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SEAWATER DESALINATION: TECHNOLOGY AND ENVIRONMENTAL ASPECTS IN UTILIZING RENEWABLE ENERGY

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Introduction

Water is an essential and inevitable component of life on earth. Besides life processes, water plays a pivotal role in socio-economic development and environmental sustainability. However, water, especially potable fresh water, is a limited and finite resource that is depleting due to increasing population, changing lifestyle pattern, water pollution, inefficient use of water and climatic changes (1).

Shortage of potable water will be a major crisis in decades to come. There are some highly alarming geographical regions where a shortage of fresh water is going to impart a major influence on the socio-economic structure of the population (1).

Unfortunately, the supply of freshwater cannot be increased by conventional technologies or it cannot be made available through any recycling process. However, the huge reservoir of saline seawater and brackish water can be utilized to generate salt-free freshwater. This technique is practiced since ancient times but is limited due to several technical demerits and shortcomings (2).

The major constraints in using desalination in a wide manner were technological limitations, high capital and unit cost and above all requirement of enormous expenditure of energy resources. Energy resources based on fossil fuels are becoming scarce with time and thus highly expensive to run desalination plants (2).

However, a tremendous advance in science and technology in past three decades has reduced the capital cost of establishing a desalination plant and enabled the use of renewable energy sources to meet up the energy requirement of the desalination project. This review describes the use of renewable energy sources in desalination procedure and discusses the economic and environmental impact of the same.

Coupling of Renewable energy to desalting technologies

It is estimated that 97% of the water available on earth is saline and less than 1% of freshwater is accessible to human. In addition, there will be a predictable rise in human population, especially in African and Asian countries making 40% of world population struggling with the freshwater shortage. In such situation, desalination of brackish water is the only solution that can be opted (3).

However, existing technology for desalination requires the burning of a substantial amount of fossil fuel which is unacceptable with our present understanding of the harmful effect of elevated CO_2 level in atmosphere and greenhouse effect. For example, present estimation shows that a production of 13 million m3 of potable water per day requires burning of 130 million tons of oil per year (4).

Therefore, a coupling of renewable energy systems (RES) to the production of desalted water may have a positive socio-economic and can contribute significantly towards environmental sustainability. Presently, renewable energy from wind, solar, photovoltaic and geothermal sources are being used in the desalination process.

Different Desalination Technologies

- *Solar still*

The most common method of coupling between the renewable energy source and desalination processes is the use of direct sun rays to produce fresh water by means of solar stills. This technology directly utilizes solar energy coming from the sunshine and produce electricity. In remote villages, this technology acts as the main alternative energy source used for desalination technique without depending on high technology and expertise (5).

However, the main disadvantage of this system is that the installation costs of solar stills tend to be considerably higher than other methods. In addition, the stills are vulnerable to weather damage and they require large areas of land for installation and have a low output (6).

- *PV-driven RO and ED processes*

PV (photovoltaic) –driven reverse osmosis (RO) and electrodialysis (ED) are high-cost technologies that use photovoltaic (PV) devices to generate electricity. The main disadvantages of these technologies are its high cost and, the availability of PV cells.

- *Concentrating solar thermal driven desalination*

In most of the thermal processes, a requirement of energy is huge to create a substantial amount of heat. Use of conventional energy resource is neither cost-effective nor environmentally friendly. Therefore, solar energy is increasingly becoming popular as an energy source in the desalination process. The major challenge is to maintain the continuous supply of energy and to concentrate the solar energy which is generally of very low yield.

- *Wind-driven water desalination*

Use of wind energy is popular energy resource in remote areas or specifically in windy seashores or island area. The process is highly cost-effective. Wind desalination plants are frequently found in Greek and Spanish islands (3).

- *Desalination powered by biomass and geothermal energy*

Use of biomass and geothermal energy is not a very popular method of generating energy is desalination process. Oftentimes, the growth of biomass requires more fresh water than the total yield from the plant. Moreover, organic residues which are required for the growth of biomass is scarce in the arid region (7).

Advantages and Disadvantages of Different Methodologies

The desalination techniques can broadly be divided into two categories. One is membrane-based techniques [eg. Reverse osmosis (RO) and electrodialysis (ED)] and the other is thermal techniques [eg Thermal vapor Compression (TVC)]. Both the categories have their own merits and demerits (8).

Advantages of membrane driven processes over the thermal processes include:

- Less energy requirement
- Lower cost of establishment
- Higher production and higher recovery ratios
- Minimum interruption to the process when maintenance is required
- Operates at ambient temperature, therefore, less vulnerable to corrosion and scaling
- Chances of microbial contamination is less due to membrane barrier

Advantages of thermal processes over membrane-based processes include:

- A proven and established method for ages
- Quality of water produced is very high
- Less monitoring required than membrane-based systems
- Dependence of output on feed water quality (salinity) is less
- No recurring cost for replacing membrane

Environmental impact of Desalination process

The desalination process may impart several environmental concerns during both the input and output steps. The intake of brackish water is achieved by two major methods, either by open intake or through beech wells. In case of open intake, the ocean environment must be away from port areas where a risk of oil spillage is obvious. Overall, a strong monitoring of contamination of seawater should be there during the input to the desalination plant.

In addition, environmental hazards related to the use of chemicals for the purpose of pre-and post-treatment of sea water, membrane cleaning, anti-corrosion and anti-scaling must be taken into consideration (9).

Economics of Desalination Process

A proper implementation of desalination project depends on several factors including cost effectivity. The following factors are taken into consideration when deciding the economics of a desalination project:

1. Quality of feed water: Its salinity, impurity should be minimized to reduce the pre-treatment cost of energy.
2. The total area of the plant: To accommodate treatment units, pumping, water storage tank, and water distribution system.
3. Location of the site: Geographical location can influence the cost depending on availability of land and other socio-economic factors.

Conclusion and Future Prospect

Keeping in mind the issue of environmental sustainability, the effort to employ renewable energy sources in desalination process has been intensified in recent times. The future efforts are directed towards integrating the photovoltaic cell based energy source to membrane-based desalination processes. However, more research and studies are warranted to understand the environmental and socio-economic impact of using renewable energy source in desalination plants.

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PHARMACOGNOSTICAUTHENTIFCATION OF GENUINE CRUDE DRUG OF ECHINOPS ECHINATUS (ROXB.)

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Abstract
Traditional medicines which are in used are mainly extracted from the medicinal plants. The medicinal plants which are directly taken as the medicines include herbs and shrubs. In this study we are aim to focus on the pharmacognostic characteristics of the Echinops echinatus, which can be used to prepare contraception. It is a xerophytic herbaceous plant commonly known as the Brahmadandika, used for sexual debility. In the recent past several attempt to have been made to study the contraceptive nature of plants and their products on scientific footing in males. Generally the crude drugs are adulterated with sub-standard material which have direct effect on efficiency of crude drugs of the animal system there is urgent need for evaluation and authentication of crude drugs by comparing with genuine crude drugs.
Keywords: *Echinops, Crude Drugs, Pharmacognosy*

Introduction:

The medicines and drugs obtained from the plants and other natural sources are counted into the Pharmacognosy (Orhan, 2014).Knowledge of medicinal plants and treatment of diseases are known since the existence of human beings (Shakya, 2016).The traditional medicines and diagnosis are the basis of modern medicines (Wachtel-Galor and Benzie, 2011).The thorough scientific studies and step by step gradual development in the traditional medicines leads to the establishment of the field of allopathy (Patwardhan et al., 2004). Hence most of the prescriptions of the modern medicines are the products which are derived from the higher ethnobotanical plants (Panet. *et. al.,* 2013).Except very few of all medicinal herbs of commercial important are collected or cultivated in this country. Medicinal herbs have been of use of thousands of years in one or another under the indigenous system of medicine like Ayurveda, Siddha and Unani (Pan *et. al*., 2014). Herbal medicine has used since the dawn the civilization to maintain health and diagnosis of diseases (Eddouks *et al*., 2012).

Man's great reproductive potential and immensely increased survival in recent years have posed a major riddle of population growth. Population expansion at an alarming rate and creating immense pressure on the population systematic. The consequences of this continued unchecked population growth could be devastating (Singh and Singh, 1970).For the limitation of exploding populating hormones, chemical and surgical methods were developed but most of these can lead to unacceptable side effects. This methods do not meet many and varied requirements for the user, particularly in the cultured and religious diverse population. Awareness and development of cheap, easily available methods of contraception is the major need of developing countries due to the alarming increasing populations (Kapur *et. al*., 1984).Hence, the search of medicinal plants that could be useful for the formulations of contraceptives or contraceptive pills is the most after approach (Jain *et. al*., 2015).In the recent past several attempt to have been made to study the contraceptive nature of plants and their products on a scientific footing in males (Adewale *et. al*., 2014). Some of the plants with its anti-fertility activities have been discussed such as *Embelia ribes* (Lal and Mishra, 2013), *Momordica charantia* (Adewale *et al*., 2014), *Hibiscus rosa-sinensis* (Singh *et al*., 1982), *Curcuma longa, Mentha*

arvensis (Gupta, 1994), *Gossypium* sps. (Hsueh *et. al.*, 1979), *Abrus precatorius*, *Azadirachta indica* (Umadevi *et. al*., 2013), *Solanum xanthocarpum* (Dixit and Gupta, 1982), *Carica papaya* (Krishna *et. al*., 2008), etc.

Materials and Methods:

The plant material is collected from premises of Swami Ramanand Teerth Marathwada University (SRTMU), Nanded. The herbarium specimen was prepared and deposited in Botanical Depository of SRTMU. The plant material is authenticated by detailed taxonomic study and by the experts Prof. (Dr.) R.M. Mulani and correct botanical identity is established and authentication number is **SLS/SRTMU/BOT/HERB-98/2017-18** given to the herbarium.

Organoleptic properties:-

The properties and characteristics of crude drugs which are sensed by color variations, taste and odor is to be categorized in macroscopic characterization and powder analysis as mentioned below:

Microscopic characterizations:

The roots were washed and hand cut sections were taken, stained by safranin and light green and mounted on a slide and observed for anatomical details. Stained roots placed on plastic sheets and dried and further investigated for the organoleptic features with the magnifying glass.

Powder analysis:

Color variation is to be observed in the crude powder extract of the *Echinops* root. For this we have chosen 16 different chemical reagents and treated with the crude powder extract and observed under different light sources such as visible light, UV light of wavelength 365 nm and UV light of 254 nm.

Physical constant determination

Total Ash:

Approx. 2-4 gm of previously ignited and grounded crude powder of *Echinops* were taken and air dried it and transferred to silica crucibles. Further, the material taken in crucible heated with increasing heat up to 450 ^{0}C, till the material becomes whitish. The material after appearance of white coloration transferred to desiccators and weighed again. Ash value is further calculated by Upreti et al., (2013).

$$\text{Ash value} = \frac{\text{Initial weight} - \text{final weight}}{\text{Initial weight}} \times 100$$

Acid Insoluble Ash: The total material obtained from desiccation boiled with 25 ml dil. HCl for 5 min and insoluble ash material separated and washed with hot acid water and heated, further allowed it to cool and weighed again. With reference to air dried material ash value of the drug calculated as mentioned below:

As Total Ash = Acid Soluble Ash + Acid Insoluble Ash

So that, Acid Soluble Ash = Total Ash - Acid Insoluble Ash

Results and Discussion

E. echinatus collected from local premises of the Swami Ramanand Teerth Marathwada University and identification of the plant is done by depositing herbarium sheet of the plant to the depository of department of Botany, SRTMU, Nanded and herbarium sheet number of the plant is SLS/SRTMU/BOT/HERB-98/2017-18. Since, civilization of human society, the medicinally important organisms collected traditionally from the natural flora (Strobel and Daisy, 2003). With the growth and establishment of pharmaceutical industries, the consumption of these has increase tremendously in recent years (Dias et al., 2012). As a result, the density and frequency of many species is fast dwindling and those with exceptionally high therapeutic value are on the verge of extinction from natural flora (Duwe et al., 2017).Generally the crude drugs are adulterated with sub-standard material which has direct effect on efficacy of crude drugs of the animal system so there is urgent need for evaluation and authentification of crude drug by comparing with genuine crude drug.

In *E. echinatus* the phytochemical and pharmacological work has been carried out while there is not much work on pharmacognostic details of these drugs.

Macroscopic characters

For macroscopic characterization we have chosen five characters of the plans such as: color, odor, taste, shape and size. We found that that fresh root and dry root of the plant having color difference like fresh root shown light gray while dry root shown light brown coloration. Among five characters the size of the roots also showing difference in the length of the root from the bases i.e. 1-4 cm long while dry root having only 1-2 cm in length (See table 1)

Table 1: Macroscopic characteristics of plant material

Sr. No.	Characters	Fresh root	Dry root
1	Color	Light gray	Light brown
2	Odor	Odorless	No characteristic odor
3	Taste	Tasteless	Tasteless
4	Shape	Oblique crooked	Oblique crooked
5	Size	1 -4 cm at the base & about 0.5 cm at the end.	1-2 cm at the base and 0.5 cm at the end.

Microscopic characters

The roots are growing obliquely in the soil which is about 20 cm long, light to dark color outside and white color inside. The outer surface shows the continuous secondary and tertiary peridermal tissues, the rootlet is less. Internally young root shows isodimetric non lignified cells which are radially arranged. Inside there is cortical cells which increases phloem cells in the ring internally there is large amount of secondary xylem with large vessels containing medullary rays which are transversely present. The roots are also increase starch grains (See Figure 1-4).

T.S. stem

Transverse section of stem is mainly circular single layered epidermis inside which there is ring of vascular bundles having phloem towards outer side and xylem towards inner side, protoxylem facing towards the centre. The pith is in the centre, so vascular bundle is conjoint collateral open as there is intrafascicular cambium present in each vascular bundle, the stele is eustele (Fig. 2).

T.S. of leaf

Leaf is dorsiventral has distinct mesophyll differentiated into upper and lower palisade and lower spongy tissue covered with upper and lower epidermis. The palisade layer made-up of 2 to 3 elongated cells. In the midrib there is collenchymatous hypodermis, while the vascular bundles are in the centre of the midrib (Fig. 3).

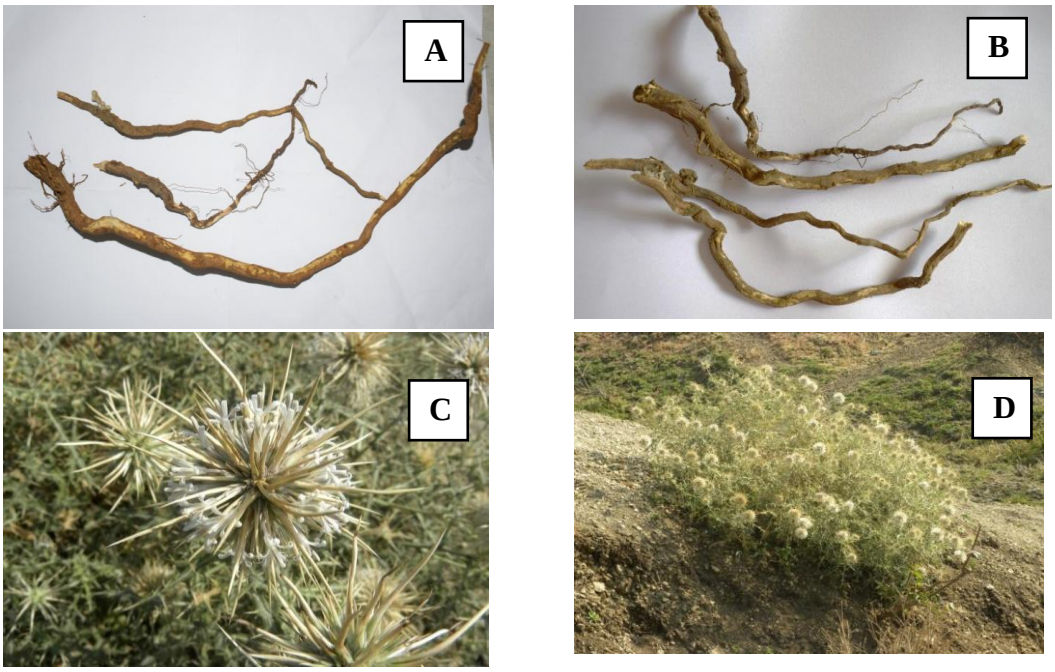

Fig. 1 A, B Habit; C- Fresh roots of *Echinops* D- Dried roots of *Echinops* plant in the Campus of Swami Ramanand Teerth Marathwada University, Nanded.

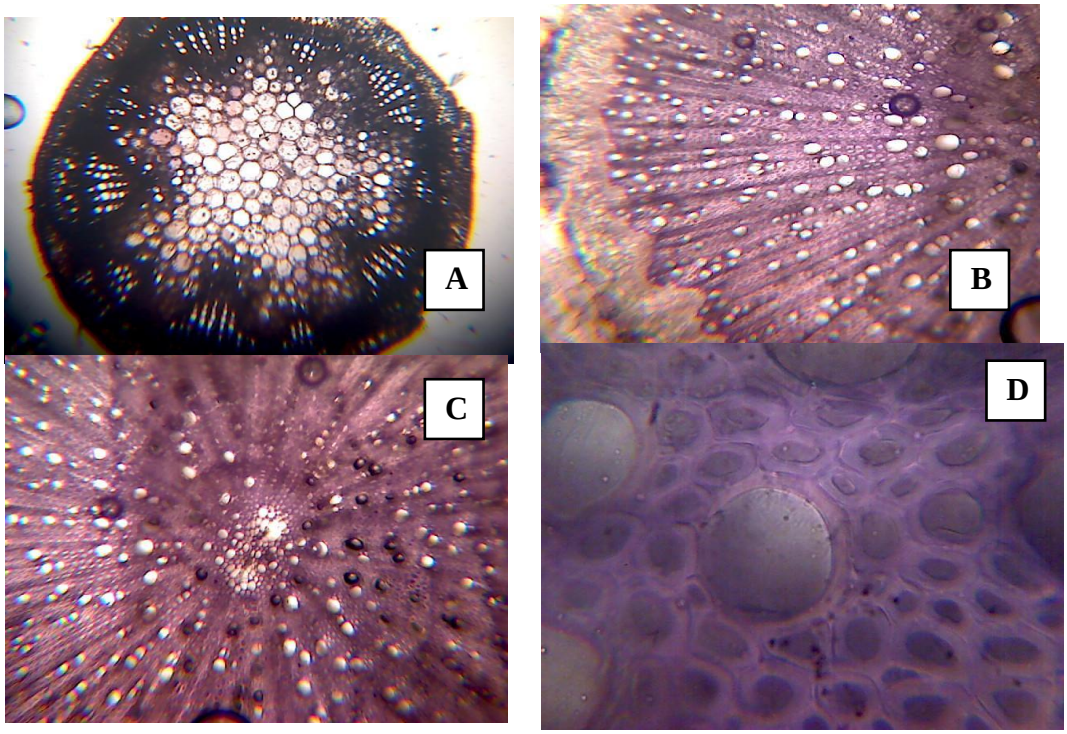

Fig. 2 T.S. of stem and Peridermal cortex of root; A-T.S. of stem; B -T.S. of root showing cortex and the secondary xylem; C-T.S. of root showing protoxylem towards the centre;
D- T.S. of root showing xylem vessels surrounded by xylem parenchyma, while sclerenchymatous tissue present around the vessels.

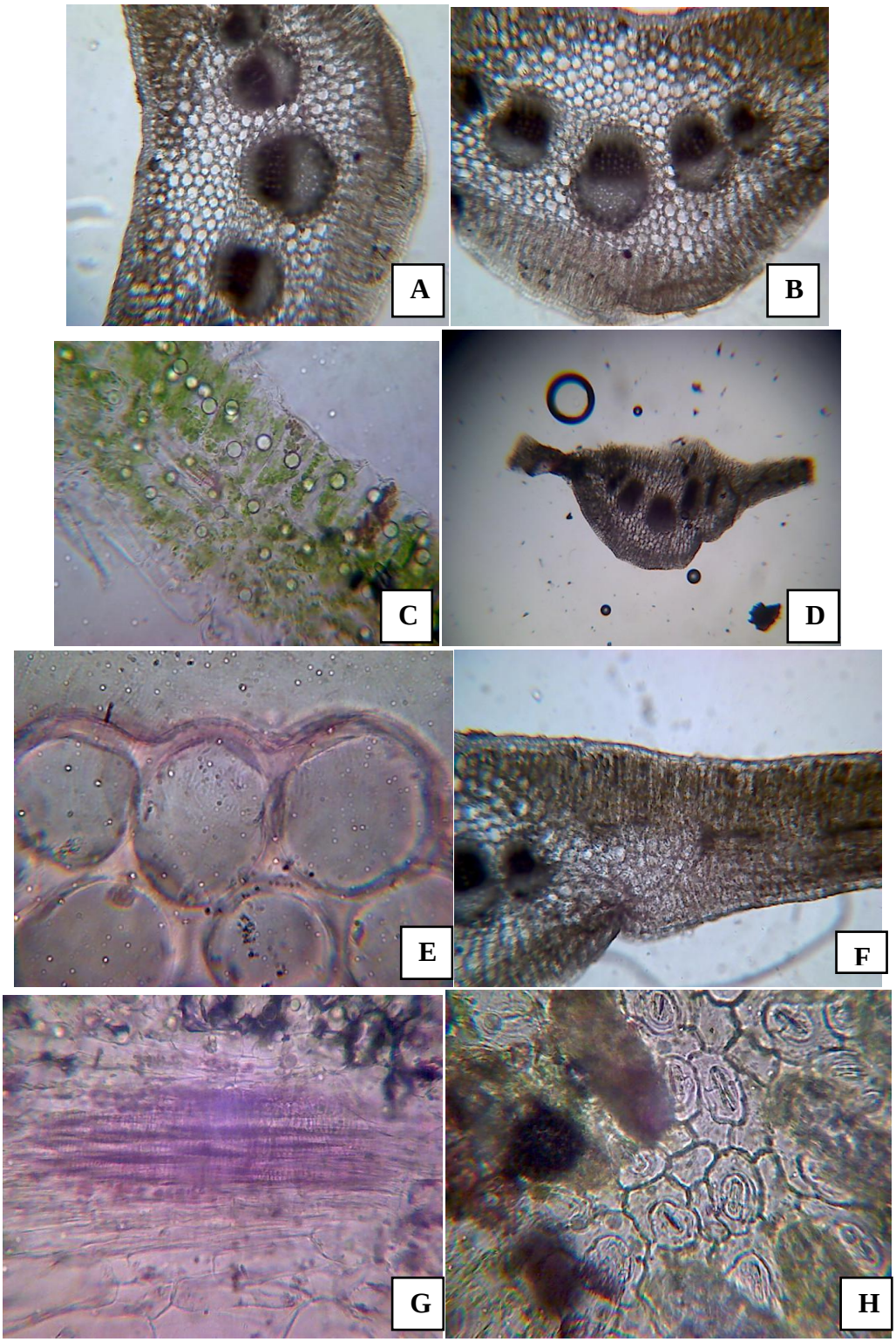

Fig. 3 A, B, D & E-midrib portion of leaf, C-mesophyll tissue, F- Epidermis with thick cuticle and intercellular spaces also thickened with deposition of lignin;
G-fibers T.S of vascular bundle H- stomata are parasitic

Fluorescence characteristics and Powder analysis

For the powder analysis we have taken 16 reagents and tested against crude powder of *Echinops*, (roots) and visualized against different light sources such as visible, UV 254 nm and UV 365 nm.

Crude powder extract as such also has color variation such as it has shown light green in visible light and UV 356 nm whiles in the UV 254 it shown a buff green. In this study we found that the each reagent shows some significant color variation in each of the different light sources. Peculiar difference with the treatment of concentrated nitric acid shown light orange in visible light while in both the UV light it has shown green coloration. With the treatment of picric acid, it has shown color variation in all three light, yellow in visible light, dark purple in UV 254 nm and green in UV 365 nm (See table 2).

Table 2: Powder analysis of crude extract of *Echinops*

Sr. No.	Reagents	Visible/Day Light	UV 254 nm (Short)	UV 365 nm (Long)
1.	Picric acid	Yellow	Dark Purple	Green
2.	Conc. H_2SO_4	Dark brown	Brownish green	Dark green
3.	Conc. HNO_3	Light orange	Green	Green
4.	HCl	Yellowish brown	Chocolate brown	Green
5.	Acetic acid	No Change	Buff green	Buff green
6.	Lactic acid	No Change	Buff green	Buff green
7.	Iodine	Buff green	Dark green	Green
8.	Ferric chloride	Dark green	Black	Blackish green
9.	Sudan III	Red	Bright red	Green
10.	Powder + 1 N NaCl	Light brown	Light brown	Green
11.	Drug + 1 N NaOH (aq)	Blackish green	Yellow green	Yellowish green
12.	Drug + 1 N HNO_3	Buff green	Greenish yellow	Dark green
13.	Powder + Ammonia	Greenish yellow	Blackish green	Green
14.	Powder as such	Light green	Yellowish green	Buff green
15.	1 N NaOH (methanol)	Yellowish green	Yellowish green	Yellowish green
16.	Powder as such	Light green	Buff green	Light green

Physical constant value

Total ash value of the crude extract of the *Echinops* were calculated and it was found that among total ash content (11%), acid insoluble were 2% and acid soluble ash found to be 9% (See Table 3).

Table 3: Physical constant value of crude drugs

Total Ash	11 %
Acid insoluble Ash	2 %
Acid soluble Ash	9 %

Conclusion and Future prospective

In this study we found several pharmacognostic characteristics to identify plants and plant products to avoid its adulterations with sub-standard products. The roots of *E. echinatus* are crusade and with less secondary and tertiary roots. The root is circular in outline with a periderm tissue. The secondary xylem is maximum, medullary rays are multicellular, vessels are oval, rounded and in groups. Powder analysis with different chemical under normal light and under fluorescent light shows characteristic color which is useful for separating it from adulterants.

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PHYSICO-CHEMICAL PARAMETERS ANALYSIS OF WATER QUALITY OF DRINKING WATER SOURCES OF SHIGHRE VILLAGE OF MURUD TEHSIL DISTRICT- RAIGAD, MAHARASHTRA, INDIA

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Abstract

Water is an important component to human survival. Water must be purified for a better life style. It is the fundamental duty of every individual to conserve water resources. The present study attempts to bring an acute awareness among the people about the quality of drinking water by taking water samples from different sources for analysis. The experiment analyses its various Physico-chemical and biological parameters such as Temperature, pH, Electrical conductivity, TDS, Alkalinity, Chloride, DO, BOD, Total hardness, Calcium hardness, Magnesium hardness and Salinity were analyzed in the month of December 2017. The results are compared with standards of WHO. By observing the result it can be concluded that the parameters which were taken to study the water quality are below the pollution level for water which satisfies the requirement for the use of various purposes like domestic, agricultural etc.

Keywords: *Drinking water resources, water quality standard, Physico-chemical Parameter.*

INTRODUCTION:

Water quality plays important role for all living beings. The quality of surface water within a region is governed by both natural processes such as precipitation rate, weathering processes and soil erosion and anthropogenic effects such as urban, industrial and agricultural activities and the human exploitation of water resources [1-5]. Ground water quality has become an important water resources issue due to rapid increase of population, rapid industrialization, unplanned urbanization, flow of pollution from upland to lowland, and too much use of fertilizers, pesticides in agriculture [6]**.** The major problem with the ground water is that once contaminated, it is difficult to restore its quality. Hence there is a need and concern for the protection and management of ground water quality. It is well known that no straight forward reasons can be advanced for the deterioration of water quality, as it is dependent on several water quality parameters [7-8]. Ground water quality in the industrial areas is determined by measuring the concentration of some physico-chemical parameters and comparing them with drinking water standards [9].

Budharatna Bhavare, Miguel A. Rodriguez, Anil Kurthe [10] has studied different physic chemical parameter and nutrients in water of Bhatye estuary, Ratnagiri central, West coast of India. Francis Andrade, H.B. Arvinda, and E.T. Puttaiah [11] have studied Manglore coastal water pollution by analysis of physical, chemical parameter. Ramalingam manikannan, Subramanian asokan and A.H.M.S. Ali [12] have studied Seasonal variation of physicochemical properties of the great vedaranyam swamp point calimere wildlife Sanctuary, South east coast of India. Sujata Sen, Dr. Minal Kanti Paul, and Madhab Borah [13] have studied the some physico chemical parameter of pond and river water with reference to correlation study. G.Velsamy, N. Manoharan, S.Ganesan [14] has

studied analysis of physicochemical variations in sea water sample Uppanarestuary, Cuddalore, Tamilnadu (India).

According to Census 2011 information the location code or village code of Shighre village is 554261. Shighre village is located in Murud Tehsil of Raigad district in Maharashtra, India. It is situated 4km away from sub-district headquarter Murud and 54km away from district headquarter Alibag. As per 2009 stats, Shighre village is also a gram panchayat.

The total geographical area of village is 259.22 hectares. Shighre has a total population of 1,847 peoples. There are about 421 houses in Shighre village. Murud is nearest town to Shighre which is approximately 4km away.

The water sample such as Pipe water, bore well water and well water was collected early in the morning between 8.00 am to 10.00 am and was analyzed to compare the differences occurred in Physico-chemical parameters such as Temperature, pH, Electrical conductivity, TDS, Alkalinity, Chloride, DO, BOD, Total hardness, Ca-hardness, Magnesium hardness and Salinity.

The research work is carried out, keeping in mind the following objectives.

- To study the chemical composition and water quality parameters of different sources.
- To investigate the possible sources and Cause of pollution in the water if any.
- To study if these effects can be attributed to the change in the chemical composition of the different water sources.

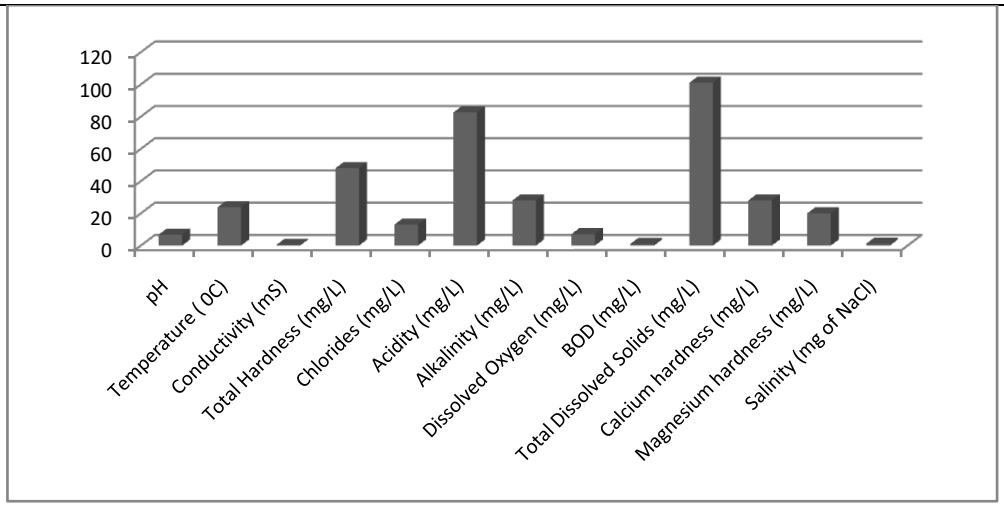
MATERIAL & METHOD:-

Sample of water was collected in sterile plastic bottle of 2 litre capacity from the dam. At the same time the temperature & pH were noted. The physico-chemical analysis was carried out within 24 hours of collection in a laboratory as per APHA (1989), (1992), AWWA & WPFA, Trivedy & Goel (1986) [15-16]. The chemicals were used of A. R. grade and are standardized as per Inorganic quantitative analysis by Vogel (1964) & (2006) [17-18]. The result is statistically analyzed by calculating mean & standard deviation.

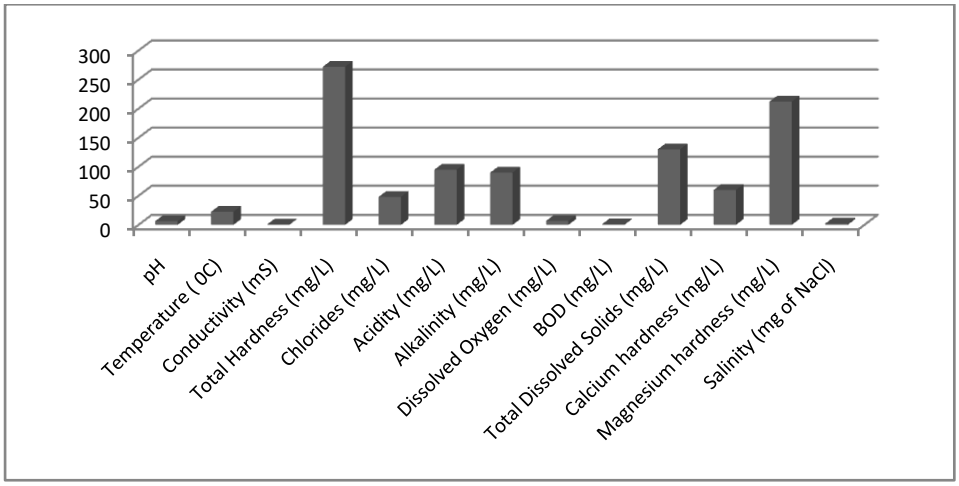
RESULTS & DISCUSSION:-

Parameters	**Tap water Mean+S.D**	**Bore well water Mean+S.D**	**Well water Mean+S.D**
pH	6.73 + 0.02	6.43 + 0.02	6.60 + 0.02
Temperature (^{0}C)	23.8 + 0.3	22.6 + 0.3	24.9 + 0.3
Conductivity (mS)	0.462 + 0.002	0.467 + 0.002	0.894 + 0.002
Total Hardness (mg/L)	48 + 1.0	272 + 1.0	340 + 1.0
Chlorides (mg/L)	13.05 + 0.18	48.15 + 0.18	28.13 + 0.18
Acidity (mg/L)	82.6 + 0.3	95.0 + 0.3	105.3 + 0.3
Alkalinity (mg/L)	28 + 0.3	90 + 0.3	388 + 0.3
Dissolved Oxygen (mg/L)	7.106 + 0.015	6.816 + 0.015	7.276 + 0.015
BOD (mg/L)	1.031 + 0.03	0.973 + 0.03	1.107 + 0.03
Total Dissolved Solids (mg/L)	101 + 1.0	130 + 1.0	235 + 1.0
Calcium hardness (mg/L)	28 + 0.3	60 + 0.3	48 + 0.3
Magnesium hardness (mg/L)	20 + 0.3	212 + 0.3	292 + 0.3
Salinity (mg of NaCl)	1.172 + 0.003	2.162 + 0.003	2.182 + 0.003

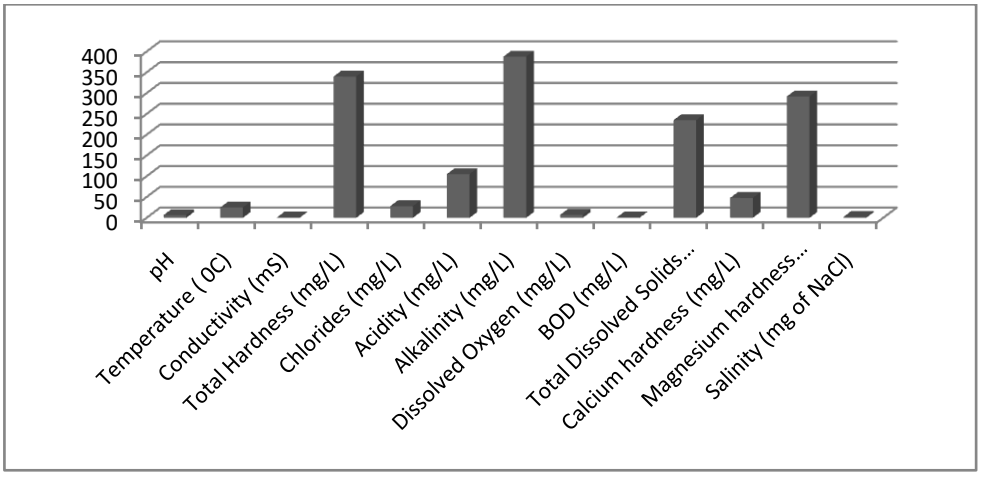
Table-1:- Values of different parameters of water sample of different drinking sources in Shighre village area. (Mean and Standard deviation is calculated)



a. Graph showing concentration range of various parameters of Tap water.



b. Graph showing concentration range of various parameters of bore well water.



c. Graph showing concentration range of various parameters of well water.

1. Temperature:

Temperature is the most importance environment factor with effect on plants and animals. Water has several unique thermal properties which combine to minimize temperature change. The Water temperature depends on the depth of the water column, climatic and topographic changes [19].

A rise in temperature of water leads to the speeding up of chemical reactions in water, reduces the solubility of gases and amplifies the tastes and odour. At higher temperature with less

dissolved gases the water becomes tasteless and even does not quench the thirst and decreases the solubility of oxygen.

Temperature also determines various other factors such as pH, Conductivity, saturation level of gases and various forms of alkalinity. The temperature of Tap water is 23.8+0.3 ^{0}C, bore well water temperature is 22.6+0.3 ^{0}C and temperature of well water is found to be 24.9+0.3 ^{0}C.

2. pH:

pH, one of the most common analyses in soil and water testing, is the standard measure of how acidic or alkaline a solution is. pH has no direct adverse effect on health. pH governs the distribution, transport and fate of heavy metals in aquatic ecosystem. It is measured a scale from 0 - 14. pH of 7 is neutral, pH is less than 7 is acidic and pH greater than 7 is basic. Aquatic organisms need the pH of their water body to be a certain range optimal growth and survival.

The pH of Tap water is 6.73 + 0.02, bore well water pH is 6.43 + 0.02 and pH of well water is found to be 6.60 + 0.02. Amongst these three samples, water is comparatively acidic in nature.

3. Electrical Conductance:

Conductivity is the measure of a substance or solution to conduct electric current. Presence of salts and contamination with wastewater increases conductivity of water. It is a indication of pollution. Electrical conductivity used to quickly estimate the ionic or soluble salt concentration in soils, water supplies, fertilizer solution and chemical solution. It is highly depended upon temperature.

Conductivity however is an important criterion in determining the suitability of water for irrigation. The conductance of Tap water is 0.462 + 0.002 mS, bore well water conductance is 0.467 + 0.002 mS and conductance of well water is found to be 0.894 + 0.002 mS. Amongst these three samples, well water is comparatively high electrical conductance. The observed values of electrical conductance for others are quite low and less electrolyte.

4. Total Hardness:

Total hardness is defined as the sum of calcium and magnesium hardness in mg/L as $CaCO_3$.Total hardness of water an important factor that indicates toxic effect and poisonous elements [20].

There is no adverse effect of hardness on health. Hard water is also not suitable for domestic and irrigation purposes. Total hardness of Tap water is 48 +1.0 mg/L, bore well water is 272 +1.0 mg/L and the well water is 340 +1.0 mg/L.

The degree of hardness of drinking water has been classified in terms of the equivalent CaCO3 concentration as follows: Soft - 0-60mg/L, Medium - 60-120 mg/L, Hard - 120-180 mg/L, Very hard - >180 mg/L. The observed values were quiet less than the acceptable limit of 300 mg/L for tap water sample. But for bore well water and well water sample, total hardness values are high and near about less and more than 300 mg/L. It shows that water is very hard.

5. Chlorides:

Chloride is mainly obtained from the dissolution of salts of hydrochloric acid as table salt (NaCl), NaCO2 and added through industrial waste, sewage, sea water etc. Surface water bodies often have low concentration of chlorides as compare to ground water. It has key importance for metabolism activity in human body and other main physiological processes. High chloride concentration damage metallic pipes and structure as well as harms growing plants. According to WHO standards concentration of chloride should not exceed 250 mg/L.

The chloride content of the tap water sample is 13.05 +0.02 mg/L, bore well water is 48.15+0.18 mg/L and Chlorides in well water sample is 28.13 +0.05 mg/L.

6. Acidity: Acidity of water is its capacity to neutralize a strong base and is mostly due to the presence of strong mineral acids, weak acids and the salt of strong acids and weak bases.

Addition of wastewater having acidity producing substances increases the acidity of water. The observed acidity of tap water sample is 82.6+ 0.015 mg/L of $CaCO_3$, bore well water sample is 95.0+ 0.3 mg/L. of $CaCO_3$. While acidity of well water samples is 105.3+ 0.3 mg/L of $CaCO_3$. The value is much less than threshold value i. e. 200 mg/L of $CaCO_3$. This indicates that sample of water are in safe range.

7. Alkalinity:

Alkalinity is a chemical measurement of water's ability to neutralize acid. Alkalinity is also a measure of water buffering capacity or its ability to resist changes in pH upon the addition of acids or bases. Alkalinity of natural water is due to primarily to the presence of weak acid salts, although strong bases may also contribute (i.e. OH^-) in the extreme environment. Bicarbonate represents the major form of alkalinity in natural water, so its source being the partitioning of CO2 from the atmosphere and the weathering of carbonate minerals in rocks and soil. Other salts of weak acids, such as borate, silicates, ammonia, phosphate, and organic bases from natural organic matter may be present in small amounts.

The observed alkalinity of tap water sample is 28 +0.3 mg/L of $CaCO_3$, bore well water sample is 90 + 0.3 mg/L. of $CaCO_3$ while alkalinity of well water sample is 388 + 0.3 mg/L of $CaCO_3$. The observed values of alkalinity of tap water and bore well water are within permissible range i. e. below 200 mg/L of $CaCO_3$. The well water is not in safe range i.e. higher than permissible range of 200 mg/L of $CaCO_3$.

8. Dissolved Oxygen:

The amount of oxygen dissolved in water, such as a lake, river or stream. Dissolved oxygen is the most important indicator of the health of water bodies and its capacity to support a balanced aquatic ecosystem of plants and animals. Warm water released from industrial outlets, flowages or storm sewers can also reduce dissolved oxygen levels. Dissolved oxygen may play a large role in the survival of aquatic life in temperature lakes and reservoirs during summer months. Dissolved oxygen of tap water sample collected is 7.106 + 0.015mg/L, bore well water sample is 6.816 + 0.015mg/L, whereas well water sample is 7.276 + 0.015mg/L . It may be due to high temperature and inorganic reluctance such as hydrogen sulfide, ammonia, nitrites, ferrous ions and other oxidizable substances also tend to decrease dissolved oxygen in water.

9. Biochemical Oxygen Demand (BOD):

Biochemical oxygen measures the amount of oxygen that microorganisms consume while decomposing organic matter, it also measures the chemical oxidation of inorganic matter. BOD is a measure of organic material contamination in water, specified in mg/L. BOD is the amount of dissolved oxygen required for the biochemical decomposition of organic compounds and the oxidation of certain inorganic materials (e.g., iron, sulphites).

The observed value of BOD for tap water is 1.031 + 0.03 mg/L, for bore well water is 0.973 + 0.03 mg/L and for well water sample is 1.107 + 0.03 mg/L which is within the permissible range i. e. 0.75-1.5 mg/L.

10. Total Dissolved Solids (TDS):

Total dissolved solids are the total amount of mobile charged ions, including minerals, salts or metal dissolved in a given volume of water in mg/L. TDS is directly related to the purity of water and the quality of water purification system and affects everything that consumes, lives in, or uses water, whether organic or inorganic, whether for better or for worse. Common inorganic salts that can be found in water include calcium, magnesium, potassium and sodium, which are cations and carbonates, nitrates, bicarbonates, chlorides and sulphates which are anions. They give a particular taste to water at higher concentration and also reduce its palatability.

The total solid present in tap water sample collected is 101 + 1.0 mg/L, for bore well water is 130 + 1.0 mg/L, while that of for well water sample is 235 + 1.0 mg/L which is lower than threshold value of total solid content i.e. 500 mg/L.

11. Calcium hardness:

Calcium is naturally present in water. Calcium is a determinant of water hardness, because it can be found in water as Ca^{2+} ions. As per Indian Standards the calcium content of water should not be more than 75 mg/L. This has been specified in the IS 10500:- Drinking Water –Specifications.

In the study the calcium content in water sample has been found to be for tap water sample is 28 + 0.3 mg/L, for bore well water is 60 + 0.3 mg/L and for well water is 48+0.3 mg/L. Tap water and bore well water possess values calcium hardness which is within the limit as per Specification. The observed values for all water samples are within permissible range of concentration of calcium.

12. Magnesium hardness:

Magnesium is naturally present in water. Magnesium is a determinant of water hardness, because it can be found in water as Mg^{2+} ions. As per ISI the magnesium content of water should not be more than 50 mg/L.

In the study the magnesium content in water sample has been found to be for tap water sample is 20 + 0.3 mg/L, for bore well water is 212 + 0.3 mg/L and for well water is 292 + 0.3 mg/L. Tap water possess value of magnesium hardness which is within the limit as per Specification. The observed values for bore well water and well water shows higher concentration of magnesium.

13. Salinity:-

Salinity which is defined as the total concentration of electrically charged ions in the water. These ions are the four major cations-calcium, magnesium, potassium and sodium, and the four common anions carbonates (CO_3), sulphates (SO_4), chlorides (Cl) and bicarbonates (HCO). Other components of salinity are charged nitrogenous compounds such as nitrates (NO_3), ammonium ions (NH_4) and phosphates (PO_4) **[**21]. In general the salinity of surface waters depends on the drainage area, the nature of its rock, precipitation, human activity in the area and its proximity to marine water [22]. Waters with salinity below 1% are fresh and waters with salinity higher than 1% are brackish/marine [23].

The observed value of salinity for tap water sample is 1.172 + 0.003 mg of NaCl, for bore well water sample is 2.162 + 0.003 mg of NaCl and for well water sample is 2.182 + 0.003 mg of NaCl .

CONCLUSION:

The present paper deals with analysis of water quality in different drinking water resources available in Shighre village region which was carried out by taking certain important parameters like Temperature, pH, Electrical conductivity, TDS, Alkalinity, Chloride, DO, BOD, Total hardness, Calcium hardness, Magnesium hardness and Salinity. The data of physico-chemical and biological parameters clearly shows that the drinking water of Shighre village region is within the permissible range as per APHA (1989), (1992), Trivedi and Goel (1986) except few limitations in one or two parameters. Such water is suitable for drinking purpose and can be used for domestic as well as irrigation purpose.

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SURVEY OF DIFFERENT ASPECTS OF GOVERNMENT SCHEMES RELATED TO GIRL CHILD

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Abstract
In any society, females form 50% of the total population for the development of the society. The income of women is also included in the national income and gross domestic production(GDP) of the country. It is imperative that the total population is participant in the development. Hence the importance of the girl child education lies on par with the male child education. Girls are equally as important as boys in the society to maintain the social equilibrium. Few years ago, there was huge reduction in the number of women in comparison to the men. In such a scenario, the role of the government and NGOs becomes all the more important in order to ensure that girls are allowed to be born and flourish in life, since they form the part of developing society. Some initiatives giving incentives to people are launched by the central or state government for flourishing the girl child. Among these includes different schemes related to their progress and development. These schemes are Beti Bachao Beti Padhao, Sukanya Samridhi Yojana, Kishori Shakti Yojna for adolescent girls, Sabla, Mazi Kanya Bhagyashree scheme, etc. This paper tries to study the impact of different aspects of schemes launched by central and state government of India specifically in Mumbai metropolis. The present paper gives survey of a information about the participants in the schemes.
Keywords*: Girl child, government, schemes, metropolis, Gross Domestic Product(GDP).*

Introduction:

In ancient time birth of a girl child was considered as auspicious. As per an Indian proverb, "A home without a daughter is like a body without soul". The birth of a daughter in the house was compared with the advent of Goddess Laxmi, the Goddess of wealth and Goddess Saraswati, the Goddess of Knowledge and Wisdom.

Women are the most important section of the society and equally participate in the life existence on the earth. However, regular decrease in the sex ratio of female in India because of the crimes against women, it has created the fear of total finish of women. So, it is very necessary to save girl child in order to maintain the ratio of women in India. InIndia mostly male dominated societiesare prevailing.Hence women are considered at the secondary position.Contrary to this, now a days "Save girl child" is a Motto of the day in India. Girls are many times suppressed and they have to pass through variety of risks and therefore it is a needed to help in their upliftment.There has been an increase in crimes against women like rape, illiteracy, gender discrimination, female foeticide and dowry deaths.

The trend of decline in the Child Sex Ratio (CSR), which is defined as number of girls per 1000 of boys between 0-6 years of age, has been unabated since 1961. This decline from 945 in 1991 to 927 in 2001 and further to 918 in 2011 is alarming. The decline in the CSR is a major indicator of women disempowerment. CSR reflects both, pre-birth discrimination manifested through gender biased sex selection, and post birth discrimination against girls suppression. Modern scientific developments and techniques and their easy availability enable sex selective elimination of girls leading to low Child Sex Ratio.Since coordinated and convergent efforts are needed to ensure survival, protection and empowerment of the girl child. Following are some initiatives in the form of different schemes launched by the central or state government relating togirl child to save and flourish them. They are:

1. **Beti Bachao, Beti Padhao** : Beti Bachao, Beti Padhao (BBBP) scheme has been introduced in October, 2014 to address the issue of declining Child Sex Ratio (CSR).
   The scheme was launched on 22nd January, 2015. Beti Bachao Beti Padhao is an effective initiative taken by central government to save the girl child and educate the girl child all over the India. A budgetary allocation of 100 Cr. has been made under the budget announcement for Beti Bachao, Beti Padhao campaign.
2. **Sukanya Samridhi Yojana**: It is a small deposit scheme for girl child. Sukanya Smariddhi Yojana is launced as a part of the Beti Bachao, Beti Padhao campaign,. The scheme was launched by Prime Minister Narendra Modi on 22nd January, 2015. This scheme currently provides an interest rate of 8.1% and tax benefits. "Sukanya Samridshi Account" can be opened at any time from the birth of a girl child till she attains the age of 10 years, with a minimum deposit of Rs. 1000. A maximum of Rs. 1.5 Lakh can be deposited during a financial year. The account can be opened in any post office or authorized branches of commercial banks. The account will remain operative for 21 years from the date of opening of the account or marriage of the girl child afterattaining 18 years of age.
3. **Kishori Shakti Yojna**: Kishori Shakti Yojna was launched by the Ministry of Women and Child Development. This scheme aims to empower adolescent girls (Age) of 11-18 years with focus on out-of-school girls. The scheme emphasis on their nutritional and health status and upgrading various skills like home skills, life skills and vocational skills. This scheme provides nutritional and health education including sanitation and personal hygiene aspects.
4. **Sabla**: The Rajiv Gandhi Scheme for Empowerment of Adolescent Girls (RGSEAG) Sabla is a centrally sponsored program of Government of India initiated on April 1, 2011 under Ministry of Women and Child Development . The objectives of this scheme are to enable the adolescent girls for self development and empowerment, improve their nutrition and health status, provide guidance about existing public services such as PHC, CHC, post office, Bank, Police station, etc.
5. **Mazi Kanya BhagyashreeScheme** : The Maharashtra government has released a chene known as Mazi Kanya Bhagyashree scheme. The main moto of this scheme is to encourage the girl child towards the education and the higher quality of living. The Mazi Kanya Bhagyashree scheme is only applicable for those people who belongs to the below poverty line or the poor families. The financial assistance will be given to the girls of these families in such a way that when a girl child will be born then the mother of that child will get Rs. 5000 per month till the child reaches the age of 5 years. Whereas the girl child will get an amount of Rs. 2000 during the completion of 5 years. When the girl child will be in 5th standard then she will get Rs. 2500 per years. At the time of 12th standard, the girl child will get Rs. 3000. When girl child attains the age of 18 years she will be provided with an amount of Rs. 1 lakh per year.

Objective:

1. To know how many people are aware aboutgovernment schemes for girl child.
2. Do the people know the benefits of these schemes?
3. Whether people take the advantage of the above schemes.
4. Whether the schemes are helpful to girl child.

Review of Literature:

The present study is made on different aspects of government schemes related to girl child.From the study of related literature it is found that few problems have been dealt with women and children regarding their upliftment and solution to these problems in their progress.

Khandelwal et.al, (2014) reviewed the government program for women and children regarding their nutrition. Sadh and Kapoor studied the initiatives to save the girl child in India. Dr.

Agnihotri and Malipatil, (2018) studied a brief information about Beti Bachao, Beti Padhao scheme. Department for international development, (2005) published a report on Girl's education towards a better future for all wherein educational problems of girls have been dealt with.

Details have been given on several government sites regarding the schemes related to girl child. The sites are as follows:

http://www.wcd.nic.in/
https://www.india.gov.in/
http://www.nari.nic.in/schemes?
https://www.indiastat.com/socialwelfareschemes/
www.womenchild.maharashtra.gov.in

Although the attempts have been made in all related problems of girl child to solve them for the betterment of girl child, no concise report is available on central and state government schemes which are related to financial helpfor the girl child. The present paper gives the general information about the involvement of public in above schemes in the region ofMumbai metropolis.

Methodology:

The study is based on primary and secondary data. The primary data is collected with the help of questionnaire. The questionnaire is prepared with the help of google form. The google form consists of total 33 questions. The first section of google form contains the questions related to general information like age, marital status, nature of employment, number of girl child of the sample respondents. The second section of google form contains the questions related to different government schemes related to girl child. It contains the questions like which schemes are known to the people, scheme they have opted, benefits of the schemes, etc.

The secondary data is collected from the different government sites.

With the help of google form, 45 samples have been collected from Mumbai metropolis. The data were collected with the help of google form.

Hypothesis:

H1 : People are aware of the government schemes related to girl child.

Data Analysis:

General Information of the respondents:

From the collected data, it is observed that out of 45 respondents,

- 33% are male and 67% are female (See Figure-1).
- 65% people are employed and 35% peoples are not employed.
- 31% are from 20 to 30 years group, 51% from 30 to 40 years group, 11% are from 40 to 50 years, 2% are from 50 to 60 years group and no one is from 60 years and above.
- 7% respondents are HSC, 42% are graduate and 51% are post graduate and no one is professional (See Figure-2).
- 56% respondents are doing service, 7% are doing business, 5% are professional and 30% are housewife and 2% are farmers..
- 70% respondents have only one child, 21% have two children and 9% have more than 3 children.
- 30% people have no daughter and 70% people have daughter (See Figure-3).

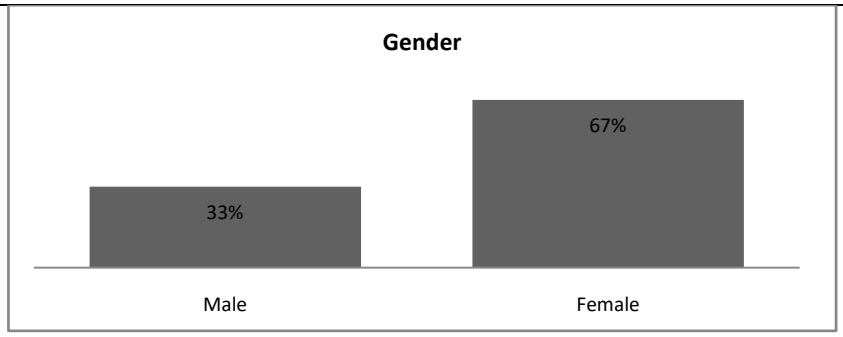

Figure-1

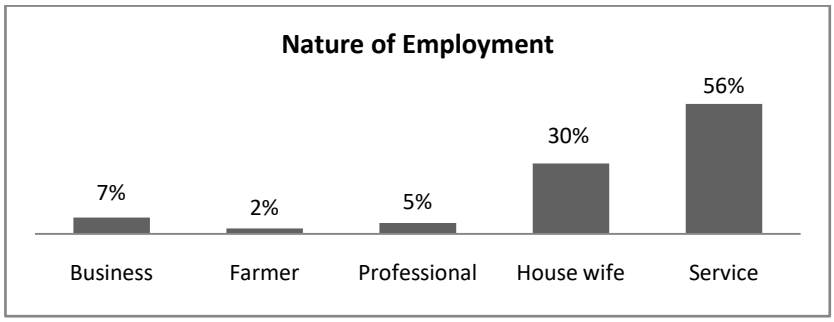

Figure-2

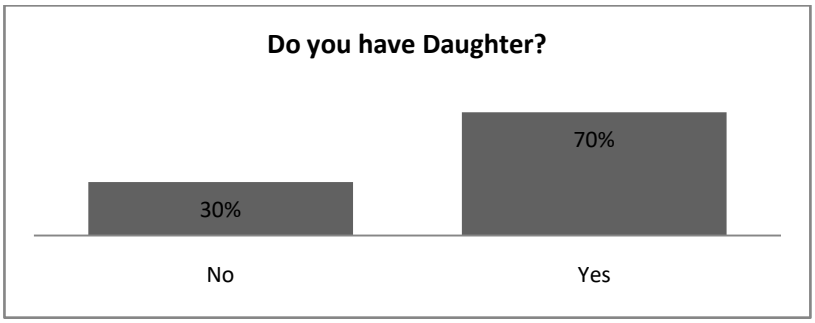

Figure-3

Specific information about the schemes related to girl child:

- 45% people are know about the government schemes related to girl child and 55% people don't know the schemes.
- Govt. Schemes known by parents having Daughter:(See Figure-4)
  - 3% people know about "Beti Bachao, Beti Padhao", "Sukanya Samriddhi Scheme" and "Sabla" scheme.
  - 3% people are aware about "Beti Bachao, Beti Padhao" and "Sabla" scheme.
  - 7% people are aware about "Sukanya Samriddhi Scheme", "Beti Bachao, Beti Padhao" and "Kishori Shakti Yojana" and "Sabla" scheme.
  - 7% people are aware about only "Beti Bachao, Beti Padhao" scheme.
  - 7% people are aware about "Sukanya Samriddhi Scheme", "Beti Bachao, Beti Padhao" and "Kishori Shakti Yojana".
  - 17% are aware about "Sukanya Samriddhi Scheme".
  - 17% people are aware about "Beti Bachao, Beti Padhao" and "Kishori Shakti Yojana"
  - 23% are aware about only "Sukanya Samriddhi Yojana".
  - 20% people don't know about any of the scheme.

- 12% people have opted some schemes and 58% people are have not opted any of the scheme and 30% people does not have daughter (See Figure-5).
- 7% people think that their daughter is burden on them and 93% people does not think that their daughter is burden on them.
- 17% people have opened the Sukanya Samriddhi account for their daughter, 60% have not opened it and 23% people are intend to open it.
- 39% people have faced the problem such as lack of Aadhar card of daughter, birth certificate of daughter and 61% people did not face any problem.
- Only 44% people know the benefits of Sukanya Sariddhi Yojana, 37% people know the benefits of Kishori Shakti Yojana, and 19% people know the benefits Sabla scheme (See Figure-6).
- 3% people think only Sabla scheme is helpful, 3% people think only Kishori Shakti Yojana is helpful for girl child, 3% people think Kishori Shakti Yojana, Sukanya Samriddhi Yojana, Sabla scheme is helpful, 7% people think that Beti Bachao, Beti Padhao and Kishori Shakti Yojana is helpful, 13% people think only Sukanya Samriddhi Yojana is helpful, 13% people think Sukanya Samriddhi Yojana and Beti Bachao, Beti Padhao yojana is helpful, 13% people think that "Beti Bachao, Beti Padho", Sukanya Samriddhi Yojana and Kishori Shakti Yojana are really helpful to flourish the girl child, 37% people think only Beti Bachao, Beti Padhao scheme is helpful, (See Figure-7).

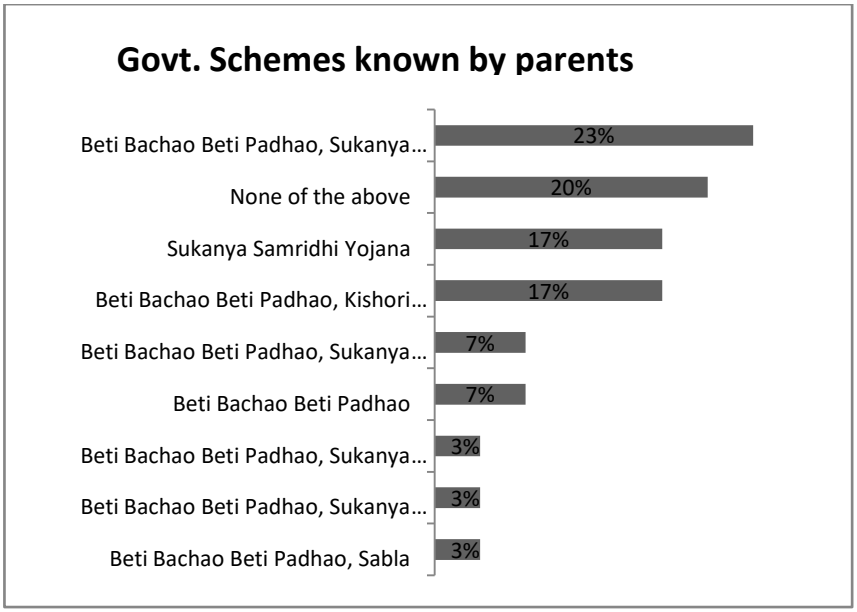

Figure-4

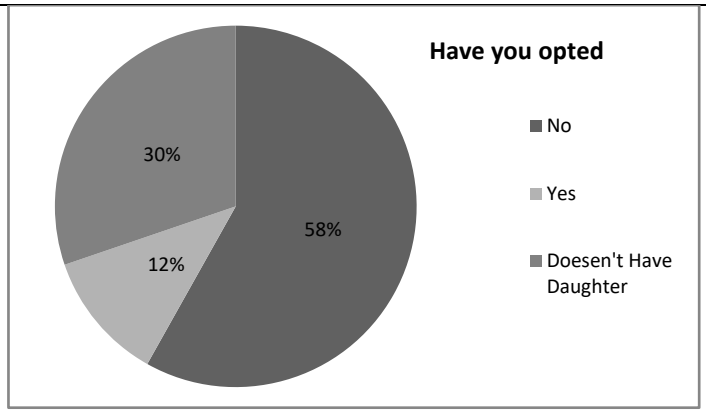

Figure-5

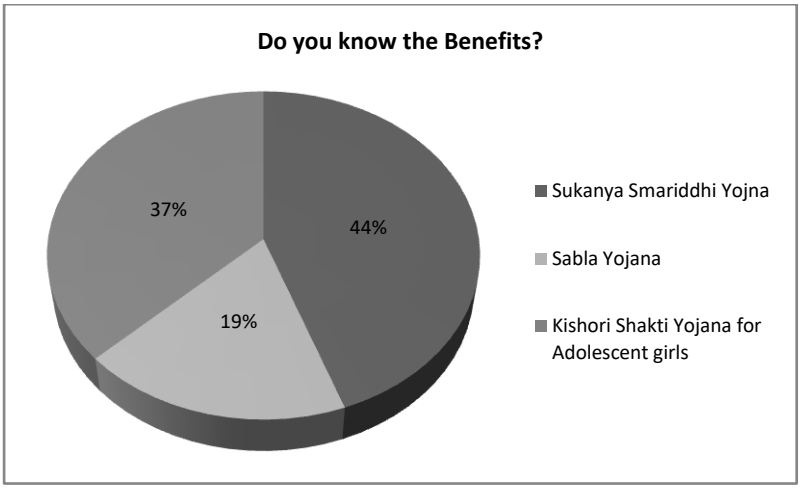

Figure-6

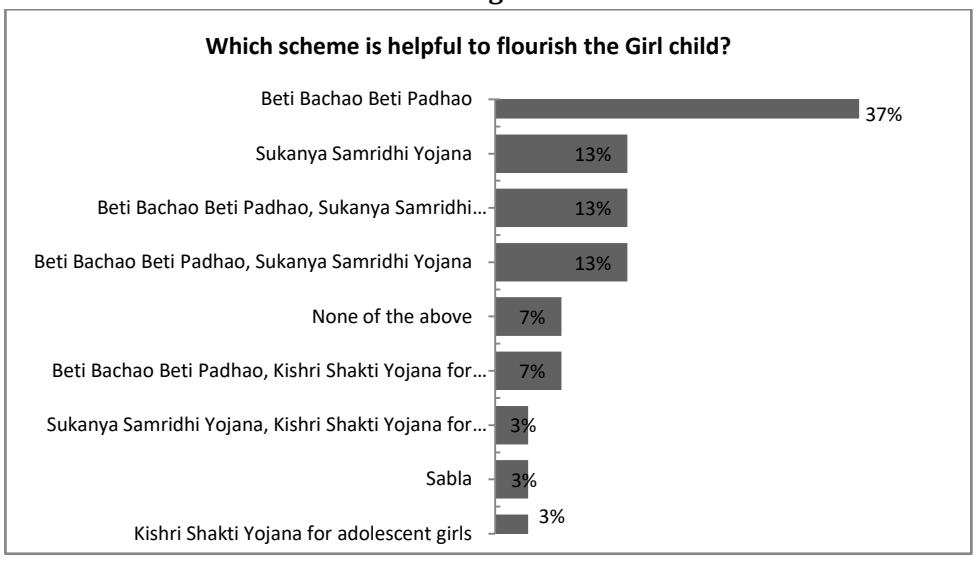

Figure-7

Discussion:

The present paper gives the different aspects of schemes including nature of schemes, their financial implications, and availability of financial help by governments, scheme's benefits to girl child and their parents, awareness of parents and their desire to help girl child for development.

On the basis of above findings and information, it is observed that in a given sample all people are not aware of the schemes and some people know only one or two schemes. Even financial

implications, its availability, its exact benefit to girl child at a proper time are not also known to the parents. Even after giving financial incentives in the form above schemes sex ratios of female to male has not increased. Unawareness and negligence may be possibly due to the educational and financial status of the parents.

Hence, earlier hypothesis that people are aware of the government schemes related to girl childfails in the light of above findings and therefore it is not acceptable.

Conclusions:

The following conclusions are drawn from the present study:

- More than 50% of the people in the metropolis like Mumbai are not aware (53%) of the schemes related girl child launched by central and state government.
- Girl child is not a burden to the parents (93.3%).
- People are aware of some schemes but not all the schemes launched by governments.

From the above study it is observed that variations in the findings may be due to several other factors also which include educational background, financial status, residence, etc of the parents. These factors may be responsible for the uneven results and need to be surveyed sepaprately.

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APPLICATION OF ICT (INFORMATION COMMUNICATION TECHNOLOGY) IN LIBRARIES

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Abstract
ICT has changed library services in all over the world. Current era is considered as a digital era. Most of the information are in digital format. With the help of ICT libraries can perform its functions more effectively, and the it can provide more accurate updated information as per its user's need. The article states that what is information technology?, components of information technology, application of information technology in libraries, what is information and communication technology?, what is library? and application of ICT on libraries.
Keywords: *Information communication technology and its application in libraries*

Introduction

"Information and Communication Technologies" ICT refers to technologies that provide access to information through telecommunications. It is similar to Information Technology (IT), but focuses primarily on communication technologies. This includes the Internet, wireless networks, cell phones, and other communication mediums.

In the past few decades, information and communication technologies have provided society with a vast array of new communication capabilities. For example, people can communicate in real-time with others in different countries using technologies such as instant messaging, voice over IP (VoIP), and video-conferencing. Social networking websites like Facebook allow users from all over the world to remain in contact and communicate on a regular basis. Library have to perform many duties and services. With the help of ICT libraries can perform their duties and services very effectively.

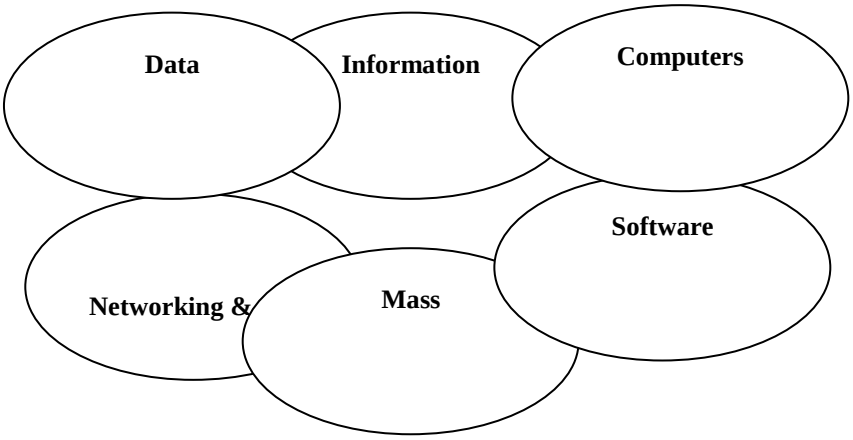
What is Information Technology?

The world Information Technology is a combination of two words. One is Information and the other is Technology. Information means knowledge, it can be a bit or a para or a page. In addition, dictionary definition of technology is the systematic application of scientific and other organized knowledge, skills to practical tasks by the use of computers and communication.

Information Technology is a generic term used to denote activities connected with computer based processing, storage and transfer of information. It includes micro processors, cable access television, fiber optics, satellite, word processing, electronic mail, video, robotics and such others. Information Technology is collective term for the whole spectrum of technologies providing ways and means to acquire, store, transmit, retrieve and process information. Information Technology is not one technology but many, which have converged to serve the needs of the information revolution. Computing technology, Telecommunications, Audio and Video technology, printing technology all are part of it. Any definition of Information Technology (I.T.) must therefore be very broad.

COMPONENTS OF INFORMATION TECHNOLOGY

Technological change is becoming a driving force in our society. Information technology is a generic term used for a group of technologies. Following are the major components of information technologies as most relevant in modern library and information system.



APPLICATION OF INFORMATION TECHNOLOGY IN LIBRARIES

The library is the main information centre which can make use of the fat development IT for the benefits of mankind as a whole. The librarian's preference of IT should include all those technologies which are expected to be used in the library activities/ operations and other library services for collection, processing, storage, retrieval and dissemination of recorded information, the fast developing information technologies have showered almost every areas of application including libraries. In case of libraries, these are good use in the following environments.

a) Library Management: Library management includes the following activities which will certainly be geared up by the use of these fast IT developments: Classification, Cataloguing, Indexing, Database creation, Database Indexing.

b) Library Automation: Library automation is the concept of reducing the human intervention in all the library services so that any user can receive the desired information with the maximum comfort and at the lowest cost. Major areas of the automation can be classified into two organization o f all library databases and all housekeeping operations of library.

c) Library Networking: Library networking means a group of Libraries and information Centers are interconnected for some common pattern or design for information exchange and communication with a view to improve efficiency.

d) Audio-Video Technology: It includes photography, microfilms, microfiches, audio and tapes, printing, optical disk etc.

e) Technical Communication: Technical Communication consisting of technical writing, editing, publishing, DTP systems etc.

What is Information and Communication Technology (ICT)?

Information and communications technology or information and communication technology (ICT), is often used as an extended synonym for information technology (IT), but is a more specific term that stresses the role of unified communications and the integration of telecommunications (telephone lines and wireless signals), computers as well as necessary software middleware, storage, and audio-visual systems, which enable users to access, store, transmit, and manipulate information.

What is Library?

A **library** is a service institution. It is a store house of information which is represented in the form of books, periodicals, newspapers, manuscripts, films, maps, prints, documents, microform, CDs, cassettes, videotapes, DVDs, Blue-ray Discs, e-books, audio books, databases, and other formats. These collection of sources of information and similar resources, made accessible to a defined community or parent body for reference or borrowing. It provides access to material which is available in physical or digital form. It is the primary duty of library to organize its resources which is

helpful to those who use. It means that the arrangement of library resources should be in easy and convenient.

There are many services offered by the library such as: Books Lending service, Document Delivery Service, Inter-Library Loan and so on.

Application of Information Communication Technology in Libraries

Information Communication Technology is very useful for libraries in creating databases of their own and meeting them available to users through networks. It also enables libraries to provide effective and efficient services. Most of the library operations like book acquisition, circulation, office management, information services, etc.

A) Computer Technology

Computers are now extensively used in the library operations and has great impact in the management of libraries and information centers. Computer technology can be used in various fields of library activities. Some of the areas where computer application takes place are:

1. Information Resource Building:

Acquisition of books, monographs, audio-visual, electronic materials such as CD-ROM, maps and so on. There are some specific functions of an acquisition process. (Suggestion, recommendations and selection of library collection.)

- Duplication checking/library holding checking.
- An vender selection.
- Preparation of order/cancellation of order lists with terms and conditions of the supply.
- Checking of overdue orders.
- Record of items on order.
- Record of received and non-received items and receipt to the vender.
- Items verification with order file and invoice.
- Inspection of items by the concerned department.
- Prepare for payment after accessioning.
- Preparation budget and maintain accounts and statistics subject wise etc.
- Final report. (Items/subjects wise/chronologically/booksellers reported etc.)

2. Data Entry:

Database is required for each:

- Books.
- Clients/Members.
- Serials.
- Audio-visuals.
- CD-ROMS, Floppies.
- Gifted items.
- Maps, Reports etc.

3. Classification and Cataloguing:

- Catalogue card production.
- On-line cataloguing.
- Duplication checking of catalogue cards.
- Production of duplicate catalogue cards.
- Preparation of authority file subject heading list.
- Shorting, checking and filing of catalogue cards.
- Automatic generation of added entries (author, title,series etc).
- Generation of monthly accession list.

 Developing centralized and on-line cataloguing.

4. Circulation Control:

 Registration/cancellation and make time for membership.
 Issue, return, renew, reservation of documents and produce the slip for proof.
 Charges for late, lost book, binding and production of penalty slip.
 Maintenance of circulation statistics.
 Inter library loan.
 Use of bar code system.
 Report/statistics of circulation.

5. Serial Control:

 Input essential serials data.
 Order list of new serials.
 Mode of payment, prepare for payment
 Receipt and updating the records.
 Receipt to vendors or publishers.
 Preparing the list of present holdings, additions, missing, cancelled serials chronologically, subject-wise, etc.
 Renewal and cancellation of present subscriptions.
 Sending reminders and follow-up of missing issues.
 Binding control.
 Accession register of bound serials.
 Prepare budget and maintain accounts/statistics- subject wise, binding etc.

6. Documentation and allied services:

 Indexing and abstracting of micro and macro documents.
 Thesaurus construction.
 Compilation of union catalogue.
 Bibliographical control.
 Current Awareness Services.(CAS)
 Literature search.
 Selective Dissemination of Information.(SDI)
 Newspaper clippings.

7. Information Retrieval:

 Database creation and maintenance, interactive searching, saving of in house as well as external databases.
 Search and print outs of queries against specified requirement.
 Information about the books (issued, reserved, lost, overdue, weed out), member-ship, inter library loan, penalty charges, periodicals, newspaper clippings, reports etc.
 According alphabetically, chronologically, subject-wise, members wise, keywords with each particular such as accession no-wise, title, author, call number, edition etc.

B) Communication Technology

Communication is the process of transforming information from an information source to a destination. Communication, the exchange of information and the transmission is very essence in a social system or in an organization. Dictionary meaning of communication is news or the act of making oneself understand the means of sending information between one place to another. In modern days, various means of communicating the information came into existence. There is a need

to communicate information effectively, efficiently and timely by applying modern technologies such as communication technology. The major areas of communication technology are:

1. Audio-visual technology
2. Fax
3. Telex
4. E-mail
5. Video text
6. Tele text
7. Online search
8. Tele conference
9. Voice Mail Box
10. Satellite Technology
11. Cellular telephones
12. Internet
13. Intranet
14. Extranet
15. CD-ROM
16. DVD

Conclusion

ICT has changed library services in all over the world. Current era is considered as a digital era. Most of the information are in digital format. With the help of ICT libraries can perform its functions more effectively, and the it can provide more accurate and up-to-date information as per user's need. Some libraries are interconnected with each other, they are exchanging their information with member library. Using ICT tools in the libraries leads to high speed satisfaction of user's need, and libraries can provide it's services with more assurance.

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LIBRARY PROVIDES ACDAMIC AS WELL AS SOCIAL REFERNCE SERVICE

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INTRODUCTION :-

In a Sense, the Student's smile is a direct Consequence of the American's with Disabilities Act. 1990. Among its finding & Stated that " censers data, national polls & other studies have documented that people with disabilities as group accept an inferior Staten in our society and are severally disadvantages Socially Vocationally, Economically & educationally .

The purpose of this Act is " to provide a clear & comprehensive national mandate for the elimination of discrimination against individuals with disabilities, " to preside enforceable Standard age vast with discrimination."The major areas of discrimination faced day to day by people with Since the AOA prohibits discrimination in public entities and public accommodation & Services operated by private entities its relates directly to public & private libraries.

Dr. S.R. Ranganathan

Def. : - Reference service "Establishing Contact between Reader & Book by personal service.

Digital Reference Service : - Digital reference to service by which library reference service in conducted online and reference transaction is a computer – mediated communication forms of digital reference.

- Email
- Web form
- Chat using Commercial Application
- Chat using Instant Massaging

TRANSLATION SERVICE :-

Translation is the comprehension of the meaning of the subsequent production of an equivalent text like wise called a " translation" that communicates the same message in another language.

REFERENCE SERVICE:-

Research is largely a matter of combining knowledge of sources techniques, knowledge of Sources and persistence. Research initiating inquiries will want to be aware of Specialized encyclopedias and state- of- the- art review articles and then of the several techniques that can be used to find more in- depth information.

REFERENCE SOURGES:-

Encyclopedia :-

Here the specialist Sets devoted to particular subject areas are at ten more useful that the Gridley Known general set purpose of an encyclopedia is to summarized knowledge and provide a starting point for more extensive research.

Index & Abstracts :-

These Serve to get you to the journal articles & research reports an your Subject .

Computer Database:-

These often Contain the Same information as conventional indexes & Abstracts.

Bibliographies : - These list publication of a particular subject.

Guide to the literature : - These often provide a connected expository overview of the literature.

Review Articles : - State – of – the – art reviews are some what like encyclopedia

Directories : - There serve to lead you to people organization or institution that are interested in a knowledgeable about particular subject.

Year Book : - There provide reviews and arrestments of the most recent years development in a field.

Hard Book & Almanacs : - There serve as compendia of a variety of miscellaneous information.

Newsletters and loose- leaf services : - These provide daily and weekly updates of information in rapidly changing fields.

Needs Of Reference Service :-

- Initiation of new comers.
- To help Research Scholars.
- To Serve Passive Clientele.
- To help Absentee Enquirer.

Importance of Reference Service :

Providing accurate, efficient and in dividend reference assistance to all clients in courteous and encouraging manners. providing structure and a positive learning experience for student to aid them in the development of information literacy skills. Providing equitable reference assistance to all diets in time frame to their needs. Providing appropriate level of service to all clients.

Conclusion : -

Reference is likely to alert you to the existence of so many good serves that, right there, you may start allowing yourself to ask question you never through could be answered. Need of the library were are constantly changing in repairs to societal changing the talk of reference libraries in the present & future is to help users meet their needs by consistently improving and finding better way to provide.

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WHEEL CHAIR CONTROL USING FLEX SENSOR

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Abstract
For the people with physical disability , sickness or injury in their legs, wheelchairs are designed to ease their mobility and to provide them with proper moving technology. This paper describes an intelligent motorized wheelchair for physically handicapped people using flex sensor technology.It is useful for physically disabled person with his hand movement with the help of hand gesture recognition.In this proposed model dc motors are used to moving the wheelchair. The sensor is used to control the direction of wheel chair as left ,right,forward and reverse.FLEX SENSOR produces analog signal i.e its resistance increases or decreases depending on the direction of bend which is given to the arduinouno, the arduinouno converts three analog signals into digital. Depending on the angle and direction of bend corresponding values are calculated by arduinouno and the motor moves in the desired direction.

Introduction:

Driving a wheel chair in domestic environment isa difficult task even for normal people and becomes even more difficult for the people with arms or hand impairments .People with physical disabilities every time find it complicated to navigate through their house without the assistance of someone.The proposed project is useful for the patients where they can move their wheelchair in their own directions, without any third party's help or support.This describes an intelligent motorized wheelchair for physically handicapped people using flex sensor technology.

This robotic type wheel chair allowing the end user to just perform safe movements and accomplish some daily life important task.Since motorized wheel chair can move at a fair speed ,it is important to control the speed of motor as per the end user requirement.Thus the speed of motor is control using PWM method. The sensor is used to control the direction of wheel chair as left ,right,forward and reverse.

Gesture control wheelchair is divided into two parts:

1. Transmitter: the Hand gesture
2. Receiver: the wheel chair

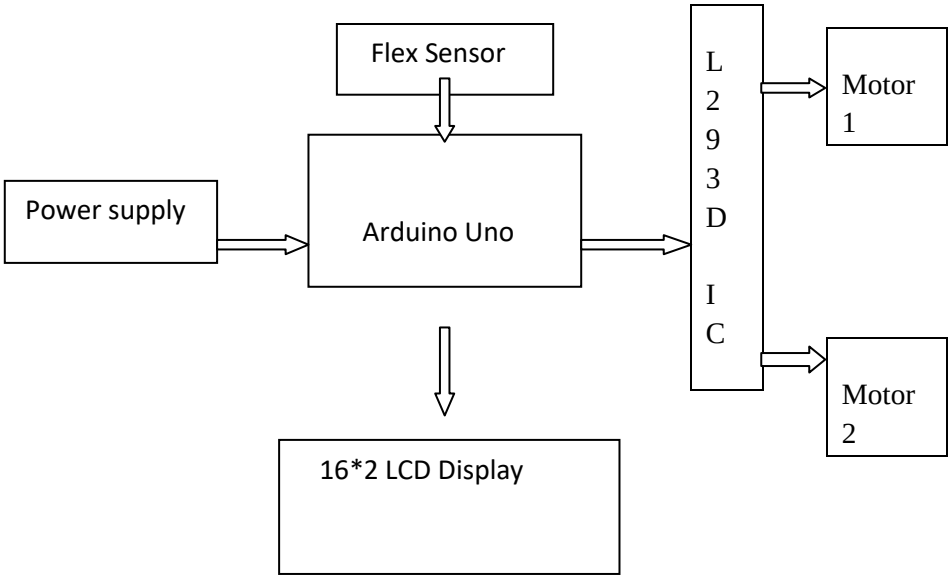
This system consists of three flex sensor . Dc motors are used to moving the wheelchair. The hardware part of the system provides main component as Arduino uno which controls and command the entire system.

SYSTEM DESCRIPTION:

The system consists of Arduino uno,flex sensor,IC L293D,Dc Geared motor and LCD display.Common 12v power supply is provided to all circuite which generated by USB wire .All devices are interfaced with Arduino uno.We uses port and port pins to interface these devices as per requirements.Three Flex Sensor is used as input device to navigate the Automatic wheelchair in different directions. FLEX SENSOR produces analog signal i.e, its resistance increases or decreases depending on the direction of bend.Resistence of flex sensor is depend upon finger movements.As per the movement of the finger,resistance of the flex sensor is changes.This change in resistence gives the input to the L293D IC. Therefore different ADC values are obtained with different touch positions. With this command DC motors driver which in turn rotates the DC motor(wheel).Arduino uno is used for taking sensor input and gives process command to the LCD.LCD display is interfaced to the

Arduino uno for displaying the command in text format as visual and the mobility of the wheelchair is observed.

Architecture:



Arduino Uno.

Arduino Uno is a microcontroller based on the datasheet. It has 14 digital input or output pins of which 6 can be

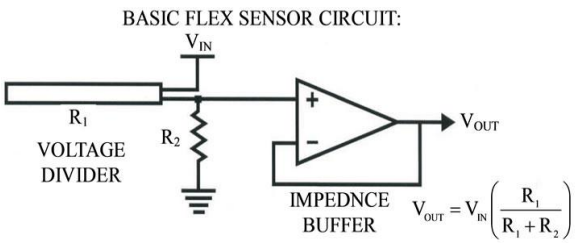
used as Pulse Width Modulation (PWM) as output, 6 analog inputs, a 16 MHz quartz crystal, an USB connection,

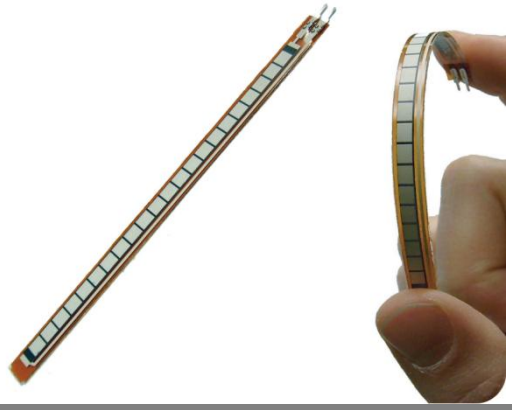
ICSP header and a reset button.

The Microcontroller simply connected to the computer with a USB cable or a power with an AC to DC adapter or battery to get started. Here the purpose of arduino is used to transmit the command through the signal.

Flex Sensor:

The Flex Sensor is a unique component that changes resistance when bent. An unflexed sensor has a nominal resistance of 10,000 ohms (10 K). As the flex sensor is bent the resistance gradually increases. When the sensor is bent at 90 degress its resistance will range between 30-40 K ohms.

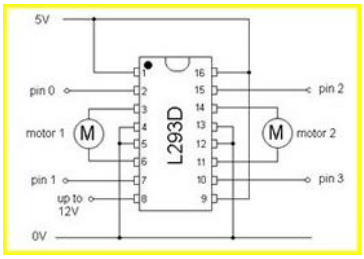




A flex sensor uses carbon on a strip of plastic to act like a variable resistor. The resistance changes by flexing the component. The sensor bends in one direction, the more it bends, the higher the resistance gets. In simple word ,flex sensor are analogue resistor which works as a variable analogue voltage divider

Motor Driver (L293D IC):

L293D is a dual H-bridge motor driver integrated circuit (IC).L293D contains two inbuilt H-bridge driver circuits. In its common mode of operation, two DC motors can be driven simultaneously, both in forward and reverse direction. The motor operations of two motors can be controlled by input logic at pins 2 & 7 and 10 & 15. Input logic 00 or 11 will stop the corresponding motor. Logic 01 and 10 will rotate it in clockwise and anticlockwise directions, respectively.



There are two Enable pins on l293d. Pin 1 and pin 9, for being able to drive the motor, the pin 1 and 9 need to be high. For driving the motor with left H-bridge you need to enable pin 1 to high. And for right H-Bridge you need to make the pin 9 to high. If anyone of the either pin1 or pin9 goes low then the motor in the corresponding section will suspend working. It's like a switch.

Advantages:

1. Minimal effort is needed to control the wheelchair because you use a simple Flex Sensor.
2. Easy to move from one place to another place.
3. Operating principle is very simple.
4. Non-skilled person can also operate this machine.

Conclusion:

Recent advancements in technology are making lives easier for everybody.This work is to help the disabled person by implementing flex sensor and voice command based control system for the wheel chair and providing alternative method to control the equipment,thereby serving many disabilities.Thus the wheel chair understand the signal coming from the control system and reacts accordingly.Functional intelligent wheel chair is practical and helpful to people with certain types and degree of handicap.Through we are mainly focusing on Flex sensor and voice recognition based system interface,more advancements can be done through more research.

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SURVEY OF ARBUSCULAR MYCORRHIZAL FUNGI ASSOCIATED WITH COLOCASIA

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Abstract
An attempt has been made to survey of Arbuscular Mycorrhizal fungi associated with Colocasia plant . Rhizosphere soil and roots samples of colocasia plant were collected from two locality of mahad area. Two genera with six species were reported from above localities. The genus Glomus was most common with four species with two species of Scutellespora were reported . The average number of AM propgules per 100 gram soil, was between 50 to 70 the percentage root infection was ranging between 20 to 60 percent.
Keywords : *Survey , Arbuscular Mycorrhizal fungi, colocasia .*

INTRODUCTION

Colocasia Plant is one of the vegetable crop . It is grown in various types of soils. The Arbuscular Mycorrhizal (AM) fungi play important role as a bio fertilizer for promoting plant growth. They also play an important role for uptake and accumulation of phosphorus and other ions like Copper, Zinc etc. Mycorrhizal Fungi survive on the root exudates, which contain sugars, amino acids. Organic acids, vitamins. Nucleotides etc.

MATERIALS AND METHODS

Colocasia Plant cultivated on two different localities of Mahad area. Dist Raigad at an interval of 30 days. These samples were analyzed for presents of Mycorrhizal fungi. The isolation of AM propagules was done by wet sieving and decanting method (Gerdemann and Nicolson 1963). The percentage root infection was measured by Phillips and hayman's (1970) method. Isolated spores were identified by using the Manual of Schench and perez (1990). The no. of propagules was counted under trinocular research microscope.

RESULTS AND DISCUSSION

The survey of AM fungi was carried out from two localities of Mahad area. The first soil samples were collected at the interval of 30 days from rhizosphere of Colocasia Plant.

Two genera ***Glomus*** and ***Scutellispora*** were found associated with Colocasia Plants. The genus ***Glomus*** was most abundant with four species two species of ***Scutellispora***. The rhizosphere soil from locality -2 had maximum no. of AM propagules 50 to 70 per 100gm of soil in the month of June minimum number of AM propogules and in the month of January Maximum Number of AM propogules. Locality 2 had maximum percentage of root infection was 60% & minimum was 20%.

Table No. 1 Arbuscular Mycorrhizal fungi reported from soil.

Sr.No.	AM Fungi	Locality-1	Locality-2
01	*Glomus albidum*	+	+
02	*Glomus boreale*	-	-
03	*Glomus convolutum*	+	-
04	*Glomus fasciculatum*	-	+
05	*Scutellospora arenicola*	+	-
06	*Scutellospora pellucida*	+	+

+Present- Absent

Table No. 2 Number of propagules per 100 gm of soil and percentage root infection.

Sr. No	Month	Locality-1 No.of Prpa.	Locality-1 % root infe	Locality-2 No.of Prpa.	Locality-2 % root infe
01	June-17	52	20%	54	20%
02	July-17	55	20%	57	20%
03	Aug-17	57	30%	59	30%
04	Sept -17	60	30%	62	35%
05	Oct-17	62	40%	65	40%
06	Nov-17	64	50%	67	50%
07	Dec-17	66	50%	69	50%
08	Jan-18	69	60%	70	60%

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CONSEQUENCE OF ANNEALING ON STRUCTURAL PROPERTIES OF ZINC SULPHIDE THIN FILMS

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Abstract
Zinc sulphide films were deposited on non-conducting glass substrates by dip method. The resultant films were annealed upto 473 K temperature. The X-ray diffraction spectra showed that zinc sulphide thin films are polycrystalline. As deposited sample shows hexagonal phase whereas sample annealed at 423 and 473 K shows hexagonal and cubic mixed phase. The grain size and microstrain were calculated and correlated with annealing temperature.

1. Introduction

Zinc sulphide (ZnS) belongs to the II-VI family of semiconducting material receiving ever-increasing attentions due to its wide variety of applications [1]. It is an excellent host material for electroluminescent phosphors and is being commercially used for electroluminescent displays [2]. It can be used for fabrication of optoelectronic devices such as blue light-emitting diodes, electro-optic modulator, optical coating, photoconductor and especially photovoltaic devices. It is also used an n-type window layer for thin film heterojunction solar cells. ZnS/Cu (In, Ga) Se_2 photovoltaic cells have shown an efficiency of 17.2% [3-6].

Thermal treatment is necessary for fabrication process of several kinds of opto-electronic devices. The role of thermal annealing process is very important in achieving high performance devices. Therefore, studies of annealing effect on the surface, the structure and optical properties play a very important role in enhancing device efficiency [7].

The aim of this work is to examine change in the properties of ZnS films deposited on glass substrate as a function of annealing temperature.

2. Experimental details

In actual experimentation, 20 mL (0.2 M) zinc sulfate heptahydrate solution was taken in 100 mL beaker. 2.5 mL (1M) succinic acid, 25 mL (2.8 M) ammonia, 25 mL (2 %) hydrazine hydrate and 20 mL (0.2 M) thiourea were added in the same reaction bath. The pH of the reactive mixture is 10.70. The temperature of the bath was maintained at 278 K using ice bath. Individual solutions were cooled at 278 K and mixed to avoid precipitation. The solution was stirred vigorously before dipping non-conducting glass substrates. The substrates kept vertically slightly tilted in a reactive bath. The temperature of the bath was then allowed to increases up to 298 K very slowly. After 9 hours, the slides were removed washed several times with double distilled water. The film was dried naturally preserved in dark desiccators over anhydrous $CaCl_2$. The films were annealed at 348K, 423K and 473K for 3 hours.

3 Results and Discussions

3.1 XRD Studies

The crystallographic study of as grown as well as annealed at zinc sulphide thin films was examined by X-ray diffractometer. The XRD patterns are shown in Fig. 1. Zinc sulphide can be grown with either hexagonal, wurtzite type structure (JCPDS 39-136) or the cubic zinc blende type structure (JCPDS 77-2100). As deposited films shows poor crystallinity with hexagonal phase. The XRD pattern of as deposited film shows the highest intensity peak at d = 3.159 Å (008). Along with (008) plane, (110) and (118) planes were observed. Annealing of film at 348K increases the intensity

of the above. Annealing of film at 423K and 473K, mixture of hexagonal and cubic phases is observed. It introduces further peaks at d = 2.707 Å (200) of cubic phase. The diffused background is due to amorphous glass substrate and also to some amorphous phase present in zinc sulphide thin films. The peak intensity increases with increase in temperature. No impurities were detected in XRD pattern. The peak intensity increases with increase in temperature.

The annealed film shows increase in crystallite size due to annealing. The crystallite size (D) is calculated using Debye-Scherrer formula [8]. The average crystallite size was calculated by resolving the highest intensity peak. It is found that crystallite size increases from 55 to 98 nm as the annealing temperature increases upto 473K. The origin of the strain is related to lattice misfit who depends upon the deposition conditions. The microstrain (ε) developed in the films were calculated from the equation;

$\varepsilon = \beta\cos\theta/4$----------1.1

As the annealing temperature increases, the microstrain decreases from 3.06×10^{-3} to 1.05×10^{-3}. This is due to the predominant recrystallization process in the polycrystalline thin films and due to the movement of interstitial zinc atoms from inside the crystallites to its grain boundary which dissipate and lead to a reduction in the lattice imperfection [9-10].

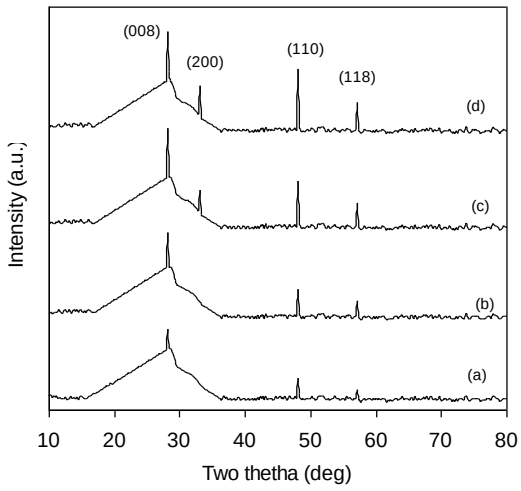

Fig. 1: XRD pattern of annealed zinc sulphide thin film.
a) as deposited
b) annealed at 348 K
c) annealed at 423 K
d) annealed at 473 K zinc sulphide thin film.

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SIXTH SENSE TECHNOLOGY

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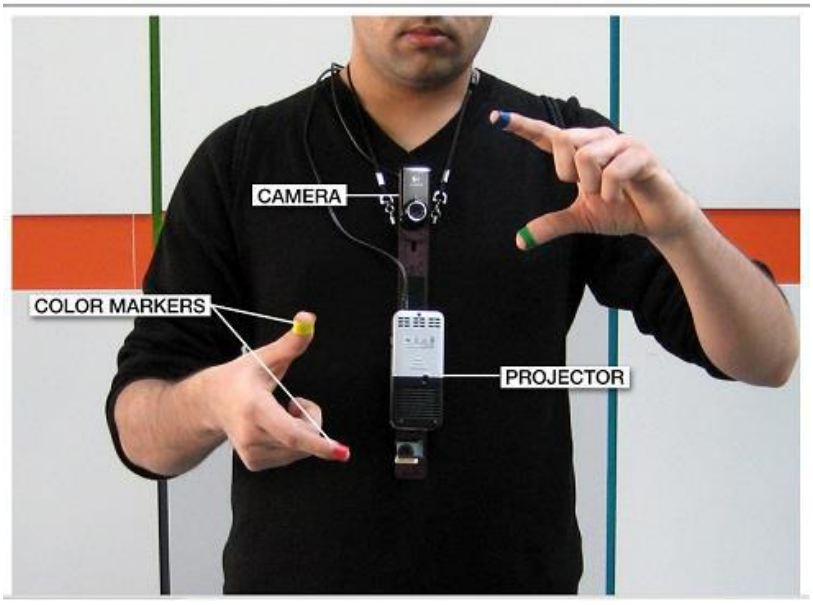
Abstract
The Sixth Sense also known as 'A Clairvoyance (Extrasensory) Perception' has emerged as 'The Sixth Sense Technology' in the past few years. Human beings have evolved over millions of years to sense the world that exists around us with the help of our five natural senses which is used to perceive the information whenever we come across a thing, a person or a place. That information helps us to make judgments and instigate the appropriate action which is required to be taken. This paper focuses on a wearable gestural interface (a device) consisting the idea of the same above mentioned Sixth Sense Technology that links the informational and data-oriented knowledge not cognoscible naturally by the five senses from the physical world around us, with the digital information and allows us to use our natural hand gestures to communicate with the digital information, comprising of various applications along with different kinds of components, making the information available on our finger-tips at lightning speed.

INTRODUCTION

"Sixth Sense Technology", it is the newest jargon that has proclaimed its presence in the technical arena. This technology which has emerged has its relation to the power of these six senses. Our ordinary computers will soon be able to sense different feelings accumulated in the surroundings. It frees information from its confines by seamlessly integrating it with reality, and thus making the entire world your computer.



It's a wearable gestural device that can turn any surface into a touch screen for computing, controlled by simple hand gestures. The device, consisting of components like LED projector, cell phone, camera, mirror and some different coloured tapes to get the gestures recognized, are connected together through Bluetooth or Wi-Fi with each other. The technology is mainly based on hand pattern

recognition, image capturing, processing and manipulation, etc. The software of the technology uses the captured video stream, which is captured by the camera, and also tracks the location of the tips of the colored markers rolled on fingers to recognize the gestures by using computer vision techniques. This paper makes us cognizant how the sixth sense technology provides an integration of the digital world with the real world by vanquishing the five natural senses.

HISTORY OF SIXTH SENSE TECHNOLOGY

Idea behind this marvellous technology was started late in 1990's by Steve Mann at MIT who actually proposed first wearable computer. Initially it was proposed as a head worn projector and camera back in 1994, thereafter he developed it and proposed it as a neck worn projector and camera in 1998. It was further developed and prototyped by PranavMistry, a PhD student in the Fluid Interfaces Group at MIT lab a as part of his research curriculum. But, we can still consider Steve Mann as the "father of emergence Sixth Sense" technology. The first archetype of the sixth sense developed by PranavMistry was very much bigger and was not a functional model so they came out with a modified neck worn type device which was like a pendant.

The first article by Arjun KR says that they started working with a big projector mounted on a helmet but that proved cumbersome if someone was projecting data onto a wall and then turned to speak with a friend then data will project on friend's face thus he switched up with a smaller projector and created the pendant prototype to be worn around the neck. The archetype was built from an ordinary webcam and a battery-powered 3M projector, with an attached mirror and all connected to an internet-enabled mobile phone here.

He says that the movies "Robocop" and "Minority Report" gave him the inspiration to create his view of a world where computers and other digital devices enhance people's enjoyment of the physical world and not dominated by computers, digital information and human robots.

WORKING WITH SIXTH SENSE TECHNOLOGY

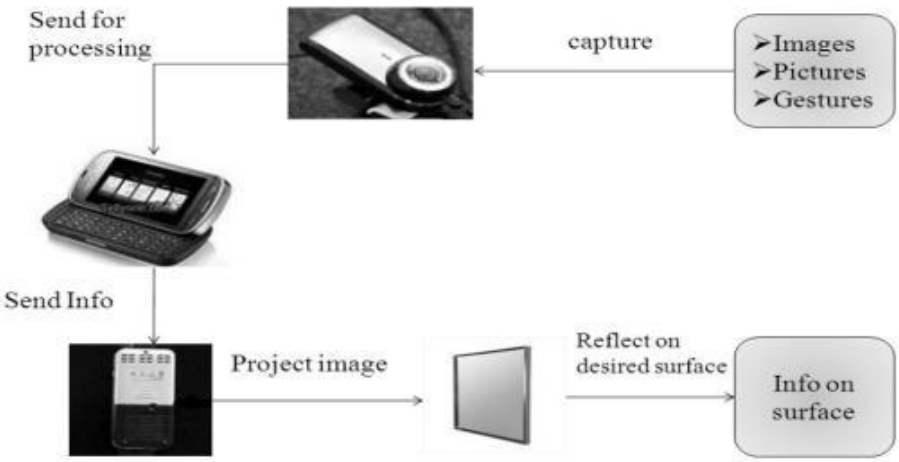


Figure 3.6: Working

The device consist of components like a camera, a mirror and a projector connected wirelessly to a Bluetooth smart phone that can slip comfortably into one's pocket. The camera recognizes individuals, images, pictures, gestures one makes with their hands with the help of the coloured markers. The data caught by the camera is then analysed by a software program and tracks down the location of the markers with the help of single vision technique. This software recognizes 3 kinds of gestures: - Multi-touch, freehand and iconic.

Information is then processed by the smartphone after which the downward- facing projector projects the output image on to the mirror which in turn reflects image on to the desired surface. Thus, digital information is freed from its confines and placed in the physical world.

VARIOUS APPLICATIONS

The various applications of Sixth Sense exhibiting the efficiency, viability and flaccidity of the system are:

o**Make a Call** by just bringing the hand in front of the device and dialling it on a virtual keypad on your palms.

o**Get Flight Updates** by getting the details of flight timings.

o**The Map** application that allows the user to navigate a nearby map.

o**3D Drawing Application** lets the user draw on any surface by tracking the tips movements of the user's index finger.

o**The Clock** lets the user to just draw a gesture a circle on his wrist and showcases a clock on his wrist.

o**Motion Capture** lets you capture photos using fingers and allows to share it with people.

o**Video Newspapers** allows the user to retrieve the latest related stories or interview videos streamed from internet.

o**Book Information** lets the user get the details of the book such as ratings, next page preview and some other additional information. Likewise, for some other products as well

CHALLENGES

A) Software Limitations includes dependency on Microsoft code libraries; image processing challenges and accurate positioning along with timing difficulties with synchronization are the main obstacles before implementation.

B) Implementation Limitations includes conversion into a final product as no live demos are given, only recorded videos of the application are available.

C) Security and Privacy Issues includes hacking information from Facebook, taking pictures in public, obtaining information about a total stranger in public due to the face recognition algorithm of the device as some of the many security issues that can occur.

D) Health and Safety Concerns such as brightness of projector on user's eyes; safety concerns with regards to wearing the device while driving are the main ones.

E) Away from Reality detaches the user from reality and pulls them away from the feel of the physical touch.

WHY SIXTH SENSE? (ADVANTAGES)

The digital information and its objects are integrated into the physical world with the help of the Sixth sense interface, hereby making the entire world as our own computer.

- Sixth Sense makes machines like computers to adapt to human needs and not the other way round.
- Apart from hand gestures that are used to communicate with digital information, Multi-touch and multi-user interaction is also supported.
- Data from machine is directly accessed into real time. It is an open source, cost effective idea that can be minded anywhere.
- All the relevant information is provided by the gesture controlled wearable computing device that manipulates any surface into a display.
- It is portable.
- Easy to carry as it can be worn on our neck.
- Even a novice with little or no knowledge of mouse and computer can use this device.
- Need to carry a camera no longer persist.

 The total cost invested for the making of the sixth sense technology proto type is exceptionally low. A basic sixth sense device sums up to approximately $350.

LATEST ALTERNATIVE TECHNOLOGIES PROPOSED

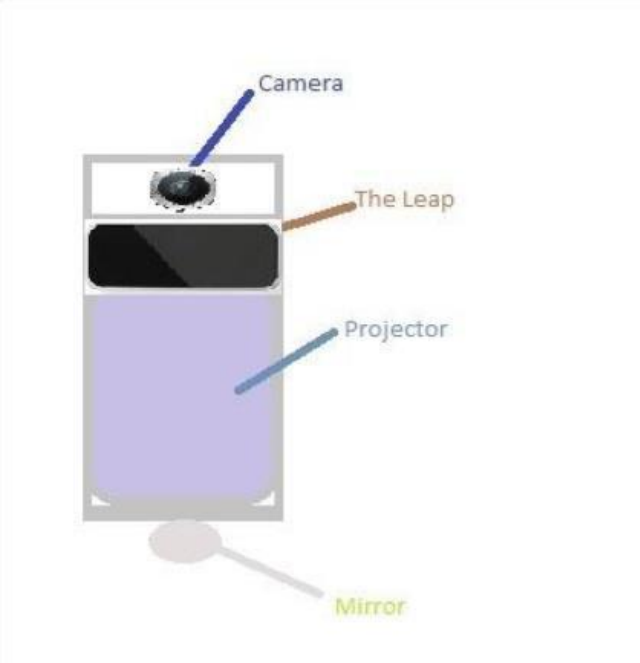
1. LASER 3D PROJECTOR

Currently, in latest version of the interface the projector used is not very efficient. The batteries of the projector used lasts only for 3 hours, as reported by an article. Also, as the device is been worn by the user, eventually it leads to a lot of focus problems.

So to overcome these problems we can use laser projector with a laser diode inside capable of projecting on any surface. Technically the interesting thing about laser projector is that it never goes out of focus. Since the application suggested in the interface requires user to wear projector on their body, a laser projector becomes more advantageous as it does not requires to adjust focus.

2. NEW CONCEPT OF SIXTH SENSE GLASS

There are some loopholes in present sixth sense design and that is there is no privacy when you are browsing your data. In this concept we can use laser filter glass having an interface between digital and real world. This glass has gesture recognition infrared camera, infrared 3D laser projector and 2 lasers fitted at both the ends of the glass and also acts as a small display and normal projector at centre. Concept of privacy is maintained. Display is made up of optical glass and have a prism layer and a mini projector which will directly project on optical nerve of eye making it seem as if your eye is projecting information.

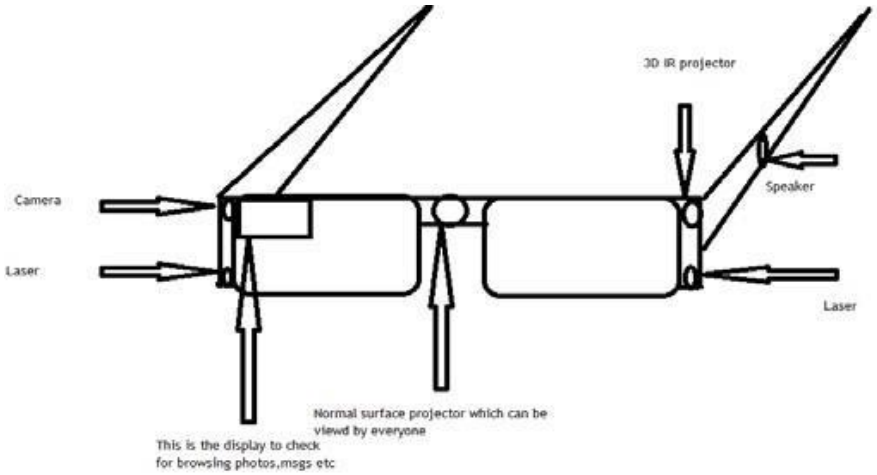


It will also include microphone which is used for sound recording and browsing of data using voice. This glass will connect with computing device with the help of Bluetooth and the glass will work on battery. Using this glass we can click photos, record video, browse data, check for direction, send message verbally, dial a call by just uttering their name, send message if number are saved or else you can simply dial the number in air.

Assuming that we are using Infrared projector, the projected things can only be seen through laser filter glasses which will protect the privacy of the user. In case of using normal projector the projector will project the information on surface which will be visible to other person. Using 3D infrared laser one can interact with 3D objects and changes can be made just like a 3D workspace. Small display in

front of the glass will display the photos; messages etc. Whilst the user can interact with it. Laser will detect the gesture and accordingly pass the signal to computing devices.

There will also be an application in computing device if user is in private browsing mode. Thus the augmented reality have gone into a different dimension where it can also be used as a night vision device and can be used by militaries. Apart from it, it can also act as a fifth sense for the disable people. Thus not only economically but it can also be used for well-being of humans.



ENHANCEMENTS

Searching the alternative for the colour markers would be another asset of this device. Kinect and The Leap have shown that it is possible. Enhancing the device to be practiced in various fields like gaming, education systems, entertainment fields will generate wide range of customer. Extra speaker can be added or mobile computing device with inbuilt speaker can be used to prepare this device. This allows developers to develop an application that can translate the gesture into sound. Integrating camera and projector in the mobile computing device would be an infallible idea as the devices like The Leap, Kinect have inbuilt sensors to recognize the gesture which could solve the limitation of camera algorithm, if the camera is been replaced by any one of these devices.

The Leap is a device that tracks movement of both hands and all 10 fingers through an open space between a user and user's computing device. It operates using LED lights and camera sensors. The software detects user's hands and fingers and translates the data into information for the device (Leap Motion 2013.)

The suggestion for the enhancement of the device would be first to finish porting the code in JAVA and to adjust it for Android also. Eventually, phones with projector can be used with little modifications like adding The Leap just below the camera section and adding the mirror right below the projector. After the modification, shaping the device as wearable is not really a problem. This modification provides multiple options to the users. They can use the phone by touching the front screen or use it by gestures and images by operating it from back side. By adding speech integrated circuit, the device can be built useful for the users with disabilities.

FUTURE (SUGGESTED) ENHANCEMENTS

To get rid of colour markers and hand use, easily used by voice recognition.

o Interactive advertisement.

o Sixth sense with holographic visualizes the better world.

o True 3D print media.

o 3D visualization and gesture tracking.

o Camera can act as an eye for blind people as a fifth sense for them.

o It is almost like setting up a digital system into our body and making use of it.
o In the given concept, the computing device has inbuilt microphone and speakers in it so the user can use that feature to connect to the external devices as well.

CURRENT STATUS

Despite of its wide press coverage in 2009, no commercial product of the Sixth Sense technology had been achieved. Also in September 2013, the open source code which was published has not been updated since October 2012 and the Java development branch of the project was similarly stalled. With many users encountering difficulties compiling and running the source code, the technology itself has not spread as widely as its media coverage. PranavMistry hinted at several reasons for not able to deliver the technology so far, including the need to incorporate newer hardware's and to remove the dependencies on proprietary Microsoft code libraries.

FUTURE SCOPE

Further development in this technology will lead to evolvement of new markets. Hardware used in the current technology can be perfected as it plays an important role in this technology by interacting with the user.

- Security of the current technology can further be improved and more accuracy could be aimed.
- Enhancements could be made so that visually impaired people can use this technology.
- The current technology is a little bulky to carry around, so few improvements can make it user friendly.

CONCLUSIONS

The insightful use of gesture movement and speech integrated circuits has made sixth sense technology a progressive and developing innovative idea. It provides us a smooth access to information that may help us to make crucial decisions. The ultimate power of Sixth Sense lies within the potential it holds is to connect Internet with the real world and superimposing the data on the real-world itself. Although upcoming technologies like 5 pen PC technology allow us to carry computers alongside with us in our pockets, a link between the digital devices we can carry and its interactions with real world, also our speech, has not yet been found. The masterstroke here is that Sixth Sense identifies the objects around oneself, lets us access the information in the way we want and displays that information as well, all this in the most simplest of the ways. Felicitous awareness of this technology will point to even further development and use of this technology, which in-turn will aid in obtaining information and operating any type of function practically at any time, simply by using gestures and commands.

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THE OSI MODEL

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Abstract
The Open Systems Interconnection model (OSI model) is a product of the Open SystemsInterconnection effort at the International Organization for Standardization. It is a way of sub-dividing a communications system into smaller parts called layers. A layer is a collection of conceptually similar functions that provide services to the layer above it and receives services from the layer below it. On each layer an instance provides services to the instances at the layer above and requests service from the layer below. For example, a layer that provides error-free communications across a network provides the path needed by applications above it, while it calls the next lower.

Introduction

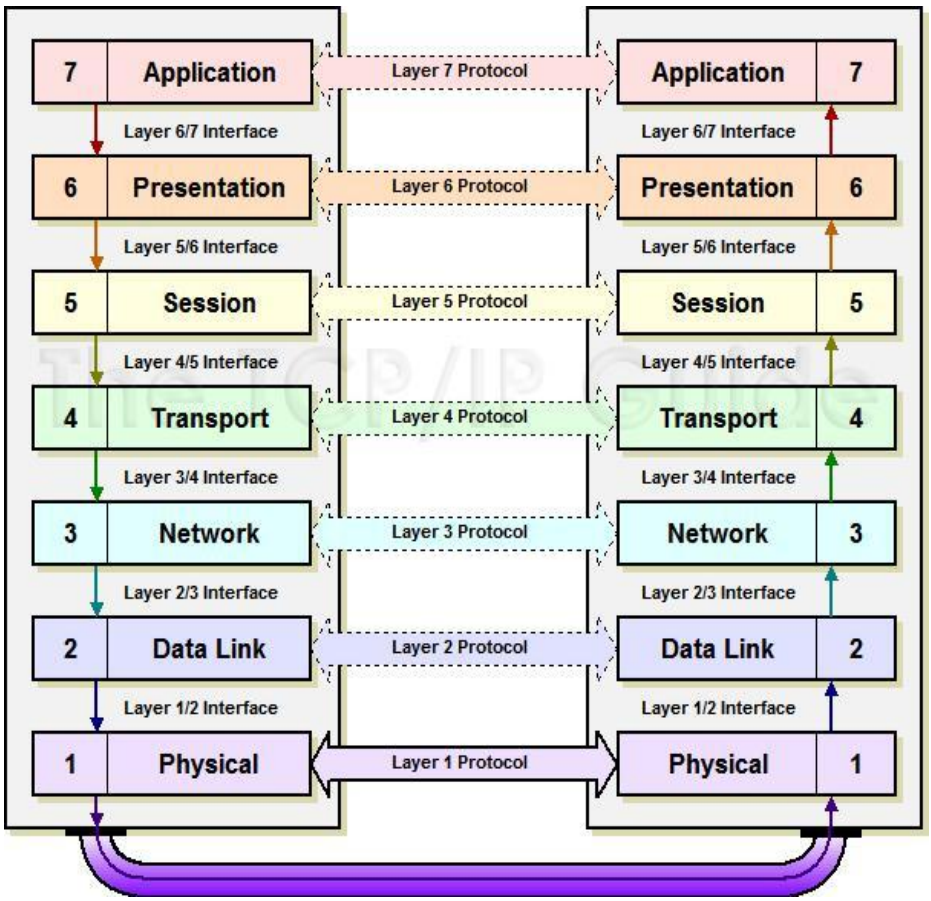
The Open System Interconnection (OSI) reference model is a framework for defining the conventions and tasks required for network systems to communicate with one another. The work on the OSI model began in the late 1970s, mostly independently, by the International Organization for Standardization (ISO) and the International Telegraph and Telephone Consultative Committee or CCITT (which comes from the translation of the title in French). CCITT has been succeeded by the Telecommunications Standardization Sector of the International Telecommunications Union (ITU-TS). In 1983 the work of the two organizations was combined, and a single document describing the reference model for Open Systems Interconnection was produced. The term "open systems" refers to the fact that the specifications are publicly available toeveryone. The purpose of the OSI model was to assist vendors and communications software developers to produce interoperable network systems. Although the OSI model was designed to replace all previous computer communications standards, it is no longer viewed as such a replacement. Rather, the OSI model has succeeded as a tool for describing and defining how heterogeneous network systems communicate.

I. HISTORY

Work on a layered model of network architecture was started and the International Organization for Standardization (ISO) began to develop its OSI framework architecture. OSI had two major components: an abstract model of networking, called the Basic Reference Model or seven-layer model, and a set of specific protocols.

The concept of a seven-layer model was provided by the work of Charles Bachman, Honeywell Information Services. Various aspects of OSI design evolved from experiences with the ARPANET, the fledgling Internet, NPLNET, EIN, CYCLADES network and the work in IFIP WG6.1. The new design was documented in ISO 7498 and its various addenda. In this model, a networking system was divided into layers. Within each layer, one or more entities implement its functionality. Each entity interacted directly only with the layer immediately beneath it, and provided facilities for use by the layer above it.Protocols enabled an entity in one host to interact with a corresponding entity at the same layer in another host. Service definitions abstractly described the functionality provided to an (N)-layer by an (N-1) layer, where N was one of the seven layers of protocols operating in the local host.

II. DESCRIPTION OF OSI LAYERS



Layer 1: physical layer

The physical layer has the following major functions:

[A]. it defines the electrical and physical specifications of the data connection. It defines the relationship between a device and a physical transmission medium (e.g., a copper or fiber optical cable). This includes the layout of pins, voltages, line impedance, cable specifications, signal timing, hubs, repeaters, network adapters, host bus adapters (HBA used in storage) and more.

[B]. It defines the protocol to establish and terminate a connection between two directly connected nodes over a communications medium.

[C]. it may define the protocol for flow control.

[D]. it defines a protocol for the provision of a (not necessarily reliable) connection between two directly connected nodes, and the modulation or conversion between the representation of digital data in user equipment and the corresponding signals transmitted over the physical communications channel. This channel can involve physical cabling (such as copper and optical fiber) or a wireless radio link.

The physical layer of Parallel SCSI operates in this layer, as do the physical layers of Ethernet and other local-area networks, such as Token Ring, FDDI, ITU-T G.hn, and IEEE 802.11, as well as personal area networks such as Bluetooth and IEEE 802.15.4.

Layer 2: Data Link Layer

The data link layer provides reliable transmission of data (frames) between adjacent nodes, built on top of a raw and unreliable bit transmission service provided by the physical layer. To achieve this, the data link layer performs error detection and control, usually implemented with a Cyclic

Redundancy Check (CRC). Note that the data link layer provides reliable transmission service over a single link connecting two systems. If the two end systems that communicate are not directly connected, then their communication will go through multiple data links, each operating independently. In this case, it is the responsibility of higher layers to provide reliable end-to-end transmission. Bridges, which connect two similar or dissimilar local area network segments, operate at this layer. Some well-known protocols for the data link layer include High-level Data Link Control (HDLC), LAN drivers and access methods such as Ethernet and Token Ring, and the LAP-D protocol in ISDN networks.

Layer 3: Network Layer

While the data link layer deals with the method in which the physical layer is used to transfer data, the network layer deals with organizing that data for transfer and reassembly. In short, the main function of this layer is Path determination and logical Addressing. This layer provides logical addresses to the packets received which in turn helps them to find their path.

"The network layer provides the functional and procedural means of transferring variable length data sequences (called datagrams) from one node to another connected to the same network. A network is a medium to which many nodes can be connected, on which every node has an address and which permits nodes connected to it to transfer messages to other nodes connected to it by merely providing the content of a message and the address of the destination node and letting thenetwork find the way to deliver ("route") the message to the destination node. In addition to message routing, the network may (or may not) implement message delivery by splitting the message into several fragments, delivering each fragment by a separate route and reassembling the fragments, report delivery errors, etc."

Layer 4: Transport Layer

The transport level provides end-to-end communication between processes executing on different machines. Although the services provided by a transport protocol are similar to those provided by a data link layer protocol, there are several important differences between the transport and lower layers:

[A]. **User Oriented:** Application programmers interact directly with the transport layer, and from the programmersperspective, the transport layer is the ``network". Thus, the transport layer should be oriented more towards user services than simply reflect what the underlying layers happen to provide. (Similar to the beautification principle in operating systems.)

[B]. Negotiation of Quality and Type of Services: The user and transport protocol may need to negotiate as to the quality ortype of service to be provided. Examples? A user may want to negotiate such options as: throughput, delay, protection, priority, reliability, etc.

[C]. Guarantee Service: The transport layer may have to overcome service deficiencies of the lower layers (e.g. providingreliable service over an unreliable network layer).

[D]. Addressing becomes a significant issue: That is, now the user must deal with it; before it was buried in lower levels.

Two solutions:

Use well-known addresses that rarely if ever change, allowing programs to ``wire in" addresses. For what types of service does this work? While this works for services that are well established (e.g., mail, or telnet), it doesn't allow a user to easily experiment with new services.

Use a name server. Servers register services with the name server, which clients contact to find the transport address of a given service.

In both cases, we need a mechanism for mapping high-level service names into low-level encoding that can be used within packet headers of the network protocols. In its general

Form, the problem is quite complex. One simplification is to break the problem into two parts: have transport addresses be a combination of machine address and local process on that machine.

[A]. Storage capacity of the subnet: Assumptions valid at the data link layer do not necessarily hold at the transport Layer.Specifically, the subnet may buffer messages for a potentially long time, and an ``old'' packet may arrive at a destination at unexpected times.

[B]. We need a dynamic flow control mechanism: The data link layer solution of reallocating buffers is inappropriatebecause a machine may have hundreds of connections sharing a single physical link. In addition, appropriate settings for the flow control parameters depend on the communicating end points (e.g., Cray supercomputers vs. PCs), not on the protocol used.

[C]. Don't send data unless there is room: Also, the network layer/data link layer solution of simply not acknowledgingframes for which the receiver has no space is unacceptable. Why? In the data link case, the line is not being used for anything else; thus retransmissions are inexpensive. At the transport level, end-to-end retransmissions are needed, which wastes resources by sending the same packet over the same links multiple times. If the receiver has no buffer space, the sender should be prevented from sending data.

[D]. Deal with congestion control: In connectionless Internets, transport protocols must exercise congestion control. Whenthe network becomes congested, they must reduce rate at which they insert packets into the subnet, because the subnet has no way to prevent itself from becoming overloaded.

[E]. Connection establishment: Transport level protocols go through three phases: establishing, using, and terminating aconnection. For data gram-oriented protocols, opening a connection simply allocates and initializes data structures in the operating system kernel.

Connection oriented protocols often exchanges messages that negotiate options with the remote peer at the time a connection are opened. Establishing a connection may be tricky because of the possibility of old or duplicate packets.

Finally, although not as difficult as establishing a connection, terminating a connection presents subtleties too. For instance, both ends of the connection must be sure that all the data in their queues have been delivered to the remote application.

Layer 5: Session Layer

The session layer permits two parties to hold ongoing communications called a session across a network. The applications on either end of the session can exchange data or send packets to another for as long as the session lasts. The session layer handles session setup, data or message exchanges, and tears down when the session ends. It also monitors session identification so only designated parties can participate and security services to control access to session information. A session can be used to allow a user to log into a remote time-sharing system or transfer a file between two machines.

The session layer has the option of providing one-or-two-way communication called dialogue control. Sessions can allow traffic to go in both directions at the same time, or in only one direction at a time. Token management may be used to prevent both sides from attempting the same operation at the same time. To manage these activities, the session layer provides tokens that can be exchanged. Only the side holding the token is permitted to perform the critical operation. Another session service is synchronization. Consider the problems that occur when transferring a file between two machines and the system crashes not being able to complete the transfer. This process must be restarted from the beginning. To avoid this problem, the session layer provides a way to insert checkpoints into the data stream, so that after a crash, only the data after the last checkpoint has to be repeated. It accepts the

data from presentation layer and provides services to it and accepts the services of the transport layer. The name of data unit in the session layer is SPDU (Session Protocol Data Unit) or sessions.

Therefore session layer functionality includes:

1. Virtual connection between application entities
2. Synchronization of data flow
3. Creation of dialog units
4. Connection parameter negotiations
5. Partitioning of services into functional groups.
6. Acknowledgments of data received during a session
7. Retransmission of data if it is not received by a device

Layer 6: Presentation Layer

The presentation layer formats the data to be presented to the application layer. It can be viewed as the translator for the network. This layer may translate data from a format used by the application layer into a common format at the sending station, and then translate the common format to a format known to the application layer at the receiving station. The presentation layer provides:

1. Character code translation: for example, ASCII to EBCDIC.
2. Data conversion: bit order, CR-CR/LF, integer-floating point, and so on.
3. Data compression: reduces the number of bits that need to be transmitted on the network.
4. Data encryption: encrypt data for security purposes. For example, password encryption.

Layer 7: Application Layer

This is the level that the user often interacts with. This is where data turns into websites, chat programs and so on. Many protocols run at this layer, such as DNS, FTP, HTTP, HTTPS, NFS, POP3, SMTP, and SSH.

"This layer supports application and end-user processes. Communication partners are identified, quality of service is identified, user authentication and privacy are considered, and any constraints on data syntax are identified. Everything at this layer is application-specific. This layer provides application services for file transfers, e-mail, and other network software services."

III. BENEFITS OF THE OSI MODEL

"By separating the network communications into logical smaller pieces, the OSI model simplifies how network protocols are designed. The OSI model was designed to ensure different types of equipment (such as network adapters, hubs, and routers) would all be compatible even if built by different manufacturers."

The OSI model has many benefits which include:

a. Compatibility: The OSI model can fit to any compatible software/hardware from different users in other parts of theworld. As software/hardware differs among various users so OSI is a model that is compatible to all.

b. Easy Troubleshooting: Since each layer in an OSI is independent of each other so it makes it easier to detect and solveall errors prevailing in it.

c. Easy Understanding Nature: OSI model is very interactive and even guides us to know what a Model is, how itoperates, and common methodologies, how new technologies are developed in existing networks.

d. Security: OSI model have functionality for Encryption and Decryption which has a major contribution for securitypurpose. This makes it Reliable.

E. Add Multiple Network Models: The OSI model is designed in such a way that user can further extend.

IV. CONCLUSION

In this paper we have tried to explain what exactly an OSI reference model is, why it is used and contribution of various researchers in this reference. OSI is basically an architecture which only gives us an idea how packets transfer over the network during any communication. OSI enhancements are done time to time for developing new technologies. Scheidell et al., proposed three different layers in his paper for improvising security in any network. Future implementation in OSI will lead to enhancement in security and many other fields.

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भारतातील दारिद्रयाची कारणमिमांसा
(Causes of Poverty in India)

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प्रस्ताविक :

जगातील सर्वच विकसित आणि विकसनशील देशात दारिद्रयाने गंभीर स्वरूप धारण केले आहे. यात विकसित देशापेक्षा विकसनशील देशातील दारिद्रयाची समस्या अतिशय गंभीर स्वरूपाची आहे. स्वातंत्र्यप्राप्तीनंतर भारताने मिश्र अर्थव्यवस्थेचा मार्ग अंगिकारला सन 1951 पासून भारताने आर्थिक विकासासाठी नियोजनाचा अवलंब करूनही मिश्र अर्थव्यवस्थेत साधनसामुग्रीच्या मालकी हक्काच्या नियोजन प्रक्रीयेत भ्रष्टाचार, राजकीय पुढाऱ्यांचा दबाव इ. कारणांमुळे अदयपावतो भारतातील दारिद्रयाचे प्रमाण कमी होऊ शकले नाही ही वस्तूस्थिती नाकरता येत नाही.

दारिद्रय, बेकारी व आर्थिक विषमता या महाभंकर समस्येने केवळ अविकशित,विकसनशिल राष्ट्रानाच ग्रासले नाही तर विकशित देश देखील या दृष्टचक्रातून सुटले नाहीत प्रस्तुत लेखात दारिद्रयाची संकल्पना, कारणे, व परिणामाचा अभ्यास करण्यात आला आहे.

दारिद्रयाचा अर्थ (Meaning of Poverty)

कोणत्याही संकल्पनेचा अर्थ देशपरत्वे, काळपरत्वे, व व्यक्ती परत्वे बदलत असतो हया कारणामुळे दारिद्रय या संकल्पनेची सर्वमान्य होईल अशी एकच व्याख्या करणे कठीण आहे. या संकल्पनेच्या महत्वाच्या व्याख्या पुढीलप्रमाणे.

1. **नियोजन मंडळ :**
   ''ग्रामीण भागात दरडोई 2400 कॅलरीज आणि नागरी भागात किमान 2100 कॅलरीजचा उपयोग जे कुटुंब /व्यक्ती घेऊ शकत नाहीत त्यांना दारिद्रय रेषेखालील कुटूंब म्हणतात''.
2. **जागतिक विकास अहवाल (2000-01) नुसार :**
   ''सुस्थितीपासून वंचित असणे म्हणजे दारिद्रय होय''.
3. **डॉ.सुभाष कदम यांच्या मते :**
   ''मुलभूत गरजा भागविण्याच्या कुटूंबाच्या / व्यक्तींच्या असमर्थतेस दारिद्रय म्हणतात''.
4. **सर्वसामान्य व्याख्या :**
   ''मुलभूत गरजा (अन्न, वस्त्र, निवारा) भागविण्याचा अभाव म्हणजे दारिद्रय होय '' .

दारिद्रयाच्या संकल्पना (Concept of Poverty)

दारिद्रय या संकल्पनेचे दोन भागात विभाजन करण्यात आले आहे. भारतात या संकल्पनेचा संबंध किमान उष्मांकाशी जोडला आहे. भारतीय नियोजन आयोगाने दारिद्र रेषा निश्चित करण्यासाठी एक तज्ञ समिती नियुक्ती केली (Task force on minimum needs and effective consumption on demand) या समितीच्या अहवालानुसार भारतातील ग्रामीण भागात एका व्यक्तीला 2400 उष्मांकाची आणि शहरी भागात 2100 उष्मांकाची गरज असते या पेक्षा कमी ज्यांना उष्मांक मिळतात त्यांना दारिद्रय रेषेखालील मानण्यात येते दारिद्रयाच्या दोन्ही संकल्पनेचे विश्लेषण खालील प्रमाणे.

निरपेक्ष दारिद्रय (Absolute Poverty)

देशातील प्रत्येक व्यक्तीला जगण्यासाठी किमान काही मुलभूत गोष्टी मिळविणे आवश्यक असते या काही मुलभूत गोष्टी प्रत्येकाला किमान किती मिळाल्या पाहिजेत ते ठरविले जाते त्यापेक्षा ज्या लोकांना या गोष्टी कमी मिळतात ते लोक निरपेक्ष दारिद्रयात आहेत. असे म्हटले जाते आपणास या संकल्पनेची सर्वसाधारण व्याख्या पुढीलप्रमाणे करता येईल "किमान आवश्यक गरजा भागविण्याची क्षमता नसणे म्हणजे निरपेक्ष दारिद्रय होय.'

सापेक्ष (Relative Poverty)

व्यक्तीच्या उत्पन्नाची तुलना केल्यानंतर सापेक्ष दारिद्रयाची कल्पना येऊ शकते व्यक्तीच्या उत्पन्नातील विषमता ज्या दारिद्रयाच्या साहायाने स्पष्ट होते त्या दारिद्रयास सापेक्ष दारिद्रय म्हणतात. सापेक्ष दारिद्रय जगातील अमेरिका व इतर वैभव संपन्न विकशित देशातही आढळून येते या संकल्पनेची व्याख्या आपणांस पुढीलप्रमाणे करता येईल 'समाजाच्या अपभोगातील किंवा उत्पन्नातील अंतर म्हणजे सापेक्ष दारिद्रय होय'.

दारिद्रयाचे कारणे (Causes of Poverty)

भारतीय नियोजन मंडळाने व्यक्त केलेल्या आर्थिक मागासलेपण व उत्पन्नातील विषमता या दोन प्रमुख कारणा व्यतिरिक्त अनेक कारणे दारिद्रयाच्या दुष्टचक्रास कारणीभूत आहेत. पैकी महत्वाचे कारणे पुढीलप्रमाणे

1. परकीय राजवटीचे साम्राज्य :

सन 1947 पर्यंतच्या इतिहासावरून असे स्पष्ट होते की, भारतावर अनेक देशातील राजांनी आक्रमण करून भारताची प्रचंड प्रमाणात लूट केली. मोगलांनी भारतावर 450 वर्षे राज्य केले तर इंग्रजानी जवळपास 350 वर्ष राज्य केले. इंग्रजांनी शेतीच्या विकासाकडे दुर्लक्ष करून भारतातील हस्तकला व कुटीर उद्योग बंद पाडले विविध पध्दतीने भारतातील साधनसामुग्रीची भयानक लुट केली त्यामुळे भांडवल निर्मिती व्हायला पाहिले तेवढी झाली नाही. परिणामतः स्वातंत्र्य प्राप्तीनंतर पाहिजे तेवढया प्रमाणात उत्पादनाचे साधन प्राप्त होऊ शकले नाही त्यामुळे देशातील दारिद्रयात प्रचंड वाढ झाली.

2. वाढती लोकसंख्या :

भारताची लोकसंख्या जलद गतीने वाढत आहे या वाढत्या लोकसंख्येला उत्पादक स्वरूपाचा रोजगार उपलब्ध होत नाही त्यामुळे असंख्य लोक दारिद्रयात जिवन जगत आहेत. म्हणजेच वाढती लोकसंख्या दारिद्रयाचे महत्वाचे कारण आहे.

3. वाढती बेकारी :

आर्थिक विकासाच्या दरापेक्षा लोकसंख्या वाढीचा दर जास्त असल्यामुळे बेकारीत वाढ होत आहे. बेकारीत वाढ झाल्यामुळे दारिद्रयाचे महत्वाचे कारण आहे.

4. आर्थिक विषमता :

स्वातंत्र्यानंतर भारताने मिश्र अर्थव्यवस्थेचा स्विकार केला आणि मिश्र अर्थव्यवस्थेतील साधन सामुग्रीच्या आर्थिक विषमतेची दरी वाढतच गेली त्यामुळे दारिद्रयाचे प्रमाण प्रचंड वाढले आहे.

5. अल्प उत्पादकता :

भारतीय श्रमिकांची व शेतीची उत्पादकता खुपच कमी आहे. श्रमिक व शेतीची उत्पादकता कमी असल्यास अनेक कारणे कारणीभूत आहेत जसे नित्कृष्ट आहार, शिक्षण प्रशिक्षणाचा अभाव, परंपरागत शेती पध्दती , जलसिंचनाच्या अपु-या सोई व भांडवलाचा अभाव इ.कारणामुळे श्रमिकास श्रम करणे व उत्पादकास

उत्पादन करणे परवडत नाही. परिणामतः दारिद्रयाच्या दृष्टचक्रातून त्यामुळे शेतकरी बाहेर पडू शकत नाही.

6. भांडवल निर्मितीचा कमी दर :

भारतीय श्रमिकांचीा व शेतीची उत्पादकता खुपच कमी आहे. श्रमिक व षेतीची उत्पादकता कमी असल्यामुळे गुंतवणुकीचे प्रमाणही कमी आहे. अल्पगुंतवणुकीमुळे उत्पादन व रोजगाराच्या संधी उपलब्ध होत नाहीत परिणामतः दारिद्रयात भर पडते.

7. औद्योगिकरणची मंद गती :

भांडवलाच्या व कुशल कामगाराच्या कमतरतेमुळे औद्योगिकरणाची गती मंद स्वरूपाची आहे. औद्योगिकरणाच्या अभावामुळे रोजगाराच्या संधी उपलब्ध होत नाहीत व दारिद्रयात भर पडते.

8. प्रादेशिक असमतोल :

भारतात प्रादेशिक असमतोल मोठया प्रमाणात आहे. एकीकडे पंजाब, हरियाणा, प. बंगाल इ. राज्यांचा विकास तुलनात्मक दृष्टया जलद झाला आहे. त्यामुळे या राज्यात दारिद्रयाचे प्रमाण कमी आहे. तर दुसरीकडे उत्तरप्रदेश, बिहार, ओरिसा, आसाम, मध्यप्रदेश आणि पूर्वेकडील राज्यांचा आर्थिक विकास तुलनात्मक दृष्टया कमी झाल्याने या राज्यातील दारिद्रयाचे प्रमाण जास्त आहे. थोडक्यात सांगायचे म्हणजे प्रादेशिक असमतोल हा दारिद्रयास कारणीभूत आहे.

9. अयोग्य शिक्षण पध्दती :

भारताची शिक्षण पध्दती दोषयुक्त आहे. स्वातंत्र्यपूर्व काळात इंग्रजांनी सुरू केलेली शिक्षण पध्दती अद्यापावतो जशीच्या तशी सुरू आहे त्यामुळे सध्याच्या शिक्षण पध्दतीत बेकार निर्मितीच्या कारखान्याचे स्वरूप प्राप्त झाले आहे. या कारखान्यातून बाहेर पडणारा युवक एकीकडे कुशल कामगार म्हणुन काम करू शकत नाही तर दुसरीकडे निकृष्ट दर्जाचे काम करण्यास तयार होत नाही. त्यामुळे दारिद्रयास गती प्राप्त झाली आहे.

10. भाव वाढ :

देशातील चलन पुरवठयात सातत्याने वाढ होत असल्यामुळे देशाची खरेदी शक्ती कमी होत आहे त्यामुळे जीवनमानाची पातळी वाढविणे लोकांना कठीण जात आहे. जीवन आवश्यक वस्तूच्या किंमती सातत्याने वाढत असल्यामुळे अल्प दरडोई उत्पन्न असणाऱ्या गटात हालाखीचे जीवन जगावे लागत असल्यामुळे दारिद्रयात भर पडत आहे.

11. नैसर्गिक साधन सामुग्रीचा अपूरा वापर :

देशाच्या नैसर्गिक साधन सामुग्रीत खनिजे, जंगलसंपत्ती,भूमी, औद्योगिक शक्ती साधने इ.चा समावेश होतो. भांडवलाचा अभाव, तंत्रज्ञानाचा अभाव व इतर विविध कारणामुळे नैसर्गीक साधनसामग्रीचा व उत्पन्न साधनांचा पुरेपुर वापर होऊ शकत नाही. परिणामतः राष्ट्रीय उत्पन्नात पाहिजे तेवढया प्रमाणात वाढ होत नाही त्यामुळे दरडोई उत्पन्न कमी होऊन दारिद्रय जन्माला येते.

12. इतर कारणे :

वरील आर्थिक कारणाव्यतिरिक्त दारिद्रयास सामाजिक, सांस्कृतिक व धार्मिक रूढी, परंपरा देखील दारिद्रयात भर पाडत आहे. जसे सण, उत्सव, व्रतवैकल्य, निरक्षरता, संयुक्त कुटुंब पध्दती इ. प्रवृत्तीमुळे विकासाच्या मार्गात अडथळा निर्माण होऊन दारिद्रयाच्या रोपटयाला खतपाणी मिळत आहे.

दारिद्रयाचे भारतीय अर्थव्यवस्थेवर होणारे परिणाम :

भारतीय अर्थव्यवस्था दारिद्रयाच्या दृष्ट चक्रात अडकल्यामुळे अर्थव्यवस्थेतील विविध घटकांवर या संकल्पनेचे विपरीत परिणाम होत आहेत. या परिणामाचे विश्लेषण खालील प्रमाणे

1. उत्पादन वाढीवरील परिणाम :

दारिद्रयामुळे अन्न, वस्त्र, निवारा या मुलभूत गरजा कशा भागवता येतील हा यक्ष प्रश्न असलेल्या जनतेकडून उत्पादन वाढीची अपेक्षा करणे कितपत योग्य आहे यामुळे वाढविण्याच्या ऐवजी घटत असून उत्पादन वाढीवर दारिद्रयाचा विपरीत परिणाम होत आहे.

2. रोजगारावरील परिणाम :

साधन सामुग्रीचा अपुरा वापर, भांडवलाचा अभाव नव नविन तंत्रज्ञानाचा अभाव इ. कारणामुळे दारिद्रयाचा रोजगारावर प्रतिकूल परिणाम होत आहे. त्यामुळे देशाच्या विकासाची गती खुंटली आहे.

3. उत्पन्न वाढीवर परिणाम :

लोकसंख्या वाढीबरोबर विकासात वाढ होत नसल्यामुळे बेकारीत वाढ होऊन उत्पादन व उत्पन्नात घट होत आहे. उत्पन्नातील घटीमुळे दारिद्रयात वाढ, दारिद्रयातील वाढीमुळे विकासाच्या अभाव असे चक्र निर्माण होऊन उत्पन्न वाढीवर दारिद्रयाचा विपरीत परिणाम होत आहे.

4. बचतीवर परिणाम :

मुलभूत गरजा भागवता येत नाही तिथे बचतीचा प्रश्नच उद्‌भवत नाही परिणामतः उत्पादन व उत्पन्नात घट होऊन दारिद्रयाचा बचतीवर विपरीत परिणाम होतो.

5. गुंतवणुकीवरील परिणाम :

दारिद्रयाचा गुंतवणुकीवर विपरीत परिणाम होत आहे. दारिद्रय, बेकारी, व आर्थिक विषमतेमुळे उत्पादन, उत्पन्न व रोजगार निर्मितीस खिळ बसली आहे. परिणामतः देशाची आर्थिक प्रगती खुंटली आहे.

अशा प्रकारे दारिद्रयाचे उत्पादन, उत्पन्न, रोजगार, बचत व गुंतवणुकीवर विपरीत परिणाम होत असल्यामुळे देशाला महासत्ता बनविण्याचे स्वप्न अधुरे राहत आहे.

सारांश : (Abstract)

भारताने तंत्रज्ञानात मोठी झेप घेऊन हरित क्रांतीपासून मंगळ यानापर्यंतचा जगाला थक्क करणारा प्रवास करूनही भारताला दारिद्रयासारख्या समस्येचे भारतीय अर्थव्यवस्थेतून समूळ उच्चाटन करण्यात मात्र अद्यापपावेतो यश प्राप्त झालेले नाही याला अनेक कारणे कारणीभूत आहेत.जसे काळया पैशाचे प्रमाण, दारिद्रय निर्मूलन योजनेतील भ्रष्टाचार, नैसर्गिक साधनसामुग्रीचा अपुरा वापर इ. कारणांमुळे दारिद्रयात घट होण्याऐवजी वाढ होत आहे. भारतीय अर्थव्यवस्थेतील दारिद्रयाचे समूळ उच्चाटन करायचे असेल तर कृषि क्षेत्राचा विकास करुन शेतक–यांच्या आत्महत्येचे समूळ उच्चाटन करणे गरजेचे आहे तसेच भारताने तंत्रज्ञानात उंच भरारी घेवून नवीन पिढी इंटरनेटशी जोडून रोजगार उपलब्ध करुन दिला तर भारतीय युवा पिढी भारतीय अर्थव्यवस्थेतील दारिद्रयाचे समूळ उच्चाटन करुन भारताचेच नव्हे तर जगाचे भवितव्य घडवू शकते.

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IMPORTANCE OF ICT IN EDUCATION

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Abstract
*This paper is a mere attempt to present a glimpse of meaning of ICT, its importance & its mandatory need for education, which is indispensable.ICT stands for INFORMATION & COMMUNICATION TECHNOLOGY .These technologies include:**1)Computers***
2) The Internet
3) Broadcasting technologies (radio and Telephone)
4) Telephony
One of the many challenges facing developing countries today is that of preparing their societies and governments for globalization and the information and communication revolution. Policy-makers, educationists, non-governmental organizations, academics, and ordinary citizens are increasingly concerned with the need to make their societies competitive in the emergent information economy. Globalization and innovations in technology have led to an increased use of ICTs in all sectors - and education is no exception. Uses of ICTs in education are widespread and are continually growing worldwide. It is generally believed that ICTs can empower teachers and learners, making significant contributions to learning and achievement. Of the teachers interviewed on the effectiveness of ICT in education majority of them felt that introduction and use of ICT adequately will be extremely effective in children's learning and achievement. However, current research on the impacts of ICTs on student achievement yields few conclusive statements, pros or con, about the use of ICTs in education. Studies have shown that even in the most advanced schools in industrialized countries, ICTs are generally not considered central to the teaching and learning process. However, there appears to be a mismatch between methods used to measure effects and the type of learning promoted. Standardized testing, for example, tends to measure the results of traditional teaching practices, rather than new knowledge and skills related to the use of ICTs. It is clear that more research needs to be conducted to understand the complex links between ICTs, learning, and achievement.

Introduction

To accurately understand the importance of ICT in Education there is need to actually understand the meaning of ICT.ICTs stand for information and communication technologies and are defined, for the purposes of this primer, as a ―diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information.‖ ICT permeates the business environment, it underpins the success of modern corporations, and it provides governments with an efficient infrastructure. At the same time, ICT adds value to the processes of learning, and in the organization and management of learning institutions. The Internet is a driving force for much development and innovation in both developed and developing countries. Countries must be able to benefit from technological developments. To be able to do so, a cadre of professionals has to be educated with sound ICT backgrounds, independent of specific computer platforms or software environments. Technological developments lead to changes in work and changes in the organization of work, and required competencies are therefore changing. Gaining in importance are the following competencies:

- critical thinking,
- generalist (broad) competencies,
- ICT competencies enabling expert work,

- Importance Of ICT In Education making,
- handling of dynamic situations,
- working as a member of a team
- Communicating effectively.

In recent years there has been a groundswell of interest in how computers and the Internet can best be harnessed to improve the efficiency and effectiveness of education at all levels and in both formal and nonformal settings. But ICTs are more than just these technologies; older technologies such as the telephone, radio and television, although now given less attention, have a longer and richer history as instructional tools. For instance, radio and television have for over forty years been used for open and distance learning, although print remains the cheapest, most accessible and therefore most dominant delivery mechanism in both developed and developing countries.

The followings are the aim and objectives of ICT implementation in education: 1) To implement the principle of life-long learning / education. 2) To increase a variety of educational services and medium / method. 3) To promote equal opportunities to obtain education and information. 4) To develop a system of collecting and disseminating educational information. 5) To promote technology literacy of all citizens, especially for students. 6) To develop distance education with national contents. 7) To promote the culture of learning at school (development of learning skills, expansion of optional education, open source of education, etc.) 8) To promote the culture of learning at school (development of learning skills, expansion of optional education, open source of education, etc

ICT and Teacher Training

a) Teachers are no longer dispensers of knowledge but proactive facilitators.

b) Redefining the role of the teacher in the new information age.

c) The quality of teachers as a predictor of student learning therefore the importance of teacher training is heightened- in this light what is the role of ICT as a tool facilitating teacher training Vikramshila Education Resource Society Shikshak Sammelan 2009, ICT for Quality Education.

d) Bringing teachers to ICT rather than taking ICT to teachers- relevance in developing nations.

Many teachers are reluctant to use ICTs, especially computers and the internet. Some of the reasons for this reluctance include: poor software design, Skepticism about the effectiveness of computers in improving learning outcomes, lack of administrative support, Increased time and effort needed to learn the technology and how to use it for teaching, The fear of losing their authority in the classroom as it becomes more learner-centered.

Conclusion

Therefore this paper is an attempt to present the important issues that must be addressed by both preservice teacher‘s education and in-service teacher professional development programs if schools and other educational institutions are to fully exploit the potential of computers and the Internet as educational tools. In terms of using internet and other ICT as a resource for lesson preparation, most of the teachers interviewed, admitted to never or rarely using it, while very few used the internet to gather information sporadically or regularly. The teachers particularly felt that they had both access and training inadequacy and hence were unable to utilize internet and other facilities. More teachers were comfortable however, with using computers as an individual than as a teacher. A positive find is that all those teachers who are not well versed with the computer and other technology, expressed keen interest in undergoing training for the same. They felt that if trained, they would be in a position to make use of resources available in the school.

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IMPACT OF GOODS AND SERVICES TAX

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Abstract

The word tax is derived from the Latin word 'taxare' meaning to estimate. Tax policies play an important role on the economy through their impact on both efficiency and equity. 85 percent of the revenue of state governments is generated from the indirect taxes on goods and services and sales tax alone accounts for 61% of the total revenue. Introduction of state level value added tax in 2005 led to uniform tax rates and eliminated cascading tax rates but it is still a step towards more comprehensive reforms as that of GST. More than 150 countries have implemented GST so far. It would be interesting to understand why this proposed GST regime may hamper the growth and development of the country. The proposed GST structure is likely to succeed only if the country has a strong IT network. It is a well-known fact that India is still in the budding state as far as internet connectivity is concerned.

Keywords*: Indian Economy, Economic growth, International market, communication E-commerce, business, Advantages of GST, Type, GST Rates, Process and GST Bill.*

Introduction: The Goods and services tax was launched at midnight on 1st July, 2017 by the Former president of India, Pranab Mukherjee and the Prime Minister of India Narendra modi GST is a kind of tax imposed on sale, manufacturing and usage of goods and services. Goods and Services Tax is applied on services and goods at a national level with a purpose of achieving overall economic growth. The GST tax more than 150 countries have implemented in the world. An idea of GST in India was mooted by Vajpayee government in 2000. The constitutional amendment passed by the Loksabha on 6th May, 2015 but and is yet to be ratified by the Rajyasabha.GST is a comprehensive tax levy on manufacturing of goods and services at a national level.

The GST Tax Bill, also referred to as the constitution (122 Amendment) Bill, 2014. GST will be an indirect tax at all the stages of production to bring about uniformly in the system. On bringing GST into practice would be merger of Central and State taxes into a single tax payment. It would also enhance the position of India in both domestic as well as international market. Communication is considered to be necessity and one cannot without communication. Country Australia France Canada Germany Japan Singapore Sweden New Zealand GST 10% 19.6% 5% 19% 5% 7% 25% 5%, There is GST or VAT, which means taxes for goods and services in more than 150 countries GST The proposed regime seems to ignore the emerging sector of e-commerce. GST will be a good reason to achieve the goal of simplifying India's indirect tax regime to eliminate cascading effects in the supply chain to the level of the final consumer only when all these indirect taxes are fully included in the GST.

What is GST? : GST stands for **Goods and Services Tax**. It is a kind of tax imposed on sale, manufacturing and usage of goods and services. Goods and Services Tax is applied on services and goods at a national level with a purpose of achieving overall economic growth. GST is particularly designed to replace the indirect taxes imposed on goods and services by the Centre and States.

Definition (GST): Goods and Services Tax can be defined as a kind of Value Added Tax imposed by on various goods and services by different countries. The tax charged on goods and services may differ from country to country. Goods and services tax is imposed to collect revenues for the government. This tax is paid by the consumers of goods and services and collected and forwarded to the government by the business entities.

How GST Works? : GST proposes to abolish the varying levels of taxation between States, and consider the country as a single whole organism when it comes to taxes on goods and services instead of as a segmented creature. All the sundry taxes will be clubbed into just 2 levels – Central GST and State GST.

The consumer who buys the product will have to pay only the GST charged by the last dealer in the supply chain, as everyone else would have the opportunity to set-off the taxes paid at the previous stages. GST will also prevent multiple taxes occurring on certain goods and ensure transparency with regards to the rate of taxation and the total amount that goes to the government as taxes on a product. Currently, a consumer is not aware of the total amount of taxes s/he pays for a product, apart from VAT which is mentioned on the bill.

Here's a list of taxes that the GST will likely replace**:** Service Tax , Cess and surcharges related to supply of goods or services, Central Excise Duty, Excise Duties on medicinal and toilet preparations, Additional Excise Duties on textiles and textile products, Additional Excise Duties on goods of special importance. The rates being discussed as of now hover around 18%, which may be higher than the current system for certain goods and services.

Goods and Services Tax origin in India: In India, the Goods and Services Tax Bill was officially introduced in 2014 as The Constitution (One Hundred and Twenty-Second Amendment) Bill, 2014. The GST Bill in India proposes the implementation of nationwide Value Added Tax on sale, manufacturing and the use of different goods and services. The Goods and Services Tax act is expected to be operative in India from April, 2016. Arun Jaitley - the Finance Minister of India announced The Constitution (122nd Amendment) Bill, 2014 or the Goods and Services Tax in LokSabha on 19 December 2014. The Parliament passed the bill on 6th May, 2015, after it received 352 votes for and 37 against it.

Current Taxation System: GST is a kind of indirect tax. Currently, Indian consumers have to pay indirect tax on goods and services such as Value Added Tax, Service Tax, Excise Duty, Customs Duty, etc. Under the current system, each State has a right to levy their own tax on the goods coming into their dominion for sale and consumption, while the Centre levies taxes on manufacture of the goods. All these direct taxes levied on the traders are passed down to the consumer.

The taxes levied by the State and Central Governments are given in the table below:

Central Government	State Government	Local Administration
Excise duty or Centre VAT service Tax, Income-Tax, Custom Duty, Central sales Tax.	Value Added Tax, Sales Tax, Entertainment Tax, Stamp Duty, Road Toll , Luxury Tax, Octroi Entry Tax.	Property Tax

Of these, excise duty/Central Vat, customs duty, service tax, central and state sales tax, VAT, Octroi, entry tax, road toll, luxury tax and entertainment tax are applicable to goods and services.

The current system is burdened with multiple taxation on the same object no way to offset. The taxes already paid at each stage of production-retailing-consumption. If Central Vat and service tax are paid at the manufacturing level, these can be offset against future payments, but none of the other taxes paid at any stage can be reclaimed.

Advantages of GST:

1. This is a federal law, which means that the states will no longer have the right to make new laws on taxation towards goods and services.
2. It simplifies the tax system and makes it easier to understand as well as cheaper to implement at various levels.

3. Tax evasion at various stages will be eliminated as tax offsets can be collected only if taxes have been paid originally.
4. It will be cheaper to buy input goods and services for production from other states.
5. The current supply and distribution chain may undergo a change with a change in taxation system that does away with excise and customs duties.
6. The consumer will get the end-product at cheaper rates because of elimination of multiple taxes and the tax cascade.
7. As of now, petroleum and petroleum products have been kept out of the GST regime until further notice.
8. Sale of newspapers and advertisements are also likely to fall under the GST regime, allowing the government to increase its revenue considerably.
9. While there will be central GST and state GST, the tax applicable on goods and services being exported and imported between states in India would fall under an Integrated GST (GST) system in order to avoid conflict of dominion.
10. Prices of goods are expected to reduce in the long run as the benefits of less tax burden would be passed on to the consumer.

Disadvantages of GST:

1. GST is not good news for all sectors, though. In the current system, many products are exempted from taxation. The GST proposes to have minimal exemption list.
2. GST is not applicable on liquor for human consumption. So alcohol rates will not get any advantage of GST.
3. Stamp duty will not fall under the GST regime and will continue to be imposed by states.

GST Bill Approval Process:

The Constitution Amendment Bill for Goods and Services Tax (GST) was cleared by the RajyaSabha on August 3, 2016. This Bill sanctions a modification in the Constitution to allow both the Centre and the States to levy goods and services tax.

The Bill was first introduced in the LokSabha in March 2011 and reports were submitted around it regularly. However, in 2014, the Bill lapsed as the LokSabha's ongoing term ended. The Bill was passed by the LokSabha on May 6, 2015, and further reports were commissioned and presented.

After RajyaSabha's clearance of the Bill, the LokSabha will ratify the Bill again. At least 15 other states also have to support the Bill to go forward with its implementation as an Act. Once the ratifications are received, the President will constitute a GST Council comprising the Finance Minister, Minister of State in charge of Revenue, Minister in charge of Finance/Taxation, and other ministers nominated by states. This Council will make recommendations on the taxes to be absorbed and done away with, exemptions to GST and their threshold, laws governing the GST levies, actual GST rates and discounts, etc.

Goods and Services Tax Bill:

The Goods and Services Tax Bill is officially known as The Constitution (122 Amendment) Bill, 2014 which is formulated to create a pan-India tax system and end the number of multiple taxes charged by the Centre and the States on various goods and services. The key points of the GST bill are given below:

1. It is an indirect, uniform tax that is levied on the goods and services throughout a particular country. Several developed countries add tax on sale, manufacture and consumption using single comprehensive tax.

2. Surcharge on supply of goods, sales, and special ad-on duty of customs, add-on duties of customs and excise and central excise duty would be replaced by Central Taxes GST.
3. Entertainment tax, entry tax, purchase tax, central sales tax, VAT, etc. would be replaced by State Tax GST.
4. The primary objectives of GST are eliminating the excessive taxation.
5. The 2014 bill deleted the 2011 bill provision that imposed certain restrictions on the states on taxation of the products that are important for inter-state commerce and trade.

Goods and Services Tax Act:

Goods and Services Tax act is one of the most remarkable tax reforms that has taken place in India so far. The GST act, which is also known as The Constitution (One Hundred and Twenty-Second Amendment) Bill, 2014, mainly focuses on changing the Constitution of India. Main features of the Goods and Services tax in India:

1. The Goods and Services Tax will include Central Indirect taxes such as Excise Duty, Service Tax, Special Additional Duty of Customs, Countervailing Duty, Central Surcharges and Cess as long as they are related to the supply and consumption of goods and services.
2. It will also include State Value Added Tax or Sales Tax, Entertainment Tax, (excluding the tax charged by the local bodies), Entry and Octroi tax, Central Sales Tax (taxed by the Centre and collected by the State Government), Purchase Tax, Luxury tax, Taxes on betting, lottery and State Cess and surcharges involved in the supply and consumption of services and goods.
3. Inclusion of the concept of 'declared goods of special importance' as per the Indian Constitution.
4. Will levy integrated Goods and Services Tax on inter-State transactions of goods and services.
5. Will levy additional tax of 1% on supply of goods in inter-State trade which will be collected by the Government of India for a period of two years and will be allocated to the states from where the supply comes.
6. Petroleum and petroleum products and alcohol have been kept out of the reach of GST.

A Goods and Services Tax Council will be created to address the issues relating to goods and services tax and give recommendations to the Union and the States on areas such as rates, exemption list and threshold limits.

GST Rates: The GST council in 23rd meeting on November 10, 2017 recommended Widespread changes in the Goods and Services Tax. The council has decided to keep the highest 28% tax on luxury and sinful items as a result 177 items have been shifted to the 18% bracket. GST on many items has also been reduced. The government has categorized items in five major slabs- 0%, 5%, 12%, 18% and 28%. Here is the updated list of goods and services taxed under various

GST slabs: 1. No tax (0%) Goods : No tax will be imposed on items like jute, fresh meat, fish chicken, eggs, milk, butter milk, curd, natural honey, fresh fruits and vegetables, flour, besan, bread, prasad, salt, bindi. Sindoor, stamps, judicial papers, printed books, newspapers, bangles, handloom, Bones and horn cores, bone grist, bone meal, etc.; hoof meal, horn meal, jaggery, Salt - all types, Kajal, Children's' picture, drawing or coloring books, Khadi Village Industries stores, Clay idols, brooms, etc.

Services: Hotels and lodges with tariff below Rs 1,000, grandfathering service have been exempted under GST. Rough precious and semi-precious stones will attract GST rate of 0.25 per cent, admission to "protected monuments". **0.25%:** Rough industrial diamonds including unsorted rough diamonds to face 0.25% instead of 3% GST.

5% : **Goods** -Items such as fish fillet, apparel below Rs 1000, packaged food items, footwear below Rs 500, cream, skimmed milk powder, branded paneer, frozen vegetables, coffee, tea, spices,

pizza bread, rusk, sabudana, kerosene, coal, medicines, stent, lifeboats, Cashew nut, Cashew nut in shell, Raisin, Ice and snow, Bio gas, Insulin, Agarbatti, Kites, Postage or revenue stamps, stamp-post marks, first-day covers, Branded food, walnuts, dried tamarind, roasted gram, Dhoop batti, Corduroy fabric, saree fall, Paper mache items,Oil cakes, Paper waste or scrap; Real Zari; Cullet or other waste or scrap of Glass..

On January 2018, these items were moved to :

5% GST Slab : Goods- LPG supply to household domestic consumers by private LPG distributors, Tailoring service , Tamarind Kernel Powder , Mehendi paste in cones , Scientific and technical instruments , Basketware and wickerwork Velvet fabric , Cigarette filter rods.

Services: All restaurants, restaurants of hotels with room tariff of less than Rs 7,500, Food parcels, Textile job work, Transport services (Railways, air transport); Supply of e-waste.

12% : Goods - Apparel above Rs 1000, frozen meat products , butter, cheese, ghee, dry fruits in packaged form, animal fat, sausage, fruit juices, Bhutia, namkeen, Ayurvedic medicines, tooth powder, agarbatti, colouring books, picture books, umbrella, sewing machine, cell phones, Ketchup & Sauces, All diagnostic kits and reagents, Exercise books and note books, Spoons, forks, ladles, skimmers, cake servers, fish knives, tongs, Spectacles, corrective, Playing cards, chess board, carom board and other board games, like Cotton quilts(quilts exceeding Rs 1000 per piece),Statues, statuettes, pedestals, ceramic articles, porcelain items, ornamental articles, bells, gongs, non-electric of base metal, animal carving material, synthetic filament yarn, such as nylon, polyester, acrylic, etc; artificial filament yarn.

8% to 12% tax shifted (10-11-2017) Condensed milk, Refined sugar and sugar cubes, Pasta, Curry paste, mayonnaise and salad dressings, mixed condiments and mixed seasoning, Diabetic food, Medicinal grade oxygen, Printing ink, Hand bags and shopping bags of jute and cotton, Hats (knitted or crocheted), Parts of specified agricultural, horticultural, forestry, harvesting or threshing machinery, Specified parts of sewing machine, Spectacles frames, Furniture wholly made of bamboo or cane

12% GST moved On January 18, 2018 : **Goods** - Sugar boiled confectionery , Drinking water packed in 20 liter bottles ,Drip Irrigation system Fertilizer grade Phosphoric acid , Bio-diesel , Bio-pesticides ,Bamboo wood building joinery , Mechanical Sprayer

Services – State-run lotteries, Non-AC hotels, business class air ticket, fertilizers, Work contracts. It is said that GST would impact negatively on the real estate market. It would add up to 8% to the cost of new homes and reduce demand by about 12%.

18% : Goods -Most items are under this tax slab which include footwear costing more than Rs 500, Trademarks, goodwill, software, Biscuits (All categories), flavored refined sugar, pasta, cornflakes, pastries and cakes, preserved vegetables, jams, sauces, soups, ice cream, instant food mixes,, tissues, envelopes, tampons, note books, steel products, printed circuits, camera, speakers, Headgear and parts thereof, Aluminum foil, Electrical Transformer, Rice rubber rolls for paddy de-husking machine, Kitchen gas lighters, Modeling paste for children amusement.

28% to 18% moved 10-11-2017 Goods - Wire, cables, insulated conductors, electrical insulators, electrical plugs, switches, sockets, fuses, relays, electrical connectors, Electrical boards, panels, consoles, cabinets etc for electric control distribution, Particle/fiber boards and ply wood. Article of wood, wooden frame, paving block ,Furniture, mattress, bedding and similar furnishing, Trunk, suitcase, vanity cases, brief cases, travelling bags and other hand bags, cases ,Detergents, washing and cleaning preparations, personald eodorants, bath preparations, perfumery, cosmetic or toilet

preparations, room deodorizer ,Perfumes and toilet waters, Glass of all kinds and articles thereof such as mirror, safety glass, sheets,

18% slab moved 18-1-2018 : Goods- Second-hand medium and large cars and SUVs Bio-fuels powered buses ,The admission to theme parks, water parks etc Cigarette filter rods Services ; Restaurants in hotel premises having room tariff of Rs 7500 and above, telecom services, IT services, branded garments and financial services, Outdoor catering .

28%- Goods -In total 50 luxury and sin products will be taxed at 28% which includes Bidis, molasses, pan masala, aerated water, paint, sunscreen, wallpaper, ceramic tiles, water heater, dishwasher, weighing machine, washing machine, ATM, vending machines, vacuum cleaner, automobiles, motorcycles, aircraft for personal use . Services - Private-run lotteries authorized by the states, race club betting, and cinema will attract tax 28 per cent tax slab under GST.

Current Tax Structure

Example of Car	**Existing**	**GST**	
Cost of Manufactures	5,00,000	5,00,000	
Excise + Infrastructure @ 10%	50,000	CGST@11%	55,000
VAT 12%	66,000	SGST@11%	55,000
Dealer Invoice	**6,16,000**		**6,10,000**
Dealer Cost (5,00,000+50,000)	**5,50,000**	**5,00,000**	
+ Margin @ 10%	55,000	50,000	
Sale price for Dealer(5 L+50 T+55 T)	6,05,000	5,50,000	
VAT 12@		CGST @11%	60,500
	72,600	SGST @11%	60,500
Price to Customer	**6,77,000**		**6,71,000**
Dealers Tax Liability Net **VAT/GST** after set-off (72,600-66,000)	6,600	11,000	
Saving to Consumer 6,600 @ 1%			

Impact of GST on the Indian Economy: GST the biggest tax reform in India founded on the notion of "one nation, one market, one tax" is finally here. The moment that the Indian government was waiting for a decade has finally arrived. The single biggest indirect tax regime has kicked into force, dismantling all the inter-state barriers with respect to trade. The GST rollout, with a single stroke, has converted India into a unified market of 1.3 billion citizens.

The rollout has renewed the hope of India's fiscal reform program regaining momentum and widening the economy. Then again, there are fears of disruption, embedded in what's perceived as a rushed transition which may not assist the interests of the country.

Will the hopes triumph over uncertainty would be determined by how our government works towards making GST a "good and simple tax". The idea behind implementing GST across the country in 29 states and 7 Union Territories is that it would offer a win-win situation for everyone. Manufacturers and traders would benefit from fewer tax filings, transparent rules, and easy bookkeeping, consumers would be paying less for the goods and services, and the government would generate more revenues as revenue leaks would be plugged.

Conclusion: More than 150 countries have implemented GST. The government of India should study the GST regime set up by various countries and also their fallouts before implementing it. At the same time, the government should make an attempt to insulate the vast poor population of India against the likely inflation due to implementation of GST. Success of any tax reform policy or managerial measures depends on the inherent simplifications of the system, which leads to the high conformity with the administrative measures and policies. One of the largest tax reform measures in India The tax on goods and services (GST) is ready to consolidate the national economy and promote overall growth.

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HISTORY OF LIS EDUCATION IN INDIA

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Abstract
LIS education provides skillful training for professionals in the field of library information science. Therefore it is very essential for the development of every library and every library professional in the world. This article deals with LIS education in India, what is LIS education, development of LIS education outside the India, LIS education in India, first course of library science in India, certificate, diploma, and training courses in India, post graduate diploma courses in India
Keywords: *LIS education, LIS education in India*

What is LIS education?

Education is a basic need for every human being in the world. The term 'education' has been interpreted by different people in different ways. Some people refer to it as formal schooling or to lifelong learning. Some others refer to it as acquisition of knowledge, skills and attitudes. Some say that education is nothing, but training of people's mind in a particular direction to bring about desired changes.

"Education in the narrow sense does not include self culture and the general influences of one's surroundings, but only those special influences which are consciously and designedly brought to bear upon the youngster by the adult persons of the community whether through the family, the church or the state." — Thomas Raymont (1906)

Libraries are very important for the development and growth of modern society. This has been strongly realized. In order to satisfy the needs of the users, libraries must develop proper way. In this regard professionals needs education and training. LIS (Library Information Science) education means providing education for a professional career in libraries, the word 'profession' implies: professionalism, prolonged training, and formal education. This type of education wasn't always the case however; it developed as the librarian profession did. In fact, the creation of library schools had a direct impact on making librarianship a professional career in the first place.

Development of LIS Education Outside the India:

The earliest American LIS students were trained under the British apprenticeship system popular in the late eighteenth to early nineteenth centuries. With the increasing industrialization of the 1800s, however, this very limited and highly specific method of training became inefficient to supply librarians for the many new libraries being founded across the US. A new system of training librarians had to be found.

Enter Melville Dewey, who was the most prominent early force in developing librarianship as a profession. After his development of the Dewey Decimal System during his tenure at Amherst College, Dewey founded and became the first president of the American Library Association (ALA). The creation of a professional organization for librarians prompted the creation of the first recognizable library schools. After Dewey was established as the head librarian at Columbia University, the first library school, the School of Library Economy, was opened in January 1887 with two men and seventeen women as its first class. Training took three months, with an internship that lasted up to two years.

The school was later transferred to the New York State Library in Albany after Columbia trustees disagreed with Dewey's inclusion of women in his courses. There, Dewey's vice director, Mary Salome Cutler, added theoretical and cultural aspects of librarianship to what had been a very business-focused curriculum.

The success of this program led to the creation of three additional library schools by 1900: Pratt Institute, Drexel University, and the Armour Institute (which became the Library School at the University of Illinois in 1897). Each school had its own early contribution to the field: Pratt established the first children's librarianship specialization, Drexel's director published the first major texts on reference materials and book selection, and the Armour Institute developed its program into a four-year bachelor degree instead of a certificate. By 1919, there were 15 library programs, most of which awarded a fifth-year bachelor's of library science (BLS) degree after four years of a regular baccalaureate. The MLS was only awarded at Albany. Due to tensions between the ALA and the schools, the library schools formed their own association, the Association of American Library Schools, in 1916.

After the Carnegie Corporation conducted a review on its libraries and found that they had inadequate resources and training, the company commissioned a study on LIS education with particular focus on library schools. The 1923 Williamson Report (headed by C.C. Williamson) profoundly influenced the direction of LIS education. The report advocated librarian training as not simply training, but a professional degree best preceded by a college education. In 1926, the Graduate Library School at the University of Chicago created the first doctoral program in 'library science' and by 1950, most library schools were offering the MLS. The first school to train African-Americans, the Hampton Institute Library School, was established in 1925. It produced some notable graduates, including Virginia Lacy Jones, but was closed due to the Depression's impact on its resources in 1939. It reopened two years later at Atlanta University.

Concerned that LIS education was not theoretical enough, the ALA Board of Education for Librarianship issued standards that required the graduate master's degree as the educational standard in 1951. It formed the ALA Committee on Accreditation in 1956, and these actions spelled the end of other forms of library education besides the graduate schools.

LIS Education in India:

In the early 19th Century, young people learned librarianship by working under the more experienced practitioners. But, gradually the tasks performed by librarians became more complex and more dependent on technology. As a result, the study of library science has moved from the work-setting to professional schools in Universities. The first ever library school was started by Melvil Dewey in USA in 1887 at Columbia College (now Columbia University). In 1889 the programme moved to the New York State Library in Albany when Dewey became the Director there. The success of Dewey's training program and the publication of *Training for Library Service*, a book by the economist Charles Williamson in 1923, led other universities, institutes of technology, and large public libraries to establish their own professional degree programs in library science.

1. First Course of Library Science in India:

In India, The first of librarian the Imperial Library (Now National Library) at Calcutta from 1901-06 in the existence of in service training was initiated by John Macfarlane, as mentioned in some reports. In subsequent years, the training programme was opened to the staff of other libraries and even those interested in librarianship who deal with books and other documents.

i) Baroda School: In 1911, Siyaji Rao Gaikwad (1862-1939), the ruler of Baroda state called the American librarian Mr. William Allenson Borden (1853-1931), a disciple of Melvil Dewey to create a

cadre of men for the newly established libraries in the state library system. In 1912, he initiated the first training school in library education in India. In 1913, another training class for working librarians of town libraries was started. These classes continued even after the departure of Borden.

2. Certificate, Diploma, and Training Courses in India:

i) Lahore School: In 1912, the Punjab University called another librarian Mr. Asa Don Dickinson (1876–1960) from USA. He started the second educational course of three month duration in library science in the year 1915. This happens to be the first university course in India. Mr. Asa Don Dickinson later become the Librarian of Panjab University, Lahore (now Pakistan) during 1915–1916.

ii) Andhra Desa: The Andhra Desa Library Association (founded in 1914) started conducting "training classes for the library workers" at Vijayawadain 1920. The classes covered a module on running adult education classes in addition to library technique.

iii) Mysore State: In 1920, a course for the training of librarians was conducted at Bangalore under the "program of library development" initiated by the then Dewan of Mysore Mr. M. Visweswaraya.

iv) Madras Library Association: A summer school for college librarians and lecturers in charge of college libraries in Madras was held in 1928 and repeated in 1930. The Madras Library Association also organized a regular certificate course in library science from 1929. Then in 1931, University of Madras took up the training course of MALA in 1931 and started offering the course on a regular basis.

v) Andhra University: Andhra University started a certificate course in 1935, which was later abandoned.

vi) Imperial Library, Calcutta*:* The Imperial library, Calcutta started a training class under the supervision of its librarian Mr. K. M. Asudulah in 1935. It was a full time regular Diploma course in librarianship at the Imperial Library, Calcutta (now National Library, Kolkata). It continued till 1946.

3. Post Graduate Diploma courses in India:

i) University of Madras: University of Madras, in 1937, introduced a one year Post Graduate Diploma course in place of the certificate course of three month duration. This was the first P G Diploma in library science in India.

ii) Banaras Hindu University: The second university to start a post graduate diploma course was the Banaras Hindu University in 1942.

iii) Bombay University: University of Bombay initiated a diploma course similar to Banaras Hindu University in 1943.

iv) Government of India's in-Service Training Course: A training course for the staff working in various government organizations was started in 1953. This course was recognized as equivalent to the university diploma courses.

4. Degree Courses

i) Aligarh Muslim University: In 1947, Aligarh Muslim University started B.Lib. Science Course for the first time in the country.

ii) University of Delhi: University of Delhi was the first university to establish a full fledged Department of Library Science in 1946. It also instituted the first post diploma degree course in 1948. In 1949, the structure was changed. The programme of Master of Library Science was introduced as a two year course with the first year leading to Bachelor of Library Science.

In between 1956-59, six new LIS departments were established at Aligarh Muslim University, MS University of Baroda, Nagpur University, Osmania University, Pune University and Vikram University.

iii) Madras University: In 1960, Madras University replaced its full time one year diploma course to B.LibSc. Degree course. By mid 1960, many other universities had fallen in the line of university of Madras following the recommendation of Review Committee Report of UGC in introducing different degree courses.

iv) Government Polytechnique for Women: The Government polytechnique for women, Ambala, Bangalore, Chandigarh, Delhi, Jullandhur, Rourkela started post matric (class X) diploma courses of two years duration in late 1960s.

v) Documentation Research and Training Centre (DRTC): In 1962, Dr. S. R. Ranganathan established Documentation Research and Training Centre at Bangalore. Previously DRTC courses were of 14 month duration which was later on moved to two years programme.

vi) Indian National Scientific Documentation Centre (INSDOC): INSDOC conducted a short term course for Asian Documentalists in 1963. In 1964, it started a one year post graduate course in Documentation and Reprography leading to "Associateship in Documentation and Reprography". In 1977, the programme was renamed as "Associateship in Information Science (AIS)". On September 30, 2002, INSDOC merged with the National Institute of Science COMmunication (NISCOM) and was renamed as National Institute of Science Communication and Information Resources (NISCAIR). At present, it is conducting "Courses in Information Science".

The DRTC and NISCAIR in Delhi concentrate on the training of professionals for special and industrial libraries and information centers. Their course contents are biased toward information science and technology. The programme of these two institutes is a class apart from other similar programmes offered by various institutes.

In India advanced professional education has remained attached to universities, though there are some regional library associations conducting certificate courses of a few months duration and women polytechnics offering post-masters two year diplomas in library science to train paraprofessionals. At present, about 107 institutions, mostly university colleges and polytechnics, have library science education courses. Out of these, the M.Lib.I.Sc. course is being offered by more than 75 universities.

5. Five Year Integrated Course in LIS: In 2010, University of Calcutta introduces five year integrated course in Library & Information Science and thus becomes the first university to launch such course in LIS domain. The entry qualification for this course was set at Higher Secondary (10+2) in Arts / Science or Commerce. Launching of this course will force the learners to choose the LIS by choice and not by chance. It will again help the students to grasp and understand the contents for LIS in a better and exhaustive way.

6. Present Status of LIS Education in India: A few departments and associations provide Certificate Courses in Library and Information Science (CLIS) and Diploma in Library and Information Science (DLIS). The others provide BLISc and MLISc courses. In most of the universities, the prerequisite for admission into the Bachelor or Master degree course in Library and Information Science is 10+2+3 years of education from any faculty (arts, science, commerce etc). The majority of the universities generally conduct two separate courses for the Bachelor's degree followed by the Master of Library and Information Science of one year (or two semesters) duration each. In recent years, some institutions have offered two years of integrated courses of four semester duration. The University of Calcutta went a step ahead and introduced five years integrated course in LIS with entry qualification as 10 +2.

Specialization: Students in most schools of library and information science have the opportunity to develop at least some degree of specialization. Some may take advanced courses in particular library

functions, such as reference work, while others may take courses related to a particular type of library, such as a course in medical librarianship or public librarianship or academic librarianship. In simple, there are many different courses available in LIS. It makes the professionals available to work at all levels of library irrespective of type, structure and function.

Conclusion:

There was initially a technical education that was acquired on the job. Practical work in a library, based on good education in schools, was the only way to train librarians. LIS education as a subject and has been taught at different level in the universities of the world. LIS education provides skillful training for professionals in the field of library information science. Therefore it is very essential for the development of every library and every library professional in the world.

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PRELIMINARY PHYTOCHECMICAL ANALYSIS OF *ISODON NILGHERRICUS* PLANT

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Abstract
Any of various biologically active compounds found in plants are known as Phytochemicals. Lamiaceae family is known for its aromatic plant species and possess various phytoconstituents. Isodon nilgherricus is aromatic plant of Lamiaceae family are annual herb with approximately 1 meter in height. This plant is commonly available and medicinally useful in this geographical area and this study would be foundation for understanding the Phytochemical and therapeutically effectiveness of these varieties. One of such resources is folk medicines. According to literature the leaves of this plant are used against wound by the Kurumba tribes in Nilgiri district ,Tamil Nadu. These plant shows medicinal properties against wound healing. In present study preliminary Phytochemical analysis was carried out and it shows presence of tannin, alkaloid, sterol ,Saponins . It suggest that the Phytochemical properties for curing wound and possess anti microbial property and leads to the isolation of new novel compounds.

Figure: 00 References: 16 Tables: 01
KEYWORDS – Phytochemicals, Isodon nilgherricus, Kurumba , Nilgiri

Introduction-

Many members of the Lamiaceae family are widely cultivated owing not only there aromatic qualities but also their ease of cultivation. Lamiaceae plants are well known for their therapeutic action. This may be due to essential oils invariably present in them. Medicinally important plants of Lamiaceae include Tulsi, pepper mint, thyme, Coleus, Spearmint and many more.

Genus Plectranthus which is also belongs to Lamiaceae , constitute about 300 species of herbs and shrubs native to tropical region. The most frequently cited use of Plectranthus species is for their medicinal properties which accounts for over 85% of all uses(Lukhoba et al 2006). Although the genus is known for its rich diversity and medicinal properties.

Isodon nilgherriucus (Benth) locally known as Sone-gida in Tamil Nadu by Kurumba tribal's in Nilgiri hills used for its ethno-botanical use and medicinal use for wound healing. the Phytochemical analysis refers to the extraction screening and identification of the medicinally active substances found in plants. Some of the bioactive compounds that can be derived from the plants are tannins and phenlos, flavonoid,alkaloids.

Material and Methods

1) **Collection of Plant Material** - Excursion were carried out to different parts of the study area. Plants were collected from the Nilgiri hills, Ooty TamilNadu and identified with the help of floras referring to research floras and expert opinions. Herbarium were made and authenticated in the Botanical Survey of India, Southern region, Coimbator. The voucher specimen was deposited in the Herbarium, BSI, Coimbator (BSI/SRC/5/23/2017/5/1637).
2) **Preparation of Extract** – The collected plant material were brought to the laboratory washed in tap water and shed dried for a one week then made into powdered and stored in clean plastic container till further use. Powdered material extracted in 5 different solvents like Water ,Ethanol, Acetone,Chloroform and Petroleum ether by Soxhlet apparatus and dried material stored and use for further experiment.
3) **Preliminary Phytochemical screening** -

The preliminary phytochemical screening of crude extract were subjected using different solvents of Petroleum Ether, Chloroform, Acetone Ethanol and Water for different test for identification of phytochemicals as Alkaloid, Carbohydrates,Tannins,Resins,Flavonoids Protein, Amino acids, Saponins and Coumarin.

1) Test for Alkaloids:

- Wagner's Test- 1ml of plant extract 3-5 drops of Wagner's reagent is added and formation of reddish brown precipitation
- Mayer's Test – 2 to 3ml of filtrate in a test tube followed by addition of Mayer's reagent - A white precipitate formed.
- Dragendroff"s reagent – 2 to 3ml of filtrate was taken in test tube. To this few drops of Dragendroff's reagent was added. Orange brown precipitate formed.

2) Test for Carbohydrates

- Molisch's test- 1ml of plant extract + 3 to 4 drops of Molisch's reagent is added +1ml of concentrated sulphuric acid. Formation of a violet ring indicates the presence of Carbohydates.

3) Test for glycosides

- Keller Kiliani Test - 1ml of extract+2 to 3 drops of ferric Chloride solution + 1ml of glacial Acetic acid+1ml of concentrated Sulphuric acid.

  Formation o brown ring at the junction of two liquids indicates the presence of glycosides.

4) Test for Flavonoid

- Alkaline reagent test -5ml of plant extract +3 to 5 drops of 20%NaoH formation of yellow colour observed, become colourless on addition of 2 drops of dilute HCl.

5) Test for Amino acid

- 5ml of plant extract + 2 to 3 drops of Ninhydrin solution was added and kept in boiling water bath for 1 to 2 minutes formation of purple colour indicates Amino Acid is present.

6) Test for proteins

- Biuret Test – 5ml of plant extract + few drops of 4% NaOH + few drops of 1% $CuSO_4$
- Millon's Test – 5ml of plant extract was taken in test tube + few drops of Millon's reagent. The solution was boiled – Brick red colour

7) Test for Tannin and Phenol

- Ferric Chloride test – 5ml of plant extract + 2 to 3 drops of Ethanol + Shake well +1ml of 5%Ferric Chloride solution – Deep blue colour

8) Test or Terpenoid

- Salkowski's test - 5ml of Plant extract +2ml of Chloroform+ 3to 5 drops of concentrated of Sulphuric acid in it - reddish then brown precipitation found.

9) Test for Quinones-

- In 5ml of plant extract 3ml of concentrated HCl added yellow precipitation occurred.

10) Test for Resin-

- Turbidity observed on addition of 5ml water in 10 ml of plant extract

11) Test for Coumarin

5ml of Plant extract of 10%NaOH added in 5ml of plant extract, Yellow colour observed.

12) .Test for Saponins-

- Frothing test- 0.5gms of an of an plant extract was taken in test tube and shaken with 5ml of distilled water – formation of stale forms indicated the presence of Saponins

Observation table 1

Phytochemical qualitative analysis of *Isodon nilgherricus* (Benth) plant

Sr. No.	Name of Test	Aqueous	Ethanol	Acetone	Chloroform	Methanol	Ether
1	Alkaloid	++	+	+	+	-	+
2	Carbohydrate	+	+	-	-	-	-
3	Tannins	++	-	+	-	-	-
4	Phenols	++	+	+	+	+	+
4	Proteins	++	++	-	-	-	-
5	Sterol	++	_	+	+	+	+
6	Saponins	++	+	-	++	+	
7	Flavonoids	++	+	+	++	+	+
8	Glycosides	+	+	++	++	-	-
9	Amino acid	++	+	+	_	_	_
10	Quinone	_	_	+	_	+	-
11	Resin	++	_	+	+	+	-
12	Coumarin	++	_	+	+	+	_

Result and Discussion :

In the present study, *Isodon nilgherricus* shows presence of carbohydrate in aqueous, ethanol, solvents only and as it absent in acetone, chloroform,methanol and ether solvent extract. Tannins, present only in aqueous and in acetone solvent extract. Phenol is preent in all solvent extracts. Sterol is present in aqueous and acetone solvent extract except ethanol,chloroform solvent extract. On the other hand resin and coumarin is present in all solvents except ethanol and methanolic solvent extract. Alkaloid is present in all solvent extract except methanolic solvent extract. This plant contains a various phyochemicals as it can be definitely prove the good source for the treatment of allergy as well for antiseptics and other diseases.

Conclusion :

The Phytochemical qualitative analysis of *Isodon nilgherricus* showed positive reaction towards an aqueous extract as most of the phytochemicals was present in it. It is a good source of alkaloid, tannin, sterol,saponins,flavonoids, glycosides, resin and coumarin. Alkaloid and tannins are present in aqueous and ethanolic solvent extract while absent in acetone, chloroform and in petroleum ether solvent extract.

Acknowledgment: Author is thankful to the Principal and Vice Principal of Ahmednagar College, Department of Botany, Ahmednagar for providing required facilities to carry out present research work and Principal of Dapoli Urban Bank Senior Science College for their encouragement and motivation.

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EFFECT OF PARTHENIUMEXTRACTAS HERBICIDE ON SOME ORNAMENTAL AND MEDICINAL PLANTS

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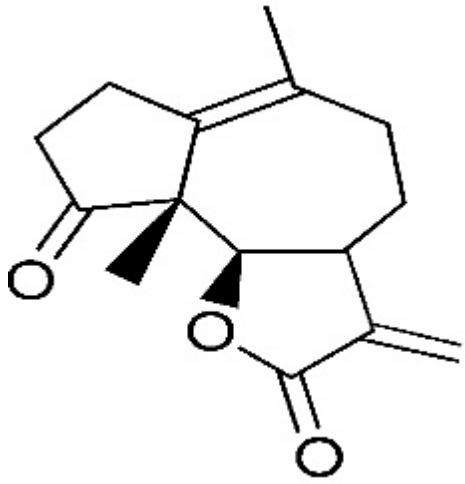
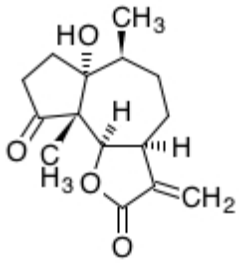
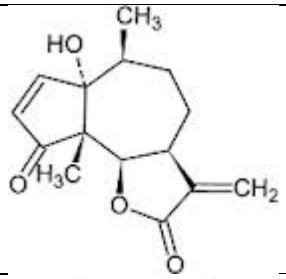
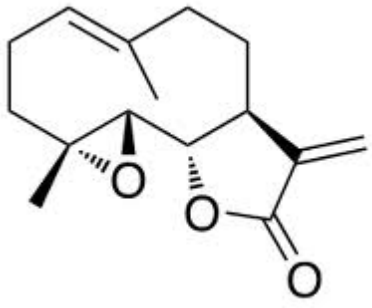
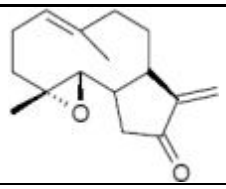
Abstract
Parthenium hysterophorus, members of the Asteraceae family .Itis a noxious weed native of America. This weed is spread all over Asia, Africa and Australia. It is considered to be a cause of a spectrum of clinical patterns: allergic respiratory problems, contact dermatitis, mutagenicity in human and livestock. Its allelophathic nature can drastically reduced the crop production and aggressive dominance of this weed threatens biodiversity. In India most of the medicinal plants are badly affected by Parthenium. Attempts to control spread of the plant have so far not been successful. First occurrence of parthenium in India is believed to be in 1956.However some reports trace its history of occurrence about one and half century older than as reported. Among the allelopathic weeds, Partheniumhysterophoruslinn.isnow recognized as a cause of serious agricultural problems due to its invasion of croplands and subsequent lowering of crop yield. Chemical control, biological control, mechanical controls are tried to irradicate this weed. But the success of irradiacaion is very limited.
Key words:-Parhenium, sesquiterpenelactone, parthenin, allelochemicals.

Introduction: Partheniumhysterophorus L. is an aromatic annual and obnoxious invasive herb under Asteraceae family, now commonly known as feverfew, Tanacetumparthenium, Chrysanthemum parthenium (Parsons and Cuthbertson, 2001; Bhatt et al., 2012). The normal height of this erect plant is up to 1 m but under favorable conditions the height may reach up to 2 m having deeply penetrating taproot with many finely branched feeding roots and an angular, longitudinally grooved and profusely branched hairy stem (Parsons and Cuthbertson, 2001; Bhatt et al., 2012). Allergen containing 8-20 cm long and 4-5 cm wide shortly hairy pale green leaves are alternate and rosette that are resemble to carrot leaves during initial growth (Parsons and Cuthbertson, 2001; Bhatt et al., 2012). Rising from the stem nodes and terminating at about the same height, each head (4-10 mm diameter) of clustered flowers bears about 40 tubular male and 5 ligulate female white florets and produces 2 mm long flattened black seeds (Parsons andCuthbertson, 2001). Seeds germinate any time of the year under wide range of environmental condition. High humidity, high moisture content and temperature around 25°C are the standard factors for seed germination (Bhatt et al., 2012). A native of tropical America P. hysterophorus was introduced during the 1950s into Africa, Asia and Oceania (Labrada et al., 1994). Now this species is frequently found on roadsides, railway reserves, stock yards, cultivated fields, rundown pastures and vacant lots in China, Taiwan, Pakistan, Nepal, Sri Lanka, Bangladesh, Vietnam, Pacific islands, Ethiopia, Kenya, Madagascar, South Africa, Somalia, Mozambique, Zimbabwe and several countries of South and Central America (Parsons and Cuthbertson, 2001; Bhatt et al., 2012). It is included in the Global Invasive Species database of IUCN due to the invasive nature (Bhatt et al., 2012). Not only this weed is well thought-out to be a factor of allergic respiratory problems, contact dermatitis and mutagenicity in human and livestock but also considered as a severely crop production reducing agent due the allopathic nature (Patel, 2011). Thus P. hysterophorus is a threat for the biodiversity.

Name of the compounds	Structure	References
Canin (C15H18O5; mw = 278.31)		(Zhou et al., 2011b)
Charminarone (C15H18O5; mw = 278.31)		(Venkataiah et al., 2003)
Coronopilin (C15H20O4; mw = 264.32)		(Zhou *et al.*, 2011b)
Parthenin (C15H18O4; mw = 262.31)		(Zhou *et al.*, 2011d)
Parthenolide (C15H20O3; mw = 248.32)		(Kuhn and Winston, 2007; Zhou *et al.*, 2011d)

Pathenolide (C16H22O2; mw = 246.35)		(Kuhn and Winston, 2007; Zhou *et al.*, 2011d)

Materials & Methods

Aqueous Extract:

1) Parthenium plants were collected and washed thoroughly withrunning water toremove alldust anddirt.
2) Leaves and stems were chopped with tine blade on the table timely average size of chapped leaves ranges from 2 to 5 mm and that of stem is 5 to 10 mm.
3) 500 ml of distilled water wastaken in the round bottom flask of 1000 ml capacity alongwith 250g of chopped material.
4) The round bottom flask was placed on heating mental and heated at a constant temperature of 80 ^{0} C for 1 hour by keeping an air condenser on the month of the round bottom flask.
5) After getting dark green color extract ; it is filtered twice firstly with cotton filler and then with filter paper. Filtrate received was 350 ml.
6) The extractwas then collected in 500 ml. beaker and evaporated to make it concentrated. Early 100 ml. of extract was collected and kept inanumbercolored bottle.

POT TESTS

Instead of field trials activity of Parthenium extract was tested on small scale by using common pot tests on ornamental and medicinal plants. Following procedure was adopted for the pot test.

1. Ten different plants having medicinal properties were grown in 20 earthen pots. Same herbs were grown in potA and potB.
2. The series of 20 pots were prepared.
3. The solutions of Parthenium extract having concentration from 10 ppm to 90ppm.
4. To the first pot (A) regular watering was done.
5. To the second pot (b) besides regular watering, 100 ml of parthenium extract was added.
6. Regular observations were taken for their growth for 15 days

Effect of Parthenium extract on the following plants.

Name of the plant	No.of days	Effective conc.in ppm
Achyranthusaspera	25	40
Cassia tora	25	70
Solanumxanthocarpum	25	70
Sphaeranthusindicus	25	50
Menthaarvensis	25	60
Ocimumgratisisum	25	-
Coriander sativum	25	50
ArgemoneMexicana	25	60
Trigonellafoenum-graecum	25	70
Allium sepa	25	80

The above plants shows effect on growth and marginal burning of leaves at different conc.

Result and discussion

Herbicide :- The chemical used to skill the weed or it suppress weed growth is known as herbicides .

Bio herbicides are the plant extracts containing toxic alkaloids which kills herb effectively or suppress the growth of it. Pure Parthenin as well as extract of different parts of

P.hysterophorus shows phytotoxic effects on many aquatic (Pandey 1994,1995,1996) as well as terrestrial weeds(Khosala et al.,1990Khosala and Sobati 1981.,Kumari,1990.,Singh et al.,)The sesquiterpene lactone Parthenin has received most attention regarding allelopathy or potential herbicidal properties of the plant(Duke et al.,2007).

Parthenium elaborates four C-6 guaianolides such as parthenin and coronopillin and several phenolic acids such as coffeic ; vanillic, fenulic chlorogenic and anisic acids aqueous extract of parthenium with various concentration n ppm were tried against observation were taken for 8 days it is found that each plant is sensitive towards parthenium at different concentration the effective concentration range is from 40 ppm – 90 ppm only ocimumgratissimum do not show any effect against parthenium extract.

Almost all the plant has shown supersession in growth and marginal burning of leaves it is observed that when aqueous extract if parthenium was added to the test plant it shows systemic action it is absorbed through the roots and translated in the body of the plants and causes marginal burning of leaves as well as suppression of growth of the plant.

Partheniumextract has shown suppression of plant growth and marginal burning of leave because of systemic action.From the above tests and observation it concludes that parthenium in an effective herbicide at higher concentration.

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INFANT CRY DETECTION BY SIGNAL ANALYSIS AND FEATURE EXTRACTION

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Abstract
The first verbal communication of newborn baby with the world is baby's cry. An infant crying signal is the attention call for parents orcaregivers and motivates them to alleviate the distress. Nowadays it is a difficult forhousekeeper mothers to take care of their newborn baby. Thispaper proposes a method to detect infant cry. The cry sound of baby has different frequency and pattern than other surroundingsoundsthus it is necessary to eliminate the surrounding sound and remove the noise for perfect crydetection. The designed system can be used in various applications such as signalingparent's about the cry also distinguishing different sounds. There are some monitoring devices including wireless camera and LCD to solve the problem but they are expensive. Our idea is to present simple algorithm with low cost device to detect infant cry.
Keywords: *Infant, DsPIC, Audio Codec, Wireless Camera, LCD.*

INTRODUCTION

The first verbal communication of newborn baby with the world is baby's cry. Infant crying is a biological alarm system. An infant crying signal is the attention call for parents or caregivers and motivates them to alleviate the distress. Infants need their parents love and care but their parents are not always available to them. This motivates the proposal of the system for infant cry detection.

Nowadays it is a difficult for housekeeper mothers to take care of their newborn baby while doing house chores. Our idea is to present a simple algorithm applicable to create a low cost device with the ability to detect infant's crying and call the parents.

Cry is the infant's most powerful, multimodal, dynamic behavior, and sometimes the only means of communication and sign of life a birth. It involves characteristic vocalization, facial expressions and limb movements, all of which change over time. It is in the most sensitive range of the human auditory sensation\ area. Several models of cry sound have been proposed. The theory that underlies most acoustic analyses of cry sounds is the sound-filter theory. In this theory, cry is expressed by a waveform that impinges upon the listener's ear is a function of the characteristics of the source and its filters.

Infant cry detection technique can be very useful for baby care and monitoring. There are many techniques proposed but there are some drawbacks with the previous designs. The external noise is one of the most important factor which hinders the detection, the noise may corrupt the cry sound and processor may not be able to distinguish between noise and infant cry.

Thus external noise has to be removed in order to have only cry detected. The proposed system focuses on removing the external noise in order to detect only cry sound using DSPIC processor.

RELATED WORK

This section gives a brief introduction about existing infant cry detection techniques.

Kevin Kuo [1] proposed a short-time signal detection method, LPCC feature extraction, and vector quantization to performed and discriminate between three cries of differing pathologies originating from a two month old baby boy. Analysis of the recordings resulted in the discovery of all

three cry types embedded in each recording to varying degrees. Despite the imprecision in the classification results, there were still noticeable presence of the cry whose pathology was predetermined with the aid of the infant's parents. The modest success was encouraging in the fact that it felled under the expected result.

Lichuan Liu et.al [4] suggest that high noise level inside the infant incubator results in numerous adverse health effects for premature newborns and the active noise control (ANC) systems are developed to reduce the noise. The paper proposes an infant cry classification integrated ANC system for infant incubators. The developed system can dramatically reduce the harmful noise level, and the integrated infant cry detector and analyzer can monitor the infants' physical conditions. The infant cry signals are picked up and detected by the same microphones used by the ANC system, the cry signal's features are extracted and then recognized. The simulation and experiment results showed that the cry recognition of specific infants yielded promising results.

Mohammad Kia1 et al. [5] proposes a simple voice recognition system which can be applied practically for designing a device with capability to detect a baby's cry and informing the parents automatically. The overall algorithm is to evaluate the resemblance of the infant's voice signal with the data stored in a database, which is already prepared by recording some cry and laughter samples, using an automatic fuzzy classifier system which can lead to detection of cry or laughter. This algorithm can serve as a reliable foundation on which the future creation of a portable real-time, automatic voice detection system device can be based. To achieve the result they created a database of sample cry and laughter signals and written a sample Matlab program for carrying out the real-time frequency-domain calculations and a sample visual program in Labview programming environment for interfacing with user.

BhagatpatilVarsharani V et al. [7]mainly focused on automation of Infant's Cry. For the implementation LFCC was used for feature extraction and VQ codebook for matching samples using LBG algorithm. First, in training phase, in which LFCC was applied for feature extraction, and then VQ codebooks are generated to compress the feature vectors. Second, is the testing phase in which features extraction and codebook generation of samples are repeated. Here, comparison of the codebook template of samples to the all the available templates in the database are carried based on Euclidian distance between them. LFCC effectively capture the lower as well as higher frequency characteristics than MFCC, hence we will get good results over MFCC.

Proposed System

The proposed block diagram for infant cry detection is shown in figure 1. It comprises of a microphone, DSPIC30F5011 processor and LCD display with speaker. The 30F family of DSPIC processor is mainly used for audio processing.

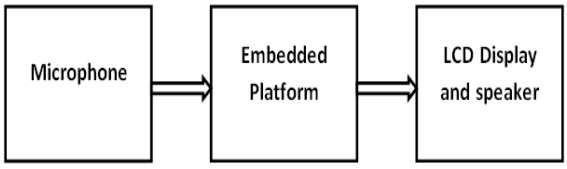

Figure 1: Block diagram of the proposed system

A real time sound is given to the processor via microphone, the given sound then is processed to compare with the testing data. FFT is carried out on the signal to obtain a pattern the obtained pattern of sample is then compared with the testing data at first the sample is seen if the sound is cry or other sound if cry sound is not found the message is displayed that cry is not detected is cry is detected the LCD display's message of cry sound detection.

METHODOLOGY

The proposed system goes through several stages of data capturing and analysis to meet the required results.The figure 2 shows the flow graph of the proposed system.

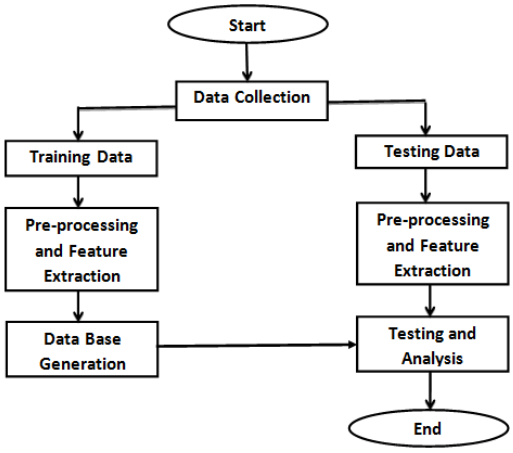

Figure 2. Flowchart of proposed system.

Stage1: The data is collected from the user it can be any audio sound using microphone.

Stage2: The collected data is trained and tested for creation of code book.

Stage3: Collected data undergoes filtering for removal of surrounding sound and FFT is carried out for generation of the pattern.

Stage4: The generated pattern is then compared with the database and the best fitting sample is checked for cry sound.

After all the stages the message is displayed if cry is detected or not.

HARDDWARE USED

The important components of the proposed system are dsPICprocessor and audio codec Ic.

1) dsPIC30F5011:

A digital signal processor, dsPIC30F5011 is a 16 bit microcontroller from Microchip

Figure 3. Pin Diagram of dsPIC30F5011 Processor

The pin diagram of dsPIC30F5011 is shown in Figure 4. The microcontroller has 64 pins which include General Purpose Input Output (GPIO) pins, and dedicated pins for SPI, CAN, UART, ADC, Timers and Output Compare.

Features of dsPIC30F5011:

- 64 pin, high performance RISC CPU
- 66KB Flash Memory, 4KB on-chip RAM
- 16 bit Timers
- 16 bit PWM/ Compare output functions
- 3- wire SPI modules
- Addressable UART modules
- 12 bit Analog to Digital Converter (ADC)
- In circuit serial programming (ICSP) capability with two UART modules.

2) Si3000 Audio codec:

The Si3000 is a complete voice band audio codec that offers integration by incorporating programmable input and output gain attenuation, a microphone bias circuit, handset hybrid circuit and an output driver for 32Ω headphones

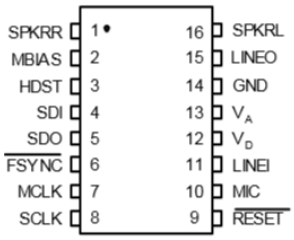

Figure 4. Pin Diagram of Si3000 audio codec.

Features of Si3000 Audio Codec:

- 84 dB ADC Dynamic Range.
- 84 dB DAC Dynamic Range.
- 4–12 kHz Sample Rates.
- 30 DB microphone pre amplifier.
- Programmable input gain: Attenuation: –34.5 dB to 12 dB
- Programmable output gain: Attenuation: –34.5 dB to 12 dB
- Support for 32 ΩHeadphones.
- 3:1 Analog Input Mixer.
- 3.3–5.0 V Power Supply.
- Direct Serial Interface to DSPs.

It also serves as a companion chip to FAT ISO modem chipset with vice features providing hardware support for handset and speaker phone. The device operates from a single 3.3 to 5 v power supply and I s available in 16bit small outline package.

RESULTS

Different sound samples were taken for study, the samples were then analyzed by taking FFT and pattern generation for distinguish between different sound patterns with cry pattern.

Figure 5 and 6 shows patterns of different sound samples. Figure 5 shows the patterns generated by sound samples such as train, owl traffic jam sound. Figure 6 shows the patterns of different cry samples

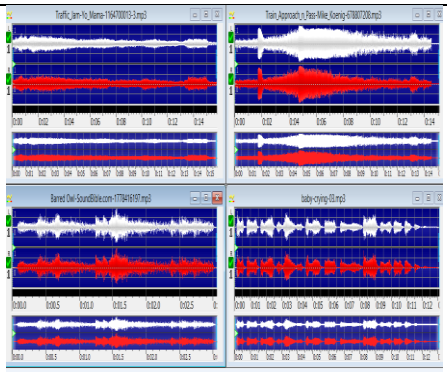

Figure 5. Patterns of different sound samples

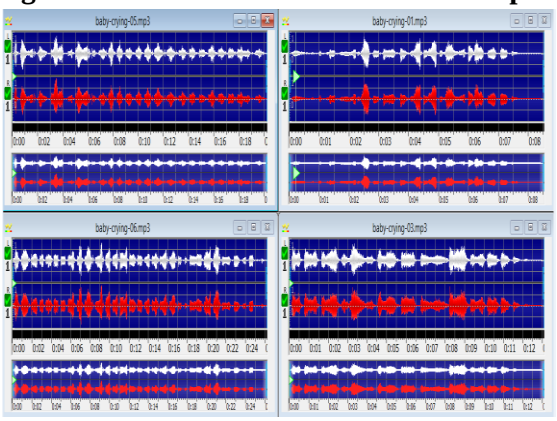

Figure 6. Patterns of different cry samples

It can be seen that the pattern of sound samples such as traffic or train sound are different than the cry sound samples. The frequency and amplitude changes can also be observed. This analysis is used in the algorithm developed for cry detection.

Further detail analysis are carried out on human body sounds and cry sounds because human sounds are similar in nature which can affect the detection of perfect cry sound.

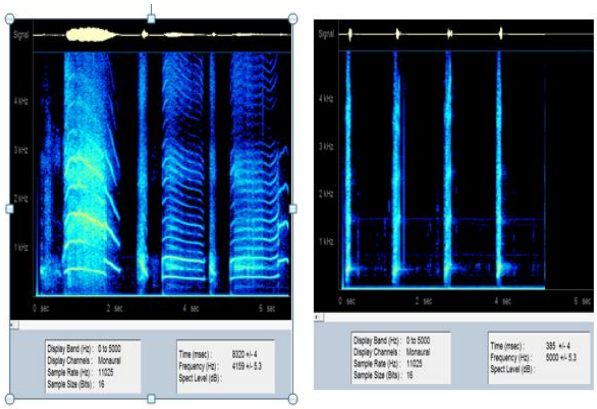

Figure 7(a). Spectrogram of cry sound and hiccup sound

Figure 7(a) shows the spectrogram of infant cry sound and human hiccup sound the pattern difference can be seen in terms of time interval and amplitude of the signal. The infant cry sound can be easily distinguished from the hiccup sound.

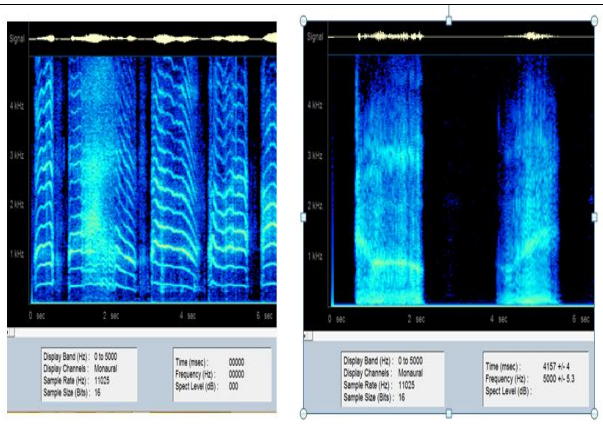

Figure 7(b). Spectrogram of cry samples and human snoring sound.

Figure 8 and 9 show the hardware experimental setup for proposed system. Programming is done in MPLAB XIDE

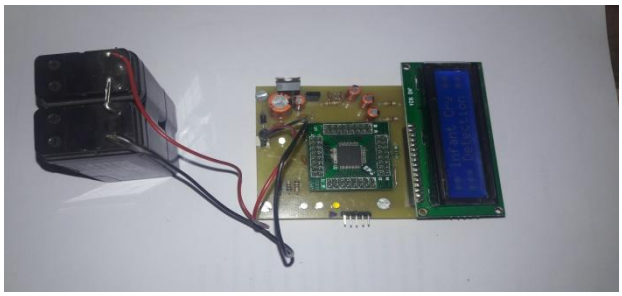

Figure 8: Experimental Setup 1

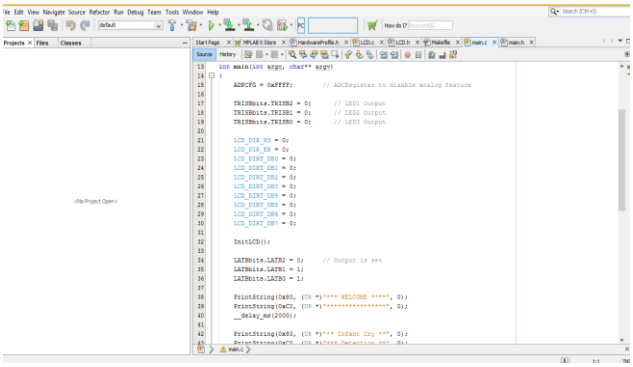

Figure 9: Experimental Setup 2

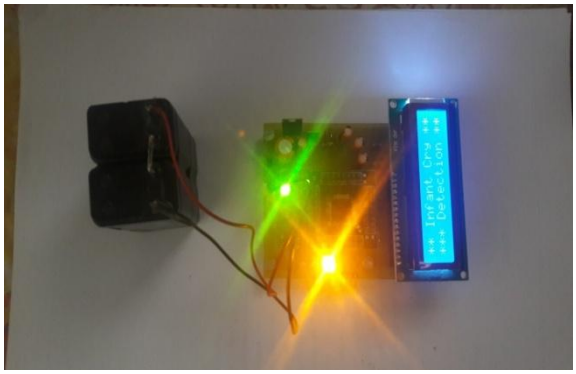

Figure 10: LED glowing when the system is powered.

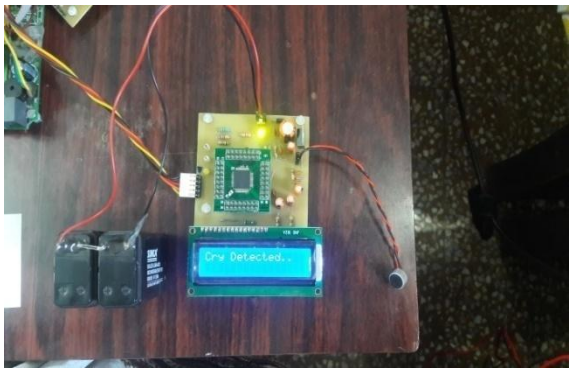

Figure 11: LCD showing detection of cry sound

Fig. 10 shows the blinking of leds when the system is powered and shows a message on the LCD display "Welcome" when battery is connected for 500ms delay and then changes to "Infant Cry Detection" for 1200ms delay. The LEDs used are toggle with a constant delay of 20ms.

Fig 11 and 12 shows the when result of cry detected or cry not detected after the sound sample is processed

Figure 12: LCD showing cry not detected.

CONCLUSION AND FUTURE WORK

Theresults show successful implementation of DsPIC30F5011 processor and Si3000 Audio codec Ic on an embedded platform. The program generated in MPLAB XIDE using embedded C language is dumped successfully and shows the desired results showing proper working of the processor. Different sound samples were analyzed according to the pitch and frequency patterns and the difference was spotted between cry samples and other surrounding sounds.The obtained spectrograms add more details to the study and differentiating of cry samples from other human sounds. Detected results are displayed on the LCD.

Future work is to develop an algorithm that will distinguish between different surrounding sound and detect only cry sound neglecting other sounds.

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रायगड जिल्ह्यातील स्वयंसहाय्यता बचत गटएक अभ्यास

प्रा . लोहकरे शत्रुघ्न नामदेव सहयोगी प्राध्यापक डॉ . सी . डी . देशमुख वाणिज्य व सौ . के . जी . ताम्हाणेकला महाविद्यालय गोहा रायगड .
प्रा . डॉ . मनिषा कर्णे प्राध्यापक अर्थशास्त्र विभाग मुंबई विद्यापीठ मुंबई .

प्रस्तावनाः

भारतीय अर्थव्यवस्था हीग्रामीण आणि शहरी या दोन भागात विभागलीअसून देशामध्ये शहरी अर्थ व्यवस्थेपेक्षा ग्रामीण अर्थव्यवस्थेचा प्रभाव अधिक राहिला आहे . कारण आजही देशाच्या 70च्या जवळपास भाग हाग्रामीण स्वरूपाचा आहे . तेव्हा या ग्रामीण भागाचा विकास हा अर्थव्यवस्थेचा नीतिचा एक अविभाज्य भाग आहे . देशाच्या स्वातंत्र्यानंतरच्या काळात देशासमोर अनेक समस्या आहेत . त्यातही ग्रामीण द्रारिद्रय बेरोजगारी गरिबी या सारख्या समस्या मोठया स्वरूपात आहेत आणि हा ग्रामीण अर्थव्यवस्थेच्या आर्थिक विकासातील अडथळा आहे . तेव्हा या समस्या सोडविण्यासाठी तसेचग्रामीण भारतातील आर्थिकदृष्टया कमकुवत वर्गाला विकासाच्या मुख्य प्रवाहात आणण्यासाठी स्वात्रंत्र्योत्तर काळात भारतात अनेक योजना उपक्रम कार्यक्रम तयार केले जातात आणि ते शासकीय व बिगरशासकीय संस्थामार्फत राबविण्यात आहेत . यासर्वामध्ये वंचितांचा विकास हा मुख्य गाभा आहे . आर्थिकदृष्टयाकमकुवत वर्गालास्वांवलंबी बनविण्यासाठीतसेच त्यांच्या समस्या सोडविण्यासाठी त्यांचे आर्थिक वसामाजिक सबलीकरण होणे आवश्यक आहे . त्यांना समाजात चांगले स्थान व मानसन्मान मिळवून देण्यासाठी असे अनेक कार्यक्रम आखले पाहिजेत कीज्यात स्वयंसहाय्यता बचत गटांचे स्थान महत्वपूर्ण आहे . स्वयंसहाय्यता बचतगटामुळेआर्थि कदृष्टयाकमकुवत वर्गाचेवंचितांचे आणि महिलांचे आर्थिक व सामाजिक परिवर्तन होत असून याआधारे भारतीय अर्थव्यवस्थेत एक नवी विचार प्रणाली नवी व्यवस्था आणि मानसिकता घडविण्यात स्वयंसहय्यता बचत गटांचे योगदान महत्वाचे आहे .

केंद्र शासनाप्रमाणेच महाराष्ट्र शासनाने देखील गरीब लोकांच्या विकासासंबंधी धोरण तयार करूनत्याच्या अंमलबजावणीसाठी अनेक योजना व कार्यक्रम राबविले आहेत . स्वयंसहाय्यता बचत गटांची निर्मिती ही त्यापैकीच एक होय . बचत गट हे वंचितांना आर्थिकदृष्टया सबल बनण्यासाठीचे एक महत्वपूर्ण साधन आहे . यातूनरोजगार व उत्पन्नाबरोबरच समाजात आत्मसन्मान गोष्टी बचत गटांच्या माध्यमातून लोक कमवू शकतात . त्यामुळे आर्थिकदृष्टया दुर्बल समाजाच्या आर्थिक व सामाजिक विकासातील स्वयंसहाय्यता बचत

गटांची भूमिका तपासणे आवश्यक आहे. भारत सरकारने अलिकडील काळात ग्रामीण दारिद्र्याचे समूळ उच्चाटन करण्यासाठी राष्ट्रीय स्तरावर 'राष्ट्रीय ग्रामीण जीवनोन्नती अभियान' सुरू केले आहे. याअभियानाच्या अंमलबजावणीसाठी महाराष्ट्र शासनाच्या ग्रामविकास आणि जलसंधारण विभागाने महाराष्ट्र राज्य ग्रामीण जीवनोन्नती अभियानाची स्थापना केली आहे. हे अभियान सुरूवातीस निवडक जिल्ह्यात आणि नंतर संपुर्ण महाराष्ट्रात राबविण्याचे ठरविले आहे. भारतातील दारिद्र्याचे निर्मुलन करण्यासाठी ग्रामीण गरीब जनतेला एकत्र आणणे□यांचे स्वयंसहाय्यता बचत गट स्थापन करणे□त्यांची वाढ व विकास करणे आणि सदर संस्थामार्फत गरीबांना वित्तीय सेवा पुरविणे□त्यांची कार्यक्षमता वाढविणे□शाश्वत उपजिविकेची साधने उपलब्ध करून देणे आणि त्यामार्फत लोकांना दारिद्र्याच्या दुष्टच□तून बाहेर काढणे ही राष्ट्रीय ग्रामीण जीवनोन्नती अभियानाची प्रमुख उद्दिष्टये आहेत.

रायगड जिल्ह्यातील आर्थिक व सामाजिक स्थिती विचारात घेता बचत गटांची भूमिका महत्वपुर्ण अशीच आहे. रायगड जिल्हा ग्रामीण विकास यंत्रणा□महिला आर्थिक विकास महामंडळ□रायगड जिल्हा आणि रायगड जिल्हा मध्यवर्ती सहकारी बॅंक मर्यादित□अलिबाग□रायगडजिल्ह्याची अग्रणी बॅंक□बॅंक ऑफ इंडियातसेच या व्यतिरिक्त जिल्ह्यातील इतर विविध शासकीय व बिगर शासकीय संस्था तसेच ग्रामपंचायत□ नगरपरिषदा□पंचायत समिती□विविध राजकिय पक्ष आणि महाराष्ट्र तेजस्वीनी महिला सक्षमीकरण कार्य□म इ. नी स्वयंसहाय्यता बचत गटांची निर्मिती करून लोकांच्या आर्थिक व सामाजिक विकासास हातभार लावला आहे. रायगडजिल्ह्यातअशा अनेकसंस्थास्वयंसहाय्यता बचत गटांना प्रोत्साहित करणा□याचे कार्य करतात. रायगड जिल्ह्यातील विविध स्तरावरील सामाजिक व आर्थिक परिस्थिती आणि ऐतिहासिक पार्श्वभूमी रायगड जिल्ह्यातील स्वयंसहाय्यता बचत गटांच्या निर्मिती व वाढी साठी पोषक ठरली आहे.

रायगड जिल्ह्याची भौगालिक व सामाजिक पार्श्वभूमीः

महाराष्ट्राच्या पश्चिमेला असणा□या कोकणविभागामध्ये मुंबईच्या लगतच रायगड जिल्हा येतो. रायगड जिल्ह्यास पुर्वी कुलाबा असे नाव असत. रायगड जिल्हा हा $17^0 51'$ ते$19^0 80'$ उत्तर अक्षांस आणि $72^0 51'$ ते$73^0 40'$ पूर्व रेखांस या दरम्यान पसरलेला आहे. तसेचया जिल्ह्याची दक्षिणोत्तर लांबी 150 कि.मी. व पूर्व□पश्चिम रूंदी 24 ते 48 कि.मी. अशीआहे. हा जिल्हा राज्याच्या पश्चिमेला असणा□या अरबी समुद्र किनारी वसलेला आहे. महाराष्ट्राला 720 कि.मी. लांबीचा समुद्रकिनारा लाभला आहेत्यापैकी ह्या जिल्ह्याला 240 कि.मी. लांबीचा समुद्रकिनारा लाभला आहे. रायगड जिल्ह्याचे एकूण क्षेत्रफळ 7152

चौ . कि . मी . एवढे असून ते महाराष्ट्राच्या क्षेत्रफळाच्या **2 . 32** टक्के इतके आहे . या जिल्ह्यात एकूण **15** तालुके आहेत . जिल्ह्याच्या उत्तर पश्चिमेला मुंबई शहर व उपनगरे उत्तरेला ठाणे जिल्हा आहे व पुर्वेला सह्याद्रीच्या रांगा त्याला लागून पुणे जिल्हा दक्षिण पुर्वेला सातारा जिल्हा दक्षिणेस सावित्री नदी रत्नागिरी जिल्हा आणि पश्चिमेला अरबी समुद्र यामध्ये रायगड जिल्हा पसरलेला आहे . भौगोलिकदृष्टया रायगड जिल्हा अ समुद्र किना यालगतचा पट्टा ब सुपीक व सपाट जमिनीचा मध्य भागातील पट्टा **3** पुर्वेकडील सह्याद्रीचा डोगंराळ भागया तीन चिंचोळया पट्टयात विभागला आहे . रायगडजिल्ह्यातील उत्तरेकडील भागात उल्हास पाताळगंगा आणि अंबा मध्य भागात कुंडलिका आणि दक्षिणेस सावित्री घोड आणि काळनदी या महत्वाच्या नद्या आहेत . कोकणपट्टात चिंचोळया भागामुळे सह्याद्रीत उगम पावून लगेचच अरबी समुद्राला मिळत असल्याने या नद्याची लांबी जास्त नाही तसेच या पश्चिम वाहिनी आहेत . रायगडजिल्ह्यात मोर्बे वाघोली हेटवणे तिनवीरा खैरे इ . प्रमुख धरणे आहेत . तसेच वरील नद्यावर छोटी मोठी धरणे आहेत . या नद्याच्या खाडीच्या ठिकाणी समुद्राच्या भरतीचे पाणी शिरत आसल्याने सिंचनासाठी या पाण्याचाफारसा उपयोग होत नाही . अलीकडे या नद्याच्या पाण्याचा वापर प्रामुख्याने औद्योगिकीकरणासाठी केला जात आहेतसेचकांही ठिकाणी पिण्यासाठी व सिंचनासाठी पाण्याचा वापर होतो . रायगड जिल्हा मुंबईच्या अगदी जवळ असल्यामुळे जिल्ह्यात अलिकडील काळात मोठयाप्रमाणावर औद्योगिकरण होत आहे तरीही या जिल्ह्यातील कांही भागाचा विकास झालेला नाही . रायगड जिल्ह्यातील मैदानी भाग वगळल्यास जिल्ह्याच्या एकूण क्षेत्रफळापैकी बराच भाग डोंगर व उंच सखल पर्वतराजीनी वसलेला आहे . येथील लोकांचे जीवन मोठे कष्टदायी आहे . तसेच येथे पर्जन्यमान जास्तआहे परंतु येथील नदयातीव्रउताराच्या असल्याने पावसाळयानंतरच्या काळात पाण्याचे दुर्भिक्ष जाणवेतपरिणामी शेतीचे उत्पादन कमी होतचालले आहे . या जिल्ह्यात सन **2011** च्या जनगणनेनुसार एकूण लोकसंख्या **26**35**394** इतकी असून **52 . 25** टक्के पुरूष व **47 . 75** टक्के स्त्रिया आहेत तसेच स्त्री पुरूष प्रमाण **959** आणि लोकसंख्येची घनता **368** दर चौ . कि . मी . इतकी आहे . रायगड जिल्ह्यात ग्रामीण लोकसंख्येचे प्रमाण **63 . 08**आणि शहरी लोकसंख्येचेप्रमाण **36 . 92** ऐवढे आहे . **2001**च्या जनगणनेनुसार रायगड जिल्ह्यातील एकूण लोकसंख्येपैकी **41 . 40** टक्के लोकसंख्या काम करणारी आहे . त्यापैकी **28 . 55** टक्के शेतकरी **20 . 36** टक्के शेतमजूर **2 . 66** टक्के घरगुती उद्योग आणि **48 . 43** टक्के इतर कामगार आहेत . सध्या रायगड जिल्ह्यात मोठया प्रमाणावर औद्योगिकीकरण होत असले तरी लोकसंख्येच्या प्रमाणात रोजगाराचे प्रमाण खुपच कमी आहे . तसेच अलिकडे

रोजगारासाठी राज्य व देशातून अनेक लोक रायगड जिल्ह्यात स्थलांतरीत झाले आहेत. यातूनचजिल्ह्यातबेकारीची समस्या उग्र स्वरूपाची बनली आहे. ग्रामीण व शहरी लोकांना आणि महिलांना स्वयंरोजगार करता यावा तसेच आर्थिकदृष्टया वंचितांचेआणि महिलांचे सक्षमीकरण व्हावे. यासाठी रायगड जिल्ह्यात स्वयंसहाय्यतास्वयंसहाय्यताबचतगटांना प्रोत्साहित करर्णा या विविध संस्थांनाबचतगटांची स्थापना करून महत्वाची अशीभूमिका पार पाडता येईल.

भारतातील सहकार आणिस्वयंसहाय्यता बचत गट ऐतिहासिक पार्श्वभूमीः

आज जागतिक पातळीवर जगातील सर्वच देशामध्ये गरिबांच्या विकासासाठी सबलीकरणासाठी आणि सक्षमीकरणासासाठी बांग्लादेशातील डॉ. महमंद युनूस यांच्या विचारसरणीवर आधारित सूक्ष्म वित्त कार्यक्रम व महिला बचत गट चळवळीचा वेगाने प्रचार आणि प्रसार होत आहे. अशाच प्रकारे भारतात देखील सत्तरच्या दशकात बचतगट प्रणालेला सुरूवात झाली आणि नंतरच्या काळात शासकीय व बिगरशासकीय पातळीवर अनेक संघटना व संस्थामार्फत बचत गट स्थापन करून समाजाच्या विकासास हातभार लावला जात आहे. सन **1992** मध्ये नाबार्डने **500** स्वयंसहाय्यता बचत गटांना बॅंकेशी जोडण्याचे पथदर्शक प्रकल्प सुरू केला. यातूनच पुढे भारतीय अर्थव्यवस्थेतील ग्रामीण लोकांबरोबरच शहरी या दोन भागातीलही लोकांना आर्थिकदृष्टया सक्षम बनवून या वर्गाला विकासाच्या मुख्य प्रवाहात आणण्याचे मुख्य कार्य स्वयंसहाय्यता बचत गटामार्फत सुरू झाले आणि आज ही एक मोठी चळवळ बनली आहे. **1996** मध्ये स्वयंसहाय्यता बचत गटांना बॅंक संलग्नता (Bank Linking) सुरू झाली. **1991** मध्ये सर्व व्यापारी बॅंकांना **1993**मध्ये सर्व सहकारी व ग्रामीण बॅंकांना बचत गट व बॅंक जोडणीत सहभागी होण्यासाठी एक परिपत्रक काढले आणि त्यामार्फत सर्व बॅंकांना बचत गट चळवळीत सहभागी करून घेतले. यातून सहकारी चळवळीच्या विकासाबरोबरच स्वंयसहाय्यता बचतगटांच्या विकासास चालना मिळाली. भारतात केंद्र सरकारने डिसेंबर **1997** मध्ये सुवर्णजयंती शहरी रोजगार योजना आणि **1** एप्रिल **1999** रोजी सुवर्णजयंती ग्राम स्वंयरोजगार रोजगार योजना सुरू केली. भारतात स्वंयसहाय्यताबचत गटांचा वेगाने प्रचार व प्रसार झाला. महाराष्ट्रात आंतरराष्ट्रीय कृषी विकास निधी मार्फत महिला सक्षमीकरणाची चळवळ पुढे नेणारा प्रकल्प हाती घ्यावा अशी शिफारस महाराष्ट्र शासनाने केली. या प्रक्रियेतून 'तेजस्विनी महाराष्ट्र ग्रामीण महिला सक्षमीकरण' कार्यक्रमाची आखणी केली. सदर कार्यक्रम महाराष्ट्र शासनाच्या महिला व बाल विकास विभागाच्या वतीने महिला आर्थिक

विकास महामंडळामार्फत सन 2007-08मध्ये सुरू केला . त्यामुळे स्वयंसहाय्यता बचत गट चळवळीला चालना मिळाली तसेच विविध स्वयंसेवी संस्थांच्या माध्यमातून स्वयंसहाय्यता बचत गट स्थापण्यास प्रारंभ झाला . आजमितीस महिला बचत गट चळवळ ही महिला सबलीकरण सक्षमीकरण सशक्तीकरण करणारी तीकारी चळवळ निर्माण झाली आहे .

स्वयंसहाय्यता बचत गटाचीसंकल्पनाः

स्वयंसहाय्यता बचत गटाची मूळची संकल्पना बांग्लादेशातील ग्रामीण बॅंकेचे प्रणेते आणि नोबेल पुरस्काराचे मानकरी प्रा . डॉ . महमंद युनूस यांची आहे . त्यांनी ती सूक्ष्मवित्त या स्वरूपात विकसित केली . स्वयंसहाय्यता बचतगटाची संकल्पना विविध दृष्टिकोनातून सांगितली जाते . स्वयंसहाय्यता बचतगटास ग्रामीण महिला बचतगट स्वावलंबी गट काटकसर गट कर्ज गट सूक्ष्म वित्त या विविध नावाने ओळखले जाते . तेव्हासर्वार्थाने साधर्म्य असणाऱ्या सभासदांनी स्वच्छेने एकत्र येवून सर्वांगीण उन्नतीसाठी बनविलेल्या व चालविलेल्या समूहास किंवा गटास स्वयंसहाय्यता बचतगट म्हणतात . बचतगटांमध्ये सभासदांची संख्या 10 ते 20 च्या दरम्यान असते . बचत गटात एकाच वस्तीतील आर्थिक सामाजीक व वैचारिक स्तरातील समान गरजा असणाऱ्या महिला एकत्र येतात . यातून महिला आपल्या समान गरजा अडचणी व जीवनमूल्ये उंचावण्यासाठी प्रयत्न करतात . त्यासाठी नियमितपणे आपली बचत करतात व त्याआधारे आपल्या समस्यावर मात करण्यासाठी सामूहिक प्रयत्न करतात . स्वयंसहाय्यता बचत गटाची अंमलबजावणी व व्यवस्थापन हे केंद्र राज्य जिल्हा तालुका आणि गावपातळीवर चालते . स्वयंसहाय्यता बचत गटांच्या योजनांची अंमलबजावणी करण्यासाठी त्रिस्तरीय यंत्रणा आहे .

संशोधनाची आवश्यकता व महत्वः

भारतात नव्हेतर जगभर स्वयंसहाय्यता बचत गट उपम चळवळ ही अलिकडे मोठी व व्यापक चळवळीच्या स्वरूपात निर्माण झालेली चळवळ आहे . ग्रामीण भारतातील आर्थिकदृष्ट्या कमकुवत वर्गाला विकासाच्या मुख्य प्रवाहात आणण्यासाठी एक प्रभावी माध्यम म्हणून या स्वयंसहाय्यता बचत गट उपम चळवळीकडे पाहिले जाते . भारताच्या सर्वसमावेशक विकासासाठी वंचितांचा विकास होणे आवश्यक आहे . तेव्हा बचतगटांचा आधार घेवून दारिद्रय निर्मुलन आर्थिक सक्षमीकरण होवू शकते . सामाजिक परिवर्तन स्वयंरोजगाराचा मार्ग व गरिबीतून बाहेर पडण्याचा मार्ग इ . मध्ये बचत गट महत्वाची भूमिका बजावू शकतो . ग्रामीण विकास सर्वांगीण विकास यासाठी बचत गटांचे महत्व अनन्यसाधारण आहे . अलिकडील

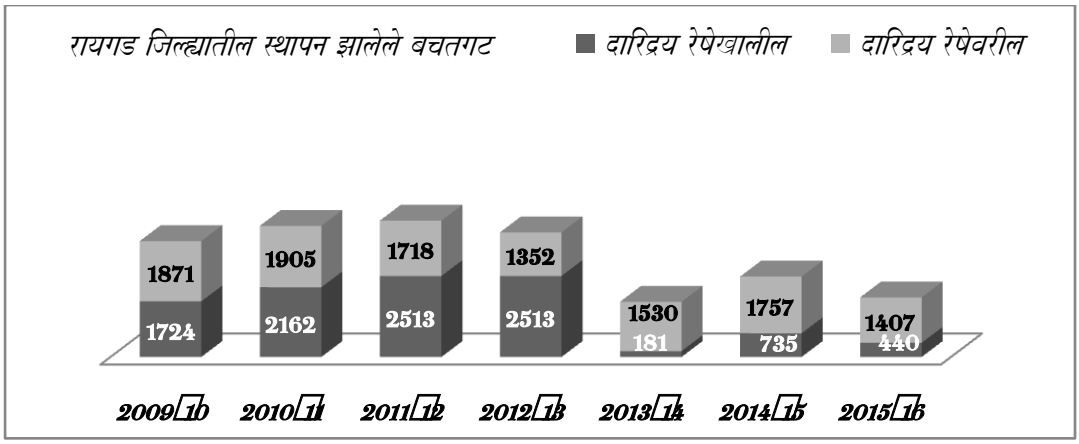
काळात जागतिक स्तरावरही बचत गटांचे महत्व वाढले आहे. रायगड जिल्ह्यातीलबचतगटांना प्रोत्साहित करणाऱ्या संस्थाचे विश्लेषण ग्राहक विकास किंवा गुंतवणूकीच्या पातळीवर होणे आवश्यक आहे.सूक्ष्मवित्ताच्या या उत्क्रांतीच्या या महत्वाच्या टप्प्यावर या क्षेत्रामध्ये अधिकतम संशोधनात्मक अभ्यास व माहितीचे संकलन होणे ही काळाची गरज आहे असे दिसते.

भारतासारख्या जास्त लोकसंख्या असलेल्या विकसनशील देशात दारिद्रय बेकारी निरक्षरता प्रादेशिक असमतोल मांडवलाचा अभाव या समस्या दिसून येतात आणि या सोडविण्यासाठी बचत गटासारख्या मार्गांचा अवलंब करणे गरजेचे आहे.स्वयंसहाय्यता बचत गट ही दारिद्रय निर्मूलनाबरोबरच स्वाभिमान व आत्मविश्वास वाढवणारी चळवळ बनली आहे.वरीलसर्व बाबींचा विचार करून महाराष्ट्रातील रायगड जिल्ह्यात अनेक संस्था व संघटनांनीबचत गटांची स्थापन केलेले आहे.यातूनरायगड जिल्ह्यात बचतगटाचा विकास वप्रगती होत आहे. या बचतगटांचीवंचितांच्या आर्थिक व सामाजिक विकासास मदत होत आहे.

रायगडजिल्ह्यातीलस्वयंसहाय्यता बचत गटः

रायगडजिल्ह्यात स्वयंसहाय्यता बचत गटांना प्रोत्साहित करणाऱ्या संस्था अनेक आहेत. यामध्ये प्रामुख्याने रायगड जिल्हा ग्रामीण विकास यंत्रणा महिला आर्थिक विकास महामंडळ रायगड जिल्हा आणि रायगड जिल्हा मध्यवर्ती सहकारी बॅंक मर्यादित अलिबाग रायगडजिल्ह्याची अग्रणी बॅंकबॅंक ऑफ इंडियातसेच या व्यतिरिक्त जिल्ह्यातील इतर विविध शासकीय व बिगर शासकीय संस्था तसेच ग्रामपंचायत नगरपरिषदा पंचायत समिती आणि विविध राजकिय पक्ष इ.नी स्वयंसहाय्यता बचतगटांची निर्मिती केली आहे.या संस्था तसेच नाबार्ड पुरस्कृत लघुउद्योग विकास कार्यक्रमयोजनेअंतर्गत आणि नाबार्डयांच्या संयुक्त विद्यमाने बचतगटांसाठी पेपरबॅग इमिटेशन ज्वेलरी व कापडी बॅगा या सारख्या वस्तू तयार करणे व विविध प्रकारचे मसाले उपवासाचे पदार्थ बनविणे व नेतृत्व विकासकार्यक्रमासारख्ये कार्यक्रमबचतगटांचा दैनंदिन व्यवहार आणि व्यवस्थापन मार्गदर्शनपर कार्यक्रम या सारख्ी प्रशिक्षण शिबीरे घेण्यात आली.महिला सशक्तीकरणयोजनेअंतर्गत महिला सशक्तीकरण मेळाव्याचे आयोजन केले. रायगड जिल्हा महिला बचतगट सक्षमीकरण फाऊंडेशन फेडरेशन निर्मिती करून रायगड बाजाराच्या रूपाने स्वयंसहाय्यता बचत गटांना बाजारपेठउपलब्ध करून दिली. यातूनस्वयंसहाय्यता बचत गटामार्फत आर्थिकदृष्टया कमकुवत लोकांच्या गरीबांच्या तसेच महिलांच्या वर्गाच्याविकासाची एक नवी संधी निर्माण झाली आहे. यातून प्रत्येक वर्षी स्वयंसहाय्यता बचतगटांची संख्या वाढत आहे हे आपणास पुढील आकडेवारीच्या आधारे असे दिसून येते.

1 . रायगडजिल्ह्यातील स्थापन झालेल्या एकूण बचतगटांची संख्या ः



स्त्रोतः रायगड जिल्हा सामाजिक व आर्थिक समालोचन 2009-2010 ते 2015-16 चे अहवाल .

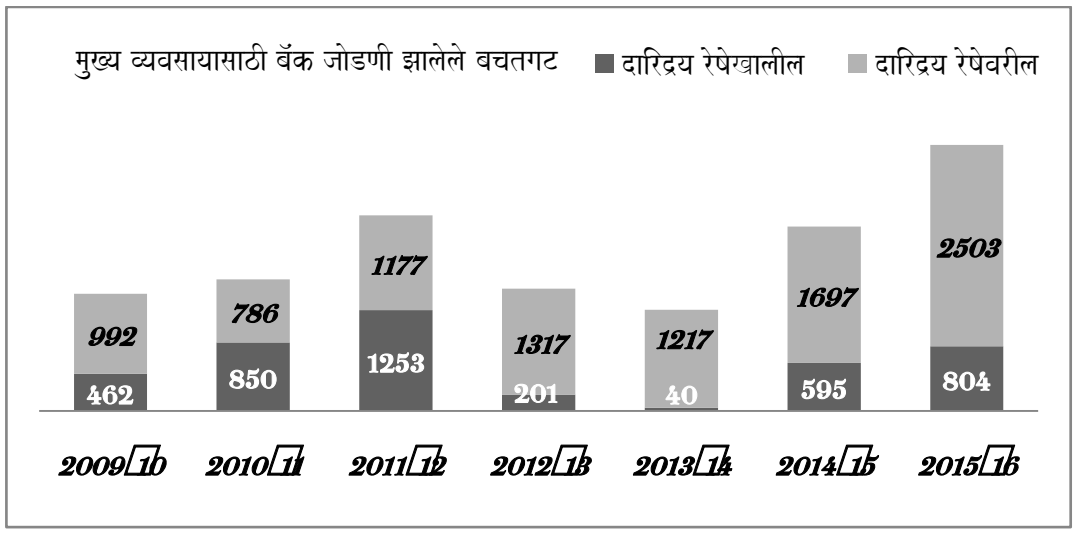
वरील आकडेवारीच्या आधारे असे दिसून येते की प्रत्येक वर्षी स्वयंसहाय्यता बचतगटांची संख्या वाढत आहे . कारण रायगड जिल्ह्यात स्वयंसहाय्यता बचत गटांना प्रोत्साहित करणाऱ्या संस्था अनेक आहेत व त्यांचे योगदान महत्वपूर्ण असेच आहे . सन 2009-10 साली रायगड जिल्ह्यात एकूण 3595 स्वयंसहाय्यता बचतगट स्थापन झाले . यापैकी 1724 दारिद्रय रेषेखालील व 1871 दारिद्रय रेषेवरील होते . यामध्ये नंतरच्या काळात वाढ होऊन सन 2015-16 या वर्षी रायगड जिल्ह्यात एकूण 1847 स्वयंसहाय्यता बचतगट स्थापन झाले . यापैकी 440 दारिद्रय रेषेखालील आणि 1407 दारिद्रय रेषेवरील होते .

2 . रायगड जिल्ह्यातील स्थापन झालेल्या बचतगटासंबंधी माहितीः

स्त्रोतः रायगड जिल्हा सामाजिक व आर्थिक समालोचन 2009-2010 ते 2015-16 चा अहवाल .

	मुख्य व्यवसायासाठी बॅंक जोडणी झालेले बचतगट			खेळते भांडवलासाठी बॅंक जोडणी झालेले बचतगट			व्यवसाय सुरू केलेले बचतगट	
सन	दारिद्रय रेषेखालील	दारिद्रय रेषेवरील	एकूण	दारिद्रय रेषेखालील	दारिद्रय रेषेवरील	एकूण	संख्या	आर्थिक वर्षात केलेली उलाढाल (लाख रू.)
2009-10	462	992	1454	619		619	1314	603.25
2010-11	850	786	1636	1671	294	1965	1636	651.31
2011-12	1253	1177	2430	2263	259	2522	2430	1857.73
2012-13	201	1317	1518	283	1317	1600	1514	1179.63
2013-14	40	1217	1257	402	1217	1619	1257	658.13
2014-15	595	1697	2292	871	1697	2567	2292	1150.84
2015-16	804	2503	3307	508	2503	3011	3307	1684.04

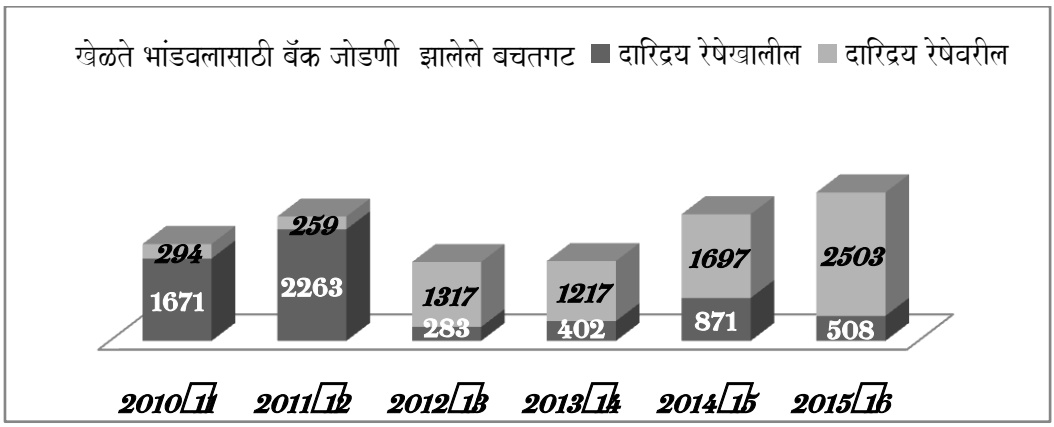
अ. मुख्य व्यवसायासाठी बॅंकजोडणी झालेले बचतगट ः



स्त्रोतः रायगड जिल्हा सामाजिक व आर्थिक समालोचन 2009-2010 ते 2015-16 चा अहवाल .

वरील आकडेवारीवरून असे दिसून येते की रायगड जिल्ह्यातील स्थापन झालेल्या एकूण बचतगटांची संख्येबरोबरच स्थापन झालेल्या बचतगटासंबंधी माहितीच्या तक्ता व आलेखाच्या आधारे रायगड जिल्ह्यातील बचतगट मुख्य व्यवसायासाठी बॅंकजोडणी झालेले बचतगटाची संख्या वाढत गेली आहे. सन 2009-10 साली रायगड जिल्ह्यात मुख्य व्यवसायासाठी बॅंकजोडणी झालेले बचतगटाची एकूण संख्या 1454यापैकी 462 दारिद्रय रेषेखालील व 992 दारिद्रय रेषेवरील होते. यामध्ये नंतरच्या काळात वाढ होऊन सन 2015-16 साली मुख्य व्यवसायासाठी बॅंकजोडणी झालेले बचतगटाची एकूण संख्या 3307 एवढी होती. यापैकी 804 दारिद्रय रेषेखालील आणि 2503 दारिद्रय रेषेवरील होते. यातून हे स्पष्ट होतो की मुख्य व्यवसायासाठी बॅंकजोडणी झालेले बचतगटाची एकूण संख्या वाढली आहे.

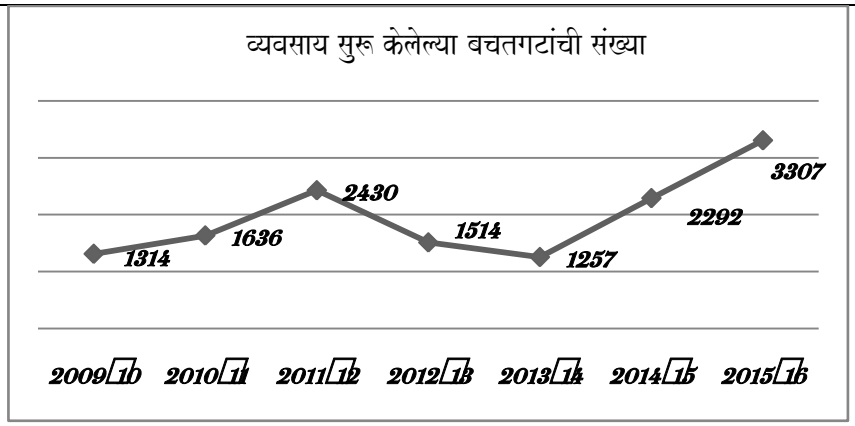
ब. खेळते भांडवलासाठी बॅंकजोडणी झालेले बचतगट ः



स्त्रोतः रायगड जिल्हा सामाजिक व आर्थिक समालोचन 2009-2010 ते 2015-16 चे अहवाल.

वरील आकडेवारीवरूनआणि आलेखाच्या आधारे असे दिसून येते की रायगड जिल्ह्यातील खेळते भांडवलासाठी बॅंकजोडणी झालेले बचतगटाची संख्या वाढत गेली आहे. सन 2010-11 मध्ये रायगड जिल्ह्यात खेळते भांडवलासाठी बॅंकजोडणी झालेले बचतगट1965यापैकी 1671दारिद्रय रेषेखालील व 294दारिद्रय रेषेवरील होते. यामध्ये नंतरच्या काळात वाढ होऊन सन 2015-16 साली एकूण 1847 स्वयंसहाय्यता बचतगट स्थापन झाले. याच वर्षी खेळते भांडवलासाठी बॅंकजोडणी झालेले बचतगटाची एकूण संख्या 3011 एवढी होती. यापैकी 508 दारिद्रय रेषेखालील आणि 2503 दारिद्रय रेषेवरील होते.

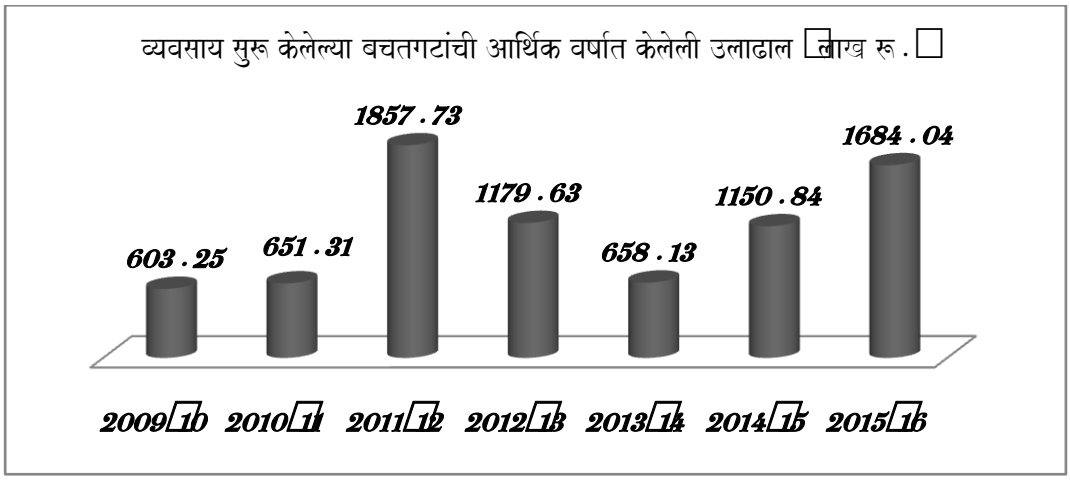
क. व्यवसाय सुरू केलेले बचतगटाची संख्या ः



स्त्रोतः रायगड जिल्हा सामाजिक व आर्थिक समालोचन 2009-2010 ते 2015-16 चे अहवाल .

वरील आकडेवारीच्या आधारे असे दिसून येते की रायगड जिल्ह्यातील ज्या बचतगटांनी व्यवसाय सुरू केलेले आहेत त्यांची वरील कालावधीत संख्या वाढत गेली आहे . सन 2009-10साली रायगड जिल्ह्यात ज्या बचतगटांनी व्यवसाय सुरू केलेले आहेतअसा बचतगटांची संख्या1314होती . यामध्ये नंतरच्या काळात वाढ होऊन सन 2015-16 साली एकूण 3307 स्वयंसहाय्यता बचतगटांनी स्वतःचे व्यवसाय सुरू केलेले आहेत .

ड . व्यवसाय सुरू केलेले बचतगटाचीआर्थिक वर्षात केलेली उलाढाल लाख रू . :



स्त्रोतः रायगड जिल्हा सामाजिक व आर्थिक समालोचन 2009-2010 ते 2015-16 चे अहवाल .

आलेखाच्या आधारे असे दिसून येते की रायगड जिल्ह्यातील ज्या बचतगटांनी व्यवसाय सुरू केलेले आहेत त्यांची सन 2009-10 या आर्थिक वर्षातील त्यांनी केलेली उलाढाल ही 603 . 25 लाख रू . एवढी होती . नंतरच्या काळात त्यामध्ये कमीजास्त प्रमाणात वाढत गेली . ज्याबचतगटांनी व्यवसाय सुरू केलेले

आहेत त्यांचीसन 2015 16 या आर्थिक वर्षातील त्यांनी केलेली उलाढाल ही 1684 . 04 लाख रू . एवढी आहे . रायगड जिल्ह्यातील बचतगटांची स्थापना हा वंचितांच्या सक्षमीकरणाच्या वाटचालीतील एक महत्वाचा टप्पा आहे . यातूनलोकांच्या आर्थिक आणि सामाजिक विकासाबरोबरचलोकांच्या दारिद्रयात घट आणि राहणीमान शिक्षण व आरोग्य आणि स्वयंरोजगार इ . मध्ये वाढ झाली आहे .

सारांशः

स्वयंसहाय्यता बचतगटांमुळे आर्थिक व सामाजिक परिवर्तन घडविण्यात स्वयंसहय्यता बचत गटांचे योगदान महत्वाचे आहे . आज जगभर वंचितांच्याविकासासाठी व सबलीकरणासाठी आणि सक्षमीकरणासासाठी बांग्लादेशातील डॉ . महमंद युनूस यांच्या विचारसरणीवर आधारित सूक्ष्म वित्त कार्य व बचतगट चळवळीचा वेगाने प्रचार आणि प्रसार होत आहे . अशाच प्रकारे भारतात तसेच रायगड जिल्ह्यातील स्वयंसहाय्यता बचतगटांना प्रोत्साहीत करणा या शासकीय व बिगरशासकीय पातळीवर अनेक संघटना व संस्थामार्फत बचतगट स्थापन करून विकासास हातभार लावला जातो . यामुळेच रायगड जिल्ह्यातीलस्वयंसहाय्यता बचत गटांना प्रोत्साहित करणा या संस्थांचे योगदान महत्वपुर्ण आहे .

संदर्भ ग्रंथः

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2 . डॉ . एम . यू . मुलाणी ऑगस्ट 2006 महिला स्वयंसहाय्यता बचत गट डायमंड पब्लिकेशन पुणे .

3 . प्रा . डॉ . विद्या पाटील आणि व्ही . बी . खंदारे 2013 बचतगट महिला सक्षीकरण सम्यकता प्रकाशन धुळे .

4 . रायगड जिल्हा 2009 2010 ते 2015 16 जिल्हा सामाजिक व आर्थिक समालोचन अर्थ व सांख्यिकी संचालनालय
नियोजन विभाग महाराष्ट्र शासन मुंबई .

INTRODUCTION OF MEDICAL GEOGRAPHY

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Abstract- *As a sub-discipline of geography, medical geography studies the environment and health-related lifestyle, relationships between lifestyle and health, disparities in the distribution of health infrastructure. Medical Geographers should take an oath to answer questions about which, where and where and who gets the proper care and proper care. The attempt to ask such questions is said to have started in 400 BC. The medical geography by Hippocrates involves two major components, e.g.: Geography of the health and health service of the disease; In both cases, health related discussions may be from local point of view, they have certain differences; In recent years, ICT has been received with sub-disciplined state-of-the-art mapping technology and statistical packages. The quality of the map, as a cartographic product, has been multiplied; therefore, it revives the notion of 'It cannot be mapped if it is not geography'. However, the main purpose of this paper is to visit the place of medical geography from its origin.*

Introduction

Medical geography, sometimes called health geography, is a field of medical research that covers geographic techniques in spreading health studies and spreading disease worldwide. In addition, there is an impact on weather and location on the delivery of health and health services of a person in a medical geographical direction. Medical Geography is an important area because its purpose is to understand health issues and to have an impact on the health of people who influence various geographical factors.

A hybrid health research in geographical and medicines related to geographical areas of health and healthcare is a "new" area. Medical Geography Studies the health and locale impact on health. It is to improve the understanding of various factors affecting the health of the population and therefore to target individuals. This is also called health geography.

Discussion on important topics related to medical geography is to 'critically evaluate the social and regulatory health of the disease and health'. Mapping of local issues and health issues. Medical Geography has developed as a sub-discipline of geography that studies the topics related to environment and health, lifestyle and health, disparity in the distribution of health infrastructure, and issues related to local problems. JACUS MJ has summarized Sabadh in his words- "Today we realize that this disease is one such event that happens only when the various components match in time and in space. The scope of interest to incorporate the relationship between various components of this complex and related geographic ecosystem is widespread. This can be called "medical geography". In brief, medical geography is a promising area of research to analyse geological patterns of health and disease, including environmental and social relations. In addition, it shows the location of

geographical factors that affect the access and use of local health services and local methods. Some ideas about medical geography from various points of view have been given below

Table 1: Multiplicity of the Medical Geography idea

Contributors	**Ideas**
De Vise, 1973	Medical geographers try to find out some answer like who gets what, where and why with respect of illness and appropriate care.
McGlashan, 1972	"Medical geography is a tool and but rarely an end itself. It is the application of geographical methods and skills to medical problems. One may consider geographical evidence on medical hypotheses".
Gesler, 1991	In Medical geography '… where a hospital lies within a spatial distribution is given more importance than what goes on within that particular hospital'.
Rosenberg and Wilson, 2005	Medical geographical research has focused on spatial analysis and place-specific examinations of the geographic distribution of medical care facilities, professionals, access and utilization to medical care services to identify under and over served areas.
Cromley, 2011	'Medical geographic research is grounded in place'.

Medical geography is becoming popular among social scientists like medical sociologists, cultural anthropologist, social psychologist.who have relied heavily upon principles of spatial analysis.

Table 2: Social sciences' contribution to Medical Geography

Discipline	Contribution
History	Evolution of the major medical systems, changes in illness prevalence and treatment modes, awareness of historical inertia.
Political science	Impact of type of medical system, role of public and private power-wielding groups.
Economics	Medical costs and cost-benefit analysis, private and public payment plans, health care and economic development.
Anthropology/sociology	Beliefs about illness causes and effective treatments, characteristics of patients and practitioners, patient-practitioners relationships.

History of medical geography

There is a long history in medical geography due to the time of Greek doctors, Hippocrates (5th-4th century BCE); people have studied the effect of their health. For example, early medicines have examined the differences in the diseases experienced by people living at high levels versus high levels. It is easy to understand that people living near low-altitude or low-

lying areas of high-grade or low-lying areas are more likely to have malaria. Though the reason for this diversity is not fully understood at that time, the distribution of this local disease is the beginning of medical geography.

This area of geography did not get importance until the middle of the 1889's, but when Cholera fled to London. As many people became ill, they felt that they were infected with vapors fleeing from the soil. John Snow, a London-based physician believed that if he separated the source of the bacteria in the body of infected people, then they would have been harmed.

As a part of his study, Snowflake distributed deaths throughout London on entire map. After examining this place, they found a cluster of abnormal death near a pump on Broad Street. After this, they concluded that the water coming from these pumps was sick and the officials handed the pump to the pump. Once people then stopped drinking the water, the number of cholera deaths dramatically decreased.

Another example of geography aiding medicine occurred in the early 20th Century in Colorado. There, dentists noticed that children living in certain areas had fewer cavities. After plotting these locations on a map and comparing them with chemicals found in the groundwater, they concluded that the children with fewer cavities were clustered around areas that had high levels of fluoride. From there, the use of fluoride gained prominence in dentistry.

Medical geography today

Today, medical geography has a number of applications as well. Since the spatial distribution of disease is still a large matter of importance though, mapping plays a huge role in the field. Maps are created to show historic outbreaks of things like the 1918 influenza for example or current issues like the index of pain or Google Flu Trends across the United States. In the pain map example, factors like climate and environment can be considered to determine why high amounts of pain cluster where they do at any given time.

Other studies have also been conducted to show where the highest outbreaks of certain types of disease occur. The Center for Disease Control and Prevention (CDC) in the United States for instance uses what they call the *Atlas of United States Mortality* to look at a wide range of health factors across the U.S. Data ranges from the spatial distribution of people at different ages to places with the best and worst air quality. Subjects such as these are important because they have implications on the population growth of an area and the instances of health problems such as asthma and lung cancer. Local governments can then consider these factors when planning their cities and/or determining the best use of city funds.

The CDC also features a website for traveller's health. Here, people can get information about the distribution of disease in countries worldwide and learn about the different vaccines needed to travel to such places.

This application of medical geography is important to reducing or even stopping the spread of the world's diseases through travel.

In addition to the United States' CDC, the World Health Organization (WHO) also features similar health data for the world with its Global Health Atlas. Here, the public, medical

professionals, researchers, and other interested persons can gather data about the distribution of the world's diseases in an attempt to find patterns of transmission and possibly cures to some of the more deadly illnesses such as HIV/AIDS and various cancers.

In the latter part of the 18th century, the term 'medical geographical' was first used by a physician named Louhurhad Ludwig Funk, but this idea is consistent with the time of production Hippocrates. In his famous 'air, water and spaces' he studied the relationship between health and environment in 400 BC. According to August Hirsch, the work of Hippocrates remained a mere effort, which started the philosophical system of geographical data. In addition, the term 'medical geographical' is used to describe the local distribution of the disease, published in 1792 by Leonhard Ludwig Fincke's 'Which Inner Lightmainen Medicine-Practison Zagfee'. They tried to describe the widespread transition of the disease. And as a result of the local environment factors that affect a particular population, there is also a debate for the relationship between illnesses and possible treatments. By arranging sub-titles, medical geography has been prepared to answer the following questions:

1. Why is a phenomenon distributed in a particular way?
2. Why are facilities and businesses located where they are? Why are the offices of physicians, public clinics, or research hospitals located in certain places and not in others?
3. Why do people move in certain directions for certain distances?
4. Why do innovations (including ideas and material goods) spread as they do?
5. Why do people vary in perception of the environment?
6. How do objects, ideas, processes, and living beings interact to characterize and constitute Places?

Medical geography is essentially bifurcated into Geography of disease and the Geography of health care. Geography of disease or ill health describes disease frequency, illness occurrence, relationship between illness and associated environmental factors in respect of answering the three major questions of geography i.e. who, why and where. Whereas, the Geography of health care describes the facility location, accessibility and utilization, patient behaviour patterns from the spatial vantage point. Parr classified medical geographical research into two dimension: research work on the spatial distribution of disease and death and geographical complexities surrounding the provision, access to and (in) equality of health care. Mishra further expands the idea include four perspectives of viewing Medical geography. First, it focuses on pattern of health and ill-health on space. Second, it studies the intensity and frequency of the health problem and various natural and socio-economic factors that determine the health condition. Third, it identifies causes and risk factors of health and ill-health by etiological hypotheses testing. And fourth, medical geography examines the spatial distribution of health care facilities with a view of suggesting policies, programmes and methodologies for locating them optimally and in conformity with the current and future needs.

In the colonial era when Europeans discovered many new lands, the rapid growth of medical geography took place. Because various diseases like plague, cholera, smallpox, tuberculosis, sexually transmitted diseases travelled from one place to another and thus the globalization of diseases took place. However, the growth of research studies in medical geography lost its pace

due to the path breaking and historic feat of inventing the germ theory by Louis Pasteur in 1861. The theory gave importance on identifying the responsible germ of a disease and accordingly administers medicines that killed them. The study of Michael A Osborne on medical geography supported that the fact that germ theory of disease was 'the major reason for the decline of medical geographical activity'. But the germ theory was criticized for simplifying the complex were factors that caused diseases. Numbers of persons inhabiting a same region are not equally influenced by the germ due to differences in cultural practices, level of nutrition and individual attitudes. Hence, it may be concluded that only identification of germ as per the biomedical disease model, is not enough to prevent diseases rather researchers should pay more attention to evaluating the socio-ecological model which identifies the impact of different geographical factors namely physical and socio-cultural factors on health.

The socio-ecological perspective believes in advanced identification and prevention of diseases rather than its treatment. Social inequalities play a vital role in determining the health condition of human populations as the most influential 'determinants of health' are rooted in social structure. There are several works which describe the relation between geographical environment and health. To depict the relationship between environment and health Light has very significantly quoted Finke- 'To which diseases and evils is man exposed, because he lives here and not somewhere else, because he breathes this and no other air, he eats this and no other food, drinks this and no other water, has this and no other way of living and so on'. May also emphasized on geographical environmental factors to describe disease ecology: "…from the water the people get their food, also their cholera, their dysenteries, their typhoid fevers, their malaria; from the earth they get their hookworm; from the crowded village they get their tuberculosis and their yaws; from the type of housing they have been forced to adopt they get their plague and typhus; and from the food which earth, temperature, and rain produce, their protein deficiencies, their beri beri". Daniel Drake identified the geological, meteorological and social determinants of disease including diet, drink and dress in great inter mountainous region between the Rockies and the Alleghenies. With the help of epidemiological data Drake and Numbers found the geographical limits of malaria, typhus and yellow fever of this region. August Hirsch devoted himself to describe the geographical distribution of diseases and the identification of the most important factors (specifically race, climate, soil etc.) of disease occurrence from historical point of view. Warner contributed an important study based on America about the impact of environment on health. According to him 'the notion that the physical and social environments were significant factors in determining appropriate therapeutic behaviour made region a necessary consideration in planning a patient's treatment and in evaluating the applicability of knowledge from another place'. Besides availability and accessibility of health care facilities various socio-economic factors like income, household wealth, education, and living style are strong factors of healthy well-being.

Recent medical geography research studies on the suitability of health services, facilities distributed across different geographical scales are being done on the development of the model.

Medical geography was benefitted from the sophisticated computing trends during 1960's which percolated a bit late in India. Invention of computer, various modern instrument and software

especially Remote Sensing, Geographical Information System (GIS), Global Positioning System (GPS), and different statistical packages have reinvigorated the sub-discipline altogether Armstrong has also considered the use of computer technology for the preparation of data for mapping as a promising development for medical geography. GIS techniques adorn an important place with regard to its capability to plan for future medical service provision and allocation of facilities in different locations. Applications of GIS techniques are also being done by many of research institutions and Universities for gauging health related issues from a geographical perspective.

Conclusion

This paper says that medical geographical geography is a part of the hope. This is a 'borderline discipline' which deals with all health related issues related to the basic area of geographic investigation. The traditional approach to medical geography is to analyse the location of local forms and diseases, diseases and medical treatment centers, whereas recent research in geography of health and health care can be linked to 'new cultural geography' and 'important geographical'. Emphasis on understanding both the approaches to "Health and Location" states, each time they are complementary to each other, how the disease and health facilities spread over time and in span. Space-temporal analysis helps in describing the various disease prone areas, the lack of proper healthcare facilities. It is easy to get more information about the etiology of a specific disease by implementing the technique S and Moon have used the word 'local' to explain the role of local (geographical) roles for the development of health policy. He also recommended the introduction of spatiality and temporization as a key pillar in medical geographical studies because 'people change a difference and place' Includes location and concepts in Duncan et al as well as medical geography Gesler also emphasized that the medical geologist should note that 'how does the healing process work in place (or the circumstances, locale, settings and milieus)?' References (locale) and structure (people) regarding the important concerns in this regard, there is a major research area for medical geography. Medical Geography has appeared as 'a new geography of health' because the emerging importance of space while studying health issues is 'the place for health, health care and health related matters'. Health problems in medical geography may be useful for health care workers, doctors and health policy makers. Local background can be easily illustrated by various diseases and prone areas, in which there is no health facility, which facilitates the distribution of construction facilities or help prevent disease or the spread of diseases. It can be concluded that currently medical geography is a very relevant area of geography and in the future it has a broad scope.

Guideline to the Contributors

SRJHSEL invites high quality research papers, Critical Analysis of Philosophies, Policies, Reports and issues from all parts of the globe providing meaningful insights to research scholars.

General Instruction for Submission

SRJHSEL strongly recommends following format of manuscripts. The first page of the submission should include the title of the article, the name of the **author(s), institutional affiliation, email address (es) Title:** Times New Roman, bold, 14 pt., space 6 above and 6 below, centered. **Name of the Author(s):** Times New Roman, 12 pt., bold, centered, below the title. **Author(s) affiliation, email address (es):** Times New Roman, 10 pt., italic. **Abstract:** Abstracts of no more than 10 lines summarizing the primary argument(s) and finding(s) in the article should be included at the beginning of the article. Times New Roman, 10 pt., italic, not exceeds than150-200 words. **Keywords:** Times New Roman 12 pt., maximum 5 keywords. Articles should be between 2,000 and 4,000 words in length. The pages of the typescript should be numbered in consecutive sequence, with Justify alignment. **Page numbering:** position right, Times New Roman, 12 pt. All articles must be typed in a **Microsoft Word** file. **Subtitles** (sub-headings) use Times New Roman, 12 pt., bold, left justified. **Main text** font use Times New Roman, 12 pt., justified. Articles should be single spaced and have 2.54 cm (1 inch) margins. Please separate paragraphs by one empty line (touching „enter" key once). All abbreviations and acronyms should be defined at first mention. To facilitate reader comprehension, abbreviations should be used sparingly/carefully. Article should be free from spelling and grammatical mistakes. **APA style** of referencing should be used for article referencing. **Tables & Figures:** Number tables / figures are consecutively as they appear in the text. Center tables / figures close in the text where they are first mentioned. Do not split tables / figures across two pages. If there is not enough space at the bottom of a page, continue your text and place the table at the top of the next page. Each table / figure must have a label (title) beginning with the table number and describing the contents. The label needs to inform the reader what the table / figure presents (coefficients, means, percentages, rates, etc.), the time frame, and the geographical coverage. Each row and column of a table must have a heading. If the contents of a table / figure are drawn or adapted from a published source, note that as footnote to the table. **Major Elements of Paper: Title:** It should be short, precise. **Authors:** Name, Address, qualification, and institutional affiliations etc. should be provided

beneath to the title. **Abstract:** The Abstract should be informative and completely self-explanatory, which should briefly present the topic, state the scope of the experiments, indicate significant data, and point out major findings and conclusions. The abstract should not be exceeds than 100 to 200 words in length. Complete sentences, active verbs, and the third person should be used, and the abstract should be written in the past tense. **Introduction:** It should be not a long review of the subject area and details of history. It should pertain to specific area. **Research Method:** It should be covers Population, Sample, Tools for data collection, Statistical techniques. Methodology should be provided separately after the research method. **Results:** It should relevant facts only, data, may be given preferable in the form of tables or occasionally in figure/text but do not repeat same data in more than one form. **Discussion:** This is important aspect of the paper, should be drafted carefully. Stating what answers we got, then in individuals paragraphs discussing these in light relevant past work and finally, try to answer: what does it means in the conducting part. In some situation section of Results may be combined with Discussion so as to avoid repetition. **Acknowledgement:** It should be short not exceeds than 150 words, which should include essential facts given at the end of the paper but not necessary. **References:** References must be arranged according to APA style of referencing.

Book

Best, J.W., & Kahn, J.V. (2006).*Research in Education*. New Delhi: Prentice Hall of India.

Book with Two Authors

Garrett, H. E. and Woodworth, R. S. (1981).*Statistics in Psychology and Education.* Bombay: Vakils, Feffer and Simons Ltd.

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Gupta, M. (1989).*Two Strategies of Computer Assisted Instruction in Chemistry*. In Mukhopadhaya, M. &Khanna, K., Parhar (Eds.), *Educational Technology*. Year Book, New Delhi: All India Association for Educational Technology.

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National Knowledge Commission, *Report to the Nation*, 2006. (2007). New Delhi: Govt. Of India