

# Environmental Protection through Recycling Businesses:

## The Case of 'Eahawe' Project and Start-up

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**Abstract**-Environmental protection is one of the key success factors to sustainable development of all kinds. For this, there are continuously research and development and the creation of innovative solutions leading to these objectives. The paper presents an interesting project and its start-up that aims at the use of human-hair to make products as clothes, accessories or to integrate it to furnishings. This human-hair will be provided or bought from suppliers as hair-cut shops or beauty centers in which there are waxing services. This new innovative business named 'Eahawe –Easy Hair Wearing' is expected to bring to the market new products and to have a lot of success by contributing to environmental and also animal protection since it can increase awareness about the dangers of the use of animal furry by being a substitute to animal furry. The paper also presents a design of a possible product, the product development process from suppliers to after-sales services, and the business and marketing strategy showing the financial forecasts and motivations for high economic performance.

**Keywords**- Environmental Protection; Research and Development; Human-Hair Based Products; Recycling Process and Business

### I. INTRODUCTION

Various researches on human-hair and the environment show that it is an important element in the detection of pollution negative impact on human-being and the environment. For instance, there is the research of [1] that analyses the contents of human-hair in non-industrialized regions in order to determine its components which show that for an approximate perfect research on human-hair components, this needs to be made in a non-industrialized region—as in a perfect economy as to say. Also, the research of [2] states that human-hair is an important biomarker and first analyzer—but not a 100% efficient tool—leading to the analysis and detection of pollution exposures in the environments and then if positive other tools are used for further analysis. Thus, these research results and others can be an important proof of the existence of negative elements in human-hair and by this, when thrown away in trashes, can cause possible damages to the environment. We also mention that environmental protection knows since decades the emergence of new practices and new trends for its development under environmental needs; according to [3], there is a great willingness to develop and market instruments for environmental protection, the freedom to analyse the costs and benefits of environments, the issue of global climate change is more seriously taken into consideration, and more attention to recycling business and waste management projects as well.

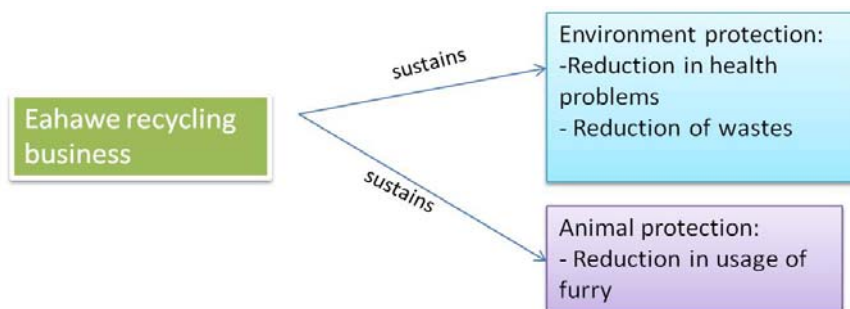


Fig. 1 Environment and Animal Protection process

In this actual paper, we question and develop a possible solution to this damaging human-hair by the creation of a recycling and waste management project. These activities are known for their environmental protection sustainability. As an example, there is the recycling of electronics materials, plastic, glass to make other products. According to [4], there is the recycling of hazardous waste containing metal or spent solvents or recycling of organic wastes as fuel, and through this the activity of disposal is avoided. The management of hazardous wastes includes the activities of disposal, treatment and recycling. Fig. 1 shows the possible positive impact of this solution—to treat and recycle the damaging hair—on the environment which is the reduction in wastes and by this also reduction of problems of pollution and health. Besides, Fig. 1 shows the effect on animal protection since the project proposes to substitute animal furry with human-hair and by this contribute to the important pillar of sustainable development—animal protection. This latter knows the creation of awareness campaigns, animal competitions and shows [5], and the development of organisations in charge of these goals as associations and companies—as Greenpeace [6] or

society for the protection of animal (SPANNA) [7] for instance—that are either profit or non-profit organisations. The objective of the project is the collection, cleaning, and usage of the human-hair as a product for the manufacturing of others. The paper is organized as follows. The next section describes the project and its development phases. The third section presents the start-up project—with a design of a possible prototype, and the product development process. The fourth section presents the business and marketing strategies for its success. And the last sections are the discussion and conclusions.

II. EAHAW: PROJECT DESCRIPTION AND DEVELOPMENT PHASES

Eahawe stands for ‘Easy Hair Wearing’ and this is the name of the project and start-up presented in this paper. The innovative solution of Eahawe contributing to environmental protection is the creation of a specific type or some kind of tissue to be used in the following, but not limited to (Table 1):

- clothes making with insertion of little pieces of it; or,
- making entire scarves, socks, gloves...etc; or,
- insertion in accessories and furnishings

TABLE I TYPES OF PRODUCTS OF EAHAW

Types of products	Definition
Clothes	products in which pieces of tissues of hair are inserted; as T-shirts, coats, pull-overs, pants, socks.....
Accessories	products in which pieces of tissues of hair are inserted as bags, scarves, shoes, purses, jewellery.....
Furnishments	products in which pieces of tissues of hair are inserted as chairs, tables, doors, sofa,

Eahawe human-hair will be used as a cloak and decoration according to the final products. Thus, it will be a cloak in scarves for the cold or cloak in hats, etc. Thus, Eahawe final products also intend to be useful to cover the body from cold (coat, scarf, etc.) or used as a shelter from the hot sun (hats, umbrella. etc.). Table 2 shows that Eahawe products will have two main utilities that are either to be as a decoration and trim on the clothes, accessories or furnishment sold to the customers or it will be, simultaneously with the first role, an engine of society development through recycling by the contribution to the environmental and animal protection that is pollution, waste and animal furry usage reduction.

TABLE II PRODUCTS AND SERVICES UTILITIES OF EAHAW

Prod/serv utilities of Eahawe: Sustainable development	
Products –Trim and Decoration	Services- Society development
- Clothes: Coats, scarfs, pants,...	- Environmental protection: pollution and waste reduction - Animal Protection: animal furry usage reduction
- Furnishments: chairs, desks, mirrors....	
- Accessories: jewellery, bags, shoes.....	

This tissue or component is based on human-hair that has its origins from either:

- hair-cuts shops; institutions in which people go for the services of hair cutting;
- beauty and estetic salons; institutions in which people go for waxing services.

These institutions will have either to give or to sell Eahawe business this hair and Eahawe will wash it and treat it in order to make the final products as mentioned above. In order to treat it and wash it, Eahawe will use special hair care products. There are various types of trademarks products to treat and wash hair and also patented product [8, 9]. Also, Gleditsia fruit can be used in treatment and washing phase of the human-hair [10]. Eahawe project is in the phase of research and development. Fig. 2 represents the design of a possible product in which there is human-hair.



Fig. 2 A sample design of a Eahawe product: A Shawl and T-shirt

Then, in order to make a first prototype Eahawe will need to bring hair from a beauty shop or hair cut -first supplier, then to wash it, to treat it, to dye it with special colors and make a first product as a shawl or gloves for example. In order to wash it, Eahawe will need another type of supplier from which to buy the necessary products and materials for the treatment and washing of the human-hair. Then, Eahawe will need a partner as the organisations experts in sewing or furnishings fabrication in order to create the first Eahawe products. Eahawe will certainly have a lot of success and high economic performance. Eahawe final product can attract various customers interested in trying human hair clothes and customers that are for the protection of the environment - Hair trashes and wastes might be harmful to the nature and environment, and for animal protection\_ Eahawe innovation might also increase awareness about the need for reduction in use of furry and hair of animals for clothing. As an example, recently in Britain, according to [11], the organizations in charge of the development of animal protection processes and activities have more acknowledgement and recognition by the British government. Also in US, there were recently various campaigns for the development of a clear, transparent and really useful strategic plan for animal rights [12].

III. EAHAWE BUSINESS: PRODUCT DEVELOPMENT PROCESS

Eahawe business needs to rapidly find suppliers production as organizations of textile and sewing, and maybe even fashion organizations and then stores of clothes, accessories and furnishment selling (Table 3). Eahawe business will produce innovative products that can be considered as products after services since this activity is after the provision of the service of hair cutting and/or waxing to customers. The users are the buyers of the final products—clothes or accessories or punishment, and they can be divided into consumer segments that are: ‘first try customers’ that just want to try the product and second, customers aiming to sustain Eahawe innovation for animal and environmental protection. Also, they can be individual or organizations in various sectors (Table 4). The users are the buyers of the final products—clothes or accessories or punishment, and they can be divided into consumer segments that are: ‘first try customers’ that just want to try the product and second, customers aiming to sustain Eahawe innovation for animal and environmental protection. Also, they can be individual or organizations in various sectors (Table 4). The users are the buyers of the final products—clothes or accessories or punishment, and they can be divided into consumer segments that are: ‘first try customers’ that just want to try the product and second, customers aiming to sustain Eahawe innovation for animal and environmental protection. Also, they can be individual or organizations in various sectors (Table 4).

TABLE III TYPES OF SUPPLIERS OF EAHAWE BUSINESS

Types of suppliers	Description
Textile industry	Organizations that can provide tissues for clothes making
Wood industry	Organizations that can provide wood for furnishment making
Plastic industry	Organizations that can provide plastic to make accessories
Metal industry	Organizations that can provide metal for accessories making

TABLE IV TYPES OF CUSTOMERS OF EAHAWE

Types of customers	Description
Lead customers	First try customers of Eahawe products that can help further develop the Eahawe products
Customers as organisations	Organizations that buy Eahawe products as furnishments for offices
Individual customers	Customers that buy Eahawe products in shops or on internet

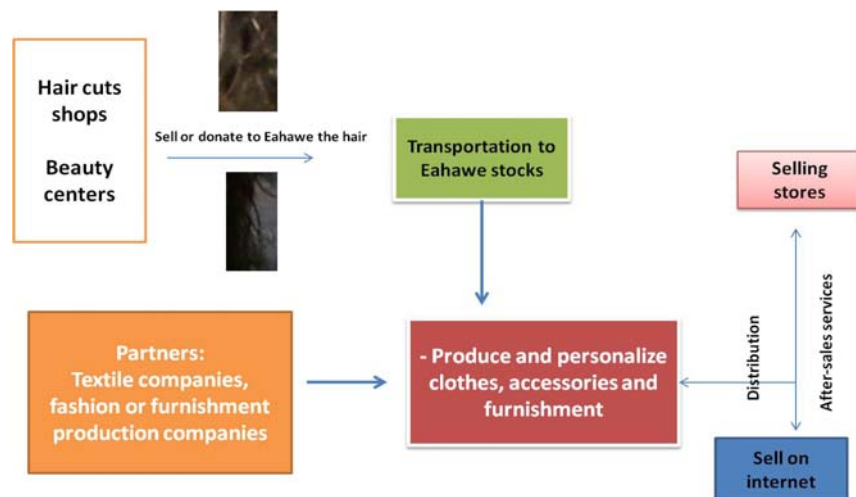


Fig. 2 Eahawe product develop process: From design to after-sales services

#### IV. EAHAWE BUSINESS: SOCIAL AND TECHNICAL IMPACTS

Eahawe will participate in awareness about the importance of Environment and Animal protection in Africa, reduce hair wastes in general-recycling of hair and create a new subsidiary product or after-services-hair cut or waxing-products. Practically, it brings good implications to the recycling sector and scientifically, contributions in the field of products after services, environment sustainability and protection.

The Eahawe products when used by the consumers will provide nice new styles as when the clients buy new clothes or accessories or refurbish a house and this can bring an interesting satisfaction to the customers knowing that at the same time, it contributes to awareness about animal and environment protection; it will contribute to reduction in animal furry usage and to the protection of the environment.

#### V. FINANCIAL FORECASTS AND RESOURCES

Eahawe aims at the development of products based on hair from waxing or hair cut and make clothes, accessories or furnishment with it. The project is competitive since it is innovative and there are no similar innovations on the market yet. Its customers are all people and organizations interested in buying human-hair based products and also those aiming at the environment protection.

Eahawe aims at the optimization of human hair recycling, to create less waste, and more optimal processes based on environment sustainability. For its success, Eahawe needs financial resources for the research of suppliers, partners, store sellers, and resources—as machines, desks and computers—at first for the production and management of the operations. It estimates the price, for instance of a scarf to 30 dollars, gloves to 25 euros... and it is expecting, after prototyping phase to make a sell of 500-700 products in the first semester of operations. It also needs employees (Table 5) as an accountant, strategic manager, business manager and so on. As a start in prototyping phase, cost per production monthly is estimated to 30000 \$ and cost per production in the short-term monthly is also estimated to 30000 \$;

$$\text{Cost of production} = \text{cost per labour} + \text{cost per capital}$$

Eahawe also aims at the development of mailing lists of potential suppliers, partners and selling stores to propose collaboration for production and selling, and to have a website to sell online the products. For the selling phase, Eahawe plans to make advertisement campaigns in fashion magazines or environmental magazines and websites. Also, it can advertise the product with direct emailing to selected potential customers.

TABLE V TYPES OF EMPLOYEES OF EAHAWE BUSINESS

Types of employees	Definition
Operations management	people in charge of production, distribution and accounting.
Technology management	people in charge of the technologies of Eahawe as information systems connecting each department to the other
Strategic management	people in charge of relationships with partners and suppliers; external environment

#### VI. CONCLUSIONS AND FUTURE RESEARCH

The paper presents an interesting project and the business plan of its start-up. Its idea is to produce clothes, accessories and furnishment in which there is the integration of tissues of human-hair or directly human-hair derived from suppliers as hair-cut shops or beauty centers. The paper is also a first result of this entrepreneurial initiative and thus other more elaborated research publications will follow through the development process of the start-up. Besides, further research can be made about the types of networks created through the entrepreneurship and business of Eahawe start-up, the types of information systems or primary products and raw material used to make the final products - chemical and environmental studies, and the managerial practices as well. A major study can also be the analysis and investigation on the development of a 'second-level' recycling practice and process concerning the final products of Eahawe after usage. That is, to find out another new method to continuously protect the environment and the animals.

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