



A STUDY ON ENVIRONMENTAL AWARENESS FOR SUSTAINABLE DEVELOPMENT IN IDUKKI DISTRICT

Minor-Project

Report



Department of Economics

Marian College Kuttikkanam (Autonomous)

Kuttikkanam P.O. Peermade,

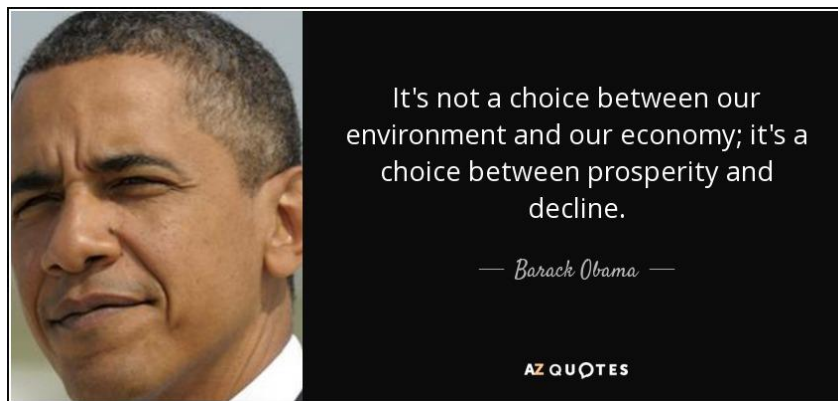
Idukki, Kerala, India - 685531

Minor Project Report

A STUDY ON ENVIRONMENTAL AWARENESS FOR SUSTAINABLE DEVELOPMENT IN IDUKKI DISTRICT

Department of Economics,
Marian College Kuttikkanam (Autonomous)

(A project undertaken by the Applied Economics Faculty members)



Project Team

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Manager's Message



I am happy that the Department of Economics has found time to do a project on 'A Study of Environmental awareness for Sustainable Development in Idukki District'. This is a topic very relevant to the Idukki District. The Director and faculty members with the cooperation from students have really succeeded in having the first step of creating environmental awareness in the people of Idukki district. When the whole world is fighting against environmental problems and trying to attain sustainable development, this effort of Economics department to create environmental awareness is highly appreciated. I wish them all the best in their future endeavors.

Fr James Kozhimala

Principal's Message



We all know that Sustainable development is the modern slogan accepted by the majority of countries all over the world. India is no exception to this general trend. Kerala is also not lagging behind in the efforts to attain Sustainable development. As Idukki district is ecologically a very fragile area, any effort to create environmental awareness is welcome.

The Department of Economics, which has completed a minor project on the topic 'A study on Environmental Awareness for Sustainable Development in Idukki District' has done a commendable academic contribution during the corona days. I wish them all the best in their efforts to make the minds of Idukki people 'green'.

Dr. Roy Abraham P

Table of Content

Sl No.	Title	Page No.
1	Background	1
2	Idukki District	8
3	From Text to Context Approach	12
4	Objectives of the Project	13
5	Research Methodology	13
6	Expected Outcome of the Project	14
7	The Survey Analysis	14
8	Findings and Post Project programmes	24
9	Project Personnel	27
10	Timeline	35

A Study on ENVIRONMENTAL AWARENESS IN IDUKKI DISTRICT

Background

The COVID-19 pandemic actually helped us to witness the very close relationship between environment and development. As a result of the shrinking of forests, the contact of humans with wildlife has increased extensively. Consequently, interaction between the wild and the domestic varieties increased, resulting in high incidence of zoonotic pathogens of wild origin. If environment is not protected, not kept clean and if human intervention is very strong, the health of the planet is disturbed, which in turn destroys the health of individuals and society. This will adversely affect the health of the economies also.

There is an **Eco System Services Index** introduced by the Swiss Ray Institute in 2020. It found that globally 20% of the countries, including India, have fragile ecosystems. It also states that 55% of global GDP depends on high functioning biodiversity and ecosystem services.

“Globally the GDP is expected to contract 2.4% to 8% in 2020. The World Economic Forum (WEF), estimates that the global cost of dealing with the Corona pandemic could be from \$ 8.1 trillion to \$15.8 trillion” (The Hindu, 04/02/2021).

The Global Risk Report (2021) published by the World Economic Forum (WEF), warns about the continuous environmental risks that threaten the global economy. All these facts are indicators of the need for a change in the mindset of policy makers towards ‘sustainable, equitable, inclusive and just development models.

No nation can stand separate from the global efforts to integrate the process of economic development by incorporating environmental considerations in economic decision making. Incorporating environmental considerations in economic decision making is the essence of Sustainable development. It is a multi-disciplinary concept introduced by the World Commission on Environment and Development (WCED) in 1987, which is defined as the **“development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs”**.

Environmental Awareness

Green Governance and Policies by the administration, Green Growth Initiatives (GGI) by the government, developing Green Technologies by scientists, along with creating Green Awareness among the people by educationists are the measures that help nations attain the objectives of

Sustainable development. Environmental education has been accepted as an important tool in the path towards sustainable development.

The Belgrade Charter – ‘A Global Framework for Environmental Education’ (1974), the Tbilisi Conference, The WCED initiatives, the Earth Summit in 1992, the Millennium Development Goals and the Sustainable Development Goals (SDGs) have clearly stated the role of environmental awareness through environmental education for keeping the balance of nature and paces of development. Since awareness determine actions, environmental education is a pre-condition for sustainable development. The world has 1.8 billion youth (between the age group 10 and 24), of whom 90% live in less-developed and developing countries. Hence spreading environmental awareness through formal education is very important and is a very important step towards Sustainable Development in these countries.

There is growing international recognition of Education for Sustainable Development (ESD) as an integral element of quality education and a key enabler for sustainable development. The Sustainable Development Goals (SDGs) adopted by the global community for the period between 2015 and 2030 include ESD. Target 4.7 of SDG 4 on education addresses ESD and related approaches such as Global Citizenship Education. UNESCO is responsible for the coordination of the Global Action Programme (GAP) on ESD.

Indian efforts for Sustainable development

India is one of the 12 hotspots of biodiversity in the world. India gives high priority to the 2030 Agenda for Sustainable development, which was unanimously adopted by the UN in 2015. There are policies and programmes which show the strong commitment of the nation for the holistic implementation of 17 SDGs. SDGs are comprehensive and focus on 5 Ps – Planet, People, Peace, Partnership and Prosperity. The NITI Aayog has been instrumental in implementing the SDGs in India. (India and SDGs: The way Forward. Prepared by Research and Information System for Developing Countries – 2016).

Also, there are extensive measures to localize SDGs and incorporate them into the development priorities of all states and Union Territories. “Indian businesses have begun to adopt the ‘Triple Bottom Line’ that gives equal weight to financial, social and environmental targets in attaining pre – defined ‘corporate objectives’. India’s civil society organizations, which are viewed as development partners by the government have been making invaluable contribution through information, education and by spreading awareness about the frame work. Thus a ‘whole society’ approach has been adopted with local variation in setting priorities for achieving 2030 Agenda. (India Voluntary National Review (VNR), NITI AYOOG – 2020)

Kerala Model for Sustainable development

Kerala is a state with high density of population. It has a unique geographical feature with lush green vegetations, deep blue sea with white sandy beaches and 41 rivers flowing from East to West and 3 rivers from West to East, across the state. Back waters and beautiful hill stations with wild bio diversity and waterfalls make it much sought-after tourist destination. It is also one of India's cleanest and most beautiful states.

Eco system Threats in Kerala

The state of Kerala is very rich in bio diversity. The three geographical divisions – high lands, midland and sea coast – occupy an important place in the ecological map of India. The highest peak in South India, Anamudi is in Kerala. It has a very rich but fragile eco system. The hilly terrains that form the part of the Western Ghats is older than the Himalayas. All the 44 rivers of Kerala are facing threat due to deforestation, landslides and sand mining. The mid land is being threatened by quarries and paddy field filling and loss of water bodies and mangroves eco system. Coastal erosion, ground water depletion, noise pollution, plastic pollution, pesticide pollution, soil degradation and climate change are some of the grave environmental problems that the state faces. Idukki and Wayanad deserve special attention in Kerala, since these two districts are ecologically very fragile. Socially and economically also these districts are important due to the presence of tribal population and production of spices.

Idukki District

Idukki is the second largest district in the state. The word Idukki comes from the Malayalam word, 'Idukku', meaning narrow gorge. Density of population as per 2011 census is 251/ sq. km. Hindus make up 46.76%, Christians 45.92% and Muslim 7.32%. There are 52 grama panchayats, 8 block panchayats, and 16 district panchayat divisions in Idukki, in addition to 2 Municipalities. As a hilly region with the highest altitude, Idukki district also has many ecological and environmental threats.



Among the districts of Kerala, Idukki is found to be having largest area under natural forest with 3150.65 Sq. Km, which is 72.33% of its geographic area.(Google search, Updated on 30th Dec. 2019)

Over the past six decades, the region has been affected by land-slides in 1919, 1918, 2005, 1997,1989,1987 and 1958. Just before the land slide in 2018, Idukki received 200 mm rainfall in 24 hours. There is a positive correlation between human settlement and increasing natural calamities. Both the Gadgil and Kasturirangan Reports* (see appendix) warned about the dangers awaiting Idukki district. Out of the 123 villages identified as the most vulnerable in the Western Ghats, 48 were in Idukki district. The Gadgil report released in 2011, classified most parts of Idukki and Wayanad districts as category 1 under Eco Sensitive Zones. In other words, no change in land use pattern was allowed (Article by Ipsita Chakravarty, Aug 15, 2020, in scroll.in).




Paniyarkutty landslide



Pettymudi landslide

DRIVEN TO SUICIDE



- Varikanikal James (52) of Chinnar Adivaram was found hanging in a teak plantation at Perinchamkutty on Tuesday morning
- James had availed loans from banks and individuals. A week ago, he received a notice from a bank's Adimali branch
- He had been engaged in farming for the past 30 years
- His pepper vines were destroyed in the floods, and he failed to repay the loan

SINCE JANUARY

January 2 Santosh (37) of Mengiri found dead in his farmland	February 8 Kottakkallil Raju (50) of Anaviratti in Adimali found hanging from a cocoa tree in his farmland
January 28 Kunnumpurathu Sahadevan (68) of Vathikkudy commits suicide	February 16 Perinchamkutty resident Nakkarayil Sreekumar (59) ends his life
February 7 Cheruthoni resident Nellippuzayil Johny Mathai (58) ends life by consuming poison	February 25 Kunmath Surendran (67) of Adimali dies after consuming poison

Source: <https://www.onmanorama.com/news/india/2019/04/11/gadgil-idukki-kasturi-farmers-suicides-kerala.html>

A report by Ayyappan in Manorama on line (April 11,2019) discusses about the farmer's suicide due to debt and agriculture failure, as one of the issues of Parliament election contest in 2019. Official figures show that 1.25 lakh farmers in Idukki are burdened by debt. Over 10,000 received attachment notices from banks. All these were due to failures in cultivation which in its turn was caused by climate changes and challenges.

The Western Ghats ecology Expert Panel (WGEEP) report known as Gadgil Report, has branded nearly 25000 sq.km of the total geographic area of the state as Ecologically Sensitive Zones (ESZ) in 2011. The entire taluks of Thodupuzha, Udumpanchola, Devikulam and Peermedu were included in ESZ -I. In 2013, the Kasthurirangan Report reduced the ESZ area to 13000 sq.km.



The Pamba River, which was in a spate during the days of flood, is getting dried up and its water level has decreased abnormally. A view of the river from Vazhakkunnam, Cherukol.

Source: <https://www.onmanorama.com/kerala/top-news/2018/09/12/post-flood-drying-up-rivers-study.html...>



A new Indian Institute of Science's (Banguluru) study, on 'Four Decades of Forest loss: Drought in Kerala', using remote sensing data says that between 1973 and 2016, Kerala lost 9064 sq.km of forest land. This is more than 50% of the present forest area. Kerala's rainfall depends on Western Ghats. Massive urbanization has occurred in the state in the high ranges. As a result, Kerala has diverted 50% of its forest area for other purposes since 1973. This is really a crisis. Urbanization

led to the loss of trees which in its turn reduced the storage capacity of the dams by 22% compared to 2015. A report by Nidhin in 'Mint' on 15th May 2017 says that after the tragedy of landslides, when summer approaches, acute water shortage in some parts pose another threat to the life of the people in Idukki district. Almost all 9 rivers* (See appendix) of the district are drying up fully in summer.



Water shortage in Thekkady Lake. Photo by Rahana Habeeb.

All these problems of Idukki district pose threat to the Sustainable development programmes. In order to be successful, any programme should be preceded by the awareness generation among the people. It is through education in general, and Environmental education in particular that the protection of environment and promotion of development are attained in a region. An educational institution is the right one to know the level of environmental awareness among the people in their locality. It is this awareness that motivates the mind and promotes programmes of Sustainable development. Hence the Economics department of Marian college, with its faculty members and selected students undertook this project, as part of their holistic vision and integrated approach, to fulfill ecological responsibility, to probe economic possibility and realize social commitment.

This study project is the result of the concern of an academic department committed to the cause of protecting the environment, while promoting development. The stakeholders of the Department of Economics had already embarked on the process of realizing the theme of **Sustainable development** as its core area of academic extension activity, aligning with the institutional vision and mission. As Idukki district is environmentally fragile, economically backward and socially marginalized, the intervention of the academic community is inevitable for the all-round development. Hence the department decided to have a preliminary project before probing more into the crux of problems and suggesting solutions. Thus first, the level of environmental awareness in the people, was selected for study, in the march towards sustainable development in the district.

Marian College Kuttikkanam (Autonomous)

Marian College Kuttikkanam which is situated in the heart of the high ranges of Kerala is an autonomous higher education institution, with a distinguished green academic responsibility as it is in the most ecologically fragile regions of India. As a mark of its 25 years of existence in the academic field and fulfilling its 'green' responsibility towards the community in this region, the college has incorporated sustainable development as a central theme of its vision and mission.

Department of Economics and Centre for Sustainable and Inclusive Development (CSID)

The above Vision and Mission of the college are being fulfilled by undertaking research studies and projects in different departments on an interdisciplinary basis. Dept of Applied Economics and Centre for Sustainable and Inclusive Development envisage research works and projects to promote sustainable lifestyle, sustainable development and sustainable consumption. As an academic institution, prime importance is being given to creation and generation of 'green' awareness as the first step towards sustainability objectives. Sustainability Ambassador Programme (SAP) aims to disseminate information and knowledge regarding the aspects of ESD among the youth and general public.

From Text to Context Approach

The formal as well as informal education that is available to the people determines the welfare of that society. Awareness about environment through environmental education can help solve a lot of environmental problems.

Awareness about environment guides the attitude of an individual both in the feeling and thinking aspects of a person. Information of the significance of environment, knowledge about environmental crisis and wisdom for the solution of that crisis are to be supplied by the education of environment. Real education is not the amount of information that is put into brain and runs riot there. Communion with nature is an important part of real education.

This is the final report of the minor project conducted by the department of Economics in association with the Centre for Sustainable and Inclusive development (CSID), Marian College, Kuttikkanam. As part of the Eco – Economic and Social responsibility of the faculty members and students to this backward hilly district. The department visualizes the formation of future Sustainability Ambassadors. This helps the protection of the fragile environment of Idukki district, through which social and economic sustainability also could be assured to the people.

Objectives of the Project

General:

1. To know the general environmental awareness of the people in Idukki district.
2. To understand the idea of development in the minds of people
3. To understand how far the people of Idukki district are familiar with the concept of Sustainable Development.

Specific:

4. To identify environmental problems as experienced by the people in the order of their intensity
5. To know the people's awareness about government policies for promoting sustainable development.
6. To know whether any household practices are continued for the protection of environment.
7. To inculcate among school and college students 'Greening Young Minds' programmes for achieving the SDGs.

Research Methodology

Project Study Area: -The five taluks of Idukki district is the area of study.



Project Study Approach: - A sample survey method based on questionnaire to measure the awareness level of the youth and public.

Project Study Method: -

Method of study is empirical, analytical, interactive and descriptive.

Project Study Period:-

The study began in December 2019 and was concluded in February 2021.

Expected Outcome of the Project

Generation of environmental awareness and sharing along with creation of information, knowledge and wisdom about the interrelation ship between environment and development will result in the enhancing of green capacity building of the people of Idukki district. This will ultimately lead to a change in life style and the net outcome is that Idukki district will be in the forefront of eco-friendly districts of the nation.

As ecology and environment along with development is a common area beyond religious and political considerations, an atmosphere of social, religious and political harmony will be created, which is the need of the hour.

The Survey Analysis

A survey method was used comprising of objective type questions and brief descriptive ones. Ninety-five families constituted the population for the survey. The survey covered all the Taluks of Idukki district. The response rate was 100%. The purpose of the questionnaire was to find out the level of awareness about environmental problems in Idukki district. Questions to know their level of awareness about sustainable development was also included. After collecting the basic information about the families, the following details were collected.

Challenges faced by respondents:

Challenges facing	Score
Financial	512
Religious	73
Environmental	288
Physical	346
Mental	123
Family problems	170
Political	126

Table 1: Challenges faced Source: Primary data

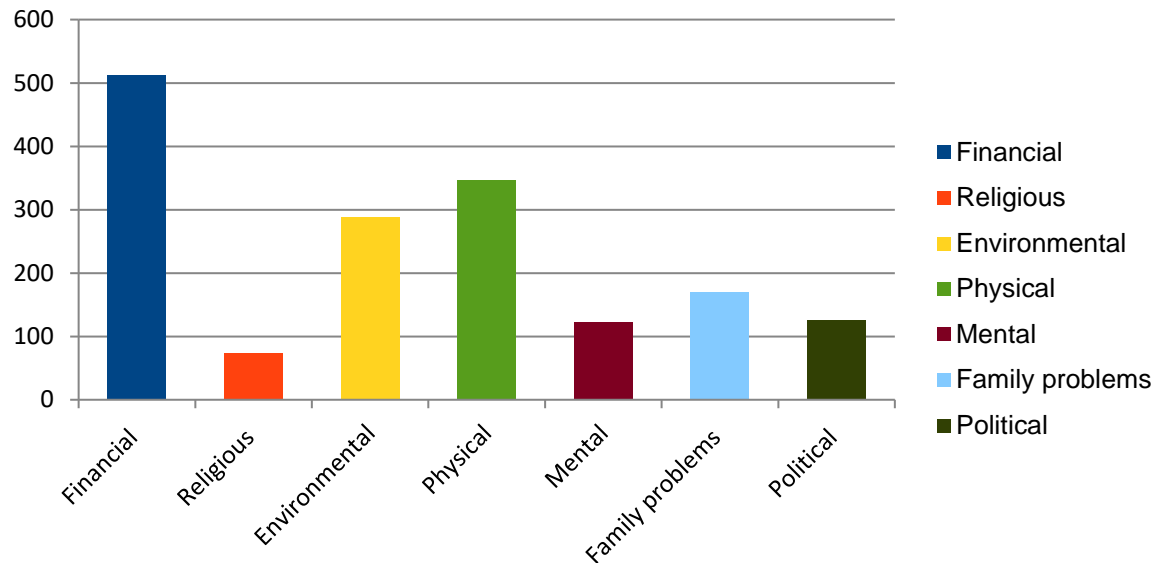


Figure 1: Challenges faced by respondents

Source: Primary data

Score was given to each answer on a seven-point scale in an ascending order according to the seriousness. Most crucial factor was given the score 7. Many of the respondents are facing financial challenges as it got a score of 512. Therefore, least score is 73, it shows people has only less concern about their religion as they are facing less challenge on their religious component

General problems faced by the respondents:

The general problems faced by the people in the district are Climate change and its impacts like flood and drought, water pollution, air pollution, soil degradation, deforestation, attack by wild animals, plastic pollution, sand mining, land sliding, land filling etc.

environmental issues faced by	Score
Soil erosion and nutrient degradation	179
Deforestation	104
Water pollution and scarcity	271
Air Pollution	159
Climatic Changes(Drought,Flood)	297

Source: Primary data

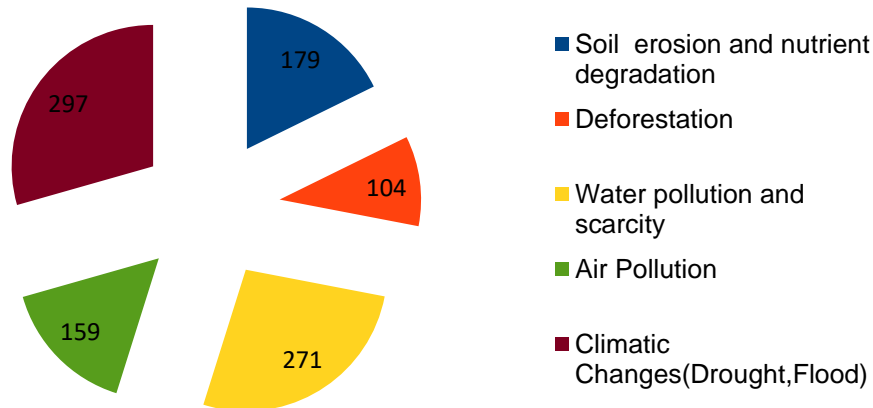


Figure 2: General Environmental problems faced

Source: Primary data

The raw data collected were compiled by giving scores to each problem mentioned in a five-point scale. The final inference is based on the overall score that each component got. Among the environmental problems faced by the inhabitants of Idukki, Climate change and its impacts were considered as the most important one by the people. Water pollution and scarcity was considered as the second important problem, followed by soil erosion and depletion, then air pollution and last only deforestation.

Causes of Environmental issues:

Nature	4
Nature and human	37
Human only	36
All the above	18
Don't know	0
Total	95

Source: Primary data

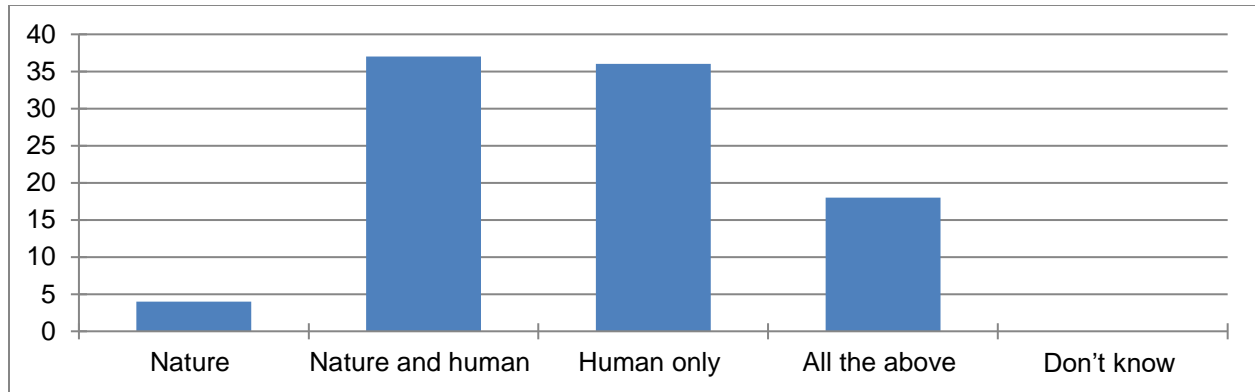


Figure 3: Causes of environmental issues

Source: Primary data

Out of the 95 families, 37 believe that Nature and human beings combined caused environmental problems. 36 are of the opinion that humans alone constitute the problem. Only 4 are of the opinion that nature alone is the cause and 18 say that all the factors constitute the problems.

Are environmental problems hindering development?

<i>yes</i>	<i>79</i>
<i>No</i>	<i>15</i>
<i>Don't know</i>	<i>1</i>
<i>Total</i>	<i>95</i>

Source: Primary data

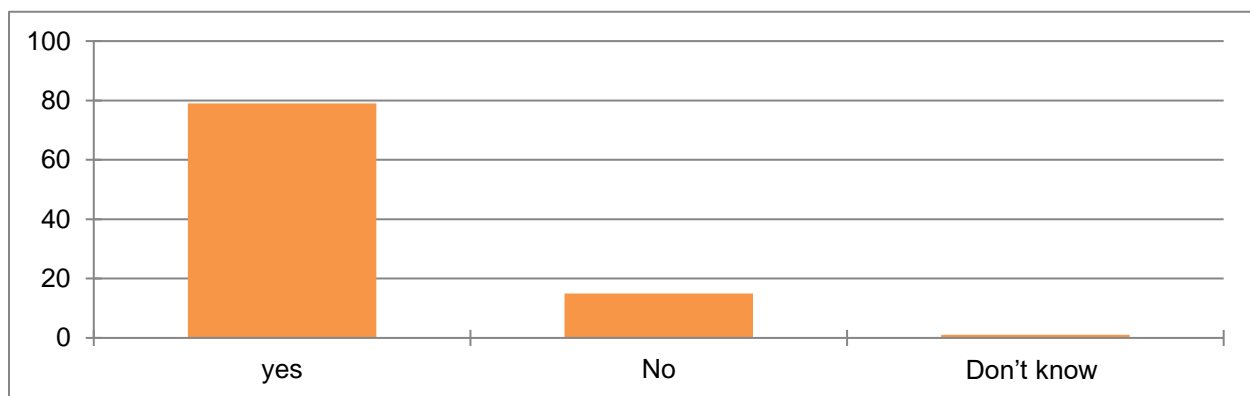


Figure 4: Are environmental problems hindering development?

Source: primary data

Seventy-nine answered 'Yes' and 15 answered 'No'. 'Don't know' came from only one.

Protection of environment:

Some protection	9.473684	9
More protection	50.52632	48
No protection	2.105263	2
Protect full	37.89474	36
total	100%	95

Source: Primary data

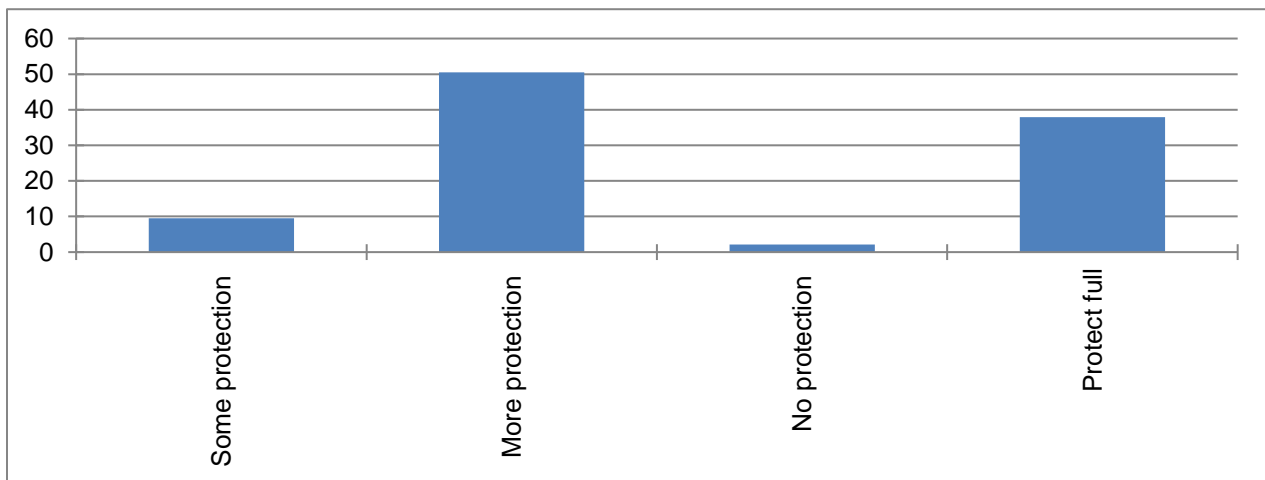


Figure 5: Protection to environment

Source: Primary data

Thirty-six respondents believe that full protection of environment is needed for development. 48 supported more protection than the present schemes, 9 opined for some protection and 2 stood for no protection.

Connection between environment and Development:

No relation	4	4.210526
High relation	49	51.57895
Some relation	30	31.57895
I don't know	12	12.63158
Total	95	100

Source: Primary data

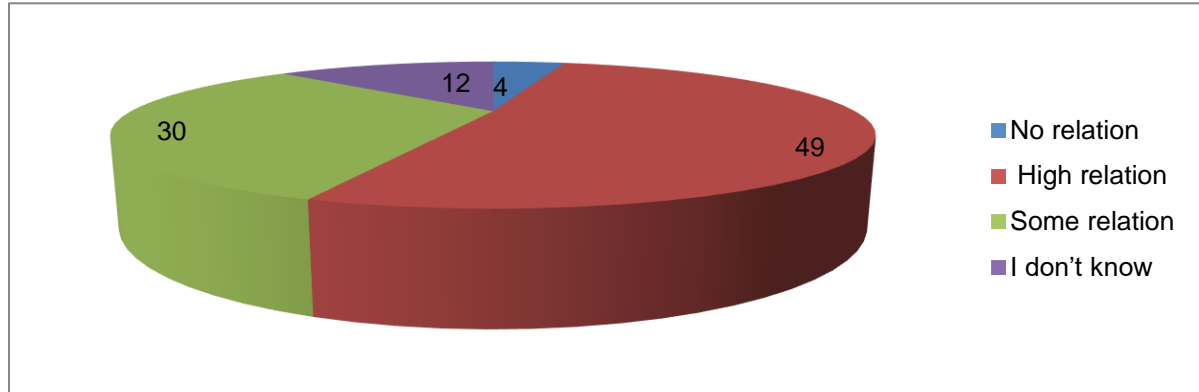


Figure 6: Connection between environment and Development

Source: Primary data

Regarding the connection between environment and development, 49 believed that there is strong connection, 30 believed that there is some connection and 12 don't know and 4 said there is no connection at all.

The below figure explains how people have got idea/information regarding the need of protecting the environment and development. Most of the information about this connection came from friends and peer groups, then through government programmes, followed by formal education. The next important agency is the NGOs, then from own home and lastly from religious institutions.

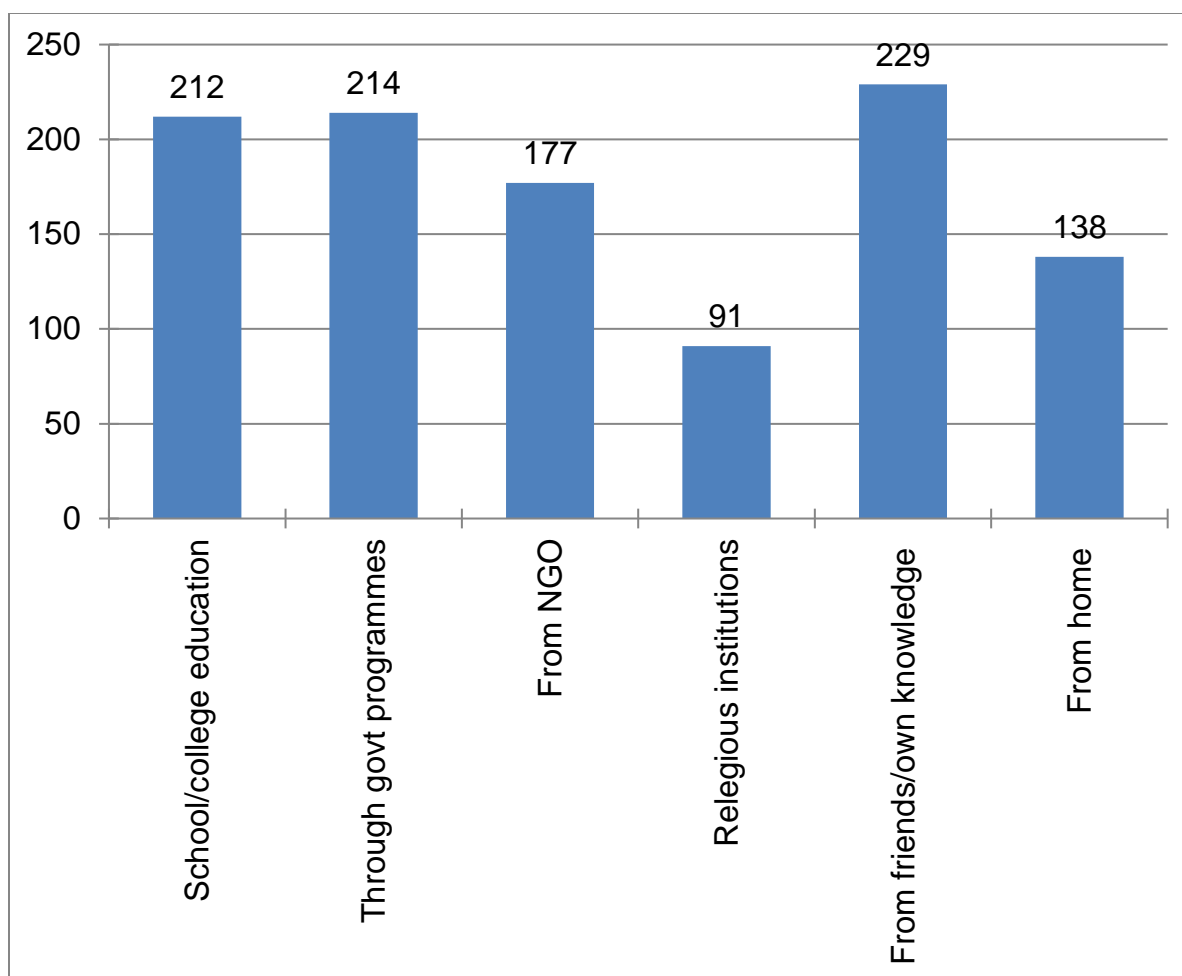


Figure 7: Information gathered

Source: Primary data

Familiarity with regard to the idea of Sustainable Development:

Response	Percentage	No. of respondents
Yes	41.05263	39
No	58.94737	56
	100	95

Source: Primary data

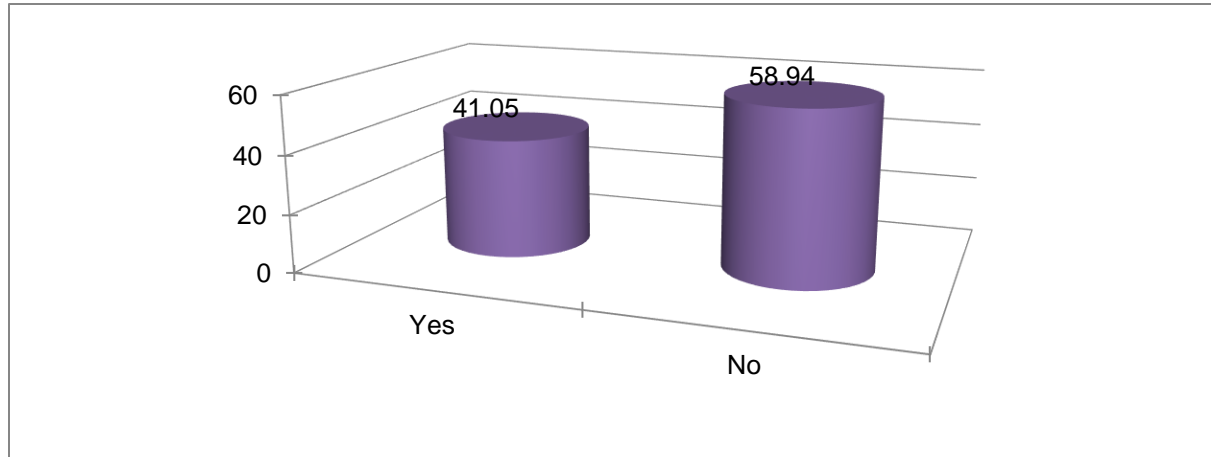


Figure 8: Familiarity

Source: Primary data

Thirty-nine respondents are familiar with the idea of sustainable development and 56 are not familiar.

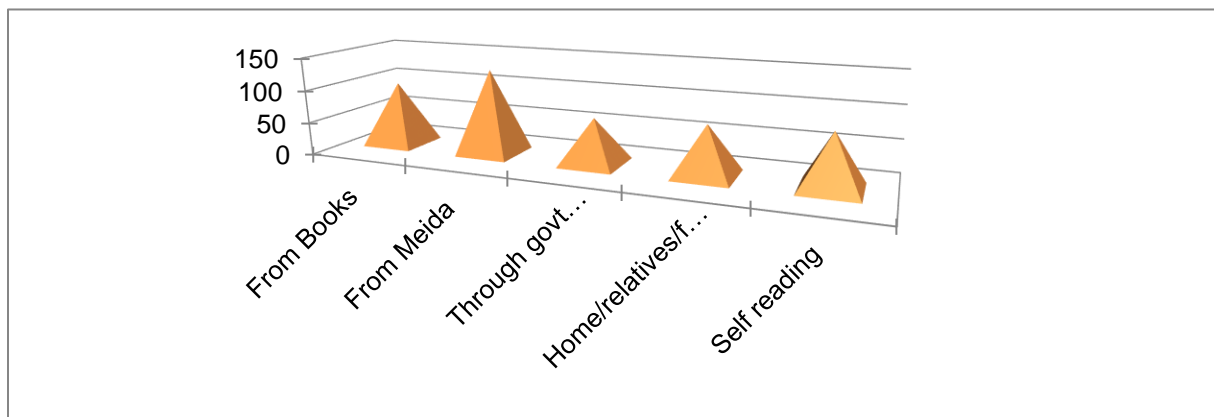


Figure 9: Sources of familiarization

Source: Primary Data

Media has the first position in the familiarization of sustainable development followed by books, relatives and friends and last government programmes (Figure 9).

Response	No. of respondents
Importance goes to environment rather than development	5
Importance to development rather than environment	1
Equal importance to development and environment	36
Importance to human	4
Importance to animal	2
Don't know	47
Total	95

Source: Primary Data

Regarding knowledge of sustainable development, 47 respondents don't know. 36 give equal importance to environment and development. 5 give more importance to environment and 4 give more importance to human beings. 2 respondents gave importance to animals and 1 gave more importance to development over environment.

No respondent was able to know the objectives of sustainable development.

Awareness regarding the implementing agencies of SDGs¹:

Particulars	No.of response
UNDO	6
UNEO	12
UNGA	9
WHO	6
Don't Know	62
Total	95

Source: Primary data

¹ Sustainable Development Goals

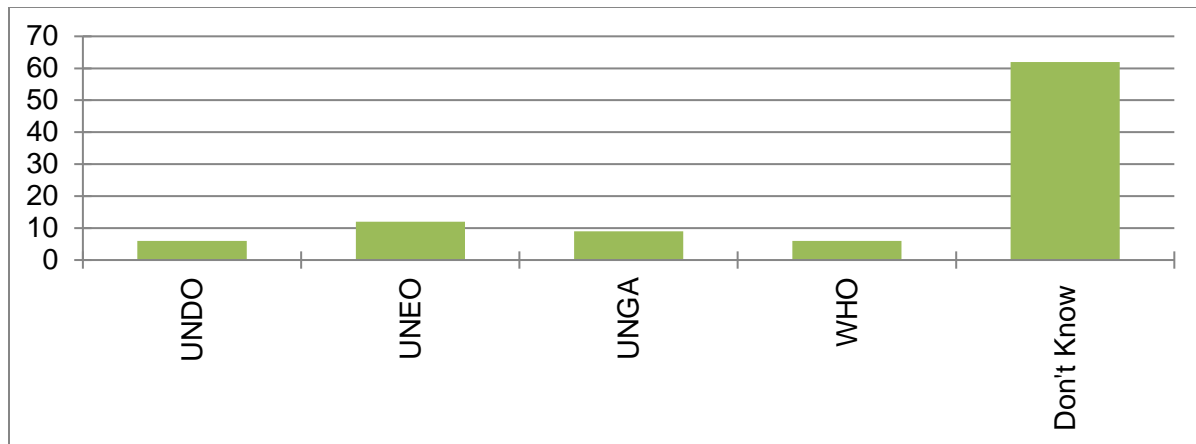


Figure 10: Agencies

Source: Primary Data

Majority of the respondents (62) don't know about the implementing agency of sustainable development. Nobody was aware of the WCED or its report 'Our common Future'. They are also not aware of any Sustainable development projects implemented at the Panchayat level. Also, nobody was aware of any NGO working for Sustainable development in their Panchayat.

Response	Percentage	No-of respondents
Yes	16.84211	16
No	83.15789	79

Source: Primary data

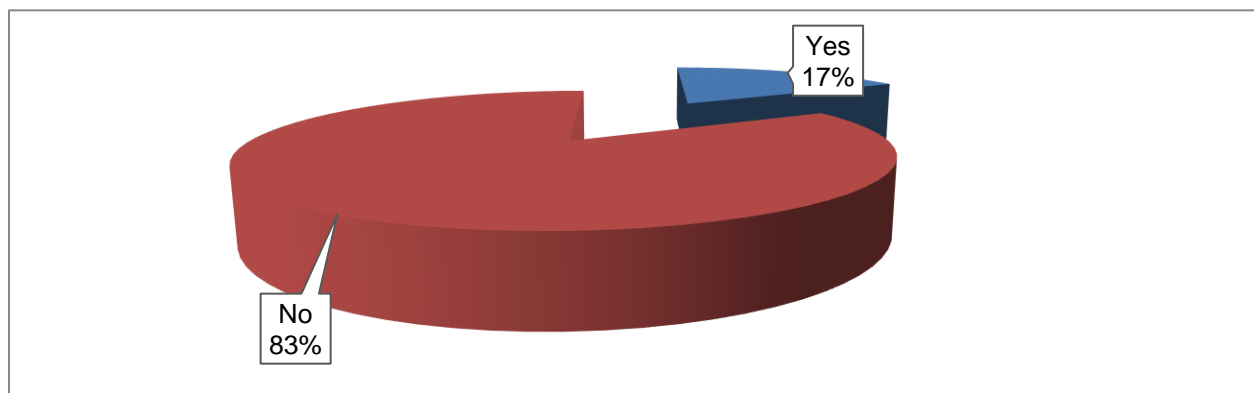


Figure 11: Interest in SDG by the political parties

Source: primary data

Seventy-nine respondents answered that political parties show no interest in SD programmes and only 16 believed that politicians have some interest and role.

Regarding the religious connection with sustainability, 44 respondents believed that Bible contents have some connections with protection of environment and development. 10 respondents believed that Hindu scriptures have some contents and 1 say Khuran is also having some content.

Organic farming	52	54.73684
Solar energy conservation	15	15.78947
Rain water harvesting	32	33.68421
Bio waste treatment plant	28	29.47368
Any other	27	28.42105

Source: Primary Data

Regarding day today activities and sustainable development, the preferences were, first, organic farming, then rain water harvesting, then, bio waste treatment plant, followed by any other and last solar project.

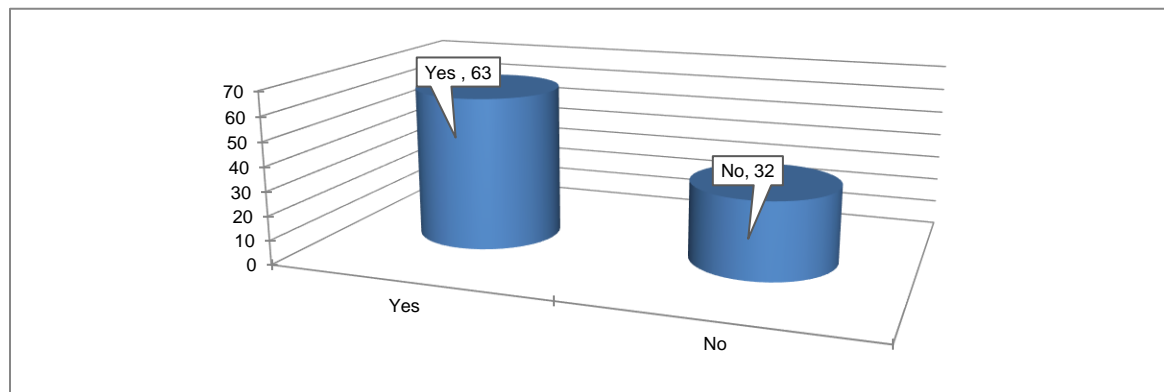


Figure 12: Confidence regarding implementation of SDGs

Source: Primary Data

Sixty-three respondents are confident of implementing Sustainable development programmes and 32 believe that they are impossible. Regarding Environmental Protection Laws, most respondents have heard of solid and including plastics, then Forest Protection Act, then, about Water Conservation Act also about, Air Quality Control. Majority of the respondents are ready to convert

their villages to Centers of Sustainable Development, by changing their life style also towards a sustainable one.

Findings and Post Project programmes

1. The people of Idukki district are facing many serious environmental problems peculiar to a hilly region. They also know that these problems are hindering the development of the region.
2. Therefore, majority of them are willing to support policies and programmes that help protect the environment.
3. But, majority of the people are not so familiar with the origin, growth and relevance of the concept of sustainable development.
4. The people assure support for implementing SD policies
5. Majority are willing to adopt SD life style and change their village to Sustainability centres.

Since the environmental problems faced by Idukki district are of a serious nature, action programmes are to be framed and implemented with immediate effect. The following Programmes are in the pipeline.

1. To help frame the younger generation and the general public to increase their capacity to develop a sustainable life style in an integrated manner.
2. To develop, practice and lead a culture of academic and community linkages for achieving SDGs
3. To regain the knowledge of traditional wisdom and indigenous technology that help sustained development.
4. To spread the information from international scientific research organisations regarding climate change and other problems.
5. Greening the minds of the public is also an associated goal of this programme being carried with the help of the social and community organisations like Kudumbasree, NSS, SNDP and NGOs. Environmental awareness will be shared through classes, discussions and seminars.
6. Associating with the activities of district, Block and Grama Panchayats in their Sustainability programmes is another way to assure sustainable development.

Environmental problems are assuming the proportion of a crisis, where finding solution is becoming very difficult. It is said that prevention is always better than cure. Curative aspects of environmental problems are more costly and time consuming. One of the most important basic methods of preventive aspects to curb and control environmental problems is to generate awareness among the people in general and youth in particular about the causes and consequences of environmental problems. The SAP's (Sustainability Ambassador Programme) GYM (Greening Young Minds) is one such programme intended to create environmental awareness to feel from the bottom of their heart along with thinking from the top of the head. This programme is designed to reach the students from the High school to the higher education level. Hence, Sustainability

Ambassador Programme is basically an Environmental Education programme in which the faculty members and selected students of the Applied Economics Department, become Sustainability Ambassadors with a vision of sustaining the balance of nature by Greening Young Minds programme, through brain storming sessions on all aspects of environment and development.

After getting sufficient information from the basic preparations, these information are disseminated among the High School, Higher Secondary and college students through power point presentations, games, chart presentations and lectures, so that the new generation get cutting edge information and knowledge about the “tipping point” problems of environment and development. This information and knowledge will help students/youth and general public to get the preventive and curative aspects of environmental problems and will certainly help to lay the foundation of the overall sustainable development of Idukki district.

Sustainable Development is the most modern development concept designed by the UN simultaneously for the protection of the environment and promotion of development. The 17 Sustainable Development Goals (SDGs) of UN, to be attained by 2030 at the global and local level is the agenda behind the SAP-GYM project of this department.

This study attempts to understand the interrelationship between environment and development in Idukki district. It is based on both primary and secondary data supplemented by informal discussions, field visits and observations. This is the first step by Marian College, Kuttikkanam (Autonomous) through the Department of Economics, to have a concrete programme of changing Idukki district to a sustainability hub.

Project Personnel

The following faculty members devoted themselves for the proper conduct and completion of the project.

Principal Investigator: Dr. T. V. Muralivallabhan

- * Director, Department of Economics, Marian College (Autonomous)
- Research Guide at Marian Research Centre – Lincoln University College.
- An International Resource Person in the area of Sustainable development, Eco spirituality and Indian culture.
- Subject Expert in Economics and UGC Resource Person and author of many articles and books. Presented more than **250 papers** in various International, National and Regional seminars/ conferences and symposia.
- Former Deputy Director of Distance Education, Mahatma Gandhi University, Kottayam, Kerala. Recipient of the prestigious St. Berchman's Award for the Best College Teacher in Kerala (2010) and Distinguished Achiever Award(2013), Speaker's Special Award (2014), and Grand Achievement Award (2015) from Zoroastrian College, Mumbai.
- Delivered lectures in the World Parliament of Religions in Melbourne, Australia(2009 and Salt Lake City, USA (2015), Canada (2018),World Environmental Education Congress, in Montreal, Canada(2009), Moral economy Project, Canada(2009) and UN Conference on Environmental Education(2005, 2007) in Ahmedabad,India and Monash University seminar, Malaysia.
- As former NCC Officer,he has successfully completed the Kailash – Manasasarovar trekking, organised by the government of India in 2005.
- Director of Holistic Family Management course in Amrita University, Amritapuri, Kollam, Kerala.
- Independent Director of Public Sector Enterprises (MSTC, Kolkata and Chairman of CSR Committee) Government of India.

Project Team:

1. **Ms. Suzanna Oommen**, Assistant Professor, HoD, Department of Economics, Marian College (Autonomous). Research Scholar at Lincoln University College – Mariam Research Centre. MA (Economics) and MBA (Project Management).

Courses/seminars attended recently:

- Basic Research Methodology organised by REST Society for Research International, April 2020.
- Advanced Research Methodology organised by REST Society for Research International, May 2020.
- Innovations and IPR, Department of English, Marian College Kuttikkanam (Autonomous), July 2020
- Online Management Summit ID 2020, United Nations Association for Development and Peace & MIIM, August 2020
- Innovations in Teaching Learning organised by AJCE and MCKA, July 2020
- Rural Development Project Management by Ministry of Rural Development, Govt. of India in June 2020.
- Smart Tools for Teaching and Research, Chandrabhan Sharma College of Arts and Science, Mumbai.
- FDP - Effective Online Teaching by Marian International Institute of Management, July 2020.
- Organised an International Discussion Forum On: Paradigm Change in Education, Opportunities and Challenges for UNAI-ASPIRE MARIAN
- Athijeevanam - Opportunities During the Pandemic by Kerala Forum for United Nations Academic Impact, July 2020.
- Impact of Covid -19 on Food Security and Small-Scale Farmers organised by MIT World Peace University and Marian College Kuttikkanam (Autonomous), June 2020.
- Impact of Covid- 19 on World Economic Environment by MIT World Peace University, Pune in Jun 2020.
- Workshop on Data Analysis using SPSS by SuGyan Academy in September 2020.

2. **Mr. GerilScariaGeorge**: Assistant Professor, Department of Economics, Marian College Kuttikkanam (Autonomous). M A (Economics)

Courses/seminars attended recently:

- National seminar on Importance of ICT integration in Revised NAAC Accreditation Framework (RAF) conducted by Internal Quality Assurance Cell, Marian college Kuttikkanam (Autonomous) 2019.
- International webinar on The Role of E-Learning during Lockdown: Academic Challenges and the Road Ahead conducted by Internal Quality Assurance Cell in collaboration with the Department of Education, Patna Women's College, Autonomous, Patna University, Patna, 2020

- International Webinar on Impact of Covid-19 on World Economic Environment Dhananjayrao Gadgil College of Commerce, Satara June 2020
 - Participated in National seminar on Dimensions of sustainable development organized by the Department of Economics St. Alphonsa College Pala
 - One week National Level Workshop on Basic Econometrics conducted by Department of Economics K N Raj Centre Mahatma Gandhi University Kottayam 2019.
 - Three Days workshop on Effective Teaching and learning Methodology organized by Internal Quality Assurance Cell. Marian College Kuttikkanam, 2019.
 - National workshop on Paradigm shift in Academic Research conducted by Department of Hospitality and management, Marian college Kuttikkanam (Autonomous), Idukki, 2019.
 - Literature Review and citations organised by Department of Economics, Marian College Kuttikkanam (Autonomous).
 - Impact of Covid- 19 on World Economic Environment by MIT World Peace University, Pune in Jun 2020
3. **Ms. Anna Roy:** Assistant Professor, Department of Economics, Marian College Kuttikkanam (Autonomous). M A (Economics), MSW. Research Scholar at Madurai Kamaraj University

Prominent Courses/seminars attended/ papers presented/sessions chaired:

- Internship in Asian Centre for Cross Cultural studies Chennai, India
- MSW internship in international NGO MCDS, Chennai Chennai 2017
- Teaching in Open School of MCDS Chennai 2016
- Participated in Asian Youth Academy and Asian Theology Forum 2016. Thailand 2016
- Participated in Asian Youth Academy and Asian Theology Forum 2015 Philippines 2015
- M.A Economics, Internship on Organic Farming and Direct Marketing in Seoul South Korea 2014
- Exposure in Participatory Development Activities in Europe Germany & Austria 2012
- Experience in PRA (Participatory Rural Appraisal) programmes Kerala, Orissa 2004-2010
- Organizing Committee member for Paper Presentation in the Economics Department Culturals, Stella Maris College, Chennai. 2012
- Participated in one day International Colloquium on Women, (Society and Law in the New Millennium) Centre for Women's Studies, Ethiraj College, Chennai 11th January 2012.
- International Conferences and Trainings attended
- Participated in the People Led Development Programme in Sri Lanka in the Community Education Centre in Uva and Monaragel Province in August 2018.
- International Conference on Peace, Sustainable Development and Ecological Justice with Special Focus on Migrants and Refugees in Asia, Asian Youth Academy and Asian Theology Forum, Thailand, 17th to 26th August 2016. Exposure visit to RTRC- Ecology Based Training Centre and Research Institute for youth, Chiangmai, Thailand, 27th to 30th August 2016.
- Participated and worked in the drafting committee of the International Conference on Peace for the Earth: Beyond Post-2015 with Special Focus on Women and Ecological Sustainability by the Asian Youth Academy and Asian Theology Forum in Philippines from 16th to 25th August 2015.

- International Conference of Asian Youth Academy conducted in Trivandrum, Kerala from 17/07/2014 to 23/07/2014 on the topic Ecological Sustainability with special focus to poverty of farmers in Asia.
 - Summer Internship in Seoul, South Korea with the NGO, KCFM(Korean Catholic Farmer's Movement) studying about Organic Farming and its direct marketing system from 21/04/2014 to 28/05/2014.
 - Participatory Development activities in Europe from 21st April to 21st May 2012 in Germany and Austria. Visited Organic farms,lived with the farming community of Wurzburg, Bavaria, Climbing the Alps mountain, Participated in farming activities and marketing of the agro-products.
 - Voluntary Sustainability Standards: Costs and Compliance of Small Coffee Producers of Wayanad district Kerala, International Conference, Indialics conducted by CDS (Centre for Development Studies), Trivandrum, 17th March 2016.
 - Presented a Paper on Relevance of People Led Development Process (PLDP) in the Development Sector in the national seminar conducted at Donbosco College Eritty, Kerala, on 19th February 2016.
 - Presented a paper on Tribal people and Dams with reference to resettlement issues of indigenous people of Sarawak, Malaysia in Kriya conducted by the International Studies Department of Stella Maris College, on 4th February 2015.
 - Researcher and Intern in RTRC (Research and Training Centre for Religio Cultural community), Thailand from February to May 2018.
4. **Fr. Biju John Chulayilaplakil:** Assistant Professor, Department of Economics, Marian College Kuttikkanam (Autonomous).

Courses/seminars attended recently:

- MBRU Community Immunity Ambassador Program by MBRU of Medicine and Health Science Dubai, April 2020.
 - “Needs of the 21st Century” by Dhananjayrao Gadgil College of Commerce ,Satara, June 2020.
 - Effective Online Teaching Strategies, MIIM, June 2020.
 - Practical Wisdom, Talk by Expert, MIIM, June 2020.
 - How to prepare your Resume, Coursera.
 - Digital content creation, IQAC, MCKA.
 - Impact of Covid- 19 on World Economic Environment, MIT World Peace University, Pune. June 2020.
 - Impact of Covid -19 on Food Security and Small-Scale Farmers, MIT World Peace University, Pune June 2020.
5. **Ms. Syama U.S:** Assistant Professor, Department of Economics, Marian College Kuttikkanam (Autonomous). M A (Econometrics), Research Scholar at Lincoln University College – Marian Research Centre.

Prominent Courses/seminars attended/ papers presented/sessions chaired:

- National seminar on Importance of ICT integration in Revised NAAC Accreditation Framework (RAF) conducted by Internal Quality Assurance Cell, Marian college Kuttikkanam (Autonomous) 2019.
- International Webinar on Academic Publishing in Top Rated Journals organized by the post graduate Department of Commerce, Government College, Tripunithura, 2020
- International webinar on The Role of E-Learning during Lockdown: Academic Challenges and the Road Ahead conducted by Internal Quality Assurance Cell in collaboration with the Department of Education, Patna Women's College, Autonomous, Patna University, Patna, 2020
- International Webinar on Academic Career Abroad organized by the post graduate Department of Commerce, Government College, Tripunithura, 2020
- National Webinar on Online class Rooms: Issues of Equity & Excellence in Higher Education Conducted by the Department of Economics, St. Berchmans College, Changanasserri, Kerala, 2020.
- Participated in the seminar on maternal and child health organized by Stanford Neo Design at Manipal academy of Higher Education, Manipal Institute of Technology, Manipal 2018.
- Participated in the National seminar on Dismantling Planning Commission in India: is NITI Aayog an alternative? organized by the Department of Economics, Government Arts College, 2015
- Participated in the State level seminar on Role of Libraries in education and Research organized by General Library, Government Arts College, 2014.
- Participated in the Awareness Seminar on Free Legal Aid Programme conducted by Department of Law, Karyavattom Campus & National Service Scheme, 2014.
- Participated in Big Days, Biggest Retail event in the History of Indian Retail at Big Bazaar, 2009
- International workshop on Inter Cultural Understanding, jointly conducted by Asian Centre For Cross Cultural Studies (ACCS) and AIACHE, at Chennai 2019.
- Three Days National Level Workshop on Basic Econometrics conducted by Department of Studies in Economics and Co-Operation, University of Mysore, Mysuru, 2019.
- Three Days workshop on Effective Teaching and learning Methodology organized by Internal Quality Assurance Cell, Marian College Kuttikkanam, 2019.
- National workshop on Paradigm shift in Academic Research conducted by Department of Hospitality and management, Marian college Kuttikkanam (Autonomous), Idukki, 2019.
- South Asian Evidence Summit 2018 conducted by Public Health Evidence South Asia, Manipal Academy of Higher Education, Manipal, 2018
- Participated in one day workshop on First Response Provider Course/BLS Training conducted by Angels International foundations, 2014.
- Sindhu S.U., Pundir P., Sebastian, A.M., Krishnan, J.B., Guddattu, V., Vijayamma, R., Das U. Public Works Programmes: How Effective Are Public Works Programmes In Stimulating Local Economic Transformation In Low- And Middle-Income Countries? An Evidence Summary (<https://eppi.ioe.ac.uk/cms/Default.aspx?tabid=3726>)
- Nair N.S, Venkatesh B.T., Bhageerathy R, Karan A, Unnikrishnan B., Sindhu S.U., Pundir P., Sebastian, A.M., Krishnan, J.B., Guddattu, V., Vijayamma, R., Das U., and Sequeria, S.M. (2017). Public Works Programmes: How effective are public works programmes in

stimulating local economic transformation in low and middle income countries? A systematic review. London: EPPI-Centre, Social Science Research Unit, UCL Institute of Education, University College London. (<https://eppi.ioe.ac.uk/cms/Default.aspx?tabid=3726>)

- Nair N.S, Venkatesh B.T., Bhageerathy R, Karan A, Unnikrishnan B., Sindhu S.U., Pundir P., Sebastian, A.M., Krishnan, J.B., Guddattu, V., Vijayamma, R., Das U, Renjith V- A protocol for systematic review of how effective public works programmes in stimulating local economic transformation, systematic review 2018 (<https://eppi.ioe.ac.uk/cms/Default.aspx?tabid=3726>)
- Presented a paper in South Asian evidence summit 2018 conducted by Public Health Evidence South Asia on How effective are public work programmes in stimulating local economic transformation in low- and middle-income countries: Systematic Review.
- Project on Public Works Programmes: How effective are public work programmes in Stimulating local economic transformation in low- and middle-income countries: A systematic Review at Public Health Evidence South Asia (PHESA), Manipal Academy of Higher Education, Manipal, Karnataka.

Survey Team: Names of students(All three batches)

S.NO	ROLL NO	NAME OF THE STUDENT
1	17UEC104	ALEENA SHAJI
2	17UEC109	ANULAKSHMI PRAKASH
3	17UEC107	ANJITHA MARIYA MARTIN
4	17UEC124	REHANA REGI
5	17UEC121	LITTO ROY
6	17UEC106	ANEETA P STALIN
7	17UEC114	EBIN ALEX
8	17UEC120	JOYAL JACOB JOSEPH
9	18UEC118	JOHNCY JOSEPH
10	18UEC107	ALKA MARIA MARTIN
11	18UEC111	CHINCHU DANIEL
12	18UEC112	CHIPPY SIBY
13	18UEC102	ABHINA T
14	18UEC117	JEFREENA JAYARAJ
15	18UEC129	SUBHA M
16	18UEC109	ANUPA MATHEW
17	18UEC113	CHRISTEENA VARGHESE
18	18UEC106	ALBIN K ANTONY
19	18UEC114	EBIN P ELDHOSE
20	18UEC116	JACQUES JUDE GERALD
21	19UEC113	NEENU MARY JAMES
22	19UEC122	SOUMYA RAJAN
23	19UEC125	VINITHA C V
24	19UEC121	SNEHA R

Data Analysis Team: -The analysis of Survey findings was done by an expert team to assess the level of environmental awareness. Mrs. Shyama (Asst. Prof) was the co-ordinator.

Publication Team: - A Team consisting of the Principal Investigator and other investigators along with the department faculty members were in charge of publishing the findings of the study. Ms. Suzanna Oommen (HOD, Economics) was the editor of the publication.

Seminar Team: -Entire faculty of the Economics Department will organise seminars at the panchayat levels in the district, as a follow up action programme. Mr. Geril Scaria George and Fr Biju John Chulayilapilakil will coordinate the event along with other staff and students of the department.

The Corona pandemic situation has exerted much constraint in the execution of the post project programmes. Once the situation changes, these programmes will be conducted.

Timeline

[illegible]

Annexure

1. The Gadgil Committee Report

2. The Kasthurirangan Report

These reports are available in the digital version of the Project Report.

Submitted by,

Dr. T. V. Muralivallabhan,

Director (Principal Investigator)

Department of Applied Economics &

Centre for Sustainable and Inclusive Development,

Marian College Kuttikkanam (Autonomous)