

## **A STUDY OF SOLID WASTE MANAGEMENT AND NEED OF RE-FRAMING THE CURRICULUM OF EDUCATION: AN OVERVIEW OF MUZAFFARNAGAR CITY (UP)**

**Dr. Sangeeta Srivastava\***

\*Associate Professor,  
Teachers Education Department,  
D.A.V. (PG) College,  
Muzaffarnagar, Uttar Pradesh, INDIA  
Email id: sangeetasri16@gmail.com, sangeeta@davcollegemzn.org

**DOI: 10.5958/2278-4853.2022.00007.6**

---

### **ABSTRACT**

*The spread of hazardous, non-biodegradable solid waste is one of the most unhealthy, uncontrolled, and anti-nature activities of human, which is now appearing as plethora of problems. Under the second phase of 'Swachh Bharat Abhiyan' NITI Aayog has initiated a scheme of 'Cleaning up Our Cities' in the year 2019, with proper monitoring and ranking of areas for improving sanitation, cleanliness and hygiene all over the country. This paper is an attempt to survey the actual scenario of Swachh Bharat Abhiyan phase 2 in city Muzaffarnagar along with the study of need of major changes to re-frame our curriculum as according to the needs of the hour. The proposed study is an analytical survey research based on primary as well as secondary data. To fulfil its objectives the researcher has developed a questionnaire on topic "Clean India Mission: An Overview in Muzaffarnagar City." to collect the primary data and analysed New National Education Policy 2020 as secondary data of this study. A sample of hundred residents covering various areas of Muzaffarnagar city was selected by random sampling technique. The study concludes that the general awareness regarding solid waste management in the city is not highly satisfactory, showing the lethargies of both local municipal board as well as public, towards the problem How a city with an average of 65 % aware people can achieve the target on clean India mission with in time. The study suggests that local bodies should initiate some awareness campaign in collaboration with schools to increase general awareness among masses and there is an urgent need of re-framing of curriculum in new national education policy to make these habits by default.*

**KEYWORDS:** Solid Waste Management (Swm), Clean India Mission, New National Education Policy 2020 (Nep 2020), Curriculum, Awareness, Swm Rules 2016.

---

### **INTRODUCTION**

The spread of hazardous, non-biodegradable solid waste is one of the most unhealthy, uncontrolled, and anti-nature activities of human, which is now appearing as plethora of problems. In compliance of Hon'ble National Green Tribunal order number 199 of date 5 February 2015, National Action Plan of Municipal Solid Waste Management Report was presented by Central Pollution Control Board (CPCB). This report stated that "It has been observed that municipalities do not keep/maintain regular data on waste generation and its

composition. Only few references of National Environmental Engineering Research Institute (NEERI) on selected towns [CPCB's study on 59 cities (2008-09)] and other institutes are available. Further, the estimation based on the information collected by CPCB from time-to-time, the reported/estimated waste generation in the country is 1, 41,064 tons/day and out of which, 127,531 tons/day (90%) is collected, and only 34,752 tons/day (27%) of this is processed. [1] This picture clearly depicts the helplessness in reducing all hazardous non degradable garbage resulted due to progress in human world. What will be the use of all development when human himself is helpless to survive? It is the prime duty for all of us to check our environmental enemy endeavours immediately.

### **Significance of the Study:**

Clean India Mission is a grand behaviour as well as scenario changing campaign in the field of sanitation and hygiene, launched by our Hon'ble prime Minister Sri Narendra Modi on 2<sup>nd</sup> October, 2014, saying that 'A clean India would be the best tribute India could pay to Mahatma Gandhi on his 150-birth anniversary in 2019.' Swachh Bharat Mission was launched throughout length and breadth of the country as a national movement. The campaign aimed to achieve the vision of a 'Clean India' by 2nd October 2019. the most ambitious goal of this campaign was to make India 100% free from open defecation up to October 2019. According to a report by NITI Aayog titled *SDG-India: Index and Dashboard 2019-2020*: "Nearly six million villages, 633 districts (90.7 per cent of all districts) and 35 states / Union territories were verified as ODF in December 2019... 17 states and 5 UTs already have declared and verified all their districts to be ODF under Swachh Bharat Mission (Grameen)." [2] To cover up such a huge target only economic resources were not sufficient as its success was totally depending on the behaviour change of citizens. With the achievement of this grand target the Swachh Bharat Abhiyan moved to its second phase i.e., Solid Waste Management (SWM). Under the second phase of 'Swachh Bharat Abhiyan' NITI Aayog has initiated a scheme of 'Cleaning up Our Cities' in the year 2019, with proper monitoring and ranking of areas for improving sanitation, cleanliness and hygiene all over the country. According to a news in Economics Times "The NITI Aayog has suggested setting up an authority which will take up installation of 'waste to energy' plants in public-private partnership (PPP) mode to clean up municipal solid waste, which, it said, has become a "serious threat" to public health. The Aayog underlined that, cities have been "slow to develop effective ways" to dispose municipal waste and called for accelerated action to combat the problem and also added that, the mountains of waste, which can now be seen in nearly all cities, have become a serious public health threat,"

After the launch of Swachh Bharat Abhiyan in 2014 October, the Solid Waste Management Rules of the year 2000 have also been replaced by new Solid Waste Management Rules (SWM) in the year 2016 by the Union Ministry of Environment, Forest and Climate Change (Mo.E F&CC). [3] The major highlights of the SWM rules 2016 are segregation of bio-degradable and non-biodegradable waste at source, the collection and disposal of sanitary waste, the collect back scheme for Packaging waste, and charging of user fees for collection of garbage which is to be decided by the local authorities. It also prohibited littering and non- segregation of waste and banned throwing, burning, or burying the solid waste on streets, open public spaces, in the drain, or water bodies. The most pertinent question at this point is, why our habits of hygiene and cleanliness are not developing by default? Why are these forced upon, in place of arousing from within? This is a most significant study of this time when efforts are being made by our policies

makers to reach the target, it may explore the ways of intensifying their impact. New education policy 2020 has also declared to achieve the target of United Nation's Sustainable Development Goals by the end of 2030. It is well said that, if you want to change any nation change its education. This paper is an attempt to survey the actual scenario of Swachh Bharat Abhiyan in city Muzaffarnagar along with the study of need of major changes to re-frame our curriculum in this regard.

**Review of Related Literature:** The review of related literature is essential step to avoid unessential repeat of work, along with formulation of research plot for the work in hand. Following are review of some most related literature in this field:

**Pushpanjali S. et.al. (2016)** conducted a study titled as "Status of sanitation and hygiene practices in context of Swachh Bharat Abhiyan in two districts of India". A total sample of 190 households was selected for the study from district Ghaziabad, Uttar Pradesh and district Jabalpur, Madhya Pradesh. Finding shows that 76% of total respondent were not aware about the "Swachh Bharat Abhiyan" and 56% were not aware about the significance of keeping good sanitary conditions. It was also observed that among the total respondents only 54% were defecating in the toilet and 8% of respondents don't wash their hands after defecation and 11% of the respondents never wash their hands before meals. [4]

**Prem S. Panda et.al (2017)** Conducted study titled "Prevalence of open-air defecation and awareness and practices of sanitary latrine usage in rural village of Raipur District." It adopted simple random sampling technique by lottery method. A structured questionnaire was used. Majority of the study participants 109 (70.3%) had sanitary latrines in their houses. The prevalence of open-air defecation in the study area was found to be 23.2%. Around 2/3rd (65.2%) of study subjects were not aware about spread of disease due to open air defecation. Awareness regarding spread of diseases due to open air defecation is poor. [5]

**Chaudhary A. (2017)** conducted research titled "Swachh Bharat Mission- Need, Objectives and Impact". This study was based on descriptive analysis examined the need, objective, and impact of Swachh Bharat Mission on India's overall economic development. The study concludes that this campaign has a positive impact on overall growth of India. The study also explore that Swachh Bharat Mission will financially benefit each & every citizen of India. [6]

**Kishor K.J. et.al. (2018)** conducted research titled "Study to assess knowledge, perception and practices regarding Swachh Bharat Abhiyan among rural people of Nalgonda district in Telangana state". This was a cross-sectional study conducted among 328 subjects of rural area with a semi structured questionnaire. It concluded that most of the people were having positive perception only 25.98% have participated in SBA activities and main source of information was found to be television and newspaper. [7]

**Ganage N.P. (2018)** conducted research study titled "Assess the effectiveness of sociodrama on knowledge and attitude regarding open air defecation in Swachh Bharat Abhiyan among people residing in selected rural areas of Maharashtra." A quasi experimental one group pre-test and post-test research design was used. A sample of 80 was selected through simple randomized sampling technique. Pre- test knowledge score with mean 9.08 and post -test knowledge scores with mean 11.42. The correlation between knowledge score and attitude level was 0.87, hence it

concludes that sociodrama on attitude regarding open air defecation in Swachh Bharat Abhiyan among people was effective. [8]

Padmakala, S. (2019), conducted a study titled “Awareness of clean India Mission among higher secondary students in Kanyakumari district.” The study revealed the level of awareness of Clean India Mission among higher secondary students at moderate level (58.8 %). Male-female, Tamil medium-English medium as well as Rural-Urban higher secondary students differed significantly in the awareness of Clean India Mission. [9]

The review of related literature clearly depicts that there is a need of a study related to actual status of Clean India Mission in real scenario so that the re-framing of curriculum in New Education Policy 2020 may get some essential directions.

**Objectives of the Study:** The main objectives of proposed study are as follows-

1. To analyse the residents’ views on prevailing scenario of solid waste management in Muzaffarnagar city.
2. To analyse the efforts made by local municipal board for enhancing awareness among citizens.
3. To analyse the scope of re-framing curriculum in New Education Policy 2020 for sustainable development.

**Research Methodology:**

The proposed study is a descriptive survey research based on primary as well as secondary data. To fulfil its objectives the researcher has developed a questionnaire on topic “Clean India Mission: An Overview in Muzaffarnagar City.” to collect the primary data based on present scenario of prevailing practices in the city and efforts made by municipal board to enhance awareness and implementation of SWM 2016 rules. The open-ended question is also being used to seek public opinion about effective implementation of the mission in the city. A sample of hundred residents covering various areas of Muzaffarnagar city was selected by random sampling technique. A percentage wise study of primary data was being used as statistical tools. The study also analyses the New National Education Policy 2020, to find new prospective regarding re-framing the curriculum to accelerate the pace of this mission for making it more effective and sustainable.

**Analysis and Interpretation:**

The researcher analysed the data as according to the objectives of the study, which are one by one described as under-

Objective 1-To analyse the residents’ views on the present scenario of solid waste management in Muzaffarnagar city.

For the fulfilment of first objective the researcher has collected primary data regarding Awareness and effectiveness of Clean India Mission in Muzaffarnagar City through an online questionnaire. This questionnaire has 12 questions related to different aspects of this Mission, so it is necessary to analyse them all.

**TABLE 1- PREVAILING PRACTICES REGARDING PREVAILING PRACTICES**

First four questions of the questionnaire are related to the prevailing practices regarding this mission, table 1 is indicating the public opinion about prevailing practices for cleanliness in the city.

S.N	Question	Yes%	No%
1	Are the people in your colony aware for not spreading garbage hither and thither in the lane?	74.3	26.7
2	Do the municipality staff of your city collect garbage from your home daily?	62.4	38.6
3	Does the municipal staff collect your garbage in blue and green bins after dry and wet segregation?	37.6	64.4
4	Do you use your kitchen garbage to make fertilizer?	38.6	62.4

The question no. 1 is about general etiquette of common people regarding solid waste management. For this question 74.3 % people have answered yes while 26.7% people are still accepting that there is less awareness among people for not spreading their garbage in lane. Second question is related to the system adopted for cleanliness of the city. There is a little disappointing picture for the answer of this question. Here only 62.4 % people have answered 'Yes' and 38.6 % people have answered 'No'. It depicts that nearly 40 % garbage is still mismanaged despite of all efforts made by local bodies. In response of question number 3 and 4 the picture is again far from satisfactory. Only 64.4 % people are segregating their garbage before being collected but here the picture also shows that the personnel of municipal board too is not collecting garbage separately. This shows that neither public nor the local government is taking it as a serious issue. Further, a very few percentages of people i.e., 38.6 % are seem to be aware about possibility of making fertilizer out of their kitchen garbage. Thus, the findings of table 1 concludes that the contribution of local citizens as well as local government for the above-mentioned issues are still far from satisfactory. The dream of Clean India Mission may never come to be true with merely 75 % aware people of any society. Its target needs 100% aware people in this regard.

Objective 2: To analyse the efforts made by local municipal board for enhancing awareness among citizens.

**TABLE 2- CHANGE IN PRESENT SCENARIO OF AWARENESS AFTER IMPLEMENTATION OF SBM PHASE 2**

S.N.	Question	TC/H	SC/SH	NC	W
5	Do people around you not throw solid waste in drains to maintain the flow in drains?	31.7	50.5	4.9	12.9
6	Do you find your city fully clean after implementation of this mission?	7.9	71.3	17.8	3.0
7	Is your surrounding environment totally free from open defecation?	71.3	25.7	Nil	Nil
8	What change is there regarding the use of polythene bags in your city?	3.0	56.4	32.7	7.9



9	Do you feel that people are more aware about cleanliness after covid 19?	13.9	71.3	3.9	10.9
10	What is the change in efforts made by local bodies to spread awareness of SBM?	25.7	54.5	8.9	9.9
11	What type of involvement of students of different levels of education is taken by the local bodies to spread the message of in this mission?	High Inv. 75	NA	NA	No Inv.25

**Total Change/High (TC/H), Slight change/Slight High (SC/SH), No Change (NC) and Worsen (W).**

Table-2 is presenting the extent of change in scenario of awareness after implementation of SBM and SWM Rules 2016. Questions No.5 to 11 are related to the opinion of citizens regarding the prevailing practices and awareness in the city. Responses on question number 5 are depicting a mix picture of this city. Here, 31.7 % people have accepted high change while 50.5 % people accept slight high change in this regard, but the no change and worsen situations about presence of solid waste in drains are still there in the city, showing unsatisfactory picture. Question number 6 is depicting the picture of cleanliness in the city indicating that there is high percentage of people (71.3 %) accepting slight high change due to this mission as compared to the previous situation. Responses on question 7 present a reversing situation i.e., people accepted high percentage (71.3% and 25.7%) of open defecation free situation in the city, but still it is not presenting 100% free condition as declared in the year 2019. It depicts that unless and until we don't have sustainability of any achievement in this field all efforts will ultimately be diluted and situations may revert themselves. Question 8 is related to polythene bags usage in the city, here the data indicates that the city is not totally free from polythene usage. People have shown a high reduction in its use (56.4%) but still it is far from satisfactory. In the responses of question 9, the awareness for cleanliness regarding covid 19, 71.3 % people have shown slight high and 13.9% have shown a complete high awareness in this direction, and this data is depicting the cause of covid free environment in the city, when covid was at its peak in other cities, this city was rather under controlled situation. In response of question 10, people have accepted that there are enough efforts made by the municipal board (25.7% high change and 54.5% slight high change) to spread the awareness about the cleanliness mission in the city. Further, in question number 11, 75% People have indicated the high involvement of students taken by the local government for the spread of awareness while 25% have denied it. Over all this table envisages that the pace of this mission is rather slow in the city, as according to the time duration for achieving the target in time. So, there is an immediate need to enhance the awareness among people in this regard.

**Objective 3:** To analyse the scope of re-framing curriculum in new education policy 2020 for sustainable development.

For the fulfilment of this objective the researcher has used an open-ended question 12 in the research questionnaire to collect the public opinion about effective implementation of SBM in the city. The responses on this question as well as the study of new National Education Policy are helpful in analysing the need to re-frame our educational curriculum. It depicts that people themselves have admitted a lack of awareness. They also admitted a need of forceful imposition of rules regarding SWM 2016. A good number of them (aprox.50%) have suggested to spread this awareness through education by changing the school scenario for developing nature friendly

habits amongst students. The researcher also analysed the new National Education Policy 2020 which is now promising a sustainable holistic development of individuals. According to National Education Policy 2020 “the world is undergoing rapid changes in the knowledge landscape. With various dramatic scientific and technological advances, -----in conjunction with multidisciplinary abilities across the sciences, social sciences, and humanities, will be increasingly in greater demand. With climate change, increasing pollution, and depleting natural resources, there will be a sizeable shift in how we meet the world’s energy, water, food, and sanitation needs, again resulting in the need for new skilled labour, particularly in biology, chemistry, physics, agriculture, climate science, and social science.” This statement depicts the fact that National Education Policy is very much aware about all the global challenges and is committed to develop holistic personalities capable to face and solve all the challenges skilfully. As a direction for curriculum designing this policy has a clear vision to include environmental education too with various other globally compatible skills at relevant stages of education. It has stated that “Concerted curricular and pedagogical initiatives, including the introduction of contemporary subjects such as Artificial Intelligence, Design Thinking, Holistic Health, Organic Living, Environmental Education, Global Citizenship Education (GCED), etc. at relevant stages will be undertaken to develop these various important skills in students at all levels.” [10]

The analysis of primary as well as secondary data the researcher has concluded that there is an urgent need to re-frame education curriculum as according to the needs of the hour to increase the sustainability of achievements of this mission.

**CONCLUSION AND SUGGESTIONS:** The conclusions and some practicable suggestions of the study are as follows:

- The study concludes that the present scenario regarding solid waste management in the city is not very satisfactory. The table 1 depicted that none of the question has indicated more than 75% extent of any such practices in the city. How a city with an average of 65 % aware people can achieve the target on clean India mission with in time.
- The study concludes that the efforts made by local municipal board for the spread of general awareness about covid 19 are rather satisfactory, but still the extent of cleanliness in city is not satisfactory showing the lethargies of both local municipal board as well as public, towards the problem. The change in cleanliness in the city has also not exceeded to 75%. Even it is not 100% free from open defecation.
- The study also concludes that there is an urgent need of re-framing of curriculum in new national education policy to make these habits by default. Some suggestions in this regard are as under-
  - The study suggests that, there should be strong actions against the violation of rules and regulations. Sudden inspection at ward levels, vigilance by camaras fitted in all streets should be used along with some incentives for cleanliness as well as penalty for dirtiness.
  - Here, it is suggested that without sustainability of any achievement there may be no celebration. So, that local bodies should initiate some awareness campaign for enhancing general etiquette among masses.

- Our new national education policy 2020 has included initial life span {ECCE (3-6)} of a child in formal education. It is suggested that this step will certainly prove to be fruitful if we pay sincere attention towards inculcation of environmental value at this early age through simple plays.
- Some primitive audit habits such as audit of clean water, surroundings, use of dustbins and waste management, sanitation and hygiene etc. should be included in their curriculum.
- The study suggests that environmental education should be included with other subjects to enhance more speedy result for inculcation of environmental values.
- The study suggests that the curriculum of environmental education should be based on some real cases and situations so that students may understand the consequences of carelessness for our environment.

#### **REFERENCES:**

1. Central Pollution Control Board. The National Action Plan for Municipal Solid Waste Management. Available at: [https://cpcb.nic.in/uploads/MSW/Action\\_plan.pdf](https://cpcb.nic.in/uploads/MSW/Action_plan.pdf)
2. SDG India Index Report, 2019-20. Available at: [https://www.niti.gov.in/sites/default/files/SDG-India-Index-2.0\\_27-Dec.pdf](https://www.niti.gov.in/sites/default/files/SDG-India-Index-2.0_27-Dec.pdf)
3. Sambyal SS. Government notifies new solid waste management rules. 2016. Available at: <https://www.downtoearth.org.in/news/waste/solid-waste-management-rules-2016-53443>
4. Swain P, Pathela S. Status of sanitation and hygiene practices in the context of "Swachh Bharat Abhiyan" in two districts of India, International Journal of Community Medicine and Public Health, 2016;3(11):3140-3146.
5. Panda PS, Chandrakar A, Soni GP. Prevalence of open-air defecation and awareness and practices of sanitary latrine usage in a rural village of Raipur district. International Journal of Community Medicine and Public Health, 2017;4(9):3279-3282.
6. Chaudhary A. Swachh Bharat Abhiyan Mission-Need, Objectives and Impact. International Journal for Research in Management and Pharmacy. 2017;6(2):5-9.
7. Kishore YJ, Naidu NK, Sreeharshika D, Harikrishna BN, Malhotra VM. Study to assess knowledge, perception and practices regarding Swachh Bharat Abhiyan among rural people of Nalgonda district in Telangana state. Int J Community Med Public Health. 2018;5(8):3399-3405.,
8. Ganage NP. Assess the Effectiveness of Sociodrama on Knowledge and Attitude Regarding open air Defecation in Swach Bharat Abhiyaan among People Residing in Selected Rural Area. International Journal of Science and Research. 2019;8(2):181-185.
9. Padmakala S. Awareness of Clean India Mission among Higher Secondary Students in Kanyakumari District. Shanlax International Journal of Education, 2019;7(3):41-45.
10. Koul L. Methodology of Educational Research, (4<sup>th</sup> ed.). India: Vikas Publishing House Pvt. Ltd: 2010.