo zhu ban*, 28 (2). 673-688. DOI: 10.13287/j.1001-9332.201702.004
- Pillar, V.D.P. and Overbeck, G.E. (2025). Nature conservation policies are biased toward forests and neglect grassy ecosystems worldwide. *Science*, 388 (6747): eadx 7441. DOI:10.1126/science.adx7441.
- Sunderlin, W., Angelsen, A., Belcher, B., Burgers, P., Nasi, R., Santoso, L. and Wunder, S. (2005). Livelihoods, forests, and conservation in developing countries: An Overview. *World Development*, 33(9):1383-1402. DOI: 10.1016/j.worlddev.2004.10.004
- Wang, Z., Fu, B., Wu, X., Wang, S., Li, Y., Feng, Y. and Zhang, L. (2023). Vegetation resilience does not increase consistently with greening in China's Loess Plateau. *Communications Earth & Environment*, 4: 336. DOI: <https://doi.org/10.1038/s43247-023-01000-3>.
- Yadav, P., Jha, R. K., Parasriya, R., Tushif, P. K., Jain, V. and Malleh, Y. (2024). MGNREGA-Assisted Afforestation for Climate Moderation in India: An Overview. *International Journal of Environment and Climate Change*, 14(2): 310-321. DOI: 10.9734/ijec/2024/v14i23946
- Brandner, R., Flatscher, G., Ringhofer, A., Schickhofer, G. and Thiel, A. (2016). *Cross-laminated timber (CLT): overview and development*. *European Journal of Wood and Wood Products*, 74, 331-351. DOI: <https://doi.org/10.1007/s00107-015-0999-5>
- Faruk, O., Bledzki, A. K., Fink, H.-P. and Sain, M. (2012). Biocomposites reinforced with natural fibers: 2000-2010. *Progress in Polymer Science*, 37(11), 1552-1596. DOI: <https://doi.org/10.1016/j.progpolymsci.2012.04.003>.
- Neitzel, N., Hosseinpourpia, R., Walther, T. and Adamopoulos, S. (2022). Alternative materials from agro-industry for wood panel manufacturing - A review. *Materials*, 15(13), 4542. DOI: <https://doi.org/10.3390/ma15134542>.
- Pickering, K. L., Efendy, M. G. A. and Le, T. M. (2016). A review of recent developments in natural fibre composites and their mechanical performance. *Composites Part A*, 83, 98-112. DOI: <https://doi.org/10.1016/j.compositesa.2015.08.038>.