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Analysis of Waste Plastic and It's Safe Disposal Mechanism in Kashmir

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ABSTRACT: The generation of waste plastic is tremendously increasing year by year as use of new plastic waste items comes into existence with each passing day. Plastic being a non –biodegradable material takes thousand years to degrade in the ecosystem , and this non- biodegradable nature of plastic inturn leads to degradation of our ecosystem by means of decreasing the fertility of soil, generation of toxic gases like dioxins, furans on burning, Threatening of aquatic life etc. Also plastic adds 2% to global warming which is a big threat nowadays, hence safe disposal mechanism of waste plastic is need of an hour!

KEYWORDS : Kashmir, Waste plastic, Global warming, Safe disposal, Ecosystem

I.INTRODUCTION

Plastic is a versatile, lightweight, flexible, moisture resistant, strong and relatively inexpensive material. Those are the attractive qualities that lead to over-consumption of plastic goods, however, durable and very slow to degrade, plastic materials that are used in the production of so many products, ultimately becomes waste. Our tremendous attraction to plastic, coupled with an undeniable behavioral propensity of increasingly over-consuming, discarding, littering and thus polluting, has become a lethal combination. The disposal of plastic is one of the least recognized and most highly problematic areas of plastic's ecological impact. Ironically, one of the plastic's most desirable traits: its durability and resistance to decomposition is also the source of one of its greatest liabilities when it comes to the disposal of plastics. Present study aims at the analysis and safe disposal mechanism of waste plastic in Kashmir valley. Also the study aims at the harmful effects of disposing waste plastics in landfills, water bodies etc.



Fig 1. Waste plastic in Kashmir valley

II. STUDY AERA

Kashmir valley is about 100km wide and has an area of 15,948 sq.km. The Himalayas divide the Kashmir valley from ladakh while pi panjal range , which encloses the valley from the west and the south, separates it from the great plains of northern India. Along the north eastern flank of the valley runs the main range of Himalayas. The densely settled and beautiful valley has an average height of 1,850 meters (6,070 ft.) above sea-level but the surrounding par panjal range

has an average elevation of 5000 meters (16,000 ft.). Kashmir valley consists of 14 districts, out of which Srinagar is known as the “Heart of Kashmir”.



Fig 2. Map of Kashmir valley

According to census 2011, the Kashmir valley has a population of about 69,07,623 residents. Population wise Srinagar is the largest district of Kashmir valley with a population density of 703 per sq.km. The plastic waste generation in Kashmir is about 23094.78 million tonnes per year. Due to the presence of inadequate disposal techniques, the waste is mostly dumped near water bodies or along road side. The dumping of wastes in such inappropriate way leads hazards to an environment.

In this study analysis of waste plastic generation was done at central and northern parts of Kashmir including Srinagar, Baramulla, and Bandipora. After whole analysis, the effects of these wastes on surrounding ecosystem were summarised and the safe disposal methods were also recommended.

III. DATA COLLECTION AND ANALYSIS

River Jhelum and Asia’s largest lake known as Wular lake are the two major water bodies that surround these 03 districts. Due to lack of proper disposal mechanism in Kashmir almost every household dumps the rubbish on the banks of these two beautifully located water bodies. Majority of the plastic waste like polythene, PET water bottles, food wrappers, grocery bags, drink lids, straws and stirrers generated from various units of these districts was found to be dumped on the banks of these two water bodies. Some portion of waste plastic was also found in open fields and along road side. The plastic waste generated was analyzed for seven days and after seven days the waste was collected from these sites and was weighed on a balance. The purpose of the weighing was how much waste plastic generated was disposed off without any proper disposal mechanism.



IV. RESULTS AND DISCUSSION

Plastic waste collected from different locations of these two main water bodies after seven days and analyzed are shown as above

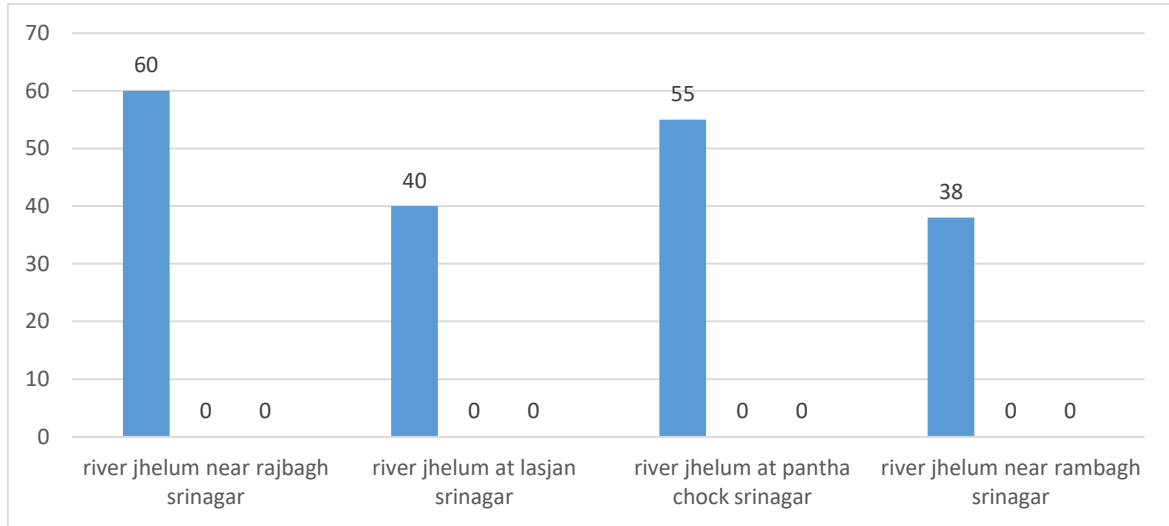
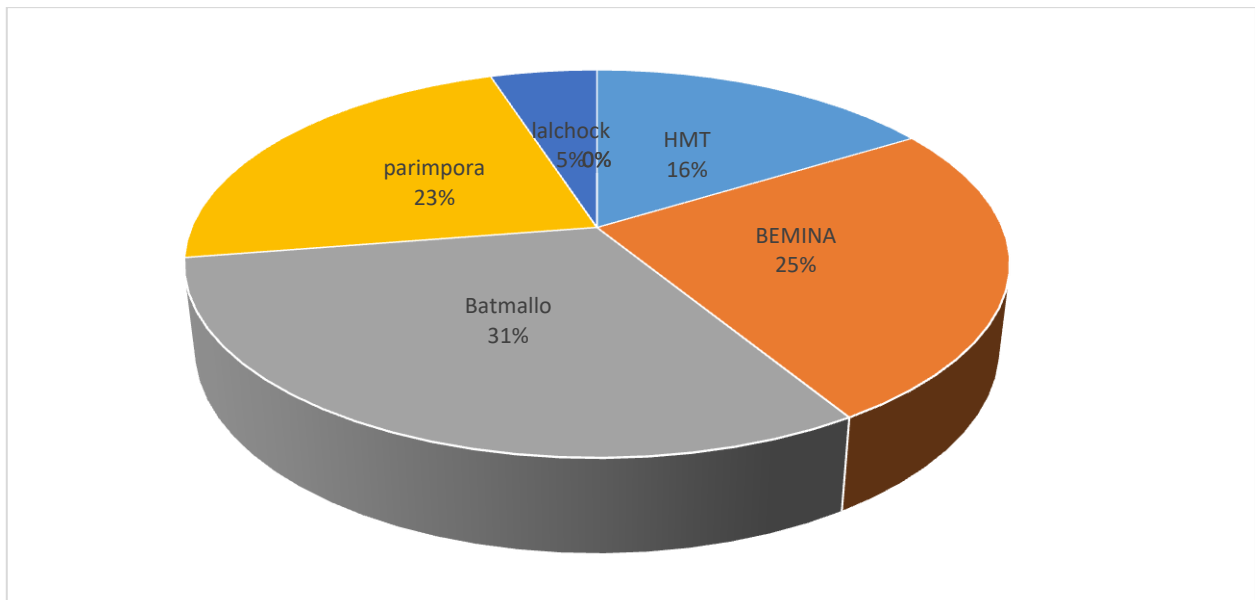


Fig 3 waste plastic production (kg/7days) at different locations of river Jhelum at Srinagar.

In Srinagar city some of waste plastic was found to be dumped along road side & in open areas, the analysis of which is shown as;



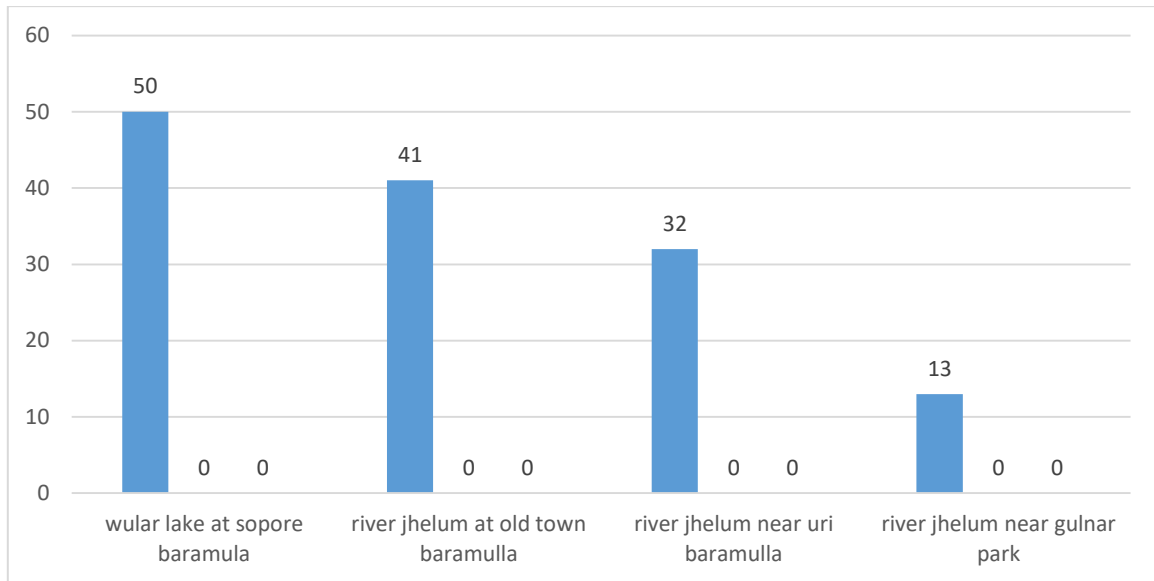


Fig 3 waste plastic production (kg/7days) at different locations of river Jhelum & wular lake at Baramulla.

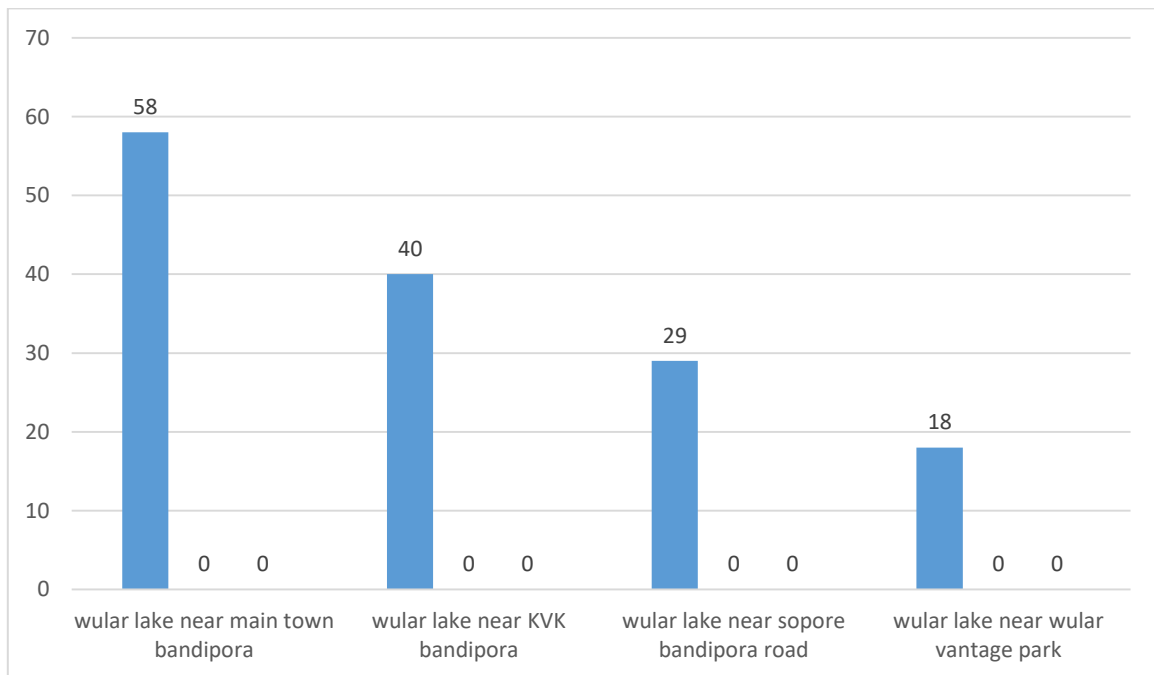


Fig 3 waste plastic production (kg/7days) at different locations of wular lake in Bandipora.

V. CONCLUSION

After the analysis it was concluded that the waste plastic dumped near these water bodies had put an adverse effect on the surrounding and as well as on the aquatic life present in these water bodies. It also has lead a way towards both soil as well as water pollution. The dumped wastes near these beautiful sites has degraded the quality of the nature as well. Hence dumping of the wastes near these water bodies should be stopped as soon as possible in order to save them from further degradation and pollution . Dumping of plastic wastes near the water bodies or in the water bodies is not the safe disposal mechanism as such , hence searching for safe disposal mechanism of these wastes in need of an hour. Plastic waste was dominant at Rajbagh , Lasjan Srinagar, batamallo Srinagar, main Baramulla and main town Bandipora because of the presence of various industrial units, hotels and large commercial activities.



VI. RECOMENATIONS

1. Use of waste plastic in road construction proves to be a safe disposal mechanism of waste plastic . Neither it creates any kind of pollution nor its hazardous in any way . so this mechanism should be adopted as early as possible. This method of disposal is eco-friendly in each and every way besides the other methods of disposal like landfilling, disposing in water bodies etc.
2. High moisture content resistance and flexibility are the two precious properties of waste plastic that governs its use in road construction without creating any hindrance.

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