

MODERN TRENDS IN ECOLOGICAL PRESERVATION OF TEXTILE MATERIALS IN THE FASHION INDUSTRY

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Abstract. Society is increasingly aware of the environment, conservation of natural resources and the general state of ecology in the world. Conscious consumption is currently the most relevant trend in the fashion industry. Conscious manufacturers use more ecological, recycled materials, and energy-saving technological solutions when manufacturing products. Textile is the most common material from which various products are made in the fashion industry, so it is the most demanded and expensive. The increase in the consumption of clothes and accessories, the reduction of their useful life due to the rapid change in fashion and consumer preferences cause an increase in environmental pollution with fibers of synthetic origin and industrial waste. Excessive consumption of things is increasing more and more, which, as a result, has a negative impact on the environment and its ecological indicators. One of the ways to improve the ecological situation in the world and preserve natural resources is a more conscious attitude to the production of products and extending the period of their use. Therefore, the need to reduce the volume of use of "fast fashion" products and extend the operating time of existing ones in order to reduce environmental pollution by waste from industrial production of the fashion industry is one of the main tasks that modern production and consumers face.

Mass media and social networks force people to buy more and more new clothes, and not to use the ones out of fashion. A large amount of it is thrown away every day, and the production of new clothes pollutes water and causes significant emissions of CO₂ into the atmosphere. The model of "fast fashion" widespread today has become the reason that twice as much clothing is produced annually compared to the beginning of the 2000s: about 62 million tons of clothing and other textile products per year, and by 2030 this indicator may reach 102 million tons [1]. Every year, the average inhabitant of our planet throws away 32 kg of clothes and shoes. According to the estimates of the US Environmental Protection Agency, since 1960, the amount of textile waste in the world has increased by 811%, and the fashion industry is already officially recognized as the second largest polluter of the environment after the oil and gas industry [2].

Among the various problems associated with "fast fashion" and how the fashion industry has boomed, the various destructive effects on the environment remain a major

concern. The textile industry is second only to aviation in the level of CO₂ emissions into the atmosphere, accounting for about 10%, which is more than 1.7 billion tons of CO₂ per year.

According to a study of the state of the problem of the fashion industry's impact on the environment, the industry is considered one of the "biggest polluters in the world" and is responsible for 20% of global industrial wastewater and 10% of carbon dioxide emissions [3]. The textile industry is constantly increasing the rate of production, while at the same time reducing the period of their use. As a result, the environment is polluted and natural resources are depleted. According to Greenpeace [4], over the past 15 years, people have bought 60% more clothes and kept them for a two times shorter term.

According to the head of the study, professor of design at Finland's Aalto University Kirsi Niinimäki, the average time of use of clothes has decreased by 36% compared to 2005, because impulsively bought clothes are often thrown away after a short period of time [1].

The transfer of production to less developed countries without strict environmental standards caused untreated water to enter the oceans. Nearly a quarter of the world's wastewater from textile dyeing contains highly toxic chemicals that accumulate because, in many cases, they cannot be treated to make the water safe again.

In addition, synthetic materials are the main source of plastic fiber pollution in the oceans, with approximately 35% of all microplastics made up of these synthetic materials. To further reduce the cost of production, manufacturers can use low-quality materials.

The concept of "sustainable fashion" is relatively new - although the idea of sustainable development has been around for decades. The idea that textiles could be made in a way that supported "ecological, social and cultural diversity" and encouraged "innovative business models" was based on the premise that this would start a movement away from the "fast fashion" phenomenon. The key goal of sustainable fashion is to replace chemical materials with environmentally friendly ones and reduce the amount of textile waste by recycling textile products. To reduce the level of negative influence of "fast fashion", consumers should reconsider their approach to buying clothes, follow the principles of conscious fashion. To see fashion and clothing more as a functional product than as entertainment, and be prepared to pay a higher price for things that take into account the impact of fashion on the environment, because the production of textiles, and subsequently clothing or accessories, uses a lot of water, chemicals and human labor.

In the fashion industry, there are various trends in the preservation of natural resources and improvement of the environmental condition in the world, which are oriented towards the ecological awareness of producers and consumers (Fig. 1).

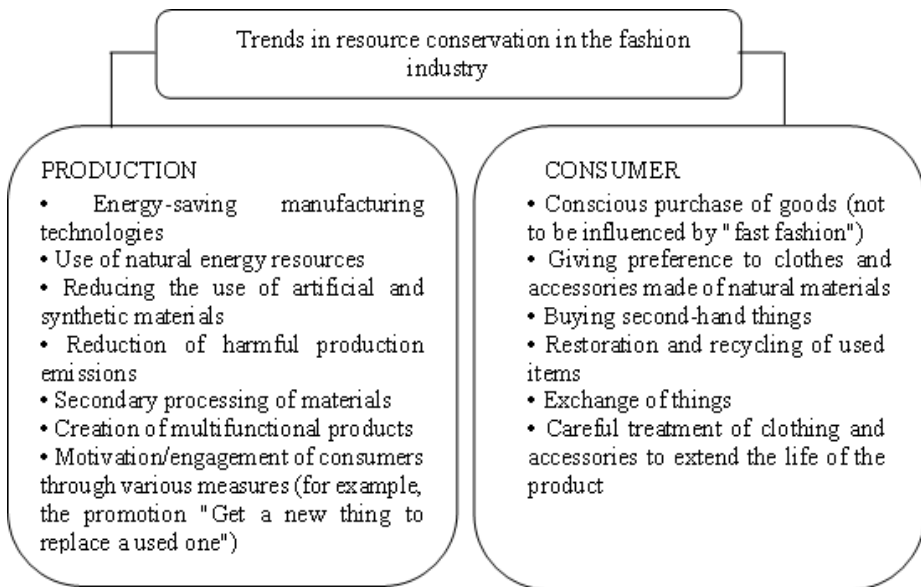


Fig. 1. Modern environmental trends in the preservation of natural resources and improvement of the ecological state in the world

Для більш усвідомленого ставлення до моди і виробництва в цілому більшість текстильних компаній і відомих брендів все частіше переходять на кругову систему, метою якої є зниження негативного впливу на навколишнє середовище. Споживачі все більше стурбовані екологічними наслідками своїх покупок і переходять на «свідому» моду, тому підприємства починають розуміти фінансову вигоду «кругової» системи моди, яка базується на принципі «вивчи – візьми – використай – утилізуй». - підхід до відновлення». І його основний принцип полягає у створенні продукту з регенеративним життєвим циклом, тобто, щоб він мав багаторазове використання, ремонтувався, повторно використовувався та легко перероблявся [5 - 8] .

Для зменшення відходів активно розвиваються тренди «sustainable fashion» у напрямку переробки текстильних виробів (upcycling та recycling), набуває поширення культура обміну речами (freecycling), зменшення кількості споживчих товарів та продовження життєвого циклу виробів.

Незважаючи на численні дослідження останніх років у сфері екологічної моди, слід зазначити, що погляди були обмеженими та не базувалися на філософських знаннях про екологічну етику та цінності. Не так давно апсайклінг став рішенням глобальної проблеми надання вживаним речам нових характеристик і перетворення їх на унікальні. Крім того, споживачі цінують речі з історією і в цьому сенсі сучасний апсайклінг близький до вінтажу, але більш креативний.

За словами дослідника культурної антропології Крістіана Палмера [9], firstly, in the assessment of moral significance, the focus should be on society, not on the individual. Secondly, ecological qualities are of primary importance. On the other hand, human actions are evaluated during environmental ethical discussions of "how humans

should act in the non-human natural world."

So, a common method of recycling in the world is upcycling, which involves the use of materials and components of used goods to transform them into new, more valuable products with the help of thoughtful design and skilled craftsmanship. This method can transform end-of-life clothing and textile waste into fashion products with high retail value, helping the industry to develop more sustainable production methods [10]. Also, the method allows applying a sustainable design option for reuse methods with the aim of greater economic and environmental benefits, in which used clothes and textiles are used for the production of new fashion goods. Many famous brands support the idea of upcycling in clothes. For example, such brands as Balenciaga, Marni, Etro (clothing from pieces of "old" things and fabrics using the patchwork technique), Coach (recycled bags from the 1970s) are experimenting with the reuse of materials.

Another well-known type of processing is recycling, when unusable things are processed using special equipment and become raw materials for new ones [11].

In the last few years, the fashion industry has been captured by a wave of social movement woke-culture and eco-activism. Woke-culture is an African-American expression from the English "wake", i.e. "woke up" - which means "realized itself", the mainstream of awakening in culture or society [12].

Brands that use cardboard or fabric packaging that is easily recycled or reusable are emerging. In addition, the methods of obtaining raw textile yarn from rice straw, bird feathers, grain husks or other ecological materials, unconventional for the fashion industry, are becoming popular. Today, for technological and economic reasons, the production of clothes from such materials cannot be put on an industrial basis, and therefore the fashion for such products and their collections exists in the context of individual developments and belongs to the direction of "artisanal fashion". Famous brands and amateur designers who create collections of clothes or accessories use recycling and upcycling as a creative source, because the recycling of used things is a popular direction among modern designers. Secondary use is a craftsman's creative approach to textile waste, which allows you to create a masterpiece with the help of your own creativity, without any technical intervention[13-15].

«Швидка мода» та індустрія моди в цілому перенасичує ринок великою кількістю товарів, на виробництво яких з кожним роком витрачається все більше природних ресурсів, завдаючи шкоди екологічній системі. Відомі бренди та дизайнери-любители, створюючи оригінальні колекції, знаходять способи збереження навколишнього середовища різними способами: від надання речам «другого життя» та переробки матеріалів, з яких вони виготовлені, до дизайнерських рішень, які надають виробам багатofункціональності, тим самим зменшуючи кількість товарів на ринку.

Враховуючи підвищення рівня свідомості сучасних споживачів товарів, можна припустити, що тенденції збереження текстильних матеріалів у сфері модної індустрії з часом знайдуть все більше прихильників.

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RATIONAL LAND USE IS THE BASIS OF EFFECTIVE AGRICULTURE.

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Rational use of agricultural land is a guarantee of effective production of agricultural products, provides landowners, landusers and tenants of land plots with the opportunity to use land taking into account land protection and minimal impact on natural factors. This is achieved through the use of land use methods that do not lead to a significant decrease in the fertility of the grounds, and optimal interaction with natural factors. Providing all land users with opportunities for maximum, efficiency of the entire land use, taking into account land protection, is a key factor in successful agricultural production.

The essence of rational land use will be the efficient and competent use of land resources, ensuring the proper balance between economic, social and environmental interests.

Agriculture as a branch of public production has its own characteristics that distinguish it from other branches of the economy. Here are some of these features:

Seasonality of production: In the country, agriculture is associated with seasonality of production, which means that most of the work is done during a certain period of the year, for example during harvest.

Dependence on climatic conditions: Agriculture is highly dependent on climatic conditions such as rainfall, temperature, humidity, which can affect the quality and quantity of the crop.

A large number of small enterprises: the country's agriculture consists of a large number of small enterprises. This can lead to limited access to capital, technology and other resources, some for industry development.

Social importance: Agriculture has an important social importance, providing food to the population and creating jobs in rural areas.

High level of risk: Agriculture has a high level of risk associated with climate change, plant diseases, pests, market fluctuations and other factors that can affect yields and incomes.

Limitation: the area of agricultural land is limited both within the limits of the entire planet and individual countries, regions, at the disposal of business entities. This circumstance determines the irreplaceability of agricultural land for agricultural production [1].