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CHALLENGES AND OPPORTUNITIES TOWARDS AGRICULTURE WASTE MANAGEMENT IN INDIA

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Abstract:

Agriculture is the backbone of numerous developing nations and is one of the largest contributors to the resource sector. Millions of people exercise husbandry as their occupation in the world. Since husbandry is on a large scale, the Agriculture wastes generated cannot be ignored and proper care to be taken to putrefy it through the Agriculture waste operation program. The primary objective is to analyse the challenges towards Agriculture waste management in Bangalore and evaluate the level of Problem facing towards Agriculture Waste Management. A sample of 100 respondents was randomly collected from various people in Bangalore through interview schedule method. The collected data has been analysed using statistical tools such as simple percentage, chi-square test and Garett ranking test. The research concluded that there are huge opportunities for companies to utilize agricultural waste and produce different types of valuables from waste. With specific laboratory techniques, research and technology, we usher in a new era focused on proper waste management. Many farmers still do not know how to use the agricultural waste. Some farmers know about recycling and managing waste. Several policies have been implemented to minimize waste, increase revenue and create jobs to manage such waste.

Key Words: Agriculture, Waste, Management, People, Problems, Employees, Challenges, Etc.,

Introduction:

Agriculture is the backbone of numerous developing nations and is one of the largest contributors to the resource sector. Millions of people exercise husbandry as their occupation in the world. With the increase in the population, there's a rise in the demand for food and food products force, so numerous people are rehearsing ultramodern husbandry to meet the demand. Ultramodern husbandry uses the rearmost husbandry ways along with artificial diseases. People are also rehearsing theater husbandry using ultramodern styles. The demand for beast products similar as milk products and meat is also high and directors have set up ways to increase productivity and drop the unit cost of product. Chemicals similar as fossil energies, inorganic diseases, and fungicides, bettered genetics of product species are enhancing the increase in the product.

Husbandry and beast husbandry also leave out wastes after they're gathered. Since husbandry is on a large scale, the agriculture wastes generated cannot be ignored and proper care to be taken to putrefy it through the Agriculture waste operation program. However, nanosecond essence patches, medicinals, if the agriculture wastes aren't disposed of duly they can be dangerous to the terrain and mortal beings as they contain colorful chemicals. When diseases are applied to the crops nutrients are absorbed by them and other accoutrements are generally rendered inoffensive in the soil. The purpose of the waste operation program is to cover the terrain and living organisms by keeping ordure and defiled waters out of face and groundwater (Water Technology). It should be assured that the operation of ordure nutrients to farmland similar that nutrients are available in the right proportion.

Generally, after crop accoutrements like straw, sugarcane trash, shops, lawn, etc are used for beast feeding whereas remaining like feedings, sauces, and weeds are generally dried and burned in the field, or else growers will leave the remaining in the field as it's for several days. This sometimes begets anaerobic condition and leads to bad smell and come the Mecca for numerous microorganisms which may also spread conditions. After harvesting of the crops, the dry waste generated is burnt by the growers which emit smokes and ashes into the atmosphere which causes air pollution. It's parlous action as there are chances of catching fire due to the natural wind inflow which may lead to disaster. Thus proper and planned operation of solid wastes in the agriculture field and Agriculture processing assiduity is necessary.

The introductory result for agriculture waste operation is compost. Vermiculture is biotechnology for converting waste into compost. Agriculture waste contains biodegradable hemicellulose and cellulose accoutrements, upon corruption they give rich nutrients to shops. Cowdung can be used as a ordure and is generally available in pastoral areas as it's deduced from the beast and is rich in nutrients and microorganisms.

Presently, about 960 million tonnes of solid waste accoutrements are generated annually in India as a by- product during artificial, mining, external, Agriculture, and other processes. Of this around 350 million tonnes are Agriculture wastes and are organic in nature, 290 million tonnes are an inorganic waste of artificial and mining sectors and about4.5 million tonnes are set up dangerous in nature.

Sweats are also made to convert Agriculture wastes to produce energy through biogas. This is going to be an unborn trend as people are getting apprehensive of renewable energy sources. Husbandry conditioning produce waste, still, it isn't the only source. In fact, food chains, and other husbandry ways can produce Agriculture solid wastes. At every step of the food chain, there will be destruction. These include

- Food and Meat Processing

Crop and beast product results in some waste in abattoirs. So effects like bones, banana peels, feathers and hoofs classify as solid destruction.

- Horticulture

This solid waste comes from the conservation and civilization of shops for aesthetic purposes. Principally, they're a lesser part of garnering than husbandry. The waste is by pruning and lawn slice.

- Beast product/ Beast

Beast will inescapably produce solid waste. Still, water, trough, if you use beast for tilling also there will be beast waste.

- Crop Production

Agricultural crop product does lead to wastes similar as crop remainders and cocoons. This happens when you cultivate crops for food or domestic product.

- Industrial Waste

Besides food product, tilling produces artificial raw accoutrements and domestic products. As a result, they also lead to destruction. The product of paper utilizes Agriculture products, hence, it produces waste. Wood slices and processing produces it too.

- On- Farm Medical

This kind of destruction is due to the use of medicines, vaccines and germicides on creatures. Disposable needles, hypes or wrappers left from vaccines contribute to it.

- Chemicals

This is one of the most likely extinctions on Agriculture land. The use of fungicides, dressings, germicides and indeed incorrect use of synthetic diseases can contaminate the terrain. For case, growers don't fully empty the fungicides and germicides rather mishandle the holders and slip these chemicals in near ponds or fields. This poses environmental hazards, food poisoning pitfalls and water pollution, harming creatures, humans and ocean life. There are other more common extinctions similar as

- Kitchen waste
- Organic Toxin bags
- Waste oil painting
- Ordure and waste

Significance of Agricultural Waste Management:

Improper disposal of waste can beget an environmental impact as well as affect humans and creatures likewise. There's a need to manage waste disposal as putatively inoffensive effects can get dangerous if not disposed of responsibly. For case, it can give rise to the problem of tips and the emigration of poisonous feasts from that area. Also, if fungicides and germicides end up in gutters rather of fields also they can kill submarine life. Though, they can also contaminate drinking water, and kill creatures that will drink from it. So beast husbandry, crop product, beast product and the use of fungicides all affect in environmental damage if you don't manage the waste. The world is shifting towards reducing the emigrations of hothouse gas. Beast product releases about 65 percent of nitrous oxide and 37 percent of methane. These are dangerous hothouse feasts. It's a cycle. The burning of Agriculture solid waste produces in a waste incinerator dangerous emigrations that affect in climate change. Climate change decreases food product. Thus, there are counteraccusations regarding food product, health and environmental enterprises. All of which are applicable to life on earth. Health and Environmental enterprises The Agriculture destruction ends up being ditched in tips ultimately, it burns and emits a high quantum of feasts that contaminate the terrain and contribute to climate change. Also, these emigrations also harm mortal health.

There's another important environmental concern due to the accumulation of destruction. Cataracts. Solid wastes from husbandry, beast and husbandry block aqueduct. Growers may carelessly leave solid wastes in aqueducts but blockage gives rise to cataracts. External solid waste and sewage sludge is dangerous waste that harms public health but also puts everyone in peril. Accordingly, there's huge damage to lives and parcels.

Food Security Enterprises:

As the world population increases, the need for husbandry and food product increases too. So does Agriculture and food waste. There's adding food instability in the world. Though, it's clearly not because of enough food products but because of food destruction. In fact, one- third of the food produced is either lost or

wasted. Developing countries contribute to destruction during product and force chain whereas developed bones do so on the table. This waste can also come a recyclable material to produce feed constituents. It results in advanced beast protein product and as a result, improves food security.

Agriculture Waste Management Ways to Control Solid Waste:

Farmers can set up regular waste collection and they can take measures to control any damage that they beget similar as control fires while burning waste. Though utmost of these wastes can be put into much better uses that can grease Agriculture product and affect in waste treatment and waste reduction. Recycling and reusing them comes in handy for

- Paper Making
- Manufacturing Glass
- Mulching
- Composting
- Making Organic Diseases
- Producing Ethanol
- Making Complements In Cement
- Generating Biogas
- Making Beast Feed
- Removing Heavy Essence
- Generating Electricity

A popular Way to Reclaim Crop Waste is by Composting:

Kitchen waste or crop destruction can also come in use as beast feed, toxin and bioenergy. It converts into beast feed by sterilization, bioenergy by anaerobic digestion and toxin by composting. They actually make for good compost and toxin as they contain nutrients and organic matter. Besides composting, there are other ways to manage destruction, reclaim and exercise it.

Non-Conventional Feeds:

The solid destruction from husbandry can suffer recycling to produce a cheap source of proteins and nutrients for beast. An illustration includes mycomeat which is a mix of solid wastes and fungi. Likewise, the feathers in flesh granges have tremendous uses as pillows, diaper stuffing, paper, water filtration filaments. thermal sequestration but also as a feed to creatures. The solid wastes convert into good feed for creatures rather than giving them separate feeds which affect in further destruction.

Silica Product:

Silica is a nonmetallic element that's great for the skin, hair, nails, bones mineralization and calcification as well as impunity. It decreases in the body as you age. Though, you can attain it through Agriculture wastes. Silica can be produced and uprooted from sludge cobs, bagasse, rice straw and cocoon. This uses chemical, microbial and thermal styles.

Making Detergents:

Cocoa capsules can putrefy Agriculture destruction. This way they enrich the soil. Also, they come in handy for making black detergents used in bathing and drawing use.

Energy Source:

Anaerobic digestion helps convert Agriculture destruction into green energy. These wastes are high in proteins and fats which can intrude with the process. Still, treatments that are mechanical, chemical and thermal announcement bibulous treatments sonication, indurating and sodium chloride treatment can ameliorate the parcels of waste. Bioenergy and Biofuel is a sustainable renewable source of energy that convert waste to energy. Also, it also shows pledge in reducing Carbon dioxide emigrations. The conversion of biomass into biofuel and indispensable energy coffers will drop profitable losses. It'll also overcome the release of feasts by burning wastes as well as increase the product of energy. Thus, you can reclaim wastes from husbandry and husbandry to reduce the impact waste has on the terrain and humans. Though, there are also some measures that growers can take on their own to reduce destruction.

Objective of the Study:

- To study agriculture waste management scenario in India.
- To analyse the Challenges towards Agriculture waste management in Bangalore.
- To evaluate the level of Problem facing towards Agriculture Waste Management.

Research Methodology:

Primary data is collected through well-structured questionnaire through interview scheduled method. A sample of 100 people in Bangalore are collected using random sampling method. The collected information were reviewed and consolidated into a master table. Secondary data has been collected through journals, magazines, websites, books, etc., For the purpose of analysis the data were further processed by using statistical tools. The statistical tools are

- Simple Percentage

- Chi-Square Test
- Garrett Ranking test.

Limitations of the Study:

- The study is restricted to the selected sample through online survey and hence the result of the study cannot be generalized.
- The statistical methods used to analyze the data have their own limitation.
- All the limitations of primary data are applicable to this study.

Review of Literature:

Babu (2003) defines solid waste operation as the process associated with the control of generation, storehouse, collection, transfer and transport, processing and disposal of solid wastes in a manner fitting public stations. In its compass, solid waste operation includes all executive, fiscal, legal planning and engineering functions in order to fight the problems raised by solid wastes. Therefore, waste operation involves the creation, forestallment, grading, checking, handling, treatment, reclaiming and residual disposition of solid wastes.

Kaseva and Mbuligwe (2005) considered the effect of privatization on solid waste collection and disposal in Salaam megacity, Tanzania. The total solid waste generation was around 2425 tons/ day. It was set up that with privatization the solid waste collection bettered by 10 to 40 of the total waste generated in the megacity per day in 2001. The study recommended the use of waste recycling and composting conditioning in order to attain sustainability in waste operation.

Karthikeyan and Murugesan (2007) anatomized hardness, EC, alkalinity, chlorides, color, odor and sulfate content of groundwater samples collected from jilting yard of the Salem Municipal Corporation and reported that the hardness was within specified limits of 300mg/L.

Singh (2011) studied the ineffective external solid waste operation (MSWM) prevailing in Jaipur. The study concluded that the external pot was unprofitable in enforcing the operation of solid waste in an effective way. It was also set up that the external pot isn't following the standard procedure of handling MSW. Collection effectiveness was set up to be only around 80, which latterly leads to a huge quantum of waste being left out in the megacity.

Rode (2010) showed that solid waste is adding in Pune megacity due to growth of population, urbanization, advanced per capita income, standard of living, changing life and food habits. While reviewing the Indian script, it was set up that solid waste is an ineluctable task in urbanization process and it'll increase in future. The collection, isolation, storehouse, transports and processing of solid waste needs association and thoughtful enterprise. Clean City improves standard of living by reducing different conditions. Public-private trust is more salutary in solid waste operation. Government and Municipal Corporation must inspire original operation through multifariousness, carriage, isolation and jilting of solid waste. Community cognizance and separation of waste at source, rules and regulations related to solid waste operation can surely bring about change in solid waste operation.

Data Analysis and Interpretation:

Table 1: Demographic Profile of the People

Particulars	Classification	No. of Employees	Percentage
Gender	Male	46	46
	Female	54	54
Age	Up to 25 years	25	25
	26 to 35 years	31	31
	36 to 45 years	30	30
	Above 45	14	14
Educational Qualification	Iliterate	35	35
	Literate	65	65
Marital Status	Married	71	71
	Single	29	29
MonthlyIncome (Rs.)	Up to 40000	46	46
	40001 - 70000	24	24
	70001 - 150000	25	25
	Above 150000	5	5
Total			100

Interpretation:

From the above table it is inferred that 46% of the people are male and 54% of the people are female. From the above table it is inferred that 25% of the people are up to 25 years, 31 % of the people are between the age group of 26 to 35 years, 30 % of the people are between the age group of 36 to 45 years 14% of the people are above 45 years. From the above table it is inferred that 35 % of the people are iliterate, 34% of

thepeople are literate. From the above table it is inferred that 71 % of the people are married and 29% of the people are single. From the above table it is inferred that 46% of the people are upto Rs.40000, 24% of the people are between the range of Rs.40001 - Rs.70000, 25% of the people are between the range of R s . 70001 - Rs.150000 and 5 % of the people range are above Rs.150000.

Table 2: Challenges towards Agriculture Waste Management- Garrettscores and rank

S.No	Reasons	Average	Rank
1	Pyrolysis	63.19	II
2	Landfills	38.98	V
4	Compost	51.16	III
5	Incineration	48.36	IV
7	Sanitary landfills	66.39	I

It is understood from Table 3 that "Pyrolysis" was ranked as a first parameter with a score of 66.39 Garrett points. "Landfills" was ranked as a second parameter with a score of 63.19 Garrett points. "Compost" was ranked as a third parameter with a score of 51.16 Garrett points. "Incineration" was ranked as a fourth parameter with a score of 48.36 Garrett points. "Sanitary landfills" was ranked as a fifth parameter with a score of 38.98 Garrett points. Therefore, it is concluded that offering better quality products to the customers are ranked as the first parameter for successful competitive advantage in the sample units with the average 66.39 Garrett points.

Table 3: Relationship between the Demographic Profile and Level of Problem towards Agriculture Waste Management

Factors	χ^2 Value	Table Value	Remarks
Gender	8.537	5.991	S
Age (Years)	4.539	9.488	NS
Educational Qualification	12.2683	9.488	S
Monthly Income	7.823	9.488	NS
Marital Status	4.698	5.991	NS

*significant at 5% percent level

Table 3 depicts the relationship between selected demographic variables and level of problem towards Agriculture Waste Management. It is clear that , the calculated chi-square value is less than the table value at five percent level, there does not exists any significant association between age, monthly income, marital status of the people and level of problem towards Agriculture Waste Management. Thus the null hypothesis is accepted. It is clear that, the calculated Chi-square value is greater than the table value at five percent level, there exists a significant association between gender, educational qualification of the people and level of problem towards Agriculture Waste Management. Thus the null hypothesis is rejected.

Conclusion:

There are huge opportunities for companies to utilize agricultural waste and produce different types of valuables from waste. With specific laboratory techniques, research and technology, we usher in a new era focused on proper waste management. Many farmers still do not know how to use the agricultural waste. Some farmers know about recycling and managing waste. Several policies have been implemented to minimize waste, increase revenue and create jobs to manage such waste. Forest and agricultural wastes are used not only for soil fertility, but also for bioenergy and industrial biotechnology. Private company, in partnership with NGOs, is developing vigilant strategies to recognize and promote the use and recycling of agricultural waste as a valuable product. This waste is used as raw material for manufacturing, thermal engineering and industrial plants. Policy changes must promote technologically advanced innovation and innovation in waste management, moving closer to a circular economy. Indian businesses and societies have demonstrated that adopting global best practices and proven solutions can bring benefits and save costs in public health, sanitation, power access, water and land protection. The overall structure proposed in this document helps explain the threats, opportunities, and incentives associated with numerous public, environmental, and industrialized inventions.

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