

# CIGARETTE BUTTS

Strategy to Recycle  
and Management



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A CREATIVE BUSINESS IN ENVIRONMENTAL MANAGEMENT

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CONCEPT BY



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7 JAN 2012, PARIS

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**AGENDA**

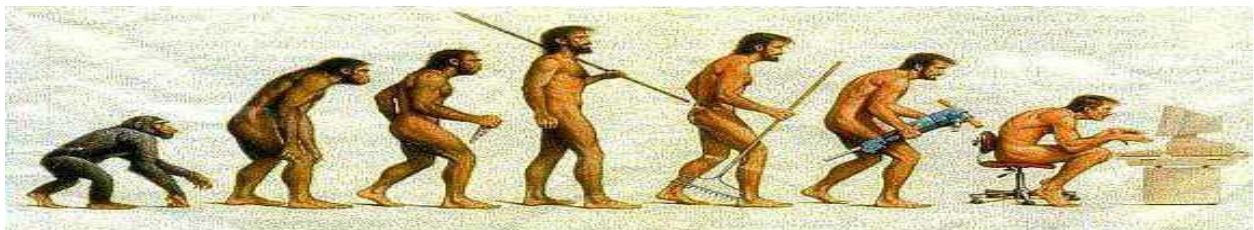
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- 1) INTRODUCTION
- 2) WHAT IS CIGARETTE AND BUTTS?
- 3) GEO-GOVERNMENT TREATS
- 4) CIGARETTE BUTTS- ENVIRONMENT  
POLLUTION
- 5) CASE VISIT (LA DEFENSE)
- 6) SOLUTION
- 7) BUSINESS IN ENVIRONMENTAL  
MANAGEMENT
- 8) CONCLUSION AND SUGGESTION

## 1) INTRODUCTION

Cigarette butt litter is one of our biggest environmental pet-peeves and we're not alone! For those who share our disgust for this disrespectful assault on the places we all share, this project is a great opportunity to get your hands dirty with us. Together we will clean up our big blue playground, stop the damage cigarette butts inflict upon our eco-systems, and give butts a better second life. And since this has never been done before, you'll be a pioneer too!

### WHY I AM CHOOSING THIS TOPIC?



Cigarette smoking started near about in ancient 5000BC phase till now it's going on .The main reason behind smoking cigarette is nicotine. People take nicotine for getting immediate refreshment like caffeine, tannin. Because nicotine immediately dissolves or absorbed in blood, that's why people and young generation started smoking to reduce stress for a while. When any person take Cigarette after smoking last part remains called "filter/butts" and now butts are everywhere....walk down the street, across a parking lot...anywhere, and you will see. These butts are making their way in to our streams, rivers, and oceans causing increased costs to our municipalities. Our State and Local Governments are spending MILLIONS OF DOLLARS every year to combat this litter issue. It is time that someone stands up and reduces these costs.

## 2) WHAT IS CIGARETTE AND BUTTS?

### 2.1) Composition of Cigarette

Once made only of paper and tobacco, cigarettes since the 60's more and more additions and varied. In total more than 4,000 chemicals inhaled by cigarette smoke, over 60 classified as carcinogenic by the International Agency for Research on Cancer. (IARoC)

Here are some to make you green with anguish of acetone is a solvent, hydrogen cyanide, which was formerly used in gas chambers, carbon monoxide coming out of exhaust pipes of our cars, DDT is an insecticide like nicotine, arsenic. These all things which are added to make Cigarette are very harmful like poison. As for believing that a cigarette "unburned" contains less harmful substances, certainly ... but it is still 2,500 chemicals, including pesticides and many additives!

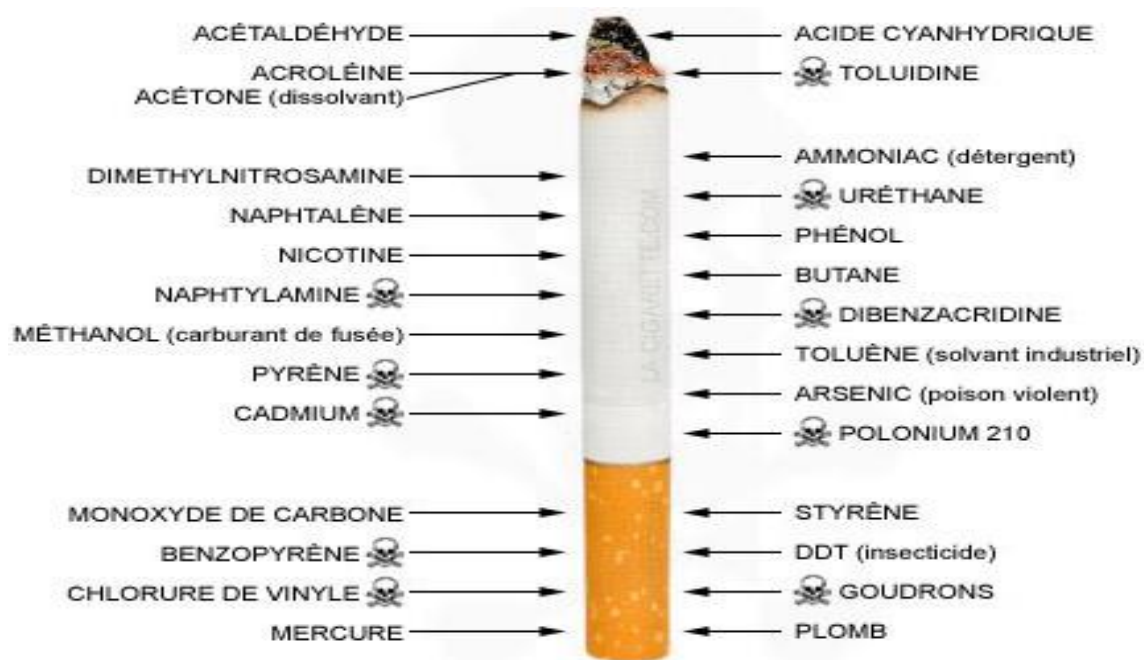


Fig. Composition of Cigarette

## 2.2) Cigarette Filter (butts)



Fig. Cigarette Filters n Cellulose acetate fiber bundle.

The raw material for the manufacture of cigarette filters is cellulose (obtained from wood). The cellulose is acetylated (i.e. making it into a material called cellulose acetate or simply "acetate" for short), dissolved, and spun as continuous synthetic fibers arranged into a bundle called tow. The cellulose is a substituted diacetate (actually 2.35 - 2.55 substitution range) cellulose, due to its chemical and physical processing. This tow is opened, plasticized, shaped, and cut to length to act as a filter. Then filter act like plastic sponge.

Purpose:

A cigarette filter has the purpose of reducing the amount of smoke, tar, and fine particles inhaled during the combustion of a cigarette. Filters also reduce the harshness of the smoke and keep tobacco flakes out of the smoker's mouth. In above images you can clearly see the before smoke and after smoke condition of filter and plasticized fibers of cellulose acetate.

Disposal:

Most cigarette filters are made from cellulose acetate. Depending on conditions, estimates for the time taken for them to degrade range from British American Tobacco's 1 month - 3 years, to 10–15 years.



Fig. A cigarette filter littered on the ground .

This resistance to biodegrading is a factor in littering, environmental damage and suggested lung damage. In the 2006 International Coastal Cleanup, the number of individual cigarettes and cigarette butts collected amounted to 24.7% of the total number of garbage items collected, over twice as many items as any other category.

### 3) GEO-GOVERNMENT TREATS

Target is to reduce smoking:



All countries over the world are trying to reduce smokers, so butts are automatically reduced. On the other hand they are trying to fill their treasury by increasing tax and license fees. This is a major hurdle that no country is coming together to set up single protocol on this issue.



EU is trying to reduce smokers by implementing following policies....

Health policy is largely formulated and implemented by the devolved administrations of each of the member countries of the United Kingdom. However, as tobacco falls within the remit of a number of different government departments: e.g. Health, Treasury, Trade, etc. tobacco control policy is partly determined at UK-wide level and partly by the devolved administrations. The four nations of England, Scotland, Wales and Northern Ireland have responsibility for their own smoking cessation and health education campaigns while UK-wide policy and law applies to taxation, smuggling, advertising, and consumer protection issues such as the provision of health warnings on tobacco packaging. Some of these measures are determined by European Union legislation.

## ADVERTISING

Tobacco advertising is banned by law throughout the United Kingdom. The Tobacco Advertising and Promotion Act 2002 prohibits tobacco advertising on billboards, in print media, by direct mail and through sponsorship. Currently limited advertising at the point of sale - equivalent in size to one A5 sized ad - is still permitted but this will end when a new law banning the display of tobacco products comes into effect from 2011. (See below). A health warning equivalent to one third of the surface area of the advertisement must be included



Fig. Marlboro (Implemented advertisement law)

## PRODUCT REGULATION AND LABELLING

Written health warnings are required on all tobacco packaging as determined European Union Council Directive 2001/37/EC, implemented in the UK by the Tobacco Products (Manufacture, Presentation and Sale) (Safety) Regulations 2001. The EU Directive permits Member States to add pictorial warnings on tobacco products but only EU approved images are allowed. To date, seven EU Member States – Belgium, France, Latvia, Malta, Romania, Spain and the UK – have passed legislation requiring pictorial warnings on tobacco products.

## TAX

In the 1998 White Paper 'Smoking Kills' the UK government announced that it planned to increase tobacco tax by at least 5% a year in real terms. And same implemented by EU countries, which helps government to full their treasury.



**NON-PROMOTION OF TOBACCO PRODUCTS OR EVENTS OVERSEAS**

UK embassies and high commissions of EU are decided to take care to avoid involvement in events which advertise or promote tobacco products overseas.

All these policies are either in the favor of government or Cigarette companies.



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Fig. Cigarette butts increasing all over the world.

NHS **National health Service** of UK finally found these policies are working properly but on the other side smokers are increasing day by day. All countries are not giving attention towards “**cigarette butts are increasing with smokers**” because they may get profited by tax revenues.

That’s why finding how environment pollution occurs by butts and providing solution on that is important.

## 4) CIGARETTE BUTTS –ENVIRONMENT POLLUTION

NEW YORK, May 24 2011 –

Worldwide, smokers toss at least **4.5 trillion cigarette butts each year**, litter that causes significant environmental harm- US researchers report.

In their study, published in the Spring 1999 issue of the journal Tobacco Control, they call for better enforcement of laws against littering to reduce the environmental impact of cigarette butts, additional taxes on tobacco products to go towards clean-up efforts, and more effort on the part of tobacco companies to reduce packaging waste and educate consumers about the impact of tobacco waste on the environment.

Novotny and Zhao examined data from two leading US environmental organizations- the Environmental Protection Agency (EPA) and the Center for Marine Conservation (CMC). They found that "for the past 8 years, cigarette butts have been the leading item found during the (CMC's) International Coastal Cleanup Project," accounting for nearly one in every five items collected.

Discarded cigarette butts in ashtrays can also pose a serious health risk to children, according to the researchers. They note that "in 1994-1995, the Rhode Island Department of Health identified 40 cases of cigarette butt ingestion among children aged 6 to 24 months... 13 of the cases of ingestion produced symptoms such as vomiting, gagging and lethargy."

**How Pollution occurs:** The average cigarette butt "contains numerous chemicals which may be considered health hazards," according to co-authors Dr. Thomas Novotny of the Centers for Disease Control and Prevention (CDC) in Atlanta, Georgia, and Dr. Feng Zhao of the Johns Hopkins School of Hygiene and Public Health in Baltimore, Maryland.

The researchers note that "smokers may not consider that a cigarette butt is litter, but these waste products seem to be ubiquitous." **Butts are** often cast onto the **sidewalk**, where they often **end up in drains** and then out to **lakes and seas**. While the paper and tobacco of cigarette butts are biodegradable, their cellulose acetate filters are not, according to the report.



### 1) *Cigarette butts start bushfires*

It's enough to make your blood boil - the sight of someone throwing a cigarette butt out of a car window. Every year the NSW Fire Brigades (NSWFB) is called to hundreds of roadside fires believed to be caused by discarded butts.

As well as the environmental cost associated with littering, there is also the potential for fires from dropped cigarette butts.

### 2) *Ocean Conservancy, Australia reported in January 2011*

Ocean trash ranks as one of the serious pollution problems choking our planet. Far more than an eyesore, a rising tide of marine debris (waste or scrap found in marine pollution) threatens human health, wildlife, communities and economies around the world.

As butts contains tar, nicotin, smoke and fine particles which get mixed with air, emits smell of chloral vinyl and color used for paper. The same and more mixed with water, as Cigarette composition contain cellulose acetate fiber and

insecticides in small amount which get mixed immediately in water, when sea living organisms eat this that cause immediate death of marine lives.

Cigarette butts are the most common type of litter on earth. Collected, they weigh in the millions of pounds. The toxic chemicals absorbed by cigarettes' cellulose acetate filters and found in butts' remnant tobacco, are quickly leached from the butts by water.

### Top Ten Items Over 25 Years

RANK	DEBRIS ITEM	NUMBER OF DEBRIS ITEMS	PERCENTAGE OF TOTAL DEBRIS ITEMS
1	CIGARETTES/CIGARETTE FILTERS	52,907,756	32%
2	FOOD WRAPPERS/CONTAINERS	14,766,533	9%
3	CAPS, LIDS	13,585,425	8%
4	CUPS, PLATES, FORKS, KNIVES, SPOONS	10,112,038	6%
5	BEVERAGE BOTTLES (PLASTIC)	9,549,156	6%
6	BAGS (PLASTIC)	7,825,319	5%
7	BEVERAGE BOTTLES (GLASS)	7,062,199	4%
8	BEVERAGE CANS	6,753,260	4%
9	STRAWS/STIRRERS	6,263,453	4%
10	ROPE	3,251,948	2%
<b>TOP TEN TOTAL DEBRIS ITEMS</b>		<b>132,077,087</b>	<b>80%</b>
<b>TOTAL DEBRIS ITEMS WORLDWIDE</b>		<b>166,144,420</b>	<b>100%</b>

SOURCE: OCEAN CONSERVANCY/INTERNATIONAL COASTAL CLEANUP

The evidence indicates that the toxic chemicals leached from discarded cigarette butts present a biohazard to the water flea at concentrations of more than 0.125 butts per liter, or about one butt per two gallons of water. The lechate from the remnant tobacco portion of a cigarette butt is deadlier at smaller concentrations than are the chemicals that leach out of the filter portion of a butt.

### 3) *Ingestion of Cigarettes and Cigarette Butts by Children*

To characterize risk factors for and outcomes associated with ingestion of cigarettes and cigarette butts among children aged less than or equal to 6 years, the Rhode Island Department of Health (RIDH) analyzed data from the RIPCC and the 1996 Rhode Island Health Interview Survey (RHIS). This report summarizes the findings of the study, which indicate that ingestion of cigarettes and cigarette butts by children aged less than or equal to 6 years resulted in minor toxic effects and occurred more frequently in households where smoking was permitted in the presence of children and where cigarettes and cigarette wastes were accessible to children.

### 4) *Marine creatures*



Cigarette filters are composed of cellulose acetate, A form of plastic that can persist in the environment for long periods of time. Plastics of this sort have been found in the stomachs of sea turtles, fish, birds, whales and other marine creatures.

## 5) CASE VISIT (LA DEFENSE, PARIS)



Fig. La Defense

After collecting all the information about Cigarette butts, I visited the most famous business district area near Paris, which is “La Defense”, to calculate actual amount of Cigarette butts littered per day.

### AREA SPECIFICATIONS-

- Declared as business District , 10 km from towards west from central Paris
- Divided into 12 sectors
- 400 acres (1.6 km<sup>2</sup>)
- 3,500,000 square meters (38,000,000 sq ft) of offices
- 1,500 businesses (of which 14 from the national top 20 and 15 from the global top 50)
- **1,50,000 employees**
- **20,000 residents**
- 310,000 square meters (3,300,000 sq ft) of flagstone walkways and sidewalk
- 110,000 square meters (1,200,000 sq ft) of greenery

As we got all the information about why people smoke cigarette, In this area more than 200 MNC's are having corporate offices. And Employee after every average 1-3 hr of interval come below the building and smoke to get relief from stress and litters the butt on the ground. So, I personally feel its good place to calculate butts per day.



FIG. Live images of employees smoking in le defense and their thrown litters

### Calculation of Cigarette butts per day-

We assume entity X= 3,300,000 sq ft of flagstone walkways & sidewalk are there.

Then, B= Average butts per day on 1 sq ft = 5+

Y=Average 30% area among X I found with litters =990,000 sq ft

Cigarette butts found per day in La defense =B\*Y= **4,950,000+ butts**

So, per day in la defense near about 5 million butts littered, which is a very huge quantity we are getting here. This can cause bad effect in upcoming days to la defense and global pollution.

I Approached to:  Defacto  
Établissement public de gestion  
du quartier d'affaires de la Défense

**Mr. Jean Yves**, Assistant representative of la defense community

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After getting some review about la defense I came to know that la defense is not taking any preventive action against cigarette litters. And particularly I found this is the same happening in other areas as well all over the world. Finally the question generated is “what can we do about collecting cigarette butts?”.

## 6) SOLUTION- Recycle

Solution I found, As we know from single la defense area we can get 5 Million butts per day which is very huge quantity and the solution is “Collect these butts by putting receptacles and Cig-bins at various locations and Recycle them to reuse”.



Fig. Receptacles and Cigbins for wall.

Cigarette butts can be recycled by 3-4 ways and can be converted into various useful products also can be used as additives like substance.

### 1. Use in Car & mould industry applications

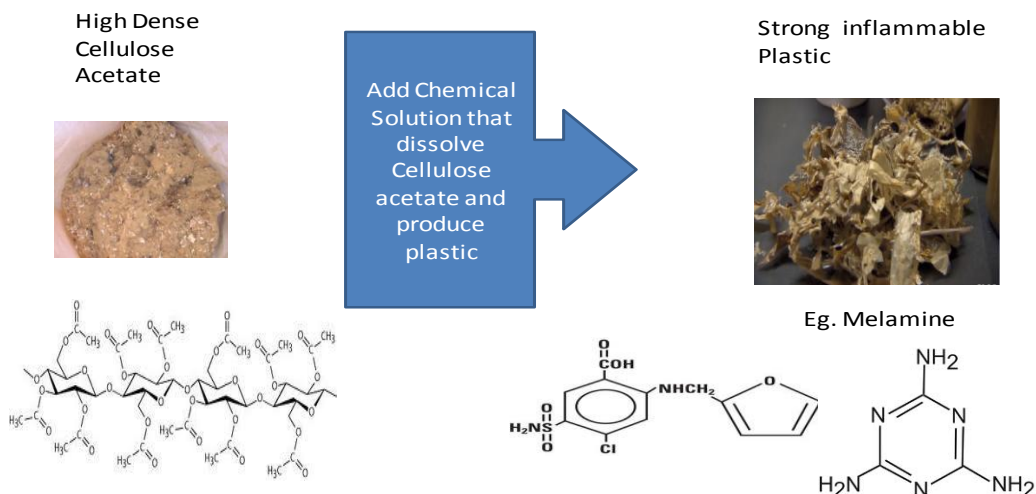


Butts we get are in end form called high dense cellulose acetate HDCA, which is allowed to flow through hippo hammer mill rotated through hand. This Process



gives us low density cellulose acetate fine powder of fibers. If we use this powder in proportion with gypsum, water and sulfate material, which create mould for producing car engine part industry.

## 2. Use in Plastic Industry



If we add high concentrated chemical solution that dissolves same HDCA and after steering for a while, that HDCA is then turned to strong inflammable plastic . The basic process is unbound the composition of HDCA and convert to Plastic like melamine, which is used to make various vessels and utensils for Microwave oven purpose. So, this can be used in various scale in plastic industry.

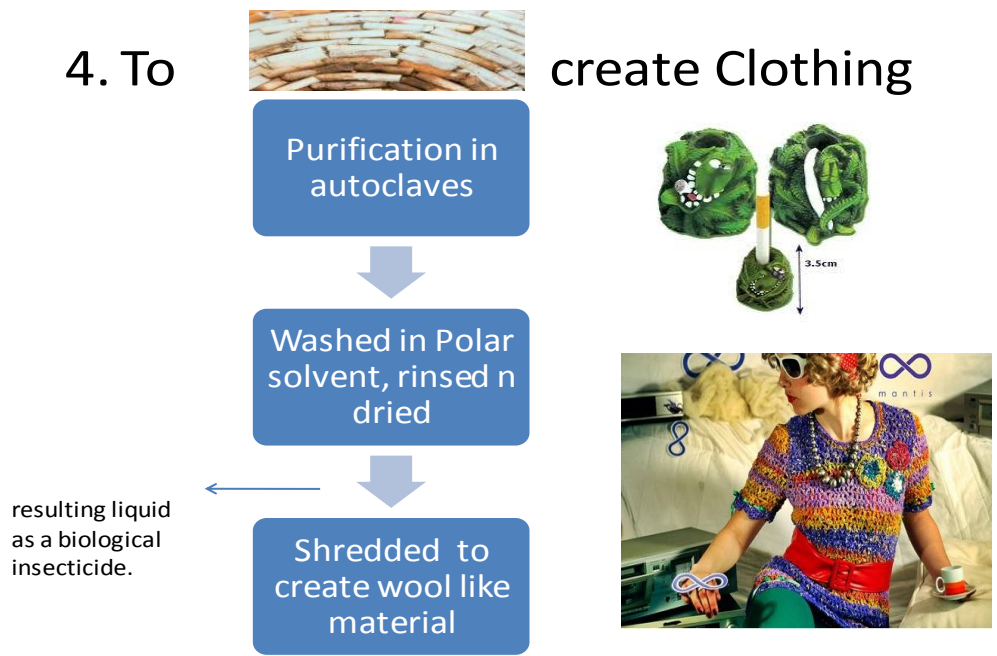
## 3. Use in preventing corrosion



Now researchers in China say they have found chemicals that could make the recycling of cigarette butts.(CNN News). The Chinese scientists found that by

immersing the butts in water they were able to **extract** nine different chemical compounds, including nicotine.

The **replacement of rusting steel pipes** is a major ongoing cost for oil producers around the world. When these **extracts** were applied to a type of steel widely used in the **oil industry** they were found to be very effective in preventing corrosion, even under harsh conditions.



This we can a very great invention done by Montis textiles. The process they patented is very simple, When you collect all the butts together just follow 3 steps as shown in above diagram.

Collect the dry butts, Only we require is autoclave (autoclave is a structure where butts are processed by heating and disinfectant process to make butts fiber germfree and to reduce power cigarette which cause skin irritants). Then butts are processed by polar solvent and then rinsed and dried. From this whole process we get two things 1. Resulting liquid- which we can use or sell as biological insecticide 2.bundle Fiber like material, which is then shredded to create wool like material. This material can be used to create antique dresses, which has great value in current market. These all recycle methods are easy and cost efficient.

## 7) BUSINESS IN ENVIRONMENT MANAGEMENT

The above all summarized issued I mentioned in this case is to full understand the impact of cigarette litters on our environment.

### How to create the business in Environment Management?



A crazy but I think good idea to develop from all point of view is...

A concept, which can cover certain following fields of problems .....

- 1) Employment Generation
- 2) Environment (CLEANER and SAFER OUTDOORS)
- 3) Recession (unblock the money)
- 4) Recycle Cigarette Filters/Butts
- 5) Moulds youth towards Business

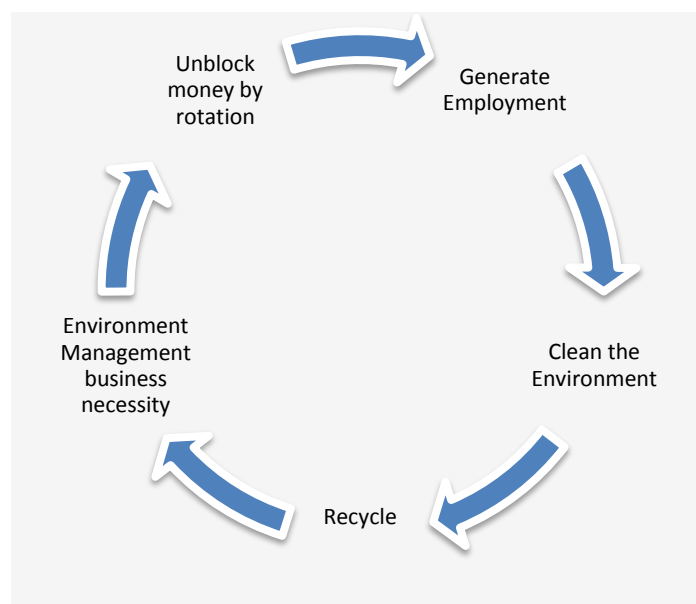


Fig. Support Cycle generated through Business

**.HOW IT WORKS?**

Idea is removing unsightly litter from the streets, creating jobs, and turning cigarette butts into useful items

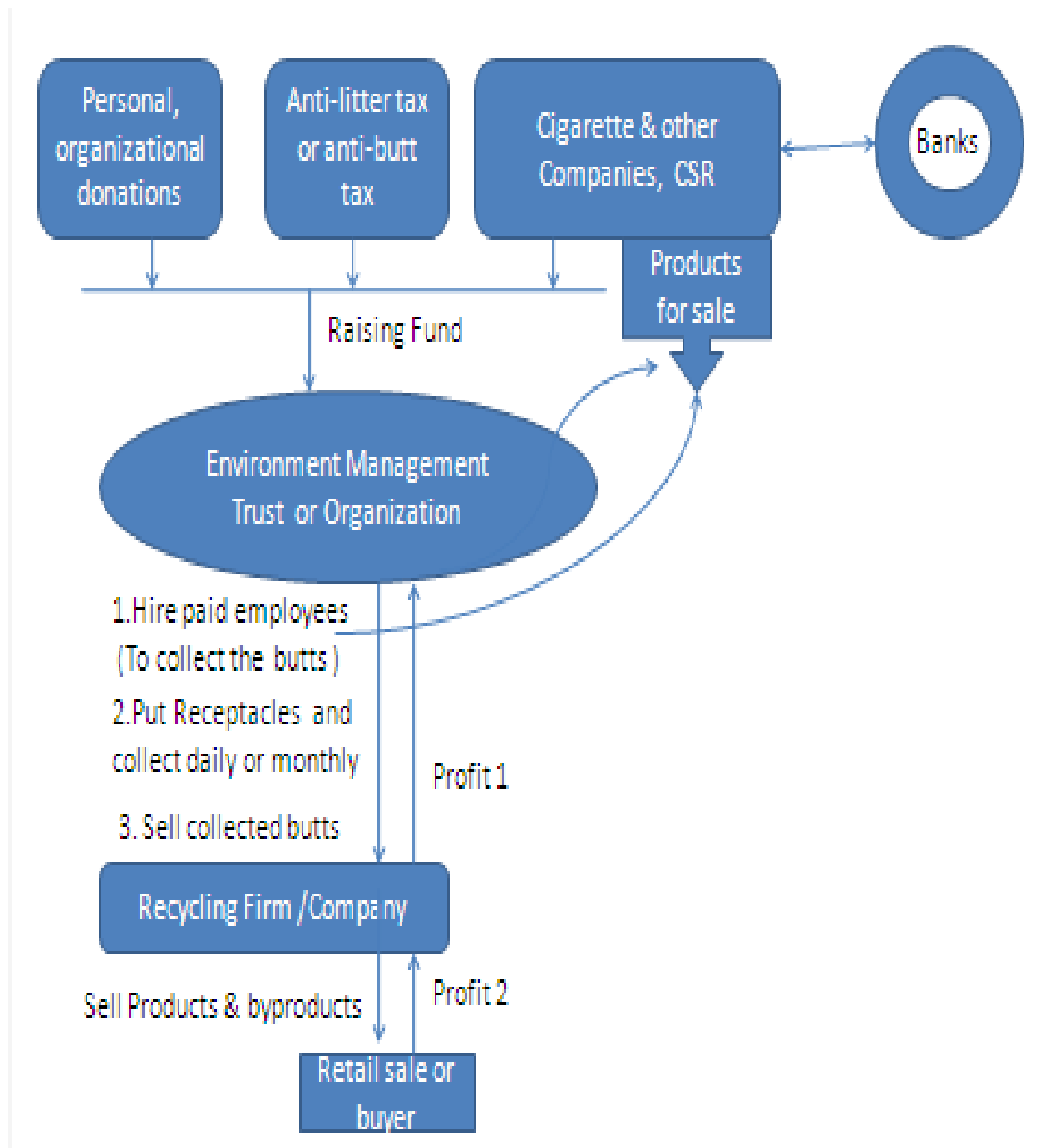


Fig. Creation of business in Environment management

We can establish small trust or organization; Litter can be picked up by volunteers or by paid employees. Hiring people to pick up smoking-related litter can cost a business, park, or school a great deal of money. Some businesses also have their employees pick up litter from parking lots, entrances, and landscaped areas.

"Adopt a Spot," "Adopt a Park" and other adoption programs involve volunteers in cleaning certain areas. Some schools can encourage student groups to Adopt a Spot on campus which they clean at least twice a year. Cleanups are also also organized by nonprofit groups, including the [International Coastal Cleanup](#), an annual worldwide event organized by firm to pick up litter along highways. In this way we can maintain **clean environment**.

For hiring people we can also solve problem of low level **employment generation** and most obvious problem is money. So, we can develop some rotation of blocked money by companies for paying them.

Lets understand the Recession mean "A **recession** is a phenomenon of slowing the pace of [economic growth](#) which reduces or by decrease in GDP (Buying power of entity, person, organization or community) tends to block the money"

So, By taking benefit of CSR, donation or litter Tax generation ( tax created by every sell of Cigarette packet by government and again it is used for the same i.e for environment management) an organization can raise the funds for such activity, Analyze the economic structure of firm and hire paid employees to clean up environment. (To pick up or collecting cigarette butts).

Trust can take some profit x and can rotate the money from same manufacturers to sub-organization to employee tends to increase buying power, which **unblocks the money** and also tend to clean the environment.

A Case Study from Africa: In South Africa a local company is making huge progress in solving the disposal of cigarette butts outdoors. Ash n Ad has introduced a unique outdoor ashtray that is fast becoming a recognized icon for the correct disposal of cigarette butts. Each month the Ash n Ad team is collecting 10 000 cigarette butts and this number is increasing by 30% each month. A recycling program has begun and very soon Ash n Ad will also be announcing its successful experiments

## 8) CONCLUSION AND SUGGESTIONS

It is recommend that the tobacco industry be held at least "partly accountable" for the environmental impact of tobacco-related litter. "The tobacco industry should improve the biodegradability of filters, reduce packaging waste, and educate its customers," they say. Special taxes might also be added to the price of cigarettes to fund environmental clean-up efforts, according. Finally, they believe that all worksites and public buildings should reduce cigarette littering by supplying ashtrays and other "disposal mechanisms" at building entrances.

### *Education—*

Educate smokers & nonsmokers about the need to dispose of waste properly. Studies show that smoking-related litter can be decreased by 50 percent or more through educational campaigns. Signs, messages printed on packaging, personal messages to smokers, and presentations about the harmful impacts of cigarette litter will decrease some littering behavior. However, like any public education campaign, the educational message must be continual. A one-time educational effort will not result in long-term changes in behavior. If smokers and nonsmokers knew that cigarette butts contain toxins, and they cost us millions of dollars in fire-fighting and cleanup, we as a society would not tolerate this littering behavior.

Have a "no smoking" policy or allow smoking only in designated areas. More and more public beaches, parks, open-air shopping malls, and college campus are trying to concentrate cigarette butt litter by requiring smokers to use only designated areas. These areas should have ash receptacles, lighting, seating, and be convenient. Often, the use of these designated smoking areas is promoted for public health reasons (secondhand smoke) and fire prevention, as well as a litter-control mechanism. This approach is sometimes attacked because it restricts smokers' rights (after all, smoking is a legal activity), and it is trying to address one behavior (littering) by restricting another behavior (smoking).

Provide ash receptacles at all entry/exit points of buildings, at bus stops, and other areas where people frequently need to discard their cigarettes. According to Keep America Beautiful, which is conducting a scientific study on cigarette littering behavior, these "Transition Points" are the places smokers need

to discard their cigarettes before entering buildings or getting on a bus. Once installed, these receptacles need to be monitored and maintained regularly; once smokers become accustomed to using these receptacles you may need to add more to keep up with the cigarette waste being properly discarded. Studies show that more ashtrays help.

Distribute pocket ashtrays. Many types of pocket ashtrays are on the market. Some are made of foil and are disposable, while others are made of plastics or metals, and can be used for years. These can be purchased in bulk and distributed by community groups or businesses as part of a litter-prevention campaign.

Enforce litter laws. Cigarette butts are litter, yet rarely do smokers get ticketed for littering. The law enforcement solution to litter is difficult; however, as many taxpayers would like to see law enforcement personnel spend their time on more meaningful work.

**Other ideas:**

Engaging Tobacco Manufacturers:

A Cigarette butt in the environment is litter's issue-not a smoking issue. Just as the manufacturers of sodas have no control over the consumer's disposal of empty cans or bottles, cigarette manufacturers cannot control smoker's behavior when it comes to the disposal of cigarette butts. Just as beverage manufacturers contribute to anti-litter campaigns, and have invested in public education on litter issues, so too should the tobacco industry.

Thus far, some cigarette manufacturers have made efforts at anti-litter education. They need to take an active and responsible role in educating smokers about this issue and devote resources to the cleanup of cigarette litter. Strategies can include anti-litter messages on all packaging and advertisements, distribution of small, free portable ashtrays, and placement and maintenance of outdoor ashtrays in areas where smokers gather. Maybe cigarette packages can be redesigned to accommodate discarded butts.

Anti-Litter Taxes:

In some states, consumers pay a small "anti-litter tax" every time they purchase a canned or bottled beverage. These funds support anti-litter efforts. A similar tax on cigarette purchases has been considered by some states that would go towards funding campaigns aimed at eliminating the littering of butts. Picking up littered cigarette butts costs schools, businesses, and park agencies money. By taxing smokers for anti-litter educational efforts, some of the costs of cleaning up cigarette butts will shift onto smokers.





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Mr. Jean Yves, Assistant representative of la defense community

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Mr. Curtis

contact0124 @ ripplelife.org

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