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SEA WATER WASTE SEPERATION SYSTEM

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ABSTRACT:

The main aim of the project to clean the sea water to design a sea water waste cleaning machine by the application of motor rotating and float mechanism. Nowadays almost all the manufacturing process is being atomized in order to deliver the products at a faster rate. Automation plays an important role in mass production. In this project we have fabricated the motor operated sea water cleaning machine. The main aim of the project is to reduce the man power, time consumption for cleaning the sea water. In this project we have automated the operation of sea water cleaning with help of a motor and chain drive arrangement. Some needs of automation are described below. Automation can be achieved through computers, hydraulics, pneumatics, robotics, etc., of these sources, pneumatics form an attractive medium for low cost automation.

RESUMEN:

El problema de los desechos debido a las actividades domésticas y turísticas en la isla de Pari es un problema que no se ha resuelto hasta ahora. Este estudio tiene como objetivo descubrir cómo mejorar la gestión del tratamiento de residuos por parte de la comunidad y cómo mejorar la gestión del tratamiento de residuos por parte del gobierno en la isla de Pari Kepulauan Seribu, en el norte de Yakarta. Los resultados de la investigación muestran que la participación de las comunidades locales podría implicar la separación de los desechos a nivel de los hogares, pero el papel del gobierno para proporcionar instalaciones e infraestructura para transportar los desechos desde la isla hasta el continente aún es muy bajo.

PALABRAS CLAVE: Ecoturismo, gestión de residuos, Isla Pari, medio ambiente..

INTRODUCTION

This project emphasis on design and fabrication of the sea water waste cleaning machine. The work has done looking at the current situation of our national sea waters which are dump with crore liters of sewage and loaded with pollutants, toxic materials, debris etc. The government of India has taken charge to clean sea waters and invest huge capital in many sea water cleaning projects like “Namami Gange”, ‘’Nchamperada Bachao’’ and many major and medium projects in various cities like Ahmadabad, Varanasi etc. By taking this into consideration, this machine has designed to clean sea water water surface.

Nowadays almost all the manufacturing process is being atomized in order to deliver the products at a faster rate. Automation plays an important role in mass production. In this project we have fabricated the remote operated sea water cleaning machine. The main aim of the project is to reduce the man power, time consumption for cleaning the sea water. In this project we have automated the operation of sea water cleaning with help of a motor and chain drive arrangement. Some needs of automation are described below.
Here using RF transmitter and receiver are to control the cleaning machine. Automation can be achieved through computers, hydraulics, pneumatics, robotics, etc., of these sources, pneumatics form an attractive medium for low cost automation.

The “Sea water waste clean-up machine” used in that places where there is waste debris in the water body which are to be removed. This machine is consists of waterwheel driven conveyer mechanism which collect & remove the wastage, garbage & plastic wastages from water bodies. This also reduce the difficulties which we face when collection of debris take place. A machine will lift the waste surface debris from the water bodies, this will ultimately result in reduction of water pollution and lastly the aquatic animal's death to these problems will be reduced. It consists of Belt drive mechanism which lifts the debris from the water. The use of this project will be made in sea waters, ponds, lakes and other water bodies for to clean the surface water debris from bodies. Similarly they are lots of problems of water pollution under Godavari Sea water.

Nasik which affect the acoustic, human life

& beauty of Godavari Sea water. The some photo graphs are shows the water pollution near Godavari Sea water Nasik. Waste water is defined as the flow of used water from homes, business industries, commercial activities and institutions which are subjected to the treatment plants by a carefully designed and engineered network of pipes. The biggest impact of cleaning the chemical wastes can cause respiratory diseases and it plays a challenging issue for the municipality officers Water damage is classified as three types of contaminated water.

They are clean water, gray water and black water. Clean water is from a broken water supply line or leaking faucet. If not treated quickly, this water can turn into black water or gray water, depending on length of time, temperature, and contact with surrounding contaminants. A drainage ditch is a narrow channel that is dug at the side of a road or field to carry away the water. Nowadays, even though automation plays a vital role in all industrial applications in the proper disposal of sewages from industries and sewage cleaning is still a challenging task.

Drainage pipes are used for the disposal of sewage and unfortunately sometimes there may be loss of human life while cleaning the blockages in the drainage pipes. The municipality workers are only responsible to ensure that the sewage is clean or not. Though they clean the ditches at the side of buildings, they can't clean in very wide sewages. The municipality workers need to get down into the sewage sludge to clean the wide sewage. It affects their health badly and also causes skin allergies.

LITERATURE REVIEW

1] M. Mohamed Idhris, M. Elamparthi, C. Manoj Kumar Dr.N. Nithyavathy, Mr. K. Suganeswaran, Mr. S. Arun kumar-" Design and fabrication of remote controlled sewage cleaning machine"-2017

The motive of the project is to automate the sewage cleaning process in drainage, to reduce the spreading of diseases to human. The black water cleaning process helps to prevent pest infestations by reducing the residues that can attract and support pests. It also improves the shelf life and sensory quality of food products. In the proposed system, the machine is operated with remote control to clean the sewage. Hence, this system avoids the impacts from the sewage waste and its harmful gases. This helps to prevent the mosquito generation from the wastage. The system has a wiper motor that starts running as soon as the set- up is switched on. Two power window motors are connected to the wheel and it is driven with the help of the remote control set-up. The process starts collecting the sewage wastes by using the arm and it throws back the waste into the bin fixed in the machine at the bottom. An arm is used to lift the sewage and in turn a bucket is used to collect them. The set-up runs even in sewage area with water (limited to a particular amount) so that the wastages which floats on the water surface also gets collected. The garbage which affects the drainage is also picked up and removed. This system has limited human intervention in the process of cleaning and in turn reduces spreading of diseases to mankind. Modern services are becoming polarized.

2] Mr.Abhijeet. M.Ballade, Mr. Vishal.S.Garde, Mr.Akash.S.Lahane and Mr.Pranav.V.Boob – "Design & Fabrication of sea water cleaning system"-2017

India is holy country & during lots of festival like ganesh visarjan, navratri durga puja & mainly Siahnsth kumbhmela there is lots of water pollution of Godavari Sea water at Nashik. The water pollution is very important problem in sea waters, ponds and water bodies near Godavari Sea water at Nashik. Due to increase in water pollution in the form to waste debris; it is hampering the life of aquatic animal and make their life in danger. Similarly sometimes the aquatic animal tends to eats surface waste debris considering it as a food; which ultimately cause the death of animals. Due to polluted water many skin diseases to human kind are observed. So that to reduce the water pollution we are trying to make sea water cleanup machine."Sea water cleanup machine" a machine which involves the removing the waste debris from water surface and safely dispose from the water body. The sea water cleanup machine works on hydropower to extract waste water debris, plastics & garbage from Godavari sea water at Nashik.

3] Mr. P. M. Sirsat, Dr. I. A. Khan, Mr. P. V. Jadhav, Mr. P.T. Date "Design and fabrication of Sea water Waste Cleaning Machine"-2017

This paper emphasis on design and fabrication details of the sea water waste cleaning machine. The work has done looking at the current situation of our national sea waters which are dump with crore liters of sewage and loaded with pollutants, toxic materials, debris etc. The government of India has taken charge to clean sea waters and invest huge capital in many sea water cleaning projects like "Namami Gange",

‘’Narmada Bachao’’ and many major and medium projects in various cities like Ahmadabad, Varanasi etc. By taking this into consideration, this machine has designed to clean sea water water surface.
Conventional methods used for collection of floating waste are manual basis or by means of boat, thrash skimmers etc. and deposited near the shore of sea waters. These methods are risky, costly and time consuming. By considering all the parameters of sea water surface cleaning systems and eliminating the drawback of the methods used earlier, the remote operated sea water cleaning machine has designed which helps in sea water surface cleaning effectively, efficiently and eco-friendly. The “Sea water waste cleaning machine” is used where there is waste debris in the water body which are to be removed. This machine consists of DC motors, RF transmitter and receiver, propeller, PVC pipes and chain drive with the conveyor attached to it for collecting wastage, garbage & plastic wastages from water bodies.

4] Pankaj Singh Sirohi, Rahul Dev, Shubham Gautam, Vinay Kumar Singh, Saroj Kumar- “Review on Advance Sea water Cleaner”-2021

Sea water water is used for irrigation which in return gives food to the people. They also maintain the ecology of region and bring prosperity. We made this project to clean the sea water. After implementing this project we can control the pollution of sea water it is very beneficial for our society. In this project turbine rotates by flow of sea water water and through the mechanical gear arrangement we arrange two conveyor belts. The first conveyor belt is used to pick solid waste from sea water and the second conveyor belt is used to draw solid waste out of sea water for solid waste management. Water is the source of life. It covers 70% of the Earth. But only a small portion of this precious natural resource is fit for human consumption. Out of the earth’s total water 97% is stored in oceans which are not fit for human consumption. The further 3% is stored in various sources like glaciers, sea waters, lakes and under-ground aquifers. Sea waters have a special place in the lives of the Indians. They consider sea waters to be sacred, take holy dip during Amavasya (new moon), Purnamasi (full moon) and on other religious occasions. Sea water water is used for irrigation which in return gives food to the people. They also maintain the ecology of the region and bring prosperity. An area without a sea water is considered to be poor. Unfortunately, during the past two decades water quality has deteriorated at a rapid pace. One of the major reasons for this is the solid waste being thrown to the sea waters, turning them to be a dirty drain. The Ganga and the Yamuna, the two most sacred sea waters of our country are no exception to it. Thousands of crores of rupees is being pumped to save the sea waters through various plans. Now days we can see sea water pollution is biggest problem for our planet so we introduce our society with an advance sea water cleaner. This is an advance sea water cleaning system. We make this project for looking to clean sea water.

5] Ndubuisi c. Daniels -“Drainage System Cleaner A Solution to Environmental Hazards”-2018.

The Drainage system cleaner is a machine which helps to protect the environment from different kinds of environmental hazards through the promotion waste management by the removal of garbage from the drainage system. These wastes when not removed end up settling in residential places where these wastes are burnt thereby causing climate change otherwise these wastes block the drainage systems thereby causing flooding. The machine is designed in such a way that it generates motion for its functions by itself through the action of running water thereby cutting out the dangers of the powering the machine by other sources of power because of the harshness of the rain on these other sources. The drainage system cleaner has three major parts which are the Propeller, the Cleaner and the Pan all make up for its effective functioning. The Drainage system cleaner was tested on three different days in the first day it rained in the months of September, October and November 2012 respectively. Based on the findings made after the test the Drainage system functioned well when there is maximum load. I therefore recommend the use of this system by various individuals, government companies and waste recycling companies for prevention of environmental hazards and also encouraging waste management. Drainage systems are blocked most times by garbage like nylon, plastic bottles, and empty cans which cluster together and find their way into the drainage systems. If these garbage are allowed to flow the will end up flowing down to recreational beaches used for tourism purposes making a scene not pleasurable to the eyes (Larsen et al 2009) else these garbage flow to residential sites where they are burnt in a way of getting rid of them, thereby causing climate change. Overflow of

water drainage system occurs when there is a blockage of an end of the drainage system forcing the water to find its way elsewhere apart from the mapped out drainage system, therefore the running water spills over the horizontal height of the drainage systems spreading to regions alongside the drainage system, thereby causing problems such as pushing down of structures such as fences, water logging of farm lands and residential buildings etc.

METHODS

Research Design

is research uses qualitative design, which is used to explore and understand the social and humanitarian aspects of individuals or groups. Qualitative research is research that intends to understand phenomena about what is experienced by research subjects such as behavior, perception, motivation, actions, etc. holistically and using descriptions in the form of words and language, in a particular context which is natural and by utilizing various scientific methods (Meleong: 2012).

e approach of this research is a case study where the case study is an exploration of a system or aparticular case from time to time, which involves resources that possess rich data and information related. e case study is selected since this research focuses only on waste management in Pari Island, Kepulauan Seribu. is research was conducted from January to May 2020. e location of the research was located in Pulau Pari. Pulau Pari is selected because of its waste management issue.

Research Instrument

e research instrument is done by interview, observation, and document study and the necessary data or information is obtained from a light source. Analysis of qualitative research data will take place along with other parts of qualitative research development: data collection and writing of findings.

Data Analysis Methods

data collected at the data collection stage is then

analyzed using the Miles and Huberman models. Data analysis, according to Miles and Huberman, is done continuously until reaching data saturation (Miles and Huberman: 1984, pp.20-30; Erwanto et al.: 2014, pp.1487). e data above analysis stages are applied in the research to answer the proposed research questions in the problem formulation.

RESULTS

A result is the final consequence of a sequence of actions or events expressed qualitatively or quantitatively. Possible results include advantage, disadvantage, gain, injury, loss, value and victory. There may be a range of possible outcomes associated with an event depending on the point of view, historical distance or relevance. Reaching no result can mean that actions are inefficient, ineffective, meaningless or flawed. Table 10.1 shows the experiment reading of the Project work result.

DISCUSSION

It was found that the cleaning capacity of the water waste collecting ranged from approximately 5 Kgs to 8 Kgs per hour. A model was proposed to describe the response of cleaning capacity, seen above the Table 10.1.It is more mechanical efficient for industrial apply compare with other commercial system.

Economic analysis of the system was conducted to determine the long term feasibility of operating the system. Net present worth calculations were undertaken based on typical usage patterns at weight lifting capacity range from 5 Kgs to 8 Kgs per hours. It was found that the total cost of operation (measured by net present worth) approximately

CONCLUSION

This project is fabricated on the basis of literature and research on different journal and paper relevantly available and fabricated in accordance so it can provides flexibility in operation. This innovation is easy and less costly and has lot of room to grow more economical. This project “Remote Operated Sea water Cleaning Machine” is designed with the hope that it is very much economical and helpful to sea water and Pond cleaning. On the basis of it design and estimating cost and availability it is very cheap and very useful for the society.

On Calculating and Experimenting the result are very satisfactory. Given motor has a power of 15 watt having 1 ampere/hour and providing battery of 30 watt having 2.5 ampere/

hour, it is estimated that project can work up to 2 hours on it full capacity but on real time working as seen the project can work up to 1.45 min after than it is required to charge the battery again. This drawback can overcome easily by using high power battery. As we can say by taking time ratio the project is working at 64.28 % from its design criteria which can be accepted as more research can be done in future to overcome with these problems.

On the basis of these result we can conclude that it is an innovative method of minimizing manual stress and thus very much reliably stabilizing the in the pond. The project carried out by us made an impressing task in the environmental purpose and it is very useful for the small scale works. Although this system able to collect the garbage from the lake with human intervention. The objective of the project was successfully achieved.

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