

Adaptation of Social Entrepreneurship For Sustainable Development

Kulkarni Sagar Sharad
Research Scholar,
Ambajogai 431517

Abstract :

Entrepreneurship is a part of economy which is demanded in modern open economies. Structural changes in the society are needed for creation of entrepreneurship. Social entrepreneurship is a phenomenon that has resisted attempts to establish a clear definition. Social entrepreneurship are moulded towards environment became Eco-friendly entrepreneurs now a day's the emerging trend is towards Eco-friendly entrepreneurs. It also helps to bring about potentially transformative societal change. Social entrepreneurship is a tool for facilitating sustainable development in the world. The research paper emphasis to express social entrepreneurship an approach towards attainment of social goals and to assure sustainable development.

Keywords : Entrepreneurship, Social entrepreneurship, Sustainable development.

Introduction:

There are approximately 356 million youth between the ages of 10 and 24 years old as the world's largest [youth population](#) despite having a smaller population than China. Youth in the India who make up more than 45 percent of the region's population. At the same time, the number of young people enrolled in school through at least the secondary level, and even the university level, is rising. As this increasingly educated generation comes of age, expectations are high—both among the youth themselves, who seek meaningful opportunities for economic and social advancement, and among the region's reform advocates, who expect that this increasingly globalized and educated generation will pave the way for sustainable development and stability in the country.

Despite the potential, the India's youth generates severe pressure on education systems, labour markets, health care, natural resources, and infrastructure. These pressures are perhaps most notable when one looks at regional labour markets, where one in four economically active youth is unemployed. Overall, the youth unemployment rate in the India is nearly double that in

the world at large, it estimates that current trends in unemployment, coupled with population growth rates, indicate that India alone will need numbers of new jobs by 2020. These labour market outcomes underline a pressing need for the public and private sector to work together to create new jobs and meaningful opportunities for work, in addition to managing the broader set of services needed by this young population. Concurrently, the region finds itself under threat from a number of important natural resource challenges related to climate change and population growth. The ability of governments to fully provide jobs and public services—are declining rapidly.

Moreover, the India has facing growing challenges related to water shortages, pollution, and desertification that further complicate the balance between achieving short-term objectives and investing in sustainable development for the future. These challenges, combined with the enormous opportunity that the India's youthful population represents, point to the need for new models of development in the country. While the India's traditional loci of economic development—government, the private sector, foreign aid, foreign direct investment, and private philanthropy—maintain important roles in helping to empower the emerging generation of economic actors, their leaders and practitioners must pursue new directions to do so effectively. Social entrepreneurship is the best way to solve these problems.

Objectives:

1. To study the concept of social entrepreneurship & sustainable development.
2. To understand the relationship between social entrepreneurship & sustainable development.
3. To study the needs for adaptation of social entrepreneurship for sustainable development.

Research Methodology:

The research paper has been written on the basis of secondary data. The secondary information and data were collected from published books, journals, research papers, official statistical documents and various websites.

Key Principles of Social Entrepreneurship

Over the past two decades, the concept of social entrepreneurship has increasingly entered public discourse. However, the concept is still, by nature, open to multiple interpretations. How much should social entrepreneurship focus on individuals versus organizations? How sustainable development must the social entrepreneur's efforts be? to answers these questions there are many definitions of social entrepreneurship have been

proposed, each of which emphasizes different elements of the phenomenon, such as “pattern-breaking,” “systemic,” or “permanent” social change; entrepreneurial innovation; or financial sustainability. Instead of creating another definition in an already densely populated field, this research paper draws on existing literature to focus on four central principles of social entrepreneurship:

1. Achievement of positive social impact:

Social entrepreneurship responds to communities that have been marginalized or excluded by existing market actors and nonmarket institutions;

2. Non-conventional thinking:

Social entrepreneurship aims for what Joseph Schumpeter called “creative destruction,” a revolutionary transformation of a pattern of production that is often associated with entrepreneurship at large but, in the case of social entrepreneurship, are applied to social challenges;

3. Use of sustainable methods:

Social entrepreneurship must include a strategy for achieving financial sustainability, such as earning income; and,

4. Innovation that can be adapted and “scaled up” beyond a particular local context:

It is by pioneering ideas that can be applied at a larger scale that social entrepreneurship is able to contribute to “systemic” and path breaking change.

From these principles, it follows that the social entrepreneur is “innovative, resourceful, and results oriented,” drawing on “the best thinking in both the business and nonprofit worlds to develop strategies that maximize their social impact.” The social entrepreneur is often regarded as possessing a unique set of characteristics. Social enterprises differ in that their commitment to impact is central to the mission of the business. Some may not aim to offer any benefit to their investors, except where they believe that doing so will ultimately further their capacity to realize their social and environmental goals, although there is a huge amount of variation in forms and activities. Thus, the social enterprise is an organization with a clear social mission and a strategy that combines resourcefulness and innovation, allowing it to be financially sustainable.

Social entrepreneurs play the role of **change agents** in the social sector, by:

1. Adopting a mission to create and sustain social value (not just private value) .
2. Recognizing and relentlessly pursuing new opportunities to serve that mission.

3. Engaging in a process of continuous innovation, adaptation, and learning.
4. Acting boldly without being limited by resources currently in hand .
5. Exhibiting a heightened sense of accountability to the constituencies served and for the outcomes created.

Sustainable development is a pattern of economic growth in which resource use aims to meet human needs while preserving the environment so that these needs can be met not only in the present, but also for generations to come. For this, each social entrepreneur presents ideas that are user-friendly, understandable, ethical and engage wide spread support in order to maximize the numbers of local people that will stand up, seize their idea, and implement it. In our country more and more people are using entrepreneurial skills in building sustainable development for profit and non-profit to effect change in India. Sustainable development represents not only a major challenge for every contemporary economy, but also an existential paradigm in doing business. Achieving a sustainable development and well functional economic model necessitates the existence of a strong social entrepreneurial culture, where the business initiative must assure a high degree of inland economic potential capitalization. With social entrepreneurship, both the investors and communities will gain economic benefits which will further contribute to general social stability and welfare.

Sustainable development as a concept, practice and an alternative for the existing economic order was proposed by the World Commission on Environment and Development (WCED) known as Brundtland Committee, in 1987. Sustainable development is the kind of development that meets the needs of present without compromising the ability of future generations to meet their own needs (WCED 1987). We have two major questions before us (a) What needs to be sustained, namely, nature, life support system, and community (b) What is to be developed, namely, individuals, the economy and society.

Sustainable development started as a debate on environment protection and has subsequently shifted to interrelation between production processes, environment and exploitation of resources for production. The challenge of sustainable development is to maintain balance between environmental imperatives and economic growth with equal attention to the social dimension to 'promote diversity, protection of human rights, reduce poverty, and enhance workplace equity and social justice'.

Entrepreneurial innovation with sustainable development has played a major role to preserve the eco-system. Among them social entrepreneurs are in the forefront to create a sustainable

society. They take up innovative practices especially in developing nations; enhancing education, productivity, socio-economic status of the marginalized people, physical health, waste management, energy retention and self-reliance of individuals and societies are to name a few. They also operate in enterprise mode to address social and environmental problems while also being financially sustainable. Such initiatives function within the guided philosophy of sustainable development. As a result, the field of social entrepreneurship is receiving increased attention across the globe as a prominent approach to achieve sustainable development. Social entrepreneurs require an ecosystem with inclusive policy environment, markets, incubators, mentors, impact investors and other stakeholders involved. Social entrepreneurship has some advantages over sustainable development co-operation. Social entrepreneurs mobilize private sector resources and create new employment and income opportunities. It enlarges poor consumers' choices of products and services. It also achieves a win-win-situation of profitability and social value creation at the same time.

The relationship between social entrepreneurship and sustainable development: The relationship between social entrepreneurship and sustainable development has been addressed by various streams of thought and literature such as: Eco-friendly entrepreneurship, social entrepreneurship, sustainable entrepreneurship and, in an indirect way also, institutional entrepreneurship. In terms of extant literature, earlier authors addressing sustainability and entrepreneurship have dealt exclusively with environmentally orientated entrepreneurship, often called 'Eco-friendly entrepreneurship', in more detail. The core motivation and main goals mentioned with Eco-friendly entrepreneurship are to earn money through contributing to solving environmental problems. Economic goals are the ends of the business whereas environmental goals are considered as integrated part of the economic logic of the business. The organizational challenge of entrepreneurship is to better integrate environmental performance into the economic business logic or to multiply the number of (small) green businesses.

The social entrepreneurship is concerned about achieving societal goals and securing its funding. In most cases, social entrepreneurship is about how to provide club goods to members or on how to provide access to innovation for specific deprived market segments especially in the context of base-of-the pyramid innovation in emerging markets and developing economies. The environmental entrepreneurship and the social entrepreneurship, also addresses corporate influence in changing market conditions and regulations as well as initiating societal change. The ambition to change institutional settings creates links to institutional entrepreneurship.

Conclusion: The Indian scene is full of possibilities and challenges. The country possesses capable human resources, and has made good progress in achieving scientific and technological capabilities. The economy has been witnessing rapid growth since the onset of liberalizations from 1991 onwards. The social entrepreneurship leads to create social venture, that underlying organization dynamics and structures, and how this type of measure social impact, mobilize resources, and bring about sustainable social change. This study has highlighted the relationship between social entrepreneurship and sustainable development in India. Social entrepreneurship could be an important means to flexibly adapt to and cater to the changing scales and types of social needs underlying sustainable development - a dynamic that challenge our ability to grow in a way that is compatible with both our current needs and the emerging needs of future generations.

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PRODUCTION OF PECTIN FROM ORANGE PEELS AND ITS INDUSTRIAL USES.

SumitRavindraHazare,

M. Tech.(CFD) I Year Student, University of Petroleum and Energy Studies, Dehradun,
Uttarakhand

Abstract

The present paper addresses to the development of the part of the process needed for the extraction of value added products like orange oil and pectin from orange peel, which is the waste of orange juice processing industry highlighting two methods namely simple distillation & leaching explored for separation of oil from peels. The remains of cake in this part are further treated for isolation of pectin. It is found from the experimental observations that the peel source, for extraction of pectin, when taken after extracting orange oil through simple distillation gives higher yield than leaching residue. It is concluded that the process in which orange oil is first extracted using technique of simple distillation followed by acid extraction of pectin is most suitable for industrial production for isolation of pectin. These results demonstrate the successful extraction of orange oil and pectin, providing potential benefits for industrial extraction of pectin from an economic and environmental point of view.

KEYWORDS: orange peel, pectin extraction, orange essential oil.

Introduction: Oranges are at the top not only in total production, but also in economic value. The albedo is the main source of pectin. Pectin includes all the esterified polygalacturonic acids at different degree of neutralization. In the presence of saccharine and small quantities of organic acids (usually citric acid), pectin gelatinized, and this property is exploited by the agro chemistry and pharmaceutical industries for pectin isolation. Orange oil is present in small ductless gland contained in the peel of the orange fruits.

The main constituent of orange peel essential oil is d-limonene (present to the extent of at least 90 %), which is the only hydrocarbon present. The d-limonene is extracted from orange rinds or solids. The rinds and pulp are sent to an evaporator and the d-limonene is steamed out. It is widely known for its pleasant scent and degreasing properties. D-limonene is currently being used in many applications such as chlorinated solvents replacements, hand cleaners and sewage treatments. The orange processing industry can get a complete makeover if due importance is given for separation of useful ingredient from orange peel. Researchers and Scientists have been working on the separation of oil and pectin from orange peels.

The present work explores the possibility of separation of essential oils and pectin from the orange peels. Nagpur is major orange producing center in the subcontinent and even recognized in the name of oranges as, Orange city.

1.1. Motivation:

Processing fruit produces two types of waste: a solid waste of peel/skin, seeds, stones, etc, and a liquid waste of juice and wash waters. In some fruits the discarded portion can be very high

(eg mango 30-50%, banana 20%, pineapple 40-50% and orange 30-50%). Therefore, there is often a serious waste disposal problem, which can lead to problems with flies and rats around the processing room, if not correctly dealt with. To overcome this problems, we can use those waste and manufacture a useful material. Some main products are: Candied peel, Oils, Pectin Reformed fruit pieces, Enzymes, Wine/vinegar.

1.2. Pectin

Pectin is partial methyl esters of polygalacturonic acid and their sodium, potassium, calcium and ammonium salts obtained by extraction in an aqueous medium of appropriate edible plant material, usually citrus fruits, apple & sunflower. In some type of pectin, a portion of the methyl esters may have been converted to primary amides by treatment with ammonia. Commercial product is normally diluted with sugars for standardization purpose. These are further specified to pH value, gel strength, viscosity, and degree of esterification and setting characteristics.



Fig 1.1: Pectin Powder

Pectin is a long chain of pectic acid and pectinic acid molecules. Because these acids are sugars, pectin is a polysaccharide. It is prepared from citrus peels and the remains of apples after they are squeezed for juice. In the plant, pectin is the material that joins the plant cells together. When fungus enzymes break down the pectin in fruit, the fruit gets soft and mushy.

1.3: Sources:

Pears, apples, guavas, quince, plums, gooseberries, oranges and other citrus fruits, contain large amounts of pectin, while soft fruits like cherries, grapes and strawberries contain small amounts of pectin.

Typical levels of pectin in plants are (fresh weight):

- apples, 1–1.5%
- apricots, 1%
- cherries
- oranges, 0.5–3.5%
- carrots approx. 1.4%

1.4. Classification:

Chemically, pectin consists of the partial methyl esters of polygalacturonic acid and their salts (sodium, potassium, calcium and ammonia), with a molecular weight of up to 150,000 Daltons.

Pectin is obtained by aqueous extraction of the appropriate edible plant materials, mainly from citrus peel and apple pomace, followed by a selective precipitation using alcohol or salts. The raw materials used contain a large amount of pectin with superior quality and are available in sufficient quantities to make the manufacturing process more cost effective.

Pectin is usually classified according to the degree of methoxylation (DM). The degree of methoxylation is expressed as a percentage of esterified galacturonic acid units to total galacturonic acid units in the molecule of pectin. Pectin produced by the normal extraction

process contains more than 50% of methoxyl groups and is classified as high methoxyl (HM) pectin.

1.5. Commercial classification:

Pectin is classified according to the degree of methoxylation (DM) as :

i) High methoxyl pectin (DM >50)

ii) Low methoxyl pectin (DM <50)

- The degree of methoxylation influences the properties of pectin, especially the solubility and the gel forming characteristics.

- The degree of methoxylation is expressed as % of esterified galacturonic acid units to total galacturonic acid units in the molecule of pectin.

- Pectin produced by the normal extraction process contains more than 50% of methoxyl groups and is classified as high methoxyl (HM) pectin

- HM pectins are capable of forming gels in aqueous systems with high contents of soluble solids and low pH values.

- LM pectins are characterized by their ability to form gels in the presence of bivalent salts, normally Ca^{++} ions, in systems with low solids content and a wide pH range.

- Pectin is classified by International Numbering System as:

E440 (i) for high methoxyl pectin and conventional low methoxylpectins

E440 (ii) for amidated low methoxyl pectin

1.6. Market Survey:

Orange is the most commonly grown tree fruit in the world. Sweet orange peels are good source of orange oil and pectin. Peels have potential to become important raw material for food proc

Table 1.1: Market Survey for Pectin

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PRODUCT	PRODUCTION	PRICE
HM medium set Pectin	20 tons/month	US \$ 5000-15000 / ton
HM rapid set Pectin	500 tons/month	US \$ 12000-14000/ton
LMC Pectin	650 tons/month	US \$ 11000-14500/ton
Amidated pectin	1000 tons/month	US \$ 6000-9000/ton

The volume of market and rate of market development

The world pectin market is currently estimated at 319 million U.S. dollars. There is a steady increase in the consumption of pectin on average 3.0 – 3.5% per year. World production of pectin-80 thousand tons per year. Consumption of pectin in Ukraine - 800 tons per year.

1.7 Scope and Development:

As we can see in day to day life the consumption of fruit juice is most common, and the industries are using a lot amount of fruits for that and the quantity of waste producing is also more. For the utilization of that waste we can develop different procedures and get more

yield from the waste. As it has many uses in medical field, we can develop new medicines for the patients.

1.8 Methods of Pectin Productions:

I. Separation of oil from peels. a) Using the method of simple distillation b) Using ethanol as solvent in the method of leaching

II. Extraction of pectin from oil peels. a) From fresh peels, the leftover b) From dried cake remained after simple distillation and leaching.

I. Separation of oil from peels:

Raw Material: Orange peels

Methods:

- Simple distillation is employed for removal of essential oil from orange peel. Dried and fined ground orange peel powder is added with known quantity of water which is simple distilled off for approximately one hour. The solid remains of the residue are dried to obtain the dry cake. The distillate resulted into two phases, oil and water. Two phases are separated and orange oil is obtained. For 350 gm. of orange powder taken, 8 ml of oil and 126.3 gm. of dried cake is obtained.
- The method of leaching is also explored for removal of oil from peels. 380 gm of fresh orange peel are extracted with 225 ml of ethanol. After adequate contacting, two phases, solid and liquid are separated, 198 gm. of wet slurry resulted into 150 gm. of dry cake. However oil could not be recovered following this method. The dried cake obtained is further treated for separation of pectin in next part of present work.

$$\begin{aligned}\% \text{ Yield of Pectin} &= \frac{\text{Weight of pectin powder}}{\text{Weight of orange peels}} \times 100 \\ &= \frac{P}{Bi} \times 100\end{aligned}$$

Where,

P is the amount of dry pectin in gm.

Bi is the initial amount of orange peel in gram.

Properties of pectin

1.10. General Properties

1. Pectin is a solid powder, off white in color.
2. Pectin is practically odorless. It is mucilaginous.
3. Pectin is stable at ordinary conditions, becomes unstable in excess heat. Pectin is soluble in pure water, partially soluble in cold water. It is insoluble in alcohol and organic solvents. When pectin is mixed with alcohol or organic solvent and mixed with water it is soluble, whereas di- and tri- salts are weakly soluble or insoluble.
4. Pectin is combustible at higher temperatures, because of this it must be kept away from heat and any source of ignition.
5. Dry powdered pectin, when added to water, has a tendency to hydrate, very rapidly, forming gels.

6. Dilute solutions are Newtonian, but at a moderate concentration, they exhibit non-Newtonian, pseudo plastic behavior characteristics.
7. Viscosity, solubility and gelation are generally related (e.g. factors that increase gel strength will increase the tendency to gel, decrease solubility, and increase viscosity and vice versa).
8. Columbic repulsion is present between the carboxylate anions which prevent the aggregation of the polymer chains.
9. Another property of pectin which plays a major role in most of its applications is its pH. When pH is lowered, ionization of carboxylate groups is suppressed, and this results in reduction in hydration of carboxylic acid groups. At higher pH the degree of methylation will be greater. At a pH of 5-6 low methoxylated pectin is stable, but high methoxylated pectin is stable only at room temperature.
10. Pectin does not undergo polymerization but undergoes depolymerisation. Depolymerisation occurs when pectin molecules are treated with dilute acids at higher temperatures. They break into smaller fragments. The pectin which is dissolved in solutions gets decomposed spontaneously by de-esterification as well as by depolymerisation. These rates depend upon the pH and on temperature. De-esterification is favored by low pH. Maximum stability of pectin occurs only at pH 4.
11. The other properties which influence the wide spread applications of pectin are, degree of methoxylation, degree of esterification and degree of amidation.
12. Generally pectin is valued by the pectin grade, defined as number of pounds of sugar that one pound of pectin can carry in a jelly.

1.11. Properties influencing the applications of pectin

Degree of methylation:

1. Degree of methylation is the ratio of the methylated galacturonic acid groups to the total galacturonic acid groups present.
2. Based on this degree pectin can be divided into two types.

Degree of esterification (DE):

1. The polygalacturonic acid chain is partially esterified with methyl groups and the free acid groups may be partly or fully neutralized with sodium, potassium or ammonium ions.
2. Degree of esterification is the ratio of the esterified galacturonic acid groups to the total galacturonic acid groups present. This is an important property which determines the gelling nature of pectin.
3. The degree of esterification values for commercial HM pectin range from 60-75% and those of the LM pectin range from 20-40%.

Degree of amidation (DA):

1. Amidation is nothing but the inclusion of the amines in the linear structure of pectin.
2. Degree of amidation refers to the ratio of amidated galacturonic acid groups to the total galacturonic acid groups present.
3. This property too plays a major role in the gelling nature and the pharmaceutical application of pectin.

1.12. Properties of orange oil

Table 2: Orange oil properties

Typical Specifications

Appearance	Liquid
Colour	Yellow to orange
Specific Gravity 20/20°C	0.850 to 0.840 Min.
Refractive Index nD ²⁰	1.475 Max. to 1.471 Min.
Opt. Rotation 25°C	99 Max. to 94 Min.
Aldehyde Content (%)	3.0 Max. to 1.1 Min
D-Limonene Content (%)	95 Min

1.13. Application of pectin

Pectin is one of the most versatile stabilizers available. It's gelling, thickening and stabilizing attributes makes it an essential additive in the production of many food products. Traditionally, pectin was primarily used in the production of jams and fruit jellies - industrially as well as domestically and in low as well as high sugar products. It secures the desired texture, limits the creation of water/juice on top of the surface as well as an even distribution of fruit in the product. With the change in lifestyle pectin is primarily sold for industrial use.

In some European markets it is still sold to the consumers as an integrated component in gelling sugar, though. Product and application development by the major pectin producers has over the years resulted in a large expansion of the opportunities and applicability of pectin. Pectin is a key stabilizer in many food and organic food products as well.

- Fruit applications- Jams, jellies.
- Dessert: Pectin is used in fruit-milk desserts.
- Sauces: Pectin is used to thicken barbeque sauces and ketchup. It provides water binding and thixotropic behavior, and also improves mouth feel.
- Bakery fillings and topping: a more soft and spongy end product.
- Dairy applications-Acidified milk and protein drinks.
- Fruit preparations for yoghurt.
- Confectionery-Fruit jellies- Neutral jellyes.
- Beverages
- Spreads
- Pharmaceutical and Medical Application: The drug release profile of hydrophilic matrix tablets and capsules can be varied by using pectins with different degrees of esterification.

Over the years the positive public connotation of pectin has proven helpful in its widespread use, and this may be a contributing factor to the growing interest in investigating pectin for possible

direct health benefits and thus applications in regulated non-food segment as well as in functional foods and nutraceuticals.

Pectin also finds medical and pharmaceutical applications. This wide range of applications explains the need for many different types of commercial pectin, which are sold according to their application, for example:

- Rapid Set pectin - traditionally used for jams and marmalades
- Slow Set Pectin - used for jellies and for some jams and preserves, especially using vacuum cooking at lower temperatures. Also important for higher sugar products like bakery and biscuit jams, sugar confectionery, etc.
- Stabilizing Pectin - used for stabilizing acidic protein products such as yoghurts, whey and soya drinks against heat processing.
- Low methyl ester and amidated pectin - used in a wide range of lower sugar products, reduced sugar preserves, fruit preparations for yoghurts, dessert gels and toppings, and savory applications such as sauces and marinades. Can also be used in low acid high sugar products such as preserves containing low acid fruits (figs, bananas) and confectionery.

1.14. Application of Orange Oil

•Anti-depressants

Well-known for its uplifting properties, orange essential oil is soothing to the mind and helps to relieve stress. It is refreshing and relaxing and commonly used for the treatment of anxiety.

•Anti-inflammatory

it provides relief from both internal and external inflammation caused by infections. It is helpful in treating swollen tissue by stimulating blood circulation.

•Anti-septic

it inhibits microbial growth and can help ease a sore throat if used in a gargle. It also helps to heal mouth ulcers when used in a mouth wash.

•Improves Digestion

it is known to promote digestion ease constipation and increase the absorption of vitamin C. Use as massage oil in the abdominal area.

•Anti-Cancer

D-

limonene is a super-nutrient that occurs in Orange Essential Oil. It has been studied for its ability to prevent cellular mutations and combat cancer tumor growth.

•Encourages Detoxification

Sweet Orange essential oil encourages detoxification by acting as a diuretic. It also stimulates the lymphatic system, the bladder and kidneys. Increased urination assists in the elimination of toxins like uric acid, bile and excess salts and helps relieve fluid retention. Detox and cleansing properties help breakdown and eliminate cellulite.

•SkinTreatment.

1.15. Conclusion:

The maximum overall yield of the pectin will be obtained from orange peel residue sample through simple distillation. The yield of pectin is indirectly proportional to pH of citric acid taken that is as pH of citric acid increases, yield of pectin will be decreases. But for pH value 2, yield is highest due to high dissociation constant.

The present work reveals that the sweet orange peels are good source of orange oil and pectin and does have the potential to become important raw material for food processing industries. We also conclude that during extraction as amount of ethanol increases yield of pectin increases. Pectin is soluble in hot water and form gel in cold water. Hence, pectin is use in making jelly. Pectin is insoluble in benzene and ethanol. Methoxyl content of pectin is 6%. Ash content is 35%, while Moisture content is 67%.

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The Political Factors that influence Africa's difficulty in overcoming its economic and socioeconomic deficiencies.

Author : Ashvyini A/P Selvaratnam
Qualification : High School Student, currently
studying Cambridge A-Levels
Designation : Student
Institute : Taylor's College Subang Jaya

Abstract

In this journal, I will be investigating the various politically connected factors that cause Africa to undergo extreme poverty and subsequently major economic deficiency. Africa is a continent that contains one of the largest populations in the world. However, Africa has always had a problem advancing substantially in the global scale of economics, despite its mammoth size as a continent and its wealth of resources. Consequently this has had a profound effect on its citizens' social welfare as well as its overall growth as a developing nation. Africa hosts some of the world's poorest nations. In 2006, 34 of the 50 nations on the UN list of least developed countries were in Africa. Around 70% of the continent's poor people live in rural areas and depend on agriculture for food and livelihood. Therefore, I will mostly explore these regions of Africa that are incessantly trapped in the vicious poverty cycle. I will look at the three main reasons, in my opinion that causes Africa's inability to perform economically and socioeconomically. These reasons are history of colonization in Africa, political corruption and wars and political unrest. In this journal, I will explain on how each of the specific factors has played a role in contributing to Africa's economic turmoil. I have conducted my study based on the journals and studies of previous researchers. I will research each of the factors individually and come up with a conclusion. By the end of the journal, I will show that the three main political factors have influenced Africa's difficulty in overcoming its economic and socioeconomic deficiencies. Also, once I have figured out the problems causing Africa's poverty, I hope to establish some steps that can be taken to improve Africa's current situation.

Introduction

Poverty is a general term usually used to classify and describe society according to their lower economic statuses compared to their wealthier counterparts. The United Nations has defined absolute poverty as 'a condition characterized by severe deprivation of basic human needs, including food, safe drinking water, sanitation facilities, health, shelter, education and information'. Statistics prove that almost half of our population (3 billion) is classified as poor, living on less than \$2.50 a day. The irrefutable effects of this perpetual lifestyle have caused torment, inequality, death, etc to its victims. Its victims not only succumb to the deprivation of basic necessities, but also get drawn into the other issues surrounding poverty such as disease, crimes, social issues and etc.

Over the last 30 years, worldwide absolute poverty has fallen sharply (from 40% to 20%). However, in African nations, the percentage has barely fallen. The state of absolute poverty in

Africa is startling. Still today, more than 40% of people living in Sub-Saharan Africa live in absolute poverty. In 2009, 22 of 24 nations identified as having "Low Human Development" on the United Nations' (UN) Human Development Index were in Sub-Saharan Africa. This fact raises red flags and many of us wonder about the reasons behind the biased statistical data toward Africa. Figures about Africa's postcolonial economic records are horrifying. Africa's development performance has been dismal and underwhelming compared to other Third World regions. In 1997, GDP per capita for Africa was \$560, compared to \$4,230 for Latin America and \$730 for Asia.

This issue is puzzling to me because, Africa, like many other developing nations is full of potential and growth opportunities. Even though African countries typically fall to the bottom of any list measuring economic activity (such as income per capita or GDP per capita), Africa still contains a wealth of natural resources. From mining opportunities alone, their earth is rich with diamonds, gold, salt, uranium, petroleum and much more. Not to mention their various climates and temperatures, suitable for various agriculture usage. A glaring example of the riches of Africa is the Democratic Republic of Congo, the country of Patrice Lumumba. Economic experts have pronounced that, when developed Congo alone can feed and provide electricity for the whole of Africa. However, most of their resources are under discovered or barely harnessed.

Other nations, which were less fortunate in terms of their natural resources, have resorted to other means of developing the country economically. One example we can use is Singapore. Despite its minute size and resources, Singapore was able to exploit its strategic position, make wise trade and investment decisions, and also kept a clean and just political office. This has turn Singapore into a frontrunner amongst other South East Asian countries and not to mention an equal rival against other economic giants. Despite increased efforts among its people to improve Africa's current position, Africa has been improving at a slow and steady pace. However, this is not accelerated enough to keep up with the rest of the evolving and developing world. I wanted to discover the intriguing reasons behind Africa's constant struggle to achieve growth and success economically. This struggle has been ongoing, dating years back. In 1820, the average European worker earned about three times what the average African did. Now, the average European earns twenty times what the average African does. We need to identify these stumbling factors in order to understand and unravel the continent's perplexing predicament. Only by recognizing these factors, we can then, pursue the solutions to the ongoing issue.

Materials and Methods

This journal is purely based on facts and theories, and hence, has not been conducted through experimentations or surveys. Instead, I collected my observations and information from other similar journals and research papers. Initially, I created the thesis based on existing knowledge and assumptions. Then I investigated my claim through extensive research in order to prove my thesis statement. I searched online and visited various websites that specialized in the specific topic of Africa's poverty. Some researchers I came across even had investigated claims that were somewhat similar to mine. By cross examining and extraction of facts and figures, I was able to provide substantial amount of discussion into my topic. Using this information, I formed my arguments and conclusions that supported my thesis. My topic about how political systems lead to the downfall of Africa's economy is fairly wide. Therefore, I was able to condense my research into three arguments supporting this thesis. In each argument, I would provide a brief explanation about the point. Then, I would discuss how each specific point has led to Africa's state of poverty. Finally I will make a conclusion based on my findings and state whether my thesis was proved or not. The materials I used mainly consist of articles and journals of others.

Results

My thesis is proven to be correct. All the three political issues are connected and have played a role in affecting Africa's economic state throughout the years. Through my extensive research, I have found out that the history of Africa has led to its corruption and political unrest. These 3 factors are inter-connected. The history of colonization of Africa has left Africa without a capable successor government, caused Africa to be dependent on foreign help, and impacted Africa's economic and social systems. Corruption has ruined Africa's economy and political systems. It has caused severe economic instabilities and continuous widening of the social economic gap. Wars and political unrest are always deleterious, not just in terms of the economic consequences but also in terms of the social welfare of civilians. This thesis is supported by the work of other research papers.

Discussion

History of colonization in Africa

The colonization of Africa by European powers altered the course of the continent indubitably. Competing European powers aimed to conquer Africa for their own imperialistic agendas. They wanted to conquer Africa, which was a booming country with lots of resources and trade potential. The Berlin conference especially ushered in a time of immense colonial activity by European powers. The effects of the Berlin conference which encouraged the colonisation agenda, caused areas of Africa which had previously been developing significant trade and economies of their own to be

controlled by European economic policies. To main colonizing nations, Britain, France and Germany, the needs of their colonial subjects were not important.

The dominance of the colonial powers eliminated most existing forms of African self-governance and autonomy. African economy was exploited to serve Europe and Europeans. African systems of cultural beliefs, political structures, and ways of life were immensely impacted by the reforms of colonization. What are the harmful effects of colonisation to Africa? Firstly, colonial powers severed the economy. Colonial powers imposed limitations on trade where African imports were made only from the colonising power and African exports would be prioritized to the same country. This severed important trade connections of Africa with other countries and impacted Africa's economic income. Also, freedom of choice of consumer goods which was previously varied, had become restricted to only goods flowing in and out from one country. Even when these powers relaxed their policies to introduce Africa to increase exports internationally, they exercised very strict regulations, maintaining priority for their country's trade needs. These policies brought the demise of the African industry. Inter-African trade was discouraged, which caused Africa's reliance on imported goods from Europe as oppose to being self-sustaining.

Also, after colonisation, foreign powers exercised their control over tax departments, even though they didn't have an interest in meeting local needs. Even though the colonists wanted African resources, they did not prioritize economic development. Improving agricultural methods of production or strengthening the economy was not important. Instead, they sort to exploit the economy. Even, the infrastructure developed during this period was designed to exploit the natural resources of the colonies. Education was also considered unimportant and was left to the private sector. The colonists might have used this tactic to delay the rise of African leaders. This had a detrimental effect on the up and coming leaders of Africa who did not have the proper training to later manage a country.

Secondly, as the Westerners heightened control over Africa, the idea of white superiority started. The Atlantic slave trade existed in Africa for over three hundred years, which caused economic problems. These slaves were demanded all across the globe for mining, agricultural(cotton plantations) and laborious work. The African dignity, cultures and beliefs were severely undermined and some eliminated during this period. In South Africa, the racial segregation of 'blacks' and 'whites' started from the Dutch's rule and carried on through the British's dominance. Better known as the Apartheid (from 1948-1994) system, the British segregated education, healthcare and public services for 'blacks'. They provided inferior services to the Africans. This had severe effects on the Africans who were degraded, had little job prospects and no opportunity in politics.

Also, European leaders debilitated the power of national rulers under the guise of colonial development. This made traditional rulers weaker because their power was destroyed. Since Africans were not allowed to improve their traditional systems or to market their own goods freely, they were forced into the colonial system. By insisting on the development of certain crops, Europeans undermined the existing economic system that had been long formed by the natives. Soon, the new power structure made African society totally dependent upon Europe for their economic destiny. Had

the European powers refrained from intervening in the native industry, Africa would be in a much better economic position today.

Corruption - How it ruined a continent.

Even after independence, Africa had not escaped the political disorder of corrupt leaders, while this situation was actually exacerbated. There are various types of corruption. Firstly, there is political corruption that takes place at the highest levels of political authority. Corruption at this level is characterized by the implementation of policies that specifically suit the needs of the politicians. Bureaucratic corruption occurs in the public administration or implementation end of politics. This sort of corruption occurs at the consumer level of administration like the hospitals, schools, police, taxing offices and etc. Electoral corruption is the abuse of power by political leaders in order to manipulate and maintain their positions of power. For example, in Nigeria votes are bought, supposed losers become the victors in elections, people are killed in the name of politics, and magic votes turn up where they were not cast.

First reason why corruption runs rampant in Africa is because of colonization. After independence, the African revolutionist leaders took their positions as national leaders. However, they didn't receive the proper guidance to manage their respective countries. Hence, they chose to run their countries instinctively and this meant that they were not strict about adhering to essential rules about politics. This led to the downfall of the systematic administration. Here, we postulate that Africa's corruption is a manifestation of its leadership and institutional failure post-independence.

Another major source of interminable corruption stems from dictatorial leadership that started post-independence. In pre-independent Africa, the colonial institutions, particularly the judiciary systems, provided the checks and balances that restricted leadership excessive powers. However, as soon as these countries gained independence post 1960s and 1970s, due to their long suppression under the colonists, many African leaders had overriding motivations to retain power for life. The white colonialists were replaced with black neo-colonialists that were more corrupt as they disregarded the checks and balances which existed during the colonial period. In the process, they obtained massive power and authority which allowed them to conquer all relevant political and economic branches (civil service, electoral commission, judiciary, media, security forces, and the central bank). Examples of past dictators include Ethiopia's Emperor Haile Selassie (44 years), Libya's Muammar Gaddafi (42 years) and Egypt's Hosni Mubarak (31 years). In the few instances where political leaders left office 'voluntarily', they hand-picked their successors and continued to dictate policies from behind the scenes thus covering their tracks.

Moving on from dictatorial leadership, corruption also stems from bad rules and ineffective taxing system. This makes it harder to track society's financial status and taxes. Ineffective taxing system is a serious problem for Nigeria. An example that could breed corruption is the ban on importation of *Tokumbo* (used car). Businessmen would be forced to bribe the corrupt custom officials (to allow the cars in), causing the state to lose the needed tax revenue. (*The Vanguard*, June 4, 2002). Another reason corruption is rampant is due to the lack of ethics and abandonment of responsible principles. The unbecoming attitudes of those who are supposed to enforce the laws of the land (judges, police officers and public officials) not only neglect their duties to uphold right



virtues but also lead people to engage in corrupt behavior. Another factor includes the African nation's poor reward system. Nigeria's reward system is, perhaps, the poorest in the world. Nigeria is a society where hard work is recognized by meager wages, but criminal activities and corruption will earn you abundance. There is an obligation to provide for one's family, whatever way possible.

What are the major problems associated with corruption? Let's look at South Africa as an example. Corruption and international perceptions of corruption in South Africa has been damaging to the country's reputation and has created obstacles to local and foreign direct investment. Trade amongst foreign nations will also be affected. This is a big issue because Africa depends on trade to sell its agricultural produce and mining products. The balance of trade might deficit. As a whole, economic growth has retrograded and has ultimately disrupted the development of its people. Corruption increases levels of poverty and income inequality. The rich, who enjoy the illegal benefits of bribery and corruption, get richer while the poor get immensely poorer.

Corruption eats into the nation's wealth. This channels funds away from such projects and the very people most dependent on government for support. Corruption causes a reduction in quality of goods and services available to the public. Taxes collected are not channeled to the projects that are supposed to such as education, healthcare and public services and instead are being channeled into pockets of politicians. Another major upset here is when the fund allocation for education declines. This projects that the future of the country would be affected as there would be a lack of qualified individuals to lead. This also means that fewer children will be able to escape the poverty cycle. Corruption only brings harm to the people of Africa.

Civil wars and political unrest

Wars and political unrest are undoubtedly agents of destruction in any country. In Africa this factor has played a major role in the decay of its economic and social welfare. It is known that over the course of Africa's history, wars have dominated the years and people. How do civil wars start in Africa? First of all, a study of Africa's never ending wars reveals that conflicts mostly originate from tyrants or rebel groups. Firstly, tyrants often desire power and wealth. Therefore, they stop at no costs including violence, bribery and intimidation to gain a coveted position of power. However, a rebel group, mostly frustrated with the existing government, trains an underground militant guerilla and then emerges to oust the existing governing body. If this campaign fails to oust the government, the war drags on for years and years to come. But even when the existing government is overthrown, a vacancy of position will cause factional leaders to battle to claim the spot, just as observed in Somalia and Liberia. The only outcome is war.

The fact that Africa is a low-income country also contributes to its volatility in civil wars. Its working class people mostly succumb to dismal lifestyles, while corrupt governments claim riches for themselves. So tyrants or frustrated rebel groups want a share of the wealth as well and set out on a mission to oust the government. They threaten governments by violence towards the public, destruction of infrastructure and monopolization of resources. Their merciless tactics include destroying government buildings like schools and hospitals. Sadly, many innocent lives are killed.

Also, Africa's wealth of natural resources, fuels civil wars. Africa is rich with diamonds, gold, salt, petroleum and much more that are spread geographically across the land. These resources finance rebel groups. These rebel groups monopolize the production and exports of the goods. With the riches



in their hands, they are able to pay their recruits and buy arms for their militant movement. For example, "blood" diamonds are illegally traded by monopolizing parties to fund wars and conflicts. This is particularly prominent in central and western Africa, according to the World Diamond council.

What are the consequences of these merciless attacks? Well wars are infamous for one thing. Deaths. During this time of political unrest, the conflicting enemies or rebels looking to overthrow a government, end up harming civilians when executing their plans. Based on Lacina and Gleditsch (2005) a total of about 3.86 million people were killed in civil war battles globally between 1960 and 2002. During 1960-2002 about 1.55 million people were killed in conflicts in Africa, about 40 percent of the world's total. Civil wars claim lives through different ways. Firstly, soldiers and civilians are killed in battle. The clashing parties often use weapons of mass destruction, firing aimlessly, oblivious towards the lives of the public. Also, the prevalence of diseases during these times also cause deaths among people. Also, an increase in violent crimes on the streets often leads to the rise of the death toll. Not to mention, many of them die of starvation as well due to the lack of food sources due to the sudden halt of economic activity. Farmers and miners aren't able to go to work as well, causing stagnation in the economic activity of the country. Many poor people who depend on these economic activities are affected when their livelihood is destroyed.

Wars force mass migration. In a state of emergency, civilians become fearful for their lives and those of their loved ones. Hence, many people flee the feuding region seeking refuge amongst neighboring nations. For example, over 4 million Syrians have fled their country due to the huge political conflicts going on. They have mostly fled to Turkey, Lebanon, Jordan and Germany. Post-war economies are incredibly unstable. During a conflict period, there will be a halt in progress and development. In states of panic and emergency, businesses and shops will close down out of fear for their safety. Hence, the public will have limited resources to live by. Food, water, clothing and other needs will become scarce as people need to stock up goods. War ruins infrastructures and properties. During a war, investors retract investment out of loss of confidence and fear of destruction of natural resources. Also, the trading process among nations halts due to loss and destruction of economic resources. Wars further exacerbate the country's poor economic and social state.

CONCLUSION

The history of colonization of Africa, the corruption of power amongst its leaders and Africa's political unrest and wars have definitely led to the debilitation and immobilization of the African economy. We must now approach the problems with solutions. Africa has to put their history behind them and move forward in order to improve themselves among other countries. They need to start political reform by 'cleansing' the political office from corruption. All new trained politicians must be reinstated and effective measures to combat corruption must be taken. The people of Africa must unite against the unjust government and reclaim their deserved lifestyles that corrupt and ineffective governments have deprived them of. Also, African nations must develop peace amongst each other and promote inter-relations that could translate to economic



trade opportunities. The national resources must be well conserved and kept by a trusted body. Other foreign countries must facilitate this process and monitor Africa's progress in order to ensure it does not relapse. Most importantly, the best yardstick to measure its progress is by eradicating the poverty cycles and all its vicious effects. Only by recognizing our failures can we move forward. Thank you.

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EUTHANASIA: COMPARATIVE ANALYSIS UNDER DIFFERENT LEGAL SYSTEM

AUTHOR- Manoj Kumar

DESIGNATION- PhD Research Scholar,
Department of Law, M.D. University,
Rohtak (Haryana)

ABSTRACT:

The word Euthanasia has its origin millennia ago in Ancient Greece and is derived from the the word “euthanatos” meaning “good death”. Webster’s dictionary defines euthanasia as “the act or practice of killing or permitting the death of hopelessly sick or injured individuals (as persons or domestic animals) in a relatively painless way for reasons of mercy.” It can also be defined as the act of painlessly ending the life of a being that is suffering from a terminal illness or other painful or incurable condition. That is, the term euthanasia normally implies that the act must be initiated by the person who wishes to commit suicide. According to the Oxford English Dictionary Euthanasia means ‘the painless killing of a patient suffering from an incurable and painful disease’. As we know Euthanasia is illegal in the United Kingdom. Any person found to be assisting suicide is breaking the law and can be convicted of assisting suicide or attempting to do so (e.g. if a doctor gives a patient in great pain a bottle of morphine to take (to commit suicide) when the pain gets too great). Between 2003 and 2006 Lord Joffe made four attempts to introduce bills that would have legalized voluntary euthanasia - all were rejected by the UK Parliament. Currently, Dr Nigel Cox is the only British doctor to have been convicted of attempted euthanasia. He was given a 12 month suspended sentence in 1992. In 1957 Judge Devlin in the trial of Dr John Bodkin Adams ruled that causing death through the administration of lethal drugs to a patient, if the intention is solely to alleviate pain, is not considered murder even if death is a potential or even likely outcome. But in India it comes under abetment of suicide (Section 306 Indian Penal Code) and attempt to suicide (Section 309 of Indian Penal Code) are both criminal offences. This is in contrast to many countries such as USA where attempt to suicide is not a crime.

KEYWORKDS- EUTHANASIA, COMPARATIVE ANALYSIS, DEATH, OUTRAGEOUS DEATH

INTRODUCTION

Euthanasia is a terribly troubling word, meaning literally, according to some, “a good death,” but according to others a morally outrageous death (Fergusson, 1997). According to Saunders (1994), euthanasia is the act of taking the life, for reasons of mercy, of a person who is hopelessly ill. A basic distinction is made between two kinds of euthanasia, namely passive and active (Gillett, 1994). Active euthanasia is identical with mercy killing and involves taking direct action to end a life, for example, intentionally giving a person a lethal dose

of a drug to end a painful and prolonged period of dying (Oehmichen & Meissner, 2000). Passive euthanasia is allowing a patient to die when he or she could have been kept alive by the appropriate medical procedures (Vere, 1997). According to Caddell and Newton (1995), active euthanasia can be defined as any treatment initiated by a physician with the intent of hastening the death of another human being who is terminally ill and in severe pain or distress with the motive of relieving that person from great suffering. Passive euthanasia can be defined or considered as discontinuing or not starting a treatment at the request of the patient (Caddell & Newton, 1995). Further distinction is made between voluntary, involuntary and non-voluntary euthanasia (Gillett, 1994). According to the latter voluntary euthanasia occurs when the decision to terminate life by the physicians corresponds with the patient's desire to do so and the patient willfully gives consent of its implementation¹.

EUTHANASIA

The word **Euthanasia** has its origin millennia ago in Ancient Greece and is derived from² the the word “**euthanatos**” meaning “**good death**”^{3,4}. **Webster's dictionary** defines euthanasia as “the act or practice of killing or permitting the death of hopelessly sick or injured individuals (as persons or domestic animals) in a relatively painless way for reasons of mercy⁵.” It can also be defined as the act of painlessly ending the life of a being that is suffering from a terminal illness or other painful or incurable condition⁶. That is, the term euthanasia normally implies that the act must be initiated by the person who wishes to commit suicide⁷. According to the **Oxford English Dictionary** Euthanasia means ‘the painless killing of a patient suffering from an incurable and painful disease⁸’.

“Devised for service in rhetoric of persuasion, the term Euthanasia no longer has any generally accepted and warranted core of meaning.”

* PhD Research Scholar, Department of Law, M.D. University, Rohtak (Haryana)

¹ www.fatti-su.it

² www.religiousforums.com

³ Ibid

⁴ Euthanasia (*eu* = good, *thanatos* = death)

⁵ www.euthanasiaprocon.org

⁶ www.oppapers.com

⁷ web02.cpu.edu.ph

⁸ www.capechameleon.co.za

The **Dutch medical profession guidelines** define Euthanasia as: Killing at the request of the killed. But then in certain cases the person killed is not capable of giving such a request (non-voluntary euthanasia) and in certain cases he is capable of giving such a consent but has not done so (involuntary euthanasia). Even though the Dutch definition does not necessarily include non-voluntary and involuntary euthanasia the Dutch⁹ do allow them to be carried out.

In Nazi discourse, euthanasia was any killing carried out by medical means or medically qualified personnel, whether intended for termination of suffering and/or of the burden or of the indignity of a life not worth living, or for some public benefit such as eugenics (racial purity etc.) and to avoid wastage of resources on useless mouths

COMPARATIVE ANALYSIS

After discussing the various legal system of euthanasia to worldwide, now we will compare some of them for better understanding the position of euthanasia in these countries...

UNITED KINGDOM AND UNITED STATES OF AMERICA:-

In the **UK** though euthanasia remains unlawful, but there have been recent cases that have advanced the legal, medical and ethical debate. Diane Pretty, aged 43, lost her British and European Court of Human Rights (ECHR) case in March 2002, where she had sought permission for her husband to administer a lethal dose of morphine to end her suffering of motor neuron disease (**Pretty v DPP [2002]**¹⁰).

The **UK** High Court permitted the hospital doctors to switch off the 17-year-old Anthony Bland's life support machine (affirmed by the House of Lords in **Airedale National Health Service Trust v Bland [1993] AC 789**). Anthony had been a victim of the Hillsborough football stadium disaster in 1989 and had been in a persistent vegetative state for three and a half years. There have been recent cases that have advanced the legal, medical and ethical debate. Diane Pretty, aged 43, lost her British and European Court of Human Rights (ECHR) case in March 2002, where she had sought permission for her husband to administer a lethal dose of morphine to end her suffering of motor neuron disease (**Pretty v DPP [2002]**¹¹).

⁹ Smith, Stephen W.. "Some realism about end of life: the current prohibition and the euthanasia underground." American Journal of Law & Medicine, Spring 2007 Issue

¹⁰ news.bbc.co.uk

¹¹ ibid

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While Active Euthanasia is illegal throughout the USA, assisted suicide is legal in three states: Oregon, Washington and Montana¹³. The **Terri Schiavo** was a legal battle in the **United States** and its open the new dimension of assisted euthanasia. Which effect was globalization of euthanasia? Except these three states euthanasia is not valid. UK position is quite different cause there euthanasia is in its preliminary stage not like **usa**.

INDIA AND UNITED KINGDOM: - As we know Euthanasia is illegal in the United Kingdom. Any person found to be assisting suicide is breaking the law and can be convicted of assisting suicide or attempting to do so (e.g. if a doctor gives a patient in great pain a bottle of morphine to take (to commit suicide) when the pain gets too great). Between 2003 and 2006 Lord Joffe made four attempts to introduce bills that would have legalized voluntary euthanasia - all were rejected by the UK Parliament. Currently, Dr Nigel Cox is the only British doctor to have been convicted of attempted euthanasia. He was given a 12 month suspended sentence in 1992. In 1957 Judge Devlin in the trial of Dr John Bodkin Adams ruled that causing death through the administration of lethal drugs to a patient, if the intention is solely to alleviate pain, is not considered murder even if death is a potential or even likely outcome¹⁴. But in India it comes under abetment of suicide (Section 306 Indian Penal Code) and attempt to suicide (Section 309 of Indian Penal Code) are both criminal offences. This is in contrast to many countries such as USA where attempt to suicide is not a crime. The Constitution Bench of the Indian Supreme Court in **Gian Kaur vs. State of Punjab, 1996(2) SCC 648** held that both euthanasia and assisted suicide are not lawful in India. That decision overruled the earlier two Judge Bench decision of the Supreme Court in **P. Rathinam vs. Union of India, 1994(3) SCC 394**. The Court held that the right to life under Article 21 of the Constitution does not include the right to die (vide Para 33). In **Gian Kaur's** case (supra) the Supreme Court approved of the decision of the House of Lords in **Airedale's** case (supra), and observed that euthanasia could be made lawful only by legislation the opinion that although Section 309 Indian Penal Code (attempt to commit suicide) has been

¹² ibid

¹³ "The Ethics of Euthanasia. Cases from around the World and India.", university degree/law/medical law/1, 2012.

¹⁴ en.wikipedia.org

held to be constitutionally valid in **Gian Kaur's** case (supra), the time has come when it should be deleted by Parliament as it has become Anachronistic. A person attempts suicide in a depression, and hence he needs help, rather than punishment. We therefore recommend to Parliament to consider the feasibility of deleting Section 309 from the Indian Penal Code. In **Gian Kaur's** case although the Supreme Court has quoted with approval the view of the House of Lords in **Airedale's** case it has not clarified who can decide whether life support should be discontinued in the case of an incompetent person e.g. a person in coma or PVS. This vexed question has been arising often in India because there are a large number of cases where persons go into coma (due to an accident or some other reason) or¹⁵ for some other reason are unable to give consent, and then the question arises as to who should give consent for withdrawal of life support. This is an extremely important question in India because of the unfortunate low level of ethical standards to which our society has descended, its raw and widespread commercialization, and the rampant corruption, and hence, the Court has to be very cautious that unscrupulous persons who wish to inherit the property of someone may not get him eliminated by some crooked method¹⁶.

INDIA AND UNITED STATES OF AMERICA:-we already study that ¹⁷Euthanasia is illegal in all states of **USA**, in the states of Oregon, Washington and Montana the difference between euthanasia and physician assisted suicide lies in who administers the lethal medication. Passive euthanasia is usually defined as withdrawing medical treatment with a deliberate intention of causing the patient's death. For example, if a patient requires kidney dialysis to survive, not giving dialysis although the machine is available, is passive euthanasia. Similarly, if a patient is in coma or on a heart lung machine, withdrawing of the machine will ordinarily result in passive euthanasia. Similarly not giving life saving medicines like antibiotics in certain situations may result in passive euthanasia. Denying food to a person in coma or PVS may also amount to passive euthanasia. Euthanasia can be both voluntary and non voluntary. In voluntary passive euthanasia a person who is capable of deciding for himself decides that he would prefer to die (which may be for various reasons e.g., that he is in great pain or that the money being spent on his treatment should instead be given to his family who are in greater need, etc.), and for this purpose he consciously and of his own free will refuses to take life saving medicines. In **India**, if

¹⁵ www.lawyersclubindia.com

¹⁶ www.lawyersclubindia.com

¹⁷ www.lawyersclubindia.com

a person consciously and voluntarily refuses to take life saving medical treatment it is not a crime. Whether not taking food consciously and voluntarily with the aim of ending one's life is a crime under section 309 IPC (attempt to commit suicide) is a question which need not be decided in this case. Non voluntary passive euthanasia implies that the person is not in a position to decide for himself e.g., if he is in coma or PVS. In the present case where we have to consider non voluntary passive euthanasia i.e. whether to allow a person to die who is not in a position to give his/her consent. There is a plethora of case law on the subject of the Courts all over the world relating to both active and passive euthanasia. It is not necessary to refer in detail to all the decisions of the Courts in the world on the subject of euthanasia or physically assisted death¹⁸. After the above comparative discussion we can say that Euthanasia law's is in primary stage different legal system at globe. But we can say that it's become a most blazing phenomenon of today world¹⁹.

CONCLUSION

Euthanasia is the termination of a very sick person's life in order to relieve them of their suffering. A person who undergoes euthanasia usually has an incurable condition. But there are other instances where some people want their life to be ended. In many cases, it is carried out at the person's request but there are times when they may be too ill and the decision is made by relatives, medics or, in some instances, the courts. The term is derived from the Greek word *euthanatos* which means easy death. Euthanasia is against the law in the UK where it is illegal to help anyone kill themselves. Voluntary euthanasia or assisted suicide can lead to imprisonment of up to 14 years. The issue has been at the centre of very heated debates for many years and is surrounded by religious, ethical and practical considerations.

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Recruitment Process of ACC Cement

Authors

Prof. Sarika Baban Nande

Institute of Management Studies & Research
Kosara, Chandrapur

Guided By

Dr. J. N. Chakravorty

(Phd Supervisor) Principal of Institute of
Management Studies & Research Kosara,
Chandrapur

Introduction

Recruitment plays important role in the development of an organization. This is one of the important HR components in developing Indian Economy, which is growing at the rapid pace. Today's, where demand of qualified and experienced people is high, the white collar salaries are increasing, every day one MNC is adding presence in Indian market, the pool of experienced professionals are smaller than it large population of our country, attrition rate is quite high ranging from 20-60%, HR professionals are struggling to attract good employees despite fierce competition.

Recruitment is an important part of an organization's human resource planning and their competitive strength. Competent human resources at the right positions in the organization are a vital resource and can be a core competency or a strategic advantage for it. Recruitment acts as a link between the employers and the job seekers and ensures the placement of right candidate at the right place at the right time. Using and following the right recruitment processes can facilitate the selection of the best candidates for the organization.

Literature review

According to (Sudhamsetti.Naveen, 2014) in every organization recruitment and selection plays a vital role. The study reveals that the recruitment and selection process offered in three selected industries is effective. The HR managers of the selected industries have to focus on selecting the right persons through other sources like campus placements, job.com, data banks etc. The selection is done by evaluating the candidate's skills, knowledge and abilities which are highly required to the vacancies in selected industries.

Dr. Shueb Ahmad (2004) Recruitment forms the first stage in the process which continues with selection ceases with the placement of the candidate. Recruiting makes it possible to acquire the

number and type of people necessary to ensure the continued operations of the organization. Recruiting is the discovering of potential applications for actual and anticipated organizational vacancies.

Objectives of recruitment

1. To analyze the process of Recruitment in ACC Cement.
2. To observe the procedure to select the candidates from internal as well as from external sources in ACC Cement.
3. To find out the various recruitment sources used by the ACC Cement.
4. To study the employee satisfactory level with the existing recruitment policy in ACC Cement.
5. To evaluate and analyze the effectiveness of recruitment and selection policies adopted in ACC Cement.

Company Profile

ACC (ACC Limited) is India's foremost manufacturer of cement and concrete. ACC's operations are spread throughout the country with 17 modern cement factories, more than 50 Ready mix concrete plants, 21 sales offices, and several zonal offices. It has a workforce of about 9,000 persons and a countrywide distribution network of over 9,000 dealers. Since inception in 1936, the company has been a trendsetter and important benchmark for the cement industry in many areas of cement and concrete technology. ACC has a unique track record of innovative research, product development and specialized consultancy services. ACC has taken purposeful steps in knowledge building. We run two institutes that offer professional technical courses for engineering graduates and diploma holders which are relevant to manufacturing sectors such as cement. The main beneficiaries are youth from remote and backward areas of the country.

ACC has a large workforce of about 9,000 people, comprising experts in various disciplines assisted by a dedicated workforce of skilled persons. ACC employees, referred to as the ACC Parivar, come from all parts of the country and belonging to a variety of ethnic, cultural and religious backgrounds. ACC employees display a strong sense of loyalty to the Company and their special stellar qualities as 'value-adding' human capital are well known in the industry.

Recent Trends in Recruitment

- * Recruitment Process Outsourcing
- * Poaching /Riding
- * Online or E - Recruitment
- * Campus Recruitment
- * Referral recruitment
- * Summer Internship
- * Contract Recruitment
- * Temporary Recruitment

Framework of ACC Cement

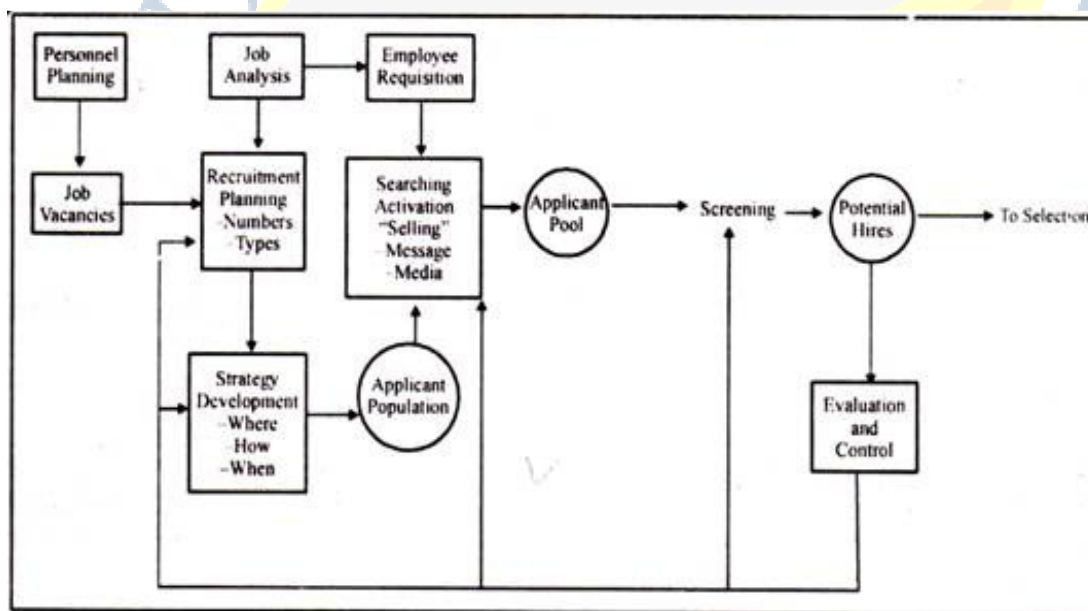


Fig. 6.2 : Recruitment Process

Sources of recruitment

ACC offers employment opportunities in a wide range of functions. The process of recruitment in ACC is fair and transparent, with adequate opportunities to look for suitable candidates both internally and from outside. Recruitment is a continuous process in ACC. We regularly hold interviews in principal cities. Campus interviews are arranged in leading institutes and universities. In other cases, applications are invited for specific vacancies announced through advertisements in leading newspapers or announced in this website.

Central Recruitment process of ACC



Process of Recruitment

Recruitment in ACC is a very fair and transparent process with adequate opportunities to look for suitable candidates internally as well as from outside. Applicants are generally invited on the basis of specific advertisements in newspapers and websites. A Committee of officers called the Central Recruitment Committee handles the entire recruitment process comprising screening of applications, preliminary short-listing, interviews and final selection. Every attempt is made to make the selection process as objective as possible by incorporating tests of competence. In some cases, outside consultants are retained. All decisions of the recruitment committee are recorded in respect of each candidate. Candidates are informed of their short-listing and selection immediately after the interview or at the earliest thereafter.

Recruitment Policy

ACC has clearly stated guidelines concerning recruitment, termination, career advancement, performance appraisal, professional and employee ethics and code of conduct. The Company's

personnel policies and processes enshrine equal opportunities to all and non-discrimination with regard to gender, caste, creed, ideology or other opinion, whether social, political or religious. Also ensured is a due process for employee consultation and participation in organizational development and policy formulation.

ACC wish to caution jobseekers and educational institutions at large that ACC Limited, as a policy has a merit based employee selection process. Further, we do not authorize or have appointed external agents to conduct employment drives or extend offers of employment on our behalf. It is also not our policy to charge or collect fees of any kind from educational institutions or from candidates for participation in a recruitment event or to receive offers of employment. Any person or organization dealing with unauthorized parties is doing so at their own risk. ACC Limited is not responsible for any losses (monetary or otherwise) that are incurred as a consequence, nor will it have any obligation to provide employment to anyone under any fraudulent offer letter.

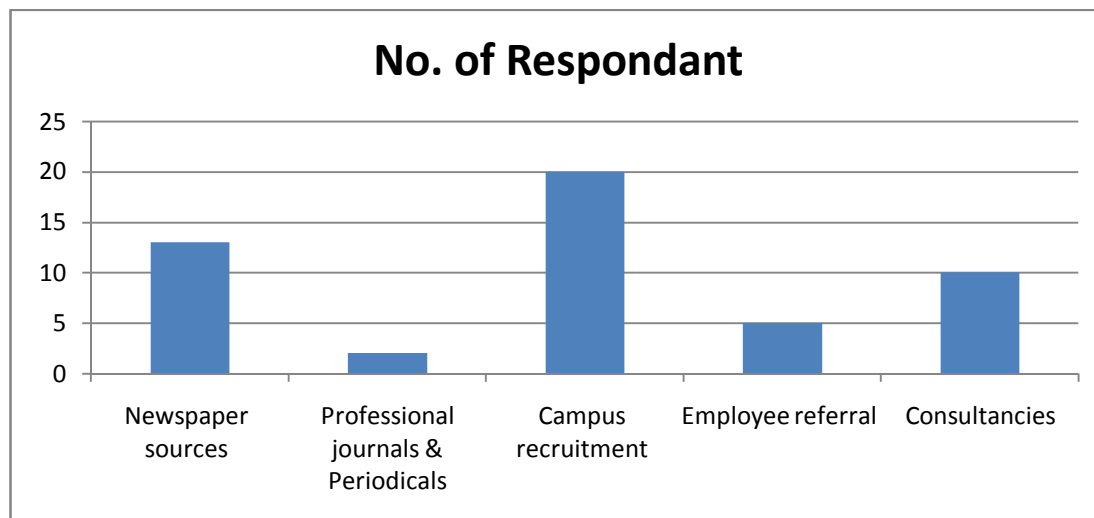
Research Methodology

In this research I was collected primary data with the help of standard questionnaire, observation and interview. I prepared two standard questionnaires for already recruited employees and employers in industry. A sample of 50 employees is selected and analysis has been done by questionnaire.

Data Analysis and Interpretation

1. Source of recruitment followed in the selected industries

Source of recruitment	No of Respondent
Newspaper sources	13
Professional journals & Periodicals	02
Campus recruitment	15
Employee referral	10
Consultancies	10
Total	50

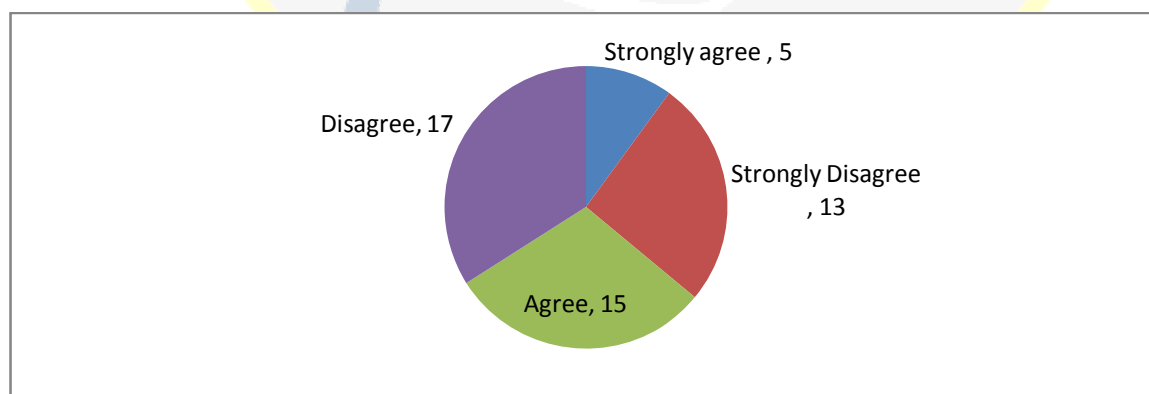


Interpretation:

From the above bar diagram, we observed that 13 members of total respondents are recruited through newspapers, 02 members of total respondents are recruited with help of Professional journals & Periodicals, 15 members of total respondents are recruited by campus recruitment, 10 members of total respondents are recruited through employee referral, 10 members of total respondents are through consultancies.

2. Do you agree that a good recruitment policy plays important role in industry?

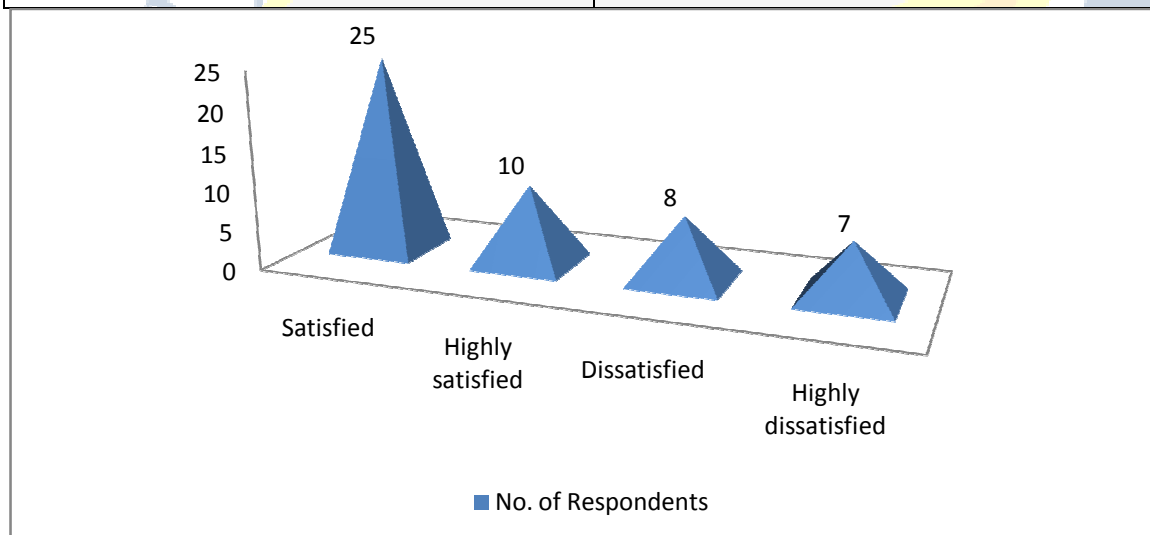
Particulars	No of respondents
Strongly agree	13
Strongly Disagree	05
Agree	17
Disagree	15
Total	50



From the above pie chart, we can observe that, 5 members of total respondents are strongly agreed that a good recruitment policy plays important role in industry, 13 members of total respondents are strongly disagreed about the policies of industry, 15 members of total respondents are agreed that the good recruitment policy important role in industry, 17 members of total respondents are disagreed that a good recruitment policy plays important role in industry.

3. Level of satisfaction with the present recruitment process in ACC Cement Industry

Particulars	No. of Respondents
Satisfied	25
Highly satisfied	10
Dissatisfied	8
Highly dissatisfied	7
Total	50



Interpretation:

From the above graph, we can observe that 25 members of total respondents are satisfied with the present recruitment process followed in ACC Cement, 10 members of total respondents are highly satisfied with the present recruitment process, 8 members of total respondents are dissatisfied with the present recruitment process, 7 members of total respondents are highly dissatisfied with the present recruitment process followed in ACC Cement.

Conclusion and Suggestions

Recruitment is play important role for every organization from above analysis we observed that recruitment process of ACC Cement is fair and transparent. They fill vacancy internally as well as externally; they also used recent trends of recruitment. Most of candidates are recruited through campus interview. Employees are satisfied with present process of recruitment, they

agree with various policies of company. A Committee of officers called the Central Recruitment Committee handles the entire recruitment process comprising screening of applications, preliminary short-listing, interviews and final selection.

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**Study of present Status OF sOLID WASTE DUMPING Sitesand aerobiological Study for
bioaerosols near and aroundthe Landfill sites in delhi**

Verma S. R.* and Chaudhari P.R. **

National Environmental Engineering Research Institute

Nehru Marg, Nagpur 440020 (India)

Present Address:

*AnandNiketan College, Anandwan, Warora, Maharashtra

sanyogitaverma15@gmail.com

**Grass Roots Research and Creation India (P) Ltd., F-375, Sec 63, Noida 201301 (U.P.)

pr.chaudhari66@gmail.com

Abstract:

With the ever-increasing population, there is rise in amount of solid waste generation. Such unscientific solid waste dumping sites lead to environmental pollution of air, water and land leading to health risks. Delhi is the largest urban area and capital of India. The population of Delhi is increasing and concomitantly the city is facing the problem of solid waste generation and disposal. Present aerobiological study have been carried out in the vicinity of solid waste dumping sites in Delhi, which are now surrounded by residential areas.

The solid waste landfill sites selected for study from Delhi area were at Gazipur, Bhalswa, Okhla and Jaitpur. The sampling sites were selected with reference to prevailing wind direction that is 500-mU/w to landfill site, 0-m D/w(D/w) to landfill site, and 500-mD/w(D/w) to landfill site. Andersen sampler was operated at 25 litres/min for 20 seconds using vacuum pump powered by electricity. After exposure, plates were incubated without further treatment. Numbers of colonies isolated on all plates were counted and expressed per m³ of the air.

The study indicates the presence of pathogens and pathogen indicator species such as *Staphylococcus aureus*, actinomycetes and fungal species in solid waste dumping site. Fungal species were the dominants among the bioaerosols. However, the people can reside safely beyond 500 m from the border of the landfill site.

Keywords: Solid waste, Dumpling sites, Aerobiological study, microorganisms, Bioaerosols, landfill sites

Introduction

In most of the developing countries, municipal solid waste is still disposed off unscientifically on open dumpsite. This system is outdated and inefficient. These solid waste dumping sites are found both within and on the outskirts of urban cities and are found to be surrounded by residential area (Saxena *et al* 2010., Zhu *et al* 2008). With the ever-increasing population, there is rise in amount of solid waste generation. Such unscientific solid waste dumping sites lead to environmental pollution of air, water and land leading to health risks (Delhi University, 2008). Some workers (Harrigan and McCance 1990., Obira *et al* 2002., Ranjan *et al* 2014) studied the environmental and health implications of solid waste disposal sites to people living in close proximity of waste dumpsites. Some of the adverse impacts are health deterioration, accidents, and flood occurrences. The surrounding area becomes invaded by excessive

number of scavenger animals which spoil the aesthetics of the area apart from other nuisances. The people, especially children, are affected by flies, mosquitoes and rodents, which are also disease transmitters leading to public health problems viz. gastrointestinal, dermatological, respiratory, genetic and several other kind of infectious diseases. The problem get worst when the solid waste is contaminated with medical waste with increasing risk of infection with Hepatitis B and HIV, and other related diseases, or agriculture and industrial waste exposing people to chemical and radioactive hazards (IHPH 1982., NEERI 1996).

Dusts blown by wind from dumping site carries all the microbiological and chemical hazards along with it and affects the people in downwind direction. The different microbial forms of aeromicrobiota generating from dump site are hazardous to plants, animals, and human being (Stainer *et al* 1989., UNEP 2005). This aeromicrobiota also change in quality and quantity as per mature of solid waste and meteorological conditions.

Aerobiological studies have been carried out in different environments of urban, rural and industrial areas in India, however, only few workers have been carried out around solid waste dumping area in India (Ashwani Kumar 2013; Thirumala *et al.*, 2012; Nyuyen *et al* 2011). Delhi is the largest urban area and capital of India. The population of Delhi is increasing and concomitantly the city is facing the problem of solid waste generation and disposal. Present review and aerobiological study have been carried out in the vicinity of solid waste dumping sites in Delhi, which are now surrounded by residential areas.

Material and Methods

The solid waste landfill sites selected for study from Delhi area were at Gazipur, Bhalswa, Okhla and Jaitpur (Figure 1). Out of these, landfill sites at Gazipur, Bhalswa and Okhla are existing working old sites while Jaitpur is newly commissioned landfill site. The aerobiological observations on microbiota were taken by six stage Andersen sampler (Andersen, 1958) near landfill sites in summer season, 2012. The sampling sites were selected with reference to prevailing wind direction that is 500-mU/w to landfill site, 0-m D/w (D/w) to landfill site, and 500-m D/w (D/w) to landfill site. Andersen sampler was operated at 25 litres/min for 20 seconds using vacuum pump powered by electricity. After exposure, plates were incubated without further treatment. Numbers of colonies isolated on all plates were counted and expressed per m³ of the air.

The pathogenic as well as indicator microbial groups viz. total heterotrophic plate count (HPC), *Staphylococcus aureus*, actinomycetes and fungi were selected for studying the biopollutants in the environment around the solid waste dumping sites in Delhi.

Results and Discussion

Climatic Conditions

The climate of Delhi is monsoon-influenced humid subtropical bordering semi-arid. The peak temperature in May is close to 45°C (114°F) with mean temperature near 32°C (90 °F). Average Relative Humidity in April and May is 34% and 33% respectively. Average precipitation in May is 25 mm. These conditions are favorable for microbial degradation of solid waste and dispersal of microbes from solid dump into the air.

Municipal Solid Waste Disposal

Delhi is the fast growing city in India with increasing generation of solid waste. Many solid waste dumping sites were used for land disposal of solid waste in the city. Already 16 landfill sites have been filled up with garbage of Delhi since 1975 in various parts of Delhi. These are being developed into parks, forests, gardens, and other useful activities. The Millennium Park in East Delhi is an ideal and beautiful example of a landfill that was converted into a park. This park is today frequented by people from not just East Delhi but other areas also (Anand, 2010).

Presently there are three landfills in operation in Delhi situated in different zones in different directions as shown in Figure 1. Ghazipur is the oldest as well as biggest and receive large amount of waste. The three landfill sites are receiving garbage from all the 12 zones of Delhi including NDMC (New Delhi Municipal Council), Delhi Cantonment Board, Delhi Metro Rail Corporation (DMRC), and Agricultural Produce Market Committee (APMC). The city produces over 6000 tonnes of solid waste daily. There is lack of any scientific management in place, except daily spreading and compaction of waste. Jaitpur (26 acres) was a new proposed landfill site where the waste was started to be disposed off.

Ghazipur landfill site in east Delhi which was commissioned in 1984, receives maximum waste at 2200 TPD including construction and demolition waste. The waste accumulation has reached a maximum height of about 30.5 metres at a few places and an average height of about 25.5 meters above ground level. Presence of poultry and fish market and slaughter house towards the northern boundary of the landfill site has led to a significant amount of animal waste being dumped here. Similarly, the Okhla Landfill site in south Delhi also reached a maximum height of 40-metres at a few places. Bhalswa landfill site in North Delhi, spread over 26.22 ha, receives 1500 tons of municipal waste plus 700 tons of construction and demolition waste by more than 500 trucks.

Aerobiological Quality of Air

The observations recorded in aerobiological studies are presented in Table 1. The counts of CFU/m³ air of heterotrophic microorganisms, *Staphylococcus aureus*, actinomycetes and fungi were recorded from U/w and D/w areas of four landfill sites. Observations were taken in May 2008. In the U/w control environment of all the four landfill sites, the range of colony count (CFU/M3) of HPC, *Staphylococcus aureus*, actinomycetes and fungi was 1133-4189, 0-11, 24-48 and 116-827 respectively, indicating dominance of HPC followed by fungi, actinomycetes and *S. aureus* in the air of Delhi. When the waste is dumped on land, soil microorganisms including fungi and bacteria readily colonize the waste carrying out the degradation and transformation of degradable organic materials in the waste.

Heterotrophic Plate Count (HPC): The term Heterotrophic Plate Count (HPC) includes all bacteria that use organic nutrients for growth. Under this broad definition, primary and secondary bacterial pathogens are included viz. coliforms (*Escherichia*, *Klebsiella*, *Enterobacter*, *Citrobacter*, *Serratia*). Though, there is insufficient clinical and epidemiological evidence to conclude that HPC bacteria (in water) pose a health risk, for this reason it is not possible to establish health-based standards for HPC bacteria (Allen *et al.*, 2004).

The HPC (CFU/m³) in U/w Control of four landfill sites was recorded to be 1133, 1633, 3273 and 4189 in Jaitpur, Okhla, Bhalswa and Ghazipur respectively, indicating increasing degradation of ambient

air quality as Jaitpur<Okhla<Bhalswa<Ghazipur. This is due to insanitary conditions in the respective areas and irregular removal, collection and disposal of solid waste.

The dynamics of HPC near and around the landfill sites is shown in Table 1 and Figure 2. Highest %increase in HPC was observed at 0-m D/w landfill site. Bhalswa landfill showed lowest % increase in HPC and then increasing in case of Ghazipur landfill, Okhla Landfil and Jaitpur landfill. Bhalswa landfill has got good management of landfill site thus % increase in HPC count is low. Ghazipur landfill site has also good management, however due to solid waste of animal origin coming to this landfill from fish market, slaughter house and poultry, the HPC count is higher. Okhla and Jaitpur landfill site are poor in management thus showing higher %increase in HPC. The HPC count was considerably reduced at 200-m D/w to landfill site and it is more or less normal at 500-m D/w.

Staphylococcus aureus: *S.aureus* is the most common cause of infections and is responsible for various diseases including mild skin infections, invasive diseases (wound infections, osteomyelitis, bacteremia with metastatic complications etc.) and toxin mediated diseases (food poisoning, toxic shock syndrome (TSS), scaled skin syndrome etc.).

The aerobiological observations on *S. aureus* are shown in Table 1 and Figure 3. *S aureus* was not recorded at Jaitpur landfill site. Highest %increase in *S.aureus* was observed in case of Bhalswa landfill while the %increase in the count was almost similar in case of Ghazipur and Okhla landfills. Figure 4 shows considerable improvement in air quality with respect to *S. aureus* at 200-m D/w and normal count at 500-m D/w to landfill.

Actinomycetes: Actinomycetes is the group of Gram positive, generally facultative anaerobic bacteria. They are both abundant in soil, solid waste and aquatic environment. They are of medical and economic importance. It is noted for filamentous and branching growth pattern that results in an extensive colony or mycelium. The mycelium in some species may break apart to form rod- or coccoid-shaped forms. Many genera also form spores; the sporangia may be found on aerial hyphae on the colony surface or free within the environment. They play an important role in soil ecology and solid waste dumping site. They produce number of enzymes that help degrade organic plant material, lignin, and chitin. As such, their presence is important in the formation of compost as well as in solid waste dumping site. Many actinomyces species are opportunistic pathogens of humans and other mammals, particularly in the oral cavity. The genus is typically cause of oral-cervicofacial disease. It is characterized by a painless “lumpy Jaw”. Another form of actinomycosis is thoracic disease. Symptoms include chest pain, fever, and weight loss. Therefore they are good indicator of pathogenic impact of solid waste dumping site.

The dynamics of actinomycetes around the landfill sites is shown in Table 1 and Figure 4. The increase in actinomycetes above U/w colony count at 0-m D/w of all four landfill sites is observed to be more or less similar. This indicates that the actinomycetes is more ubiquitous in occurrence in solid waste landfill sites and gets easily air borne by natural or anthropogenic disturbance. The %increase at 0-m D/w ranged from 102% to 123% over control U/w level. There was considerable reduction in colony count at 200-m D/w showing %increase ranging from 25% to 65%.Jaitpur, Ghazipur and Bhalswa showed more reduction as compared to Okhla landfill. The actinomycetes count decrease to below normal control U/w levels at 500-m D/w to landfill sites.

Fungi: Bioaerosol concentrations of fungi around the landfill site are shown in Table 1 and Figure 5. The landfill sites at Ghazipur, Okhla and Jaitpur showed considerably higher incidence of fungal



bioaerosol than that of Bhalswa at 0-m D/w. This again may be correlated to the solid waste mixed with solid waste of animal origin at Ghazipur and relatively poor management of landfill site at Okhla and Jaitpur. The fungi bioaerosol was observed to be considerably reduced at 200-m D/w to all landfill sites and coming to normal below control levels at 500-m D/w to landfill. Fungal spores can cause severe allergies in humans. Fungi cause adverse health effects including infections, hypersensitivity disorders and toxic /irritant effects from their by-products.

Conclusion

Solid waste dumping sites in developing countries are mostly managed in unscientific manner and thus, rich microbial aerosols are released from the landfill sites posing threat to public health of people residing in nearby area. However, the present study indicates that the people can reside safely beyond 500 m from the border of the landfill site.

Acknowledgement

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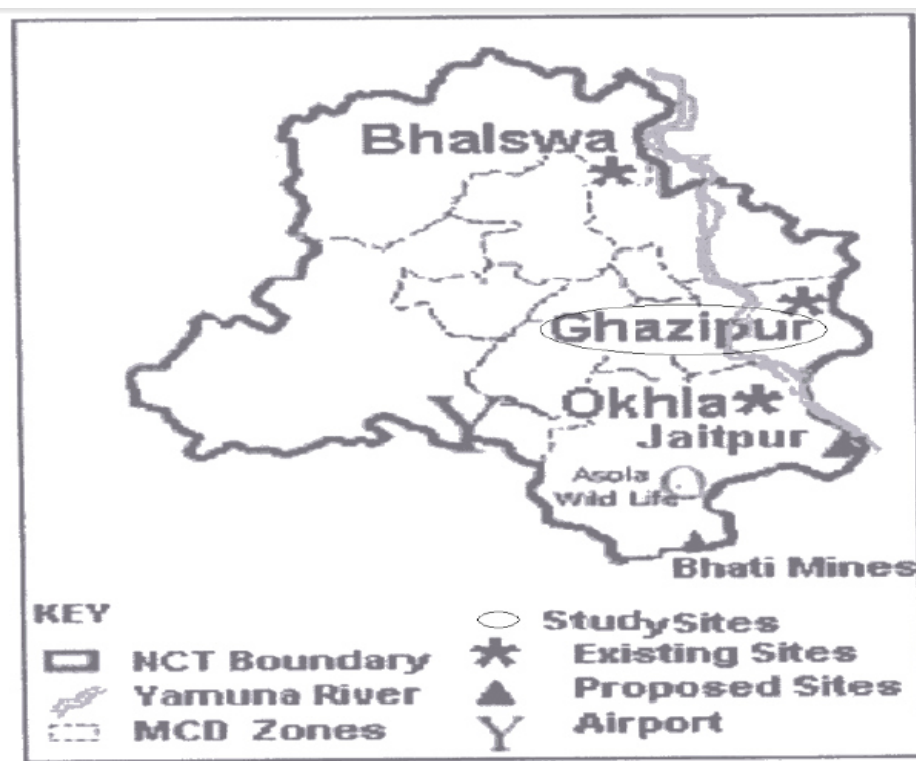
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Table 1: Aerobiological Quality around Landfill Sites in Delhi

Microbial Group	Landfill site	CFU/m ³ of air at different sampling points at landfill sites			
		Upwind	0m Downwind	200 m Downwind	½ km Downwind
Heterotrophic microorganism	Ghazipur	4189	10599	4822	3962
	Bhalswa	3273	4834	4237	2980
	Okhla	1633	4788	3298	1422
	Jaitpur	1133	3878	2262	1089
Staphylococcus aureus	Ghazipur	11	36	15	4
	Bhalswa	7	27	10	5
	Okhla	4	14	6	2
	Jaitpur	0	0	0	0
Actinomycetes	Ghazipur	48	98	60	42
	Bhalswa	44	93	55	27
	Okhla	26	58	43	23
	Jaitpur	24	32	28	10
Fungi	Ghazipur	827	2208	1168	414
	Bhalswa	654	973	746	622
	Okhla	414	948	697	398
	Jaitpur	116	234	158	106

- Average of three observations at Gazipur, Bhalswa and Okhla
- Average of two observations at Jaitpur
- CFU – Colony Forming Unit



Source: Anand, 2010

Figure 1: Four Landfill Areas of Delhi Selected for Study

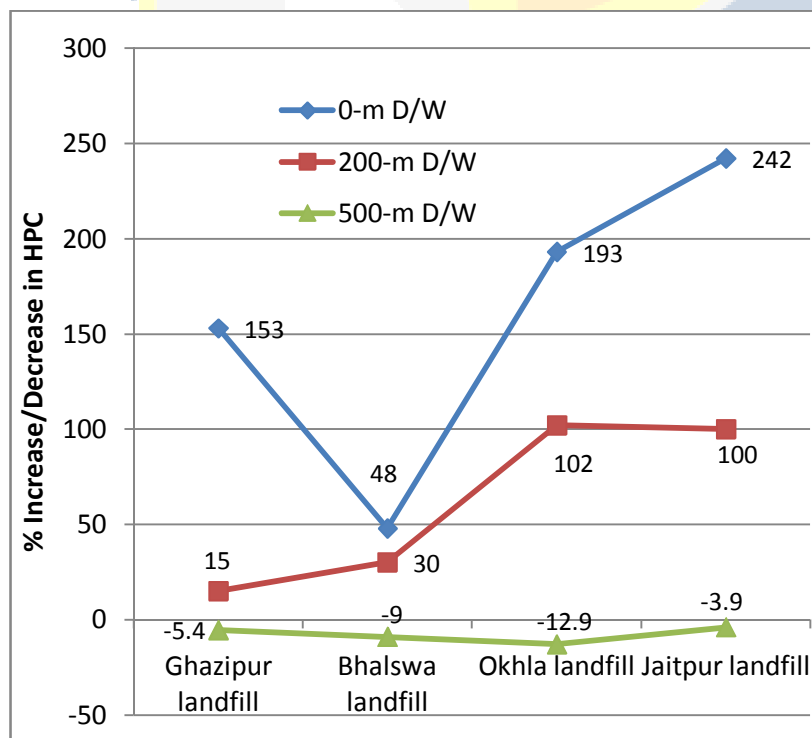


Figure 2: Increase / Decrease in HPC Bioaerosol near and Around Landfill Sites

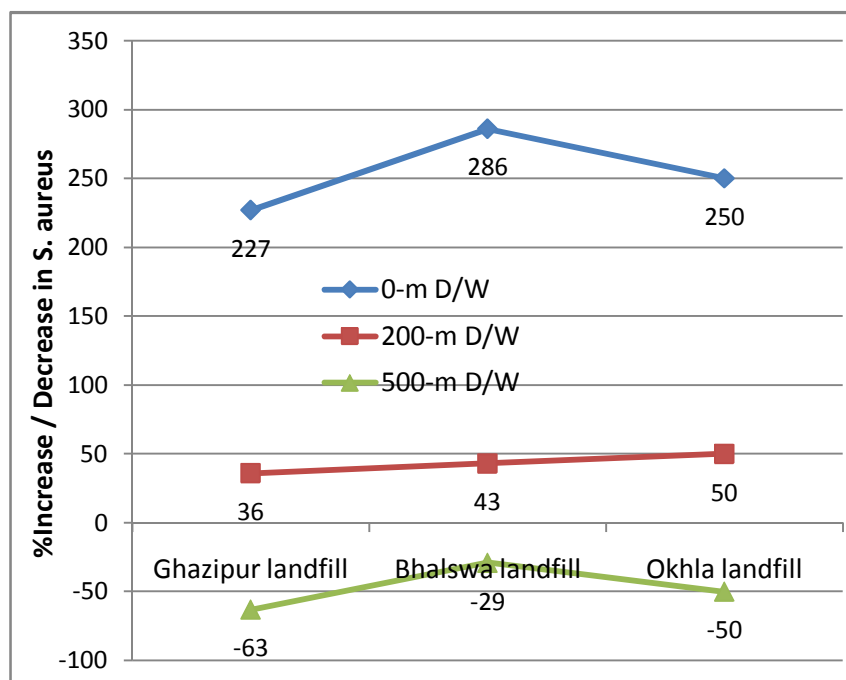


Figure 3: Increase / Decrease in *Staphylococcus aureus* Bioaerosol near and Around Landfill Sites

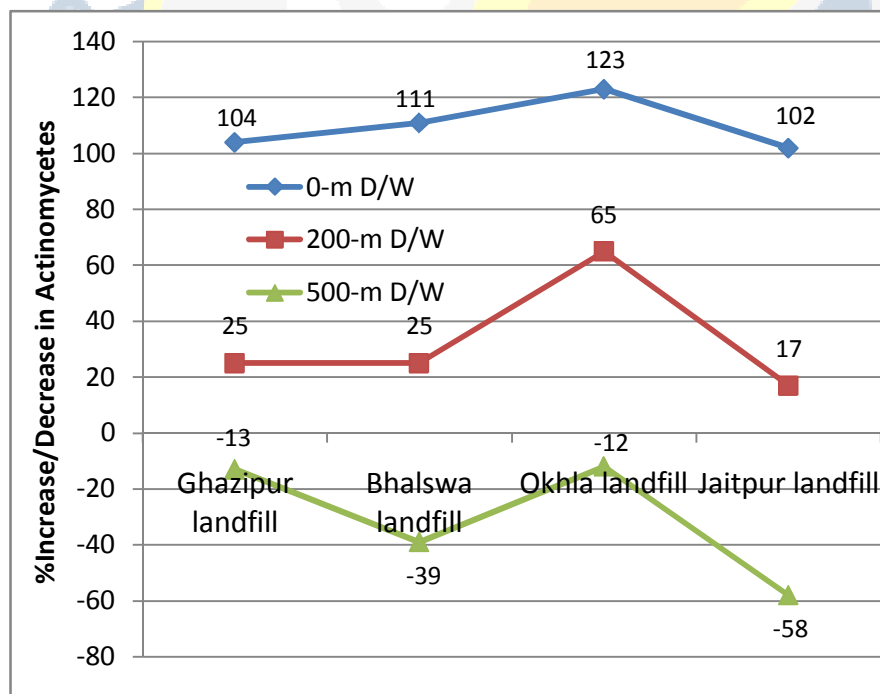


Figure 4: Increase / Decrease in Actinomycetes Bioaerosol near and Around Landfill Sites

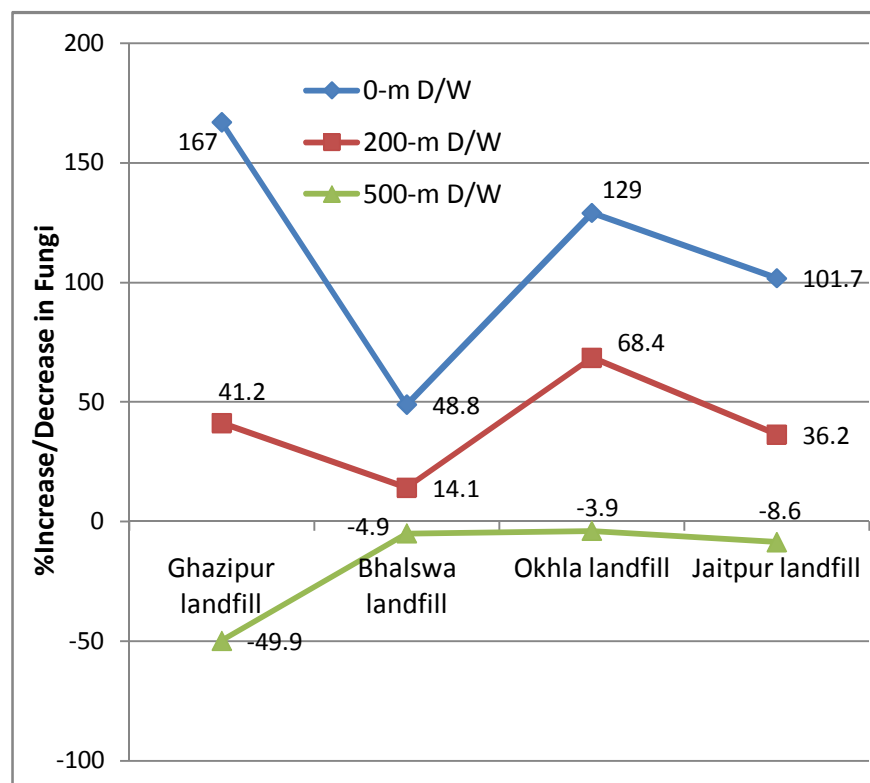


Figure 5: Increase / Decrease in Fungi Bioaerosol near and Around Landfill Sites

Ecological and Lateritic Status of Grus Antigone Antigone (sarus crane) with special reference to Indian Vedic Literature

Dr. D. R. Gabhane

Samarth Mahavidyalaya Lakhani

Abstract-

Sarus crane is the tallest flying bird belongs to the family of large birds. It lives in wetland areas in many parts of the world but the population of it becoming less and less day by day. In India its population is confined to Rajasthan, Uttarpradesh, Gujrat, Haryana, Bihar and eastern part known as Vidarbha of Maharashtra specifically in Gondia and Chandrapur Districts. Being included in the Red list of IUCN, there is a urgent need to conserve this bird and it's habitat.

Sarus always to be found in pairs usually accompanied by the last hatching young. Sarus cranes are essentially birds of well watered open plains and avoid hills, forest country and deserts lands. Their flight is powerful but rise slowly and seldom fly at any great height from ground. The call of sarus is a fine trumpet uttered morning and evening.

The word Sarus is to be derived from the word Sarasa meaning 'the lake'. The word found in **Rigveda**. Sarus is also known as **Kraunch**. It also in Indian Vedic Literature specially in Ramayana and Mahabharata and also in Sanskrit Literature. The bird is ecological important as it is the best indicator of balanced ecosystem of the habitat where it is found. The Paper deals with such type of aspects in details.

Key words :- Rigveda , Sarasa, Krauncha, Ramayana.

Introduction –

Sarus crane (Grus antigone antigone) is flying iconic species of freshwater ecosystem near close proximity to humans. It is basically a wetland bird and prefers nesting in a marshy land. a fully mature Sarus crane is 4 to 5 ft. in height and during flight it spreads wings to 8ft. long. Both the sexes are similar but male is slightly larger than female.

There are 9000 species of birds of which 1250 species of birds found in India. Sarus belongs to the family of large birds with long legs and a long neck. They live in marshy area in many parts of the world. South America and Antarctica are the only continents with no cranes. Most cranes that live in the Northern hemisphere migrate south each far from nesting grounds in the North. More species of cranes live in Africa, Asia and Europe than in North America. Their population is more than 1000 in India and Australia, but less than 1500 in Bangladesh, Nepal and Pakistan. Their breeding occurs in Cambodia, Myanmar, Vietnam also. There are about 15 species of cranes. According to detailed survey of status of sarus crane undertaken by Prakash

Gole, sponsored by Ministry of Environment and Forests, Govt. India, it has lost its hold over most of its earlier distribution range. Gole (1989) stated in the report on the status and Ecological requirement of Sarus crane that its area of distribution may be redrawn between Porbandar to Hissar in the west, passing through Pilibhit in north to Gorakhpur in the east. In India it includes plains of Northern, North western and Western India and Western half of Nepal Tarai. It is most common in U.P. Rajasthan, Gurat and Haryana and less in Bhihar & M.P. Sarus crane *Grus antigone* once had its distribution range from the Himalayan foothills to the Godavari plain in the south.

Today their distribution is fragmented (Vyas Rakesh, 2002). The population of Indian Sarus (*G. Antigone*) is 8000 to 10000, Eastern Sarus (*G. sharpii*) is 500 to 1500 and Australian Sarus (*G. gillies*) is less than 500. The Sarus crane is a large bird requiring huge area for foraging and breeding.

Discussion :-

Lateritic Status of *Grus Antigone Antigone* (sarus crane):-

The earliest mention of Sarus in the *Ramayana* in third century BC. Valmiki wrote Sarus as Krouncha .

|*ma nishada pratthishtaam twamagama shashwathi samaaha*|

|*yeth krouncha mithuna dekham ava dehi kama mohitam*|

Sarus crane has religious importance in epic Ramayana. The word Sarus is to be derived from the word Sarasa meaning 'the lake'. The word found in **Rigveda**. Sarus is also known as **Kraunch**. It also in Indian Vedic Literature specially in Ramayana and Mahabharata and also in Sanskrit Literature. The diary of Mughal emperor Jahangir written in the late 16th century also mentioned about Sarus. Buddhist scripture also talk about an incident of a Sarus Crane hunting observed by Gutam Buddha in Lumbini.

The oldest reference to Cranes by Vajasaneyi Samhita as

'Let the crane be offered to Indra and Agni.'

The word Krauncha appears to have been derived from the verb Krunc means 'to call' or 'to make sound'. The **Amarkosh** gives Synonym **Krun** derived from the same root. In the Skanda purana there is story about demon namely krauncha. In Great work of Mahakavi Kalidasa i.e. **Meghdoot** there is reference to **Krauncharandhra**. In **Raghuvamsha** of Kalidasa it is

mentioned that which means “At times raising up their faces at the Sarasa birds, who sweetly warble, and by flying together in a line seemed to form an archway without supporting pillars.” In *Mahabharata* the Sarus was said to be the son of **Garuda**. In *Mrigapakshishastra* it is also mentioned that which means The Sarus Crane are very soft to touch and their call is melodious. These birds give pleasure to eyes.

Ecological Significance of Grus Antigone Antigone (sarus crane) :-

The Sarus crane are essentially birds of well watered open plains and avoid hills forest country and desert lands. It is found in shallow wetlands cultivated fields, and wet grasslands. Sarus Cranes are social birds. They usually seen in pairs or in small family groups. It is omnivorous bird feed on marshes, berries, seeds, roots, insects, frogs, reptiles, butterflies, grasshoppers. They flies with straight neck, and long leg trailing behind them. Their flight is very powerful but they rise slowly and seldom fly at great height. It is always in pairs usually accompanied by the last hatched young. The bird is ecologically important as it is the best indicator of balanced ecosystem of the habitat where it is found.

It is an ecologically significant bird and feeds on the pests of crops. So it help to the farmers so it is a friend of farmers. But the mark of civilization has pushed this bird to the margin of existence. The bird is endangered due to destruction of its habitat by the encroachment of wetland area, pollution, hunting, use of insecticides and pesticides in the crop fields. The eggs of Sarus crane are stolen to make medicine to cure cattle eye diseases.

Threats to Sarus crane:-

The local people and farmers do not know the importance of this bird. The eggs of the Sarus crane stolen and consumed by local people, their poaching of this bird of meat, there is lack of food for cranes, use of insecticides and pesticides for agriculture responsible for the threats to this bird. Destruction of their breeding area (i.e. nest) is the chief threat to this bird. The bird is included in schedule – IV according to wildlife (Protection) act, 1972 and classified as Vulnerable and included in Red Data List of International Union Conservation of Nature (IUCN). According to D. Rajshekhar and others (2008), there is need to create awareness amongst the local people for the conservation of wetland area through environment education, outreach programmes targeting the village communities & other stakeholders of ecosystem. The conservation of wetlands and their management is crucial factor for the survival of Sarus crane. Due to this, the distribution of

this bird is restricted. Their population is less and remarkably decreasing. So there is immediate need to conserve Sarus crane and its habitat for its healthy survival.

Material and Method

For the present work, preliminary information is collected by interviewing the local people of Gondia Bhandara and Chandrapur districts. The related literature is also surveyed through published work and INTERNET. Literature related to ancient India is also referred.

Result :-

From the above study the following observations are pointed out :-

1. Sarus crane has best indicator of balanced Ecology
2. It is friend of farmer as it feeds upon insects and pests of paddy.
3. The bird easily becomes familiar to the local people but very sensitive to small disturbance to its habitats.
4. Sarus has great status in Vedic literature.
5. This bird has also representation in mythological and historical literature.

Conclusions :-

From the above study it can be concluded that being vital status in ecology having unique status in Indian Vedic literature there is a need of strategic planning of conservation of Sarus crane regarding present status and its habitats. Also there is a need of conservation and rejuvenation of its past or left habitats of Sarus crane. The awakening amongst the local people of this region regarding conservation of the bird is a need for the survival of it. The farmers nearest to the habitats of Sarus crane should be given special financial assistance for the conservation of the bird. There is a need to explain the significance of the bird.

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