



Waste for the Soviet Economy: Recycling of Rags in Ukraine in the 1920s

RESEARCH

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 ubiquity press

ABSTRACT

This article, based on previously unexplored archival documents, examines the recycling of rags in the early Soviet Union, using the Ukrainian Soviet Socialist Republic (SSR) as a case study. Within the context of the early Soviet waste regime, the characteristics of the Ukrainian rag market, its key participants, the challenges they encountered, and the strategies they devised in a republic with limited textile waste are investigated.

The article asserts that in the Ukrainian SSR during the 1920s, the paper industry emerged as the primary consumer of rags. Consequently, the secondary utilization of rags in this sector should be regarded as the authorities' endeavor to extensively utilize substitutes in light of the limited reserves of cellulose and timber in the republic. Rags were also an important export resource, driven more by ideological reasons than purely economic ones. The article demonstrates the specificities of waste management policies during the New Economic Policy period, characterized by the authorities' directive methods of regulating the market, attributable to the strategic significance of this type of raw material for Soviet enterprises. It contends that the transition to a centralized waste collection model in the early 1930s was a natural outcome of the implementation of the planned economy. However, intense competition for various waste materials, particularly rags, contributed to this transition.

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KEYWORDS:

rags; waste; recycling; Ukrainian SSR; Soviet Union

TO CITE THIS ARTICLE:

Perga, T. 2023. Waste for the Soviet Economy: Recycling of Rags in Ukraine in the 1920s. *Worldwide Waste: Journal of Interdisciplinary Studies*, 6(1): 4, 1–15. DOI: <https://doi.org/10.5334/wwwj.97>

INTRODUCTION

The study of waste recycling across various countries, historical periods, and contexts has attracted significant research attention due to the imperative to develop sustainable patterns of resource consumption and utilization. However, a considerable research gap exists regarding waste reuse in Eastern Europe. While much of the existing research has focused on the Cold War period, during which the Eastern bloc countries, including the USSR, reassessed the role of waste as a raw material for consumer goods, the period before World War II remains understudied, particularly in the case of the Soviet Union. The limited empirical data available (Gardner 2013; Pristed 2020, etc.) is insufficient to fully comprehend the significance of waste in the Soviet economy and its consumption trends.

This article challenges the assumption that the development of recycling in the USSR began in the second half of the 20th century and argues that it started as early as the 1920s. It examines the peculiarities of rags collection during the New Economic Policy (NEP) era, the strategic importance of rags for Soviet industrial development and exports, and the main actors involved in their collection. The article discloses the methods used to manage rag picking in the 1920s and the practices employed by collectors to enforce Soviet regulatory authorities' plans, as well as the ways of encouraging the population in these activities.

The geographical focus of this research is the Ukrainian SSR, which was one of the largest and the most developed Soviet Republic. Given the centralized decision-making structure in the USSR and the limited autonomy of its republics, the example of the Ukrainian SSR sheds light on both the all-Union tendencies related to the collection and processing of rags and the regional context of this activity. This is of great importance for a comprehensive understanding of Soviet waste policy.

REVIEW OF SOURCES AND LITERATURE

The archives of Ukraine provide a significant volume of primary sources pertaining to the management of waste disposal in Soviet Ukraine during its time in the USSR. These documents, particularly those from the 1920s, have not yet been examined and introduced into scientific circulation. This article draws heavily upon an extensive analysis of documents sourced from the Central State Archive of Supreme Bodies of Power and Government of Ukraine (TsDAVO of Ukraine), as well as the State Archives of Kyiv region (DAKO). Specifically, the focus is on materials from the All-Ukrainian joint-stock company for the collection, purchase and sale of various waste – Ukrutilsbir (Vseukrayins'ke aktsionerne tovarystvo

po zboru, zakupivli i realizatsiyi riznykh vidkhodiv), the State Export-Import Office of the Ukrainian SSR – Derzhtorg (Derzhavna eksportno-importna kontora), and the All-Ukrainian Central Union of Consumer Societies – Vukoopspilka (Vseukrayins'ka tsentral'na spilka spozhyvchykh tovarystv).

The archival records of these institutions comprise detailed statistical data on waste, including various reports and internal correspondence. The protocols of the meetings organized by the People's Commissariat of Trade of the Ukrainian SSR – NK Torg (Narodnyy komisariat torhivli Ukrayins'koyi RSR) and a range of decrees and instructions are valuable sources for documenting the state of the Ukrainian waste market and the relationships among key actors, including waste collection companies.

Considering the lack of published statistics on waste management by the Soviet authorities at both the union and republic levels, the available archival statistics are extensive yet highly fragmented. To augment these statistics, data from the USSR statistical yearbooks are a valuable source. They provide information on the paper requirements of the Soviet industry, which relied on rags for production, as well as the demand for rags for export. These yearbooks also contain information on the production of consumer goods, particularly clothing, which eventually turned into rags.

Another important source of information is the scientific popular literature of the late 1920s and early 1930s, which aimed to promote waste picking and establish the necessary behavioral models within Soviet society. These publications provide numerous examples of the use of various waste materials in the USSR, such as rags, bones, paper, metals, glass, and others, and reflect the prevailing understanding of waste during that period (Beckerman 1941; Freidzon 1930; Lazarev 1932, etc.).

It is worth noting that Soviet experts differentiated between the concepts of 'trash' (отбросы in Russian, покидьки in Ukrainian) and 'waste' (отходы in Russian, відходи in Ukrainian), despite the two being synonymous. The modern interpretation of these concepts in Russian and Ukrainian linguistic dictionaries is similar to the definitions given by Soviet experts. According to the Akademik dictionary, 'trash' refers to substances generated in economic or everyday life cycles that are not considered valuable or cannot be utilized (<https://dic.academic.ru>, Trash). Ozhogov's dictionary defines 'waste' as residues of production that are usually suitable for use and processing (<https://slovarozhegova.ru>, Waste).

Soviet experts distinguished between 'waste', which they considered to be recyclable residues, and 'trash', which they considered as 'waste that is mostly unused'. They argued that the disposal of trash incurred a double cost – the funding required organizing their collection and transport to landfills. The challenge confronting Soviet technology and industry was to prevent waste

from becoming trash (Lazarev 1932: 3–4). Rags were deemed unusable products or parts of products made from natural fabric that have lost their operational value, as well as products with defects or waste from light industry (Freidzon 1930: 5).

As highlighted by Heike Weber and Ruth Oldenziel (Oldenziel & Weber 2013), waste recycling is not a recent phenomenon of a thriving post-modernist society, nor is it solely motivated by environmental concerns. Studies on historical periods (Douglas 2002) and the 19th century (Strasser 2000) demonstrate that people frequently employed various waste reuse practices in their daily lives.

Chad Denton and Heike Weber argue that in the 19th century, various industries practiced the utilization of their waste materials as a means of production, often referred to as waste utilization or recovery. This involved the trading and refining of residues by diverse business actors, such as rag-and-bone pickers, who repurposed discarded materials and sold them to buyers capable of reutilizing them in production (Denton & Weber 2022). During that period, rags were highly valued as they were the primary raw material for paper production (Barles 2005; Heidi 2019; Senchyne 2017). Rags were collected from the streets and households to be recycled into paper. According to Deborah Wynne (2015), British paper manufacturers often struggled to obtain enough cloth, and in the 1850s, a severe shortage of rags prompted Harriet Martineau to refer to cast-off cloth as ‘precious tatters’ (Wynne 2015).

In the late 19th century Russian Empire, rags were also utilized in the paper production process. The demand for rags was estimated to be around 2,500,000 pudi (40,951 t). If we take the average cost of one pood (16.38 kg) of rags to be between 1.50 and 1.70 kopeks, the annual financial transactions associated with this type of waste in Russia were approximately 3,750,000 to 4,250,000 RUB. The potential capacity of the Russian rag market, however, allowed for the collection of up to 5,000,000 pudi (81,910 tons) annually (Bakhtiyarov 1890: 24–25).

At the turn of the 20th century, the reprocessing of rags for reuse became widespread across various industries. Numerous studies have highlighted the significance of rag picking and recycling in different economic sectors. In Nazi Germany, such activities reached a considerable scale. Recently, Heike Weber revealed that in 1928, the German industry reclaimed 130,000 tons of rags, with roughly 60,000 metric tons utilized in the paper and cardboard industry, another 60,000 tons becoming fibers for the textile industry, and 10,000 tons retrieved for other purposes, such as upholstery (Weber 2022). Germany, unable to meet the increasing demand for rags, resorted to importing them, including from the USSR. From October to December 1928, the USSR exported 952 tons of rags to Germany, followed by 5,473 tons in the same

period in 1929 and 8,483 tons in 1930 (Foreign Trade 1933). In the United States during the 1920s and 1930s, 13% of textile waste was utilized in paper production (Smith 1997: 167), the other part was obviously used in the same directions as described above.

High-quality rags were utilized for making banknotes while low-quality rags were turned into cleaning rags or roofing felt. The final products consisting of rag and waste paper residues comprised a diverse array of goods, ranging from blankets to buffing wheels and organic fertilizers.

Waste salvage was a crucial element of the Nazi economy, and it was associated with the regime’s ideological, racial, and expansionist ambitions. Weber characterizes the gradual expansion of Nazi policies in this area and waste disposal campaigns as ‘the Nazi regime of waste exploitation’ (Weber 2022). Anne Berg expounds on waste recycling in Nazi Germany, asserting that it was driven by the necessity to complete the energy cycle, broaden the resource base, and enhance the regime’s capacity for waging war (Berg 2015).

In contrast, there is limited literature on the recycling of waste in the early Soviet Union, particularly in the 1920s. Although there is a significant amount of research on everyday life and consumption in the early Soviet Union, which includes topics of deficit, black market, speculation, food, and consumer goods (Fitzpatrick 2000; Golubev & Smolyak 2013; Hessler 2004; Herlemann & Murphy 2019; Kiaer & Naiman 2005), they do not describe or document waste picking or the involvement of Soviet citizens in these activities.

The literature on the repair and reuse of various items, including clothing, sheds light on the survival strategies of Soviet citizens during times of scarcity and limited access to consumer goods (Gerasimova & Chuikina 2014). These practices posed challenges to waste collection plans and compelled waste pickers to adopt diverse strategies to address these difficulties.

Birgitte Pristed is one of the few researchers who studied waste collection in the early USSR. In the article ‘Point of no return: Soviet paper reuse, 1932–1945’ (Pristed 2020), she examines the reuse of paper as a daily practice that was implemented through the Soyuzutil waste collection system in the early 1930s, as a counterpart to Stalinist industrialization, from both ideological and economic perspectives. However, the author’s focus is mainly on the paper itself, and there is no mention of rags. Furthermore, in the 1930s, a new centralized model of waste disposal was introduced while in the 1920s, these activities were decentralized.

On one hand, the reason for the decentralized model of waste disposal in the 1920s in the USSR can be attributed to the policy of the New Economic Policy (NEP), which permitted some aspects of the free market and capitalism. On the other hand, during this period,

waste disposal was in its early stages of development, and it took time for the Soviet government to recognize the potential value of waste and devise strategies to maximize its extraction from both individuals and enterprises in an efficient manner.

Drawing on Zsuzsa Gille's notion of the 'waste regime' to conceptualize waste management in Hungary, we argue that the period spanning from the early 1920s to the onset of World War II in the Soviet Union can be identified as the 'early Soviet waste regime'. This article explores the rag policy during this first phase when the Soviet Union was implementing the NEP (Gille 2007).

THE FIRST STEPS OF THE SOVIET GOVERNMENT IN WASTE RECYCLING

The emergence of waste utilization initiatives in the USSR was predominantly influenced by a severe scarcity of essential material resources stemming from the destruction caused by World War I, the Revolution of 1917, and the Russian Civil War of 1918–1920. The economic landscape during this period can be characterized as a 'shortage economy' according to the concept proposed by Kornai (Kornai 1980). The Soviet edition of 1940 portrayed the situation of the first half of the 1920s as a time when 'without solving the fuel and raw material problem, it was impossible to think about the restoration of large industry' (*The Development of the Soviet Economy 1940*). Consequently, the procurement of various industrial and agricultural raw materials held strategic significance for the USSR in the early 1920s.

In this context, the policy of the Soviet Union was not distinct from that of the USA and many European countries, including Germany. In their article, 'Rethinking waste within business history: A transnational perspective on waste recycling in World War II,' Chad Denton and Heike Weber examined the extensive historiography on the recycling of diverse waste materials during World War I, World War II, and the interwar period. Scholars refer to this period as 'critical phases during which the material streams of resources that fed the military, industry, and society were substantially transformed' (Denton & Weber 2022).

The earliest action taken by Soviet authorities in this domain traces back to World War I. In 1918, the Supreme Council of the National Economy – VSNKh (Vysshiiy sovet narodnogo khozyaystva), established a Department for the Disposal of Unusable Items. This department was charged with the responsibility of managing waste materials that were deemed 'unusable in a particular production of property and industrial materials' (*Resolution of the Supreme Council of National Economy 1918*).

The initial regulations that governed waste management in the USSR included the Decree of the Central Executive Committee 'On the recognition of strike work on the harvesting of animal raw materials, leather, fur, goat, bristles, hair, wool, horns, and hooves' (*Decree 1918*), the Decree of the Council of People's Commissars 'On the disposal of paper waste' (*Decree 1919*), and the Decree of the Council of People's Commissars 'On the harvesting of bristles, hair, horns, and hooves' (*Decree 1921*). The Decree of 1920 combined the collection of raw materials and food products (*Decree 1920*), which potentially explains the use of the term 'procurers' for waste pickers. Hence, in this article, the term 'procurer' will be employed to identify the primary actors – rag collectors. Although no specific decrees related to rag collection were implemented at the legislative level, its significance for the Soviet economy should not be underestimated, given its value as a vital secondary resource for the paper industry.

In 1929, the NKTorg of the USSR issued a ruling stating that individuals who gather and supply waste to state or cooperative organizations, and who neither sell waste nor engage in employing labor, are not stripped of their voting rights (provided they are not otherwise deprived of these rights) (*TsDAVO Fond 71 File 212:319*). The aim of this decree was to provide a certain level of protection for waste collectors, as well as to preserve and potentially increase their numbers, which indicates the importance of establishing the waste collection process.

One should take into account the fact that during the 1920s, the Soviet Union put a significant emphasis on the overall rationalization of Soviet production (*Report to the 8th Congress of Soviets 1920*) and resource conservation (*The Course of the Communist Party 1925*). Waste recycling was viewed as a tool to expand the raw material base for the development of the Soviet economy and was integrated into the rationalization process. This approach led to a gradual reassessment of waste, which was seen as a valuable raw material for industrial development. In the early 1930s, the Soviet press and popular science literature began to use phrases like 'gold in a landfill' (*Gold in a Landfill 1932*) and 'unused treasures' to describe waste (Lazarev 1932).

RAGS FOR SOVIET INDUSTRY AND EXPORT

In the 1920s in the Ukrainian SSR, the demand for rags was primarily driven by the paper industry, which played a crucial role in the functioning of the state apparatus, educational institutions, literacy campaigns, and propaganda. Despite the active use of pulp and wood pulp for paper production (Kochetkova 2015: 112–113), there was a shortage of these raw materials, which led

to an increased reliance on waste paper and rags. For instance, the production of 715,000 tons of paper in the USSR in 1932–1933 required 677 tons of pulp and wood pulp. However, the existing businesses were only able to meet slightly over half of this demand. In 1928–1929, for instance, they produced just 299 tons ([Problems of paper industry 1937](#)).

The peculiarity of the situation in Ukraine was the shortage of wood and pulp reserves for paper production, as their main reserves were located in the territory of the RSFSR. The primary producers of pulp and wood were concentrated in the RSFSR, particularly in the southern part of the North-Eastern region, as well as in the northwestern and western parts of the Central Industrial Region. Transportation costs from these areas were considerable, leading to a significant increase in the expenses associated with paper production. Hence, the Ukrainian authorities, like those of other Soviet republics, had to search for local sources of raw materials to meet their paper production needs. Recycling rags provides a case study of how the Ukrainian authorities addressed this issue.

Although the exact amount of rags and waste paper used for paper production in Ukrainian SSR at the end of 1920s cannot be determined due to the loss or destruction of many documents during World War II, estimation can be made based on the 1931 paper production plan. According to this plan, the Ukrainian SSR was required to collect 25,000 tons of waste paper and 60,000 tons of rags, indicating a significant utilization of rags for paper production ([Decree 1932](#)).

The popular Soviet literature of the late 1920s and early 1930s indicates an increase in the usage of rags in various industries, including chemical, haberdashery, and construction. Rags were crucial for the production of cardboard, lining material, and roofing felt. The lining material, in particular, was widely utilized in the production of various consumer products, such as shopping bags, school bags, lady's handbags, haberdashery items, and upholstery for suitcases, furniture, and cases ([Beckerman 1941](#)). It is worth mentioning that the demand for large rag shreds of 20 × 20 cm in size, which were used for wiping machines, mechanisms, and engines from oil, increased due to industrialization.

However, archival documents of the main rag collectors in Ukraine, namely Ukrutilsbir, Rusavstorg, and Derzhtorg, do not contain any information on the supply of rags to state-owned enterprises of the aforementioned industries. Only Rusavstorg delivered 20 t of rags to the Klinovetsky Sukonny Trust in RSFSR in 1929. In Ukraine, rags were mainly used in paper production. Small amounts of rags were used for the production of consumer goods by artels- small voluntary production cooperatives that were popular during the NEP and after it. This was the peculiarity of the local context.

The technology of producing paper from rags was widely used and had been invented centuries prior. It was prevalent in many countries. The process involved sorting rags, crushing them into small pieces, and boiling them in large boilers. The mixture was then mechanically ground in special vats (rollers) to create a liquid pulp. Bleaching agents and soda were added to whiten the pulp. The mixture was drawn out on a metal mesh and passed between two large copper cylinders, which were tightly in contact. The paper, which was simultaneously dried and pressed, was wound on the cylinders. According to a 1944 Soviet manual on paper production, the recommended quantity of rags for producing 100 kg of paper varied between 127–175 kg depending on the level of contamination. Alternatively, 135–150 kg of straw or 110–120 kg of waste paper was recommended ([Vishnevsky & Ovsyankin 1944: 42–43](#)).

The comparison of the aforementioned data with that of Heike Weber leads to the conclusion that rags were more extensively used in Nazi Germany by the late 1920s, with the main consumers being the paper and textile industry. The limited use of rags in the Ukrainian state textile and chemical industry can be attributed to their underdevelopment. Historically, the supply of plant and animal raw materials for fabric production in Ukraine was limited. In the 1920s, yarn required for fabric production was imported from the RSFSR, but it was still inadequate. Furthermore, technologies for the reuse of textile were not yet widely implemented ([For the textile industry 1932: 8](#)).

An analysis of documents from the Ukrainian Textile Trust of the People's Commissariat of Light Industry of the Ukrainian SSR reveals that textile enterprises generated substantial waste from their own production that remained unused. The establishment of recycling workshops at textile enterprises to process waste began to be considered only in the early 1930s by the USSR. Therefore, the primary focus was on developing 'internal' waste resources ([Znamensky 1935](#)) and enterprises didn't need the extra rags. One should take into account that the main objective of industrialization, which began in the late 1920s, was to transform the USSR from a backward, agrarian country into an advanced industrial power. This objective entailed prioritizing the development of heavy industry, such as machine-building, metallurgical enterprises, and energy capacities, while providing limited funding to light industry, including textiles ([Ostrovityanov et al. 1954](#)). Consequently, the development and modernization of the textile industry and recycling technologies were hindered. These facts serve as additional arguments supporting the thesis of this article that during the interwar period in the USSR, rags were mainly used in the paper industry.

In the Soviet Union, rags were classified into four distinct types by procurers: woolen, semi-woolen, linen-

spun, and cotton, along with a miscellaneous collection of rags that did not fall under any specific group. Each group was further divided into several subgroups based on the degree of wear and the type of material (vegetable, artificial, or animal) from which the canvas originated. The value of rags and their industrial quality was determined by the strength of the canvas, which in turn determined its price. Therefore, much emphasis was placed on the storage and protection of rags from excessive humidity and dampness, which could degrade the quality of the canvas. The production of high-quality white paper and tracing paper used in tobacco production required linen rags, while cotton, canvas, and woolen rags were used to produce lower grades of paper, cardboard, and roofing felt (Freidzon 1930: 6–10).

Prior to World War I, the paper industry in the Russian Empire had an annual production of 401327 tons of paper, with an average per capita consumption of 7 pounds (3.2 kg). In contrast, the Soviet government set a more ambitious goal to increase paper production to 12 pounds per capita (5.4 kg) by 1930, equivalent to 687988 tons (National Economy of the USSR 1932). Gross paper production, measured in monetary terms, displayed a steady growth during the 1920s: 18544000 RUB in 1921, 60225000 RUB in 1923, 142898000 RUB in 1925, 19734000 RUB in 1928, and 374273000 RUB in 1930 (National Economy of the USSR 1932: 2–3). As the paper industry expanded, the Soviet industry's demand for rags grew proportionally. To produce paper in 1927/1928, it was necessary to accumulate 36000 tons of rags, and by 1929/1930, the required amount had increased to 46000 tons. By 1930, the demand for cotton rags, mainly used for wiping, reached 100000 tons (Freidzon 1930: 6–10).

Rags constituted a significant resource not only for the Soviet economy, but also for export. The export of rags was necessary to obtain foreign currency, which was used to purchase much-needed equipment for Soviet industries. The export of rags began in 1921 for the USSR and in 1925 for the Ukrainian SSR. During the last quarter of 1928, the USSR exported 8,692 tons of rags, 41,572 tons during the same period in 1929, and 52,387 tons in 1930 (Foreign trade 1933:31). This threefold increase in exports during three years indicates the growing demand for rags, but export quantities also depended on international market conditions. The largest exporters of rags from the USSR included the USA, Great Britain, France, Germany, Austria, and Italy. The main customer of rags for export was Derzhtorg. Due to the non-convertibility of the Soviet ruble, the Soviet Union could only acquire hard currency by selling Soviet goods or gold on the world market.

Canvas and linen rags were highly valued in foreign markets. Germany demanded woolen rags (TsDAVO Fond 438 File 245:12); whereas Great Britain sought after white coarse woolen rags (known as 'stocking

and mitten') and canvas rags. Rags of other fibers, particularly of low quality and various colors were sold at a price that was close to their cost. The Soviet exporters aimed to introduce unpopular rag types to the international market by using the highest grades of rags (TsDAVO Fond 423 File 340:253), thereby not expecting high profitability from these operations. The export of rags may have been driven not only by economic reasons but also by ideological motives, particularly the desire of Soviet decision-makers to create an image of the USSR as a strong and promising exporter of different goods. However, the export of rags created additional problems for rag pickers as the production of high-grade white paper in the USSR required linen rags, which were valued abroad. This factor contributed to the competition for the purchase of rags from the population.

PECULIARITIES OF THE UKRAINIAN RAG MARKET

The peculiarity of the Ukrainian rag market was the scarcity of high-quality fibers, especially canvas rags. In general, Ukrainian rags were of inferior quality due to several reasons. Firstly, weaving in rural areas of Ukraine was largely focused on producing low-cost fiber varieties such as cotton, chintz, and mittcal. Canvas, which was the most valuable type of fiber for the paper industry and for export, was available only in limited quantities. Secondly, in the Soviet Union and its republics, there was a shortage of consumer goods, which led to the popularity of practices such as repairing items to extend their service life. This trend was so significant that some scholars even characterized Soviet society as a 'repair society.' Ekaterina Gerasimova and Sof'ia Chuikina write that citizens were actively involved in the system's 'repair projects', in terms both of officially sanctioned social activism and of the everyday economy, in which case they adapted the system for their own comfort (Gerasimova & Chuikina 2014). In the context of the early Soviet Union, adopting a repair-based approach was more an economic survival strategy due to the difficulty and expense of purchasing new items. According to official data, the poorest segments of the population were peasants, and in 1923/1924, a per capita rural resident consumed 0.15 pairs of leather shoes and 1.47 meters of fabric, while in 1928/1929, they consumed 0.38 pairs of shoes and 5.68 meters of fabric. In 1928, the average per capita sales of fabric and leather shoes, including urban residents, were 13.6 meters and 0.63 pairs, respectively, in the USSR (Statistical table of the Central Statistical Office 2003).

In addition, there was a significant disparity between the purchase price of rags from the population and the cost of textile products. For instance, one pood of peasant rags, which included calico and coarse calico,

was procured at a price of 90 kopeks – 1 RUB, while cloth row was procured for 1.20 RUB (DAKO Fond 2993 File 43: 98). Meanwhile, retail prices for some types of manufactory that were set by the USSR Supreme Council of People's Commissars, were following: mittkal – 2.75 RUB, chintz – 3.07 RUB, and calico – 3.50 RUB per linear meter (About fixed prices for manufactory, linen and leather 1928). Such prices increased the economic value of textile products and created an additional reason to repair existing items and prolong their service life, which limited the ability of the population to hand over rags in large quantities. Despite the Ukrutilsbir periodically purchasing waste from textile enterprises (DAKO Fond 2993 File 65: 263–265), the volumes of these operations were negligible. The underdevelopment of the textile industry in Ukraine in the 1920s is evidenced by the fact that the rural population was the primary source of rags, as many peasants wove fabrics for their own use. As a result, fulfilling the plans of the Soviet government posed a constant challenge for rag-pickers, who had to find ways to overcome the shortage of rags.

MAIN ACTORS OF WASTE PICKING IN UKRAINE

In Ukraine, during the 1920s, the primary customer for rags was the All-Ukrainian paper trust, Ukrpapirtrust, which was established in 1921 and subordinated to the VSNKh of the Ukrainian SSR. This trust consolidated various paper industry enterprises and was a branch of the all-Union paper trust, Ukrpapirtrust. It consumed almost all of the rags that were produced in Ukraine. For example, in 1926, the commodity resources of rags in Ukraine were estimated to be between 13105–18019 t, while the needs of Ukrpapirtrust that same year were 11466.5 t. Rag picking was also permitted at the Republican level for state company Derzhtorg, private companies such as Ukrutilsbir (which operated between 1923 and 1930), and Russian-Austrian Trade and Industrial Joint Stock Company Rusavtorg (which operated between 1924 and 1929). These entities were the primary actors in the rag market and accounted for approximately 60%, 24%, and 16% of waste harvesting, respectively (TsDAVO Fond 423 File 502: 131). Additionally, consumer cooperative societies, which operated under the umbrella of the All-Ukrainian Central Union of Consumer Societies (Vukoopsilka), and some humanitarian organizations, such as the Red Cross and the Committee for the Fight against the Unemployed (Comborbez), were subcontractors and received payment in the form of commission. While these actors worked with a wide range of waste, this study will focus only on rags.

These companies employed individuals for either temporary or permanent positions. The occupation of

collecting, receiving, and sorting rags was regarded as laborious, lacking in prestige, and offering meager remuneration. Most of the work was piecework: waste pickers received approximately 5–7 kopecks of commission per pood of rags, while the cost of sorting rags varied from 1.5 to 20 kopecks per pood (DAKO Fond 2993 File 60: 603) depending on the type. Plans for individual pickers were high. For instance, collectors hired by Rusavtorg were required to procure 3 tons of rags in a season that spanned 4–5 months (TsDAVO Fond 71 File 192: 221).

The rag-picking system provided employment opportunities for many individuals, mainly those who were recruited through the unemployment exchange. In 1930, Soviet authorities allowed the employment of disenfranchised individuals, known as 'lihsentsy', for certain non-prestigious jobs, including waste collection. Many of them, particularly those of Jewish nationality, were temporarily employed at Ukrutilsbir. Private entrepreneurs also participated in rag picking and entered into temporary labor agreements with companies, working on a commission basis. Many of them had only primary or incomplete secondary education, which prevented them from applying for more prestigious positions. Undoubtedly, individual attitudes towards this work depended on personal circumstances and motivations, but it seems that for most employees, it was just an opportunity to earn money. Some workers were appointed by trade unions or the Communist Party of Ukraine; they primarily held managerial positions at various levels. There was a shortage of qualified professionals involved in waste collection. Typically, these were waste collectors who lived in rural areas and had connections established in this field since the times of the Russian Empire. Therefore, the employees of the Soviet waste collection and recycling system gained experience through their work.

From a modern perspective, the system of rag procurement in the 1920s appears rather disorganized. The main procurers had their own staff of collectors, but they often hired each other as subcontractors, as well as smaller actors mentioned earlier. Despite the introduction of free trade, the Soviet regulatory authorities represented by the VSNKh and the NKTorg attempted to regulate waste picking through directive methods. During the NEP, a peculiarity of the waste market was that both private and state-owned companies worked for the Soviet government and carried out its orders and instructions.

BATTLE FOR RAGS

The limited capacity of the Ukrainian rag market led the main producers to become competitors, resulting in fierce competition for the opportunity to purchase waste.

Although archival documents do not mention physical confrontations between rag-pickers, they contain numerous references to attempts to acquire rags through unfair business practices, especially non-compliance with the established prices for rags. In the 1920s, it was a common practice to regulate prices for raw materials, including waste, by concluding special agreements called conventions. In the Ukrainian SSR, convention bureaus were established on different levels, including one at the Raw Materials Department at the NKTorg. At the beginning of each season, the main actors concluded a convention that established prices for different types of waste, as well as conditions for their quality and logistics. If necessary, the number of additional waste collection points was determined. However, many waste-pickers violated the established prices periodically. Due to the shortage of rags and the need to fulfill the plans set by the Soviet authorities, collectors attempted to acquire rags by any means necessary. Consequently, organizations and grassroots rag-pickers raised rag prices on various pretexts, violating the terms of the convention. This caused hype and chaos in the market.

As an illustration, a complaint was lodged by Derzhtorg on June 26, 1928, against Rusavtorg, whose representative in the Sumy region raised the purchase price of rags by 40 kopeks under the guise of covering the cost of transportation to the railway station. This led to a chaotic situation on the market and resulted in rag pickers refusing to hand over their rags to Derzhtorg unless it added 40 kopecks to the initial price (TsDAVO Fond 423 File 318: 164). For its part, in the Berdychiv district, Derzhtorg granted patents to its contractors, covered the costs of renting warehouses, and offered higher commissions of 15–17 kopeks per pood (DAKO Fond 2993 File 54122). Such incidents were prevalent, and the violation of conventional prices was not limited to the collection of rags alone but extended to other waste categories such as bones, metals, paper, and so on.

The provision of advances to grassroots collectors for the purchase of waste from the population was a distinctive feature of the collection of rags and bones in the 1920s. The amount of the advance determined the quantity of waste that collectors could acquire and consequently influenced the commission they could earn. This practice had been established even during the Russian Empire era (Bakhtiyarov 1890). Transactions with the population were conducted exclusively in cash, while legal entities were paid in non-cash form. Procurement companies often attempted to recruit employees from their competitors by offering higher advances. However, some unscrupulous workers who had received an advance from one company would start working for another, resulting in losses for the institution that had provided the funds. For example, in Glukhiv, Konotop, and other districts, 40% of collectors received advances from two

or three organizations, allowing them to choose which one to deliver the waste to. The other collectors did not deliver the rags at all or delivered them in unsorted, dirty, or wet form (TsDAVO Fond 71 File 182: 397).

In 1926, when Ukrutilsbir began to develop a network of private collectors, it encountered ‘an unesirable trend among all waste collectors was observed to be offering large advances and paying considerably more than the established price in order to attract more collectors’. It was justified by ‘allegedly better supply, better quality, while the quality of waste was the same for all’ (DAKO Fond 2993 File 42: 149). In the same year, the head of the Ukrutilsbir office in Bila Tserkva district wrote: ‘The condition of the market is deemed to be unfavourable. The issuance of advances by some procurers has led to an atmosphere of excitement and competition in the market. The procurers are not adhering to the prices that have been agreed upon by us. There are violations...’ (DAKO Fond 2993 File 42: 147).

In April of 1928, the leading rag pickers, namely Derzhtorg, Ukpapirtrest, and Ukrutilsbir, tried to institute a maximum advance limit of 50 RUB per rag collector. However, experienced rag-pickers who were contracted under special agreements were permitted to receive up to 100 RUB in advance. It was also decided that there would be an exchange of lists containing the names of collectors who had received advances. However, these conditions were often not met.

These and many other facts indicate that adequate funding for waste collection was the key to meeting the plans. State procurers had an advantage over private companies like Ukrutilsbir since they had state-guaranteed funding. In contrast, private companies were forced to seek funding on their own, often through expensive and limited bank loans. The lack of working capital sometimes prevented Ukrutilsbir from meeting its obligations. For instance, in the first quarter of 1930, the company could only fulfill 81.5% of its waste collection plan, which resulted in competitors questioning the company’s reliability as a waste supplier.

One incentive for grassroots rag pickers to collect waste was the provision of fodder for their horses, which were commonly used for waste removal in the 1920s in the USSR. Companies attempted to provide fodder for their pickers, but its purchase required permission from the NKTorg. In a letter to the Grain and Raw Materials Department of NKTorg in the summer of 1928, the Chairman of the Board of Ukrutilsbir, Myron Kolchynskiy, expressed concern that seasonal supplies of waste raw materials suffered significant damage due to the lack of fodder for horses. This resulted in collectors leaving work and returning home, disrupting the procurement process. He requested an allocation of 4.9 tons of oat to Dnipropetrovsk district, 4.9 tons to Zaporizhzhia, 3.2 tons to Zinoviev district, and 3.2 tons to Kherson district (TsDAVO Fond 423 File 318: 106).

In 1924, Ukrutilsbir attempted to contest the contract between Ukrpapirtrust and the Kyiv Municipal Utilities in court, as part of their efforts to compete with other procurement companies. For example, in 1924, Ukrutilsbir tried to challenge in court Ukrpapirtrust' contract with the Kyiv Municipal Utilities (Komunal'ne hospodarstvo Kyieva) to collect waste, primarily rags and bones, from four city landfills. When this failed, Ukrutilsbir waited until the end of competitor's contract and then renegotiated the contract with the communal landfills, increasing the rent by 40% (DAKO Fond 2993 File 74: 21–23). In July 1929, the Rusavstorg complained that some procurers were forcing the collectors to hand over the canvas (the most valuable rags) to them and the defective and substandard rags to the Rusavstorg (TsDAVO Fond 71 File 182: 111). One can see, the methods of the competition during NEP were diverse – price dumping, corruption, legal action, and the creation of a bonus system. Many of them continue to be used by different companies today.

SOVIET PEDDLERS AND ENCOURAGEMENT OF THE POPULATION TO HAND OVER RAGS

The limited amount of rags led to the spread of motivation models not only among collectors but also among the population. The main instrument used for motivating the population to hand over waste was the exchange of waste for haberdashery started in 1928. However, this practice was not a unique invention of Soviet rag collectors; it was popular in the 19th century both in the United States (Diner 2015) and in Europe (Fontaine & Whittaker 1996). Retail peddlers were commonly involved in these operations, known as *'korabeyniki'* in the Russian Empire. As Bakhtiyarov wrote in 1890, 'A ragman, having collected in a box crosses, beads, silk ribbons for hair, hand mirrors, fragrant Kazan soap and other haberdashery goods, sets off to travel through the countryside' (Bakhtiyarov 1890: 23). In the 1920s, rag-picking in the Soviet Union, particularly in Ukraine, followed a similar process.

In urban areas, the methods employed for waste collection differed from those in rural areas. Both state-owned companies and private collectors picked up rags from municipal and departmental landfills, abandoned lots, residential complexes, and other sites of waste accumulation. However, the practice of exchanging waste for haberdashery goods was not observed in cities, which may be attributed to the greater opportunities for rag collection. In cities, waste collection points have been established where residents can independently deposit their waste. As of 1930, Ukrutilsbir had 10 collection points and several warehouses for storing waste in Kyiv.

The reasons for disposing of old items are difficult to determine, particularly given the high cost of new

goods and the inability to purchase them. It could be attributed to financial or ideological reasons. However, it seems plausible that the desire to acquire scarce haberdashery goods – such as notebooks, writing paper, envelopes, threads, needles (for hand and sewing machines), combs, cheap sweets, shoelaces, women's stockings, dishes, among others – was the most realistic reason, particularly in rural areas. These goods could be obtained by exchanging them for haberdashery or consumer goods offered by waste collectors. State procurement companies had an advantage in purchasing haberdashery products for this purpose.

The extent of the population's encouragement to collect rags can be inferred from certain figures. During a meeting organized by NKTorg on July 4, 1930, it was decided to allocate a special bonus fund in the amount of no less than 300,000 RUB for the fourth quarter, in addition to the handkerchiefs worth 50,000 RUB. The allocation of haberdashery goods was planned to be proportionate to the main procurers' share of total procurement. The task of executing this plan was assigned to Vukoospilka, a subcontractor that united cooperative organizations. However, the association was driven by its own interests and rewarded its employees first, leading to unequal working conditions in the market and additional competition between grassroots rag-pickers. As a result, the instrument was abolished in 1929 due to its ineffectiveness. This situation exemplified the unfair competition that occurred in the Ukrainian rag market.

ATTEMPTS BY SOVIET AUTHORITIES TO REGULATE COMPETITION

One of the contributing factors to the destabilization of the waste market was the imposition of excessive plans by governing bodies, without taking into account the market's capacity. Internal correspondence from Ukrutilsbir noted periodic challenges in implementing plans, particularly with respect to rag-picking. For instance, in 1928, NKTorg instructed Rusavstorg and Ukrutilsbir to purchase an additional 700 t of rags, most of which were supposed to be canvas. However, this mandate did not consider the limited availability of canvas rags in Ukraine, which comprised only 40% of the total amount of rags. Both companies stated that they could not guarantee the successful completion of the increased plan (TsDAVO Fond 423 File 317: 172).

NKTorg endeavored to regulate the market and minimize competition among the primary procurers. Even the responsible individuals acknowledged the detrimental effects of competition for rags on meeting the plans established by the Soviet authorities. To regulate the situation on the market and reduce competition between the main procurers, the NKTorg implemented

two tools. The first tool was the conventional agreements, which set limit prices for waste based on the directive prices established by the Supreme Council of the People's Economy of the Ukrainian SSR – VRNH (Vyshcha Rada Narodnoho Hospodarstva Ukrayins'koyi RSR). All disputable issues were to be resolved at meetings of the Convention Bureaus or Central Bureaus of the Convention. However, this mechanism lacked administrative or criminal liability for violation of the convention, thereby reducing its effectiveness. Additionally, this system contradicted the elements of the free market that existed during the NEP and exacerbated the contradiction between the cost of purchasing rags from the population and the cost of new items in stores.

A second tool involved the zoning of territories where waste pickers were allowed to work. Although the main waste procurers were present in many regions, they aimed to expand their network of waste collection points. As of 1929, Derzhtorg had 250 waste collection points, Rusavtorg had 80, and Ukrutilsbir had 85 (DAKO Fond 2993 File 71: 36). The authorization to establish new collection points was granted by NKTorg or its local branches responsible for internal trade – *Vnutorgs*. While this measure was more flexible, it was not entirely effective. In the 1920s, it appears that NKTorg could not definitively determine whether zoning was an effective incentive mechanism, often leading to the manual regulation of the market.

Zoning of territories and their allocation to collectors could demotivate some of them, especially in areas where potential reserves of rags were scarce. On the other hand, the lack of zoning encouraged procurers to cover wide territories and intensify their work, which increased competition and prices for waste. This caused losses to companies and the state. Thus, in 1928, NKTorg refused zoning because of the risk of not fulfilling the plan due to the short season of rag picking resulting from the late spring (DAKO Fond 2993 File 70: 9).

During meetings of the raw material section established by NKTorg, issues related to the implementation of plans were periodically raised. Ukrpapirtrest frequently filed complaints with higher authorities alleging that rag procurers were failing to meet their contractual obligations, which in turn disrupted paper production plans. Nonetheless, the reason of this was attributed not to the insufficient availability of rags in the Ukrainian market but rather to the mismanagement of waste pickers.

NKTorg and its local branches, known as *Okrorgs*, frequently held discussions regarding the reduction of the number of rag procurers due to the challenges faced in the waste market (DAKO Fond 2993 File 54: 117, 122). However, the reasons for these debates were not solely driven by the objective need for improving waste management practices but also involved subjective

factors such as protectionism and lobbying for the interests of specific companies. This led to a 'rag market bacchanalia' that had a negative impact on the state institutions and economy of the republic (DAKO Fond 2993 File 54: 118). This demonstrates the example with Rusavstirg which in 1927 experienced a situation where Derzhtorg provided special documents to remove its agents from work in Bila Tserkva, Fastiv, and Pavoloch, and to take away the rags they had collected (TsDAVO Fond 423 File 318: 212). The reasons for this decision are unclear, but it is possible that corrupt relationships existed between officials of Derzhtorg and local authorities, which may have influenced the decision-making process.

WASTE COLLECTING COMPANIES

In the late 1920s, new methods of waste collection began to be practiced in Ukraine, as well as in other Soviet republics, driven by the onset of industrialization and the growing demand for raw materials for Soviet enterprises. The limited success of waste procurers during the NEP period highlighted the need for broader public involvement in this activity.

The large-scale waste collection campaigns during the Thaw and Stagnation period in the Soviet Union and other Eastern Bloc countries have been extensively documented in contemporary literature. As noted by Zsuzsa Gille, these campaigns served as instruments of discipline, mobilization, and education for young people (Gille 2007). However, the first waste collection companies, which emerged as a result of industrialization, have received limited scholarly attention. Meanwhile, the ideology and methodology for large-scale waste collection companies that involved the participation of the wider population were developed during this period.

It is of utmost importance to consider the peculiarity of media coverage of the early large-scale waste collection companies. For instance, an article published in the newspaper *Globus* on February 2, 1930, reported that the collection of 1800 RUB allowed for the purchase of one tractor (About junk 1930:14). One of the slogans of waste collection company of winter 1930 was 'Let's make tractors out of rags' (Komsomolets of Ukraine 9: 4). In our view, such 'monetization' of waste collection through the use of simple and accessible examples was intended to foster an understanding among Soviet citizens of the significance of these activities and to develop an appropriate conscience.

It should also be emphasized that the educational function of these companies went beyond just involving schoolchildren, students of labor schools, and Komsomol members. Given the lack of experienced workers, the development of professional and organizational

competencies among participants was equally important. These companies aimed to 'provide new personnel for the organizers of the collection of scrap' (Komsomolets of Ukraine 9: 4).

In the autumn of 1928, VSNKh of the Ukrainian SSR submitted a proposal to the Central Committee of Komsomol of Ukraine to involve young people in the improvement of industrial territories (DAKO Fond 2993 File 70: 433). The impact of trends observed in the RSFSR is apparent, as various documents and newspaper articles referenced examples from the Moscow Komsomol. This marked the emergence of local and regional waste collection companies in Ukraine, which varied in terms of their duration and specificity. Frequently, one company would outgrow another in terms of size and scope.

On January 30, 1930, a first waste collection campaign was launched in Kyiv involving major rag collectors, Derzhtorg and Ukrutulsbir. From this point on, they became the norm in operation. During the period of *mesyachnik*, which took place from March 21 to April 21, Ukrutulsbir was able to collect 1701 tons of waste, consisting of 621 tons of metals, 195 tons of rags, and 885 tons of other waste (DAKO Fond 2993 File 93: 4).

These waste collection companies mobilized not only the population but also waste collectors themselves, who initiated different socialist competitions. Despite some controversial methods, such as enlisting pioneers to collect trash from cemeteries, these efforts were in line with the utilitarian approach to resources that were promoted in the Soviet Union. The human resources required to conduct such campaigns were supplied by the labor exchange. In the following years, such campaigns were improved and became a norm of Soviet citizens' life deeply rooted in the practice of waste collection in the USSR. They became an integral part of the economic life of the USSR and continued to exist and develop until the end of the Soviet era.

RATIONALIZATION OF WASTE PROCUREMENT SYSTEM

During the late 1920s, the competition for waste, especially for rags, increased, and the failure to meet collection targets prompted discussions on rationalizing the collection network. It is evident that the beginning of industrialization, which significantly increased the demand for raw materials for Soviet enterprises and for currency to purchase various equipment and machinery abroad, contributed to this. In 1928, there was a proposal to exchange rags between Derzhtorg and Ukrutulsbir, where rags for domestic enterprises would be handed over to Ukrutulsbir, and rags for export would be given to Derzhtorg (DAKO Fond 4889 File 74: 373). However, the

economic efficiency of this proposal was questionable, as it would likely result in additional logistics costs. The majority of discussions during this time were centered on limiting the number of procurers involved in waste collection, merging procurement apparatus and warehouses, or establishing a new institution to oversee waste collection activities centrally.

By the end of the 1920s, Derzhtorg emerged as the leading waste collection company compared to Ukrutulsbir and Rusavstorg. As a state-owned enterprise, Derzhtorg was able to establish the most extensive network of waste collection services in Ukraine. Moreover, it had access to abundant financial resources, haberdashery goods, and horse fodder, which incentivized waste pickers and the general public to collaborate with the company. Derzhtorg also utilized administrative resources, citing the necessity to ensure exports, to advance its interests. Ukrutulsbir and Rusavstorg lacked the advantages that Derzhtorg had which hindered their ability to fulfill the plans established by Soviet regulatory bodies and undermined their authority and viability. In addition, the small size of the rag market made the presence of three procurement companies unnecessary. As a result, Rusavstorg was closed in 1929, and Ukrutulsbir met the same fate in the autumn of 1930, with their collection networks transferred to Derzhtorg.

This occurred against the backdrop of the implementation of the New Economic Policy and the transition of the USSR to a planned economy. It was initially developed as a system aimed at comprehensive resource mobilization for accelerated industrialization and the displacement of private elements (kulaks, NEPmen, concessionaires, artisans).

Until 1928, during NEP, the USSR pursued a relatively liberal policy. While agriculture, retail trade, services, food, and light industry were mostly in private hands, the state-maintained control over heavy industry, transportation, banks, wholesale, and international trade. State enterprises competed with each other, and the role of the Soviet State Planning Committee (Gosplan) was limited to forecasts that determined the directions and scale of state investments.

However, the pace of economic recovery did not allow for catching up with and surpassing the industrialization of developed countries in a short period. The agrarian-industrial economy of the USSR, its dependent position in the global division of labor (export of agricultural products and raw materials and dependence on the import of machinery and equipment), the hostile environment of capitalist countries, the mismatch between the development of productive forces and the goals of industrialization, and other factors contributed to the introduction of a planned model of Soviet economic development in the late 1920s (Kurnosov 2011: 11). This began with the implementation of the first five-year

plan (1928–1932). In the field of waste management, this entailed the creation of a new management model based on the principle of centralization. Although directive methods were widely used in waste collection in the 1920s, given the decentralization of this activity, they proved to be insufficient.

In 1930, a new waste collection company named Ukrutil was established, and in 1932, the all-Union company Soyuzutil was established. The Ukrainian branch of Soyuzutil was later merged with Ukrutil in 1936. This marked the beginning of a new stage in the development of waste recycling policy in the early Soviet Union.

CONCLUSIONS

The early Soviet regime of waste management, which we associate with the period of the 1920s–1930s, marked the beginning of large-scale waste recycling programs in the USSR and its republics, including Ukraine. Although environmental considerations were not yet the driving force, these programs played a decisive role in the further development of waste recycling practices in the Soviet Union. Like in many other countries, these programs aimed at expanding the raw material base of industry and increasing the economic potential of the Soviet regime. At this stage, the strategic importance of waste, particularly rags, as additional raw material for the Soviet economy and exports was recognized, and the corresponding infrastructure and specialists were prepared.

The first stage of waste management in the early Soviet period, which is examined in this article and coincided with the NEP period and the beginning of industrialization, is characterized by several features. Firstly, Soviet authorities tried to find the most effective model for collecting waste for its secondary use. Despite the decentralization of management in many areas of enterprise activity during this period, directive management methods were widely used in the waste market, which can be explained by the strategic importance of waste as raw material for Soviet enterprises.

Secondly, all waste procurers, regardless of ownership form, had to fulfill orders for the Soviet industry, and the VRNH and NKTorg actively intervened in their ongoing activities, dictating plans and prices. Price scissors between the cost of waste, in particular rags, and the cost of textile products in stores contributed to the formation of periodic crises in the procurement of waste and the fulfillment of regulatory bodies' plans. This led to unhealthy competition and chaos in the market and contributed to the transition to a centralized waste collection system in the early 1930s. We argue that the closure of private waste procurement companies was

inevitable and became a consequence of the overall Soviet economic policy of centralization and centralized planning.

The Ukrainian case not only demonstrates the significance of rags for the Soviet economy but also highlights the regional specificity of their collection for recycling. It informs us that in the 1920s, amidst limited resources of cellulose and wood, rags emerged as the primary raw material for the development of the Ukrainian paper industry. The utilization of rags should be regarded as an endeavor by the authorities to expand the resource base by attracting secondary resources.

COMPETING INTERESTS

The author has no competing interests to declare.

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TO CITE THIS ARTICLE:

Perga, T. 2023. Waste for the Soviet Economy: Recycling of Rags in Ukraine in the 1920s. *Worldwide Waste: Journal of Interdisciplinary Studies*, 6(1): 4, 1–15. DOI: <https://doi.org/10.5334/wwwj.97>

Submitted: 11 January 2023

Accepted: 18 July 2023

Published: 07 September 2023

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Worldwide Waste: Journal of Interdisciplinary Studies is a peer-reviewed open access journal published by Ubiquity Press.

