Sl. No.	Description	Summary
1.	**Preamble**	1. The Policy acknowledges the historical background set by various Acts, reports, government legislations and Court directions and India's commitment by way of being signatory to various international conventions. This defines the framework and guiding principles within which the Policy operates 2. The Preamble lays out the doctrines and principles which the policy is defined by and in conformance with Section 11 of the Solid Waste Management Rules 2016.
2.	**Vision**	The vision for the Karnataka State Policy on Solid waste management is to achieve worker equity and inclusion , protection of public health, an owning of civic responsibility and to achieving sustainable solid waste management through waste minimisation and a 'no bury , no burn' approach.
3.	**Objectives**	1. The Policy states its applicability to the entire State of Karnataka 2. The Policy prescribes that all generators, local bodies both urban and rural of all sizes need to have a plan a work strategy for dealing with all types of solid wastes 3. The Policy identifies the requirements for municipal workers and the informal recycling sector which are central to a well-functioning solid waste management system 4. The Policy lays out the fundamental tenets of solid waste management which is waste minimisation and segregation at source, in consonance with the circular economy principles through the waste hierarchy.

		5. The Policy seeks to devolve the planning and accountability to the ward committees or the smallest governance unit in the local body. 6. The Policy welcomes the citizen participation and seeks to improve the civic consciousness
4.	**Salient Features**	1. The salient features which are covered in the overall Policy objectives, individual policy and strategy across all aspects be it governance, principles or process are compiled as a quick read
5.	**Target**	1. Every individual Policy and Strategy is presented as annexures and identifies the various targets that the local bodies have to achieve. 2. It further identifies the timeline within which the local body shall carry out the requirements of the policy as an Action plan at the end of every individual Strategy and approach 3. The target is to be defined as per the local body type
ANNEXURES		
6.	**Individual Policy and Strategy**	1. The individual policy and strategy are laid out for each of the aspects of the functioning of solid waste management 2. Every individual Policy identifies its guiding principles 3. The individual Policy prescribes the requirements of each generator type 4. The individual Policy prescribes the requirements of the local body with respect to setting up the process and destination capabilities
6a.	**Planning , Institutional Mechanism and Financial Management**	1. The Policy prescribes the planning that each local body has to undertake 2. The Policy identifies the various stakeholders and lists out their roles and responsibilities 3. The Policy sets out the financial resource utilisation guidelines for the local bodies

6b.	**Municipal Workers**	1. The Policy recognises the role of the Pourakarmikas as a major workforce in the solid waste management service 2. The Policy prescribes the requirement of engaging the Pourakarmikas by the local body
6c.	**Informal Sector**	1. The Policy recognises and acknowledges the contribution made by the informal recycling sector 2. The Policy lays out the process of integration of the waste pickers 3. The Policy identifies the convergence requirements that every local body has to carry out
6d.	**Stream wise waste management**	1. Each of the waste streams policies and the related strategy and requirements are detailed out for the purpose of addressing the unique requirements of each waste stream. (Included in this submission are detailed 4 waste stream policies(Wet, Dry, Sanitary , C&D) . The others (Faecal Sludge , Legacy waste and Special wastes) are pending detailing.)
(i)	**Wet waste management**	1. Each individual waste stream Policy lists out the various principles governing each stream of waste management, identifies the stakeholders and lays out their roles and responsibilities 2. The main strategies suitable for each waste stream is identified and the corresponding actions to be taken by the stakeholders are laid out 3. The process hierarchy along with the various destinations for each waste stream is identified and laid out
(ii)	**Dry waste management**	
(iii)	**Sanitary waste management**	
(iv)	**C& D waste management**	
(v)	**Faecal Sludge management**	
(vi)	**Legacy waste management**	
(vii)	**Special waste**	1. The Policy identifies the need for a strategy to be identified for each of the special waste categories like Slaughter house waste, E waste, Domestic hazardous waste and Disaster waste management.

6e.	**Public Information and Education**	1. The Policy identifies the objectives of Public information and education to be carried out by each and every local body 2. The Policy identifies the strategy for effective communication
6f.	**Extended producer Responsibility (EPR) , Recycling and Material usage policy**	1. The Policy identifies the need for creating a EPR policy and strategy which will address the requirements and role of Producer responsibility, create a strategy to deal with waste resulting from planned obsolescence, overpackaging, redundant packaging. 2. The Policy will also look at a material usage policy improving recyclability of products and supporting circular economy and bring in integration of the informal sector in the recycling activity.

POLICY

1. PREAMBLE,

2.VISION ,

3.OBJECTIVES

Solid Waste Management Policy of Karnataka - 2019

BACKGROUND

1. The Government of Karnataka has always strived to ensure progress and development of the state is environmentally sound, socially just and economically equitable, as is enshrined in Article 39 of the Constitution of India. All laws, policies, programmes and schemes particular to the welfare of the people have been guided by values enshrined in Articles 48A and 51A(g) of the Constitution. The State Government has also strived to ensure development is respectful of environmental limits adopting various progressive principles of environmental jurisprudence such as Principle of Intergenerational Equity, Principle of Sustainable Development, Polluter Pays Principle, Public Trust Doctrine, Principle of Free, Prior and Informed Consent, Doctrine of Absolute Liability, Principle of Ecocentrism, etc.

2. To ensure that urban and rural areas developed and prospered in consonance with these progressive principles, Karnataka State pioneered environmentally sensitive district planning by undertaking the Environmental Master Plan Study of Dakshina Kannada (now Mangaluru and Udupi districts) and also promoting the concept of 'carrying capacity' studies and 'green belt' development. In this manner it was sought to plan and promote urban, infrastructure and industrial growth within environmental limits.

3. Karnataka was amongst the first states to adopt the concept of participatory and planned development of rural and urban areas by legislating the Karnataka Town and Country Planning Act, 1961. The state was amongst the earliest to ensure participatory governance became a reality of rural Karnataka, in consonance with Article 40 of the Constitution, by enacting Panchayat Raj Act, 1983. This law was comprehensively amended in 1993 to conform with the Constitutional 73rd Amendment (Panchayat Raj) Act, 1992. In the same way, Karnataka Municipal Corporation Act, 1976 was comprehensively amended to conform with Constitutional 74th Amendment (Nagarpalika) Act, 1992. In addition, planning of rural and urban futures is to be overseen by District/Metropolitan Planning Committees as envisaged in Articles 243ZD/ZE.

4. In particular regard to solid waste management, Karnataka Government has always strived to ensure there is no exploitation of labour, as required per Article 43 of the Constitution. It has always been the State Government's endeavor to ensure operational systems are fair and economical, and the entire process overall secures environment and public health of all.

5. In an effort to secure equitable socio-economic growth and health of all in Karnataka, key initiatives were taken during early 2000s by constituting an High Power Committee on Redressal of Regional Imbalances under the chairmanship of noted economist Dr. D. M. Nanjundappa and promoting Health Sector Reforms under the Chairmanship of noted public health promoter Dr. H. Sudarshan.

6. In recent decades, the state has witnessed unprecedented urbanization and infrastructure development which has created great opportunities for millions. But it has also resulted in resulted in disparities in economic development of the masses, and caused environmental and public health stresses. Unbridled consumerism combined with unplanned urbanization has also accentuated pollution in urban and rural areas.

7. The Hon'ble Supreme Court of India in B. L. Wadhera and Almitra Patel vs Union of India (*correct citation needed*), 1999 has warned the country of the consequences of not attending to environmental and social impacts of economic development and progress, and in the particular context of solid waste management. As a consequence of the Hon'ble Court's directions, the Municipal Solid Waste Management Rules, 2000 were brought into effect. Alongside, various regulatory norms were introduced to tackle hazardous waste (including restricting its transboundary movement), biomedical waste, plastic waste, electronic waste, instituted extended producer responsibility, regulation of building and construction debris, etc. However, weak implementation of these laws and regulations have resulted in crises of solid waste management. This situation resulted in a series of Public Interest Litigations (Kavit Shankar and ors. & Environment Support Group and ors. Vs. BBMP and State, WP 24739/2012 c/w WP 46523/2012) being filed in the Hon'ble High Court of Karnataka and the resultant directions have caused comprehensive reform of the country's solid waste management systems leading to the enactment of Solid Waste Management Rules 2016.

8. However, challenges of solid waste management are mounting as consumerism, especially by middle and richer classes, is rapidly increasing. The composition of waste has also transformed substantially in recent decades. From a time when much of the waste was organic, and thus compostable, waste now is increasingly non-biodegradable. Almost every consumer product is wrapped in plastic and/or metals, be it required or not. Quite often the packaging is necessary, inappropriate and amounts to overpackaging. All this is the outcome of an aggressively competitive consumerist market driven by the fast moving consumer goods sector (FMCG). The once common tradition of segregating waste at source, of composting waste locally, of recovering recyclables, and avoiding unnecessary consumption and creation of waste, has given

way to a use and dispose culture that is widespread now. In addition, mixed waste is carelessly disposed almost everywhere. Moreover, waste generated in large urban areas is transported out to villages for dumping. Waste pollution is so widespread, that lakes, rivers, streams, open spaces, village commons, forests, beaches, mountainsides, etc, are not spared. All this places a huge burden on Local Governments and regulatory agencies in dealing with the intensity and scale of the problem.

9. Prevailing systems of waste management involves widespread exploitation of labour. Pourakarmikas (solid waste workers) toil endlessly from the early hours of morning through the day, and through harsh summers, cold winters and wet rainy seasons, and without any holidays, to keep cities and villages clean and healthy for all. In the process they suffer high rates of exposure to infectious and hazardous wastes. There is widespread denial of due wages, and payment of wages is delayed inordinately as well. The lack of appropriate equipment to handle waste aggravates adverse impacts on their health, especially given that they are in direct contact with waste all the time. It is not uncommon to see Pourakarmikas handle solid waste in the most undignified and inhumane ways, including attending to blockages in drains and sewers that cause them to manually remove human faecal matter, and also biomedical and hazardous wastes.

10. Despite being the largest workforce employed by local governments, there has not been any systematic effort to attend to their occupational health needs, to provide them with dedicated and free public transport, and women, in particular, do not have a safe and supportive work environment. All this has a debilitating impact on their health and their life span, and their social-cultural and economic status. Even in this day and age, most Pourakarmikas are from Scheduled Castes and Backward Communities. In addition, almost all Pourakarmikas are women. Notwithstanding several decades of reforms to integrate depressed communities into socio-economic and cultural mainstream of society, Pourakarimikas and their families remain marginalized.

11. The State of Karnataka has been ever vigil to protect the dignity, rights and entitlements of Pourakarmikas. In 1973, Karnataka was the first State in the country to issue an order banning the carrying of night soil. The Government also took the decision then to change the degrading nomenclature of sweepers and scavengers to that of Pourakarmikas. In April 1976, the Government constituted committee chaired by Shri I. P. D. Salappa produced a comprehensive *"Report of the Committee on the Improvement of Living and Working Conditions of Sweepers and Scavengers"*. However, it is a matter of grave concern that four decades later, only some

of the recommendations of this committee have been implemented, especially those relating to daily-wage Pourakarmikas.

12. In recent decades the contract system of hiring Pourakarmikas was introduced which has caused a situation for gross exploitation of labour. In acknowledgment of which, the State Government constituted a 'Three Member Official Committee' to investigate the matter. In their pathbreaking *"Report on the Proposed Road Map and Guidelines for the Comprehensive Development of Safai Karmacharis"* of June 2013, the committee has recommended, *inter alia*, regularisation and absorption of all contract Pourakarmikas and with immediate effect. Following this, two Cabinet decisions have been taken, in May 2016 and July 2017, to bring into effect abolishment of the contract labour system, instituting direct payment of wages to Pourakarmikas and also directing their regularisation. At present, Pourakarmikas who work as street sweepers have been brought under the Direct Payment system, while those working as drivers and loaders are employed under contract system. There is a great need for substantive reforms in this area so Pourakarmikas are provided an environment of safe and dignified work.

13. A key task of waste management is undertaken by thousands of informal waste pickers who recycle solid waste to earn a living and not slip into acute poverty. They provide a major environmental and public health service, but their contributions are not acknowledged and respected. Thousands of families who live off recycling constantly suffer threats of dislocation and harassment. There is an urgent need to accord them due recognition so they can be mainstreamed into solid waste management for their benefit and the benefit of the wide public.

14. The common practice of dumping solid waste in quarries, lakes, streams, low lying areas, open spaces, etc., creates a host of problems. Designated landfills too reflect the situation of dumps due to poor design and management and weak regulation. The victims of such neglect are villagers around large cities. Despite not generating waste, they suffer a host of adverse consequences. In most cases such waste dumping sites and landfills are in areas where less privileged live, thus exacerbating their already weak socio-cultural and economic situation. Surface and ground water aquifers in such areas are heavily contaminated due to discharge of toxic leachates from such dumpsites and landfills. Quite often the waste dumped is burnt or catches fire, causing serious air pollution. As such sites have massive volumes of containers which collect dirty water, they turn into perfect breeding sites for mosquitos and result in the spread of dengue, chikungunya, malaria, and other such diseases. Such sites have an intergenerational impact as toxins released are absorbed into soil and water, travel up the food web, particularly through livestock and milk, and end up affecting human populations.

15. Callous waste disposal also results in a very serious unintended impact. As waste dumped is by and large mixed waste, they tend to draw dogs, rodents and livestock which feed off the food remains. As a result, the numbers of these scavenging animals increasing, and several packs of dogs are turning feral and tend to attack people, especially children. These animals also become infected with various diseases and spread dangerous and incurable diseases such as rabies. Waste strewn in forests and ecologically sensitive areas similarly pose a grave risk to the health of wildlife. Leopards are straying out of forests to feed easily on dogs thus intensifying avoidable human-wildlife conflicts. In several instances small and large herbivores have suffered due to ingestion of plastic wrapped around food, which is a increasing cause for wildlife casualties.

16. Solid waste strewn on streets is not merely major public health problem, but also is an spoiling the aesthetics of pristine farm, forest, mountainous, wetland and coastal landscapes. Besides, such waste also contributes to the breakdown of public infrastructure. Indian Railways has expressed serious concern over dumping of solid waste along railways lines for the acids flowing out of decomposing waste corrodes metals fasteners of railway sleepers and poses a huge risk to safety of passengers. Similarly, waste dumping and landfills coming up in the proximity of airports pose a grave risk to flight movements due to bird hits, as birds are drawn to the food in such dumpsites. Solid waste is also a major cause for blocking storm water drains which results in flooding of streets and buildings, contributing to avoidable damage to public infrastructure and private property, and most unfortunately loss of lives.

17. Compost derived from mixed waste often is sent to farms resulting in some more unintended consequences. With the ubiquitous use of electronic equipment and batteries, their callous disposal into municipal waste streams results in release of heavy metals and other toxins that they contain into the environment. This results in dangerous and irreversible contamination of soil, water and food, which then affects the food web, human health and the health of biodiversity.

18. With massive urbanization underway, the volume of building and construction debris has increased manifold. Quite often the debris is dumped in open grounds, in valleys or in wetlands. Only in some cases is this used for construction of roads or raising ground for various building activities. Such material contains a variety of hazardous chemicals which find their way into the environment, and so the need for caution is paramount. Most local governments find it difficult to handle the large volumes of building and construction debris generated today due to redevelopment of old buildings and new constructions.

19. Karnataka is keen at attend to the prevailing deeply problematic situation of solid waste management as is required per the Solid Waste Management Rules 2016, the directions of the Hon'ble High Court of Karnataka in WP 24739/2012 c/w WP 46523/2012 and WP 817/2008 and the Hon'ble National Green Tribunal……

20. Thus, this policy, which is the outcome of widespread consultations with the wide public based on district wise consultations held in every district with due and prior information of the contents of this policy.

Policy

21. As mandated in the Constitutional 73rd Amendment (Panchayat Raj) Act 1992 and Constitutional 74th Amendment (Nagarpalika) Act 1992, and in conformance with Solid Waste Management Rules 2016 and other applicable rules, notifications, orders per the Environment Protection Act 1986, and in consonance with the requirements of the Water (Prevention and Control of Pollution) 1974, Forest Conservation Act 1980, Air (Prevention and Control of Pollution) Act 1981, Biological Diversity Act 2002, National Building Code of India, National Environment Policy 2006, various standards and regulations prescribed for safeguarding special and highly sensitive infrastructure such as a airports, and in conformance with aforesaid judgments of the Hon'ble Supreme Court, Hon'ble High Court of Karnataka and Hon'ble National Green Tribunal, the Government of Karnataka resolves to take all such steps as are necessary to ensure the state is fully compliant with all the applicable rules, norms, standards, and processes necessary to manage solid waste in a socially just, humane, economically viable and environmentally wise manner within a year from the date of adoption of this policy.

    All steps necessary will be undertaken to ensure that various progressive principles of environmental jurisprudence applicable in India, such as the Doctrine of Public Trust, Principle of Inter-generational Equity, Polluter Pays Principle, Precautionary Principle, Principle of Free Prior and Informed Consent, etc., and also all binding international environmental and human rights agreements and treaties, such as the Montreal Protocol (1986), Rio Declaration (1992), Convention on Biological Diversity (1992), International Convenant on Economic, Social and Cultural Rights passed by International Labour Convention (in particular Article 7 on Right Decent Work) amongst others, shall be comprehensively abided with by State and regulatory agencies, and local municipal and rural governments, in undertaking the mandatory task of solid waste management.

23. The State Government by way of this policy determines the roles and responsibilities and timelines for compliance by Local Governments, and Statutory and Regulatory agencies is in compliance with provisions of Environment Protection Act and its subordinate rules and notifications, in particular Solid Waste Management Rules 2016, and also all other applicable laws and rules, to produce a socially just, environmentally wise and economically viable strategy of solid waste management as is described in **ANNEXURE**. The State Government resolves to provide all necessary financial, managerial and infrastructure support to ensure such compliance by Local Governments. In the event of persistent failure on the part of Local Governments to comply with laws, norms, governance principles and judicial orders as cited above, and that after all necessary and appropriate assistance has been extended to them, the State Government will extend all necessary assistance to regulatory institutions to ensure necessary punitive action is initiated to set right the systems of solid waste management.

24. The State Government emphasises segregating waste at source by waste generators at all levels and scales will be the fundamental strategy to manage solid waste in Karnataka. In this manner the State Government will endeavor to raise consciousness on the increasingly large amounts of waste generated every day and of the critical need to attend to the scale and intensity of the problem in wise and just ways. The State Government will advocate the importance of taking responsibility for minimization of waste by way of responsible consumption. Open burning of solid waste anywhere will be effectively discouraged including with penal action. In this manner the State Government endeavours to safeguard the health of one and all, and of generations to come, by promoting the processing of all solid waste locally, through the agency of Gram Sabhas, and Ward Committees and Area Sabhas, and by employing appropriate processes and technologies that have no adverse fallout on workers, environment and public health. Consequently, the State Government will ensure technology that incentivizes disposal and/or combustion of unsegregated waste resulting in irreversible and adverse toxic impacts on environment and health, and which also propagates the disposal and dumping culture, will be actively discouraged and regulated against. A list of acceptable solid waste management technologies is annexed at **ANNEXURE** .

25. By means of widespread and systematic public education, the State Government will communicate to the public at large that taking responsibility for waste one produces is an integral part of citizenship and a civic duty, as enshrined in Article 51A(g) of the Constitution of India, and as directed by the Hon'ble High Court of Karnataka in WP 24739/2012 c/w WP 46523/2012. The State Government will constantly guide Local Governments to marshal necessary resources and the agency of Gram Sabhas, Ward Committees, Area Sabhas, Biodiversity Management Committees and Forest Rights Committees, and to collaborate with

civil society organisations, to ensure systematic public Information Education Campaigns (IEC) are in place to promote and actualise segregation of solid waste at source, composting organic matter locally, promotion of recycling of waste at source and within the local area, reducing waste generation through responsible consumption and exploring reuse of waste materials locally. By way of such IEC exercises, it would be actively and systematically advocated that doing one's part in solid waste management is a civic duty of every person. Towards this end, State Government will assist in passing necessary orders and notifications so that such public education on appropriate solid waste management is systematised in schools, colleges, corporate offices, public places, public institutions, transport hubs, public sector organisations, etc.

A. <u>Governance</u>:

26. The District Collector will ensure that every village, town, city, metropolis, public transit zone, pilgrimage centre, tourist destination, transport hub, etc., has a duly approved solid waste management plan in consonance with this policy as per the timeline proposed in **ANNEXURE**. In the case of Class 1 cities and metropolitan areas, the plan will also include steps to prepare micro-plans for solid waste management at the Ward level. Such a plan would include strategies for bulk waste generators, by they service providers of any sort, corporate organization, industries and industrial estates, public institutions, building and construction agencies, transit or religious/cultural centres, etc., with emphasis on handling and processing waste in accordance with guidelines prescribed as a part of this policy and annexed as **ANNEXURE**S _, _, _, as described in Table 1. All such plans will be on permanent public display and will be accessible in every office of Local Governments, particularly at the level of Gram Sabha and Wards.

27. In support of objects listed out in this policy, every member of the public and every person in charge of any institution, be it in the form of a home, hostel, kalyana mantap, cultural centre, shop, mall, small and large business, market, public institution, factory, corporate organization, government agency, defense establishment, transport stations, educational institution, construction site, religious place, and such other units of dwelling, business, and public engagements, take responsibility to segregate solid waste at source and to ensure the same is handled in a manner prescribed in this policy. In special circumstances, and in ecologically sensitive areas, the more specific guidelines evolved by the Local Government will be strictly complied with. Failure to comply will result in punitive action per law.

28. All bodies corporate, be they in the public or private sectors, in the nature of business establishments and manufacturing entities, FMCG companies, and any corporate organisations and entity that deals with consumer products, the consequence of the use of whose products generates solid waste, shall be required to recover such solid waste as per the Extended Producer Responsibility mandated in EPR Rules, and as per the time line prescribed in **Annexure**. They shall be required to promote packaging in an environmentally appropriate manner as is illustrated in **ANNEXURE** , with an emphasis on generating bare minimum waste. Failure to comply will result in punitive action per law.

29. All District/Metropolitan Planning Committees shall in consultation with designate planning and governance authorities, be they in the nature of Panchayats and Municipalities, Town and Country Planning agencies, Development Authorities, Industrial Town Committees, Tourism Authorities, Temple Town Committees, etc., will take necessary steps to prepare comprehensive solid waste management plans that will include budgets detailing capital and operational costs of supporting human resources, maintaining transport infrastructure, availing land with associated infrastructure, and in accordance with this policy. In finalizing the District Solid Waste Management Plans, District/Metropolitan Planning Committees will duly involve the public in formulating final proposals as per due process of law and in conformance with the Principle of Free, Prior and Informed Consent. Such plans will be submitted to the State Finance Commission for approval within a year of this policy coming into effect, and as per guidelines annexed at **Annexure** .

30. All district environmental authorities and district offices of the Karnataka State Pollution Control Board will extend all necessary technical assistance to Local Governments within their jurisdiction, and no later than two weeks from when this assistance is sought. Failure to comply will result in punitive action per law.

B. <u>Labour:</u>

31. All workers involved in handling waste, be they in the direct employment of local governments, or contractually employed in any form, and also those who are in the unorganized sector, shall be assisted in handling waste as per applicable public health, occupational health and labour norms, so as to ensure that they are not allowed to handle waste in a manner that could be hazardous to their health, wellbeing and dignity. Every local government and body corporate will ensure that such workers will be extended all protection as is essential per applicable laws and norms, and failure to comply with these norms and enforce the same will result in punitive action against the immediate supervising authority/officer/person responsible.

32. Several Group D employees engaged in solid waste management are employed under regular appointment system or on contract. Through this Policy, the State Government resolves to completely remove the contract system progressively, and not later than a year from the adoption of this policy, and bring all workers under Direct Payment and Permanent Worker Status on Pay Scale.

33. The Policy recognises the service rendered by the Pourakarmikas over the decades in protecting the health of citizens and acknowledging the historic injustice done to these workers, particularly the neglec of their labour rights and occupational needs, resolves to set right this situation with necessary urgency. The Policy acknowledges that the majority of the workforce engaged in the discharge of its obligatory functions of solid waste management, especially the Pourakarmikas, are predominately women and primarily from the historically, economically and socially oppressed Dalit communities (Scheduled Castes). The Policy aims to ensure economic and social upliftment of workers employed in solid waste management is a prime concern for all local governments and state agencies.

34. The services of cleaning, waste collection, transportation, sorting, disassembly, processing, recycling, which are obligatory functions of the local bodies, will be considered as environmental services to guarantee environmental and public health for all. The people engaged in these tasks will be technically trained and their competencies updated periodically to elevate the status of such jobs to the professional standing that they deserve. The State Government will ensure dignity of labour by ensuring strict compliance with all labour laws, in providing safe working environment, and extending necessary economic opportunity and social security for workers engaged in solid waste management environmental services.

35. In the employment of workers in solid waste management, the State Government will ensure that the workers' job, wage, health and social security will be comprehensively provided no later than a year from when this policy is affirmed. The working conditions will be such that the dignity of workers is protected as per Article 43 of the Constitution of India and Article 7 of the International Convenant on Economic, Social and Cultural Rights passed by International Labour Convention which India as ratified and as per Government of India's Decent Work Programme Policy (2012-2017).

36. The State of Karnataka has taken the policy decision to ban outsourcing of Pourakarmikas, which will extend throughout the State and progressively cover all workers employed in solid waste management. As recommended by the 1976 Shri I.P.D. Salappa Committee report and

the 2013 Three Member Official Committee report, workers would be provided with protective and safety gear. The norm to be adopted in determination of the number of Pourakarmikas employed to service the needs of resident population would be 1:250, and commensurate with the increased per capita consumption and corresponding production of solid waste. The Policy commits to extend to the workers all rights available under the various labour laws.

37. It shall be ensured that all steps would be taken forthwith to ensure Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013 and that the law is strictly implemented in its letter and spirit. In this manner the State Government resolves to comprehensively attack and disallow the inhumane practice of manual scavenging which is an affront to the very idea of human dignity. The Policy adopts and affirms the *"Report of the Committee on the Improvement of Living and Working Conditions of Sweepers and Scavengers"* and the *"Report on the Proposed Road Map and Guidelines for the Comprehensive Development of Safai Karmacharis"* and adopts the principles and guidelines outlined in **Annexure**.

38. The State Government will take necessary steps to provide legal recognition and protection to informal waste workers as is required per the National Environment Policy 2006 and the Solid Waste Management Rules 2016. In this regard, the guidelines provided in **Annexure** will be adhered with by Local Governments so that there is no lapse of any sort in extending due dignity of decent work to informal waste pickers and also those who work for their welfare and the welfare of the wide public.

C. Sectoral Guidelines:

39. By way of this Policy, the following sectoral guidelines are adopted, and the same shall be complied with Local Governments in developing their Solid Waste Management Plans and Strategies. These Guidelines will also guide District/Metropolitan Planning Committees in collating, approving and updating their District/Metropolitan Development Plans as is mandated in Articles 243 ZD/ZE of the Constitution of India.

4. SALIENT FEATURES

4.Salient Features

The following are the salient features of the policy

1. **Households generators** - The State shall :

a. Encourage minimization of waste through policy and monetary instruments

b. Establish service level standards for hygienic hassle free collection of waste from all households, offices, shops, commercial establishments in the city

c. Devise suitable incentive-disincentive mechanisms to achieve segregated collection of household waste through dedicated stream wise collection in the next 2 years

d. Devise focused behaviour change strategies for compliance to source-segregation of waste by citizens. This may form a compulsory component of the Public information and education

e. Encourage home composting or biomethnation with monetary incentives, expert guidance and supporting mechanisms such as call centre and compost collection facility

f. Ensure separate collection of household sanitary wastes and link their disposal to existing biomedical waste treatment systems wherever available.

g. Establish robust systems targeted at cleanliness and smooth SW collection in low-income neighbourhoods and slums

h. ULBs to provide the necessary frameworks which will enable assistance and guidance in segregation, storage, and decentralised processing of solid waste to group housing or commercial, institutional or any other non-residential complexes exceeding 200 dwellings or having a plot area exceeding 5,000 square meters

2. **Public areas policy** - The State shall:

a. Establish roadside, lakeside and parks cleanliness standards to be maintained at all times by ULBs

b. Establish cleanliness standards for public buildings and public transport (buses/metro)

c. Devise rules with penalties for curbing burning of waste and throwing of waste on public roads, vacant lands and parks

d. Encourage on-site composting of horticultural waste within parks

e. Encourage street-level lane composters for wet waste and leaf composting

3. **Markets Policy –** The State shall

a. Encourage onsite biomethanation of wet waste and onsite use of biogas

b. Encourage linkages to piggeries, fishery units, chicken farms or dairy units for wet waste that cannot be processed locally.

c. Ensure separate collection of dry waste from every stall

4. **ULB capacity enhancement Policy** The State shall:

a. As far as possible encourage in-house ULB delivery of SWM services and build adequate infrastructure capacity for the same
b. Design SWM standard contract templates for ULBs to use at the time of outsourcing SWM and provide legal advisory in adapting them to local conditions
c. Establish a contract enforcement cell for ensuring enforcement of SWM contracts
d. Ensure sufficient funding to ULBs for efficient SWM through enhanced grants, taxation powers and other forms of resource mobilization. Provide them flexibility in utilization of such funds for different components of SWM based on local needs and priorities
e. Devise service level rules for transport vehicle design and maintenance, GPS tracking and standards of their aesthetics and hygiene

5. **Commercial Entities Policy** - The State shall:

a. Design focused SWM handling rules for non-industrial commercial entities based on polluter pays principle and SWM Rules 2016
b. Encourage Reduction, Reuse and Recycling of waste generated by commercial entities through various market and fiscal instruments

6. Wet waste Policy – The State shall

a) Promote home composting by all households on 30 by 40 square feet land and above
b) Ensure mandatory processing or pre processing of all wet waste in situ by bulk generators generating 100 kgs of waste per day
c) Create an overflow model for processing of wet waste with various sizes of decentralised facilities
d) Centralised facilities shall carry out composting of segregated wet waste only
e) Bio methanation should be the preferred recovery method for larger processing volumes
f) Promote City Compost policy while facilitating farmer linkages

7. **Dry Waste Policy – The State shall -**

a. Promote collection and sorting of dry waste through registered waste pickers and other informal waste collectors
b. Support them with sorting spaces and waste aggregation centres
c. Ensure maximum local management of dry waste collected through dry waste collection centres

8. **Biomedical Waste Policy**: The State shall

a. Ensure complete stoppage of backyard burning and burial of BMW in all hospitals including veterinary hospitals in the next 2 years
b. Enable stringent action by health department including cancellation of licenses to health establishments that do not comply with BMW rules
c. Ensure integration of domestic sanitary waste disposal with biomedical waste facilities
d. Ensure that no micro incineration is permitted

9. **Plastic Waste Policy –** The State shall:

a. Provide incentives and disincentives to enforce compliance with the State plastic ban
b. Will ensure that all recyclable waste is channelised to registered wastepickers and other informal waste collectors
c. Discourage unnecessary use of plastic (magazine covers)
d. Provide spaces for aggregation centres
e. Promote alternative treatment of non-recyclable plastic
f. Encourage RDF units to shred and process rejects into usable fuel for industry
g. Mobilise and utiliise EPR funds for all the above

10. **Landfill Policy –** The State shall **:**

a. Permit below-ground landfilling of only organics free debris, construction and demolition waste
b. As a first step do windrow stabilisation of all wet or mixed waste before above-ground land-fills disposal
c. Avoid disposal of all unstabilised waste below or above ground in airless heaps
d. Undertake bio-stabilising followed by bio-mining of legacy waste as per CPCB guidelines of April 2019, to be completed within the next 3 years
e. Avoid soil capping of fresh waste or legacy waste
f. Excavate already-capped waste for above-ground bio-stabilising and bio-mining to avoid long-term pollution of underground water sources and release of methane

14, **Construction and Demolition waste and other special wastes Policy** – The State shall :

a. Ensure a framework for collection from all small generators and assign destinations for the C and D waste by the ULB
b. ULBs to ensure that all bulk generators and service providers manage their own C and D wastes by setting up debris sites.
c. Encourage recycling of segregated C and D wastes, especially concrete wastes
d. Provide disposal sites for residual C and D waste without disturbing natural water flows.

15. **Special Wastes Policy** – The State shall:

a. Manage slaughter house waste in compliance with the Prevention of cruelty to animals (Slaughter house) Rules 2001, section 25 and 26 of the Water (prevention and control of pollution) Act, 1974, MSWM Manual 2016 and KSPCBs guidelines on this subject

b. Manage E-waste as in compliance with the E-waste (Management and Handling) rules 2016 and the MSWM manual 2016

c. Ensure that ULBS fix a calendar for periodic (e.g. quarterly) collection of E-waste, domestic hazardous waste, bulky waste and broken glass and also provide ward-wise drop-off centres for the same.

d. Promote biomethanation of faecal sludge along with wet waste in Sewage Treatment Plants

e. Create an inventory of types of special wastes (specific small scale industry wastes such as silk reeling units ash, cut beedi leaves, tailoring wastes etc) with separate rules to handle them

f. Enable disaster waste management

16 Establish tribunals for speedy redressal of disputes regarding SWM between ULBs, contractors and citizens

17. Pollution containment policy - The State shall:

g. Follow polluter pays principle towards SW polluters of public areas and water bodies

h. Establish a recycling and reuse policy for all categories of waste

i. Ensure city compost out of segregated wet waste only to keep it free from contaminants

j. Establish mechanisms for stringent monitoring of air and water pollution levels in neighbourhoods surrounding waste dumps

k. Ensure no micro incineration

l. Waste To Energy by burn technologies (incineration etc) for solid waste shall not be considered anywhere in the State at any time as it is polluting

m. Encourage partnerships of ULBs with pollution control boards to devise surveillance mechanisms for achieving prescribed cleanliness standards

18. Personnel oriented policy - The State shall:

a. Ensure health, welfare and dignity of workers especially the pourakarmikas

b. Ensure no form of contractualisation and casualization of workers is permitted

19. Integration of Informal Waste Workers – The State shall

a. Seek to promote and protect safe and decent livelihoods in the recycling industry, following the principles of circular economy

b. Acknowledge and recognise the primary role played by the informal sector of waste pickers, waste collectors and recycling industry in reducing waste through material recovery

c. The State shall ensure that sufficient spaces are ear marked for recycling, sorting and storing materials and will make provisions to integrate them into the solid waste management system

20. Administrative reform - The State shall:

a.Ensure a dedicated department with various capabilities administrative, technical and project implementation expertise

b. Ensure officers in key positions for SWM are guaranteed a substantial tenure to deliver on SWM projects and show results

c. Create platforms for coordination between all stakeholders at State and ULB level for smooth execution of SWM projects (land availability, suitable clearances etc) and continuous service level maintenance Encourage formation of ward committees to enable community participation in SWM

d. Ensure suitable provisions be made in master plans of cities for waste processing and disposal facilities

e. Ensure collection and maintenance of reliable data on waste generation, processing and disposal by leveraging technology, surveys and crowd sourcing data

f. Devise rules for establishing **Extended Producer Responsibility** for major recyclable waste, multilayered plastics waste, sanitary waste e waste and household hazardous waste

6.ANNEXURES

ANNEXURE 6 A

PLANNING, INSTITUTIONAL MECHANISM AND FINANCIAL GUIDELINES

Solid Waste Management is an essential service and a mandatory function of the municipal authorities across the State, to keep the cities and towns clean in an environmentally sustainable manner. It is equally important for the ULBs to ensure safety guards against environmental degradation. This annexure provides Guidelines for an effective and efficient implementation by the administrative bodies of the State and the local bodies of solid waste management.

1. Planning

1.1. Every local body has to carry out comprehensive planning by assessing the present status, conduct a gap analysis and requirements, complete a detailed review and analysis of national, state and municipal levels laws, rules, policies, programmes and guidance notes related to SWM, along with future projections and put in place action plans, after stakeholder consultation with targets which are realistic and achievable. Such planning will also help to identify the stakeholders' roles and responsibilities and set up the required administrative frameworks.

1.2. The plans so devised should be short term plans spanning 2-5 years and reviewed thereafter. Long term plans may extend to a 25 year period. Short term plan should cover institutional strengthening, community mobilisation, waste minimisation initiatives, waste collection and transportation, treatment and disposal, workers welfare and informal recycling sector integration along with financial outlay based on requirement of funds for the projects identified.

1.3. The Plans must be in compliance with the SWM Rules 2016, and in alignment with the respective State Sanitation Strategy under the National Urban Sanitation Policy, and follows the principles of circular economy, and waste hierarchy from the most preferred action which is reduce, reuse, recycle or compost, other forms of recovery before final disposal.

1.4. The plans must encompass – institutional strengthening, human resource development, technical capacity building, financial capacity and arrangements, community partnerships, legal framework and mechanisms for enforcement, information education and communication, public grievance or complaint redressal.

1.5. The plans must specifically address integration of informal sector and the importance of protection of livelihoods.

1.6. The plans should

1.6.1. Incorporate strategies for waste minimisation and management

1.6.2. Create better information systems , validated key base data like population, households, area maps for effective implementation

1.6.3. Ensure estimation of waste generated through quarterly surveys to assist in correct capacity design

1.6.4. Ensure complete coverage of all waste generators including government institutions, temples air army, navy areas, railways, airports, bus terminals , industrial townships, outgrowth areas which include Gram panchayats in an area of 15 kms surrounding the cities and towns.

1.6.5. Ensure that the legacy waste on land and in water bodies is addressed

1.6.6. Create model agreements of each solid waste management service or activity such that the terms and conditions of the agreements are clear and free from ambiguity and protect the interest of the ULB / Government and ensure effective implementation of solid waste management

1.6.7. The terms and conditions of the agreements entered into with service providers should ensure in addition to the standard clauses for the scope of work entered into , inclusion of clauses for

i. Ensuring door to door collection and transportation of a minimum of 3 segregated waste streams of wet , dry and sanitary waste.

ii. To also ensure wherever possible that the wet and sanitary waste is collected every day , and the dry waste is collected a maximum of twice a week by waste pickers.

iii. Commitment clause for reducing the amount of mixed waste over a stated time period across the agreement entered into , to reach a goal of 100 percent segregation

iv. The basis for payments should never be on a per tonne payment basis or per trip distance basis. Payment should instead be on a per capita or per household basis

v. Grievance redressal mechanism against the service provider

vi. Force majeure clause where the removal of waste after a natural disaster is a pre requisite in the interest of protecting public health from epidemics. Relevant clauses for restoration of services should be included.

vii. Arbitration as per the GO dated 10.01.2014 which directs that all arbitration proceedings should be referred to the Karnataka Arbitration Centre. Referring the arbitration to the ULB in charge officer should be avoided at all costs

1.6.8. Address special wastes which include e waste, hazardous waste and bio medical waste any other waste listed in the policy

1.7. Set year wise operational targets with a time bound plan of the waste management activities and indicate the means to achieve them

1.8. Issue guidelines wherever necessary

1.9. Such plans shall be submitted on an annual basis for assessing progressive improvements

1.10. The policy will have to be reviewed and amended every two years, in order to accommodate the new innovations and research on processing of solid waste management.

2. Institutional Mechanism

In order to enable the effective carrying of the plan and functions stakeholder roles and responsibilities are identified. Every local body shall in turn set out the roles and responsibilities of the stakeholders in planning, implementation and monitoring.

2.1. The Government and local bodies shall at the earliest constitute such bodies, committee and advisory team or assign responsibilities to local body or district heads involving all departments concerned involved , in the discharge of solid waste management functions and services

2.2. The ULBs must endeavour to set up and SWM cell or SWM department and will follow the state government norms for staffing the SWM department

2.3. The following shall be some of the responsibilities assigned.

2.3.1. To empanel consultants for preparation of DPRs, authorise institutes for appraisal of DPRs approve DPR and financial model of SWM and sanction projects

2.3.2. To review the matters related to implementation of SWM Rules, state policy and strategy on SWM and give advice to the state government

2.3.3. To examine the technical feasibility of the DPR submitted by the ULBs

2.3.4. To review action plans and to review progress of SWM projects

2.3.5. To monitor solid waste management service provision at the ward level and publicise contact details of ward committee members

2.4. There shall be involvement of the external stakeholders like community comprising households, informal recycling sector, municipal workers, non-government organisations, civic body organisations, self-help groups, worker organisations etc in the solid waste management planning and implementation

2.5. There shall be interdepartmental coordination to carry out convergence of social welfare and benefit schemes for the benefit of the sanitation workers and the waste pickers

2.6. The human resource utilisation guidelines shall be issued by the State Urban/ Rural Development department defined for different categories of local bodies from time to time indicating organisational structure , allocation of responsibility and accountability for effective implementation of the solid waste management plans

2.6.1. The guidelines shall identify the overall SWM organisational hierarchy of the various implementing bodies ,nodal agencies/Departments/ officers and implementing bodies from the state level down to the ULB /Gram Panchayat level

2.6.2. The guidelines shall specify the structure of the SWM cell /Department to be set up in every ULB per size, Designation and number with minimum number advised for every role and responsibility. Total sanctioned posts to be updated as per guidelines to be issued by UDD periodically

2.6.3. The criteria for selection, qualification / entrance exams / Number of Health Inspectors, Environmental Engineers , Pourakarmikas, for each role of SWM implementation shall be laid out

2.6.4. The guidelines shall also specify the tenure , transferability and timeline for filling of vacancies

2.7. A specific Training and capacity building plan with training modules and mandatory training of all personnel involved in solid waste management shall be developed.

2.7.1. SIUD shall be the nodal agency to develop training modules/ content and provide training and capacity building to all MSW staff. The required funding and budgetary allocation shall be provided. SIUD can enlist the assistance of solid waste management practitioners, experts and other institutions working with municipal workers and informal recycling sector for developing the modules.

2.7.2. The training plan shall ensure coverage of all personnel within a specified period

2.7.3. In addition the local body shall carry out the training or elearning and training modules under various Government of India programmes.

2.8. In addition the required completion of the e learning training modules that is prescribed by the MoHUA from time to time under the SBM to be completed by all SWM personnel

2.9. The capacity building exercises will also have to be undertaken for elected representatives, citizen volunteers, informal waste workers and other NGOs/CBOs working on waste management or community mobilisation.

3. Financial Management

3.1. The ULBs will have plan for accurate financial calculations which include incorporating elements of the full cost accounting as outlined the Swachh Bharat Mission, MSWM Manual 2016- Part 2 , page 64.

3.2. The ULBs will have to determine the availability and allocation of finances to different services and functions and identify sources of finances

3.3. The State Urban / Rural Development Departments shall set out the financial resource utilisation guidelines for different categories of ULBs.

3.4. Such guidelines shall provide for

3.4.1. Need based allocation of funds to help the ULBs to bridge the gap between resource and expenditure planned for

3.4.2. That the ULBs should ensure maximisation of own resources through efficient collection and widening of the Solid Waste Management SWM cess

3.4.3. Assessment and requirement of capital and revenue funds based on the total solid waste management plans of the ULB across the short term plans covering 2 to 5 years with year wise milestone implementation plan

3.5. The sources of funds available for solid waste management shall include

3.5.1. Central government grants through the 13th , 14th finance commission

3.5.2. Swachh Bharat Mission funds for capital expenditure

3.5.3. State grants through State Finance Commission tied/untied for revenue expenditure

3.5.4. Municipal funds through levy of SWM cess or user fees, fines and penalties collected

3.6. The availability of grants should be utilised annually to ensure the necessary asset creation as per the Short term plans

3.7. In order to bridge the gap between resource and operations and maintenance revenue expenditure

3.7.1. The ULBs should plan for adequate collection either through SWM cess or User fees , preferably through property tax or through authorised agency.

3.7.2. The ULBs shall ensure 100% collection of the SWM cess estimated.

i. The ULBs shall collect cess from places of public worship, occupiers of buildings / shops owned by ULBs and Government Buildings and from owners of vacant lands.

ii. The ULB shall collect cess from each occupier of the units in a complex or single building

iii. The ULB shall collect user fees from industrial townships, areas under the control of the Indian Railways, airports, airbases, Ports and harbours , defence establishments and special economic zones where collection is being carried out by the ULB or facilities of the ULB are being utilised

3.7.3. The sale of recyclables or compost should not be used as a source of funds for the ULBs. It should in fact be made available to the facility operator service provider to be set off against the operations and maintenance costs incurred and to improve the viability of the facility

3.8. Service models for mechanised or manual street sweeping, collection and transportation, processing and disposal shall be planned for carefully taking into account all relevant aspects .

3.8.1. Services of Safai karmacharis known as Pourakarmikas shall under no circumstances be contracted out. Services of the Pourakarmikas shall be utilised only under the Direct pay system with the ULB being the Principal employer . Payments shall be made directly to the bank account of each of the Pourakarmikas engaged

3.8.2. Not more than 50% of SWM collection, transport and processing services of a ULB shall be outsourced. Smaller ULBs [below 5 lac] shall manage SWM in-house

3.8.3. The ULBs may contract Outsourcing of MSWM services should be carefully considered taking into account all relevant aspects. Contracting models should be performance based and the payment to the private partner should be based on measured outputs reflecting the service quality levels as defined in the contract

3.8.4. The local body shall prepare a listing of preferred types service models for various solid waste management activities

References

1. Report of the Comptroller and Auditor General of India- Report no. 4 of the year 2018, , Government of Karnataka
2. Swachh Bharat Mission Municipal Solid waste management Manual , 2016
3. SWM Rules 2016
4. Template for Gap Analysis of Municipal Solid Waste Management Infrastructure and Services in Urban Local Bodies, 9th November 2017

Annexure 6 B

Health, welfare and dignity of workers

The Policy adopts the following principles as the fundamental minimum guidelines to be followed in regard to workers and further declares that under no circumstance shall these following principles be violated or diluted, though any practice in vogue or contemplated which are more beneficial would be implemented:

(i) The Policy recognizes the service rendered by the powrakarmikas in carrying out the obligatory functions of the local bodies in maintaining public health and acknowledges the historic injustice done to the workers in the past.

(ii) The Policy acknowledges that the majority of the solid waste management workforce engaged, especially the powrakarmikas, are predominately women and primarily from the historically, economically and socially oppressed Dalit communities. The Policy aims to ensure their social and economic upliftment.

(iii) It is recognized that any form of contractualization and casualization of these workers, may not be permissible under the existing law since the work is continuous, obligatory and perennial in nature and may result in exploitation, hence workers working in Group "D", including the supervisory staff, shall be employed directly and in a manner that ensures security of tenure.

(iv) The Policy recognizes that in order to ensure that D-Group workers have the opportunity of social mobility, they will be gradually granted permanent status and given the opportunity to be promoted to other works.

(v) The Policy recognizing the obligation of the State under Article 43 of the Constitution to secure to all workers, a living wage and conditions of work ensuring a decent standard of life and full enjoyment of leisure and social and cultural opportunities shall ensure that workers are paid a living wage, and as a first step towards the same shall be paid the same wages including all allowances and all benefits as enjoyed by the regular workmen.

(vi) The Policy recognizes that the dignity of labour shall be ensured by ensuring compliance of all labour laws, providing safe working environment, economic opportunity and social security for the people engaged in the environmental services. This includes the Industrial Disputes Act, 1947, Minimum Wages Act, 1948, ESI Act, 1948, Employees' Provident Funds and Miscellaneous Provisions Act, 1952, the Payment of Wages Act, 1936, the Payment of Bonus Act, Maternity Benefits Act and all other laws that are applicable.

(vii) The Policy recognizes the need to ensure post-retirement benefits. All workers shall be ensured terminal benefits and pensionary benefits concomitant to their service and further shall be ensured the provision of compassionate appointment to their dependents immediately.

(viii) The Policy recognizes and guarantees that the Government shall ensure the fundamental rights of all workers also identified as the fundamental principles identified by the ILO Declaration on Fundamental Principles and Rights at Work Adopted at its Eighty-sixth Session, Geneva, 18 June 1998, including

(a) Freedom of association and the effective recognition of the right to collective bargaining;
(b) Elimination of all forms of forced or compulsory labour;
(c) Effective abolition of child labour; and
(d) Elimination of discrimination in respect of employment and occupation.

(ix) The Policy recognizes that the nature of the work exposes the works to occupational health hazards that requires urgent studies and attention. The preliminary step will be to provide all the equipment and facilities detailed in the Notification bearing No. KaEe 71 LWA 2015 dated 04.08.2016, as also, but not limited to, Uniforms, Hand gloves, Caps, Gumboots with ISI mark, Slippers, Cleaning instruments and tools, Long handle broom, broomstick with wiring, etc.

(x) The Policy recognizes that urbanization and increase in per capita waste generated requires that the workload on the powrakarmikas is constantly increasing. It recognizes that the norm of 1 powrakarmika for every 250 inhabitants should be adopted in every aspect of solid waste management. It further recognizes that with the increase in per capita waste produced, the number of powrakarmikas and normative standards will be further increased at a minimum of every three years.

(xi) The Policy recognises that the workforce involved in solid waste management includes street sweepers, door-to-door collectors, drivers, helpers, loaders and workers in various processing units and establishments in all processes of solid waste management and ensures their protection under these principles and guidelines.

(xii) The Policy mandates that there shall be a specific focus on places of tourism, religious and historical significance and recognises that cities, towns and villages embracing these descriptions involve substantial increased waste generation and the increased workload and stress for workers. Special focus will be on these areas to ensure that there is relaxation in the population to workers' norms and normative standards, and to see that manual scavenging does not take place.

(xiii) The Policy acknowledges that there are grave occupational health hazards to which the workers are exposed and adopts the recommendations of the reprts of the Salappa Committee and the Three – Officials Committee on Safety, technical up-gradation and mechanization. Workers should be provided with protective and safety gear and the implements utilized in the cleaning of streets and garbage removal must be upgraded including motorisation of the push trolleys

must be motorized and the mechanized methods of sweeping must be introduced. The work of solid waste management is one with serious occupational hazards, both short-term and long-term. In order to prevent such occupational hazards, it is necessary to ensure the provision of safety equipments as mandated under law. The notification issued under the Minimum Wages Act dated 04.08.2016 mandates the provision of the facilities and protection gear, which at the very least is to be provided.

(xiv) The Policy recognizes and adheres to the principles of collective bargaining in accordance with the Convention No. 87 of the International Labour Organization being the Freedom of Association and Protection of the Right to Organise Convention, 1948 (No. 87) and recognizes the right of the workers to organize and places a duty on the employer to collectively bargain in good faith.

(xv) The Policy resolves that the State government, local bodies and all agencies concerned with solid waste management shall be model employers.

(xvi) The Policy recognizes that Article 46 of the Constitution mandates that the State shall promote with special care the educational and economic interests of the weaker sections of the people, and, in particular, of the Scheduled Castes and the Scheduled Tribes, and shall protect them from social injustice and all forms of exploitation and in light of the said obligation undertakes to ensure the provision of quality education, including primary, secondary and higher education, permanent housing, quality health services and take further steps for overall upliftment.

(xvii) The Policy recognizes that Article 43A of the Constitution mandates that the State shall take steps to secure the participation of workers in the management of undertakings, establishments and other organisations and taking cognizance of the same shall ensure the participation of the workers and their representatives in all decisions relating to solid waste management.

(xviii) The Policy recognizes and acknowledges that owing to the insufficient sewage networks, workers, especially in smaller villages, towns and cities, are doing manual scavenging. In this regard the Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013 shall be implemented in full letter and spirit so as to protect the dignity and rights of workers.

Annexure 6 C

Integration of Informal Recycling Sector in the process of Solid Waste Management- Policy and Strategy

1.0 Introduction

1.1 This policy recognises and acknowledges the contribution and role of the informal recycling sector, in retrieving valuable materials, for recycling and further processing, diverting materials otherwise destined for landfills. The policy also acknowledges the entrepreneurial nature of the sector in dealing with issues of unemployment, for a livelihood and the problems and challenges faced with regards to poor working conditions, lack of identity and harassment, need for space, need for finance and technology and skill up gradation among others.

1.2 This policy acknowledges the directions of the Lok Adalat in directing the ULBs in issuing occupation id Cards and setting up dry waste collection centers and Karnataka High Court WP 24739/2012 in recognising that wastepickers have first right of access to dry waste.

1.3 This policy is evolved in conformance of the Solid Waste Management Rules, 2016, Sec 11 a, b, c and m and Section 15 c, d, h, l along with various other legislations, advisories and guidelines on the need for integration of the informal waste sector in solid waste management such as The National Environment Policy, 2006 states "Give legal recognition to, and strengthen the informal sector systems of collection and recycling of various materials. In particular enhance their access to institutional finance and relevant technologies" (Section 5.2.8 Part (iii) Action Plan e). (**See Annexure for list of guidelines**) Further Articles 39 (a) of the Constitution clearly mentions that the State shall in particular direct its policy so that - (a) the citizens, men and women equally, have the right to an adequate means of livelihood.

1.4 This policy seeks to promote and protect safe and decent livelihoods in the recycling industry, along with public health and occupational safety of workers, keeping in mind the larger goals of environmental sustainability by following the circular economy principles.

2 Objectives

The overarching objective is to promote enabling conditions and supportive environment the local recycling industry that ensures the informal waste workers livelihoods and address the local government dry waste management.

The specific objectives are:

2.1 To provide legal recognition to all informal sector workers in waste industry including wastepickers, waste sorters, itinerant buyers scrap dealers etc.., and issue occupational Identity card with 20 year validity

2.2 To acknowledge the traditional rights of waste pickers and other informal waste collectors to waste and recyclable materials

2.3 To earmark recycling spaces and provide necessary infrastructure for sorting and storing of materials and reserve land in development plans for decentralised processing and setting up of sorting sheds, dry waste collection centers, material recovery centers and allowing setting up of scrap shops at the neighbourhood level and awarding protection of natural markets and support natural recycling hub (dry waste recycling an preprocessing area organically developed over the years) by providing incentivize as green industry.

2.4 To facilitate, support and encourage memberships based organisations of waste pickers and other informal recyclers, and organisations working with workers informal waste sector

2.5 To set up participatory mechanisms, for inclusion of representatives of wastepickers in all committees related to solid waste management

2.6 To facilitate and promote access to social security, health benefits, access to finance, technology and skill up gradation for waste workers

2.7 To provide incentives to encourage informal sector participation, seeking it bid for tender and other contracts, excise and tax exemptions, priority to undertake small contracts

2.8 To make appropriate interventions for better or alternatives to the children wastepickers

2.9 To ensure that adequate and appropriate personal protective equipment is made available for all informal waste workers, as detailed in SWM Rules 2016, Section 15 zd

3. Definition of words

3.1 **Decentralised** means establishment of dispersed facilities for maximizing the processing of biodegradable waste and diversion of recyclables closest to the source of generation so as to minimize

transportation of waste for processing or disposal (As per Pune Municipal Corporation Public Health & Sanitation Bye Laws 2017) **.**

3.2 **Door-to-Door collection system** is defined as system of collection at source by actors (waste pickers, corporation employees, empaneled vendor, NGOs, SHG groups, waste collectors, etc, authorised for collection) , by stream (Wet, Dry, Biomedical, Domestic Hazardous, Sanitary) to destination (Bio gas plant, local composting plants, Dry waste collection centers), employing different modes for transportation (push cart, hand cart, carriage, cart, van, truck bicycle, cycle-rickshaw, auto-rickshaw, motor vehicle etc. or any wheeled conveyance), based on the geographical terrain.

3.3 **Dry Waste Collection Center** means any land shed or structure located or any municipal or Government land or in a public space which is intended by the municipal body to receive and sort dry waste; Dry Waste Collection Centers (DWCCs) are important aspect of decentralized waste management and though the concept was modeled around the neighbourhood recycling centers, was based on the principles of waste hierarchy, to put in practice the three R's – reduce, recycle and re-use at the neighbourhood level. The DWCCs are to facilitate the collection/ take back and buy-back of all dry waste from local residents, contract workers, and waste workers or scrap dealers, integrate informal waste workers into the operations of these centers and encourage/implement extended producers responsibility (EPR) of packaging materials that are not being.

3.4 **Informal waste collector** includes individuals, associations or waste traders, who are involved in sorting, sale and purchase of recyclable materials

3.5 **Informal recycling sector** – refers to the informal recycling pyramid, represented in a pyramid structure, in which the bottom most layer consists of waste pickers and waste sorters, the second layer consists of itinerant buyers, the third layer consists of neighbourhood scrap shops, the further layer consists of large scrap traders and the fifth layer or the top most layer being informal recyclers and reprocessors.

3.6 **Integration** refers to several ways in which the informal waste sector could be involved in the formal waste management systems or to create supportive and enabling conditions, to allow them to function effectively for a decent livelihood.

3.7 **Itinerant buyers** means a person or groups of person who purchase small quantities of scrap from households, offices, shops and other small commercial establishments

3.8 **Occupational Identification Card** means a card to be issued by the concerned local bodies, for a period of time to all waste pickers and other informal waste collectors in the state denoting their status as waste pickers or informal waste collectors and their right to collect, segregate and sell recyclable waste across the state.

3.9 **Person** means any person or persons and shall include any shop or establishment or firm or company or association or body of individuals whether incorporated or not and their agents, assignee etc.(As per Pune Municipal Corporation Public Health & Sanitation Bye Laws 2017)

3.10 **Processors/Reprocessors and Recyclers** – Reprocessors/processors and recyclers are largely located both in the formal and informal sector and use scrap as their raw material. They range from small scale enterprises to medium size labour intensive industries to automated multinational factories in the case of paper and glass. All enterprises need capital investment and utilize power for their operations.

3.11 **Persons engaged in the recycling industry** – includes all persons engaged as waste collectors, outsourced or contracted municipal waste collectors, itinerant buyers, scrap traders and those employed in the trade, processing and reprocessing industry.

3.12 Scrap dealers/ traders' –include retail and wholesale dealers/ traders who buy directly from the waste collectors and itinerant buyers and resell to processors and reprocessors.

3.13 **Waste Markets** means any designated or Natural waste trading areas, in operation for three to five years or more around the city and within the city that buys, sells, trades, aggregates, processes, pelletisation, bailing, and recycles non-biodegradable waste/dry waste includes refurbishment, repair.

3.14 **Wastepickers** means a person or persons informally engaged in collection and recovery of reusable and recyclable solid waste from the source of waste generation, the streets, bins, material recovery facilities, processing and waste disposal facilities for sale to recyclers or through intermediaries to earn their livelihood.

3.15 **Waste sorter** means a person or groups of persons engaged in sorting and grading waste into different categories

4. Strategy for integration of Informal Waste Sector

4.1 Identify organisations /groups/institutions working with waste pickers and other informal waste workers

a. Identify organisations/groups/institutions working with informal waste workers, if none exists, engage with groups /institutions/organisations working in other cities/districts of Karnataka

b. Establish partnerships through MOU or contract, to identify wastepickers and other informal waste workers within the ULB limits

4.2 Collection of Baseline Data on the Informal Waste Sector at the ULB level and management of Central Data base

a. Issue circular to document landscape, universal survey of wastepickers and other informal waste collectors for registration and enumeration in the ULB limits.

b. Map the different kinds of workers involved: in different activities of waste management: picking, sorting, transportation, aggregation, sale and reprocessing and the type of waste collected

c. Map areas of wastepickers colonies and markets.

d. Collect training needs data (give options to waste-pickers for different kind of training sessions available and they will be interested to pick whichever suits their interest)

e. Compile and maintain data collected in a central database.

Refer BBMP Circular No: A/PSR/509/11-12, for survey details of how to conduct, what to keep in mind while outsourcing, format of the survey and verification process, maintenance of central database

4.3 Issuance of ID cards for wastepickers and other informal waste workers including waste sorters, itinerant buyers and other informal waste collectors.

a. The onus of registration of wastepickers and enumeration of other informal waste workers will lie with the ULB as mentioned in SWM Rules 2016 section 4 (1), 15 (c), 15 (d)
b. The ULB will arrange for a capacity building exercise on understanding the informal recycling sector for all the officers, prior to the start of the registration and enumeration process,
c. The ULB will ensure that adequate publicity will be given prior to the start of the registration process, with details of area covered and period of survey.
d. Occupational ID cards will be only issued to wastepickers/or other informal waste collector, if she or he has completed eighteen years of age along with a self-declaration stating the she/he is a waste picker.
e. The verification process can include an introduction letter from the Resident Welfare Association or Area Sabha, Ward Committee or Commercial complexes or Hotels and Companies stating that waste picker is picking up waste from their premise or proof of membership of any organisation that has as its objectives the welfare and benefit of wastepickers and is constituted under the Societies Registration Act, 1860, Indian Charitable Trust, The Trade Union Act, 1920, The

Companies Act, 2005, The Cooperatives Act, 2005 or any other Act in India or Letter from a neighbourhood scrap dealer/trader to whom the scrap is being sold by the waste picker or waste collector

f. The formal survey can be carried out by the ULB directly or through the NULM/NRLM Livelihood Centers, or the ULB can engage an NGO working on livelihood or labour issues or any other organisation working on informal waste worker issues.
g. Once the survey is completed, the waste picker will be issued an acknowledgement receipt with the respondent number printed on it, and the date of completion of the survey.
h. The occupational ID card will contain the logo and the name of the municipality, and state occupational ID card. It will include the name of the wastepicker, date of birth/age, gender, address and contact number if any, ward number/locality name, identity card number, date of issue and validity and signature of te commissioner or equivalent
i. The Occupational ID card so issued will be for a period of twenty years and renewable thereafter subject to prevailing rules
j. The time frame to distribute occupational ID cards if all eligibility conditions are met, post the completion survey, will be within a maximum period of four months.
k. The ULB will conduct the survey five years, but in the intervening period, the ULB will continue to issue occupational ID cards through the NULM City Livelihood Centers and NRLM.
l. The ULB will maintain a paper record of the survey for a period of seven years and will maintain electronic records, duly backed up.

4.4 Facilitating Training and Skill Development

a. Training sessions must include and not be limited to how to set up organizations of waste-pickers, how to better recyclable business, organic waste management, event waste management, terrace gardening, plastic recycling, finance management, health and hygiene.
b. The ULB will engage in a special session on the need and use of personal protection equipment, while handling waste.
c. The ULB will also educate the informal waste recycling workers on door to-door collection of segregated waste, the existing rules and regulations
d. For some of these training sessions, convergence of National Urban Livelihood Mission and National Skill Development Council, Central Institute for Plastic Engineering Institute, National Safaikaramcharis Finance & Development Corporation, Skills Council for Green Jobs and any other scheme established by government that are relevant
e. The ULB will also facilitate micro entrepreneurship trainings programs, along with trainings to register wastepicker based associations or organisations, in consultation with organisations woking with wastepickers and other informal waste workers

f. The ULB will facilitate relevant technology and other digital training for the informal waste workers, as and when the opportunity arises.

4.5 Facilitating Common Interest Groups/SHGs, led up by the informal waste sector in the absence of an organisation or group working in the area as outlined by the Convergence Document between SBM and Day –NULM

a. The ULBs will facilitate and handhold support for Common Interest Groups of informal waste pickers and waste collectors and link them to necessary skill training program and other entrepreneurship development programs, as outlined by the SBM- Day NULM convergence Document.
b. Following the formation of CIG, ULBs will encourage the formation of waste picker and other informal waste collector organisation constituted under the Societies Registration Act, 1860, Indian Charitable Trust, The Trade Union Act, 1920, The Companies Act, 2005, The Cooperatives Act, 2005 or any other Act in India.

4.6 System for Integration of the informal recycling sector into the solid waste management system

a. Promote handing over of segregated dry waste to wastepickers and other informal waste collectors, by way of announcements
b. The ULB can develop a system to allot /assign Dry Waste Collection Centers/ Material Recovery facilities to registered wastepickers or enumerated scrap dealers, for operations
c. Post capacity building, the ULB can assign/allot other decentralised waste processing like organic waste management - composting, management of bio methanation, plants, management of community gardens to registered wastepickers or enumerated scrap dealers
d. Include wastepickers and other informal waste collectors in door to door collection as outlined in SWM Rules 2016 15 c
e. Facilitate and promote wastepickers and other informal waste collectors services by way of empanelment as a service vendor in providing services to bulk waste generators and commercial generators
f. Encourage wastepickers in in situ management of waste at bulk generator facilities/premises
g. Enter into contracts/MOUs with wastepickers and other informal waste collectors for management of waste in commercial areas and evolve a mechanism for timely payments
h. Wastepickers and other informal waste collectors can also be integrated as direct employees within the ULB, in solid waste management
i. Earmarking spaces for sorting sheds for the wastepickers and other informal waste collectors. The ULB will facilitate opportunities for technology upgrade in the recycling hubs/ natural

markets and other areas that the ULB earmarks for value addition/processing of waste into materials

j. The ULB will facilitate convergence between various schemes notified by the Central and State Governments such as Mudra Yojna, National Safaikarmacharis Finance Development Corporation Schemes, Startup India, for access to finance and technology
k. Sensitisation/ Communication and Capacity building of police, RWAs, municipal officers, municipal workers including pourakarmikas & safaikarmacharis and other citizens of informal waste recycling workers role and contribution
l. The ULB will ensure prevention of Harassment of wastepickers and the other informal waste collectors
m. The ULB will ensure that if wastepickers are employed in private facilities or MRFs operated by the private agencies, wastepickers will be provided with clean and functional toilets along with access to clean drinking water.
n. As outlined by SWM Rules 2016, the ULB will ensure representation of representative of waste picker organisation in all State level Committees and Task Force and consultation on solid waste management

4.7 Provision of occupational safety gears

a. The ULB will provide personal protection equipment to all wastepickers and other informal waste collectors including fluorescent jacket, hand gloves, rain coats, appropriate footwear, and masks periodically

b. The ULB will make a note of what has been issued out to wastepickers in the central database along with occupational ID cards

4**.8 Facilitate access to social security and health and other welfare provisions**

a. The ULB will facilitate convergence between National Health Mission or Aayushmaan Bharat, any other health schemes instituted by the Central and State Government.

b. The Municipal Governments should set up a health insurance scheme for all enumerated waste-pickers covering their health costs.

c. The ULB will facilitate monthly health camps with the help of Government/Aided hospitals in different neighbourhoods

d. Facilitate access to crèches for child care

e. The ULBs will facilitate free access to government toilets upon production of occupational ID cards

f. The ULB will facilitate necessary scholarship programs for children wastepickers as announced by the Central or State Governments

Note: This document must be read together with the Empowering Marginalised Groups-Convergence between SBM and Day-NULM- March 2018 by the Ministry of Housing and Urban Affairs and those listed in Annexure 1

Annexure 6 c (i) : Government of India policies, initiatives and reports on the need to integrate wastepickers and other informal waste workers

There are several rules and policies, government orders, and steering committee reports in India that clearly state the need to integrate the informal waste sector.

1995	**The Planning Commission constituted a High Power Committee on Solid Waste management under the Chairmanship of Prof. J.S. Bajaj, Member, Planning Commission, Government of India, 1995, which** "Recognized waste-picker contribution, stressed the need to organize them into cooperatives and emphasized the need for them to be integrated into municipal solid waste management systems and also suggested the need to construct ward level recovery centre". https://swachcoop.com/pdf/Bajaj%20Committee%20Report%201995.pdf
1999	**Recommendations For The Modernization Of Solid Waste Management In Class I Cities In India : By Report Of The Committee Constituted By The Hon'ble Supreme Court Of India (March, 1999)**, "Recommended that NGOs may be encouraged to organize waste-pickers for door to door collection"
2000	**Municipal Solid Waste (Management and Handling) Rules 2000** Note: Given that the 2016 rules have been notified, the details are listed below
2002	**The Report Of The Second Indian National Labour Commission-2002** One of the key points listed in the TOR was "to suggest an Umbrella Legislation for ensuring a minimum level of protection to the workers in the unorganised sector." It is very difficult to make a list of all the employments and occupations that fall in the unorganised sector, but it is clear that the workforce in this sector covers a vast spectrum, extending from self-employed workers, part-time workers and domestic workers to workers in employments in the penumbra of the organised sector. http://www.prsindia.org/uploads/media/1237548159/NLCII-report.pdf
2006	**National Environment Policy 2006, clearly states, "**Give legal recognition to, and strengthen the informal sector systems of collection and recycling of various materials. In particular enhance their access to institutional finance and relevant technologies." (Section 5.2.8, point (e), Pg. 39) https://www.indiawaterportal.org/articles/national-environment-policy-nep-ministry-environment-and-forests-2006
2007	**National Petrochemical Policy 2007 states the following** **The policy also notes that,** the downstream plastic processing industry is highly fragmented and consists of tiny, small, and medium units. Presently there are about 22000 plastic processing units of which about 75% are in the small scale sector. The small-scale sector, however, accounts for only about 25% of the polymer consumption. The industry also consumes recycled plastic, which constitutes about 30% of the total consumption. The structural constraints in the plastic processing industry relate to the reservation of articles of plastic for manufacture in small-scale sector. While there are no quantitative **restrictions on imports, incentives offered to remain small** have resulted in several suboptimal size plants operating with older generation technology. Plastic processed articles which are exported both to the developed and developing countries form about 1.2% share in the global export market even though it is one of the important foreign exchange earners of the country **National Programme on Petrochemical Development** **Petrochemical Research and Development Fund** The new scheme of the PRDF would cater to the projects of R & D, waste management, recycling and development of biopolymers and biodegradable polymers is proposed to be formulated. (**A feasibility report of such fund was submitted in November 2010. No update on this is available on online)** Centres of Excellence in Polymer Technology: One of the focus area includes- focus of recycling process

	technology, innovative collection, segregation, cleaning and development of recycled products **Plastics and Environment**: There is a need to develop awareness on recyclable properties of plastics. Promotion of recycling technology for used plastics may be promoted as parallel industry. (The recycled plastics industry has also made a mark by providing employment in the manufacture of varied consumer products) Government, Industry and NGO are required for bringing awareness about the proper disposal of plastic waste and for suitable mechanisms for systematic waste collection, recycling and promote recycled products in the non-critical applications **Initiatives on Waste Management** Plastic Industry encouraged to take up community awareness. For curtailing indiscriminate littering efforts will be made to evolve mechanisms for industry contribution to the recovery and recycling of the post-consumer spent packages. Encouragement for the use of recycled plastic products in non-critical services will be given priority An incentive scheme for the ULBs which contribute significantly towards plastic waste management/recycling would be formulated with the MPUD being nodal agency Policy restrictions on import of plastic waste/Scrap reviewed in consultation with Moef and Department of Commerce. https://www.cipet.gov.in/national-policy-on-petrochemicals.php
2008	**National Action Plan for Climate Change 2008 states,** "While the informal sector is the backbone of India's highly successful recycling system, unfortunately a number of municipal regulations impede the operation of the recyclers, owing to which they remain at a tiny scale without access to finance or improved recycling technologies" (3.3National Mission on Sustainable Habitat) National Action Plan for Climate Change, 2008 http://pmindia.nic.in/Pg01-52.pdf
2008	**The Performance Audit Report on Management of Waste In India submitted by the office of the Comptroller and Auditor General (CAG) (December 2008)** "MOEF/states should consider providing legal recognition to rag pickers so that recycling work becomes more organized and also ensure better working conditions for them." (Chapter 3, Section 3.5) http://saiindia.gov.in/english/home/Our_Products/Other_Reports/Study_Reports/Study_Report_Environment_Audit/Chapter_5.pdf
2008	**The Unorganized Workers' Social Security Act 2008** has several definitions, schemes and acts relevant to the informal waste sector. **Employer** means a person or an association of persons, who has engaged or employed an unorganised worker either directly or otherwise for remuneration **Home based worker** means a person engaged in the production of goods or services for an employer in his or her home or other premises of his or her choice other than the workplace of the employer, for remuneration, irrespective of whether or not the employer provides the equipment, materials or other inputs **Self-employed worker** means any person who is not employed by an employer, but engages himself or herself in any occupation in the unorganised sector subject to a monthly earning of an amount notified by the Central government or State Government from time to time… **Unorganised sector** means an enterprise owned by individuals or self-employed workers and engaged in the production or sale of goods or providing service of any kind whatsoever, and where the enterprise employs workers, the number of such workers is less than ten **Unorganised worker** means a home-based worker, self-employed or a wage worker in the unorganised sector and includes a worker in the unorganised sector who is not covered by any of the Acts mentioned in Schedule II of the Act **Wage worker** means a person employed for remuneration in the unorganised sector, directly by an employer or through any contractor, irrespective of place of work, whether exclusively for one employer, or for one or more employers, whether in cash or kind, whether as a home-based worker,, or as a temporary or casual worker, or as a migrant worker, or workers employed by households including domestic workers, with a monthly wage of an amount as may be notified by the Central Government or State Government, as the case might be The Act also states that the State Government may formulate and notify, from time to time, suitable schemes for unorganised workers, including schemes relating to provident fund, employment injury benefit, housing, educational scheme for children, skill up gradation of workers, funeral assistance and old age homes. **The Act also lists about ten schemes** such as the Indira Gandhi National Old Age Pension Scheme, National Family Benefit Scheme, Janani Suraksha Yojana, Janashree Bima Yojana, Aam Admi Bima Yojna and Rashtriya Swasthya Bima Yojna **The Schedule II lists the following Acts**: The Workmen's Compensation Act, 1923 (8 of 1923), The Industrial Disputes Act, 1947(14 of 1947), The Employees' State Insurance Act, 1948, (34 of 1948), The Employees Provident Fund and Miscellaneous Provisions Act, 1952 (19 of 1952), The Maternity Benefit

	Act, 1961 (53 of 1961), The Payment of Gratuity Act, 1972 (39 of 1972) http://legislative.gov.in/sites/default/files/A2008-33.pdf
2008	**The High Powered Expert Committee (HPEC) for estimating the investment requirement for urban infrastructure services set up by the Ministry of Urban Development** in May, 2008 stated that, "Cities and towns of India are visibly deficient in the quality of services they provide, even to the existing population The Committee believes that public services such as drinking water, sewerage, solid waste management, roads, and street lights must be accessible to one and all to achieve the goals of inclusion and to achieve both inclusion and economic growth will, however, require shifting the focus of policy from creating physical infrastructure to delivering services". http://icrier.org/pdf/FinalReport-hpec.pdf
2009	**The Asian Development Bank (ADB) retained ICRA Management Consulting Services Limited (IMaCS) to develop the Toolkit for implementation of Public Private Partnerships (PPPs) in Municipal Solid Waste Management (MSWM) sector**.The toolkit prepared on behalf of the Ministry of Urban Development Government of India (MOUD) and supported under the Government of India-ADB led initiative, jointly undertaken with the Department of Economic Affairs Ministry of Finance Government of India (DEA) for mainstreaming Public Private Partnerships (GoI-ADB-PPP initiative) across infrastructure sectors, lists : Rag Pickers: In the Indian context, rag pickers contribute a great deal in waste management as they scavenge the recyclable matter thereby saving the municipality of the cost and time of collecting, segregating and transporting garbage to the dumps. It is estimated that about 60 per cent of plastic waste gets recycled even in the absence of formal systems for waste collection. However, it is to be noted that rag pickers operating in an informal nature are often exposed to very poor working and living conditions… While MSWM efforts and planning by should leverage the presence of rag pickers, these efforts should also focus on formalising and building adequate safeguards for the same http://ppp.worldbank.org/public-private-partnership/sites/ppp.worldbank.org/files/documents/India_SolidWasteMgmt_PPP_Tookit-Volume-I_EN.pdf
2010	**Report of the Committee to Evolve Road Map on Management of Wastes in India, MOEF 2010** The scope of the committee was to examine the existing administrative and regulatory mechanism in Waste Management. The report emphasised that for Sustainable Waste Management , "Collection of segregated waste must be done by local agencies through NGOs/Association of rag pickers and self Help Groups (SHG) groups for making arrangements for collection of waste from: Households, Slums & Squatter settlements, Commercial areas, Industrial areas, Horticulture nurseries are parks, sites generating construction and demolition waste, office complexes, slaughterhouses and vegetable markets, Health Care establishments especially their non-infected waste. The inorganic/non-biodegradable waste should be channelized through informal sector workers like door-to-door collection workers, SHGs, waste worker associations…" **Under Recommendations, under each category the report lists** **MUNICIPAL SOLID WASTE MANAGEMENT**: The inorganic/non-biodegradable waste should be channelized through the informal sector workers like door-to-door collection workers, SHGs, waste worker associations and others to registered recyclers for recycling and only the remaining waste, which cannot be recycled should be taken to sanitary landfills by the registered recyclers or the municipality. **Plastic Waste** : Inventory of plastic waste viz. waste generated, processed, recycled and disposed off in the country, including the details of manufacturers, processors, recyclers etc. with type and quantities of plastics being processed must be recorded; State-wise and city-wise data on plastic waste should be inventorised; This inventory would serve as the decision support system for formulating further policies and management rules. Technical manuals for each type of plastics and end use applications for the benefit of all stakeholders should be prepared. Rules for manufacture, use, reuse and recycling of plastics and monitoring mechanisms for the regulatory and implementing agencies is to be facilitated; Understanding the safety issues involved in Plastics Waste Management (PWM) is to be promoted. It further states, the responsibility of Manufacturers & Processors may include the following: · Paying for both recyclable & non-recyclable plastics and their ultimate waste management options · Setting up of safe and sustainable common plastic waste management units by plastics processors/re-processors in community areas or in designated common facility locations. · Providing incentives for adopting non-burn and novel technologies for non-recyclables · Providing incentive schemes for processors & recyclers adopting environmentally sound technologies. · Undertaking mandatory responsibility of producers for R&D activities on plastic waste mitigation.

	The responsibility of the recyclers to include the following: · Recycling plastic waste into safe value-added products using environmentally sound techniques and adhering to food and health safety standards in an honest, self-regulatory manner. · Creating occupationally safe employment opportunities in recycling sector by providing safe and conducive environment for workers The responsibility of the concerned authorities to include the following: · Capacity building for segregation of plastic waste at collection sites and safe handling by rag pickers. · Channelizing the waste collection through waste collectors associations who practice safe and environmentally sound option Coordinated approach for plastic waste management by manufacturers, consumers, collectors, re-cyclers as well as civic authorities. · Need to maintain separate waste bins designated for nonbiodegradable & biodegradable plastic waste both at residential and community level. Assuring and Ensuring involvement of the informal sector in segregated collection, sorting, storage, resale and safe reprocessing. Necessary infrastructure to be created for plastic waste management in various towns. Encouragement of involvement of various stakeholders especially the informal sector through self-help group formations and provision of required space and sorting facilities within the cities and towns and capability building to be initiated. **Packaging** A study should be initiated for estimating the quantity and characteristics of each type of packaging material in the waste stream, major sources of its generation and existing disposal methods being practiced. A policy on packaging waste management system with the participation of all stakeholders should be developed. Studies on a framework for promoting clean recycling policy for packaging waste should be developed by using Life Cycle Analysis (LCA) methods. Guidelines/Rules should be brought out to involve large scale retailers and user industries from pharmaceuticals, processed food industries etc. in devising strategies for managing these wastes. Bureau of Indian Standards (BIS) should be requested to frame standards for manufacture and use of packaging with the idea that their reuse and recycling should not be hazardous to human health and the environment. Plastic packaging material should be characterized and their processing recommended after proper hazard assessment as also material from other Packaging materials viz., tetra pack, paper, pharma, glass and metals. There is a need to prescribe standards for non-plastic packaging as well plastics. Quantification and characterization of non-plastic packaging waste reaching landfill should be carried out and their recycling potential should be assessed and safe technologies for the same recommended. A comprehensive legislation on packaging waste should be initiated. Handling of any post-consumer waste is an issue which has a collective responsibility for producers, consumers, regulators, policy makers and enforcement agencies. Therefore, conducting mass awareness programmes for manufacturers, consumers, regulators, policy makers and citizens would have to be initiated. Strategies for recovering energy by incineration of packaging waste should be discouraged and banned. Design safer packaging, sorting, separating, reuse, recycling and safe reprocessing should be encouraged and promoted. http://www.indiaenvironmentportal.org.in/content/300662/report-of-the-committee-to-evolve-road-map-on-management-of-wastes-in-india/
2010	**Report of the committee set up to frame National Sustainable Habitat Standards for the Municipal Solid Waste Management** The National Mission for Sustainable Habitat was approved by the Prime Minister's Council for Climate Change in June 2010. LEGAL PROVISIONS: Municipal authority to identify & allocate suitable locations to facilitate sorting of recyclable waste- The Municipal Authorities may identify and allocate suitable pieces of land in 4 their Jurisdiction to facilitate sorting of various components of recyclable material collected by waste collectors and prevent such activities being carried out on the footpaths, road side, etc **Report of the Committee to frame National Sustainable Habitat Standards for the Municipal Solid Waste Management** The Municipal authorities may identify & allocate suitable pieces of land in their jurisdiction to facilitate sorting of various components of recyclable material collected by waste collectors **National Action Plan for Climate Change- National Mission of Sustainable Habitat**: The National Action Plan for Climate Change states that India has a significantly high rate of recycling in comparison to developed countries. The National Mission on Sustainable Habitat which is a component of the National Action Plan for Climate Change will broadly cover the following aspects:**Recycling of Material and Urban Waste Management**. A special area of focus will be development of technology for producing power from waste. The National Mission will include a major R&D programme, focusing on

	bio-chemical conversion, waste water use, sewage utilization and recycling options, plasma conversion of waste of biological origin to liquid fuels that can substitute for petroleum based fuels wherever possible **Report of the committee set up to frame National Sustainable Habitat Standards for the Municipal Solid Waste Management**: Municipal authority to identify & allocate suitable locations to facilitate sorting of recyclable waste : The Municipal Authorities may identify and allocate suitable pieces of land in their Jurisdiction to facilitate sorting of various components of recyclable material collected by waste collectors and prevent such activities being carried out on the footpaths, road side, etc**.** **Duty of Municipal Authorities to provide temporary Waste storage depots** It shall be incumbent on the Municipal Authorities to either Provide and hygienically maintain adequate covered waste storage depots in the city or place at such depots large mobile covered Containers / receptacles of green colour for Separate storage of Organic/ bio- degradable waste collected from households, shops and establishments and black containers for storage of waste collected from streets and public spaces until the waste is transported to processing and disposal sites or arrange for direct transportation of such segregated waste from the source of generation to the treatment or disposal site. They shall also make adequate provision for the safe deposition of domestic hazardous waste material by the citizens as may be notified and arrange for their collection and safe disposal. **http://mpurban.gov.in/pdf/MunicipalSolidWasteManagement.pdf**
2010	**The Ministry of Urban Development circular dated March 2010 Circular** : Directs the principal secretaries to include waste pickers into solid waste management and further articulates the principles on which the integration of waste pickers should occur. http://cpheeo.gov.in/upload/uploadfiles/files/Advisory%20on%20Improving%20Municipal%20Solid%20Waste%20Management%20Services.pdf
2011	**Lok Adalat's Direction on issuance of occupational ID cards and setting up of dry waste collection center**
2011	**Plastic Waste (Management and Handling) Rule, 2011** **And E-Waste (Management and Handling) Rule, 2011** Note: Given that the 2016 rules have been notified, the discussions are listed below
2011	**E Waste in India, RESEARCH UNIT (LARRDIS) RAJYA SABHA SECRETARIAT NEW DELHI, JUNE, 2011, recognising the contribution of the informal waste sector states** India has the label of being the second largest e-waste generator in Asia. According to a MAIT – GTZ estimate,83 India generated 330,000 lakh tonnes of e-waste in 2007, which is equivalent of 110 million laptops. More than 90 per cent of the e-waste generated in the country ends up in the unorganized market for recycling and disposal. The unorganized sector mainly consists of the urban slums of the metros and mini-metros, where recycling operations are carried out by the unskilled employees using the most rudimentary methods to reduce cost. The unorganised sector consists of an assortment of small and informal businesses not governed by any stringent health and environmental regulations In Bengaluru, the Silicon capital of India, e-waste recycling is a multi-crore market where e-waste is received in Gowripalya and Nayandahalli. The e-waste scrap dealers send the segregated and dismantled e-waste parts to Delhi and Mumbai every alternative day. The e-waste recyclers earn around Rs. 2-3 lakhs a month from selling the dismantled e-waste to Delhi. http://rajyasabha.nic.in/rsnew/publication_electronic/E-Waste_in_india.pdf
2013	**Ministry of Urban Development Government of India Advisory on Improving Municipal Solid Waste Management Services** Specifies the need to incorporate the '3Rs' principle (Reduce, Reuse, Recycle), decentralisation of waste and incorporation of a MIS system and also makes a mention of the importance of recycling and integrating waste-pickers "It is essential to save the recyclable waste material from going to the waste processing and disposal sites and using up landfill space. Profitable use of such material could be made by salvaging it at source for recycling. This will save national resources and also save the cost and efforts to dispose of such wastes. This can be done by forming a habit of keeping recyclable waste material separate from food wastes, in a separate bag or a bin at the source of waste generation. This recyclable waste can be handed over to the waste collectors (rag pickers) at the doorstep. Local bodies may mobilize voluntary organizations, Non-

	Governmental Organizations (NGOs) or co-operatives to take up the work of organizing street rag-pickers and elevate them to door step "waste collectors" by motivating them to stop picking up soiled and contaminated solid waste from streets, bins or disposal sites and instead improve their lot by collecting recyclable clean materials from the doorstep at regular intervals of time. Local bodies may, considering the important role of rag pickers in reducing the waste and the cot of transportation of such waste, even consider extending financial help to NGOs and co-operatives in providing some tools and equipment to the rage pickers for efficient performance of their work in the informal sector. Local Bodies may actively associate resident associations, trade & Industry associations, Community Based Organizations (CBOs) and NGOs in creating awareness among the people to segregate recyclable material at source and hand it over to a designated waste collector identified by NGOs. The local body may give priority to the source segregation of recyclable wastes by shops and establishments and later concentrate on segregation at the household level. The upgraded rag pickers on becoming doorstep waste-collectors, may be given an identity card by the NGOs organizing them so that they may have acceptability in society. The local body may notify such an arrangement made by the NGOs and advise the people to cooperate" http://moud.gov.in/pdf/57f1f0a614e7aAdvisory%20on%20Improving%20Municipal%20Solid%20Waste%20Manageemnt%20Services08.pdf
2014	**Report of The Task Force on Waste to Energy (Volume I), Planning Commission, in the context of Integrated MSW Management (May 12, 2014)** The purpose was to identify technically feasible, financially affordable and environmentally sound processing and disposal technologies for Municipal Solid Waste (MSW) and assess, evaluate and recommend systems, processes, technological options, financial mechanisms and institutional arrangements to enhance resource recovery and promote Waste to Energy (W to E) technologies while ensuring integrated management of MSW in India. However, the report stated that, "the thrust of the task force is therefore to minimize the quantum of waste for disposal by optimal utilization of the potential of all components of MSW by adopting the "concept of 5-R" – Reduce, Reuse, Recover, Recycle and Remanufacture – and through integrated Municipal Solid Waste Management, derive energy and other useful products and ensure safe disposal of residual waste. The ultimate objective should be zero waste going to landfills". It is strongly felt that citizens and municipal authorities need to change their attitude towards waste, make serious efforts to reduce the waste and recover recyclable materials, return nutrients to the ecosystem The report also acknowledged that of the 62 million tonnes of waste generation reported, annually, the data did not include wastes picked up by kabadiwalas from households and from the streets by wastepickers. It also stated that there are "conflicting data about the quantum of waste actually generated in urban areas in the country, principally because there is no system of periodically collecting and updating country wide data base on quantity and composition of waste". **Under Appropriate Approaches, Systems and Technological options- Integrated approach towards management Integration of kabadiwalas and rag pickers into MSWM system:** For efficient utilization of untapped resources, source segregation of MSW, recycling enabled through the informal institution of kabadiwalas and ragpickers be appropriately integrated into the system through recognition and strengthening of this sector. The municipal authorities may support association of rag pickers or NGOs in setting up **Recyclable Waste Collection Centres (RWC) on municipal land** where the rag pickers can sell for a price the recyclable materials (not otherwise purchased by kabadiwalas) collected by them. The municipal authority may also involve the rag pickers (there are an estimated 1 million rag pickers in the country) through NGOs or private sector for picking plastic and other recyclable materials from the streets in a designated area for making the cities "litter free" and preventing the useful material going to landfills. Such rag pickers could be paid incentive money for carrying out the task satisfactorily. While protecting the interest of rag pickers care needs to be taken to prevent child labour. **To facilitate sorting of recyclable materials collected by informal sector and supporting recycling industry, the municipal authorities should set up waste sorting facilities at suitable locations and permit the informal sector to use the facility for segregation of recyclables.** **It also recommends that Following national policies be framed for the implementation of action plan**

	The MoUD should come out with national policy outlining the country's intentions about handling waste of all types and clearly demarcating the role of central government, states and local authorities. The national goal should be clearly stated, specifically indicating what will be achieved by the end of each Plan. ii. **A National Policy on "Recycling, Resource Conservation and Preventive Environmental Management" notified**. **Strategy National Recycling Programme (NRP):** The NRP will be an overarching framework to create and mainstream the organized waste management and recycling industry. Under the NRP structured frameworks and guidelines for recycling industry should be developed to integrate it with the existing waste management rules & guidelines. Industry and sector specific recycling standards, including recycled product standards be developed under the NRP As a strategy, it would be prudent to make efforts to motivate the waste generators to reduce generation in the first place and reuse the waste to the extent possible, guide and enable industry and commerce to enhance recovery of materials and intermediates during manufacturing, promote segregation of recyclables at source and re-use the material in remanufacturing of products and intermediates, transitioning towards achieving the goal of optimum utilization of recyclable material In Conclusion, It focuses it emphasizes that recovering resources and energy from the MSW must not be the sole aim , but, promotes conservation of energy and encourages minimization of waste and promoting recycling of waste in all possible manner by adopting the "concept of 5-R" i.e. **Reduce, Reuse, Recover, Recycle and Remanufacture.** vii. It recognizes the role of kabadiwalas and ragpickers and incorporates this informal sector in IMSWM. It facilitates sorting of recyclable materials collected by informal sector and support recycling industry by permitting the informal sector to use designated storage and transfer station facility for segregation of recyclables http://planningcommission.nic.in/reports/genrep/rep_wte1205.pdf
2014	**Swachh Bharat Mission** **T**he Guidelines for SBM, urges state governments to pursue the cause of wastepickers:
2015	**Report of the Sub-Group of Chief Ministers on Swachh Bharat Abhiyaan, October, 2015, constituted by NITI Aayog as per decision taken at the first meeting of the Governing Council of the NITI Aayog chaired by the Prime Minister on 8th February, 2015** In urban areas, rag pickers form the backbone of the informal waste recycling set-up, where they collect, segregate, and sell waste to earn livelihood. Emerging approaches of waste management lay emphasis on modernisation, privatisation and mechanisation of waste management which can result in loss of livelihood for rag pickers as the formal ownership of waste may change from being openly accessible resource to a private good. In the new arrangement, only formal participants of the waste management process may have access and ownership to waste, denying the informal sector access to waste, which use it as a resource. In addition, lack of formal recognition, absence of social security, working without safety equipment and contemptuous treatment by the society, are some important issues which impinge the status of rag pickers. For efficient utilization of untapped resources and source segregation of MSW, the informal institution of kabadiwalas and rag pickers may be appropriately integrated into the system through recognition and strengthening of this sector. They are working in unhygienic condition. By integrating them into the system, they will get accessories so that their health conditions may not get adversely affected. At the same time dignity will be accorded to their work. The municipal authorities may support association of rag pickers or NGOs in setting up Recyclable Waste Collection Centres (RWC) on municipal land where the rag pickers can sell for a price the recyclable materials collected by them. The municipal authority may also October, 2015 38 involve the rag pickers through NGOs or private sector for picking plastic and other recyclable materials from the streets in a designated area for making the cities "litter free" and preventing the useful

	material going to landfills. Such rag pickers could be paid incentive money for carrying out the task satisfactorily. To facilitate sorting of recyclable materials collected by informal sector and supporting recycling industry, the municipal authorities should set up waste sorting facilities at suitable locations and permit the informal sector to use the facility for segregation of recyclables https://niti.gov.in/writereaddata/files/coop/Report%20of%20Sub-Group%20of%20Chief%20Ministers%20on%20Swachh%20%20Bharat%20Anhiyaan.pdf
2015	**National Urban Sanitation Policy** The vision for Urban Sanitation in India is: All Indian cities and towns become totally sanitized, healthy and liveable and ensure and sustain good public health and environmental outcomes for all their citizens with a special focus on hygienic and affordable sanitation facilities for the urban poor and women. **Preparatory Actions- City Sanitation Task Force** • Mobilize Stakeholders: The first step in making the cities 100% sanitized is to elevate the consciousness about sanitation in the mind of municipal agencies, government agencies and most importantly, amongst the people of the city • Constitute a multi-stakeholder City Sanitation Task Force comprising representatives from • NGOs working on water and sanitation, urban development and slums, health and environment, ■ Representatives of unions of safai karamcharis, sewerage sanitary workers, recycling agents / kabaris, etc http://mohua.gov.in/cms/National-Urban-Sanitation-Policy.php
2016	**Solid Waste Management Rules 2016** **Section 15 a, b,c, Sec 11**
2016	**"The National Action Plan for Municipal Solid Waste Management" ,** [In compliance with Hon'ble National Green Tribunal Order Dated 5th February, 2015 in the Matter of OA No. 199 of 2014, Almitra H. Patel &Anr. Vs Union of India &Ors.] by Central Pollution Control Board http://www.cpcb.nic.in/wast/municipalwast/Action_plan.pdf
2016	**National Safai Karmachari Finance & Development Corporation (NSKFDC)** has decided to include waste pickers as target group for providing financing and self-development skills. This decision was taken on the direction of Union Ministry of Social Justice and Empowerment (MoSJE) The schemes related to financing and skill development are undertaken by NSKFDC, an apex corporation set up by Government of India and channelized through state channelizing agencies nominated by state and union territory governments, nationalised and regional rural banks. In Karnataka and Maharashtra, Dr B. R. Ambedkar Development Corporation and Mahatama Phule Backward Class Development Corporation are respective channelizing agencies. Similar agencies are nominated in other states by the state governments under the aegis of Social Welfare Development. The schemes extended include financing: cheap credit at an interest rate 4 % per annum for expanding livelihood and higher educational opportunities; technical, vocational entrepreneurial training. Schemes particularly related to financing i.e. cheap credit will be beneficial for wastepickers as they are entrepreneurs and require credit to expand their micro-enterprises. An additional 10 percent of total allocation of NSKFDC for financial year 2016-2017 has been made for wastepickers, without diluting the benefits of another target group.

	Reference: https://wastenarratives.files.wordpress.com/2016/11/letter1.pdf

Table Source: Chandran, P; Arora, K; Shekar, N; Abubaker, M; (2018) Valuing Urban Waste: The Need for a comprehensive material recovery policy, Hasiru Dala, Bengaluru, India

References

Karnataka Waste Picker Welfare Rules, 2018, drafted by Vidhi Center for Legal Policy

Municipal Solid Waste Management Manual 2016, GOI

SWM Rules 2016

Annexure 6 D (i)

WET WASTE (BIODEGRADABLE WASTE) MANAGEMENT POLICY & STRATEGY

1.0 Introduction

1.1 The policy acknowledges the need for sustainable management of biodegradable waste herein after referred to as wet waste, in line with the principles of circular economy which moves away from a single stream collection of mixed waste to landfill.

1.2 The policy recognises the importance of segregated wet waste (biodegradable waste) processing, as the only sustainable way forward and the need to put in place a decentralised system of managing waste at the local level in line with the Solid Waste Management Rules 2016 that emphasises on the adoption of decentralised waste management systems.

1.3 The policy recognises that Composting is an important component of integrated waste management, as it provides a range of economic and environmental benefits including improved soil health, creation of green jobs and preventing greenhouse emissions

1.4 The policy recognises that for effective functioning of segregated wet waste to compost or to extract energy (biogas) effectively, it is important to create a policy framework which not only develops the eco system and strengthens the supply chain collection of segregated wet waste but also addresses the convenience to users and incentivizes them along with the necessary regulatory system for the same.

2.0 Objectives

The main objective of the policy is that wet waste (biodegradable waste) is not landfilled, and decentralised recovery in the form of local composting/biogas is promoted, ensuring that toxic free compost is manufactured only from segregated wet waste and the same is used extensively in farming and horticulture, leading to improved soil health.

3.0 Guiding Principles

3.1 **To create a priority position on composting** from segregated Municipal Solid Wet Waste which recognizes that the optimal of handling waste is by committing that our waste is our responsibility. Municipal solid waste should contain only source segregated waste streams of kitchen waste comprising of vegetable and fruit peels, cooked food and other biodegradable items or garden and horticulture green and brown waste, from all generators.

3.2 **To promote home composting and community solutions**: The ULBs will endeavour to promote management of wet waste at the source of generation, either through home composting , vermin-composting, bio gas generation or at the community level.

3.3a **To promote decentralised wet waste processes over centralised where ever possible**: The ULBs shall opt for decentralised processing of wet waste wherever possible before selecting centralised large scale options. Decentralised composting as several benefits – including reduction in collection and transportation costs, reduction in smell/bad odour at the premises/storage points and roads and streets, elimination of uncontrolled leachate, shorter transport chain leading to better quality of city compost.[1]

3.3 b **To consider bio methanation process as a preferred recovery method**, **in large scale processing**: The technological progress and the financial feasibility of bio methanation methods has proven its superiority in large scale handling of wet waste , making it the preferred method for large scale wet waste processing .

3.4 **To ensure only clean and toxic free compost is manufactured:** The ULBs will strive to ensure that compost so produced is from clean segregated wet waste only, via separate collection systems. Mixed waste composting generated from mechanically segregated mixed waste tends to contain greater amount of heavy metals which leaches in the soil, given the presence of other materials generated at the household level like e-waste, plastics, paints, inks, cosmetic and cleaning products, along with solutions used for pest control and pesticides for household gardens, small amounts of medicines and sanitary wastes. Each waste stream has specific characteristics and need to be treated separately as per the applicable legislation. The long term accumulation of heavy metals in the soil environment is a concern because of their potential consequences to the human and animal health because of its presence in the food chain, toxicity to plants and soil microbial processes. The SWM Rules 2016 prescribes the need to ensure safe application of compost with specifications organic compost and manure.

3.5 **To phase out the use of chemical fertilisers in one year and use city compost** in all parks, gardens maintained by the ULB and wherever possible in other places under its jurisdiction

3.6 **To build a convergence of the City Compost Policy** along with Karnataka Organic Farming Policy, the Soil Health Management, an intervention under the National Mission for Sustainable Agriculture and the Soil Health Card Scheme promoted by the Department of Agriculture & Co-operation under the Ministry of Agriculture and Farmers' Welfare.

3.**7 To propose suitable financial incentives** through waivers rebates, subsidies, to encourage and promote the production of organic compost from wet waste processing and utilise schemes that provide financial assistance for producing organic compost and fertilisers under Soil Health Management (SHM) of National Mission of Sustainable Agriculture (NMSA), Mission for Integrated Development

[1] As outlined in the advisory on On-Site and Decentralized Composting of Municipal Organic Waste, June 2018

of Horticulture, Rashtriya Krishi Vikas Yojana (RKVY), NABARD and any other central or state government schemes

3.8 **To facilitate farmer linkages and encourage small social enterprises** leading to innovations: The constant innovation resulting in solutions and by products has increasingly made the circular economy models of various kinds of biodegradable waste more and more mainstream. Such circular practices should be followed keeping in mind that it leads to creation of jobs, protection of livelihoods and new sustainable materials and products.

3.9 **To integrate the informal waste recycling sector** in processing decentralised facilities and provide initiatives for recycling of wet waste

3.10 **To encourage and facilitate urban agriculture** within the municipality including balcony gardening, large courtyards, vertical gardens, rooftops and street and community gardens and terrace gardens and develop appropriate guidelines for community and street gardens

4.0 Strategies for wet waste management

4.1 Strategies to manage wet waste	4.2 Strategies to promote management of wet waste
• 4.1A Through Waste Reduction • 4.1BThrough Resource Recovery • 4.1C Through Circular economy	• 4.2A. Through financial instruments and compost take back and its use • 4.2B. Through community enagagement and public education

4.1 Strategies for wet waste management

4.1 A Through waste reduction

The ULBs will endeavour to promote waste minimisation by necessary management of wet waste at source or point of generation that results in volume reduction and decreases the rate of per capita waste generated. The approach to waste reduction at the generator level through composting, home bio gas at the individual household level, insitu at the bulk generator level or market level and leaf shredding at the community, park and street level and introduces a ban on sending wet waste to landfill.

4.1 A. i Home composting : With more and more home composting do it yourself solutions or readymade options becoming available in the market it, ULBs should pursue the options of waste reduction through promoting , supporting and also incentivising home composting . Households should be made to understand that they are responsible for the waste that they generate and the option of

handing over the source segregated wet waste to the ULB collection system is only second to the preferred option of home composting. All households on 30 by 40 square feet land and above should be advised to carry out home composting.

4.1.A. ii Home bio gas should be promoted by the ULB as an alternative to use of LPG while also ensuring wet waste management at source. Here too the market place offers sufficient options as per the convenience of the user. All Households on 30 by 40 square feet land and above should be advised to set up home bio gas .

4.1.A.iii In situ processing : All residential bulk generators in apartments over 50 units, all institutional bulk generators including government institutions, military bases, airports, railway stations including their residential quarters and commercial bulk generators occupying more than 5000 square meters should mandatorily set up in situ facilities for wet waste management . This could be either composting or pre digesters or end to end biomethanation unit.

4.1.A.iv. Leaf shredding : This is a extremely effective way to reduce the volume of dry leaf litter , garden or horticulture waste by way of grass cutting, prunings , fallen branches. Given the large volume of this type of waste, it may be sent out of smaller premises for processing.

4.1.B Strategies for wet waste management through Resource recovery

Wet waste is a valuable resource which needs to be redirected in the form of recycling, composting, and recovering resources from waste such as leaf mulch and compost that acts as soil nutrient, reducing toxicity of chemical fertilisers and improves food quality; energy recovery or feedstock as in the case of used cooking oil.

4.1.B.i Leaf Mulch : The voluminous amount of leaf waste that is generated in the seasonal leaf fall can be converted into leaf mulch through a process of layering and adding water . The time taken for this process can be shortened by shredding, adding inoculum and natural nitrogenous material, thereby also improving the quality of the mulch. This can be used as a soil additive and helps to retain soil quality and improves water retention. There is never any smell associated with leaf mulching process. The conversion of leaf to leaf mulch is the most sustainable option instead of leaf burning or sending it mixed with street sweeping inerts to the landfill.

4.1.B.ii. Compost: Creating compost out of wet waste especially vegetables, fruits and even food leftovers is the most natural way of resource recovery. Wet waste will naturally decompose which is where certain processes have to be followed for creating compost. Compost processes can be aerobic, anaerobic or vermi compost. Compost processes can also be in vessel or windrow methods. Compost can be used in landscaping or in farming.

4.1.B. iii Bio methanation with pre digester method: Large bio methanation units can be effectively supported through the use of decentralised methods of installing pre-digesters. Pre-digester is

effectively an ultra-compact liquid anaerobic composter that is economically viable and space efficient. This method can also be considered for supporting in situ processing.

4.1.B.iii Energy recovery: Energy recovery in form of heat, gas or electricity using different types of bio methanation technologies is an efficient way to scale treatment of biodegradable waste. Improving technologies have shown the versatility of resource recovery possible. Energy recovery using briquettes made from different varieties of bio degradable waste is also a suitable form of recovery.

4.1.B.iv Separate Collection of Used Cooking Oil to Bio Fuel: Bio fuel from used oil is an emerging sector that needs to be encouraged to promote better management of used oil, in line with the Food Safety and Standards Authority of India (FSSAI) initiative to collect and convert used cooking oil into bio-fuel - Repurpose Cooking Oil (RUCO) **.** This will also improve community health by avoiding the usage of used oil. The bio fuel boards' efforts should be coordinated for better results of building a supply chain.

4.1.C Strategies for wet waste management through circular economy

For a transition to circular economy it is important for the ULBs to ensure wet waste management after waste reduction and resource recovery is not diverted but reutilized, thus deriving value from the output of the resources recovered. This will not only improve soil health, ensure safe food, but also promote entrepreneurship, generate jobs and ease pressure on the environment. New innovations in this space should be promoted, incubated and incentivised. These strategies include

4.1.C.i. **Community Gardens:** Promote urban agriculture, terrace and rooftop gardens, community gardens, vegetable cultivation in unused spaces

4.1.C.ii. **Farmer Connect Programs:** Promote the use of urban compost from decentralised units with rural farmers located on the outskirts of the city through Farmer Connect programs. The ULB will need to work out a guidance document on buying and selling price of compost, modalities of farmers on transportation and labour, and soil testing and a selling back of produce

4.1.C.iii**. Use in Horticulture:** The ULBs shall ensure that chemical fertilisers are completely phased in all parks, gardens maintained by the ULB and wherever possible in other places under its jurisdiction

4.1.C.iv **Bottling of CNG**: The ULBs shall promote the bottling of compressed natural gas(CNG) for transport and stationary applications, and slurry to be sent to farmers

4.1.c.iv **Floral waste recycling to various products**: Promoting and encouraging floral waste recycling into various products like dyes for food, textile and candle industries, organic colours for Holi, cooking essence, fragrances including agarbhattis.

4.2 Strategies to promote management of wet waste

4.2.A Strategies for promoting wet waste management through financial instruments and compost take back and its use

4.2.A.i The home composting, home biogas and in situ composting should be incentivised by the ULBs through waiver of SWM cess, based on an annual self-declaration which accompanies the property tax submission

4.2.A.ii Where the self-declaration is found to be false the ULB should penalise such errant home owners or bulk generators

4.2.A.iii State GST exemption on composting products and services will be provided as a relief by the government

4.2.A.iv. The ULB shall make arrangements to take back the compost from bulk generators without any charge. Such compost should be used by the Horticulture departments in the maintenance of parks and medians.

4.2.A.v. Government departments and public sector undertakings should also use city compost including that from Bulk Generators, to the maximum extent possible for their horticulture and related use.

4.2.A.vi In order to increase the confidence of the farmers on the product quality and enabling better market acceptance an appropriate BIS Standard / Eco mark shall be developed by the State for all City compost, including those from Bulk Generators.

4.2.A.vii.The Department of Agriculture should take field demonstration activities to the extent possible using City compost including that from Bulk Generators, to make it popular among the farmers.

4.2.A.viii The expenditure towards market development assistance for scaling up production and consumption of city compost should be met out from the budget provisions for the Department of fertilisers

4.2.A.ix. The process of subsidies for renewal energy through a single window arrangement should be set up to make efforts to converge solar, bio gas and bio fuels subsidies that support wet waste management.

4.2.B Strategies for promoting wet waste management through community engagement, public awareness, capacity building and investment in R & D

Bringing about changes in social behaviour is a necessary part of improving waste management practices. The ULBs should look at using the participation of all stakeholders to create the strategic community engagement.

4.2.B. i. Invest in a learning center - SwachaGraha Kalika Kendra , a Compost learning centre:

In order to create a practical interface and live demonstrations of various types of composting and bio gas methods , every ULB should allocate space and resources to set up as many compost learning

centres as is required for the convenience of the general public. This can be set up on the lines of the SwachaGraha Kalika Kendra which has shown that live demonstrations are popular and necessary tool of learning. These centres will demonstrate not just wet waste management practices but also close the loop by using the compost generated to create home or community gardens for growing chemical free vegetables.

4.2.B.ii Organise Compost Santhes: Every effort must be made by the ULB to showcase sustainable options that are available in order to keep the general public informed on various alternatives that are available. The Compost Santhe has been seen to be very effective in promoting best practices and community engagement at the ward level. Such Compost Santhe should be held at monthly intervals in every ward on a rotation basis. The ULB should seek the participation and cooperation of NGOs, SWM practitioners and RWAs and extend support through financial and institutional resources.

4.2.B.iii Investment in R & D and other capacity building exercises : The ULBs will encourage education, research and extension work on wet waste management.

5 Requirements for wet waste management by each Generator

Providing for efficient collection process of wet waste from every generator is based on the outcome requirements of achieving maximum segregation at source , so that the residual wet waste which is not processed at source can be collected and processed at the common facilities , dry waste is recovered suitably , the mixed waste is avoided at all costs and there is diversion from the landfill.

5.1 Household Generators: Where the household does not carry out home composting or for the residual wet waste, every household should keep the wet waste free from any non-biodegradable material and hand over the wet waste in a covered bin , without a plastic liner . This is necessary to also ensure that the wet waste does not start decomposing which makes processing difficult. The generators should hand over the waste on a daily frequency to the collection provided by the ULB.

5.2 Bulk - Commercial Generators: A very high quantum of wet waste is generated by the commercial establishments like shops, supermarkets, malls, hotels, restaurants, eateries, street vendors and markets. All such generators should ensure that a minimum of two bins for collecting wet and dry is placed in the front of their establishments for disposal of the wet and dry waste by the customers. A similar arrangement should be made at the back end of every commercial establishment to store the segregated wet and dry waste that is disposed off. A higher frequency of collection should be provided for either by the ULB or by the empanelled service provider responsible for the commercial establishments to ensure the bins are cleared and no accumulation and spill over takes place. The ULBs will strive for separate collection of commercial waste where ever possible.

5.3 Bulk Generators- Residential and Institutional : The specified categories of the bulk generators should mandatorily carry out in situ wet waste processing, only residual wet waste which cannot be processed on site should be collected by the service providers empanelled for the purpose. The bulk

generators should ensure that there is responsible handling of the wet waste handed over to such empanelled service provider.

5.4 Festival Wet Waste Management: Festival waste created on special occasions like Ganesh Chathurthi, Dussera, Ramzan, Diwali to name a few prominent ones is celebrated by all hence leading to a large amounts of waste pile up. In order to ensure that the celebrations are carried out in a sustainable manner, all generators should follow the guidelines issued by the ULBs for minimizing the amount of wet waste and keeping the same segregated. All vendors, shops in market areas should hand over the waste generated by them to the special frequency service for collection of the wet waste that is provided by the ULBs to ensure that there is no waste pile up in the streets, immersion points and market areas

5.5 Event wet waste management: Public events most often end up in mismanaged waste management and in creating large amounts of mixed waste left to be dealt by the Municipality which can only end up in the landfill. Without any abdication of responsibility , it is important that the event organisers follow the guidelines on the permissions to be sought, avoid penal provisions for violation of plastic ban, tie up with an authorized vendor , create provision of segregated waste collection bins , maintenance of general cleanliness , create accessible toilets and non-burning of waste.

6. Setting up Wet waste Management facilities and their operations

6.1 Over view

In order to achieve the main objective of this policy that wet waste is not landfilled and maximum recovery at the decentralised level is made possible, this section details the hierarchy to be adopted to manage wet waste, Planning for material Inflow and outflow, Strategy for overall operations, Destinations for wet waste management and the Action Plan. It is the obligation of the ULB to set up the various facilities, which act as destinations for the wet waste that are either wholly or partially owned by the ULB, operated or managed by different categories of persons, community, informal waste sector or organisations /entities.

6.2 Hierarchy to be adopted to manage wet waste

6.2a. At source management refers to wet waste management taken up in the home or in situ, which includes any type of composting, bio-methanation which results in the end product at source or pre-processes like shredding and stabilising of wet waste through the use of inoculum preparing it for the final stage of composting or bio-methanation which is done elsewhere.

6.2b Community level management refers to processing and preprocessing which is taken up at the lane or street level which caters to a cluster or block of households

6.3c Ward level management refers to wet waste processing or preprocessing which is set up to cater to wet waste received from anywhere in the ward .

6.4d. Common facility management refers to wet waste processing of composting or bio methanation which is set up to cater to wet waste received from designated areas across the town city/ district

6.3 Planning for Material Inflow and Outflow

Material Inflow	Material Outflow
a. Inflow of wet waste should take place from the collection of segregated source of wet waste b. Inflow of waste into processes - End Processes which result in creation of final end product - Pre-processes which prepare the wet waste for feeding into end processes	a. End product like sieved or un sieved compost, compost slurry and leaf mulch which will be sold to end users or compost buy-take back facilities b. Coarse organics which will be sold to bio mass processing facilities or sent to forest land to be used in the forest floor c. Gas which is piped either to the end user or sent to bottling units d. Electricity which is discharged directly or fed back to the grid e. Rejects/inerts (wrong material that the Centre cannot receive) ; non-biodegradable scraps, post composting residues , etc) will be picked by the ULB MSW Contractors and despatched to the Landfill .

6.4 Strategies for overall operations - Wet Waste Management Destinations

6.4. a. Institutional support: The first step for effective operations is identification of suitable land for setting up facilities with all the due diligence followed. The second is to creating technical advisory panels for evaluating solutions, securing intra department participation and support from Department of Agriculture, Department of Forests, Department of Horticulture, Karnataka State Pollution Control Board (KSPCB), National Urban Livelihood Mission (NULM) , National Safai Karamcharis Finance & Development Corporation(NSKFDC) , Karnataka Compost Development Corporation, Muzrai Board as it is critical to create synergistic and conducive eco systems, for the efficient functioning of the destinations

6.4.b. Viable operations: It is in the interest of the ULB to ensure that the destinations are made sustainable and viable. This is possible through regular inflow of segregated wet waste, good

infrastructure, investment in capital expenditure, and wherever ever necessary based on the management model, provide viable gap funding, timely and regular payments to operators, undertake repairs, coordination between departments, community awareness. A viable operation is automatically a savings to the Municipality on providing MSW services, mitigation of environment damage costs, landfilling costs. A demonstration of reliable operations will also attract private players' participation.

6.4.c. Good Design: It is essential to providing adequate infrastructure and efficiency of processes. This is also necessary to create an aesthetic appeal and visibility to the general public and get their cooperation and support for the facility operations

6.4.d. **Operate within capacity** : Most often it is seen that the capacity of the destination provided is either under- utilised and left idle or is burdened beyond actual capacity by forcing it to receive more wet waste for processing. Especially with wet waste management the latter is problematic and will lead to serious issues of smell and compromise the quality of the process. It is therefore important to ensure that the waste received is well within the capacity of the destination to handle.

6.4.e. Public utility function: Processing Centers are a public utility service and hence the destinations must offer nominal / standardised costing of services . Destination operations must be run on principles of not for profit, environ friendly practices. Since operation of destinations means preferential status for operating out of Government Land and having being given right to access waste, the allotment of spaces must be for CSO, NGO and not for profit enterprises who will uphold the public utility function. This can be further supplemented through EPR. Further broad based participation should be encouraged with ceiling on the number of destinations that can be operated by a single individual operator/organisation.

6.4 f. Human Resources: All compost planned operators and personnel must be trained – operations and management, understanding contaminants, the process of composting, identifying materials, odour management, emergency and first aid procedures and use of personal protective equipment. This is not an exhaustive list, but these serves as a primer for training. Training must be carried out at frequent intervals. Personal protective equipment must be provided and mandated for use at all times. The destinations must provide dignity of work and hygienic work conditions to safai karmacharis, pourakarmikas, waste pickers, or other informal workers in waste sector through employment or ownership of operations.

6.4.g: Integration of the Informal Sector: Integrating wastepickers into the preprocessing facility at the compost plants, after due training can improve the quality of their working conditions and their earnings.

6.4.h. Community participation to be encouraged to the maximum possible extent through information of options available and time bound support on setting up various required destinations

6.4.i. **Outreach:** The destinations must carry out frequent promotion awareness programs with the support /assistance of the local community and the ULB at the ward level

6.4.j. Encouraging innovation and R&D through public private participation through timely project approvals and viable gap funding. The land is the most critical part of providing the partnership.

6.4.k. **Transparency and Accountability: (i)** The Destinations must maintain a public record

- of wet waste quantity that is received
- of where the waste is being despatched and end destination/process

(ii) The destinations must be evaluated against the Service Level Benchmarks ie. How many households is it servicing, what percentage of waste is being received segregated at source, how much is recovered and how much is sent for disposal

6.4.l. **Performance and Penalty**: The destinations must report on dropouts , that is .households who stop giving wet waste and mixed waste that is households who do not give properly segregated waste. The Destinations must be open to independent verification and evaluated on its competency in operations

6.5 **Setting up Destinations for wet waste management**

Destination Name	**Location**	**Set up by**	**Service To**	**Operated by**
At Source management				
Home	Households	Households	Self	Self
In Situ	Residential , Institutional, Commercial Bulk generators	Bulk Generators	Self	Inhouse/ Private Solution-service providers, Wastepickers and other informal waste workers, NGOs, CBOs, SHGs
Market	Natural Markets, APMC yards, wholesale markets etc.	Municipality , Market Associations	Vendors, Shop units operating in the market	Municipal appointed operators / Market Association appointed agencies Wastepickers and other informal waste workers, NGOs, CBOs, SHGs

Temples	Temples	Muzrai Board, Temple Trusts,	Self	Inhouse/ Private Solution-service providers / Appointed by Muzrai board Waste pickers and other informal waste workers, NGOs, CBOs, SHGs
Community Level Management				
Leaf Bins	Street	Municipality / Private	Households in the street, street sweeping Leaf litter	Pourakarmikas / Households
Lane Composting	Street level / Block level	Municipality / RWA	Households	Pourakarmikas/ Households / RWA
Ward Level management				
Park Composting	Neighbourhood Parks	Municipality	Parks	Municipal appointed staff / agencies
Micro composting centres	At single or various locations in the Ward	Municipality	Households / Commercial generators	Municipal appointed staff / agencies
Ward Bio methanation units	At single or various locations in the Ward	Municipality	Households / Commercial generators	Municipal appointed staff / agencies including Wastepickers and other informal waste wokers, NGOs, CBOs, SHGs
Common Facilities				
Leaf Cutter Shredders	Ward level/ Zonal / District level	Municipality	Street Sweeping/ Bulk Generator	Municipality appointed staff / agencies including Wastepickers and other informal waste wokers, NGOs, CBOs, SHGs

			garden waste	
Coconut briquetting	Ward level/ Zonal / District level	Municipality	Municipal collection	Municipality appointed staff / agencies including Wastepickers and other informal waste wokers, NGOs, CBOs, SHGs
SWM Composting / Bio Methanation Plants	Zonal / District level/ City level	Municipality	Municipal collection	Municipality appointed staff / agencies including Wastepickers and other informal waste wokers, NGOs, CBOs, SHGs
Compost Buy back- take back	Zonal /District/ City Level	Municipality	Bulk Generators	Municipality appointed staff / agencies

6.4 Action Plan with Target timelines for setting up wet waste management operations by ULB

In the interest of streamlining dry waste management activities all ULBs should

Sl No.	Action Plan / Action Item	Target	Timeline/ ULB size wise
1.	Notification for Source management by Households	100%	1 year
2.	Notification for in situ management by Bulk generators	100%	1 year
3.	Notification for issue of waiver of SWM cess	100%	1 year
4.	Notification for GST exemption on composting products	100%	1 year
	Notification for introduction of BIS standard / Eco mark on city compost including that from Bulk Generators	100%	1 year
5.	Notification for take back- buy back of compost from Bulk Generators	100%	1 year
6.	Promotion activities through Compost Santhe	100%	1 year
7.	Setting up of Compost Learning Centres	100%	1 year
8.	Notification on Festival waste management	100%	1 year
9.	Notification on Event waste management	100%	1 year

10.	Setting up of Community level management	100%	2 years
11.	Setting up of Ward Level management	100%	1 year
12.	Setting up of Common Facilities	100%	1 year
13	Guidelines for community gardens, urban agriculture	100%	1 year

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12. National Policy on Biofuels 2018

Annexure 6 D ii

DRY WASTE MANAGEMENT POLICY & STRATEGY

1.0.Introduction

1.1 The policy acknowledges the need to adopt the principles of circular economy – which moves away from "use and throw", linear system to a closed loop which builds on the idea of continually reusing and recycling materials, by incorporating the framework of waste hierarchy that of reduce, reuse and recycle.

1.2 The policy acknowledges the contribution of the informal waste recycling workers across the informal recycling value chain from wastepickers, waste sorters, itinerant buyers, scrap dealers/traders, large scrap traders and re-processors in retrieving valuable material away from landfill and their value addition in the process, through secondary sorting and grading

1.3 The policy also recognises the need to include and integrate the informal recycling sector in the formal waste management systems adopted by the ULB.

1.4 The policy recognises the need to implement the Karnataka State Plastic Ban and to divert recyclables to the maximum extent, before exploring other options for non-recyclables, including enforcing extended producers responsibility which will work together with the informal recycling sector

2.0 Objectives

The overall objective of the policy is to treat dry waste as a potential resource, through a rigorous application of waste hierarchy, by practicing waste minimisation, maximising recycling by integrating informal waste sector, increase and build demand for recycled products and allowing for alternative treatment, when no other method is possible and using the polluter pay principle through extended producers responsibility

3.0 Guiding Principles

3.1 To avoid waste/prevention of waste: The ULBs shall endeavour to prioritise waste reduction and minimisation, through ban on single use disposable materials in line with Karnataka State Plastic Ban, encourage efficient re-use of materials through repair, re-manufacture, refurbishment. Sustained efforts should be made to encourage design of products/packaging to promote easy recyclability.

3.2 To increase and improve resource recovery: The objective of dry waste management should be to maximise the collection of all dry waste from the source of generation thereby ensuring minimum contamination of the dry waste material and its diversion from the landfill. The objective should also

be to enable maximum recovery through sorting and grading of recyclable material which can be sent for material recycling processes.

3.3 To manage using the principle of proximity: The ULBs shall implement decentralised dry waste management facilities and at the ward level and for bulk generators mandate insitu collection space thereby creating savings through reduced collection and transportation.

3.4 To include and improve the livelihoods: Recognising the importance of the role of waste pickers and other informal waste workers the ULBS should necessarily include them by giving access for direct collection from source and provide the necessary support for sorting and trading, in terms of space, ability to transport , create value addition through re-processing, while providing necessary skill up gradation, access to finance and infrastructure and social welfare benefits.

3.5 To extend the precautionary principle on energy recovery Energy recovery may be considered only when no more material resource recovery is possible. Such technologies should be used with extreme caution mindful of its impact on the environment and public health.

4.0 Strategies for Dry Waste Management

In line with the guiding principles and objectives, the following strategy will be adopted:

4.1 Implementation of Single-Use disposables plastic ban:

4.1. a. All ULBs shall enforce and implement the Karnataka State Single Use Plastic Ban, issued as per the Gazette Notification in March 2016 and subsequent addendum in April 2017, March 2018 and April 2018.

4.1.b. All ULBs will undertake regular and effective monitoring through interdepartmental coordination and joint inspection drives. All ULBs, shall frame byelaws and shall issue a notification on penalty for offences on manufacturing, supplying, storing, transporting, sale or distribution of banned items of plastics, including use of single use packaging with online retailers and delivery services

4.1.c. All ULBs shall undertake awareness drives, on ban of single use-plastics and promotion of alternatives for packaging and health impacts of plastics.

4.1.d. The use of compostable plastic bags shall not be encouraged as single use disposables should be disallowed at all costs.

4.2 Efficient material recovery of Dry Waste through enforcement of segregation of waste at source

4.2. a. In order to ensure collection of segregated dry waste from the households it is necessary for the ULB to carry out the door to door collection wherever possible.

4.2.b. It is best that the dry waste collection is carried out directly by the wastepickers who are operating the dry waste collection centres, through dedicated dry waste collection vehicles which are provided for

by the ULB. In absence of dry waste collection centers, ULBs must arrive at a system for wastepickers, itinerant buyers or other informal collectors to have access to dry waste from the household level.

4.2. c. Every ULBs should ensure that all dry waste is collected separately in a suitable frequency, on specified days of the week. This separate collection should be emphasised in order to gain support from households on segregation at source.

4.2. d. The collection of all dry waste should be of recyclable items like plastic, paper, metal, glass , non-recyclable items like multi-layer packaging. Bulky items and infrequent items of dry waste shall also include cloth, wood , thermocole, mattresses, leather items, footwear, broken glass but excluding construction debris items like ceramic ware like sanitary fittings, bath tubs, wash basins and commodes.

4.2. e. Where such door to door collection is not possible because of the spread either in the outskirts, outlying or hilly areas , the ULB should plan to set up local collection points where the households can come and drop off the dry waste and the same can be collected by the closest dry waste collection centres.

4.3 Efficient material recovery of all Dry Waste for collection, through integration of wastepickers and other informal waste workers and protection of livelihoods: All ULBS shall give legal recognition to, and strengthen the informal sector systems of collection and recycling of various materials and ensure the following-

4.3. a. Prepare a Baseline to identify all informal waste workers, recyclers, those involved in the kabadi system and NGOs or other organisations working with wastepickers and other informal waste workers.

4.3.b. Register all wastepickers in the jurisdiction, issue 20 year occupational ID cards, provide access to waste by integrating them into door-to-door waste collection, operation of Dry Waste Collection Centers, and ear mark space for sorting dry waste

4.3.c. Identify scrap dealers at the neighbourhood level and allow ease of operations at the locality level.

4.3. d. The ULB should also maintain at all times that 100 % of the total dry waste collection centres be operated by registered Waste pickers, scrap dealers or informal sector either individually or severally where the group is, organized into member based organisations, cooperatives or self-help groups. Such groups may be supported by facilitating organisations that will provide the necessary managerial resources and support.

4.3.e. In addition, the wastepickers should also be allowed to access waste directly from the bulk generators.

4.3.f. Identify Wholesalers, preprocessors, and manufacturers and protect natural waste trading markets within the city and designate spaces for processing with upgraded access to infrastructure

4.3.g. Provide exemptions on fees and deposits for participation of informal sector associations in bidding for dry waste contracts.

4.4. Efficient material recovery of all Dry Waste for collection, with Extended Producer Responsibility support of buy back of non-recyclable factions

4.4.a. Invest in collection/aggregation Centers: Brand owners, producers and manufacturers should be required invest in the capital expenditure or upgradation of dry waste collection centers, set up aggregation centres and preprocessing RDF units

4.4.b Buy back of the Multi-layered plastics: The producers will have to arrive at a cost for buy back of the sorted non-recyclable factions which can be utilised for making RDF. In this way they will be responsible for bearing the cost of managing the post-consumer waste created through their multi-layer packaging. This will also ensure that the informal sector which operates the dry waste collection centres, collect, transport, sort, and grade the dry waste will be fairly compensated for their effort in this regard.

4.5 Management of Non-recyclable Fraction (Multi-Layered) Plastic Waste

4.5.a. The ULBs will ensure 100% collection of multilayered packaging, along with recyclable materials

4**.5.b.** Labelling of multilayer packaging: All shall packing should be clearly marked as non- recyclable, with full disclosure of materials in the packaging in order that consumers may be made aware of the same and can exercise their choice of selecting products which use recyclable packaging

4.5.c. The ULBs will arrive at system to work with the producers to set up collection centers and the cost for buy back, transportation of multilayered plastics

4.5.d. Efforts should also be made by the industry in a time bound manner to replace Multi-Layered Plastic with recyclable packaging. The ULBS and Gram Panchayats shall follow the principles of waste hierarchy and endeavour to minimise the waste generation and set timelines for phase out of the materials and promote sustainable packaging design.

4.6 Use of Energy recovery methods for disposal of no value – non recyclable dry waste to be restricted to use as Alternate Fuel or recovery of chemicals only

4.6.a. Co processing by cement companies is the most preferred option, given the strict regulatory emission norms that are required to be complied with and as there are enough cement companies that already exist there is no need for setting up a special infrastructure by the ULBs.

4.6. b. Energy recovery through use of boilers in thermal plants may also be considered where proximity of cement companies is not available.

4.6.c. The setting up of a waste to energy unit using various technologies of either incineration, gasification for generation of power is not permitted under any circumstances.

4.6.d. Use of segregated combustible faction in any other boiler or furnace type other than cement units or thermal power units should be discouraged and subject to strict regulatory norms on emissions as is defined from time to time.

4.6.e. The selection of the process of energy recovery should carefully consider the impact on the environment through toxic emissions.

4.6.f. It is important to emphasise that only the non-recyclable faction of the dry waste should be considered for energy recovery. The use of recyclable dry faction for energy recovery should be avoided at all costs as this is an unsustainable activity and goes against the principles of circular economy for which this policy stands

4.7. Use of no value – non recyclable dry waste in alternative product uses

4.7.a. The Municipalities should ensure use of such non-recyclable waste in the road construction to create polymer blended bitumen roads , as per the Indian Roads Congress Guidelines IRC:SP:98=2013 Guidelines for the use of Waste Plastic in hot bituminous Mixes (Dry Process) in wearing courses, which suggests that black coloured plastic waste and PVC shall not be used,

4.7.b. The Municipalities may also encourage the creation of plastic bricks which may be used to lay roads, create embankments or in home construction.

4.8 Promote demand for recycled material and encourage limited packaging

4.8.a. The KSPCB should endeavour to promote the demand for recycled materials and products containing recycled content by setting down time bound targets for increasing the component of recycled content in packaging.

4.8.b. Eco-labelling of product packaging promoting conscious consumption and leading to waste reduction should also be actively promoted

4.9 Creation of Alternative technologies

4.9.a. The KSPCB, Department of Science and Technology and the Ministry of Industries should set up technical advisory and mentoring boards which incubate alternative technologies , evaluate them and put out advisory and information manuals for use by the local bodies especially in the area of energy recovery , plastic to fuel , plastic to roads, plastic to bricks . The technologies promoted should at no point in time undermine the material recovery of recyclable material and create adverse impact on the environment.

4.10 Knowledge Sharing, Public Information and Education to promote waste minimisation, reuse and recycling

4.10. a. The ULB should create ongoing, large scale awareness campaigns and educational programmes which highlight the harmful effects of certain materials and promote reuse and recycling.

4.10. b. The campaigns should create sensitivity towards the waste pickers who carry out the manual handling and sorting of dry waste that is collected from households. This should be done seeking the participation of citizen groups, civil society organisations, non-government organisations and waste picker organisations

4.10. c. The ULBs should also promote alternative to plastics in order to bring about a real shift in the use of single use plastics

4.10. d. All points of citizen interface like the dry waste collection centres or the collection points should have well displayed uniform signage and attractive uniform structures which will drive better cooperation and participation from the general public.

5.0 Requirement for Dry Waste Management by each Generator

Providing for efficient collection process of dry waste from every generator is based on the outcome requirements of achieving maximum segregation at source, so that the wet waste can be processed suitably, dry waste can be sent for recycling and the non-recyclable factions can be sent for energy recovery, and mixed waste is avoided at all costs and there is diversion from the landfill.

5.1 Household generators: Every household should store the segregated dry waste, free of organic contaminants, in a reusable bag and hand over the same at the frequency determined by the ULB. The generators should also provide access to hand over to the registered wastepickers and other informal waste collectors .

5.2. Bulk Generators- Commercial generators: 5.2.a. A very high quantum of dry waste is generated by the commercial establishments like shops, supermarkets, malls, hotels, restaurants, eateries, street vendors and markets. All such generators should ensure that a minimum of two bins for collecting wet and dry is placed in the front of their establishments for disposal of the wet and dry waste by the customers. **5.2.b.** A similar arrangement should be made at the back end of every commercial establishment to store the segregated wet and dry waste that is disposed of. **5.2.c**.A higher frequency of collection should be provided for either by the ULB or by the empaneled service provider responsible for the commercial establishments to ensure the bins are cleared and no accumulation and spill over takes place. 5.2.d The generators should also provide access to hand over to the registered wastepickers and other informal waste collectors .

5.3 Bulk generators- Residential and Institutional : The bulk generators should ensure that there is responsible handling of dry waste and that the monetary incentives offered upfront for the dry waste does not in any way compromise the handling of low value dry waste, non-recyclable dry waste by the buyer or collector. The bulk generator should also provide access to hand over to the registered wastepickers and other informal waste collectors.

5.4. Festival Dry Waste Management: Festival waste created on special occasions like Ganesh Chathurthi, Dussera, Ramzan , Diwali, Christmas to name a few prominent ones is celebrated by all hence leading to a large amounts of waste pile up . In order to ensure that the celebrations are carried out in a sustainable manner, generators should abide by the guidelines issued by all the ULBs for minimizing the amount of dry waste and keeping the same segregated. All vendors, shops in market areas should hand over the waste generated by them to the special frequency service for collection of the dry waste that is provided by the ULBs to ensure that there is no waste pile up in the streets, immersion points and market areas

5.5. Event Dry Waste Management: Public events most often end up in mismanaged waste management and in creating large amounts of mixed waste left to be dealt by the Municipality which can only end up in the landfill. Without any abdication of responsibility it is important that the event organisers follow the guidelines on the permissions to be sought, avoid penal provisions for violation of plastic ban, tie up with an authorized vendor , create provision of segregated waste collection bins , maintenance of general cleanliness , create accessible toilets and non-burning of dry waste

5.6. Wet waste Processing Plants: Although the wet waste processing plants may receive only wet waste, it is likely that some quantum of mixing may lead to generation of segregated combustible faction SCF after sorting and separation. This segregated combustible faction should be dispatched to the assigned preprocessing units for onward dispatch to either the alternative product uses or to the cement kilns

6.0 Setting up and operationalising Dry waste management facilities and Integration of informal waste workers

6.1. Overview

In order to achieve the main objective of this policy, that dry waste is not landfilled but maximized through efficient source segregated collection by integrating informal waste sector and mandating, this section details the hierarchy to be adopted to manage dry waste, planning for material inflow and outflow, strategy for overall operations, destinations – both formal and informal necessary and the action plan. It is the obligation of the ULB to set up the various facilities and provide supportive environment for informal spaces sorting and trading, which act as destinations for the dry waste. The ULB will also have to put in place adequate fire safety measures and build capacity in in being fire safe.

6.2 Hierarchy to be adopted to manage dry waste

It is important for the ULB to arrive at a convergence with the informal recycling sector and recognise and create supportive infrastructure at all levels, integrating with the formal systems, in a complimentary mode.

	Spaces that are operated informally by the informal sector that ULB must support, enable and facilitate	**Formal Facilities that ULB has to create to supplement**
Level 1	Informal Sorting Sheds	Kiosks or Sorting Station
Level 2	Neighbourhood Scrap Shops	Dry Waste Collection Centers
Level 3	Large Scrap Shops located in the markets or outskirts or at informal recycling hubs	Material Recovery Facilities

Level 4	Informal Material Trading Markets – which also act as an aggregator	Aggregation Centers
Level 5	Informal Areas that recycle Bulky Waste	Bulky Waste Storage Centers
Level 6	Informal Recycling Hubs	Recycling Parks
Level 7	Recycling Units – Informal	ULB facilitated Recycling Units
Level 8	NA	SCF/RDF units
Level 9	NA	Bitumen Mix plants, Co-processing, Thermal Power Plants

6.3. Planning for Material Inflow and Outflow

Material Inflow	**Material Outflow**
a. Inflow of dry waste should take place from the recovery of segregated source of dry waste b. Inflow of waste into processes Supporting Recycling or Alternative treatment - Primary recycling to the same or similar product, upcycling or alternative treatment - Secondary recycling to a different product - Tertiary recycling to a chemical or fuel	a. Recyclable material will be sold to Recyclers (formal or informal) , who in turn will sell to Factories dealing in the material. b. Non-recyclable material (Laminate packaging) will be baled (where baler is provided by the ULB) and stored and dispatched to the secondary to the tertiary units which aggregate the RDF - SCF stream and send to the assigned destinations for co processing with cement kilns or thermal power units c. Rejects/inerts (wrong material ie that the Centre cannot receive) ; straw , organic scraps, dust, etc) will be picked by the ULB MSW Contractors and dispatched to the Landfill twice a week.

6.4 Strategies for Overall Operations- Dry waste Management Destinations

6.4.a. Institutional support: The first step for effective operations within the formal system is identification of suitable land for setting up facilities with all due diligence followed. Within the informal system recognising places of operations and creating supportive environment for effective functioning is the pre-requisite. The second step is to create an enabling environment like inclusion of representatives of organisations working with informal waste workers in advisory panels, securing intra department participation and support Karnataka State Pollution Control Board (KSPCB), National Urban Livelihood Mission (NULM),National Rural Livelihood Mission (NRLM), National Safai Karamacharis Finance & Development Corporation (NSKFDC), along with the Commercial Tax Department, Excise Department, Industry Associations, other NGOs etc as it is critical to creating synergistic and conducive eco systems, important for the efficient functioning of the destinations.

6.4. b. Viable operations: It is in the interest of the ULB to ensure that the destinations are made sustainable and viable. This is possible through ensuring regular inflow of segregated dry waste, good infrastructure both at the formal and informal operations, investment in capital expenditure, operating expenditure and technical upgradation and wherever possible through a three party arrangement, provide viable gap funding. Timely and regular payments to operators in the formal system, common infrastructure in the informal areas, coordination between departments, community awareness are equally important. A viable operation is automatically a savings to the Municipality, mitigating environment damage costs of landfilling.

6.4.c. Good Design: It is essential to provide adequate infrastructure and efficiency of processes. This is also necessary to create an aesthetic appeal and visibility to the general public and get their cooperation and support for the facility operations. This also includes uniform branding, signage, access to clean water and toilets, availability of personal protective equipment, fire safety, good access road across all the facilities – formal and informal.

6.4.d. MSW Public utility function in the formal set-up - Collection Centers are a public utility service and hence the destinations must offer nominal / standardised costing of services. Destination operations must be run on principles of not for profit, environment friendly practices. Since operation of destinations means preferential status for operating out of Government Land and having being given right to access waste, the participation criteria should be for CSO, NGO, other informal waste workers and not for profit enterprises who will uphold the public utility function. This can further be supplemented through EPR. Further broad based participation should be encouraged with ceiling on the number of destinations that can be operated by a single individual operator/organisation.

6.4.e. Human Resources: The destinations must provide dignity of work and hygienic work conditions to waste pickers, or other informal workers in waste sector through employment or ownership of

operations. Up skilling and training must be provided at frequent intervals both at the formal set-up and the informal set-up. . Personal protective equipment must be provided and mandated for use at all times.

6.4.f. Extended Producer Responsibility (EPR) participation can be encouraged or enforced for support in setting up the capital intensive technologies and process to help process non recyclables, multi-layer laminates and therefore an automatic sharing/saving of costs for the Municipality. Only materials that have no recycling market should be dealt with by EPR.

6.4.g. C**ommunity participation** to be encouraged to the maximum possible event through information and awareness.

6.4.h. Outreach: The destinations must carry out frequent promotion awareness programs with the support /assistance of the local community and the ULB at the ward level

6.4.i. Encouraging innovation and R&D through public private participation especially with informal and social sector enterprises , through timely project approvals and viable gap funding

6.4.j Transparency and Accountability: (i) Formal destinations must maintain a public record of dry waste quantity that is received and where the waste is being dispatched and end destination/process(ii) The destinations must be evaluated against the Service Level Benchmarks ie. How many households is it servicing, what percentage of waste is being received segregated at source, how much is recovered and how much is sent for disposal.

6.4.k. Performance and Penalty The formal destinations must report on dropouts that is households who stop giving dry waste and households that give mixed waste or who do not give properly segregated waste**.** The formal destinations must be open to independent verification and evaluated on its competency in operations.

6.5. Destinations for Dry Waste Management

6.5 A Formal System

Destination Name	Location	Set up by	Service To	Operated by
Secondary Collection, Sorting & Storage				
Informal Sorting Sheds	Street/Block Level/Markets	Municipality	Houses, Markets, Shops, Commercial Areas , Bus stands, Tourist spots	Wastepickers, Municipal Workers, Itinerant Buyers, Waste Sorters
Sorting Station	Street/ Block Level	Municipality	Markets, Shops, Commercial Areas , Bus stands, Tourist spots	Waste Pickers in collaboration with RWA
Dry Waste Collection Centres (DWCC)	Ward Level	Municipality	Households, Small shops	Registered Waste Pickers/ small scrap dealers Facilitating NGOs
Material Recovery Facility (MRF)	Anywhere	Empanelled Destinations	Bulk Generators	Empanelled operators including informal waste workers
Aggregation Facilities				
Aggregation Centres only for non recyclable and bulky materials that cannot be	Zonal / District	ULB	DWCCs	Waste Pickers, Facilitating NGOs

managed by the informal markets	Anywhere	Private Service Providers, Dry waste management companies	DWCCs, MRF,	Private Service Providers, Dry waste management companies
Pre Processing Centres				
Recycling Parks	Within Large Establishments, IT Parks, Industrial Areas	Bulk Generators	In House	Empanelled Service Provider
	Zonal / District	ULB / KSPCB	Informal Sector	Informal Sector
Recycling Units	Anywhere	ULB	DWCCs	Private Service Provider , Private companies
SCF/RDF Units	Anywhere	ULB / Private Service Providers/ Private Companies	Aggregation Centres, Wet Processing Plants	ULB managed / Private Service Provider / Private Companies
Disposal Units				
Bitumen Mix plants	Anywhere	ULB	ULB	Road Construction Agencies
Co processing Cement Plants	Anywhere within 600 Kms of the City Limits	Cement Plants	RDF Units	Cement Plants
Thermal Power Units	Anywhere within 600 kms of the City Limits	Thermal Power Companies	RDF Units	Thermal Power Companies

Destinations that operate informally by the Informal Waste workers and need to be supported by the ULBs

Neighbourhood Scrap Shops	Ward Level	Scrap Show owners/Individuals	Households, Small shops	Scrap Dealers/Wastepickers, Petty Scrap Shop Owners
Large Scrap Shops located in the	Anywhere	Scrap Traders/ Individuals, Association of informal Traders	Scrap Shops, DWCC, MRFs, and others	Scrap Traders/ Individuals, Association of informal Traders
Informal Material Trading Markets also aggregation	Anywhere	Scrap Traders/ Individuals, Association of informal Traders	Scrap Shops, DWCC, MRFs, processors factories and others, including exporters	Scrap Traders/ Individuals, Association of informal Traders
Informal Recycling Hubs	Anywhere, including designated waste trading markets	Scrap Traders/ Individuals, Association of informal Traders	Scrap Shops, DWCC, MRFs, processors factories and others, including exporters	Scrap Traders/ Individuals, Association of informal Traders
Informal Recycling Units	Designated Natural Waste Trading Markets, outskirts, Industrial units, neighbourhoods.	Scrap Traders/ Individuals, Association of informal Traders	Scrap Shops, DWCC, MRFs, processors factories and others, including exporters	Scrap Traders/ Individuals, Association of informal Traders

6.5 Action Plan with Target timelines for setting up dry waste management operations by ULB

Sl No.	Action Plan / Action Item	Target	Timeline
1.	Enforcing single use disposables plastic ban	100%	6 months
2.	Labelling of non-recyclable packaging	100%	1 year
3.	Material recovery through dedicated primary collection of dry waste	100%	1 year
4	Registration and Integration of waste pickers	100%	Immediate
5	Notification for festival waste management	100%	1 year
6	Notification for event dry waste management	100%	1 year
7	Setting up of Secondary collection, sorting and storage	100%	1 year
8	Setting up of Aggregation Facilities	100%	1 year
9	Setting up of Pre processing Facilities	100%	1 year
10	Setting up of Disposal Units	100%	2 years

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ANNEXURE 6 D iii

SANITARY WASTE MANAGEMENT POLICY & STRATEGY

1.0 Introduction

1.1 The policy recognises that disposing sanitary waste is a huge problem and needs to be tackled in a safe and efficient manner, in line with the Environment Protection Act, 1986, the Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981. Disposable pads and diapers flushed in the toilets causes blocked sewer and is a major health hazard.

1.2 The policy recognises the ambiguity across the central rules of Solid Waste Management Rules 2016, which includes sanitary waste in the dry waste category. The Karnataka State policy recognises the importance of separate collection of sanitary waste, in line with the Karnataka High Court Directions WP 24739/2012, which directs ULBs to adopt the 2Bin1Bag method for segregation of waste.

1.3 The policy recognises the need to safeguard the working conditions of municipal workers, wastepickers and other informal waste collectors, and the system of collecting sanitary waste must not in any way violate the Manual Scavenging Act, 2013

1.4 The policy recognises the importance of centralised processing of sanitary waste, rather than a decentralised waste management and does not permit microincineration which does not conform to SWM Rules 2016

1.5 The policy recognises that there are limited experience of handling large scale sanitary waste and hence the need to promote sustainable menstruation and sustainable diapering in the State.

2.0 Guiding Principles

2.1 To carry out collection and processing of only domestic sanitary waste: The ULBs will ensure separate collection of domestic sanitary waste only, on a day-to-day basis which includes used diapers, sanitary pads/towels, napkins, tampons, condoms and incontinence sheets, which are wrapped in newspapers or non –chlorinated bags provided by brand owners and channelised to sanitary waste collection centers and from there to centralised biomedical facilities within the city or using a cluster mode to the common bio-medical waste treatment facility.

2.2 To ensure there is no contact in handling during collection: The ULBs will make appropriate announcements on the need to wrap domestic sanitary waste in newspapers and will ensure that municipal or any other workers handling the waste are provided with appropriate personal protective equipment

2.3 To carry out centralized processing: In line with the emission standards, prescribed by the SWM Rules 2016 and Bio Medical Rules, amended 2018, the ULBs will opt for centralised facilities or through a cluster based approach to a common biomedical facility. In addition to evaluating a combination of alternative processes of deep burial and auto claving along with centralised incinerations. At no cost, will micro-incineration be permitted.

2.4 **To exercise the precautionary principle on use of technologies for disposal especially burn technologies, that do not conform to the SWM Rules 2019**

2.5 Large scale of distribution of sanitary pads to villages or schools, will have an increasing component of reused sustainable hygiene products, as and when scale of production is available.

3.0 Strategies for Management of Sanitary Waste

3.1 Public Education, Information and Communication and Capacity Building

3.1.a. To promote awareness on the harmful effects of irresponsible disposal of sanitary waste and the strategy adopted by the ULB for separate collection, including the right way of wrapping sanitary waste.

3.1.b. To promote menstrual hygiene management, across all stakeholders, in particular the applicable disposal strategies and the need to switch to sustainable alternatives

3.1.c. To promote sustainable menstruation like reusable cloth pads, menstrual cups and sustainable diapering as ULB level strategy

3.2 Separate Collection and Sanitary Waste Collection Centers

3.2.a The ULBs shall incorporate in the bylaw the process of separate collection of sanitary waste, wrapped in newspaper or non –chlorinated bags provided by brand owners only for collection daily.

3.2.b. The ULBs shall make arrangements with local hospitals for temporary storage for aggregation and send to biomedical facilities on a daily basis

3.3c. The ULBs will keep a record of sanitary waste collected at the ward level and upload the same on the website.

3.3. Processing and Infrastructure

3.3a. In the absence of biomedical processing facility, the ULBs will ensure that the collected sanitary waste is transported to common shared facility operated in a cluster mode between ULBs

3.3b. At the village and small towns, if sanitary pads and diapers are made of natural fibres not bleached and without plastic covering, deep burial method can be followed as per Technical Guide 2, notified under MHM National Guidelines, December 2015

3.3.c. In small cities, the sanitary wastes can be composted if cloth /clothes are separated from the products.

3.4 Extended Producers Responsibility

3.4. a. The ULBs shall within a stated time frame ask producers to submit the plan for using compostable or recyclable materials in their products and the disposal methodology for the same.

3.4.b. The ULBs shall direct the producers to do a full disclosure of contents of pads/napkins and diapers on the packets

3.4.c. The producers shall pay an Eco-tax on the per unit sale, within the State, of single use disposable sanitary pads and diapers to the State Government.

3.5 Karnataka State Pollution Control Board obligation

3.5.a. Karnataka State Pollution Control Board shall not allow sale and operations of mini and modular incinerators for disposal of sanitary napkins. Modular incinerators can be promoted only in the case of remote location (military establishments/camps)

3.5b. KSPCB shall responsible for producers who can associate and assist with ULB and at the local level to make necessary arrangement for collection and disposal of sanitary waste. To also verify the producers association as per the submissions in the plan.

3.5.c. Shall amend and upgrade the specification for sanitary napkins to contain full discourse of material and include toxicology tests reports to ensure safety and insist

3.5.d. Shall promote and coordinate with different ministries, departments to facilitate and support the setting up small micro enterprises to manufacture the reusable menstrual cups and cloth pads, define standards of these products and provide for tax rebate for these manufacturers.

Action Plan with Target timelines for setting up sanitary waste management operations by ULB

Sl.no	Action Plan/Action Item	Target	Timeline

1.	Notification on separate collection of sanitary waste and procedure for wrapping and collection	100%	Within 3 months

References:

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6. Bio Medical Waste Management Rules 2016, amended, 2018
7. BBMP Sanitary Waste Poster http://bbmp.gov.in/BBMPSWM/Documents/Segregation/Bin%20Poster_Sanitary_Reject%20Waste_Red%20Bin.jpg

ANNEXURE 6 D iv

CONSTRUCTION AND DEMOLITION (C&D) WASTE MANAGEMENT POLICY & STRATEGY

1.0 Introduction

India is urbanizing faster than its planners can cope with. In metros like Bangalore today, construction and demolition (C&D) waste or debris accounts for one-third of total municipal solid waste. Fast growing tier two cities are no exception to this trend. Unlike municipal solid waste for which collection and systems have been in place for decades, there is no formal system for prevention, reduction, management, reuse and recycling of C&D waste. Therefore a policy for management of Construction & Demolition (C&D) waste, and its effective enforcement, are necessary to control, minimize indiscriminate illegal dumping also called fly tipping , of C&D waste all over the city on vacant sites, beside highways, below flyovers and on lake shores.

2.0 Guiding Principles

2.1. Toward sustainable use of materials Keeping in mind sustainability, the use of recycled materials is also to be encouraged. Many new recycled products are now available like fly ash bricks, pavement bricks from recycled plastic, salvaged usable materials from demolition sites for reuse.

2.2. To support reuse recovery practices Providing market space to receive and sell salvaged materials from demolition, by small entrepreneurs like that done by Pune Municipal Corporation, will encourage more recovery and thereby less to the landfill.

2.3. To improve access to reuse material making it economical This will also encourage behavioural and attitudinal changes in people using the once already used materials and thereby reduce the cost of construction , especially in the housing for the poor.

3.0. Strategies for C&D waste management through resource recovery and recycling

With increased urbanisation and infrastructure creation, there is a shortage of conventional building materials such as coarse aggregates, sand which are fine aggregates and a significant increase in the price of building materials such as concrete and bricks. Also, given that material costs comprise nearly 40 to 60 percent of the project cost in the construction industry, sustainable management of C&D Waste can result in significant cost savings for industry and other stakeholders.

3.1 Source reduction through minimising waste by use of prefabricated concrete slabs and other RCC members

3.2 Segregation and removal which encourage on site separation practices and in situ pre processing of concrete material

3.3 Deconstruction through demolition methods for easy separation of different materials and reusing the same in other construction projects

3.4 Reuse and Recycling potential

3.4.1 Use of C&D waste for road and embankment construction

3.4.2 Use of recycled aggregate and other products with recycled content in construction .More specifically, all lean concrete in grades less than M-15 should mandatorily use recycled coarse aggregate instead of virgin stone aggregate. (Refer Appendix for more details)

3.5 In addition, government agencies and service providers inviting tenders for any construction or infrastructure should specifically require that C&D Waste should be processed or disposed in accordance with applicable law. The tender could also specify in the tender document/ work contract the designated location for disposal or processing of the C&D Waste generated from the project.

4 Strategies for promotion and use of recycled products

In a bid to promote recycled C&D products into the mainstream, the following initiatives have to be taken by differential government authorities:

4.1 Local bodies are required to make provision for giving incentives , like tax breaks for manufacturing, for use of material made out of C&D Waste in the construction activity including in non-structural concrete, paving blocks, lower layers of road pavements, colony and rural roads. Further, the state government is mandatorily required to procure materials made from C&D Waste up to a certain percentage (10-20%) in municipal and government contracts subject to strict quality control. (Refer Appendix for note on incentive that can be provided)

4.2 As a first step, it is recommended that all government agencies and departments should include the use of products made from C&D Waste including recovered plastic waste for appropriate use in government contracts, tender and institutional purchase mandates.

4.2.1 Such products/material should also be included in the PWD schedule of rates.

4.2.2 The extent of use of such products and the type of contracts/ tenders where such use should be described and mandated by the technical experts within the relevant departments and agencies.

4.2.3 In addition, to compete against traditional building materials, C&D recycled products will require certification from credible testing authorities as cheaper substitutes without compromising on strength and other important aspects.

4.2.4 The appropriate governmental agency should also introduce standardisation and testing norms for C&D product which is essential for acceptance of C&D recycled products among the ultimate consumers, especially for non-structural applications.

4.2.5 Furthermore, as and when C&D Waste recycling plant is commissioned at a ULB, it may be made mandatory for all construction activities to use a specified percentage of building construction materials manufactured from recycled C&D Waste.

4.2.6 ULBs, relevant development authorities, such as the state PWD etc. can play a major role in dismissing the notions about the suitability of the use of C&D recycled products through recognition of C&D Waste products as genuine substitutes for conventional products. This can encourage private players to follow suit. This will ensure market development for the recycled products making them economically viable for recyclers and reduce subsidy burden on civic bodies.

4.2.7 The Local Bodies should involve institutions such as CREDAI, Karnataka Public Works Department (KPWD), and Karnataka Housing Board (KHB) and other relevant departments in this respect.

4.3. Building ratings like GRIHA, LEED etc. should explore factoring a building's resource consumption, waste generation and utilisation of C&D Waste/recycled products in the certification issued by them with respect to "green buildings"/ "green rating" and other ecologically sound construction.

4.4. Finally, similar to plastic waste, C&D Waste can also be used in construction of roads as a filler or forming a sub-base layer. Local Bodies can explore the potential to use of a certain percentage of C&D recycled products in construction of roads which do not experience heavy traffic load.

4.5 Create linkages to increase access to reuse and recycled material availability through App based technology to connect generators and processors of C&D waste with consumers for recycled aggregate. For example, all the stone used for pitching the sides of lake rejuvenation could be replaced by large chunks of recycled concrete

5. Requirements for C&D waste management by each generator

Generators should be identified, based on the quantum and frequency of waste generated.

5.1 Common requirements

5.1.a. Every waste generator shall be responsible for collection, segregation and storage of the C&D waste generated, as directed or notified by the local authority in consonance of the C&D Rules.

5.1.b. No person/s shall dispose of construction waste or debris on the streets, public spaces,footpaths, pavements, roads or any other location which will lead to nuisance to public

5.1.c. No solid waste should be mixed in the C&D waste and excludes material which may have had exposure to nuclear waste contamination

5.1.d. No demolition waste should be stored outside the site perimeters and violations should attract penalties.

5.1.e. All construction material, even for the smallest houses, shall not spill onto the carriageway of a road.

5.2 Generator specific requirement

5.2.a .Micro generators :The small generators who occasionally generate C&D waste less than 30 kgs from minor house repairs, broken ceramic sanitary ware like bathtubs, commodes, washbasins etc.

i. C&D waste should be segregated into three types concrete, soil and others
ii. C&D waste should be filled in old cement bags and stored on the premises and not left loose on the road.
iii. The micro generators should handover the C&D waste on the designated day per month when the collection of C&D waste is carried out by the Local body or the use the designated services of the C&D waste contractors identified by the local body and pay a nominal amount as per the published schedule of charges for collection and transportation

5.2.b. Small Generators: Those that generate C&D waste during building renovation , remodeling or construction where the total amount of C&D waste generated in the entire project is less than 20 tonnes

i. The project owner or developer shall be ultimately responsible for ensuring that the C&D waste is disposed off responsibly in the designated locations identified by the local body
ii. Should segregate the C&D waste into 3 types concrete, soil and others
iii. Shall procure a receipt from the designated location where the services of the transportation operators used by the demolition or construction contractors is used , or
iv. Shall use the services of the designated C&D waste contractors identified by the local body and pay a nominal amount as per the published schedule of charges for collection and transportation

5.2.c. Bulk generators : Waste generators who generate more than 20 tons or more in one day or 300 tonnes per project in a month

i. The project owner or developer shall be ultimately responsible for carrying out end to end C&D waste management responsibly irrespective of the project activities being entrusted to contractors or sub contractors and shall show adequate proof of such management

ii. The C&D waste shall be segregated into a minimum of 4 streams concrete, soil, steel, wood and plastics , bricks and mortar on site and suitable arrangement for in situ management or storage shall be provided

iii. Every project developer or Contractor shall set up their own debris site , either individually or in collaboration with other developers or contractors

- Such debris site shall be capable of receiving the volume of C&D waste generated individually or cumulatively across the projects handled.
- All C&D waste generated shall be disposed off or managed only in these debris sites and shall under no circumstances use the general public facilities set up by the local authority
- Such debris site shall be set up in compliance with the criteria for storage, processing or recycling facilities for C&D waste and obtain all such necessary permissions for operating the same.

iv. A Waste management plan covering segregation, storage, collection, reuse, recycling, transportation and disposal of C&D waste generated in their projects , shall be submitted to the local body for availing approval of construction giving details of (Refer Appendix for details)

- Construction waste management policy of the company along with the designated responsible technical person for the project
- A site plan should indicate designated waste segregation place at the site to facilitate segregation and recycling of construction waste along with an estimate of different kind of wastes generated out of building construction from inception to construction completion.
- Projects which are unable to store the construction waste within their site, should take prior permission of the local authority or the State Government authority as may be applicable, for temporary storage of such waste and having obtained & paid for such permission. In such cases, storage of wastes must not hamper the traffic/spread on the road /block surface drains/ storm water drains.
- Project needs to demonstrate at the end of construction that 100% of the waste generated on site is received at the debris site and is either recycled or reused to obtain no objection clearance for the project

5.2. d. Service Providers are authorities who provide services like water, sewerage, electricity, telephone, roads, drainage etc and carry out infrastructure projects like metro, railways, airports who often generate C&D Waste during their activities, which includes excavation, demolition and civil work.

i. The authority who is the project owner or project developer shall be ultimately responsible for carrying out end to end C&D waste management responsibly irrespective of the project activities being entrusted to contractors or sub contractors and shall show adequate proof of such management

ii. The C&D waste shall be segregated into a minimum of 4 streams concrete, soil, steel, wood and plastics , bricks and mortar on site and suitable arrangement for in situ management or storage shall be provided. Desilted material which does not include decomposed organic material can be included

iii. Where in the case of public areas in situ management is not possible all C&D waste generated shall be removed and the area cleaned every day, if possible or within a reasonable timeframe in application with the local body

iv. Every Service provider shall set up their own debris site for use by the project developer or contractor assigned to the project who do not have their own debris site

- For larger projects the service provider shall mandate that the project developer or contractor assigned have their own debris site
- Such debris site shall be capable of receiving the volume of C&D waste generated individually or cumulatively across the projects handled.
- All C&D waste generated shall be disposed off or managed only in these debris sites and shall under no circumstances use the general public facilities set up by the local authority
- Such debris site shall be set up in compliance with the criteria for storage, processing or recycling facilities for C&D waste and obtain all such necessary permissions for operating the same

v. The Service provider shall require a Waste management plan covering segregation, storage, collection, reuse, recycling, transportation and disposal of C&D waste generated in their projects ,to be submitted by the assigned project developer or contractor to the Service provider for availing approval of construction giving details of (Refer Appendix for details)

- Construction waste management policy of the company along with the designated responsible technical person for the project
- A site plan should indicate designated waste segregation place at the site to facilitate segregation and recycling of construction waste along with an estimate of different kind of wastes generated out of building construction from inception to construction completion
- Projects which are unable to store the construction waste within their site, should take prior permission of the local authority or the State Government authority as may be applicable, for temporary storage of such waste and having obtained & paid for such permission. In such cases, storage of wastes must not hamper the traffic/spread on the road /block surface drains/ storm water drains.
- Project needs to demonstrate at the end of construction that 100% of the waste generated on site is received at the debris site and is either recycled or reused to obtain no objection clearance for the project

5.2.e. Disaster Debris During a disaster such as flyover /building collapse ,high volume of waste generated in a short time period (instantaneously). Relief efforts depend on quickly moving the debris before lives can be saved. If a plan is in place, no time is lost in deciding what to do with the debris and avoids multiple handling and further impacts from improper disposal.

i. Every Bulk Generator and Service Provider shall in addition to the Waste management plan of the project also identify a Disaster debris management plan and give details of the Debris site allocated for receiving such disaster debris.

ii. The Local Body shall also provide a designated location for a receiving disaster debris

iii. Such designated Debris sites shall be free of day to day activities and be kept free of material to receive the disaster debris waste at short notice

6 Overview of objectives and obligations

6.1 Local Body obligations

6.1.1 The details of the format required to be included in the waste management plan can be appropriately included in the bye-laws for management of C&D waste to be adopted by the local body

6.1.2 ULBs are required to examine and sanction the waste management plan of the generators within one month from the date of submission or date of approval of the building plan ,whichever is earlier

6.1.3 Shall device appropriate measures in consultation with expert institutions for management of construction and demolition waste generated including processing facility and for using the recycled products in the best possible manner

6.1.4 shall create a sustained system of information, education and communication for construction and demolition waste through collaboration with expert institutions and civil societies and also disseminate through their own website;

6.1.5 shall make provision for giving incentives for use of material made out of construction and demolition waste in the construction activity including in non-structural concrete, paving blocks, lower layers of road pavements, colony and rural roads

6.2 Setting up Common Destinations for C&D waste management by Local Body

Destination Name	Location	Set up by	Service To	Operated by
Secondary Collection, Sorting & Storage				

Drop off point from where the waste stored is cleared on a weekly basis to the pre processing or the Processing Facility				
Common Debris sites	Zonal Level	Local Body	Micro Generators , Small Generators, Street sweeping	Transportation operator
Pre Processing Sites Simple segregation and screening to recover aggregates is carried out and sent back to the construction or civil works site for use				
Common Debris pre processing Sites	Anywhere	Local Body	Common Debris Sites, Small Generators , Civil works Contractors	Operator
Recovery and recycling Facilities				
Processing and Recycling Facilities	Anywhere in compliance with the buffer zone and pollution standards	Local Body	Common Debris Sites, Pre processing sites , Civil Works Contractors	Technology companies
Final Disposal Sites				
MSW Sanitary Landfill	As and where	Local Body	Common Debris Site, Pre processing site , Processing and recycling facilities	Operator

6.3 **Action Plan with Target timelines for setting up C&D waste management operations by ULB**

In the interest of streamlining dry waste management activities all ULBs should

Sl No.	Action Plan / Action Item	Target	Timeline

1.	Notifying the Bye law for C&D waste	100%	1 year
2.	Notification to all Generators of their roles and responsibilities and requirements for C&D waste management	100%	1 year
3.	Notification for setting up of Debris Sites by Bulk Generators and Service Providers	100%	1 year
4.	Ensuring compliance of setting up of Debris Sites by Bulk Generators and Service Providers	100%	1 year
5.	Setting up a Hotline and related collection mechanism	100%	1 year
6.	Notification for mandatory use of recycled products in all constructions with required limits of usage in each category of plain concrete, reinforced concrete and lean concrete	100%	1 year
8.	Setting up of Common Debris Sites	100%	1 year
9.	Setting up of Pre processing Sites	100%	1 year
10.	Setting up of Processing and Recovery Facilities	100%	2 years
11.	Setting up of Disposal Sites	100%	1 year

APPENDIX

A. USE OF RECYCLED PRODUCTS

1. The Bureau of Indian Standards (BIS) has amended specification for coarse and fine aggregate for concrete (Third Revision) (IS: 383-2016) to include "manufactured aggregates produced from other than natural sources" for use in the production of concrete for normal structural purposes including mass concrete works. These manufactured aggregates are of two types namely: (a) Recycled Aggregate (RA): It is made from C&D waste which may comprise concrete, brick, tiles, stone, etc. (b) Recycled Concrete Aggregate (RCA): It is derived from concrete after requisite processing.
   Scope: This standard covers the requirements for aggregates, crushed or uncrushed, derived from natural sources, such as river terraces and riverbeds, glacial deposits, rocks, boulders and gravels, and manufactured aggregates produced from other than natural sources, for use in the production of concrete for normal structural purposes including mass concrete works.

   BIS IS: 383 is the principal driver, the standard for coarse and fine aggregates for use in concrete was revised in January, 2016, permitting use of recycled aggregates up to 25% in plain concrete, 20% in reinforced concrete of M-25 or lower grade and **up to 100% in lean concretes of grade less than M-15.**

Table 3.1: IS 383 : 2016 Indian Standard COARSE AND FINE AGGREGATE FOR CONCRETE – SPECIFICATION (Third Revision)

C & D waste BIS IS: 383	Plain Concrete	Reinforced Concrete	Lean Concrete (< M15 grade)	Extent of Utilization
Recycled Concrete Aggregate (RCA)	25%	20% (only upto M25 grade)	100%	as Coarse Aggregate
Recycled Aggregate (RA)	nil	nil	100%	as Coarse Aggregate
Recycled Concrete Aggregate (RCA)	25%	20% (only upto M25 grade)	100%	as Fine Aggregate

2. National Building Code (NBC- CED 46) of India 2005: Part 11 of NBC 2005 on 'Approach to Sustainability'(Chapter 11), states that:

   (a) Recycled Coarse Aggregate may be used in concrete for bulk fills, bank protection, base/fill of drainage structures, pavements, sidewalks, kerbs and gutters etc.

   (b) Up to 30% of natural crushed coarse aggregate can be replaced by the recycled concrete aggregate.

   (c) This percentage can be increased up to 50% for pavements and other areas which are under pure compression specific to the standards and practices pertaining to construction of roads.'

3. Central Public Works Department (CPWD) and National Building Construction Company (NBCC) have recommended use of recycled portions of C&D wastes in their construction activities or if the same is available within 100 km from construction site. In addition, CPWD, and NBCC promote (a) maximum of 20% replacement of aggregates in RCC with RCA and (b) 100% replacement of aggregates with RCA in light or non-load bearing lean concrete.

4. Incentives that can be provided on recycled products

Some examples of incentive driven waste management:

4.1 European Union Producer responsibility

Extended Producer Responsibility makes producers financially responsible once their products become waste, providing them with an incentive to develop products which avoid unnecessary waste and can be used in recycling and recovery operations.

An example of producer responsibility is the 'Green Dot' system currently operating in many Member States. Producers placing material on the market pay a levy for the collection and recycling of a related amount of waste material. This forces them to consider the whole life cycle of the goods they produce.

Source: EU Waste Policy

4.2 Malaysian University article proposes

Three basic types of policy incentives can be used to prompt waste generators, handlers, and managers to minimize waste generation: command-and-control regulations, social-psychological incentives, and economic incentives. Also, The likelihood of command-and-control regulations being successfully implemented depends importantly on the social-psychological and economic incentives for waste minimization provided in the regulations.

Source:

Policy incentives to minimize generation of municipal solid waste

By Donald C. Taylor

First Published October 1, 2000

There can be 4 approaches for incentives:

1. Financial Disincentives – charge - per – bag or pay – as – you – throw local collection fee combined with low or zero charge for the collection of recyclables.
2. Consumer Education – Posters & Special Events
3. Product restrictions or Bans
4. Tax Incentives – Granting tax incentives for the purchase of recycled equipment encourages its use

Source: Plueddemann, David W. "Creating Incentives for Waste Reduction: State and Local Perspective." Journal of Environmental Health, vol. 57, no. 3, 1994, pp. 23–26. JSTOR, www.jstor.org/stable/44533612

B. WASTE MANAGEMENT PLAN

Refer following formats for preparation of CWM plan

- Annexure -1 for standard data for estimating waste
- Annexure -2 listing major construction waste come out of any construction project to facilitate estimation

- Annexure -3 : Format for construction waste management plan for estimation & monitoring
- Annexure – 4: Construction waste collection area estimation

ANNEXURE 1: GUIDELINES FOR ESTIMATING WASTE GENERATION DURING CONSTRUCTION

Sl no. Type of construction process estimate waste generation

1 Construction 40 – 60 kg/m2

2 Renovation and repair work 40 – 50 kg/m2

3 Demolition of pucca building 500 kg/m2

4 Semi-pucca buildings 300 kg/m2

Source: GRIHA rating

ANNEXURE 2: COMMON MATERIALS THAT ARE FOUND AT CONSTRUCTION SITE AS FOLLOWS

FOR PREPARATING PLAN

SN	Stage	Materials
1	Excavation and foundation works, super structures	Explosives and related products and equipment used in excavations
2		Fuels and heating oil and other volatile/flammable liquids, such as coolants and grease
3		Pesticides
4		Chemical admixtures, sealants, adhesives, solvents
5		Plastics, acrylics, silica and PC
6		Electronic ballasts, PCBs, transformers, capacitors, switch gears, lead cable, and oil filled/gel-filled cables
7		Tar and tar products (bitumen, felt and water proofing compounds)
8		Centering oil and form work oil
9		Asbestos products- insulations, tiles
10		Product packaging (cement bags, cartons, containers & plastic covers)
11	Finishing and interiors	Tarpaulin
12		Compressed gases/cylinders
13		Batteries
14		Wood dust
15		Paints, pigments, dyes and primers
16		Mercury containing lamps and tubes: fluorescent lamps intact and crushed, halogen lamps, arc lamps, UV lamps, high pressure sodium lamps, mercury vapour lamps, neon lamps, and incandescent lamps
17		Mercury containing devices, relays, regulators, thermostats, thermometers, manometers, and debris containing mercury

Source: GRIHA rating

ANNEXURE -3: FORMAT FOR CONSTRCTION WASTE MANAGEMENT MONITOING FORMAT

DEBRIS DISPOSAL SITE NAME: '_____'

Construction Waste Management - Log Sheet							
Project Name							
						Date:	
Sl no	Construction Materials	Total Quantity proposed for the project (kg)	Quantity of Waste Expected to be Generate at site (Kg)	Quantity of waste sent for recycling /reuse	Quantity of waste sent for landfill (Kg)	Location of waste recycled/re used	Scrap dealer name / ULBs as applicable

ANNEXURE 4: STORAGE AREA SIZE ESTIMATION TABLE

Project Built Up Area	Size of storage area
<5000 sqft	82 sqft
5001 – 15,000 sqft	125 sqft
15,001 – 50,000 sqft	175 sqft
50,001 – 100,000 sqft	225 sqft
100,001 – 200,000 sqft	275 sqft
> 200001 sqft	500 sqft

Source – USGBC LEED NC rating system

GUIDELILNES FOR LOCAL GOVT. APPROVED CWM SITES

• Locate identified debris disposal site in a map, which will be easily accessible by the construction companies to locate the disposing sites

• Site to be appropriately selected based on the following:

o Environmental Impact to be minimal

o Site should be authorised / approved by the respective govt. Authority

o Appropriate construction of the site to cause least disturbance to areas surrounding the location

o The process of segregation & level of waste storage to be clearly defined for each site

• Facilities at site

o Site should be envisaged with display signs to facilitate easy accessibility

o Proper accessibility to vehicle movement in / out of the site

o The site should be properly illuminated for night hour usage. Suggested to developers that the waste disposal is carried out during non peak hours i.e. post 10pm to 6 am to have minimum disturbance to the public and ease the traffic.

o Proper fencing & gates with security guard & guard room

o The entire site should be properly bifurcated for different wastes for easy segregation for recyclers to remove recyclable waste material

o Recyclers will be allowed to take out materials for their recycling plants only from these locations by paying a tipping fee also the transportation will happen between 10pm to 6am.

o Entry books for vehicles moving in & out with project name & complete address. For easy tracking, each project will be assigned with separate log sheet for entry to enable project team to submit the same log sheet for NOC clearance to demonstrate disposal quantities easily.

o Bill book to be maintained for the fee applicable for disposal of waste into the site. This fee will help to manage the site in a self sustained manner.

o Proper storm water drainage with filtration (such as screen meshes) to be planned at the site

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ANNEXURE 6 E

PUBLIC INFORMATION, EDUCATION AND COMMUNICATION STRATEGY

1.0 Introduction

Public Information, Education and communication are multilevel tools for promoting and sustaining changes in individual and communities. It is a complex web of factors that affect behaviour change and a mix of sustained and regular interventions are needed to motivate and sustain new behaviours. Communication is not a single time activity, but a sustained campaign using multiple modes , mediums, formats. This document serves as a policy primer to developing a ULB level plan.

2.0 Objectives

The overarching objective is to bring about an efficient, effective and integrated waste management communication program to enable people and communities move towards sustainable behaviors – which includes adoption of waste hierarchy, decent and safe livelihoods to informal recycling sector and explore sustainable alternatives

The broad objectives are:

a. To ensure no littering
b. To promote waste minimisation and reduction
c. To promote awareness of waste as a resource and to encourage re-use, recycling and composting and reduce diversion to landfill
d. To communicate health and environmental benefits of recycling and composting and increase diversion rates
e. To bring about an awareness of the different waste streams and their treatments
f. To raise awareness about municipal workers, safai karmacharis, waste pickers and other informal waste collectors and respect the workers
g. To promote sustainable alternatives and encourage zero waste lifestyle

3.0. Guiding Principles of Communication

3.1 All communication so designed will be clear, crisp, jargon free, non-technical, and positive and allow for a two-way dialogue

3.2. There will be consistent branding – at the State and ULB level with synergy adopted, that people can relate to

3.3. The State will facilitate standard content, which can be tailor made, modified based on the ULB and reviewed periodically – once in two years from changes and amendments.
3.4. The State will facilitate the collection of best practices in the form of a compendium to be released on June 5th every year
3.5. Suitable budgets will be allocated for the same, with timely release of payments
3.6 Training and capacity building exercise of all internal staff will be undertaken prior to the roll out
3.7 The ULBs will; explore multiple modes and formats while communicating, backed up with relevant outreach programs.
3.8 Materials used for promotions, will follow the guidelines of Karnataka State Plastic Ban
3.9 Communications will be targeted to different stakeholders, using multiple modes. The ULB will create a detailed mapping of all stakeholders, and review existing materials, before designing the program.

4.0 Medium of Communication to be adopted

The suitability of the mediums of communication should be evaluated and based on maximizing not just reach but also in enabling impact.

Traditional Media: Print, Radio, TV and other paid media including bill boards, posters

Community Media: Community Radio, Theatre, Newspaper

Digital Media – All social media channels including websites of the ULBs

Outreach Component, including street plays, door-to-door awareness, school programs, meetings, wall paintings, rangoli competitions, flash mobs

5.0 Branding

In order to create a public recall for the messaging , a standardized branding approach should be adopted in all public places like tourist spots, railway stations, airports, bust stands and markets. This will also have the advantage of reaching to a large floating population and make them aware of their responsibilities in discharging their civic duties towards maintaining cleanliness .

6.0 Key messages – Thematic Awareness and Campaigns

In order to remain attractive to the general public efforts should be made to launch well designed and relevant key messages based on themes and around which campaigns can be built

6.0 Target Groups

Every effort shall be made that the Public information and education is carried out for all spectrums of society . To this end target groups should be clearly defined while deciding the medium of communication and the strategy .

7.0 Impact Assessment

In order to assess the impact of the Public information and education carried out , key performance indicators should be evaluated . This should be a necessary part of any plan .

8.0 Strategy and thrust of the Public information and education

1. Public information and education activities should be accorded priority . Such Public information and education should be appropriate and create awareness through effective communication, about the harmful effects of solid waste management on public health and environment .
2. The Public information and education should be communicated effectively using various mediums with emphasis on social and digital mediums . A strategy plan suitable for every ULB body shall be developed assigning required personnel and budget for the same.
3. The Public information and education activities should be undertaken keeping in view the particular wastes in particular seasons and taken up consequent to assessments and pilots.
4. The Public information and education campaigns should target households, shops and commercial and institutional premises and developed with the participation of stakeholders such as municipal officials, elected representatives, schools, non-government organisations , the informal sector, safai karmacharis , media etc to endure their participation in managing the city waste by discharging their roles effectively
5. Standard content for use by the ULBs should be developed and reviewed every 2 years
   5.1. Content developed by non government organisations which have been piloted (eg. Trashonomics for schools) , to be considered for adoption.
   5.2. Content showcasing best practices in use by various communities
6. 2bin1bag system which has been recommended by the High Court of Karnataka in its directions should be adopted as the standard model for supporting the three way segregation at source.
7. Public information and education should particularly address
   7.1. Domestic hazardous waste including both toxic and bio medical wastes and E waste
   7.2. Provisions regarding levy of penalty for littering , non segregation of different waste
   7.3. Single use disposables plastic ban
   7.4. To emphasise on ‘not to burn’ ‘not to bury’
   7.5. Minimisation strategies of zero waste and circular economy using 5Rs (refuse, reduce, reuse, recycle, refurbish)
8. Public information and education should encourage community participation , maintaining cleanliness, building a cadre of Suchi Mithras who will assist in neighbourhood level awareness creation and Master Trainers who will carry out training the trainers programmes of personnel, workers and public.
9. Public information and education should create an awareness thrust amongst the workforce for utilisation of personal protective equipment .

10. Segregation at every level starting from source, should be given greatest emphasis by devising a system for incentivising and disincentivising waste generators and collectors . There should be a ' no tolerance' stand for mixed waste
11. Public information and education campaigns for every target group should focus on citizen fundamental responsibility for segregation at source. My waste , my responsibility should be advocated as the guiding principle for both generators and collectors
12. As a part of the Public information and education Guidelines should be developed
    - 12.1. Issue of 2bins1 bag to every household
    - 12.2. Common storage by bulk generator premises
    - 12.3. Requirement of 2 bins for wet and dry ,by every commercial generator in full view for use by the general public
    - 12.4. Providing sanitary waste bin in all public toilets and toilets in commercial establishments and work places

Reference

Report of the Comptroller and Auditor General of India- Report no. 4 of the year 2018, , Government of Karnataka

Swachh Bharat Mission Municipal Solid waste management Manual , 2016