Is the European waste management industry ready for bioplastic waste?



Background:

- Group 1: Biobased biodegradable (e.g. Starch-based); Group 2: Biobased non-biodegradable (e.g. bio-PET); Group 3: Fossil-based biodegradable (e.g. PBAT).
- Bioplastics are 1% share of the total plastic production.
- Group 2 bioplastics share 35.8%.
- Group 1 & 3 bioplastics share 64.2%. \bullet
- Total bioplastic market share envisaged **to increase** lacksquare

Research question:

Is the existing waste management infrastructure equipped to handle the bioplastic waste?

Methodology:

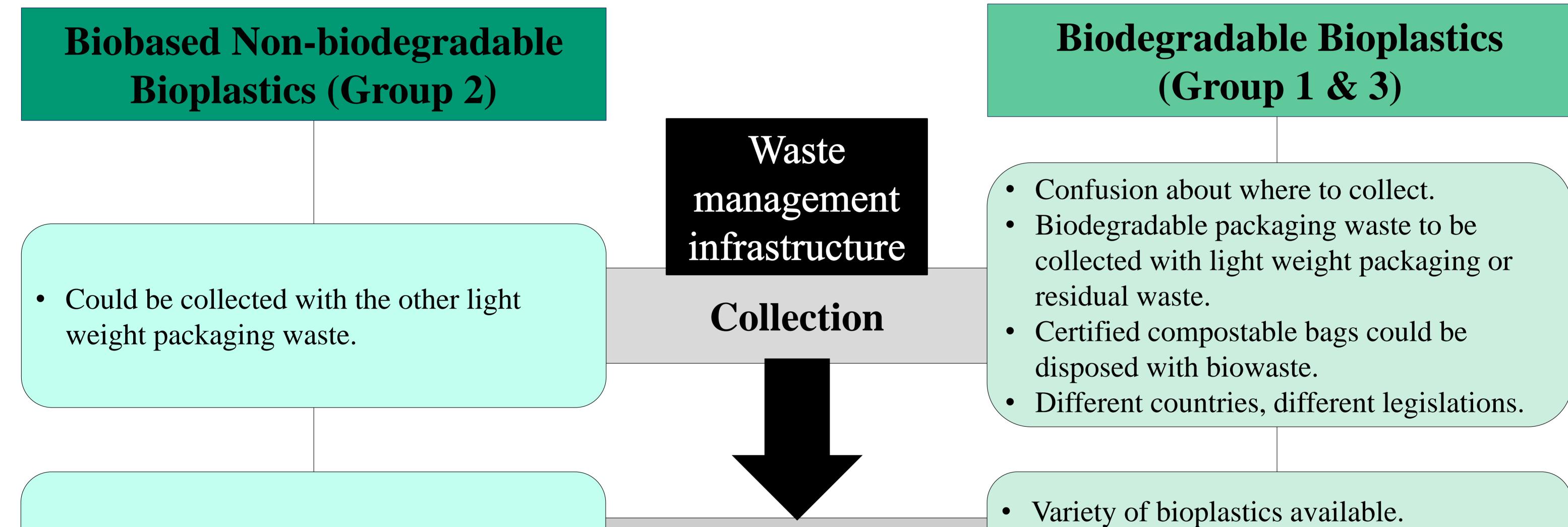
- Systematic literature review, using Google Scholar and ScienceDirect databases.
- 244 papers related to bioplastic waste management were referred.



dynamically in future.

Wide application area – **48% packaging**.

Review paper to be published in a peer-reviewed journal.



• Chemically and physically similar to conventional plastics - so, easily sorted.

Sorting

Recycling

- Ideally could be sorted out; however, lacksquaremachines need to be taught with the new materials.
- Act as contaminants for the conventional plastic recycling streams.
- Biodegradability major attraction; however, ulletdepends on the biowaste treatment facility acceptance & available infrastructure.
- So far, majorly incinerated.

Conclusion:

• Drop-in bioplastics.

• Could be recycled in the existing

conventional plastic infrastructure.

- Sustainability of bioplastics could only be accrued when they have a **proper waste management**.
- **Group 2** bioplastics could be effectively handled with the

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- conventional plastics' recycling scheme.
- Group 1 & 3 could be seen as contaminants for conventional plastic recyclates & biowaste.
- **Current** waste management infrastructure is **not equipped** to **handle recycling** of the biodegradable plastics influx, and should develop to meet the expected rise in bioplastic quantity.

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