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RESOURCE-ORIENTED MANAGEMENT OF SECOND-HAND TEXTILES FROM THE PUBLIC COLLECTION

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Textile consumption is the fourth largest source of negative environmental and climate impacts after food production, housing and mobility in the European Union (EU). In legal terms, important framework conditions have already been created with the amendment of the EU Waste Framework Directive in 2018, which have been transferred to German law. For example, the Circular Economy Act amended in October 2020 stipulates that from January 1st, 2025 there will be an obligation to separate collection of used textiles for public waste disposal authorities. How exactly the practical implementation of the collection and sorting should look like, which is currently being carried out primarily by charitable institutions and recycling companies, is unclear. A research and solution algorithm must be developed for this. While international attention is often focused on the main producers of textiles, such as Bangladesh, sustainable solutions for dealing with used textiles in Europe are still vacant. Across Europe, 11 kg of used textiles per person are disposed of every year (European Commission, 2022, p. 1). Accordingly, around 23,200 tons of used textiles accumulate in Thuringia every year. In the period from 2000 to 2015, global textile production almost doubled. A further increase of around 63% is expected by 2030, so that the consumption of textiles and shoes will increase from the current 62 million tons to 102 million tons (European Commission, 2022). If the increase continues at the same rate until 2050, the textile industry would claim more than 25% of the CO2 budget to meet the global 2°C target (Ellen MacArthur Foundation, 2017). Globally, the clothing sector emits 3.3 billion tons of greenhouse gases per year. That's more than all international flights and shipping in a year combined. The annual global cost to consumers of discarded clothing is estimated at $460 billion (Ellen MacArthur Foundation, 2017). Global recycling companies operate in the used textiles market, their business model being based on the generation of proceeds from the sale of clothes that can still be worn. According to TEXAID Apolda, which operates the second largest sorting plant in Germany for used textiles at the site, the entire collection chain and logistics of the used textiles is financed through the resale of the most valuable part of the "clothes donation" (approx. 5%). The recycling of old textiles, e.g. for the production of cleaning rags or felt, only plays a subordinate role. Extensive proportions of used textiles are exported to non-EU countries and, in addition to being resold with unknown whereabouts, large parts of them are dumped or burned there. A study by Cobbing, Daaji et al. on behalf of Greenpeace (2022) speaks of 45 - 60% export and at least 30 - 40% non-sellable portion, i.e. disposal as waste in the environment. According to GIZ, Germany is the second largest exporter of used textiles in the world after the USA, accounting for 12% of global exports (Hemkhaus et al., 2019).

Based on the insufficient recycling of accumulating material, it must be possible to convert the previously linear product and disposal routes in the textile industry into a closed material cycle. For this purpose, conceptual and technical options for recycling in the textile sector must be identified, evaluated and proposals for institutionalization in Thuringia developed.