

Study of Human Hair “Waste” and It’s Implementation

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Abstract- Human hair is considered as waste material in most parts of the world, and there are many environmental problems in its collection in waste stream; however, there are many well-known uses in it. To prevent such waste of materials, it is necessary to address the problems of current use and develop its utility systems where it is missing. By focusing on developing the systematic use of human hair waste, this paper mostly reviews the potential use of human hair collected from large-scale business, local / traditional knowledge, upcoming innovations and scientific research. Developed on the basis of the well-known use of social economic systems. Concerns and obstacles are identified in these systems and possible directions are discussed

I. INTRODUCTION

Human hair is considered inefficient in most societies and is therefore found in municipal waste streams in almost all cities and towns of the world. In rural areas or in less populated densities, hair is thrown in nature, where it is gradually disinfected for many years, eventually ingesting components, carbon, nitrogen, sulfur and so on, back to their natural cycle. In urban areas or high population densities, it is often stored in large quantities in solid waste stream and excites drainage systems, in which multiple problems arise. Due to slow degradation, it remains in the dump / waste stream for longer space spaces. Over time, the lymph water from this dump increases nitrogen concentration in the body, which causes eutrophication problems. Burning human hair or collecting garbage collections is found in many parts of the world - toxic odor such as ammonia, carbonic sulphides, hydrogen sulphides, sulfur dioxide, phenols, nitriles, and pyridines. Hair open dumps produce hair dirt which brings discomfort to nearby people and, if taken in large amounts, can lead to many respiratory problems. Hair, panic, and other organic substances that stick to the hair become watered over time and become a disease of diseases odor and reproduction.

The best way to solve such problems is to develop systems that use waste products as a tool. In addition to reducing waste, it contributes to the economy. As a potential resource, the benefit of human hair is that it is fully biodegradable, retrievable and available in every area.

Interestingly, when hair is dumped as garbage in most places, some kind of high quality human hair and its products are widely traded internationally. In 2010, India alone, one million kilograms of human hair and \$ 238 million worth of US \$ was exported, and total global imports were valued at US \$ 1.24 billion. Widely wigs, hair extensions, and forward-focus, this trade also has many sources of environmental and health problems described above. Due to hair loss and haircut, many hair-processing units in India have increased cases of tuberculosis and respiratory tract infections. In many of these units, the disadvantage of hair and other processing waste is a source of pollution and legal conflicts. In one

to address this gap. To enhance the use of hair in new contexts, important things like knowledge, skills and technical requirements and potential markets have been discussed. After all, the policy framework for social and environmental use of human hair is outlined. This study shows that human hair is a very versatile material, which has significant potential in some important areas such as agriculture, medical applications, construction materials and pollution control. Moreover, this use is uniquely diverse enough for the industries of highly technical individuals, and a wide variety of human hair disorders in different places.

Keywords – Environment, agriculture, pollution, hair, fertilizer, soil

such case in the Jwalapuri market in New Delhi, traders used to burn garbage hair. In 1998, the neighbouring neighbours transferred processing units to villages in New Delhi through protests and legal efforts, but there was no systemic improvement in processing practice. In Eluru district in Andhra Pradesh (India), large number of hair waste dumping from processing units along the riverbed led to pollution, health problems and conflicts, but the authorities could not solve this issue as they did not get any of them. Ways to Deal with Hair Garbage Other than Burn or Dump these examples show that despite the large scale economy surrounding human hair, there is no systemic thinking about environmental management of human hair waste environmentally safe.

There is a great need to develop utility systems for various types of human hair waste found in municipal and industrial sources. For the efficient and environmentally safe use of human hair, there is a need for identification of appropriate uses and techniques that can be adapted according to the local circumstances of hair trash and location. For example, some communities in China and India are using human hair to make fertilizers, while in some communities in the US and Japan there are rugs for applications, for example, horse riding (wide infra).

Every material use and technology, however, also has some socio-cultural and economic aspects associated with it, which often determine the use or adaptation of the technology. In context, to develop appropriate use of human hair waste, so all the potential uses and techniques with their socio-economic and environmental impacts need to be considered. While research on biology of human hair development is a large body of research literature, and its social aspects have hair care and human hair. There are some research on techniques, there is very little literature. Organized environmental safe management of human hair waste.

II. METHODOLOGY

In addition to the available literature, data on human hair usage was collected by intensive field studies involving various target groups: barbers, garbage pickers, NGOs,

general public and scientific researchers. During November 2011 to March 2012, studies were conducted by informal discussions with members of the target group of Delhi, Madhya Pradesh, Uttar Pradesh, Karnataka and Maharashtra states. Hair traders were also contacted, but they were generally reluctant to discuss the details. Trade. The data on export and import statistics was taken from the United Nations Comtrade Database. Presents of exclusive hair products in the global market were assessed from online trading sites and business articles. The authenticity of the information received by field discussions was cross-checked with people from different geographical locations as well as other available sources, and it was also tried for data obtained from news and internet articles.

III. USE OF HUMAN AIR

Unique properties of human hair, such as its unique chemical composition, slow digression rate, high tensile strength, thermal insulation, elastic recovery, skull surfaces and unique interactions with water and oil, along with their social roles, have led to various uses. . These uses are also dependent on the different types of hair available, which are changing in five dimensions: length, colour, straightening or crusty, hair loss and contamination.

These variations are based on culture, ethnicity, hair styles and hair care practices in this area. For example, hair removal, such as permanent wave, dyeing, and chemical shampoo are common in malnourished areas or in areas where hair loss is more common. Chemical poisoning is observed in hair due to the use of poisonous colours and chemicals in hair care or presence of poisonous chemicals in the atmosphere or food chain of the area. For example, in many areas of the world where electronic waste recycling is conducted, hair is contaminated with bromine ant flame retardants.

This section describes the use of different types of human hair according to the application's field. Geographical spread of well-known uses and summaries are summarized in Table 1 after the historic era, and the new research conducted on the use of human hair is listed in Table 2.

Table 1: Geographical spread, historical age, and scale of human hair uses in practice.

Use	Countries in which present	Age and scale* of use
Wigs, hair extensions, eyebrows, beard, and so forth	Production: India, China, Korea, Tunisia, Italy, Russia, Bangladesh, and Pakistan Market: USA, UK, Africa, Japan, China, and Italy (almost every country)	Centuries old; very large scale
Fertilizer	China, India, and USA	Centuries old (recent in USA); medium scale (few villages/towns)
Pest repellent	India, USA, and Mauritius	Centuries old; small scale
Clay reinforcement	India, Bangladesh, Syria, and Europe	Centuries old; medium scale
Oil-water separation	USA, Philippines	15 years; medium scale
Stuffing toys, furniture, mattresses, and so forth	India, USA, Hawaii, and few European countries	A century old; medium scale
Fabric making	China, India	Few centuries old; medium scale
Artwork	Past: China, England, USA, Prussia, France, Italy and Scandinavian countries Present: China, USA	China, 1000 years, Europe, 200 years, and recent revival, 20 years; small scale
Hydrolysed protein (HHPK)	USA, Europe	20 years; small scale
Extracting amino acids	India, China, Korea, and Europe	40 years; medium scale
Ethnomedicinal uses	China, India	Centuries old; small scale, carbonized hair medium scale

Table 2: Countries undertaking new research on human hair uses.

New uses/areas of research	Countries where research is undergoing
Liquid fertilizers	India, USA, Korea, and Bangladesh
Concrete reinforcement	Canada, India
Pollution control	Canada, Singapore, India, Iran, Korea, Egypt, and Jordan
Molded furniture and objects	UK
Engineering polymers	Singapore, China, Japan, and India
Follicle cell cultures/tissue regeneration	Switzerland, UK, Korea, and France
Composites for superconducting systems	India, Greece, and The Netherlands
Flexible microelectrodes	China

3.1 Fashion, Theatre, and Cosmetics Industry

3.1.1 Wiges, Hair Extensions, Beards, and other Beauty Accessories

With the ever growing scale of the global expansion of the fashion industry, it is the oldest and the largest of the human hair based industries. The best known wig is 1400 BC. Egypt, some of which are still intact even after 3400 years. In eastern countries, such products mainly looked after the theatre world, but in the West they grew significantly with the fashion industry. This app mainly uses almost all colours of good quality, long hair. Also, the hair which has all the scales in the same direction in the same direction (like the hair on the human body), known as ram hair, is preferred because it causes very little confusion when working. Non-Remy hair is often used which removes the outer scale of the chemical layer of the chemical. Pure Remy hair products are expensive, while non-rim hair or human hair is mixed with other fibers.

3.1.2. Test Content for Hair Care Products

Human hair swaps are used for shampoo, oil, conditioners, colours and so forth for new formulations, (based on the information of trading sites like <http://www.alibaba.com/> and experiments and researchers experimented by hair production companies). Users include labs and salons in both hair care researchers, product manufacturers, hair stylists and trainees. These tests use hair of different colours, the range of curliness and the loss of various levels.

3.1.3. To make a cosmetic brush

Scales on the hair Cosmetic powder can hold particles and apply it to a uniform skin or surface. Therefore, human hair is used in cosmetic brushes. Almost all types of straight hair can be used for brush.

3.2. Agriculture

3.2.1. As fertilizer

Human hair is one of the most nitrogen-containing (16%) organic ingredients because it mainly consists of (nitrogen-containing) proteins. For comparison, the stain of animals is 0.2-0.3% nitrogen. In addition, human hair includes sulfur, carbon, and other 20 essential elements for plants. In the atmosphere, the hair falls very slowly, but moisture and carotenolytic fungi are present in soil, animal compost and wastewater mud, which reduces hair within a few months. In traditional Chinese agriculture, human hair was mixed with cow dung to prepare fertilizers used in farms in winter season.

3.2.2. Pest Control

Human hair is also known for solving problems arising due to many animals and pests, although by various methods. In larger animals, it is used for the withdrawal of rabbits in Mauritius, rats and wild boar in India, and in the USA. Typically, the hair is spread with the holes near the mice in fields / farms or areas. Rabbits, rats and wild boars trace their food through sniffing, and hair is believed to come in their nostrils and they become uncomfortable. In the case of deer, pigment is believed to cause hair scratches in the nylon bag due to the aroma of the hair, and techniques do not work well in areas where deer is unaware of humans. Among insects, human hair is used to catch gonosaurus beetles in India. Small balls of human hair are placed on affected plants such as coconut trees nodes. Conflicts in the Beetles that are unable to move the hair are confused. Using human hair mats, farmers in Florida (USA) were able to save \$ 45,000 on pesticides on nearly 1 million plants in 2007, in addition to the benefits of fertilizer and fertilizer.

3.3. Joint material

3.3.1. Execution of the building materials

Due to high tensile strength and high friction coefficient, clay body has been used to strengthen soil-based construction. In the rural areas of Uttar Pradesh and Madhya Pradesh, India, Bangladesh Syria and European countries, human hair / clay mixture (with other hostages) plastering in the walls of the house, lining oven , Making wheels and much more are used. Adding hair significantly reduces cracking and extend this structure's life. Research shows that human hair strengthening increases the thermal insulation capacity of structural strength as well as soil structure. However, such soil-based construction in rural areas is now declining, they gain importance in sustainable architecture. Due to human hair reinforcing plastic contraction, 92% cement mortgages reduce cracks in mortar and fly ash / cement conserves three times the compressible power of concrete.

3.3.2. Molded Furniture and Objects

UK-based industry entrepreneur, Ronald Thompson has developed a method to create composite materials, including the first haircut in the web or mat, and then resin or flexible polymer (preferably a recyclable or biodegradable material). The joint has good strength and can be used to make molded structures such as furniture and menquin. The same combination has been used with unwanted hair to create biodegradable eye glasses.

3.3.3. Composites for Superconducting Systems

Superconducting power appliances often use fiber-glass-based composites for cryogenic insulations. Michael It has been shown that the combined lymphatic of human hair (and some other natural fibers) of epoxy resin has the appropriate electric breakdown properties for insulation into cryogenic systems. Compared to the currently used glass-fiber compounds, these compounds can significantly reduce production costs of cryogenic devices.

3.4. Pollution Control and Treatment

3.4.1. Oil-water splitting and oil spill remediation

Human hair surfaces have more attraction for oil - it is much higher than its behaviour for water. This property is very useful in the oil-water division. USA. Philippe A. From Alabama After the leading work of McCurry, human hair booms and mats are used for circulating oils in the Philippines and the USA. In this method, oil can be retrieved by extracting hair, which can then be reused for up to 100 times - Other benefits not available in other oil spill therapy. With this method, over 98% of the clogged oils can be recovered. Oily hair can be used to increase oyster mushrooms, which disintegrates the oil. Then the hair can be left to the left fertilizer. Human hair can also separate oils in water, which is very expensive to clean by other methods. This property can help clean up the flow of industries like oil refinery. Any type of hair can be used in these programs (except for toxic contamination, which can contaminate the water body).

3.5. Pharmaceuticals and biomedical applications

3.5.1. Pharmaceuticals

Human hair proteins usually have 20 essential amino acids, which are extracted by the complete hydrolysis of the hair. Some amino acids, which are well-received from human hair, are L-cysteine, L-leucine, L-isoleucine, and L-valine. L-cysteine and its chemical derivatives are used in many cosmetics and pharmaceutical formulations. For example, L-cysteine is used for permanent wave lotion and healing formulations, while its one derivatives, N-acetyl L-sinine (NAC), chest wetting and acetaminophen poisoning are used to treat conditions. It is better to remove certain amino acids from certain specific demographic areas. For example, Asia's black hair has more cistine than golden hair. Also, hair that does not change chemicals by any styling treatment is better, because some of these remedies can change the chemical structure of the hair. For example, the growing tendency of permanent weaving in several parts of China has made Sixtine extraction difficult.

3.5.2. Hydrolysed Hair Carotene

A mixture of amino acids and polypeptides obtained by hydrolysis of keratin proteins from human hair, known as hydrolysed human hair carotene protein (HHKP), is used in hair care products by many companies. It is believed that hair loss made from various hair styling remedies is repaired because its components are similar to the original hair proteins. H.H.K.P. Extraction needs uncontrolled hair.

3.5.3. Ethno medicine uses

Some cultures are using human hair to prepare traditional medicines. Carbonized human hair is used to treat haemorrhages, burns, injuries and scars in traditional Chinese medicine. It is also used in veterinary medicine to prevent bleeding and to stimulate urine. In Chhattisgarh, India's rural communities, apply hair removal to open wounds for immediate pain relief and long-term recovery.

In addition, formulations of powdered hair, hair loss and hair disorders are used to treat mouth ulcers, ringworms and blisters caused by inflammation in the community. Other ethno medicine studies in India A cure indicates the use of human hair for the treatment of anaemia, asthma, urination calculation, boycott, mice sting poison, foot brain, sexual problems, and the treatment of childbirth pain. The quality and purity of hair is the essence of these preparations.

3.5.4. Surgery Content

In most of the surgery, human hair has a high enough power to use as a piece. It is relatively easy to build nodes and is ineffective (due to its slow decomposition rate and high consistency with the human body). It was used as a sewer in Europe in the middle Ages. Studies have often established human hair formulas and are in conjunction wound repair surgery, general surgery on humans and animals and microsurgery. It can be easily sterilized by autoclaving. Medium thickness is the best for long, unwanted hair (not too little or too thin).

3.6 Food Industry

Many amino acids derived from human hair are also used in the food industry as an agent for pizza dough and donuts, artificial meat flavours, nutritional supplements, and for the next part. Use of human hair in the food industry is the use of amino acids, however, in many countries (with Infra) is a major source of concern.

3.8 Textiles, Fiber Stuffing and Other Artefacts

3.8.1. Filling toys, pillows and other household items

Due to its elastic and skilled temperament and good thermal insulation properties, human hair is used in Hawaii and USA and to provide materials to household items such as toys, furniture, pillows, buds, jackets, hair-pin skills and toys. , And so forth, in India. In pin cushions, the natural oil of the hair prevents pins and needle rusting. For filling toys and pillows, human hair is usually mixed with cotton or other fibers (author's field discussions).

3.8.2. Fabrics

High thermal insulation, resilience and good tensile strength make human hair useful for various fabrics. In Arunachal region of India, people traditionally mix cloths of human hair with yak hair, brass fiber and cotton. In China, human hair, yak hair, and cotton cloth and jacket are used to make interlining fabrics. In these applications, mostly cotton yarn is used as a wrap and the hair is used as a weight. Human hair mixed with animal fiber is used to make blankets of India, blankets. A company al. Kishore (Chennai, India) has also started to make haircut and clothing completely. Human hair is more difficult than animal hair, but many people make use of doometts, furniture thermal cushions, artwork and more like today. Serbian artist produced 1200 square meters Humorous hair is felt in 2009.

3.8.3. Oil filters

In the 1920s, knitted human hair cloth was used as refractories for heavy oils in refineries and distilleries, because the process involved heavy pressure that many natural fibers cannot tolerate. Hair cloth, in contrast, was tough and almost inappropriate. Later, high tensile strength and small diameter synthetic fibers became available. These fiber filters can also filter small particles and therefore change human hair filters.

IV. CHOICE OF VALUE ADDITION IN HUMAN HAIR TRADE

Some of the uses of the above discussion have developed a very broad range of value additions for human products, which start from the collection to process different products. These systems are often shaped by hairstyles, actors involved, kind of process, nature and distribution criteria and markets, and consumer concerns and preferences. This section highlights some of the key features of these social economic systems.

4.1. Collection Systems

On the basis of various sources, five types of collection methods are found for human hair.

Hair and Hair Stylists Shops. One of the most convenient sources of hair getting haircuts is Barber Shops. In many countries (India, China, etc.), these stores mostly get long hair (> 6 inches), usually by women's hair cloth or toning, because of their high market value for the wagon trade. Short hair is mostly thrown. In some places like New Delhi (Author, discussions with discussions) and Chennai short hair is also collected at a very low price or collected for free to make cults, blankets, amino acids, fertilizers and more.

Religious places like Tirupati temple On Tirupathi Balaji Temple in Andhra Pradesh and some religious places in Varanasi city in India, a large number of people are trampled as part of their religious doctrine. The hair available here is of good quality because a large part of the visitors come from rural areas, which keeps their hair natural oil, soil and so forth. Apart from this, women are also torn away in these places, so long hair is available in big hairs. Due to its high value, these hair is usually auctioned by the temple administration or barbers.

Table 3: The intentions of donors and the critical driving agents in various human hair collection systems.

System of collection	Donor's intention	Critical agents/stakeholders in collection
Salons	To get rid of hair	Barbers/hair collectors
Religious places like Tirupati temple	To remove/to offer the hair	Barbers/religious authorities
Hair harvesting	To earn money	Donor, hair collectors
Trash scavenging	No information or concern	Ragpickers/hair collectors
Charities (for wigs and oil spills)	For social good	Charity organization

Out of these systems, cleaning waste is particularly a matter of concern as it involves many risks. Rappers often work with waste hands and often injure and develop health problems. This method, however, provides livelihood to a large population in many countries, with no other opportunities available to them. Therefore, while

maintaining their livelihood, there is a need to upgrade and improve people's working conditions in this system.

4.2. Collection and processing

After storage, proper moisture, oils, and biological or chemical wastes to remove hair loss shelf life and prevent related disease or environmental hazardous cleanliness and storage are crucial. Need to process further according to targeted products or apps. In small scale use, all the processing is done by the users only. For example, in the ethnic medicinal system, medicines will provide medical professionals with good quality hair for direct medicines, which will then be processed further. In large-scale industries, the process includes extended systems with a large number of actors.

Due to limited information, detailed description of the procedures and their prevalence is not possible here, but the authors present a few common methods in visiting places of processing units in Delhi and online reports by others.

Separating hair from other garbage. Depending on the source, stored hair has other waste such as cotton, blades and household waste, which vary in almost all cases - manually by many workers. This case can also be for hair picks hairdressers from haircuts or hair collectors (sometimes collectors deliberately add other materials to the weight).

4.3. Markets, customer preferences and rules

The large mobility in the global markets for human hair products has diminished and this mobility has changed according to social and cultural beliefs about the production and its competitive content and products. Concerns about product safety and trade regulations have affected markets for some products as well. By the middle of the 20th century, unprotected human hair trade was almost uncontrolled. In 2002, China banned import of unsatisfactory human hair due to increased environmental problems.

Marketing and packaging strategies have encouraged some human hair products in the new markets. Carbonized human hair has been used in international markets due to the growing popularity of traditional Chinese medicine in the use of conventional medicine in China. In addition to this, it has contributed to its increased use of tea, one-use marketing as a small packaging (e.g., 10 grams), and the use of new formulations such as Ghana's healing creams. Similarly, the use of human hair in agriculture was offensive to many farmers in the USA. However, the highlights of its soft nature of marketing and production in the most-friendly forms, such as the Smart Frog (Wide Supra) and its benefits increased its acceptability. Due to lack of extensive and cheap storage in the USA, however, hair is mostly imported from China and India.

V. ADDRESS CONCERNS AND OBSTACLES IN CURRENT SCENARIO

The aforementioned human hair trade is related to the concern collection tools, hair processing industry working conditions, waste disposal and the safety of products for customers. In addition, packaging and post-consumer waste generated from human hair products is another issue that needs to be addressed. Disposal of these products after use can make problems of solid waste of nature similar to or sometimes worse than original material. This section discusses possible solutions to these problems.

5.1. Gossip in Collection, Processing and Trading Systems

However addressing concerns in trading systems requires different strategies according to the places, some specific guidelines can help achieve these goals.

Processing units must ensure safe working conditions, environmental safety around the units and ensure product safety for consumers. Warming and drying hair immediately after collection and storing it in dry and closed places reduces the problems of odor and hair dirt. In most cases, hair hygiene and bacterial killer power can be reversed by washing with soap or soda without any strong chemicals, which reduces toxicity. The use of herbal soaps can further reduce chemical discharge. Acids or bases, if used, must be disabled and treated before the discharge into a liquid treatment unit. Most of these units are used as hair waste for fertilizer. Length hair ~ 1 cm or more can be used in sludge and concrete reinforcement. Garbage Protein Solutions Produced in Amino Acid Emissions Units can also be used as soil nutrients after proper pH control

In the context of packaging, there is no special requirement for the basic need of human hair, because, first of all, the hair is solid and the second, clean and dry hair are stable in atmospheric conditions. In many places, users also ask for eco-friendly packaging of cosmetic products, including human hair products. Therefore, the use of biodegradable or reusable packaging is essential for promoting human hair products at the minimum required level.

5.2. Recycling of "Post-Consumer" Human Hair West

Not every use of human hair reduces human hair waste because in some applications hair removal can bring it into the waste stream. For example, scales and hair extensions use a large amount of human hair, however, the hair is not consumed during use, and then it throws it again in the garbage. On the other hand, the use of fertilizers breaks the hair and brings its elements back to the nature cycle.

In the context of physical flux, the use of human hair can be broadly classified in the three categories mentioned in Figure 1. For ease, these categories are called Type 1, 2, and 3 Uses. Type 1 uses, disrupts hair processing or during use and eventually becomes part of the natural biological cycle. This category includes mainly agricultural uses, extraction of amino acids, the use of medicines, cosmetics and sources (after proper decomposition with biomedical waste)

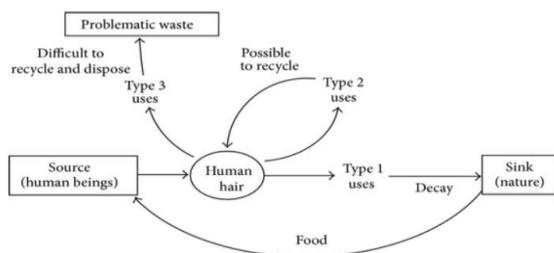


Figure 1: Flow of human hair as material in various possible uses.

Type 2 uses are those that remain intact during hair use and after using for similar or different applications the hair is likely to be recycled or reused again. This category includes wigs and hair extensions, toys and mattress stuffing, ropes, and so forth. Products like hair fabric and hair embroidery are mixed with other fibers / materials in human hair. These products may also be in Type 2 category, but the potential recycling pathway relies on other material(s) contained in the products. For example, only hairstyles, yak hair and cotton fabrics can be mixed, but synthetic fabrics such as polyester are also difficult to fabricate. Recycling of such fabric will require the separation of the fibers.

Using Type 3 does not crush the hair or intersect it for safe reuse or recycling. These are the applications in which the contamination of the hair is inherently combined with toxic chemical or non-biodegradable or ecologically unsafe material. Malicious hair is a type of case with poisonous organic pollutants. Such other uses would be non-biodegradable resinous human hair combinations. The recycling or safe disposal of these products needs further processing to remove specific contamination or segregation of other contaminated substances. For example, two methods or safe method for safe decomposition, such as the burning need to be kept at very high temperatures, to safely destroy the hair compounds with non-biodegradable resin.

In order to reduce total human hair waste, each category requires a different approach. The use of type 1 is essential to promote, which disintegrates the path and restores the hair healthy to nature. For Type 2 applications, hair-back and re-use systems need to be developed so that these products do not end in landfills. Such back-to-back centres can be developed in Barber Shops, shops or different trash hair shops. Type 3 is a method of research and development that can be widely adopted in order to ensure safe discoloration or recycling of hair and other component materials.

VI. DEVELOP POLICY FRAMEWORK FOR HUMAN HAIR UTILIZATION

Despite the significant human hair trade in many parts of the world, the percentage of hair available is currently used. Hairdressing and hair shade annually by 100 gram hair shade are curled by everyone, according to the annual hairstyle of 1.2 billion (India's census 2011), 120 million kgs (specific information is available, but hair for an adult The development is about 6 inches ~ 100 grams per year. The average population of the entire population can be

slightly lower due to fewer hairs in children and older people, but 50% of this number there will be mesmerizing.) Besides this, similar hair remaining for the last years is not disintegrated and consumer wigs, stuffing, and so forth. In 2010, the total export of human hair and its products was only 1 million kg (Supra of the country), and domestic consumption in the country is very low. Therefore, with very strong hair trade in India, current consumption is only 1-2%. Hair used in such large quantities represents a significant probability of developing its use in almost all parts of the world.

6.1. Knowledge, Skill and Technical Input

The use of human hair extends to various types of knowledge, skills and technical needs. Based on these requirements, this usage can be categorized into three broad groups: central, KS-intensive, and KST-intensive. K-centric uses only require basic knowledge and understanding about usage but do not need more skills and techniques, for example, fertilizers, pest replants and so forth. To encourage these uses, it is necessary to disseminate knowledge about the benefits of use and the appropriate method.

Knowledge and skills are essential for KS-intensive uses but do not have much technical input. Good quality hair slip or hair embroidery requires complex skill in the art. These applications do not require extended technology or capital investment as they have been practiced for many long time in many rural and tribal societies. To develop these applications, training programs will require skill development.

Kast-intensive applications will require access to knowledge, expertise and technology. To accept these applications, technical human power and resource development will be needed. For example, making hair-hydrated proteins and engineering biomedical is technically intensive and it requires knowledge, skill and money to accelerate the technology.

6.2. Areas of markets and needs

Depending on the potential potential market potential for human hair products, economic potential and the benefits of hair products in relation to its manufactured products / products. There are many essential areas in which the use of human hair can make a big impact. Agriculture is one of the most important areas. With an estimated production of ~ 16.5% nitrogen and direct application in soil (which is responsible for nitrogen loss as the oxyx during salts) 50% accepts this amount, ~ 120 million kg hair is diverted (with supra) 9.6 million kg nitrogen And ~ 20 million kg of urea. This use can significantly reduce the pressure on the petrochemical sector. In addition, it is more durable because human hair is a renewable and locally sourced device compared to fossil fuel-consuming urea.

6.3 Policy Framework

Based on the above discussion, Table 4 lists five key features for hair use. What kind of hair is needed and knowledge, skill and technical requirements determine the

potential for use in a field. Post-consumer recyclable type suggests what kind of efforts are needed to prevent more solid waste problems, while potential users and markets determine the scope of usage.

VII. CONCLUSION

This study shows that human hair is used in large numbers in areas ranging from agriculture to pharmaceuticals to engineering industries. In addition, many new areas are being invented in scientific research. Large-scale implementation of these uses, however, requires some environmental, social and economic considerations.

Existing trade in human hair, which has evolved some of these uses over the centuries, provides many important lessons. Hair collection can be based on many different systems governed by economic and non-economic factors. Some of its products have retained big markets, despite competitive products due to its good properties. This business has provided livelihoods in many parts of the world but there are concerns about hair safety, environmental protection and health safety in the hair processing industries and also for the safety of the product for consumers. Depending on the systemic approach to the collection of full value additions from the collection, most of these concerns can be addressed.

Using human hair, human hair collection does not reduce waste, because only use specific (type 1), which is used to completely trick hair, reduces hair "garbage". In other applications, the hair remains intact during use and then produces waste after the consumer. For some of these applications (type 2), back-back systems are essential for hair collecting and recycling. Other (type 3) uses in which the hair gets contaminated or mixed with toxic or non-biodegradable materials, to ensure safe recycling or tooth decay, more research is needed and to bring back mixed ingredients back to nature.

A policy framework has been shown to enhance the use of human hair while ensuring social and environmental well-being. This includes the creation of laws and standards for development and support system for various uses, according to environmental impacts, entrepreneurial needs and market scope. The public must be aware of its beneficial properties and the safe and safe methods of storage and use. With the help of various stakeholders, it is possible to develop complete utility systems for human hair, which reduces solid waste and environmental problems, generates significant social economic benefits for the people and reduces other non-useful materials and fossil fuel pressure.

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