

## Title

### **Urban-Rural Material Cycles (WP3)**

## Summary

Interactions between rural and urban material flows are little understood and can be characterised as disrupted. At the same time, a transition towards a Circular Economy (CE) requires a holistic view on production and consumption systems along the value chain and lifecycle of products at the local scale.

“WP 3: Urban-Rural Material Cycles” aims at understanding and supporting the management of material flows in the context of spatial human-environmental interactions and urban-rural linkages. The region Huangyan-Taizhou, as part of the Chinese ‘prefectural-level city’ Taizhou, will be examined as an exemplary case study. The region is known for its extended and traditionally strong plastic industry. Its hinterland, however, is dominated by agro-food systems watered by the Changtan reservoir. Metals play a crucial role in the partially informal metal recycling sector with its well-established access to the international metal market, as well as in the expansive building and construction sector. The flows of these three materials are included in the scope of WP3’s investigation.

The first step for WP3 is an actor analysis, which allows the identification of relevant stakeholders and the evaluation of their importance towards the current management of material flows. Following this is the acquisition of preliminary data based on both bottom-up data provision, such as interviews and field measurements, and top-down data provision, such as national statistics and yearbooks, and local statistics. The gathered information allows for the reconciliation of data and the development of a qualitative material flow analysis (MFA). The qualitative MFA will enable the identification of the most relevant, as well as disruptive, material flows and will reveal the first potential transition options towards a Circular Economy.

WP 3 aims to develop a quantitative MFA during the follow-up research after the URA definition phase. Therefore, throughout the definition phase, the development of data acquisition strategies is achieved. The definition phase deliverables of WP 3 are:

- 1) A list and a map of the involved actors and stakeholders in plastic, metal and food flows;
- 2) Sketched qualitative MFA model for plastic, metal and food flows;
- 3) Data sourcing strategies for quantitative MFA studies (follow-up research);
- 4) An outline of at least two sustainable pathways for urban-rural metabolism in the study region

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