

Business Prospect of Recycling Household Wastage: A Study on Gopalganj District of Bangladesh

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ABSTRACT

To find out the business prospect of recycling household wastage in Gopalganj districts the main target of this research. To conduct this research the authors have collected the data from both primary and secondary sources. Mainly, interview and observation methods have been used to collect primary data and various types of published and unpublished documents, websites, etc. have been used to collect secondary data. From this study, it has been found that there is a potential business prospect of recycling the household wastage and it will contribute significantly to increasing the land productivity and reducing the unemployment problem of Gopalganj district. If it is possible to implement this research idea, it will increase business opportunities and save the environment from pollution. To conduct this research it was very difficult for the authors to collect the data by physically observing the dumping sites.

Key Words: Business Prospect, Recycling, Household Wastage, Gopalganj District, Bangladesh

INTRODUCTION

Mankind is standing on the verge of a huge garbage ocean which is engulfing everything from man's life. People's unconscious attitude towards the environment is posing a measure threat to livable existence. Environmental pollution is a universal problem and its potential to affect the health of human beings is great (Fereidoun et al, 2007; Adusumalli, 2016; Abdollahi et al., 2022). World is becoming a worse place for its habitat. So, people are degrading the environment day by day. Man's life is so connected with the environment that when pollution occurs, it brings about disaster in their life. According to the popular newspaper "*The Daily star*" published an article in 2015 said that, every year 234000 people died, including 18000 dead in urban areas due to environmental pollution in Bangladesh. These people are suffering from several diseases and health risks. This report is published by *The World bank*. Mainly, the environment has become polluted in three ways. Those are air pollution, water pollution and

soil pollution (Ahmed et al., 2022). One of the main reasons for that pollution is dumping household wastage here and there. Environment pollution by wastage in the perspective of air pollution, water and land/soil pollution is a wide-reaching problem and are not only seriously affecting the human by many fetal diseases and problems but also the trees/ plants and animals (Khan & Ghouri, 2011). When people are disposing of household wastage carelessly, it emits a huge number of toxic gases which are harmful for the environment and by burning waste it creates smoke which is responsible for creating carbon-dioxide. "In Bangladesh 800 people die every hour due to sufferings from air pollution." According to the report of *Greenpeace*. This report is published through an article by "*The Daily star*" newspaper on March 06, 2019. *The report also includes that Bangladesh has the most polluted air in south Asia and Dhaka is the second most polluted city. Gopalganj district is a part of Dhaka division.* Readers can easily realize the present condition of our living environment through these reports. It is proved that dumping or burning household wastage in an open space causes air pollution (Pasupuleti, 2016; Yannan et al., 2021). Mills, factories, water vehicles and human beings create water pollution by throwing waste into water. Covid-19 is the name of the pandemic for which the world suffered most from last century. Readers will be more astonished that this "Covid-19 is influenced through air pollution." Said by the Environmental pollution scientist in Italy. Moreover, when household waste is dumped into a river, pond or canal it becomes contaminated with toxic chemicals which create water pollution (Adusumalli, 2017a). As a result, the level of carbon-dioxide into water becomes high which is also harmful for water being animals like fishes. So, it also can be said that dumping household wastage in open space also causes water pollution (Adusumalli, 2017b). Where water pollution is a national and global issue. Many serious diseases like-Typhoid, Diarrhea, Dengue, Cholera, Jaundice, Malaria, Chikungunya, etc. take place in the list of diseases through water pollution (Ahmed and Ismail, 2018). By disposing plastic wastage which is not septic, causes soil pollution. So, regularly dumping household waste carelessly, air, water and soil become polluted which causes environmental pollution. "The Daily Star" newspaper published a report on March 14, 2019. Said that "**01 out of 4 premature deaths are caused by pollution.**" Uncourtly this is an alarming report for the people of Bangladesh as well as for Indian subcontinent. Recent studies draw a terrible picture of pollution which clearly shows the negative influences on economic productivity (Pasupuleti, 2020). Because of pollution people of lower class suffer from many fatal diseases which reduce their working ability and they cannot produce enough crops for this huge population (Adusumalli, 2019; Guan et al., 2022). As a result, it affects economic conditions. In this situation recycling household wastage is the most suitable solution for saving the world (Pasupuleti, 2017). Recycling household waste will be benefited in two ways. Firstly, it will save the environment. Secondly it can be benefited us economically by producing bio-fertilizer using household wastage in many ways.

STATEMENT OF PROBLEM

People of this country mostly depend on chemical fertilizer so that they can produce more crops in a lower possible time and less effort (Adusumalli, 2018; Alizadeh et al., 2022). The farmer's, who have almost no scientific knowledge about cultivation, intention is not bad but the effects of their used chemical fertilizer is long lasting and causes various problems such as, this decreases actual land productivity in long run as well as decreases food quality (Adusumalli & Pasupuleti, 2017). It also heavily pollutes water and soil. So if the wastages can be recycled and converted into organic fertilizer then, there will be huge positive impact of the society such as pollution will be reduced, productivity of the land will be increased, employment facilities will be increased (Sushil, 1990; Chen et al., 2022).

Objectives of the Study

The main objective of this paper is to know the business prospect of recycling household wastage and the others objectives are

- To know the extent of household wastage in Gopalganj district.
- To know the impact of recycling household wastage.
- To analyze the business prospect of recycling the household wastage of Gopalganj district:
 - To know the cost structure, revenue structure & SWOT analysis of recycling the household wastage for the purpose of business.
 - To know the employment opportunities, business model, profit model, selling and marketing policy in Gopalganj District.
- To provide suggestions about increasing land productivity through producing bio-fertilizer from household wastage.

LITERATURE REVIEW

Jereme et al. (2015), in their study, wanted to create the habit of recycling among the population, reduce cost of solid waste management, minimizing waste disposal. This paper shows the comparison among the waste recycling system in Malaysia, other developing countries and developed countries. The authors represented some data and done the comparison depend on those data. They suggested to recycle wastage for transforming the country from a developing country to a developed country. Alam et al. (2019), presented a paper to know about the food wastage of Bangladesh. Authors of the study find out that, 67.65% to the aggregated municipal solid wastes are only food waste which is 19,361.73 tons/day while the total solid waste is 58,963.15 tons/day in Bangladesh. They suggested to take action for implementing immediate and proper management program for waste management. The authors collected these data through some survey.

Subin & Sreeja (2018), in their study discussed about the interrelationship of energy between Bio-mass, Bio-fuels and Bio-slurry. They entitled the impacts and the uses of bio slurry as a bio-fertilizer in an environment friendly manner, which produced from bio-mass as a byproduct from producing bio-gas. Ragi et al. (2021) also recommended to build the strength of Bio-energy program for the betterment of the country. Azam & Shaheen (2018), done a research to fold out an empirical investigation of the role of different factors like- economics, marketing, social, government, cultivation in adoption of organic farming system. Further, the authors examine the factors which influence farmers' choice of choosing organic farming, based on their demographic variation such as land ownership, farming experiences, farm size and education level of the organic farmers. The study found five main factors that affect the adoption of organic farming (these are- economic, social, and marketing, cultivation, government policy) in India. Hossen et al. (2021) suggests that without the support of government, the adoption of organic agriculture seems to be a highly challenging task in any situation, where majority of the farmers fall under the small and marginal category.

Skenderovic et al, (2015), stated in a journal which discussed about the impacts, influences and effects of waste management on the environment and environment pollution. They find out that, every year, about 10 million tons of oil products reaches Ocean and rivers and has more than 500 billion tons of industrial wastage. They want people do research and develop new technologies for recycling these wastages. Shamsuddoha (2009) in his study wanted to know about the present scenario of solid waste management in Bangladesh, to mention the

obstacles of proper solid waste management. He enlightened waste generation status, its management and barriers of proper waste management system in Chittagong city. He also suggested some ways to overcome the waste management problem of Chittagong city. Sani (2012), published a paper. That paper represented the impacts of bio-fertilizer in Sustainable Economic Development (SED). Also reflected the interrelation between bio-fertilizer and SED development system. The author showed some survey results on the effect of bio-fertilizer and chemical fertilizer. According to those survey results of that research showed that for achieve to sustainable economic development in agronomy, the farmers must use the bio fertilizers instead of chemical fertilizers. Sobhan et al, (2013), done a study which was conducted to know the existing situation of waste separation and waste management ensuring more effective waste management practices as well as to know about the quantity of daily waste generation from various family category. In this study it is written that, in the study area waste separation methods showed that among the separated wastage, fruit & vegetable waste measured in the highest. In case of solid kitchen wastage having percentage of 64.80% compared to other types of wastages. They suggested that, the government and non-government authorities should take proper steps to establish waste management system.

RESEARCH METHODOLOGY

Data collection

Main target of this study is business prospect of recycling household wastage which is based on Gopalganj Sadar. This study is basically based on both primary & secondary data. Among different types of primary data collection methods the authors have used interview method and observation method.

Primary Data Collection

The authors have conducted face to face interview to the authority of Gopalganj municipality to collect the primary data and also completed a market research about the business prospect of recycling household wastage. In this purpose the authors have done an observation in around 500 houses and some of the dustbins of Gopalganj municipality. Even the authors have completed a full survey on Dumping site, different level of wastage cleaner and so on of Gopalganj Sadar for completing the survey.

Secondary Data Collection

Secondary data has been collected from the following sources:

- Internet,
- Report, Publications and Handbooks of various agricultural institutions,
- Newspaper, magazine & books,
- Reports prepared by research scholars.
- Public records & statistics, historical documents etc.
- Unpublished Data such as, cost and quantity of present wastage management systems, required Employee and their salary, their lifestyle and so on collected from Gopalganj Municipality Office.

Study period

This study covers about 2 years starting from September 2019 to August 2021. Because of corona pandemic it has taken a little long time to complete the study.

Market Research Area

Writers have completed a market survey in Gopalganj district about several fertilizer's demands, price & availability in the present agriculture market. The writer has taken many interviews from many farmers, fertilizer seller, and fertilizer producer, local authority of Gopalganj municipality, workers & drivers who are directly working for the wastage management activities in Gopalganj municipality. Also, the writers analyze several documents and have completed a full market research related to organic fertilizer. Writers also thought about business model, customer segmentation, marketing strategies, local syndicate for fertilizer, land productivity, land production rate in several previous years in the agriculture market in Gopalganj district. After completing an overall survey and huge analysis writhes come to a conclusion that the business can be mostly feasible.

BUSINESS PROSPECT OF RECYCLING HOUSEHOLD WASTAGE: PRESENT SITUATION

It is a very alarming matter that, there are more than 8000 tons of household wastage is producing every day in Bangladesh (Hossen et al., 2021). 80% of this household wastage is fully organic and 70% of this household wastage is not managed at all. This vast amount of household wastage not only directly comes to the environment and causes several environmental pollutions but also creates a big health risk for surrounding dwellers of the dumping site (Pasupuleti et al., 2019; Iswanto et al., 2022). This situation is not a single picture of a country, actually it is a common picture of the largest under-developed country in the world. Now, readers can easily measure what a demonic problem is going to face in the future world. Authors think that it is almost the eleventh hour to take the effective initiative for solving these problems. Recycling the household wastages can be one of the vital solution of them (Fadziso, et al., 2018).

ANALYSIS & FINDINGS

Wastage type

Researcher's survey (on Gopalganj municipality) shows that around 85% wastage is organic wastage on household wastage which is being managed by the local municipality. Municipality spend money for household wastage management. Here if an entrepreneur take the responsibility of these wastage management and get his required raw material for producing organic fertilizer, there is no any cost of the raw materials (Rajendran et al., 2022). Then he needs to segregate the waste collected by the city dwellers, between organic wastage and non-organic wastage.

Suitable place for factory

To start the actual production procedure, segregating activities should be completed in a special factory, which has a large area. Factories should be established outside of the city. Distance should be not too far and not too near from the city.

Production procedure

In this stage, a field will be prepared for producing organic fertilizer. There should be several plots. Available manpower is a vital factor here. Manually prepared plots will be used each day. Each plot should have around 10 layers of organic household waste and soil. After completing all layers, the total mixed ingredients will be covered by soil. And time to look after the plot day by day. Every 2- or 3-days water will be given to the organic fertilizer field through several small & deep holes. This hole can be prepared by bamboo or pile. It will take around 3 months to ready Final organic fertilizer. Local weather is not a great fact in this production procedure.

Cost Structure

Researchers have also thought about the cost portion. Here a survey summary is given by the authors. The data used in the survey is almost 100% primary data. After several cross examinations and considering almost all related factors the summary has been prepared. The survey shows that there are almost 8 basic categories of cost function in overall cost structure in this business prospect. Which will make the people more clear about the cost categories and their percentage in total cost function.

Revenue Structure

This is the time to give a road map of revenue structure of the author's survey. There will be several ways to generate revenue in several selling goods. A revenue model gives the best answer of a question, "how do business make money?" (Madding et al., 2020). The Author's survey says that, there are three possible ways to generate revenue on this business prospect. Those are selling organic fertilizer, selling plastic, selling other Byproducts (paper, metal, iron etc.). Survey on this topic at Gopalganj district shows that the estimated proportion of revenue model will be 85% from selling organic fertilizer which will be the main part of revenue stream then 11% from selling plastic which will be the major byproduct of this business plan. Because the household wastage in Gopalganj district is mostly mixed with organic & inorganic wastage. Final 4% revenue might come from selling others by product like paper, or several metals. And the revenue or selling fertilizer will come within 3 to 4 mounts from the starting date of production. That means it will take 3 to 4 mounts to produce organic fertilizer from household wastage. After the first 4 mounts the fertilizer can be produced every after 7 days. Here is a significant factor which will need to be considered that is, fertilizer is not a daily used goods. The demand of fertilizer is mostly seasonal, which means there are some specific & selective time periods when the market has around 80% its yearly demands. Rest 20% demand is common demand and stable all around the year. As the demand is seasonal, the producer of organic fertilizer has to store their products in the warehouse and continue the production all around the year so that he can supply fertilizer in the mass demand periods.

Profit Model

Now analyzing the overall cost and revenue structure according to the author's survey in Gopalganj district, the authors can come to a profitability decision of this business prospect. Author believes that the business will be mostly profitable if a producer is able to manage the project. The profit can be 60% to 85% of the production cost within 4 mounts only. The combination of cost structure & revenue structure model is given below which will provide the reader clearidea to understand the calculation. The profit can be fluctuated on the change on business performance (Azam et al., 2021). Here the author tries to give the general view of profitability.

Business Model

Authors have shown the profit model but this profit can be maximized only when the entrepreneur will follow the perfect business model. Author believes that without maintaining perfect business model an establish business can be fall let alone a new business. In this circumstances author tries to give some suggestion about the perfect business model of this business prospect. The present agricultural goods market (last 10 years) in Gopalganj district have been analyzed. The market is mostly oligopoly market, people follow a price range for each fertilizer. People mostly buy organic & non-organic fertilizer from wholesalers in the local market. Government takes necessary steps depending on situation. So, the

authors' suggestion is to follow 3 types of business model for maximizing revenue and provide best customer services. These 3 Business models is 1. Business to business, 2. Business to consumer, 3. Business to Government. Hopefully, by following these business model an entrepreneur will be able to run a start-up properly.

Employment Opportunities

Every new start-up creates some new opportunities like this one whether this will be feasible. By employment opportunity as a reader you will able to know how much new job opportunities will be created by this paper. A business with a capital of Tk. 15,00,000, which will be sole proprietorship business, can create at least 50 to 70 unemployed people to get job. The salary of these employees can be different for affecting several factors. From a survey of Bangladesh Bureau of Statistics in July, 2015, an overview of an employment condition of Gopalganj district has been found. There are total 735882 working class residential people where 296642 people are full-time employed. On the other hands, there are 8610 people who are looking for job and 128967 people are fully unemployed in the present employment market. So this project will be able to make a significant contribution in the present unemployed market.

Selling & Marketing policy

As fertilizer market is mostly seasonal. The present supply chain is from producer to wholesaler to retailer to consumer/ user. Maximum time sales will be occurred from wholesaler to consumer where retailer is not necessary. According to exiting supply chain it will be easier to pick this supply chain and catch the targeted wholesaler and final consumer. By this way sales can be maximized within a short period of time. Selling policy need to be changed as per the time demands. Here Researchers are giving some way of marketing to the reader based on analyzing present market situation for a startup business so that businessman can easily execute the business prospect. The application of combined selling & marketing policy such as banner, poster, making, giving free sample, seminar can make businessman successful in the business. It is mentionable that the communication trough highway with the whole country from Gopalganj is very easy now. After completing the Padma Bridge this will be easier than now. Even, the railway communication has also started now at Gopalganj. So, if the business increases with increasing demand, it will be possible to send the product to whole country.

SWOT ANALYSIS

Authors have analyzed the several factors in their survey and find several considerable factors. Those factors need to be measured before starting a start-up. There are many positive instruments which will help an entrepreneur to take an initiative as a new start-up. Such as the total production process is very short time consuming (3 to 4 mounts). For this reason, revenue and start-up cost will be recovered shortly. Even production cost, raw material cost, start-up cost is not so high. So, an entrepreneur can easily invest in this project (Rahman et al., 2019; Ahmed et al., 2022b). Moreover, the produced product "organic fertilizer" has huge market demand in the agriculture market in Gopalganj district. In addition, there is no environmental bad impact and government restriction. On the other hand, there are also some possible drawbacks of this project such as a land with huge space is needed to establish the factory which is high costly (Pasupuleti & Adusumalli, 2018). A bad smell of household wastage can be found from the recycling process which is not good for the health of the workers but comparatively less than the dumping site rancid (Pasupuleti & Amin, 2018). Last but not the least, the producer of agricultural goods, the farmer, will need to be convinced by the producer of "organic fertilizer".

CONCLUSION

From the start of modern civilization, urban people are very familiar with household wastage. Nowadays, many countries are spending millions of dollars for proper household wastages management. But most middle or lower middle economic countries fail to do so. As a result, those countries are polluting the environment including several Infectious Diseases. The survey shows that, demand of fertilizer in this present agricultural market is huge and the maximum market is captured by the chemical fertilizer because of their comparative lower price and availability next to the door of a farmer. On the other hand, organic fertilizer is more expensive than chemical fertilizer, though the production cost of organic fertilizer is much lower than chemical fertilizer. It can be a great work if people will be able to produce organic fertilizer, which is almost 100% pollution free, from the household wastage and use that organic fertilizer, which will help to increase land productivity and be fully environment friendly, to the land for producing food for us. Even employment facilities will also be increased for this recycling process. So, this is the time to rethink and take some necessary steps for building a better and cleaner world for future generations.

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