

# River Cleaning Machine

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**Abstract**—India is a holy country. There are lots of festivals like Ganesh Visarjan, Navratri Durga Puja & Sahansthkumbhmela because of these there is lots of water pollution of rivers & lakes. The water pollution is a very big problem in rivers, ponds and water bodies near rivers. Due to a gradual increase in water pollution in the form of waste debris; it is hampering the life of aquatic animals and making their life in danger. Similarly, sometimes the aquatic animals can eat the surface waste debris considering it as a food; which can cause the death of animals. Due to polluted water many skin diseases to human kind are observed. To reduce the water pollution we are trying to make a river cleaning machine. “River cleaning machine” a machine which is used to remove the waste debris from the water surface and safely dispose it from the water body. The river cleaning machine works on hydropower. It extracts waste water debris, plastics & garbage from the river.

**Keywords**—River Cleaning Machine, Hydropower, etc.

## 1. INTRODUCTION

The “River cleaning machine” is used in those places where there is waste debris in the water body which is to be removed. This machine consists of a waterwheel driven conveyor mechanism which collects & removes the floating waste, garbage & plastic waste from water bodies. This also reduces the difficulties which can be faced in the collection of debris. The machine will lift the waste from the water surface, this will result in the reduction of water pollution and the death of aquatic animals. It consists of a conveyor mechanism which lifts the debris from the water surface. This project will be useful for rivers, ponds, lakes and other water bodies for cleaning floating water waste debris. From this project we try to clean the surface water debris from the bodies.

## 2. LITERATURE REVIEW

The literature review is helpful for design, analysis and experimental testing of a river cleaning machine. This machine is manufactured on the basis of literature and research on different research papers & journals. It can be manufactured in such a way that it can provide flexibility in operation. This machine is easy and less costly and has a lot of area to grow more economical. This project “River Cleaning Machine” is designed with the hope that it is very much economical and helpful for river and pond cleaning. It is very cheap. It is very useful for the society. After calculations & trial on the machine the results are very well. On the basis of these results we can conclude that it is an innovative method of minimizing manual workload & stress. It is very much reliable for stabilizing the river. It is very useful for small scale areas. Although this system is able to collect the garbage from the river with human interaction.

## 3. PROBLEM STATEMENT

Water running through a water drainage system & waterways mostly carries along waste materials, most of which are non-biodegradable, which not only cause flooding but also climate change. The impurities present in water can cause hazardous disease.

## 4. OBJECTIVES

- To reduce the pollution in water bodies.
- To reduce the difficulty of removing floating waste debris on the water surface.
- To introduce automation in river cleaning.
- To improve the speed & reliability in operation.
- Improve the water quality of a stream or river.

## 5. CONCEPTUAL MODEL

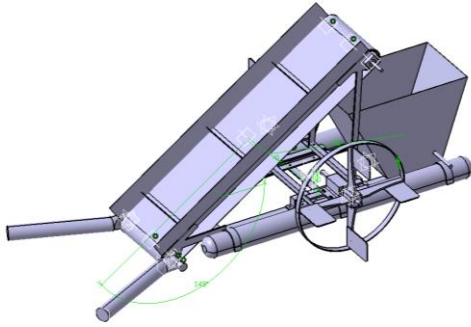


Fig.1.Conceptual Creo Model

## 6. WORKING

The main purpose of this machine is to pick up the waste debris from the water surface and dispose them in the container. It consists of an arrangement of the conveyor mechanism which is mounted on the shaft & bearings support. The shaft and bearing is mounted on the M.S angle frame. By using hydropower guide wheels are rotate; this power is transmitted to conveyor mechanism by using chain drives. The conveyor is move as well as it collects the water debris, waste garbage & plastics from water surfaces. When the machine is placed in the water the floating waste debris in water will be lifted & moves in upward direction. The waste debris will get collected in the container. In this way cleaning of water surface and safe collection of waste debris from water takes place. After collection of all wastage debris the container carried out of the river. In this way river cleaning will be takes placed. Fig.1 shows the Concept drawing of river cleanup system.

## 7. ADVANTAGES

- It is a non-conventional river cleanup system.
- It's initial & maintenance cost is low.
- System does not required skill worker.
- Proper coordination of mechanical operations can improve the control of machine.
- System is economical.

- Environment friendly system.

## 8. CONCLUSION

This machine is manufactured on the basis of literature and research on different research papers & journals. It can be manufactured in such a way that it can provide flexibility in operation. This machine is easy and less costly and has lot of area to grow more economical. This project "River Cleaning Machine" is designed with the hope that it is very much economical and helpful to river and pond cleaning. It is very portable and very useful for the society.

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