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Development Practice

'One Plant, One Student': A Case Study

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Abstract

Environmental concerns such as global warming, the extinction of species and the natural response of the common man towards the exploitation of nature have raised innumerable questions pertaining to the future of mankind for academia in recent times. This paper aims to present a case study as a conceptual framework to study the likely relationship that can be created between students and plants at their places of academic pursuit to toil and nurture nature along with their studies. It also summarizes the evolution of a practical approach to integrate the University Grants Commission's (UGC) proposed mandatory environment management course to its basic level of involvement of the student community on campus. Contemporary students' orientation of vocational excellence and splendid life style is expected to be slightly modified with such an interface with a plant during any course of study. Academics in general have a proven disconnect to the rural agrarian dynamics of the country. This study utilized detailed inquiry methods to generate primary data from a NAAC accredited institution of Kerala. The data were summarized to determine how academic organizations can become systems to promote such best practices with prospects.

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"The history of life on Earth has been a history of interaction between living things and their surroundings. To a large extent, the physical form and the habits of the earth's vegetation and its animal life have been molded by the environment."

Rachel Carson (author of *Silent Spring*)

Introduction

The term biological diversity was used first by a conservationist, Raymond F. Dasmann, in 1968 in his book *A Different Kind of Country* to advocate conservation. The contracted term 'biodiversity'may have been coined by W. G. Rosen in 1985 during the 1986 National Forum on Biological Diversity organized by the National Research Council (NRC). Later this term first appeared in a publication by the eminent sociobiologist, E. O. Wilson. Since then, the term has seen a widespread use among biologists, environmentalists, political leaders, policy makers and citizens (Franco, 2013: 2).

Biodiversity, as the term denotes, is the co-existence of different types of ecosystems, different species of organisms, their variants adapted to different climates and living conditions along with their mutual interactions and processes. These living organisms which coexist on Mother Earth, live in diverse habitats possessing diverse qualities and are considered to be highly essential for the sustenance of human life on Earth. It is an indispensable chain where, although both support and sustain each other, one has to accept the very bitter truth that Nature can still survive without human beings on Earth while humans cannot survive without Nature.

Various environmental concerns such as global warming, extinction of species and other non-renewable natural resources have raised innumerable questions pertaining to the future of mankind on this Earth since these changes drastically effect the Nature-human balance. This slow but steady devastation of Mother Earth will make us reach the verge of the ultimate realization that anything built by man can be destroyed by the same Mother Earth. In fact, Nature's fury has already begun. Little do we know, that we have come from 'Nature' and have to return to the same abode one day. The quicker we realize this, the better would be our initiatives in preparing

our present and future generations to make this Earth a better place to live in, in communion with Nature in all its glory.

The growth that our country aspires for in terms of development should, therefore, encompass priority measures that contribute towards energy conservation and environmental protection since without it we are simply an organism without an identity. As E.O. Wilson rightly puts it, "If all mankind were to disappear, the world would regenerate back to the rich state of equilibrium that existed ten thousand years ago" (Bekoff, 2013: 22).

The movement towards a deeper commitment to environmental protection through planting new trees and taking care of the existing ones, is rapidly increasing all over the world. The task of environment protection is a universal responsibility of all of us. That is why it is extremely important to not only take a keen interest in the cause of environmental protection, but also to implement this ideal in action by planting new trees and energy conservation. It is a way of making an important gesture to the world in demonstrating our global concern and at the same time making our own small but significant contribution to the cause.

Environment

Protection of environment has of late become a global concern especially after the Stockholm Conference organized by the United Nations Environment Programme (UNEP). Primitive man did not ever concern himself with conservation methods as there was no need for it. He pampered himself with Nature's abundance. The restorative capacity of Nature could cope with the damage or exploitation inflicted, as resources were restored quickly and in abundance. It was all 'taking' from Nature and no 'giving back' to replenish the natural resources. But the depletion of resources has gradually led to the realization of the necessity of Nature's conservation by all means. He has understood the truth that Nature is exhaustible, its restorative capacity has progressively deteriorated. All this will have a direct repercussion on the quality of human life if left unattended.

Environment Management

Saxena (2000) describes known approaches developed for environmental management. These include the ad-hoc approach, the problem solving approach, the systems approach, the specialist discipline approach, the voluntary sector approach, the commercial approach, the human ecology

approach, the political ecology approach and also the EMS (environmental management systems) approach. All have been developed to address the environmental issues. The measures other than the technical ones are environmental education, environmental legislation, monitoring mapping and use of remote sensing, environmental impact assessment, and the environmental management plan (Saxena, 2000: 66).

Ecology

Ecology is the study of this interrelationship between all living organisms and environment. Terms like human ecology, social ecology, and ecological equilibrium in the environment connote 'the conservation of nature'(Singh and Mal, 2009: 24). Industrialization and technological advancements significantly alter the properties of the biosphere, profoundly affecting the natural biogeochemical cycle of materials which again affects the oxygen and carbon dioxide balance in the atmosphere. Changes occur in the natural properties of soil along with the disturbance in the flora and fauna composition which are irrevocable changes. All these point towards the most pressing needs of today, namely the conservation, protection and positive transformation of the environment.

Biodiversity

Biological diversity means the variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part. This includes diversity within species, between species and of ecosystems. (Duraiappah and Naeem, 2005: 18). There are three levels of diversity—species diversity, genetic diversity and ecosystem or habitat diversity. India has around 200,000 species of the total species described (Maheshwari, 2016: 2). Misra and Murty (2001) describe some of the benefits of biodiversity to man like absorption of greenhouse gas carbon dioxide through the process of photosynthesis and climate regulation, decomposition of wastes and pollutants by diverse microorganisms, pollination of fruits, flowers and vegetables, soil production, protection and prevention of erosion, bio-geochemical operations in the biosphere, lifesaving drugs from biodiversity especially medicinal herbs used in practices like Ayurveda, Siddha and Unani. In modern medicine also, around 119 pure chemical substances are extracted from about 90 species of plants (Misra and Murty, 2001).

According to Chaplin et al. (cited in Singh and Mal, 2009: 76)the human population explosion, the resource consumption rate, extinction of natural fragments due to land overuse, exploitation of natural resources and change in the carbon pool of the biosphere has led to several environmental concerns. As Ervin (cited in Singh and Mal, 2009: 76) states, the loss of biodiversity is considered to be one of the most serious problems when compared to the global climatic changes, ozone depletion, and glacial retreat. This extinction of species and the systems they live in, leads to an imbalance of the ecosystem such as imbalance of the bio-geochemical cycle, energy flow, and severe interruption of the evolutionary process.

Biodiversity Conservation

The environment or the ecology conservation movement is basically a scientific, social and political movement to find solutions for the environmental issues. Environmental protection or preservation initiatives have begun both on international and national dimensions and a lot is happening on this front in terms of policies, education and awareness-generation among the general population. Such programmes are spearheaded by a range of organizations that vary from country to country. The environmental movement is seen to be all-encompassing. It includes private citizens, professionals, religious devotees, politicians, scientists, non-profit organisations and some individual advocates.

There are two basic approaches towards the conservation of biodiversity: in situ conservation and ex situ conservation: in situ protection and conservation of biodiversity happens in its natural habitat itself such as national parks, bio-reserves and wildlife sanctuaries and ex situ, where conservation of selected rare plants and animals happens outside their habitat such as botanical gardens and zoological parks. The attempt is mainly to prevent the extinction of rare and endangered species (Tikader and Vijayan, 2017). Some authors claim that a better understanding of the human or social dimension of environmental issues will surely improve conservation. It has become widely recognized that "engaging with the human dimension of conservation and environmental management is needed to produce robust and effective conservation practices, actions and outcomes" (Bennet et al, 2017: 94).

Global Initiatives towards Biodiversity Conservation

Biological diversity appeared as a matter of grave concern in conservation

circles at the end of the 1980s. It was given due significance as a matter of concern in the World Research Institute (WRI), World Bank, International Union for Conservation of Nature (IUCN) and World Wildlife Fund (WWF) publications. The collaborative effort of the WRI, IUCN, and United Nations Environment Programme (UNEP) in coordination with other relevant institutions, is leading to the preparation of a global strategy for the conservation of biodiversity. This comprehensive strategy will be developed by and for national governments, non-governmental organisations (NGO), resource managers, scientists, international institutions, multilateral banks, and bilateral aid agencies (McNeely et al., 1990: 109). The United Nations has proclaimed May 22 as the International Day for Biological Diversity (IDB) to bring awareness to all communities about the biodiversity issues. There has to be a collective consciousness to address the various issues pertaining to biodiversity.

Biodiversity conservation as a subject has occupied a prominent position in the international and our national agenda. This huge step was mainly facilitated by the signing of the Convention on Biological Diversity by more than 190 countries at the Earth Summit in Rio de Janeiro in 1992. Until then, this subject was merely a subject of academic discussions in narrow scientific circles. It has now also impacted the sociological and social work arena, so much so that the World Social Work Day, which is celebrated on the 21st of March every year, chose 'Promoting Community and Environmental Sustainability' as its theme for the year 2017 (Maheshwari, 2016).

A lot of interventions have occurred in terms of policies, treaties, education/awareness generation and efforts by the environmental advocates. Some of the international initiatives in this direction include: the World Rainforest Movements (WRM) 1987, the International Convention on Biological Diversity conceived at a United Nations Environment Programme(UNEP) in November 1988, a Conference for the Adoption of the Agreed terms of the Convention on Biological Diversity (CBD) held in Nairobi, Kenya in 1992 leading to the famous Rio "Earth Summit" (this agreement covers allecosystems, species, and genetic resources), the Gran Canaria Declaration, calling for a Global Plant Conservation Strategy in 2002. Other than these, there are the initiatives by the World Wildlife Fund (WWF) to safeguard biodiversity by working with various agencies and NGOs to promote sustainable development of the environment. The United Nations Educational, Scientific and Cultural Organisation

(UNESCO) also aims to strengthen the policy of biodiversity through its contribution to the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) (UNESCO, 2017).

As of 2016, the Convention on Biological Diversity has 196 parties, which includes 195 states and the European Union. All UN member states, with the exception of the United States, have ratified the treaty (Bourguignon, 2016). National Biodiversity Strategies and Action Plans (NBSAPs) are the principal instruments for implementing the Convention at the national level. Along with the emergence of all these policies and strategies, there has also been some criticism (although not fully evident) levied against the convention that specifically states that all forms of life are covered by its provisions. But a thorough analysis of various reports, strategies and action plans submitted by participating countries shows that, in practice, this is not the scenario.

The Global Initiative on Biological Diversity Public Education and Awareness

Article 13 of the convention on biological diversity states the activities with regard to worldwide public education and awareness. It promotes various measures required for the preservation of biological diversity which includes its propagation through media, inclusion of such topics in the curriculum and other educational programmes. It also calls for a unified cooperation with the other states and international organizations in developing such educational and public awareness programmes for the conservation of biodiversity throughout the world (Secretariat of the Convention on Biological Diversity, 2005).

Conservation Movements and Initiatives in India

In the year 2002, the Biological Diversity Act came into existence in India. It was specifically meant for the preservation of biological diversity in India. It was enacted with the aim to fulfill the targets as delineated under the CBD, to which India is a party. It deserves to be mentioned that as far back as 1842, the Madras Board of Revenueinitiated the local conservation efforts, headed by Alexander Gibson, a professional botanist who systematically adopted a forest conservation programme based on scientific principles. This is considered to be the first ever attempt towards the conservation of forests in the world (International Geographical Union, 2014).

Indian Environmental Movements

The origins of Indian environmental movements can be ascribed to the most celebrated forest movement popularly known as the Chipko Movement (1973) of the central Himalayas spearheaded by Sunderla Bahuguna, a Garhwali environmentalist. This unique movement in the Garhwal Himalayas emerged in the wake of reckless deforestation and larger issues of the depletion of resources. It was in fact a revolt against mindless deforestation and was marked by people hugging trees when the woodmen came to axe them. Another famous movement is related to the Silent Valley Project 1978, where this hydroelectric project was launched to dam the Kunthipura River submerging the entire biosphere reserve and destroying its four million year-old rainforests. This grassroots level movement became the bedrock of Indian environmental activism. The Navdanya Movement led by Vandana Shiva, a famous environmental activist, reinstated a farming system that embarked upon engaging the womenfolk in her ecofeminist movement. She founded Navdanya in 1982, an organization that promoted biodiversity conservation and organic farming. Some of the other popular environmental movements that took birth in Indian soil were the Jungle Bachao Andolan (1980s), and the Narmada Bachao Andolan (1985) (Malhotra, 2008).

Biodiversity Protection: Initiatives Taken by Indian Government

The National Biodiversity Authority (NBA) is a statutory autonomous body under the Ministry of Environment and Forests, Government of India, established in 2003 to implement the provisions under the National Biological Diversity Act, 2002, after India signed the Convention on Biological Diversity (CBD) in1992 (NBA, 2008). The headquarters of the NBA is in Chennai and it acts as a facilitating and regulating body to the Government of India on matters pertaining to conservation and the sustainable use of biological resources. From time to time, it advises the State Governments in identifying the biodiversity specific heritage sites. The NBA organised the first ever National Biodiversity Congress (NBC) in 2012 which was held at Thiruvananthapuram, Kerala. On this occasion, the National Biodiversity Students' Congress was also held. India is a signatory to several major international conventions relating to the conservation and management of wildlife. This makes Indian States/Union Territory Governments provide financial and technical assistance for the

protection of protected areas including forests. All these come under various centrally sponsored schemes.

Biodiversity of India and the Need for Protection

India has always been famous for its diverse and rich collection of flora and fauna popularly called the Sacred Groves. The number of plants both flowering and non-flowering in India is estimated to be over 47,000, representing about 12 per cent of world's flora. India is found to be better when compared with the world forests as it has shown positive changes during 1990–2005. In spite of all this, India has to put a lot of effort to reach the ecological threshold. The depletion of forest and other natural resources in India has brought various species under threat of extinction (Singh and Mal, 2009: 21). One of the features of Indian biodiversity is that it has two of the 25 identified biodiversity centres known as 'hot spots', extremely rich with different species. These hot spots are the Eastern Himalayas and the Western Ghats. They are now under threat of loss of biodiversity (Misra and Murty, 2001: 150).

India is one among the17 mega-diverse countries of the world. In order to protect and maintain the endangered and threatened animal and plant species, the Government of India has taken various steps in terms of laws and policy initiatives. According to the Press Information Bureau, the Ministry of Environment and Forests has delineated some major steps taken by the Government for Biodiversity Protection. It includes the Wildlife (Protection) Act, 1972; Wetland (Conservation and Management) Rules 2010; the National Plan for Conservation of Aquatic Eco-System; the Wildlife Crime Control Bureau; and the Integrated Development of Wildlife Habitats, a centrally sponsored scheme. Some of the significant Indian Acts passed related to the environment and biodiversity are the Indian Forests Act 1927, the Prevention of Cruelty to Animals 1960, the Wildlife Protection Act 1972, the Forest Conservation Act 1980, the Environment Protection Act 1986, and the Biological Diversity Act 2002. There are also some significant policies for the preservation of biodiversity such as the National Forest Policy, the National Conservation Strategy and Policy statement on Environment and Development, the National Policy and Macro-level Action Strategy on Biodiversity, the National Biodiversity Action Plan (2009), the National Agriculture Policy, and the National Environment Policy, 2006.

Some of the organizations in India working for the preservation/ conservation of the environment and biodiversity are The Corbett Foundations, the Wildlife Institute of India (WII), the Wildlife Conservation Trust (TCT), WWF- India (the largest voluntary organisation that works for nature as well as wildlife conservation), the Wildlife SOS, India, the Centre for Wildlife Studies, the Nature Conservation Foundation, and the Environment Conservation Group (ECG).

Social Work Perspectives on Ecology, Environmental Preservation and Eco Social Work

Extinction of species has always been a fact of life whether natural or man-caused. The question is: are humans responsible for the extinction of some of these species? Today, the extinction rate has been found to surpass the mass extinction that has happened in the past. Schucking and Anderson (2003) point to several reasons that have been found for this impact:

- The sum of various human activities: agriculture, over harvesting of plants and animals, urban and industrial development, forest clearance, grazing, pollution, and indiscriminate use of pesticides.
- Loss of ecosystems that play a major role in the evolutionary processes called the power houses of evolution.
- Terrestrial plant species which form the very basis of land ecosystems are threatened. Today one fifth of all plant species on land are facing extinction within the next 20 years.

The deliberate substitution of diversity by uniformity of crops, trees, livestock, and developmental projects financially aided by international agencies, has worsened the biodiversity crisis (Shiva, 1993).

Since time immemorial, humans and nature have coexisted on this planet, sharing a deep connection fostering each other's growth and sustenance. Unfortunately, the most serious condition humans face today is the worldwide degradation and depletion of pristine biodiversity, threatening the very aspects of global stability and human health. Environment and biodiversity have occupied a prominent place in social work research, although the relevance of a social worker's role/interventions towards these are of recent origin or concern. It is gradually coming to the forefront, surpassing different challenges since the boundaries of social work practice have been difficult to be clearly identified or demarcated. Social workers have been and are instrumental in encouraging and

empowering people to enlighten themselves on the interrelationships among humans and their natural environment, thus dealing with one of the most serious issues of the present era, namely biodiversity conservation and environmental protection. "Social work as a discipline must learn to ask and respond to the question of how our threatened biodiversity relates to human health and well-being. It must prepare itself to recognize the human contribution to the problem of climate change, habitat loss such as deforestation, exploitation and misuse of lands and severe degradation of oceans and fresh water resources" (Tedeschi et al., 2013: 223).

The challenge lies in making wider communities undergo attitudinal and behavioural changes for the preservation of our overall environment, including biodiversity. They can effect this through their different methods, a social movement towards a more sustainable, ecological and humane presence on earth. Most of us have grown up in a period that has witnessed the "abundance" of natural resources, a period when we were not aware much of the term "endangered species". Social Work as a profession/ discipline has rarely been concerned over the dangerous repercussions of environmental depletion. It has always applied a "person-in-environment" approach or model but unfortunately has not gone beyond this level to explore the connectedness between biodiversity and global health stability. But, over the past few years, there has been an immense pressure on the social work profession to include areas related to the preservation of nature and biodiversity in professional social work training, education and practice.

The United Nations Development Programme (UNDP) environment strategy targets three types of interventions—biodiversity conservation, natural resource management and clean energy technology promotions. Under the UNDP programme, the Government of India launched a project for biodiversity conservation through community-based natural resource management. The project aims at piloting various community-based natural resource management initiatives along with the biodiversity conservation initiatives. The two major components of this project are: field based activities with grassroots interventions and secondly, national level activities focusing on using lessons from field experiences for informing the legislative and policy-making authorities of the country. As per Article 6 of the CBD, all the parties are expected to prepare National Biodiversity Strategy and Action Plans popularly known as (NBSAPs) which are instrumental for the implementation of the CBD at a national level.

In 1994, as a policy level initiative, the Ministry of Environment and Forests, Government of India, initiated consultations with representatives from various ministries, governmental agencies, NGOs, and academicians for preparing a national action plan for biodiversity conservation. NBSAP has been found to be highly participative and all inclusive, with its openness to different points of view. However, it took more than a decade for it to reach various village level organisations, movements, NGOs, academicians, government agencies, the private sector and others who are working towards biodiversity conservation (Kumar, 2005: 248). Currently, NGOs have taken on a wider range of responsibilities towards preservation of natural reserves. Many NGOs have become highly professionalized, hiring their own environmental researchers. Although these NGOs are producing valuable publications, there is a criticism that their studies are biased. Many educational institutions are also embarking upon biodiversity measures in their own territories and contributing immensely towards environmental conservation, together with creating an environment-conscious generation of children and youth.

Background of the Study

As a part of this universal endeavour, the Loyola College of Social Sciences, Thiruvananthapuram, has also embarked on an innovative environmental project of "one plant-one student". This research paper is basically a study of this environmentally-sensitive biodiversity project that has been implemented on the Loyola campus. In association with TIES (Tropical Institute of Environmental Studies), students were made instrumental in planting trees, shrubs and herbs on the three important areas in the college premises exclusively demarcated for this purpose. Also, in association with Ayushya, students have initiated a herbarium at one of the parks inside the campus, which is exclusively for medicinal plants.

Similarly, towards an energy conservation initiative, the institution conducted a green audit at three levels: an energy audit, a water audit, and a biodiversity audit, assisted by the faculty members and students in three different groups. Biodiversity activities under the Green audit project also showcases a model of unity in diversity as each area is owned by students from diverse streams, working together to bring forth a beautiful park or garden as per their set criteria. The biodiversity audit was mainly to identify the species of the trees and plants on the campus. As mentioned, students

were divided into three groups to gather data on species richness, species even and species abundance. As the first step, they were given training in identifying the plants, fruit trees, medicinal plants and vegetable plants. At the next level they received training in naming and numbering the trees and plants in a systematic manner. At the third stage, these bio-parks were entrusted to three different groups of students who took the initiative in planting new saplings and owning them. As a result, the campus is expected to be more bio-rich in the coming years. Before going further in their attempts or initiatives towards biodiversity and environmental preservation, it is important to highlight the meaning and relevance of some of the common terms and terminologies that come as a part of this study.

Objectives of the Study

To study the ecological conservation and promotion of post graduate students in Kerala, the focus is on the student ownership model for conservation and promotion of strong ecological systems. The aim is to explore the possibility of designing a framework to promote consistent and sustainable ecological conservation practices

As a realization of reaching the 50th year of its establishment, the Loyola College of Social Sciences, Thiruvananthapuram, attempted to integrate the environmental concern into almost every aspect of everyday life on the campus through a project titled *One Plant One Student*. It serves to educate the students by identifying themselves as living and contributing beings of this world. It also highlights the growing negligence of the general population about the fragility of our environment and about the need for its careful preservation and governance. There is a popular saying that goes, 'Each one plant one'. The movement towards a deeper commitment to environmental protection through planting new trees and preserving the existing ones, is rapidly increasing all over the world.

"We should judge every scrap of biodiversity as priceless, while we learn to use it and come to understand what it means to humanity" (Wilson, 1992:351)

Evolution and Context

Loyola has always been relentless in encouraging and engaging its students in various environmental activities and the students had gone one step further each year in evolving new ways to enrich the biodiversity of the

campus. For a long time now, the personnel and students have been working together in unison involving themselves in various bio-intensive programmes on the campus. This mindful integrity of Loyolites has been quite evident from its eye-catching heritage of greenery and serenity that has always attracted the attention of many. It has cradled the very growth and evolution of age-old trees singing out the saga of the Loyola reminiscences. Embedded deep in the bark of these trees are the untold stories of the glories and emotions of several generations. The greatest treasures these trees hold is the result of the very sweat and toil of veteran teachers, priests, brothers and students who lived and walked in the garden of Loyola. Education is incomplete without nurturing the pristine nature and Loyolites have always been keen to reveal this.

Year Y2K was a period of "Enlightenment", triggered by the community extension activities that led to the cultivation of Azola as a feeder to cows for enhanced milk production. That farming experiment motivated the student community to understand the life of plants and living beings at large. In the course of time, several similar initiatives popped up consistently. In early 2011, one such bio-intensive programme, The Ayushya 2011, was held featuring various projects including a bio-intensive vegetable garden, mushroom cultivation, naturopathy, and a herbarium. This venture had culminated in a permanent herbarium, adjacent to the statue of ArnosPathiri. The same was later taken up seriously as part of the biodiversity initiative of the college, and preserved by the subsequent student batches 2012, 2013, and 2014. It is at present referred to as the Ayushya-Thanal Garden.

Evolution of an organized and sustainable approach for future generations to carry forward the conservation of plants, exhibited a strong sense of ownership and dedication. This spirit culminated in the idea of the "one student, one plant" programme, an initiative which is still going in full swing.

Recently the college had to undergo a very emotional moment when it witnessed the fall of the great Badam tree at its premises. It was indeed a great loss since there were many memories attached to this tree that had borne witness to many generations of Loyolites. The new batch of students was overwhelmed by the emotional response of the alumni members on Facebook, and re-dedicated to preserve the environmental heritage of the campus.

On every environment day (June 5th), there is a practice of handing over of the plants by the senior batch of students to their juniors as a mark of passing on the responsibility and opportunity of nurturing the plants which they had been caring for so far. The planting of new saplings became another initiative to nourish the *Smritivanam* and the campus foreseeing the needs of future generations.

One Student, One Plant Project: The Concept

In order to inculcate the principle of the value of life, it was decided to plant new saplings of different varieties and assign these plants in the campus at their infant stage to individual students for effective watering, manoeuvring and weeding. This is intended to make the student understand stages of growth such as budding, blooming and fruition. Laying emphasis on different trees and flowering plants all around the campus, a list of plants was made based on a need analysis.

The main building of the college is a large open-centered pentagon surrounded by big trees, lawn and the Chapel and Sutter Hall adjacent to it. At the entrance there is an area promoting the assembly of a good collection of Mahoganies and Teak at one side and a general variety of trees at the other end. Within this area, new plants are planted to anticipating future requirements. The funds are primarily from the biodiversity board and from the college itself.

Methodology

The creation of a sustainable ecosystem for the generations to come and learn social sciences for a period of 24 months with fresh oxygen is the interest behind this study initiated in the year 2013. A sapling planted by a student will be nurtured by the same student for one year and, after marking the growth, it will be handed over to a junior student. Saplings of fruit yielding varieties, with proper manoeuvring and watering may bear fruit in about five to eight years. With proper orientation, students have shown real enthusiasm anticipating their return to a much greener and rich campus, where trees will be remembered by their names to claim the growth. Loyola has embarked upon this innovative environmental project, wherein the students are initially divided into groups and made instrumental in planting trees, shrubs and herbs at the three important parks namely Daya Park, Violet Bouquet and Thanal on the college premises. The new eco-model

of 'One plant, one student,' envisages that each student is responsible for planting and nurturing a plant for one whole year. Every year, the first year batch of students, as they complete their 2nd semester will be grouped into three and assigned to the three plots identified on the campus, subject to the availability of identified plants. There is a plant assignment log comprised of plant name, scientific name and common name, indicating the place occupied by the plant in the plot as maintained by the college (Biodiversity Coordinator or the NSS Programme Officer).

Table No. 1. Rotary grouping and assigning of students

Name of the Plant Assigned	*Scientific Name*	*Name in Malayalam*	*Student Id*
Daya Park			
Guava	*Psidiumguajava*	Pera	SW 1
Jack Tree	*Artocarpusintegrifolia*	Plavu	SW 2
Canistel	*Pouteriacampechiana*	muttapazham	SW 3
European Gooseberry	*Ribusgrossularia*	SeemaNelli	SW 4
Custard Apple	*Annonasquamosae*	Seethapazham	SW 5
Gamboge Tree	*Garciniacambogia*	Kudampuli	SW 6
Chicle	*AchrasZapotalinn*	Sapota tree	SW 7
Pista	*Pistaciavera*	Pista	SW 8
Devadaru	*Polyalthialongifolia*	Aranamaram	SW 9
Star Apple	*Chrysophyllumcainitoverigata*	Nakshathranelli	SW 10
Thailand Rose apple	*Eugenia javanica*	Chamba	SW 11
Milk fruit	*Chrysophyllumcainito*	Milk fruit	SW 12
Asoka Tree	*Saracaasoca*	Ashokam	SW 13
Thorny bamboo	*Bambusaarundinaceae*	Illimula	SW 14
Indian laurel fig	*Ficusnitida*	Atthi	SW 15
Cinnamon	*Cinnamomumzeylanicum*	Karuvapattamaram	SW 16
Neem tree	*Azadirachtaindica*	Aaryaveppu	SW 17
Indian Mulberry	*Morindacitrifolia*	Noni	SW 18
White Sandalwood	*Siriummyrtifolium*	Chandhanam	SW 19
Sweet Cherry	*Prunusavium*	Cherry	SW 20
Teak	*Tectonagrandis*	Teak	SW 21
Sapodilla	*Sapotaachras*	Sapotamaram	SW 22
Malabar Kino	*Pterocarpusmarsupium*	Venga	SW 23
Tamarind	*Tamarindusindica*	Pulimararm	SW 24
Humboldtia	*Humboldtiavahliana*	Kara	SW 25
Violet Bouquet			
Star fruit	*Averrohacarambola*	Anapulinchi	HR 1
Cassia biflora	*Cassia biflora*	Konna	HR 2
Kris Plant	*AlocasiaAmazonica*	Alocasia	HR 3
Dinner plate aralia	*Aralia balfouriana*	Aralia	HR 4
Snowflake	*Hibiscus rosa-sinensis*	Chemparathi	HR 5

Yellow bell flower	*Allamandacathartica*	Kolambi	HR 6
Ixora	*Ixoracoccinea*	Thetty/chetti	HR 7
Guava (1)	*Psidiumguajava*	Pera	HR 8
Guava (2)	*Psidiumguajava*	Pera	HR 9
Neem (1)	*Azadirachtaindica*	Veppumaram	HR 10
Narrow leaved bottlebrush	*Callistemon linearis*	Bottlebrush	HR 11
Thorny bamboo	*Bambusaarundinaceae*	Illimula	HR 12
Custard Apple	*Annonasquamosae*	Seethapazham	HR 13
Graviola	*Annonamuricata*	Mullathi	HR 14
White emetic nut	*Gardenia gummifera*	Gandharaja	Co 1
Cassia biflora (2)	*Cassia biflora*	Konna	Co 2
White emetic nut	*Gardenia gummifera*	Gandharaja	Co 3
Torch Ginger	*Etlingeraelatior*	Pambukolli	Co 4
White Spider lily	*Hymenocalliscaribea*	White lily	Co 5
Croton plant	*Codiaeumvariegatumpictum*	Croton	Co 6
Crape Jasmine (2)	*Tabernaemontanadivaricata*	Kurudipala	Co 7
Jatropha	*JatrophaCurcas*	Kadalavanakku	Co 8
Mussaenda	*Mussaendaerythrophylla*	Mussaenda	Co 9
Annatto (2)	*Bixaorellana*	Chenchayamaram	Co 10
Thanal			
Mosaic plant	*Fittoniaverschaffeltii*	Nerve plant	So 1
Yellow bell flower	*Allamandacathartica*	Kolambi	So 2
Anthurium	*Anthuriumandraeanum*	Anthurium	So 3
Coral bush	*Jetrophamultifida*	Karukolpatta	So 4
Snakegrass	*Beloperoneplumbagiofolia*	Vishapachha	So 5
Indian borage	*Plectranthusambionicus*	Panikoorka	So 6
Papanasini	*Heigraphis coloratura*	Murukutti	So 7
Black vasu	*Justiciagendarussaburm*	Vathamkolli	So 8
Aarogyapacha	*Trichopuszeylanicus*	Aarogyapacha	So 9
Garland flower	*Hedychiumcoroparium*	Kalyanasauganthikam	So 10
Indian telegraph plant	*Codariocalyxmotorius*	Thozhukanni	So 11
Aromatic Ginger	*Kaempferiagalanga Linn.*	Kacholam	So 12
Elephants foot	*Elephantopusscaber Linn.*	Anachuvadi	So 13
The greater galangal	*Alpiniacalcaratarox*	Chittaratha	So 14
Arrow root	*Marantaarundinacea*	Koova	So 15
Bengal pepper	*Piper longum*	Thippali	So 16
Asparagus	*Asparagusracemosus*	Sathavari	So 17
Jimson weed	*Daturastramonium*	Ummam	So 18
Garden lavender	*Sphaeranthusamaranthoides*	Keshavardhini	So 19
Vetiveria	*Vetiverzizaniodes*	Ramacham	So 20
Malabar nut	*Adhathodabeddomeiclarke*	Aadalodakam	So 21
Nerium	*Nerium oleander*	Arali	So 22
Mango	*Manjiferaindica*	Maavu	So 23
Guava	*Psidiumguajava*	Pera	So 24
Devil’s backbone	*Cissusquadrangularis*	Asthisamharaka	So 25

Management as a System for Environmental Preservation: One Student, One Plant

Every student stands accountable for the well-being of the respective plant they have been assigned. Every year there are additions in terms of new plants and saplings of trees for this purpose. After the individual allotment of each plant, the remaining old ones are also taken care of by each group as a part of their group responsibility. The present second year batch of students have planted new saplings and at the same time is responsible for nurturing the old ones as entrusted to them by their seniors. In the subsequent year, it is their turn to pass it on to their juniors with all the necessary instructions.

This project strives to make every student responsible for the part of nature they are taking care of. It aims to nurture a symbiotic bonding with Nature, and for the care and protection of the biodiversity of our campus. It also paves the way for a combined effort, sense of belonging and group cohesiveness among the students and teachers from different departments as they work together towards a common purpose.

The institution also conducted a green audit at three levels: energy audit, water audit, and biodiversity audit assisted by the faculty members and the students in three different groups. Biodiversity activities, as mentioned above, showcase a model of unity in diversity as each area is owned by students from diverse streams.

The biodiversity audit was mainly to identify the species of trees and plants on the campus. As indicated, the students were divided into three groups to gather data on species richness, species even and species abundance. As the first step they were given training in identifying the plants, fruit trees, medicinal plants and vegetable plants. At the next level they received training in naming and numbering the trees and plants in a systematic manner. At the third stage, these bio-parks were entrusted to three different groups of students who took the initiative in planting new saplings and owning them. As a result, the campus is expected to be more bio-rich in coming years.

Conclusion

"One touch of nature makes the whole world kin" (Shakespeare).

The task of environment protection is the universal responsibility of all of us. It is extremely important to note that only a foolproof modality and systematic approach will fetch the desired outcome in the direction of

sustainable ecology. Keen interest in the cause of environmental protection needs to be generated within the academic curriculum and institutional framework. A sustainable ecosystem may emerge for future generations to exist on the planet earth, with the systemic change in interventions as presented in this paper is introduced. Our inquiry into the basics of awareness-building as well as hands-on training imparted by an academic institution forms strong proof in this direction. This conceptual frame work evolved from the old saying 'Each one, Plant one". This suitably adopted and visualised in such a fashion means that the present-day student community can come back to campus with their children and share their pride by showing the trees they have nurtured. Students therefore will truly form part of the stakeholders of academic activism. To implement this ideal in action by planting new saplings of trees is meticulously planned, charted out, student lists were prepared with plants assigned and published. It is a way of making an important gesture to the world in demonstrating the global concern of academia and at the same time making our own small but significant contribution to the cause.

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