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On behalf of:



of the Federal Republic of Germany



Assessment of alternatives to plastic in the state of Kerala

DATA REPOSITORY

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List of Abbreviations

CED	Centre for Environment and Development
CES	Circular Economy Solution
CPCB	Central Pollution Control Board
EPR	Extended Producer Responsibility
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
GO	Government order
KSPCB	Kerala Pollution Control Board
MOEFCC	Ministry of environment, forest and climate change
PET	Polyethylene
PETE	Polyethylene terephthalate
PLA	Poly lactic acid
PMU	Project Monitoring Unit
PVC	Poly Vinyl Chloride
PWM	Plastic waste management
SUP	Single Use Plastic
TC	Technical Corporation
ULB	Urban Local Body
UN	United Nations
WHO	World health organization

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Executive Summary

Plastics have become a vital material for human activities since the invention of the first synthetic polymers in the twentieth century, owing to valuable properties such as their low cost of manufacturing and diverse potential applications. The massive accumulation of plastics in the natural environment is threatening the sustainability of our planet . Single-use plastics (SUP), often known as disposable plastics, are commonly used in plastic packaging and include objects that are intended to be used just once before being discarded or recycled. They are non-biodegradable and have a negative impact on our health, wildlife, and the environment. They take years to decompose and further degrade into smaller particles of plastic known as microplastics, which contaminate food and water, including oceans.

Demand for more environmentally friendly formulations and alternatives has grown in response to concerns about the viability of the current manufacturing model and the effects of traditional plastics on the environment. Kerala is no exception to this growing concern, and there is a need to introduce plastic alternatives to address this issue. The need for plastic alternatives in Kerala arises from the environmental, health, and economic impacts of plastic waste. Plastic waste pollution is a significant environmental issue, affecting ecosystems, wildlife, and human health. Moreover, managing plastic waste is a significant economic burden, with the cost of collection, transportation, and disposal being borne by local governments and communities.

The objective of this study is to create a data repository of the plastic alternative manufacturers in Kerala and to understand the challenges faced by the manufacturers and startups currently working in the field of plastic alternatives. Stakeholders also need to explore new possibility to develop technology adapted to local needs and it is essential to increase the availability of local resources. Attitude of people and industry needs to be changed for developing new products and markets along with considering the comfort of the consumers. Consultation with several industries, alternative product manufacturers in this study has revealed that capacity building of local community on would enable new entrepreneurs to create new products and robust marketing strategies that address the need of low-income groups too.

1. INTRODUCTION

Plastic, an incredible revolutionary material with a variety of characteristics and capabilities, has come to symbolize human ingenuity as well as insanity slowly turning into a bane for our planet. It has become a ubiquitous part of modern life due to its durability, versatility, and low cost of production. Plastic is used in a wide range of products, including packaging, construction materials, medical devices, electronic components, and consumer goods. However, plastic also presents significant environmental challenges, as it can take hundreds of years to degrade, and when not disposed of properly, it can pollute land, waterways, and oceans, entangling and suffocating wildlife and marine creatures thus disrupting ecosystems. During the 4th United Nations Environment Assembly (UNEA) in March 2022, 175 countries including India has agreed on a global plastics treaty by the end of 2024. India is the one of the largest contributors to riverine or marine litter due to influx of plastics mainly single use like plastic packets or sachets. Moreover, the Indian national framework on Plastic Waste Management, Rules 2022 aims at the implementation of Extended Producer Responsibility (EPR) and integrating Eco-design by mandating the use of recycled content related targets in plastic packaging.

The total plastic generation in India accounts for 34,69,780 tonnes/annum (~ 3.47 million tonnes/annum) in the year 2019–2020 (CPCB (Central Pollution Control Board) 2021). Despite having lower per capita usage than the majority of other developing and developed nations, India's plastic consumption has been increasing substantially, and plastic pollution has become one of the nation's major issues. As per Annual report on Implementation of Plastic Waste Management Rule, published by the Central Pollution Control Board (CPCB) in 2019-20, Kerala state accounts for nearly 4% of the total plastic waste generation in the country.

As per the latest CPCB report (2019-2020) Kerala generates 1,31,400 TPA of plastic waste of which the unmanaged waste often ends up as litter in the seas and oceans. The issue of littering in marine, riverine and lake ecosystems is of serious concern to the state of Kerala. The Kerala backwaters, rivers and coastline are impacted by plastic littering. There is also significant action in the state of Kerala for eliminating Single-Use Plastic (SUP) items and implement Plastic waste management rules and waste management systems. The Govt. of Kerala had also issued order for the complete ban on several single-use plastic items including plastic carry bags irrespective of thickness in the state with effect from 1st Jan. 2020.

Gearing up efforts for the management of plastic waste demands a systemic approach in addition to the regulatory mechanisms. There is a need to identify tangible solutions for implementation of closed loop measures like sustainable end-of-life management of plastic waste, alternatives, certifications, eco-design and digitalization etc. This data repository on plastic alternatives is prepared with the support of Indo-German Technical Cooperation (TC) project “Circular Economy Solutions (CES) Preventing Marine Litter in Ecosystems” The project is implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH jointly with Ministry of Environment, Forest and Climate Change (MoEFCC), Government of India and is commissioned by the German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV). The project focus ranges from tracking and monitoring marine litter in selected states of India to the demonstration of technological solutions on reduction, reuse and recycling of plastics. The project provides technical assistance, capacity

building, institutional and accompanying support to contribute to the implementation of the international commitment for preventing marine litter. Alternatives play a key role in the transformation of plastics value chain. The CES project supports linking manufacturers/suppliers of alternate packaging materials and the potential users that would facilitate the scaling up and replication of innovations and innovative business models in the state of Kerala.

1.1 Plastic waste management regulations in India and Kerala

On the regulatory front, the Plastic Waste Management Rules 2016 govern the management of plastic waste in India. They apply to waste generators, local bodies, gram panchayats, manufacturers, importers, and producers and define the responsibilities of each of these when it comes to plastic waste management. The rules also identify Extended Producer Responsibility (EPR) as a mechanism through which Producers, Importers, and Brand Owners (PIBOs) can contribute to the waste collection system through their own distribution channel or the local body concerned (Pani and Pathak 2021). The Plastic Waste Management (Amendment) Rules 2022 which legally enforces EPR is a step in the right direction of bringing accountability to plastic introduced in the market.

The Government of Kerala issued order for the complete ban on single- use plastic including plastic carry bags irrespective of thickness in the State with effect from 01.01.2020 vide G.O.(MS) No.6/2019/Env. dated 27/11/2019. District Collector, Sub-Divisional Magistrate, concerned Board officers, Secretaries of all local bodies and officers were also directed for strict implementation of the order and to take strict action as per Section 19 of the Environment Protection Act. Fine to be levied from manufacturer, bulk distributor, shop keeper or sellers was prescribed as Rs. 10, 000 for first violation; Rs.20,000 for second violation and Rs. 50,000 for continued violation and Divisional Magistrates, Secretary of Local Self Government Department and Pollution Control Board were entrusted for taking action. MoEFCC vide the letter No. 17/6/2021-HSMD dated 25-3-2021 instructed the Government of Kerala to constitute a Task Force for the preparation of a Comprehensive Plan with focus on implementation of provisions of PWM rules, 2016, and building strong public movement around this issue with wider public participation. The Government of Kerala vide order no. G.O.(Rt)No.37/2021/ENV. dated 4-5-2021, re-constituted the Special Task Force under chairmanship of Chief Secretary for the effective implementation of Plastic Waste Management Rules, 2016.

Table 1.1 Banned plastic items and alternatives in the state of Kerala

#	Banned items in the state:	Recommended substitutes	Remarks
1	Garbage bags (plastic)		G.O. (MS) No.7/2019/Env. dated 17.12.2019 G.O.(Rt) No.06/2020/ENV. dated 11.05.2020
2	Non-woven bags *, plastic flags, plastic bunting *[WP(c) No. 23089/2022 case number, High court verdict as on 10.01.2023, less than 60 GSM]	Cloth & paper- bags, flags, bunting	G.O. (MS) No.7/2019/Env. dated 17.12.2019 G.O.(Ms)No.2/2020/ENV. dated 27.01.2020
3	PET/PETE bottles of drinking water of capacities less than 500 ml.	Banned, no substitute	G.O.(Ms)No.2/2020/ENV. dated 27.01.2020

#	Banned items in the state:	Recommended substitutes	Remarks
4	Plastic carry bags irrespective of thickness	Cloth, paper bags (free from plastic coating)	G.O. (MS) No.7/2019/Env. dated 17.12.2019 G.O.(Ms)No.2/2020/ENV T dated 27.01.2020 G.O (Ms) No. 4/2020/ENV T dated 16.02.2020
5	Plastic carry bags – compostable		Subject to judgment dated 16/02/2021 on WP (c) No. 4291 of 2020 (J)
6	Plastic coated - items like paper cups, plates, bowl, paper bags	For paper cups with PLA- Coating , certified by CPCB and IS:17088 complaint	G.O. (MS) No.7/2019/Env. dated 17.12.2019 G.O.(Ms)No.2/2020/ENV T dated 27.01.2020
7	Plastic/ plastic coated leaves used as plates		G.O (Ms) No. 4/2020/ENV T dated 16.02.2020
8	Plastic packets (use of plastic packets in retail outlets, including street vendors/ hawkers, for packing fruits and vegetables)	Paper and cloth bags	G.O. (MS) No.7/2019/Env. dated 17.12.2019 G.O.(Ms)No.2/2020/ENV T dated 27.01.2020
9	Plastic sapling bags	Substituted with non-plastic materials. For grow bags, compostable materials can be used	G.O (Ms) No. 4/2020/ENV T dated 16.02.2020
10	Plastic sheets (sheet used as table spread)	Paper spread	G.O. (MS) No.7/2019/Env. dated 17.12.2019 G.O.(Ms)No.2/2020/ENV T dated 27.01.2020
11	Plastic water pouches, non branded plastic juice packets	Banned , no substitute *(Branded plastic juice packets will come under EPR regulations)	G.O. (MS) No.7/2019/Env. dated 17.12.2019 G.O.(Ms)No.2/2020/ENV T dated 27.01.2020
12	Plates, cups and decorative materials made of thermocol/ Styrofoam	Glass, ceramic , steel- cups, plates, paper and plant-based decorations	G.O. (MS) No.7/2019/Env. dated 17.12.2019 G.O.(Ms)No.2/2020/ENV T dated 27.01.2020
13	PVC flex materials, plastic coated cloth like polyester/ nylon/ Korean cloth	only cloth (plastic free) or paper (plastic free) or polyethylene material	GO(Rt) No.111/2019/LSGD dated 29.08.2019 G.O (Ms) No. 4/2020/ENV T dated 16.02.2020
14	Single use plastic utensils like cups, plates, dishes, spoons, fork, straw, stirrer, made of plastic	Glass, ceramic , steel, wooden cups, plates, dishes, spoons, fork, straw, stirrer *(all product attached straws, and other such items part of branded product packaging exempted from ban and come under EPR)	G.O.(Ms)No.2/2020/ENV T dated 27.01.2020 G.O (Ms) No. 4/2020/ENV T dated 16.02.2020
15	Garbage bag, non woven bags, PET bottles, carry bags,	Paper and cloth bags, Glass, ceramic , steel, wooden cups,	G.O.(Ms)No.6/2022/ENV T dated 29.10.2022

#	Banned items in the state:	Recommended substitutes	Remarks
	plastic sapling bags, cups, plates	plates, dishes, spoons, fork, straw, stirrer	

- Exemption of branded products covered under EPR 0G.O.(Ms)No.2/2021/ENVT

പ്ലാസ്റ്റിക് മലിനീകരണം കുറയ്ക്കുക, ഒഴിവാക്കുക അവബോധമുണ്ടാക്കുക

പൊതു അറിയിപ്പ്

(07.02.2023-ലെ കേരള മലിനീകരണ നിയന്ത്രണ ബോർഡിന്റെ CP-99/143/2021-UPC-11-HO-CPCB-HO/8459 നമ്പർ നിയന്ത്രണ പ്രകാരം പുറപ്പെടുവിച്ചതാണ്)

പ്ലാസ്റ്റിക് വെയ്സ്റ്റ് മാനേജ്മെന്റ് ചട്ടങ്ങൾ 2016- ഒറ്റത്തവണ ഉപയോഗ പ്ലാസ്റ്റിക്സിന്റെ നിരോധനത്തിന്റെ നടത്തിപ്പ് സംബന്ധിച്ച്

01.01.2020 മുതൽ സംസ്ഥാനത്തിനകത്ത് നിരോധിച്ച പ്ലാസ്റ്റിക് വസ്തുക്കൾ

1. ഗാർബേജ് ബാഗുകൾ (പ്ലാസ്റ്റിക്) (ബയോഡെഗ്രാഡബിൾ സുരക്ഷാപാലങ്ങളിൽ ഉൾപ്പെടുത്തിയിട്ടില്ലാത്തവ)
2. നോൺ റ്റുവൺ ബാഗുകൾ *
[WP(C) No.23089/ 2022 നമ്പർ കേസിലെ ബഹു. കോർട് വിധിയുടെ 10.01.2023ലെ വിധിനിയമ പ്രകാരം 60 GSM ന് താഴെ *]
3. പ്ലാസ്റ്റിക് ഫ്ലാഗുകൾ
4. പ്ലാസ്റ്റിക് തോരണങ്ങൾ
5. PET/ PETE കുടിവെള്ള ബോട്ടിലുകൾ (500ml ന് താഴെയുള്ളവ)
6. എല്ലാകണത്തിലുമുള്ള പ്ലാസ്റ്റിക് ക്യാനിബാഗുകൾ
7. പ്ലാസ്റ്റിക് കോട്ടിംഗ് ഉള്ള പേപ്പർ കപ്പുകൾ, പേപ്പർ പ്ലേറ്റുകൾ, പേപ്പർ ബാഗുകൾ, പേപ്പർ ബാഗുകൾ
8. പ്ലാസ്റ്റിക് പ്ലാസ്റ്റിക് കോട്ടിംഗ് ഉള്ള ഇലകൊണ്ടുള്ള പ്ലേറ്റുകൾ
9. പ്ലാസ്റ്റിക് പാക്കറ്റുകൾ (കടകളിലും വഴിയോരുകളിലും വിതരണത്തിനും ഉപയോഗിക്കുന്ന പ്ലാസ്റ്റിക് പാക്കറ്റുകൾ)
10. പ്ലാസ്റ്റിക് ടൈ ബാഗുകൾ
11. പ്ലാസ്റ്റിക് ഷീറ്റുകൾ (മേഘവീശി) ഒറ്റത്തവണ ഉപയോഗിക്കുന്നവ
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14. പി.വി.സി ഫ്ലക്സ് മെറ്റീരിയലുകൾ, പ്ലാസ്റ്റിക് കോട്ടിംഗ് ഉള്ള പോളിസ്റ്റർ, നൈലോൺ, കൊറിയൻ തൂണികൾ
15. ഒറ്റത്തവണ ഉപയോഗമുള്ള പ്ലാസ്റ്റിക് കപ്പുകൾ, പ്ലേറ്റുകൾ, സൂണുകൾ, ഫോർമുകൾ, സ്പോകൾ, ഡിഷുകൾ
16. നിരോധിക്കപ്പെട്ട ഒറ്റത്തവണ ഉപയോഗിക്കാവുന്ന ഉല്പന്നങ്ങൾ ബയോഡീഗ്രേഡബിൾ (കേന്ദ്ര മലിനീകരണ നിയന്ത്രണ ബോർഡിന്റെ സർട്ടിഫിക്കറ്റില്ലാത്തവ)
17. ഓക്സോബയോഡീഗ്രേഡബിൾ പ്ലാസ്റ്റിക് കൾ
മേല്പറഞ്ഞവ സംസ്ഥാനത്ത് പൂർണ്ണമായി നിരോധിച്ചിരിക്കുന്ന സാഹചര്യത്തിൽ അവയുടെ ഉല്പാദനവും വിതരണവും ഉപയോഗവും കർശനമായി നമ്മുടെ സംസ്ഥാനത്ത് തടയുന്നതിനും പിഴയടയ്ക്കുന്നതിനും ആ സംസ്ഥാനങ്ങളിൽ നിന്നും വരുന്ന മേല്പറഞ്ഞ പ്ലാസ്റ്റിക് ഉല്പന്നങ്ങൾക്കെതിരെ കർശന നടപടികൾ സ്വീകരിക്കുന്നതാണ്. ഒറ്റത്തവണ ഉപയോഗമുള്ള മേൽ പ്രസ്താവിച്ചിരിക്കുന്ന വസ്തുക്കൾ പൊതുജനങ്ങളുടെ ശ്രദ്ധയിൽപ്പെട്ടാൽ അവ അടുത്തുള്ള തദ്ദേശ സ്വയംഭരണ സ്ഥാപനങ്ങളിലോ മലിനീകരണ നിയന്ത്രണ ബോർഡിന്റെ ജില്ലാ/ മേഖലാ ഓഫീസിലോ പരാതിപ്പെടാവുന്നതാണ്.

കേന്ദ്രതലത്തിൽ 01.07.2022 മുതൽ അധികമായി നിരോധിച്ചവ

കോലിമിറായി, ഇയർബഡ്സ്, ഐസ്ക്രീം, ബാബിസ് എന്നിവയുടെ പ്ലാസ്റ്റിക് പീടികൾ, മധുരപലഹാരങ്ങൾ, കഷണക്കുറുത്തുകൾ, സിഗരറ്റ് പാക്കറ്റുകൾ ഇവ പൊതിയുന്ന പ്ലാസ്റ്റിക് ഫിലിമുകൾ.

കേരള സംസ്ഥാന മലിനീകരണ നിയന്ത്രണ ബോർഡ്

Figure 1.1 Banned plastic items in Kerala and additionally banned items as per PWM rules 2021 notification

1.2 Promoting alternatives to plastics and alternative innovative business models

The demand for banned single-use plastic items can be decreased by responsible consumption behaviour of citizens and also with supply of alternate products in the market. With responsible consumer behaviour, demand for alternatives will be accelerated and products can get mainstreamed. Thus, the production would reach economies of scale in no time, leading to a decline in consumption of SUP products. Though there exist varied innovative products as plastic alternatives, the question of sustainability and availability still questions its production and the success rate of those business models. The low-scale production of plastic alternatives and the affordability, availability, and expensive nature of alternative products have created less acceptance among the public. And this has resulted in both the production and sale of banned items in regular usage. This is something serious that has to be tackled from the initial stage itself. The regulations on EPR and the enforcement actions on banned items actually could create an essential need for the availability of alternative plastic products which can revive and create new business models.

Another significant feature is the need to have a market study of these plastic alternatives. The challenges of promoting alternatives to plastic include cost, availability, infrastructure, consumer behavior and associated policies and regulations. It is necessary to create a platform with basic infrastructural facilities, financial assistance, and human resource to enable the possibility of a new plastic alternative business model to thrive in the economy. As per the recent GIZ study (GIZ, 2022), the most common alternate materials/products suggested by each State and UT in their official notifications across India include paper bags/paper carry bags, cloth carry bags, jute bags/jute carry bags, biodegradable and/or compostable carry bags, wooden, paper and eco-friendly cutlery (spoons, plates, cups, straws, stirrers, etc.).

Undeniably, the move towards plastics substitutes requires innovation, new designs, and sustainable business models that encourage the lowest environmental impact. At present the replacement of polymers are two fold:

- **Plastic substitutes**
- **Plastic alternatives**

Table 1.2 : Plastic substitutes vs plastic alternatives (Source: UNCTAD ,2023)

Plastic Substitutes	Plastic Alternatives
Natural materials excluding fossil-based or synthetic polymers	Bioplastics or Biodegradable plastics (usually polymers materials produced from renewable biomass sources)
Mineral, plant, marine or animal origin	Vegetable fats and oils, corn starch, straw, woodchips, sawdust, and recycled food waste
Should be biodegradable/compostable or erodible, and should be suitable for reuse, recycling, or sound waste disposal	Should be subject to material recycling, biodegrade in the natural environment or that can be composted (end of life)

Plastic Substitutes	Plastic Alternatives
Should have lower environmental impact along their life cycle (e.g., natural fibers, agricultural wastes, and other forms of biomass)	
Can include by-products	Can include by-products
Should not be hazardous for human, animal or plant life	Should not be hazardous for human, animal or plant life

Lack of availability and affordability is the major hindrance because of poor manufacturing facilities and financial support to produce alternatives of SUP. Furthermore, India's plastic manufacturing sector is small-scale, so it is not easy to shift to alternatives that easily. Creating awareness among society is very important as people are still dependent on plastic. In the present situation, it is necessary to make plastic alternative products more available to the community by increasing the accessibility and affordability of the products, especially in the regions having strict enforcement regulations on using plastic items. It is also important that while enforcement on plastic waste management can be made stringent, traditional occupations and livelihood may also help in supplementing plastic alternative products from natural products like various plant-based fibers, and other substances. This could also support the women's entrepreneurship schemes through promoting SHGs (Self Help Groups) that engaged in producing plastic alternative products like cloth bags, biodegradable and compostable utensils, and gadgets of daily use.

Keeping aligned with the national ban on identified SUP items from July 2022 onwards, many stakeholders have aligned themselves to shift to alternate materials, partially or completely. Due to many initiatives and schemes (Alternative Investment Funds, Atal Innovation Mission etc.) that give encouragement to individuals and organisations to innovate and create, many have successfully transformed the world of alternate materials and products through their creative, needs-based approach.

2. Promoting plastic alternatives in the state of Kerala

2.1 Background

The decision to ban single-use plastic from the ecosystem cannot be implemented effectively if there is no push to bring alternatives of plastic products into the value chain. Therefore, the demand and supply of plastic alternatives that are more sustainable and eco-friendly, have to be increased and pushed by the Government for effective implementation of the ban. Improving the demand for plastic alternatives in Kerala requires a multifaceted approach among the consumption and production value chain. Increasing awareness of the issue through education campaigns and media coverage can also help to change consumer behaviour.

Businesses in the state of Kerala can respond to changing consumer demand by offering eco-friendly alternatives to plastic, such as jute bags, paper straws, or biodegradable packaging. New substitutes for plastic products are constantly being developed, including natural fibers and organic waste. This may provide an opportunity to start production of entirely new products based on pre-existing raw materials and with that to support more holistic or inclusive circular economies. For example, natural fibers (e.g., from coconut, palm), or organic waste such as crop residues and their associated products (e.g., bagasse and corn husks).

In Kerala, like many other places around the world, there is a growing awareness of the environmental impact of plastic and a push towards finding alternatives. Here are some plastic alternatives that are being adopted or explored in Kerala:

- **Banana Leaf and Areca Nut Plates:** Traditional alternatives to plastic plates and bowls include using banana leaves or plates made from areca nuts (also known as areca palm or betel nut palm). These natural alternatives are biodegradable and compostable.
- **Paper Bags:** Paper bags are a common alternative to plastic bags. They are made from renewable resources and can be recycled or composted. Many shops and grocery stores in Kerala have started using paper bags instead of plastic bags.
- **Cloth Bags:** Reusable cloth bags, often made from cotton or jute, are another popular alternative to plastic bags. They are sturdy, can be washed and reused multiple times, and help reduce plastic waste.
- **Biodegradable Packaging:** Some companies in Kerala are exploring the use of biodegradable packaging materials made from plant-based sources such as cornstarch, sugarcane bagasse, or bamboo. These materials break down naturally and are less harmful to the environment.
- **Stainless Steel or Glass Containers:** Instead of using single-use plastic containers for food storage or takeaways, stainless steel or glass containers can be used. These containers are durable, reusable, and do not leach harmful chemicals into the food.
- **Water Filters and Reusable Bottles:** Instead of buying bottled water in plastic bottles, using water filters and carrying reusable water bottles can significantly reduce plastic waste. There are various types of water filters available, including activated carbon filters, ceramic filters, and reverse osmosis filters.

- Natural Fiber and Bamboo Toothbrushes: Plastic toothbrushes contribute to plastic waste. Using toothbrushes made from natural fibers like bamboo or biodegradable materials is a sustainable alternative. These toothbrushes are compostable or recyclable.
- Bulk Shopping and Refill Stations: Some stores in Kerala are adopting the concept of bulk shopping, where customers bring their containers and fill them with products like grains, oils, detergents, or cleaning supplies. This reduces the need for single-use plastic packaging.

It's important to note that while these alternatives can help reduce plastic waste, they may not be universally available or suitable for all purposes. It's a collective effort that requires both individual choices and systemic changes to address the plastic pollution problem effectively.

Table 2.1 Alternatives available for banned SUP items

Banned SUP items	Commonly available market Alternatives
Plastic sheets	Paper sheets, Aluminium sheets, Aluminium foils, Banana leaves
Plastic carry bags	Paper bags, Cloth bags, Reusable plastic bags, Handy-craft bags.
Plastic balloon sticks	Rubber balloon sticks, Wooden sticks, Yarn and Thread
Plastic flag sticks	Wooden sticks, Rubber sticks, Paper sticks
Plastic flags	Metal flags, Paper flags, cloth flags
Plastic films on cigarette packets	Nil
Plastic films on invitation cards	Paper cards without films, Paper envelopes
Plastic films on sweet boxes	Cardboard boxes, Hard plastic containers
PVC banners	Cloth banners
Plastic candy sticks	Wooden sticks
Plastic cups and glasses	Steel crockery, Glass crockery, Paper crockery, ceramicware, Earthen clay cups and glasses, Sugar bagasse crockery, Areca-nut disposable crockery, Sal leaf cups
Plastic earbuds	Wooden earbuds, Bamboo earbuds, Reusable steel earbuds
Plastic spoons, forks and knives	Steel cutlery, Wooden disposable cutlery, Aluminium cutlery

Banned SUP items	Commonly available market Alternatives
Plastic ice-cream sticks	Wooden sticks
Plastic plates	Paper plates, Steel plates, Hard ceramic plates, Hard plastic plates, Wooden plates, Banana Leaves, Earthen clay plates, pattal
Plastic straws	Paper straws, edible wafer straw
Plastic trays	Aluminum trays, Cardboard box trays
Thermocol decorative items	Paper décor, Inflatable balloon décor, tissue paper décor

2.2 Model case studies from Kerala

2.2.1 Green Protocol

Green protocol is essentially a set of measures which when implemented results in significant reduction of waste. The primary focus is on waste minimization through prevention of use of disposables and using reusable alternatives like glass/stainless/porcelain cutleries. When Green Protocol is implemented in any event, non-biodegradable waste generation becomes close to zero. Therefore, the question of waste management following the event becomes virtually non-existent. It was tried for the first time in National Games held in Kerala and now it has become a people's movement in Kerala with many functions including weddings implementing Green Protocol

2.2.2 Padiyur Kalliyad Panchayat, Kannur

Padiyoor Kalliad Gram Panchayat is located in Kannur district, Kerala, India. It has a total population of 12114 (as of census 2011). There are more than 2700 families residing in the Panchayat. This panchayat is a model panchayat in terms of waste management. They have taken several steps to reduce waste management. The practices they follow are effectively implemented across the Panchayat. Panchayats implement their practices with the help of all the government offices in the Panchayat, Ward members, Police Station. Active participation of the residents made waste management a grand success in the Panchayat.

In Padiyoor Kalliad Grama Panchayat,

- Single Use Plastics (SUP) are completely banned. For this the Panchayat has taken the help of all the political representatives of the Panchayat.
- There are many offices linked to the Panchayat. Banning of SUP is strictly followed in these public offices. They set an example for the people to eliminate plastic from their day to day life. The public offices of the Panchayat strictly follow Green Protocol.
- They organize rallies and awareness programs for promoting the ban of SUPs.
- All the notices printed in the Panchayat contain slogans against plastic.

- They publish posters exclusively for plastic ban.
- They insist shop owners of the Panchayat not distribute plastic bags in the shop. Panchayat itself takes the initiative to put up posters against plastic in front of the shops.
- Kudumbashree members of the Panchayat produce cloth bags and paper bags to promote the alternative to plastic and distribute them across the Panchayat.
- ‘Harithamangalyam’ is the practice they follow on marriage functions to reduce the use of plastic. According to this scheme, the Panchayat aims to completely eliminate the use of plastic plates, spoons, forks, paper cups, ice-cream cups, plastic leaves etc. instead the Panchayat itself gives steel and ceramic cutlery on a fixed rent. The residents of Panchayat can borrow the items by submitting a request to the Panchayat. Banana saplings were distributed among the Panchayat to promote the use of banana leaf for functions. Through this they effectively reduce the use of SUPs.



Figure 2.1 Banana saplings cultivated to promote green weddings

- The Panchayat constituted a committee, ‘Anti Plastic Surveillance Committee’ consisting of Panchayat Secretary as Convenor, Panchayat President as Chairman and Section Clerk, Assistant secretary, Political Representatives etc as the members of the committee. This committee arrange regular inspections on a weekly basis accompanied with the Junior Health Inspector. During the inspection if use of SUPs are found out then all the items are seized by the team and warned not to use SUPs. If again it is found out then fines are imposed from the respective shop owners.
- Within the Panchayat with help of ward members ‘anti-plastic surveillance squad’ is set up with the ward member as the chairman and it is 9 people committee. The anti-plastic surveillance squad reports to the Panchayat if uses of SUPs are found out. Further actions will be taken by the Panchayat with the help of Kerala Police.
- The Panchayat insists in following Green Protocol. As a part of this all school students are given steel water bottles at half the price to completely eliminate the use of plastic water bottles. Officials of the Panchayat and other public offices use steel water bottles instead of plastic water bottles.
- Fish, chicken and meat should not be covered in plastic carry bags instead they use leaves of various trees and newspaper. They took action to convince the neighbouring Panchayat to initiate the process of elimination of plastic successfully. When license for a shop is given through the Panchayat, an affidavit is signed from them stating the ban of plastic in their shop and if they break the rule then their license shall be cancelled

2.2.3 Zero waste stores

Zero waste stores are retail establishments that aim to reduce waste and promote sustainable consumption practices. These stores operate on the principle of minimizing packaging waste, single-use plastics, and other disposable items commonly found in traditional grocery stores. The goal is to create a circular economy where resources are used efficiently and waste is minimized. 7to 9 Green store is a popular zero waste store in Kolencherry, Kochi. The store sells spices, organic foods and vegetables and encourages customers to bring their own containers and bottles for shopping and avoid plastics. They can also get paper bags, organic cotton bags or glass bottles from the store.



Figure 2.2 Reuse and refill models of consumption in Kerala-Zero Waste Store
(PC: 7 to 9 Green Store)

Mechanism of zero waste store



Supply Chain Management

Supply Chain Management in a zero waste store involves careful selection of suppliers and products that align with zero waste principles, prioritize sustainability, and promote waste reduction. The focus is on offering a diverse range of package-free or sustainable packaged products that enable customers to adopt a more environmentally conscious lifestyle.

Supply Chain Management involves following key aspects:

- 1. Supplier selection**-Zero waste stores carefully select suppliers who share their commitment to sustainability and waste reduction. Suppliers are evaluated based on their environmental practices, ethical sourcing, and packaging standards.
- 2. Identifying zero waste products** -that align with zero waste principles. It usually include procuring spices, oil, grains, home and personal care products, organic fruits and vegetables from resellers and farmers or directly from individual producers, SHGs, farmer aggregators either locally or within state.
- 3. Packaging considerations**-The store aims to work with suppliers who use minimal or plastic-free packaging. Bulk suppliers are preferred, as they allow customers to bring their own containers for refills. It includes packaging using non plastic products such as brown paper bags, paper bags, jute and cotton cloth bags, aluminium tins etc. Additionally, the store may opt for suppliers who use recyclable or compostable packaging materials.

Stock management and Warehouse Operations

Stock management and Warehouse Operations are critical components of running a successful zero waste store. These practices ensure that the store can efficiently store and manage its products while minimizing waste and adhering to sustainability principles.

Stock management and Warehouse Operations key elements

Warehousing for Bulk Items: Zero waste stores often deal with bulk items, such as grains, nuts, spices, and cleaning supplies. An efficient warehouse is essential for storing these products before they are dispensed into the store's bulk bins. To maintain quality, health and safety element in store perishable items are stored in moisture free environment, regular exposure to sunlight and sometimes treated with natural repellents.

Inventory Tracking: Zero waste stores use inventory tracking systems that helps in forecasting demand, ensuring that popular items are always available, and minimizing waste caused by overstocking or expired products.

Packaging and Waste Management: Proper waste management is implemented in the warehouse to handle packaging materials from incoming shipments. Recycling, composting, and responsible disposal practices are employed to minimize waste generated during the storage and handling processes.

Store logistics and retail operations

The internal operations of zero waste stores revolve around creating an environment that promotes waste reduction and sustainability. These stores carefully curate their product offerings, selecting suppliers who prioritize eco-friendly materials and packaging.

Store logistics and retail operations key aspects

Product Display and merchandising- Zero waste stores focus on visually appealing product displays that showcase the variety of eco-friendly and package-free options available.

Bulk Dispensing Systems: Bulk dispensing systems are a key feature of zero waste stores. These systems allow customers to purchase items in the desired quantities, using their own reusable containers.

Customer Education: Zero waste stores often prioritize customer education by providing information on sustainable living, zero waste practices, and the environmental benefits of the products they offer. So some stores put up stalls and exhibitions to increase their sales and generate awareness.

Refill Stations: Some zero waste stores incorporate refill stations where customers can bring their empty containers and refill them with products such as cleaning solutions, personal care items, or cooking oils.

Sustainable Product Lifecycle Management

Sustainable Product Lifecycle Management

Waste minimisation- Zero waste stores prioritize waste minimization by adopting practices such as sourcing package-free products, encouraging customers to bring their own containers, and reducing unnecessary packaging.

Recycling,composting,repurposing and reuse-Organic waste, such as food scraps and plant-based materials, is typically composted in zero waste stores. Waste materials or products that cannot be recycled or donated may be repurposed or upcycled within the store.

Waste Management Infrastructure: Zero waste stores ensure they have proper waste management infrastructure in place, such as waste sorting stations and designated bins for different waste streams (recycling, composting, general waste). Clear signage and employee training help ensure that waste is correctly sorted and disposed of.

2.3 Survey of Plastic Alternative manufacturing units in Kerala

Kerala has taken initiatives in recent years to reduce plastic usage and promote plastic alternatives. This is due to increased awareness of the negative impacts of plastic on the environment and ecosystem. The use of cloth bags instead of plastic bags is one of the plastic alternatives suggested in Kerala. These bags are made of natural fibers like cotton or jute and are reusable, washable, and long-lasting. The state administration has also prohibited single-use plastic bags and encouraged the usage of environmentally friendly bags. Another alternative to plastic is the use of biodegradable plates, cups, and cutlery made from materials such as Palm, sugarcane, bamboo, and cornstarch. These products are compostable and do not harm the environment. Furthermore, the state has launched a programme called "Haritha Keralam" (Green Kerala), which aims to promote sustainable and environmentally friendly practices in a variety of sectors. This includes promoting plastic alternatives in homes, schools, and workplaces. Due to the initiatives taken by Kerala government, there is an increased awareness of usage of environment friendly and biodegradable products.

As per the survey conducted on the plastic alternative manufacturers, it was found that approximately 300 units are currently operational in the state producing plastic alternative products (as on May 2023). 13 startups are also functional producing plastic alternative products. The detailed information of some alternative manufactures/ suppliers in the state are enclosed in the ANNEXURES. In addition, the state has various Kudumbashree units across various local bodies manufacturing plastic alternatives like cloth bags, paper pens, (plastic free) ornamental products, crafts, coconut shell cutlery items etc (in small scale). This is currently not included in the list of assessed manufactures of plastic alternatives.

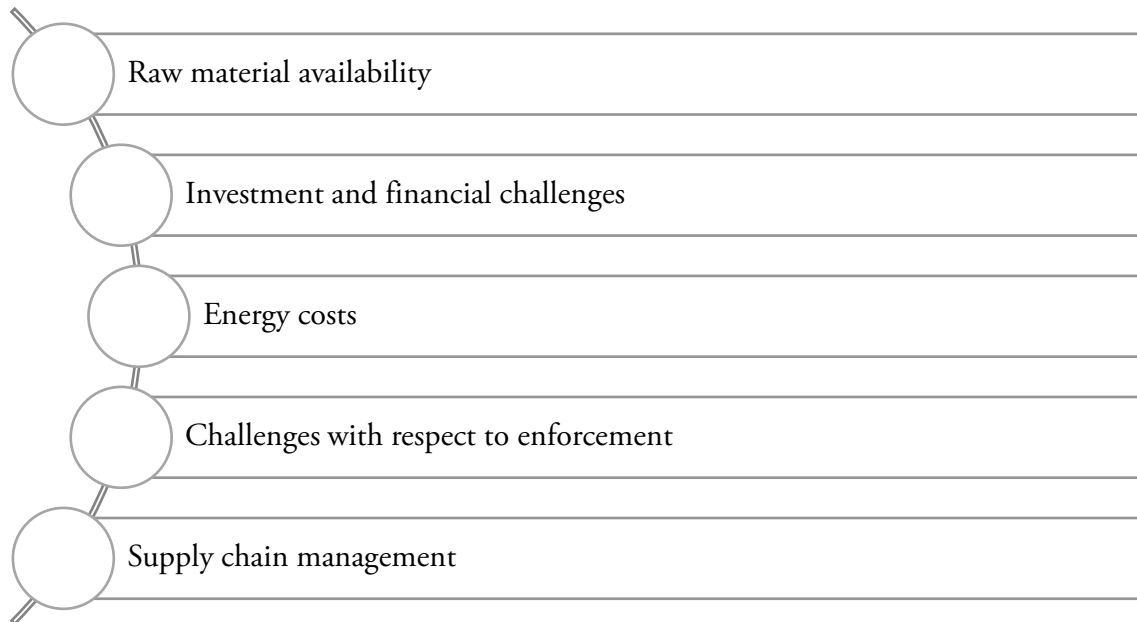
In general, it was found that though alternatives are available, most establishments are hesitant to use or want to delay its usage as much as possible due to the cost factor. The sudden increase in the demand of the alternatives and decline in the demand of SUPs has further escalated the gap. This has resulted in high-end brand owned establishments switching to alternatives whereas smaller vendors like roadside eateries and juice centres are finding it difficult to replace. Most of the alternatives are again of single-use nature, like paper cups, kullads, wooden spoons, paper straws, etc. The recycling capacity of most of the alternatives to SUP products is the same and a challenge in recycling these alternatives can be foreseen. Therefore, alternatives with multi-use should be promoted and made available, which will ultimately help in reducing the pollution burden

Plastic alternative startups

Plastic alternative startups in Kerala, are emerging as innovative and environmentally conscious enterprises that are focused on addressing the plastic pollution problem. These startups recognize the detrimental impact of plastic waste on ecosystems, human health, and the planet as a whole. With a goal to promote sustainability and provide practical alternatives to traditional plastic, these startups are developing and promoting innovative materials and products that can replace or reduce the reliance on plastic in various industries and everyday life. Through their initiatives, these startups aim to create a positive environmental impact, raise awareness about the importance of plastic alternatives, and contribute to the transition towards a more sustainable and plastic-free future in Kerala. (Annexures, Table 1).

3. Challenges and Opportunities for Promoting Plastic Alternatives

3.1 Challenges for mainstreaming alternatives



1. Raw material availability

One of the main challenges in Kerala is the lack of availability of locally sourced raw materials. Most of the raw materials used to produce plastic alternatives, such as plant-based fibers, Palm leaves, bamboo, PLA, and bioplastics are not grown or produced locally in sufficient quantities. This means that manufacturers often have to source raw materials from other regions, which can be expensive and logistically challenging. Disruptions in the supply of these materials may lead to the shortage and increased manufacturing cost.

2. Investment and financial challenges

There is a lack of cheaper availability of alternatives as the raw materials are not available to meet the demand. The increased non availability of raw materials leads to an increase in the cost. This can impact the cost of production for alternative manufacturers and their ability to maintain profitability. Fund issue after covid 19 lock down is a common issue.

3. Energy Costs

These energy-intensive manufacturing processes can result in higher energy costs for manufacturers. The higher energy costs can increase the production costs of alternative materials, making them less economically competitive compared to traditional plastic materials.

4. Challenges with respect to enforcement

The wide range of regulations related to environmental and health concerns are increasing nowadays and the changes of rules affect the manufacturer as the restrictions on the use of certain chemicals to be replaced and thus it can impact the production and availability of the products. The changes in the laws frequently affect the cost of production. Strict action is not taken against the presence of banned products in the market. Rapid changes in laws- causes the replacement of old machineries

5. Supply chain management

Sourcing of raw materials is a herculean task as the availability is less. The distribution is also a challenge as the readily available of banned plastic products in the market. The lack of distribution networks of the alternative products causes the difficulty in selling. Lack of advertising causes reduction in the sale of the products. Already manufactured plastic and plastic products selling in the market cause less demand for the alternative products.

3.2 Opportunities for promoting alternatives to SUPs

Ban of SUPs by July 2022 can help increase sales. Hence, fast establishment of manufacturing unit can meet increase in demand.

Obtain own certifications to enhance sales, profits and also exports.

Align with EPR regulations for sustainable packaging

Obtain certification for saving GHG emissions and also promoting sustainability

Enhance tie-ups with major brands, online food delivery services etc

Upgrade machinery with more automation and digital controls. This will enhance production to meet increasing demands and also lower the delivery times

Raise funds from both private and government agencies to procure machinery and also produce large volumes.

Approach fast food outlets corporate offices, railways to use eco-friendly products which have been developed (this is true for all start-ups).

Knowledge sharing between entrepreneurs and consumers for achieving the sustainable targets.

The Micro, Small, and Medium Enterprises (MSME) sector plays a crucial role in supporting and promoting plastic alternative manufacturers

-
- Manufacturing Support: MSMEs often specialize in manufacturing processes and have the flexibility to adapt to new technologies and materials. They can provide contract manufacturing services to plastic alternative manufacturers, helping them scale up production and meet market demand.
 - Access to Machinery and Equipment: MSMEs can offer access to machinery, equipment, and production facilities that may be expensive for smaller manufacturers to acquire individually. This allows plastic alternative manufacturers to leverage the infrastructure and capabilities of MSMEs to produce their products more efficiently and cost-effectively.
 - Financial Assistance and Funding: The MSME sector can help plastic alternative manufacturers by providing financial assistance and funding options. MSME-focused banks, financial institutions, and government schemes often offer loans, grants, or subsidies specifically designed for small-scale and medium-sized enterprises. These financial resources can support plastic alternative manufacturers in setting up production facilities, investing in research and development, or expanding their operations.
 - Supply Chain Collaboration: The MSME sector can collaborate with plastic alternative manufacturers to form a robust supply chain. MSMEs involved in raw material supply, component manufacturing, packaging, or distribution can partner with plastic alternative manufacturers to ensure a smooth flow of materials and products. This collaboration helps in optimizing the supply chain, reducing costs, and enhancing overall efficiency.
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Support from CIPET- Central Institute of Petroleum Engineering & Technology, is a premier institute in India dedicated to research, education, and training in the field of plastics. CIPET has been actively engaged in research and development related to plastic alternatives and sustainable materials. Following support is offered:

- Research and Development: CIPET conducts research and development activities focused on developing new plastic alternative materials and technologies.
 - Technical Consultancy: CIPET provides technical consultancy services to plastic alternative manufacturers. They offer expertise in material selection, formulation, processing, and quality control. Manufacturers can seek guidance from CIPET to optimize their production processes and enhance the quality of their plastic alternative products.
 - Training and Skill Development: CIPET offers specialized training programs and workshops for manufacturers and industry professionals. These programs cover topics related to plastic alternatives, including material selection, processing techniques, product design, and sustainability. By enhancing the skills and knowledge of manufacturers, CIPET helps improve the overall quality and competitiveness of plastic alternative products.
 - Incubation and Start-up Support: CIPET provides incubation facilities and support to start-ups and entrepreneurs in the plastic alternative sector. They offer infrastructure, technical guidance, and business mentoring to help emerging companies develop and commercialize their innovative plastic alternative solutions.
 - Collaboration and Networking: CIPET facilitates collaboration and networking opportunities for plastic alternative manufacturers. They organize seminars, conferences, and industry interactions where manufacturers can connect with experts, researchers, and other stakeholders in the field. These interactions promote knowledge sharing, technological advancements, and business collaborations.
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4. Summary and conclusion

Alternatives of all sorts of plastics should be explored and more innovation centers must be promoted. It is important that government and government allied institutions must support new initiatives. Lifecycle analysis of alternative materials like bamboo, bagasse, hemp, sugar cane, cloth etc should be studied before implementing it to avoid any detrimental side effects. Acceptability of the product plays a significant role in implementing any alternative. To improve the efficacy of the ban on SUP items, it is important to follow, the process as illustrated in the following figure 4.1 (Rialch, 2018)

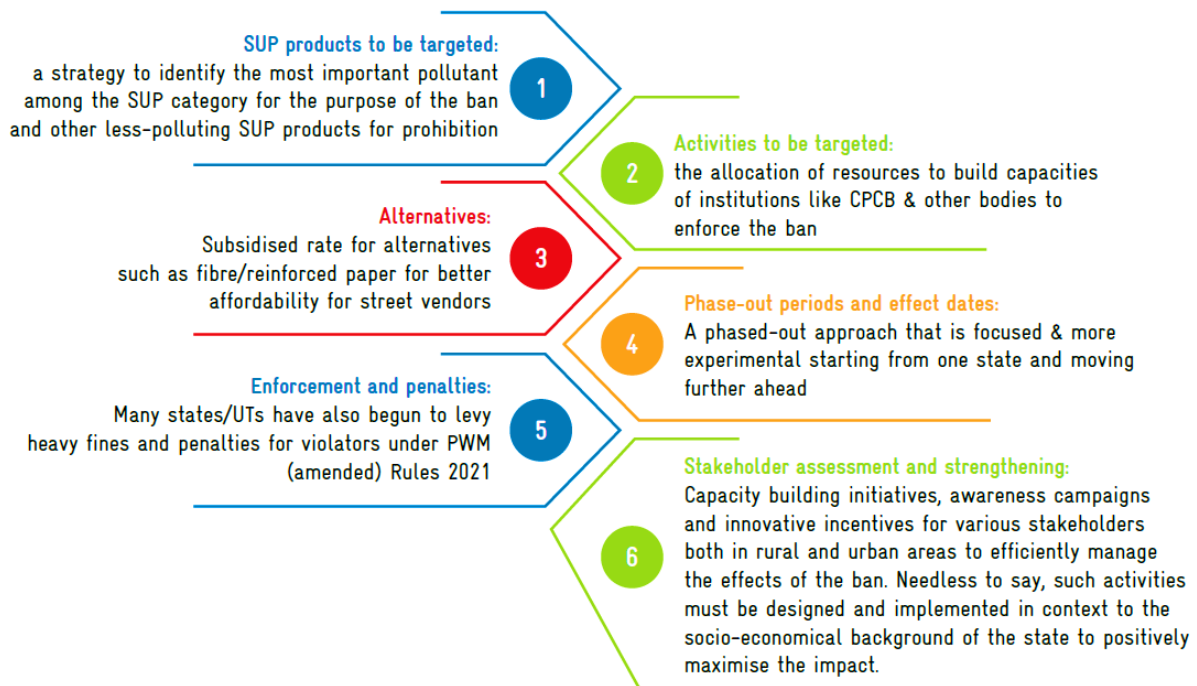


Figure 4.1. Improving the efficacy of the ban (GIZ, 2022)

With more availability and acceptability of alternative products, the cost would reduce. To reduce single-use plastic usage and adopt plastic alternatives, it is important to promote:

- (i) Supply-side- banning the supply of materials to industries producing SUPs,
- (ii) User side- awareness to the users to stop using SUPs,
- (iii) Alternative materials- providing alternative materials like biodegradable cutlery
- (iv) Standardization of biodegradable materials.
- (v) Innovation
- (vi) Investment and capital,
- (vii) Behavioral change- which shall be led by private and public actors

Annexures

Table 1: Details of plastic alternative start-ups

Sl. No.	Name of the manufacturer	Location of Operation	Raw material used	Any other information	Contact information
1	Thooshan	Aura Exim C9, Tower 2, Inkel Business Park, Angamaly, Kochi, Kerala 683573	Wheat Bran & Rice.	Edible, Biodegradable Cutlery	Contact: 9911887727 E-Mail: mail@thooshan.com vinay@thooshan.com http://www.thooshan.com
2	Fibrent	TC 16/1051, CS Road, Jagathy, Trivandrum – 14	Bamboo	Bamboo items (Kitchen Utensils and Stationary)	thefibrent@gmail.com https://fibrent.in/
3	Iraaloom	Iraah Loom International PvtLtd, Kerala Startup Mission 2nd Floor, UL CyberPark Rd, Nellikkode, Kozhikode, Kerala 673008	Cotton, Jute, Bamboo, Coconut Shell, Paper, Reed, Wax, Clay, Coir	Eco Friendly fabric and sustainable products namely in Jute, Cotton, Juco, Paper	7306104070 6282555367 iraaloom@gmail.com https://www.iraaloom.com/
4	Papla	Oravil Vadakillom, Chalakkadavu, Madikai, Kasaragod, Kerala – 671314	Areca leaves	Areca leaves tablewares, Areca leaves badges	6235826264 6235726264 papla.india31@gmail.com https://www.papla.in/home

Sl. No.	Name of the manufacturer	Location of Operation	Raw material used	Any other information	Contact information
5	Qudrat	Kazhakoottam	Rice husk	-	sayhello@qudrat.co.in Marikar Green Earth Private Limited Plot No 19& 20 KINFRA Film and IT park , Chanthavila, Kazhakoottam https://qudrat.co.in/
6	Saintjo Innovations	Kerala	Sugarcane Bamboo, Wheat straw	The company provides alternative packaging by coming up with products made up of sugarcane waste, products like paper bags, coir coco pots, food tray.	Contact: 0484-2707065 9074822320 9744467865 saintjoinnovations@gmail.com https://saintjoinnovations.com
7	Sanchi Bags	TC 26/1340 LathaBhavan Secretariat ward, Opp. SP Grand Days Trivandrum	Cloth Jute Paper Palm Areca Bamboo	Green alternatives office and household, eco-friendly bags and pouches, green solutions events and functions, recycled products, bamboo products, cotton products	9995463481 sanchibags@ gmail.com https://sanchibags.com/

Sl. No.	Name of the manufacturer	Location of Operation	Raw material used	Any other information	Contact information
8	Uravu	Uravu Indigenous Science & Technology Study Centre Thrikkaipetta P.O. Wayanad, Kerala, India, PIN: 673577	Bamboo	Manufacturers of Bamboo Crafts	Phone: 079027 48292, 079027 48293, 04936 231 400 uravu.india@gmail.com https://www.uravu.in/
9	S M Ventures	11/557, Melekonam, Mullaravila, Perumpazhuthoor, Neyyattinkara, Thiruvananthapuram – 695126	Paper	Paper bags	9633133744 mailsmventures@gmail.com
10	Thenga	2nd Floor, Manjali Building, CBE Road, Sultanpet, Palakkad - 678001	Coconut Shell	Women led start-up from Kerala, working on products made with discarded coconut shells. - Handmade by artisans and can be mixed with soil as it is easily biodegradable	9619964286 maria.thengacoco@gmail.com https://www.thengcoco.com/

Sl. No.	Name of the manufacturer	Location of Operation	Raw material used	Any other information	Contact information
11	Triton Green Energy Solutions	Cliff View, Teachers Colony, Sreenivasapuram 695 145, Varkala, Kerala, India	Water- based coated sheets, sugarcane bagasse, cornstarch, areca leaf, birchwood, coconut palm leaves, bamboo, wheat hay, coir fibre, banana fibre, cloth, vegetable starch, recycled paper, jute, etc.	,	9048080196 nahas.tritonges@gmail.com
12	Varsya Eco Solutions Pvt Ltd.	Opp. Dot Space Business Centre, Laham commercial Complex, Kazhakkootam, Trivandrum – 695685		Clay dinner set, eco kraft containers, bio bagasse plates, plantable paper bags, bio bagasse containers, Areca plates, areca bowl, paper cups, clay glasses, Eco Friendly notebooks, eco paper pens.	Sri.NitheeshSundaresan 8139899988 9633315391 nitheesh@varsya.com hello@varsya.com https://www.varsyaeco.co.in/

Sl. No.	Name of the manufacturer	Location of Operation	Raw material used	Any other information	Contact information
13	Subird Staws	Zaphon Repurpose, Mayilmoola, Perumbala Post, Kasargod District, Kerala Pin- 671317	Multi-layered drinking straws and pens made from naturally dried coconut leaves	Straws and pens- made from naturally dried coconut leaves and 100% biodegradable. The products are created with a chemical free process. The natural wax of leaf itself makes the outer and inner wall anti- fungal and water resistant	Phone: +91 99020 03239 info@sunbirdstraws.com https://sunbirdstraws.com/

Table 2: Details of alternative plastic products- Palm and Areca Industry

Sl. No.	Name of the enterprise	Location of operation	Any other information	Contact information
Alappuzha				
1	Cherthala women welfare co operative society	Cherthala, Alappuzha	-	9656115815 CMC 30, Cherthala
Kottayam				
2	T cups	Vellikulam P.O,Theekoy	Production is very low. Soap dishes and palm plates. Product has less demand after COVID. Production is more than 5000 units/ month	9846746444 Thannikal House,Vellikulam
THRISSUR				
3	Anna Palm Products	Near Kannan Thrikkivil Temple,Pavaratty	Palm plate,soap box,bowl. Availability of 12 machines for production and a supply of 1000 plates /day	9400164100, W/O.K.L. Benny, Kuttikkat House, P.O. Pavaratty, Thrissur-680507
4	Deepam Palm Dish	Near nandanam godown,olarikkara	Manufacture of palm plates,ice cup and soap box	9349486814 Kalarikkal house,ponnikkara.P O https://www.deepampalmdish.com/
5	M S Natural Palm Leaf Products Pananchery	Pananchery, P. O. Pattikad, Thrissur	Soap box-2000/day, Plates-1000/day	9495132649 Karayatt (H) Pananchery Pattikkad P.O 680652

Sl. No.	Name of the enterprise	Location of operation	Any other information	Contact information
6	Nandanam Palm Products	9/380A, kolengattukara, P O Choolissery, Tsr 680541	Reduced production due to the unavailability of raw materials. 200 palm plates/day	9744702649 Kolangattukara House Choolissery Post Thrissur
7	V and H Agencies	Gramam, Uppada PO	Areca Leaf Plate ,Cups	9495387164 Harinilayam, Gramam, Uppada PO
8	Abhinaya Areca Plates	10/437, N G Colony, Vannamada PO., Chittur, Palakkad	Production of Areca Plates.Capacity-400 plates/day	9745429262 S/O Krishna Swamy, Moongilmada, Vannamada PO., Palakkad
9	Green Revolution	10/825, Chettipady, Aryampau, Ariyoor P.O.	Palm plates,cup production capacity is low due to non availability of raw material.	9539505243, Madakkan House, Chettipady, Aryampau, Ariyoor P.O., Pin 678583.
10	Jeswanth Enterprises	Kariyanchetti kalam, Attayampathy PO, Menonpara, Chittur	Areca plates and cup production of different size and shape. 70000 plates and cups/month	9846579275, S/o Thankavelu, Koundankalam, Eruthenpathy PO., Chittur
11	Kavyasree Palm Plates	7/338, chavadiyoor Puthoor	Less demand for plates. 400 plates/day	9562337017, Sidharthsree House, Chavadiyoor P.O
12	Kailas Areca Leaf Plates	03/106A, Kottathara, Attappady	Occasional production-voltage issue in areas	7510319375 Kailas Nivas, Vattalakki, Mattathukad, Agali

Sl. No.	Name of the enterprise	Location of operation	Any other information	Contact information
13	Samridhi areca leaf products	Bobay colony, palappuram p.o, pin. 679103	Exporting Areca Plates-300/Day	9447030157, Sreesumam, Mangalam p.o, Lakkidi. Pin.679301
14	Sri Vinayaka areca leaf plate	6/426, Pudur	Reduced production of Areca plates	8086859979 gokulam Nivas Pudur po
WAYANAD				
15	Smile Areca Product	Chulliode	Palm plates and spoons	9747105529 Chakkunnam House Melangadi Kondotty
16	Bhuvana Bio Plates	She that shullia ,neerchal p.o,kasragod	-	9495766151 W/O. Shyam Bhat, Shanthar House, P.O. Neerchal
17	Haritham Palm Plates	Manadukka PO,Manadukka	-	9562519205 Durgapuram house,Manadukka PO,Manadukka
18	Mahima Palm Plate Unit	Iriyanni, muliyar po	Production of palm plates-with production capacity of 600 plate/day	9605428999 Secretary Iriyanni Po Kasaragod 671542
19	Nalluraya Industries	Paivalike	1000 plate/day	8547552421 Kuntukolanji House, Paivalike(Po), Uppala(Via), Kasargod

Sl. No.	Name of the enterprise	Location of operation	Any other information	Contact information
20	Rainbow	Gowriadka, PO Movvar) Kasaragod	Palm plates, 10000/month	9809528942 Movvar H, Movvar Kasaragod
21	Sana Palm Plates	Pathur,manjararam,kasaragod	-	8722536547 Badimale,pathur, manjesharam
22	Sauhrudha Natural Leave Products	Kollampana Munnad PO	Palm plates,ice cream cups,6 machines-1000 plates/day	8547540141 Kochupalavilayil,poozhikadu po ,panthalam

Table 3: Details of alternative plastic products- Banana fiber, Straw

Sl. No.	Name of the enterprise	Location of operation	Any other information	Contact information
Kollam				
1	Bharatham arts	Kadavur, Kollam	Wall hangings	9446834174 Sivamangalathu Vadakkathil, Kadavur, Perinadu P O, Kollam
2	Kairali straw picture	Kadavur, Kollam	Wall hangings	9605583430 Kaliyattayil Veedu, Kadavur Perinadu P O, Kollam
Wayanad				
3	Wayanad eco centre	Sulthan Bathery	Mats, bags and straws (Banana Fibre)	9946924917 Poovathingal house,kolagaparapo,avayal

Table 4: Details of alternative plastic products- Paper industry

Sl. No.	Name of the enterprise	Location of operation	Any other additional information on products	Contact information
Thiruvananthapuram				
1	Akshaya Cups And Plates	Nedumangad(M)	Paper cups and plates	9447206061 Akshaya,Elankathara,Parandode ,Nedumangad
2	Allied Packing Products(Green Wrap paper bag)	Kadinamkulam	Production- 5-10 Tons/Month	8606312121 Knra 156 Vadayakadu Tvpm
3	Amrutha Paper Carry Bags	Karavaram		9142329670 Pooram House, Njarakkattuvila, Nedumparambu.P.O, Pin 695102 (M)9142329670
4	Arithi Packs	Peringamala	Paper boxes and bags	9446520358 Vijaya Mandiram, Aralummodu.P.O
5	Carryon Paper bag	Mudakkal	Textiles bags .production capacity-20,000 to 30,000/month	9995196673 Vaisakham, Valakkad, Elampa

Sl. No.	Name of the enterprise	Location of operation	Any other additional information on products	Contact information
6	Eco serve natural leaf plates	Mudakkal		9446793978 Edatham, Avanavancheri
7	Green Papers	Kottukal	Paper bags and table cover	9497774575 Payattuvila, Uchakkada
8	Krishna Bags	Maranalloor		9645311300 Kailas, Kottamukal, Ooruttambalam Po
9	Nanma Paper Carry Bag	Pazhayakunnummal	Cloth Carry Bags	9846711614 KunnilVeedu, Tholikkuzhi, AdayamonPin.695614 (M)9846711614
10	New Day Paper Products	Andoorkonam	PLA-210,150 Paper cups	7561882139 Albarkah, Malamelparambu
11	Newgen Carry Bags	Attingal(M)	Cotton bags, (production capacity-reduced)	9947772235 Thiruvonam, Near Awics, Alamcode.P.O., Attingal
12	Padua Social Centre	Trivandrum	Paper Cups	9744160382 Kalluvila Puthenveedu Mangad Po Kollam tharapadmanabhan2016@gmail.com

Sl. No.	Name of the enterprise	Location of operation	Any other additional information on products	Contact information
13	Pioneer Paper Bag	Venganoor		8281267805 J J Bhavan, Charivila, Cellar, Kovalam P O
14	Ponmudi Pack Arts P Lt	Vallakkadavu		9947055888 H.No.40priyam ,Asan Nagar,Vallakkadavu
15	Salam Trading Compan	Athiyanoor		9447094455 Jawadh Cottage, Madanthapacha
16	S.N Paper Products	Venganoor	Paper cups -10000/day	8589052664 Sandwanam, Vra-136 Palachira Po Varkala Thiruvanathapuram
17	Sri Nithi Enterprises	Vilappil	Computer boards and packaging	9387811706 Tc 26/1839, Gpo Lane, Tvpm
18	S.R.Paperbag Industry	Avanavanchery	Production- 2000/ Month	9747821748 S.S.Manzil,Elamba.P.O,Avanav anchery
19	Take Me Paper Products	Peringamala	Production capacity- 5000 bag/month	8921593048 Kaniyapuram

Sl. No.	Name of the enterprise	Location of operation	Any other additional information on products	Contact information
20	Yuvasree No. 34	Peringamala	Cloth bags	9745086459 Jisna Manzil, Chittoor, Peringammala
21	Zion Papers	Kottukal		9387814623 Payattuvila, Uchakkada
Kollam				
22	Aapt Bags	Keralapuram, Vellimon P.O, Kollam		9495703348 Punartham, Keralapuram , Vellimon P.O, Kollam
23	Ankur Non Woven Carry Bags And Paper Carry Bags	Pavumba South, Pavumba.P.O, Karunagapally, Kollam	Capacity of facility - 25 Ton/month	9633997217 Kaleekal Vadakathil, Pavumba.P.O, Thazhava, Karunagapally, Kollam
24	Araam Paper Carry Bag	Plappally	Paper Carry Bag,Cloth Bag,Mobile Carry Bags.	9496658801 Kochazhikathu,Araam Bhavan, Kottarakkara
25	Aryaans Pnv Cloth And Paper Bag	Kamukamcherry	Cloth Bag-	9539013191 Kulathoor House, Kannanalloor P. O., Konnanalloor
26	Bismi Jute Bag	Eda Vettam, Vellimon P.O	Jute And Cloth Bags	9847455178 Bismi Manzil, Edavettam, Vellimon P.O

Sl. No.	Name of the enterprise	Location of operation	Any other additional information on products	Contact information
27	Chinnu Paper Bag	Panapetta, Thalavoor		9744332688 Chitrapuri,Kariyara, Punalur
28	Chirayil Agencies	Taha Junction, Thattarkonam Po, 691005	Paper Cups, Plates	7356951510 40/26,Chirayil Agencies, Thattarkonam, Near Taha Junction,Thattarkonam B.O,Kollam -691005 sanomurali@gmail.com
29	Devi Paper Plates	Kanjaveli, Kanjaveli P.O	Paper Cups	9539968548 Puthazhikatu Veedu, Kanjaveli P.O
30	G Pro	Paper Products Aysha Tower, Chathannoor.P.O., Kollam		9633090962 Nizar Manzil, Chathannoor.P.O., Kollam
31	Greenmark Paper Bag	Near Railway Station, Venga , Sasthamkotta		9633939222 Kavil, Venga P O , Sasthamkotta
32	Green Paper Products	Pathanapuram		8111988882 Thannivila Veedu,Kundayam P.O, Pathanapuram
33	Grg Paper Bags	Padappakkara, Near Gov Lps Padappakkara		9539397789 Padappakkara, Padappakkara P.O

Sl. No.	Name of the enterprise	Location of operation	Any other additional information on products	Contact information
34	Grg Paper Carry Bag	Padappakkara,Kollam		9387913370 Kanakamangalam ,Padappakkara(Po),Perayam, Kollam- 691503
35	Ln Paper Works	Krishnakripa,Ithottuva,West Kallada	Paper Plates	9447402187 Krishnakripa,Ithottuva, West Kallada
36	Madeena Bags	Banglam Kunnu	Production 300kg/month	9447484607 Abusa Cottage, Nilamel
37	Mahima Paper Bag Industry	Elampalloor, Kundara P.O	Cloth Bags,Jute Bags	9633128768 Venus Perumbuzha P.O, Kudara
38	Sannidhanam Paper Products	Karikuzhy, Mayyanadu P. O., Kollam	Partially Prepare Paper Cups, Only Also tissue Papers	9447211098 Ethan, Vikas Nagar 67, Pattathanam P. O., Kollam
39	Sini Paper Industries	Mla Junction, Nedungolam, Paravur		9497589827 Sineesh Bhavan, Nedungolam.P.O., Paravur, Kollam
Pathanamthitta				
40	B and B engineering company	Ezhamkulam	Cloth bags	8111851468 Sherin villa,arukalikkal padinjaru

Sl. No.	Name of the enterprise	Location of operation	Any other additional information on products	Contact information
41	Ethnic Creations	Ranni-Pazhavangadi		9645954377 Moozhickal House, Makkapuzha Po Ranny
42	Gurusakthi Carrybag	Ranni-Perunad	Cloth bags	9947415088 Puthenparambil house.Mampara.P.O. Eruvattupuzha
43	Prakrithy Bags	Pathanamthitta(M)		9846119147 Prakrithy Bags, Near ANERT, Opp. Sub Jail, Pathanamthitta
44	Sun industries	Kalanjoor	Paper bag production capacity-50000/month	9747144746 Thirumangalath,murinjakal
45	The Moon industries	Kunnamthanam	Paper bags, packaging paper	9895291407 Thekkanal Poikayil Manthanam.Malkappalky
46	Valanchuzhy Vanitha SwayamSahaya Sangam	Pathanamthitta		9747144746 The Presidant, Kamalavilasam N S S Building, Valamchuzhy, Pathanamthitta
47	Virad Carry Bag	Vadasserikkara	Cloth bags	9744418018 Vazhayil house,Vadasserikkara.P .O,Vadasserikkara

Sl. No.	Name of the enterprise	Location of operation	Any other additional information on products	Contact information
48	Vysali Jute Carrybag	Ranni-Perunad	Cloth cotton bag	9745758729 Thattuparackal house, Mampara.P.O,Kizhakemampara
Alappuzha				
49	Alba Green	Chunakkara	Cups, cloth bags, paper cover.	9495696699 Arryattil House, Chunakkarasouth, Chunakkara.Po
50	Appus Paper Cups	Mararikulam North	Paper cups	9846862470 Pannisseril House, Kanichukulangara- P.O,Cherthala
51	Ara Products	Thrikkunnapuzha	Bio plates	8589875551 Maya Bhavanamperungala P.O, kayamkulam
52	Eco Calls	Alappuzha (M)	Parcel cover	8606942747 Nambyathusseril, Thumpoli .P.O,Alappuzha
53	Kandathil Paper Products	Chettikulangara	Paper cup, straw	8089891951 Kandathil, Panoor, Pallana
54	Krishnas Paper Products	Karthikappally		9645177939 Komallil House, Vettuveni, Haripad

Sl. No.	Name of the enterprise	Location of operation	Any other additional information on products	Contact information
55	Prasad Paper Carry Bag	Kayamkulam (M)		9048102558 Pitbull Padittathil, Mahadevikad
56	Priya Paper ,Products	Kumarapuram	Paper cup production, production is very less.	9387772879 Iqbal Bhavan, Danappady, Haripad P.O., Alappuzha
57	Sreeprabha Industries	Alapuzha (M)	Bio plates	9961097959 Kaduvinal House, Erezha North, Chettikulangara. P. O, Mavelikkara
Kottayam				
58	Eco Tech Manufactures	Adackal	Paper and cotton bags, production capacity- 8000/month	9846897859 Kunnappallil, Nadackal P.O
59	Cr Carry Bags	Manjoor	cloth bags	9447291272 Puthettukunnel, Manjoor Po, Kottayam
60	Jyothis Paper Bag	Kadanad		9446489667 Valliath, Kadanadu
61	Lakshmi Paper Products	Nedumkunnam	Paper carry bags, currently stopped-due to non availability of raw materials	8086765048 Kalarickal Parambil House, Nedumkunnam P.O

Sl. No.	Name of the enterprise	Location of operation	Any other additional information on products	Contact information
62	M And M	Maravanthuruthu		9847470447 Meeralayam Edavattom Thlsyolspparambu
63	Maple Packings	Kuravilangad		9496479984 Chellangattucherry, Nazareth Hill. P.O., Kuravilangad
64	Marvel Paper Bag	Neelamperoor	Cloth bag-seasonal	7510799093 Kochuparampil, Neelamperoor P O Kurichy Kottayam
65	Nehas Paper Industry	Akalakkunnam	Paper cups and carry bags	7558853202 Mundanickal, Manarcad P.O., Kottayam 686019
66	Pachappu Carry Bag Unit	Thalappalam	Paper carry bag,production-15000/month	9562385272 Marottikkal House Melambara P.O
67	R S Paper Products	Thrikkodithanam		9447212143 Santhi Nivas, Puzhavathu, Changanacherry,Kottayam.
68	Sh Paper Bags	Changanasserry (M)		9142834221 Essechil House,Perunna

Sl. No.	Name of the enterprise	Location of operation	Any other additional information on products	Contact information
69	Tom Dispo	Akalakkunnam	Paper plate	9847346357 Maniyangattu House, Manalunkal P O Kottayam
Idukki				
70	Anugraha SHG	Peruvanthanam	Cloth bags	9497682170 Anugraha SHG, Paloorkavu.P.O, Thekkemala
71	Empire bags	Rajakumary	Paper bag, cloth bags,	9447769354 Thelluvavve house No RCity P O, Manjakuzhy
72	Marymatha	Karimkunnam	Production 5000- 10000/month	9539488427 Vadakkal, karimkunnam
73	Moms eco production unit	Kanthalloor	Cloth bag	9400948997 Manalodiyil, kovilkkadav
74	Popular Carry Bags	Thodupuzha(M)	Cloth bags.production capacity-15000/month	9496302178 Kunnumpurathu, Vengallur
75	Sindhooranjali Paper Products	Elappara		9847474960 Nellikasseriyil house,Elappara.P.O,Chemmannu

Sl. No.	Name of the enterprise	Location of operation	Any other additional information on products	Contact information
Ernakulam				
76	Aen Enterprises	Cochin (Corporation)	Paper straw and plat	9847031341 W/O.Babu Alackal,D6,Alackal House,Galaxy Clifford, Chilavannoor, Kadavanthara P.O.,Kochi 682020 aenterprises1@gmail.com
77	Ambwallur Paper Bag	Amballur	Cake box and paper carry bags	8111966797 Parayil, Amballur.P.O sujithappus@gmail.com
78	Carry 4 Enterprises	Nellikuzhi	Cotton carry bag, non woven carry bag and paper carry bags. 10,000bags/ month	9446806420 Chembakasserill, Thrikkariyoor P O, Thankalam, Kothamangalam carry4enterprises@rediffmail.com
79	Chakkunni And Sons Chellanam	Chellanam		9847033546 Kollannur House, Vadyar Lane, Azad Road, Kaloor, Kochi 682017 sangeethabag@gmail.com
80	Chennoth Paper Products	Chendamangalam	Paper files and bags	9847659567 Devasamparambil House, Kunnathuthali Road, Chendamangalam- P.O, Pin 683512

Sl. No.	Name of the enterprise	Location of operation	Any other additional information on products	Contact information
81	Dhanamithra Industries Neeleeswaram	Malattoor-Neeleeswaram		9847193601 Malattoor-Neeleeswaram
82	Eze Creations	Pachalam	Paper bags -10000-15000 bags/month	9847915548 Cherupunathil T Square Road Pachalam betsysuraj@gmail.com
83	Fresh N Pack Poly Sacks	Chengamanad	Paper bags,cloth bag	9746365425 Manaf Manzil, Thottakkattukara
84	Greenland Industries	Elamkunnappuzha	Paper bags,cloth bags,	8943728775 3/139a, Perumalpady, Elamkunnappuzha
85	Gurunidhi Industries	Eloor (M)		8891188222 Gurusree 68/3235 Kannachanthodu Road Pachalam 682012 gurunidhiindustries@gmail.com
86	Ideal Marketing Non Wooven Carry Bags	Cochin (Corporation)	Cotton bags	8136842181 Kannamkeriyil House, Kadebhagam, Akg Road, Palluruthy P.O., Kochi 682006

Sl. No.	Name of the enterprise	Location of operation	Any other additional information on products	Contact information
87	Kichoos Paper And Cloth Bag	Kalamassery(M)	Cloth bags	9746712557 Kichoos Paper And Cloth Bag,Holy Angels Building, South Kalamassery
88	Krishna Industries	Chendamangalam		9349845487 Chennothparambil House, Chendamangalam P.O, N.Paravurpin 683512
89	Kumbalam Aster Enterprises	Mamangalam		9388838373 Valiyara House,Pottakuzhy,Mamangalam Road-682017 Aster_Enterprises@yahoo.com
90	L And V Products	Trippunithura(M)		9747656321 Srinilayamhouse,Parappillyroad, Prra 238,Thiruvankulam
91	Lps Book Binding And Carry Bag	Cochin (Corporation)		9349943788 Pereppilly House, Vaduthala P.O. Boat Jetty Road, Mother Theresa Lane
92	Mr Carrier Bags	Chottanikkara	Cloth bags	9562999898 Chettuparambil,Market Road, Tripunithura mrcarrierbags@gmail.com

Sl. No.	Name of the enterprise	Location of operation	Any other additional information on products	Contact information
93	Nasco Print Pack	Paipra		9744676460 Mattathil House, Punnurickal Parambu, Mulavoor, East Vazhappilly P.O., Muvattupuzha Ernakulam District, Kerala - 686673
94	Oscar International	Ayavana	Paper plates without plastic coating.	9947093109 Kottakkudiyil Enanalloor.P.O abdulrahim2288@gmail.com
95	Papertrail	Cochin (Corporation)	Cloth carry bags and paper bags, paper pens, seed bomb	9995311888 12a, Phase 1, White Waters Apts, Thevara Ferry Road,Cochin-682013 info@papertrailindia.com www.papertrailindia.com
96	Royal Castro	Amballur	Production-1000/day,	7907721217 Vattakkunnel,Nellikunnu ,Pathanpara.P.O,Kannur salesroyalcastro@gmail.com
97	R R Paper Products	Kalamassery(M)		9961470233 Anjiliveliyil,Kallumadayil Lane,Rajagiri P O,Kalamassery richardusha9@gmail.com

Sl. No.	Name of the enterprise	Location of operation	Any other additional information on products	Contact information
98	Samridhi Carry Bags	Kumbalam	Production-50000 bags/month	9037418839 Vishnupadhi,Kattazath House, Lakshmi Narayana Temple Road, Kumbalam.P.O.,Ernakulam- 682506 samridhicarrybags@gmail.com
99	Sea Paper Products	Nedumbassery	Paper bags and cups	9447056593 Kavattuparavattil House, Mekkad P.O
100	Sobha Industries	Nellikuzhi		9995330094 Kathalikkattil Housenellikkuzhy.P.Okothama ngalam
101	Southern Packings	Amballur	Textile, bakery covers,and Paper carrybags. More than 5000 numbers of production in a month	9633171039 Korakkattil, Amballur-P.O. Kanjiramattom
102	Veltech Carry Bags	Muvattupuzha (M)		9388612613 Vellikullam House, Randar P.O, Near Manniyamkulam Jn, Muvattupuzha
Thrissur				
103	Anugraha Carry Bags And Screen Printing	Municipality Marketing Building, Gandhinagar, Guruvayoor		8086123186 Asma Ashraf,Kombantharayil House,Chavakkad P.O,

Sl. No.	Name of the enterprise	Location of operation	Any other additional information on products	Contact information
104	Best Paper Bags	West Koratty		9745751258 Pattammadi House,P.O.Mambra, West Koratty, Thrissur.680308
105	Bheem Jyothi	Maruthayur Junction	Paper Plate	9526559360 Bheem Jyothi Shg,Maruthayur Junction, Pavaratty P.O,Thrissur
106	Century Threads	Plot No.42,Kinfra Small Industrial Park P.O, Koratty, Thrissur-680309	Production - 2-2.5 tons/month	9846018161 Info@Centurythreads.In S/Oi.R Peter, Inikkadan House, Vazhichal,Koratty South P.O, Thrissur - 680308
107	Enviro Green Carry Bags India Pvt Ltd	Plot No 170 171, Dp Ayyankunnu, Mundoor, Tsr	Cotton Bags	9846424567 Plot No 170 171, D P Ayyankunnu, Mundoor, Tsr
108	Green Needles	Municipal Trunching Ground, Parapilthazham, Chavakkad P O, Thrissur	Cloth Bag	9847601627 Secretary, Municipal Trunching Ground, Parapilthazham, Chavakkad P O, Thrissur
109	Horizon Paper Products	Nadathuruth	Paper Covers	9846722272 Pullari, Nadathuruth

Sl. No.	Name of the enterprise	Location of operation	Any other additional information on products	Contact information
110	Jeevan Paper Products	3/11, P O Ponnore, Tsr 680552	Production is very less	9400487723 S/O. Lawrance, Maliyamavu House, P.O. Ponnore, Thrissur-680552
111	Jyothi Tailoring And Material Bag	Thiruvenkilam, Guruvayoor	Cotton Bags	9961264372 Manayath House, Thiruvenkilam, Guruvayoor
112	Kjk Paper Plates	Mambra P O, West Koratty		9446144537 Kjkpaper@Yahoo.In
113	K K Paper Products	Kundur P O	Paper Cups	8086950089 Baijusuncity@Gmail.Com
114	K K Paper Products	Kundoor	-	8086950089 Kalathamparambil
115	Krishna Paper Products	Mie Mundathikode	Paper Cups.	9846440752 Cherussery Variam, Puthanveetil House, P.O Puthuruthy Pin: 680623 Thrissur
116	Kv Paper Products	Mambra P O, West Koratty		9446293070 Kjkpaper@Yahoo.In

Sl. No.	Name of the enterprise	Location of operation	Any other additional information on products	Contact information
117	Mariyan Paper Bags	Nadathuruth	Paper Bags, Cloth Bag Paper Bags 10000/Month, Cloth Bag 10000/Month	9447351121 Mattath (H),Porkkalangad P.O,Thrissur
118	Nandanam Industries	Shameera Building,Elavally North Po		9605041628 Pullanji Parambath House,Elavally P.O North
119	Opj Enterprises	West Bazar , Kunnamkulam		9495281533 Pulikkottil House, West Bazaar, Kunnamkulam
120	Packme International	Opposite Jawahar Library, Kathikode, Mathilakam		8590326452 Panikkaveetti House, Nedumparambu, Koolimuttam P O, Mathilakam
121	Paper Glass Unit	Ashtimichira,Thrissur-680731		9645247348 Umarva@gmail.Com Ummar V.A,Valiyaveettil House,Ashtamichira P.O,Thrissur-680731
122	Phoenix Paper Bag Unit	Kozhikada, Pullut	Cloth Bag	9446352158 Phoenix Paper Bag Unit, Kozhikada, Pullut P O, Kodungallur

Sl. No.	Name of the enterprise	Location of operation	Any other additional information on products	Contact information
123	P R Cloth And Paper Bags	Cheruval, Pazhai.P.O	Cloth Bag, Paper Bag. Production-20000/Month	9539393391 Puthenveedu House, Cheruvak, P.O.Pazhai
124	Providence Product Of Cotton	Vendore, Alagappanagar.P.O, Thrissur 680302	Cotton Bags	9744705304 Kallokkaran House, Vendore, Alagappanagar.P.O
125	Q Cert Eco Products	Room No. 3, Ground Floor, Idp, Ayyankunnu, Mundur,	-	9446465493 M/S. Q Cert Eco Bags, Room No. 3, Ground Floor, Idp, Ayyankunnu, Mundur, Thrissur-680541
126	Revathi Paper Carry Bag	Pettikada Stop, Karadivalavu, Kaipmangalam Beach		9746919926 Kaithavalappil House, Pettikada Stop, Kaipmangalam Beach, Thrissur
127	Rosma Products	Parppukara		9249224642 Maniparambil House,Parappukkara P.O,Thrissur-680630
128	St Marys Paper Products	Parlikkad.P.O, Thrissur	Paper Cups	9447521647 Vadakkan House,Parlikkad P.O,Thrissur.680623

Sl. No.	Name of the enterprise	Location of operation	Any other additional information on products	Contact information
129	Sukas Paper Products	High School Road, Mulloorkkara.P.O	Carry Bags 100-200 Daily, Bakery Covers 3000-4000 Daily. Paper Cups	8907466338 S/O Abdulrahiman, Ellikkottil House, Mullurkkara Post, Thrissur-680583
130	Thanal Enterprises	5/36a, Parakkad, Elavally P.O, 680511	Paper Plate	9947515144 Poottalakkal House, Elavally North P.O, 680511
131	V And V Paper Products	Muriyad	Production 250 Kg/day	9605376286 Vinojmuriyad@Gmail.Com Madathiparambil House Muriyad P O Trissur 680683
132	Virgin Paper Products	Thiruthalloor	Production of paper cups are very less now	9495114971 Kareepadath House, P.O. Thrithallur West, Vatanappally, Thrissur. 680619.
133	Winners Cloth Bag Unit	Po Ponjanam, Kattoor	Cloth Bag, Jute Bag	9526165164 Palayamkottu, Po Ponjanam, Kattoor
Palakkad				
134	Amba Paper Products	East street Koduvayur	Paper cup-stopped manufacturing after ban	9037112259 NA Manzil, East Street Koduvayur

Sl. No.	Name of the enterprise	Location of operation	Any other additional information on products	Contact information
135	A M Paper Products	VATTAMBALAM, Kumaramputhur P.o., Mannarkkad	Stopped manufacturing paper cups -one month ,because of circulation of plastic coated cups	9847225457 Kappungal House, MES College P.O., Mannarkkad
136	A R K PAPER BAGS	Vattakkunnu, Kanjirathani		6238794169 Kanjirathani, Kappur
137	Beeyar products	Alinchod Kanayam Road Kulappully Shoranur Palakkad		9846291145 Chakkayil house, Kanayam Kulappully Shoranur 2 Palakkad
138	Blaze Poly Packs	Kinfra Iit Park Kanjikode Palakkad		8606347677 blazepolypacks@gmail.com Kinfra Iit Park Kanjikode Palakkad
139	Crystal Group of paper bags	Near Nalukandam Village,Edathanattukara,Mannar kkad, Palakkkad Dist	Paper,cloth bag.production- 100000/month	9447747432 crystalgroup147@gmail.com Palakkazhy House, Edathanattukara (PO), Mannarkkad, Palakkad
140	EMKE POLY SACK	Olassery, Kodumb,Palakkad	Paper and cloth sacks	9447346207 OLASSERY Kodumb Palakkad
141	Fine Packs	Pottimada, Vanoor, Alathur, Palakkad		9961019022 S/ o. Muhammedkutty, Faisal Manzil, Pottimada, Vanoor, Alathur, Palakkad

Sl. No.	Name of the enterprise	Location of operation	Any other additional information on products	Contact information
142	G S A Paper Products	Abi complex, Court Road, Alathur, Palakkad.	Paper bag, plates	8129416400 gsaexporters16@gmail.com Noorjahan Manzil, Swabab Nagar, Alathur, Palakkad.
143	Hiba Paper Tubes	Pezhumparambu, Pudiyanam, Alathur, Palakkad	-	9446236949 hibapapertube@gmail.com W/o.Fazil, Mulakkal House, Mariyamparambu, Kattussery, Althur-678 541
144	SAFA PAPER CUPS	VII/639, Nasta Building, Kanjikualm, Marutharoad PO, Palakkad	Ice cream cups	8281556406 sadikalp@yahoo.com Sri.V B Navas, resing at 19/1850, Anjellate parambil, SDPY Raod, Palluruthy, Cchin, Ernakulam
145	Skill Tech Enterprise	2/310, Parakkulam, Polpully PO., Palakkad	Paper bags, cloth bag	9496553808 Parakkulam, Polpully
146	S.P.Selvi Pandiyan Toys Work	Perumal Kovil Street, Kollengode	-	9495072164 S/O.Pandyan, P.K.Village, Kollengode.P.O.,678506
147	Sree Krishna Arts	Chettikalam, Erattakulam Po., Elappully, Palakkad - 678 622	Producing paper pulp and clay	9946554682 S/O Janardhanan, Chettikalam, Erattakulam Po., Elapully, Palakkad - 678622

Sl. No.	Name of the enterprise	Location of operation	Any other additional information on products	Contact information
148	Sri Venkata Industries	Manjilas Complex, Market Road	Biodegradable paper cups	9037613631 kavi7sara@gmail.com Kavitha Saravanan, 39/697, Mithila Sree, Tailor Street, Palakkad-678001
149	Thavakkal Paper Products	Kulukiliyad, Kottappuram, Sreekrishnapuram		9744432101 Poovalappil H, Ariyoor, Aryambavu, Mannarkad, Palakkad
150	V.B.R.Paper Plate Products	Palayam, Vadakkenchery, Palakkad		8289907476 Kootapura House, Kammanthara, Vadakkenchery, Palakkad-678683
151	V M Polytechs	Ida Kanjikode Palakkad		9746470677 Ida Kanjikode Palakkad
152	Wel Pack Poly Products	Virinjipadam,Pudhunagaram		8089625005 E P M House,Opp Police Station, Pudhunagaram
Malappuram				
153	Agfa Marketing	Thuvakkaf	Paper bags,ecofriendly products-(bettak)	9447042271 Pooniyeri House, Po Paramalangadi, KalpakancheRI 676551

Sl. No.	Name of the enterprise	Location of operation	Any other additional information on products	Contact information
154	Ameen Plates	Palakkaparamba Chirayil Post Kondotty Malappuram dist		9746485193 ameenplates@gmail.com Palakkaparambu (H),Chirayil (Po),Nediyiruppu-673638
155	BYEND	PP1/495 , IJK,Pulparamba, Pallikkal P.O,Kakkateeri, Malappuram dt	Paper carry bag,cloth bag	9747082016 buyendcalicut@gmail.com Aula Nivas, Pullipparamba P O, Chelembra
156	Crona Industries	Shed No 4 (Dic Mlpm Allotted), Mini Industrial Estate, Oorakam Keezhumuri Post	100% paper plates	9947969907 Kunnathuvalappil Housr Makkaraparamba(Po) 676507(Pin)
157	Dildiya Paper Products	Aravankara,pookootoor	Paper plates	9447395348 Ninan Valapil (H),Kaliyaparamba,Aravankara, Pookkottur-676517
158	Down to Earth Eco bag	Tipusultan Road,Thiruvali		9746012819 Kavalapara house,Thiruvali,Parhiruyal po
159	Follow me paper products	Tirurangadi Road,Kolappuram South,A.R Nagar Po Malappuram.Dt		7025000068 evonfootwear@gmail.com Poothamkurinhi House,Kolappuram South,A R Nagar Po-676305

Sl. No.	Name of the enterprise	Location of operation	Any other additional information on products	Contact information
160	Glister Sachet India Private limited	Plot No 6061 Kinfra Industrial Park Kakkanchery Post Chelemra	-	9947503589 glister.india@yahoo.in Plot No 61 62 Kinfra Industrial Park Kakkanchery
161	Golden Packs	Pilathara,kadampuzha	-	9846861619 Malaparambil House, Kallarmangalam,(Po), Kadampuzha, Malappuram Dt. Pin.676553
162	Golden Paper Cups	Chelakuth, kallarmangalam	-	9846861619 S/O Balan.M,Malaparambil (H),Kallarmangalam (Po),Kadampuzha (Via),Malappuram-676553
163	Green Industries	Thazhe V K Padi, Mampuram Link Road		9947530053 S/O Mohammed Kutty, Kavungal House, Thazhe V K Padi, Mampuram Link Road, Mampuram Post-676306
164	Hridya Paper Products	Narippatta,valanchery		9745675056 Kottattu Kuzhiyil(H) Naripotta Valanchery (Po) Malappuram- 676552
165	Janatha Paper Products	Athanikkal ,Vailathoor		9895667040 VAKKAYIL House Kalpakant Henry P O

Sl. No.	Name of the enterprise	Location of operation	Any other additional information on products	Contact information
166	Kalathingal Paper Mart	Near Nareekkav Temple,Dr. Damanlal Hospital Road, Edarikkode Post	Paper covers	9633979600 basithk19@gmail.com S/O Koya,Kalathingal House,Edarikkode Po-676501
167	Lucky Paper Products	Codackal- Tirur	Cake cups	9746343665 Kodapeediakal, K-Puram, Vattathani, Tirur- 676307
168	Master Plastics	Chirackal Road , Tanur	Stopped production due the non availability of PLA. Less marketing. Will restart after the availability of PLA	9895131592 Master Housenear Block Office Chirakkal Road Tanur(Po)676302(Pin)
169	Paper Bag World	Amminikkad, Perinthalmanna		6238605161 Kannammannil house,Pathaikkara, Perinthalmanna
170	Prasadam Enterprises	Kozhakottur Areakode P.O Malappuram		9497348062 Lakshmi Nivaskozhakottur Areakode P.OmalappuraMPIN-6733639
171	Prestige Paper Products	Shed No 13 , Sidco Mini Industrial Estate, Oorakam Keezhumuri Post		9847202426 prestigepaperprodutsnew@gmail.com Kundupuzhakkal House,Cherur Post, Vengara Via-676304

Sl. No.	Name of the enterprise	Location of operation	Any other additional information on products	Contact information
172	Rahath Paper Cups	Mukkola Pariyapuram Post		9946067638 Manningapattu house Vailathur Athanikkal
173	Royal paper products	Vailathur,Athanikkal		9895160481 Manningapattil (H), Vailathur, Chilavil, Ponmunda dam (Po)-676106
174	T.N.Paper Products	Vettom (PO)	Bio coating papers	9846881874 Thanikkattu, Kuttayi, Tirur- 676562
175	United Plate Industries	Shed No 3, Sidco Mini Industrial Estate, Oorakam Keezhumuri Post, MalappURAM	Paper plates	9847781212 Manakkadavan House, T C Road, Vengara Post-676304
176	Smart Associates	Thanniparammal, Cheruputhur, Mongam P.O.	Paper carry bags, paper bags, bakery bags	9961392286 S/O Muhammed Unni, Thoufeeq Manzil, Cheruputhoor, Mongam (Po)-673642
177	Sneha Bags Perumpadappu	Kakkarat House, Perumpadappu	Paper bags and cloth bags	8301071596 Kakkarat House, Perumpadappu, malapuram- 679580

Sl. No.	Name of the enterprise	Location of operation	Any other additional information on products	Contact information
178	S.S Paper Products	Poovathikandi,Vaalillapuzha.P.O		9495624910 W/O Shamsudeen.K.C,Kaithamanna(H),Keezhuparamba.P.O,Areacode
179	Unity Occupational Hub	Thangals Road, Payyanangadi, Tirur		9497490453 kunjimoideenpulikkal453@gmail.com Pulikkal (House), Payyanangadi, Tirur.
180	Western Paper Products	Kolalambu	Stopped working now. Will restart after the availability of PLA	9846450928 Karumathil (H),Nannammukku South (Po),Changaramkulam-679575
Kozhikkode				
181	Apollo Carry Bag	Eramala	Paper carry bags,	8086955507 Teekay Cottage, Po.Kurikkilad, Vatakara
182	B And S Associates	Kakkodi	cloth bags	8078330549 PathanaMadathil house,kizhakkummuri
183	Blossom Paper Bag And Cloth Bag	Unnikulam	Cloth,jute bag	9447848255 Uthradam, Iyyad Po, Unnikulam,673574

Sl. No.	Name of the enterprise	Location of operation	Any other additional information on products	Contact information
184	Enfold Making Home	Unnikulam	Paper bags, cloth bags	9539214304 Arippankuzhiyil, Iyyad Po, Unnikulam, 673574
185	Global Paper Products	Olavanna		8590658440 Kulangara Veetil, Edathilparambu, North Beypore
186	Packwell Paper Bags	Kozhikode (M Corp		9447928858 Hamlaz, Meleripadam, Panniyankara, Kallai PO, Kozhikode packwellclt@gmail.com
187	Professional Packaging	Karassery	Paper carry bags,crafts,	9947824664 Kayal Thodika House, Kumaranallur, Mukkom
188	Sreedev Enterprisess	Balussery		9562612101 Kunnathkandy House, Thuruthiyadu, Balussery P.O, Kozhikode 673612
189	Velox Products	Feroke (M)		9633297994 West Nallur, Feroke PO
Wayanad				
190	Star Paper product	Kolagappara	Paper cover, medical cover, textile covers	7907546123 sherinalphu@gmail.com Nallimattan House Kolagappara P O

Sl. No.	Name of the enterprise	Location of operation	Any other additional information on products	Contact information
Kannur				
191	Anna Paper Bag	Edavaramba, Meenthulli, Edavaramba P O		9048809153 Parankimamvila Nellicode Vadaserikonam P O Tvm
192	Rainbow Products	Uruvachal, Uruvachal.P.O	Cloth bags	9744190884 Punnente Veedu, Uruvachal, Uruvachal.P.O,Pin -670702
Kasaragod				
193	Crystal Paper Products	DP Chattanchal	Paper plates	9995447239 mandiyanf@yahoo.com Mandyan House, Athinhal, P.O.Manikkoth, Kanhangad Pin 671329
194	Gabbana paper products	Gabbana building, Bhaskar Nagar		9037814786 Jyothi Nivas, PAS Nagar, Soorambail, Kumbala, Kasaragod -671321
195	Shyam Paper Products	Vijaya Nivas,Mogral Puthur		9448591626 Vijaya Nivas, Mogralputtur
196	Unique Paper Carry Bag	Bela, Kasaragod		9746591437 D/O Krishna Naik, Majirpallakatte, Bela p o

Table 5: Details of alternative plastic products- Cloth industry

Sl. No.	Name of the enterprise	Location of operation	Any other additional information on products	Contact information
Trivandrum				
1	Akshaya Carry Bag	Karakulam		9995873147 Nalpara Veedu, Maruthoor, Vattapara
2	Nanma Paper Carry Bag	Pazhayakunnummal	Paper bags	9846711614 KunnilVeedu, Tholikkuzhi, AdayamonPin.695614 (M)9846711614
3	Yuvasree No. 34	Peringamala	Paper bags	9745086459 Jisna Manzil, Chittoor, Peringammala
Kollam				
4	Araam Paper Carry Bag	Plappally	Paper carry Bag, Mobile carry bags.	9496658801 Kochazhikathu,Araam Bhavan, Kottarakkara
5	Aryaans Pnv Cloth And Paper Bag	Kamukamcherry	Paper bag also	9539013191 Kulathoor House, Kannanalloor P. O., Konnanalloor
6	Bismi Jute Bag	Eda Vettam, Vellimon P.O	Paper bags, Jute bags	9847455178 Bismi Manzil, Edavettam, Vellimon P.O

Sl. No.	Name of the enterprise	Location of operation	Any other additional information on products	Contact information
7	Mahima Paper Bag Industry	Elampalloor, Kundara P.O	Paper Bags, Jute bags	9633128768 Venus Perumbuzha P.O, Kudara
Pathanamthitta				
8	B and B engineering company	Ezhamkulam		8111851468 Sherin villa,arukalikkal padinjaru
9	Gurusakthi Carrybag	Ranni-Perunad	Paper bags	9947415088 Puthenparambil house.Mampara.P.O. Eruvattupuzha
10	Virad Carry Bag	Vadasserikkara		9744418018 Vazhayil house,Vadasserikkara.P .O,Vadasserikkara
Alappuzha				
11	Alba Green	Chunakkara	Paper bags, cups, paper cover.	9495696699 Arryattil House,Chunakkarasouth,Chuna kkara.Po
Kottayam				
12	Cr Carry Bags	Manjoor	Paper bags	9447291272 Puthettukunnel, Manjoor Po, Kottayam

Sl. No.	Name of the enterprise	Location of operation	Any other additional information on products	Contact information
13	K K Paper Products	Karoor		9846657342 Sreevilasam, Valavoor Po, Pala, Kottayam- 6866358281556406
14	Marvel Paper Bag	Neelamperoor	Paper carry bag	7510799093 Kochuparampil, Neelamperoor P O Kurichy Kottayam
15	Ultra Bag	Perumpanachy		8606417410 Karakkadu House, Perumpanachy P. O.
Idukki				
16	Anugraha SHG	Peruvanthanam	Paper bags	9497682170 Anugrha SHG, Paloor kavu.P.OThekkemala
17	Dream land bag unit	Ayyappancovil		9846299543 Secretary Dreamland J L G Upputhara
18	Empire bags	Rajakumary	Paper bag	9447769354 Thelluvavve house No RCity P O manjakuzhy
19	Moms eco production unit	Kanthalloor	Paper bags	9400948997 Manalodiyil, kovilkkadav

Sl. No.	Name of the enterprise	Location of operation	Any other additional information on products	Contact information
20	Popular Carry Bags	Thodupuzha(M)	Paper bags, Production capacity-15000/month	9496302178 Kunnumpurathu,Vengallur
Ernakulam				
21	Fresh N Pack Poly Sacks	Chengamanad	Paper bags	9746365425 Manaf Manzil, Thottakkattukara
22	Greenland Industries	Elamkunnappuzha	Paper bags,	8943728775 3/139a, Perumalpady, Elamkunnappuzha
23	Honey Industries Chellanam Unit	Chellanam	Jute bags	9847033546 Kollannur House, Vadyar Lane, Azad Road, Kaloore, Kochi - 682017 sangeethabag@sify.com
24	Kichoos Paper And Cloth Bag	Kalamassery(M)	Paper bags	9746712557 Kichoos Paper And Cloth Bag,Holy Angels Building, South Kalamassery
25	Mr Carrier Bags	Chottanikkara	Paper bags	9562999898 Chettuparambil,Market Road, Tripunithura mrcarrierbags@gmail.com

Sl. No.	Name of the enterprise	Location of operation	Any other additional information on products	Contact information
26	Papertrail	Cochin (Corporation)	Paper bags, paper pens, seed bomb	9995311888 12a, Phase 1, White Waters Apts, Thevara Ferry Road, Cochin-682013 info@papertrailindia.com www.papertrailindia.com
Thrissur				
27	Green Needles	Municipal Trunching Ground, Parapilthazham, Chavakkad P O, Thrissur		9847601627 Secretary, Municipal Trunching Ground, Parapilthazham, Chavakkad P O, Thrissur
28	Phoenix Paper Bag Unit	Kozhikada, Pullut	Paper Bag	9446352158 Phoenix Paper Bag Unit, Kozhikada, Pullut P O, Kodungallur
29	P R Cloth And Paper Bags	Cheruval, Pazhai.P.O	Paper Bag. Total Production capacity - 20000/Month	9539393391 Puthenvedu House, Cheruvak, P.O.Pazhai
30	Winners Cloth Bag Unit	Po Ponjanam, Kattoor	Jute Bag	9526165164 Palayamkottu, Po Ponjanam, Kattoor
Palakkad				
31	Blaze Poly Packs	Kinfra Iit Park Kanjikode Palakkad		8606347677 blazepolypacks@gmail.com Kinфра Iit Park Kanjikode Palakkad

Sl. No.	Name of the enterprise	Location of operation	Any other additional information on products	Contact information
32	Crystal Group of paper bags	Nalukandam	Paper production-100000/month	9447747432 crystalgroup147@gmail.com Palakkazhy House, Edathanattukara (PO), Mannarkkad, Palakkad
33	Fine Packs	Pottimada, Vanoor,		9961019022 S/ o. Muhammedkutty, Faisal Manzil, Pottimada, Vanoor, Alathur, Palakkad
34	Skill Tech Enterprise	Parakkulam, Polpully	Paper bags	9496553808 Parakkulam, Polpully
Malappuram				
35	BYEND	Pulparamba	Paper carry bag	9747082016 buyendcalicut@gmail.com Aula Nivas, Pullipparamba P O, Chelembra
36	Sneha Bags Perumpadappu	Kakkarat	Paper bags	8301071596 Kakkarat House, Perumpadappu, malapuram- 679580
Kozhikode				
37	Apollo Carry Bag	Eramala	Paper carry bags	8086955507 Teekay Cottage, Po.Kurikkilad, Vatakara

Sl. No.	Name of the enterprise	Location of operation	Any other additional information on products	Contact information
38	B And S Associates	Kakkodi	Paper bags	8078330549 PathanaMadathil house,kizhakkummuri
39	Blossom Paper Bag And Cloth Bag	Unnikulam	Paper bag, jute bag	9447848255 Uthradam, Iyyad Po, Unnikulam,673574
40	Enfold Making Home	Unnikulam	Paper bags	9539214304 Arippankuzhiyil, Iyyad Po, Unnikulam, 673574
Wayanad				
41	Devivilasam carry bag mfg	Manalvayal PO		9633987362 Devivilasam house, Manalvayal PO
Kannur				
42	Rainbow Products	Uruvachal, Uruvachal.P.O	Paper bags	9744190884 Punnente Veedu, Uruvachal, Uruvachal.P.O,Pin -670702

Table 7: Details of alternative plastic products- Jute, Cotton

Sl. No.	Name of the enterprise	Location of operation	Any other additional information on products	Contact information
Thiruvananthapuram				
1	A R Garments	Thiruvananthapuram (Corp)		9605792777 Tc 20/1796, Ambedkar Nagar, Tamalam
2	Deshapushpam Bags	Attingal(M)		9400928986 Kmra 46, Kodumon, Attingal.P.O. 695101
3	Newgen Carry Bags	Attingal(M)		9947772235 Thiruvonam, Near Awics, Alamcode.P.O., Attingal
4	Sree Cotton Bags	Attingal		9746942858 See Pulluvarambil, Vilayilmoola, Attingal. 695101
Kollam				
5	Bismi Jute Bag	Eda Vettam, Vellimon P.O	Paper Bags, Jute and Cloth Bags	9847455178 Bismi Manzil, Edavettam, Vellimon P.O
Alappuzha				
6	Cherthala women welfare co operative society	Cherthala, Alappuzha	-	9656115815 CMC 30, Cherthala

Sl. No.	Name of the enterprise	Location of operation	Any other additional information on products	Contact information
Pathanamthitta				
7	Vysali Jute Carrybag	Ranni-Perunad	Used to produce jute carry bags	9745758729 Thattuparackal house, Mampara.P.O,Kizhakemampara
Kottayam				
8	Eco Tech Manufactures	Adackal	Paper, production capacity-8000/month	9846897859 Kunnappallil,Nadackal P.O
Ernakulam				
9	Honey Industries Chellanam Unit	Chellanam	Jute bags	9847033546 Kollannur House, Vadyar Lane, Azad Road, Kaloore, Kochi – 682017, sangeethabag@sify.com
10	Ideal Marketing Non Wooven Carry Bags	Cochin (Corporation)		8136842181 Kannamkeriyil House, Kadebhagam, Akg Road, Palluruthy P.O., Kochi 682006
Thrissur				
11	Enviro Green Carry Bags India Pvt Ltd	Mundoor, Tsr	Paper Bags	9846424567 Plot No 170 171, D P Ayyankunnu, Mundoor, Tsr
12	Jyothi Tailoring And Material Bag	Thiruvenkidam, Guruvayoor		9961264372 Manayath House, Thiruvenkidam, Guruvayoor
13	Providence Product Of Cotton	Vendore, Alagappanagar.P.O, Thrissur 680302		9744705304 Kallookkaran House, Vendore, Alagappanagar.P.O

