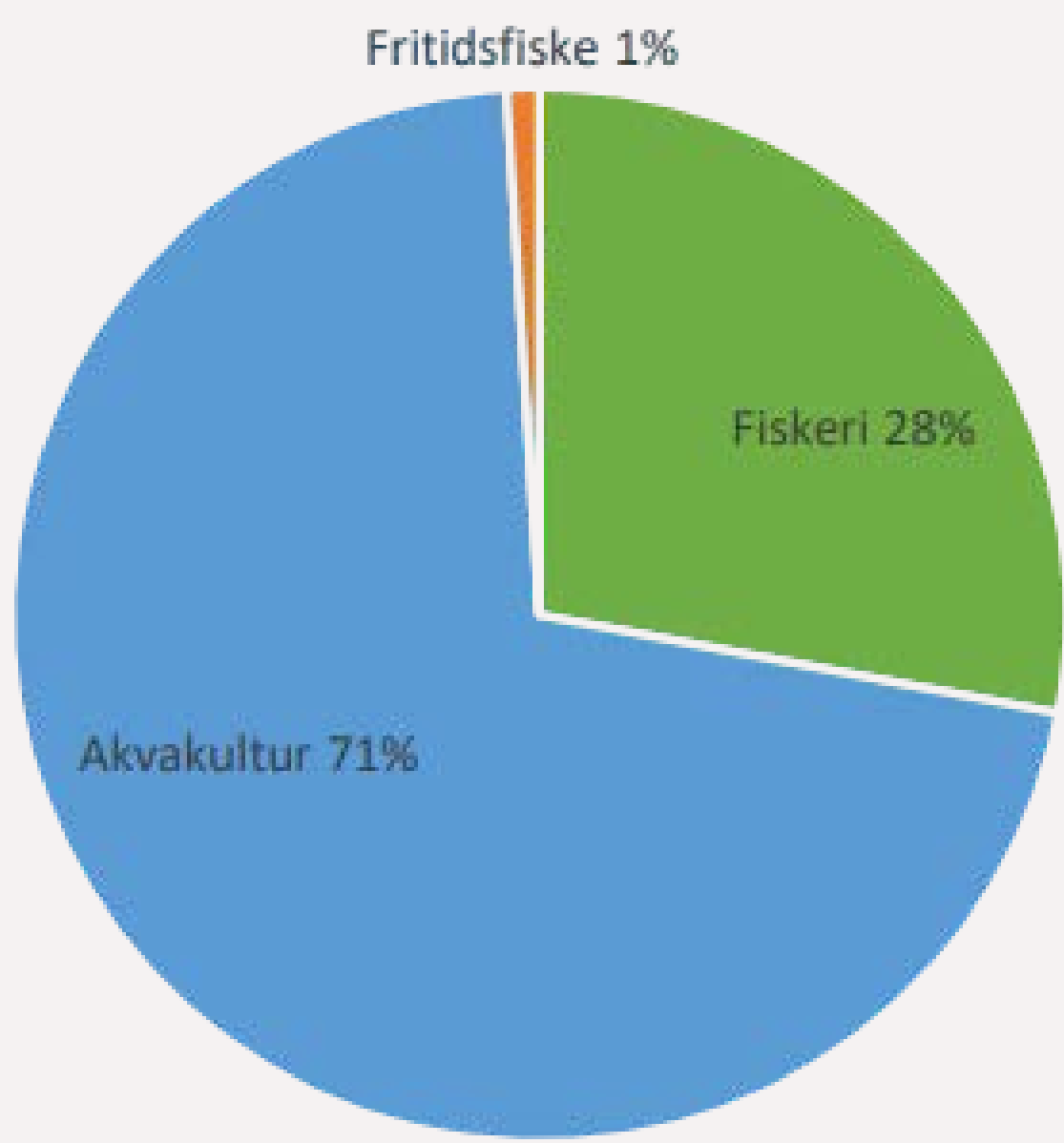


Plastic Waste Management in Aquaculture

1

Introduction

It is estimated that 22% out of 31 000 tonnes plastic waste is recycled every year, creating a very linear model (Mepex, 2023). Plastic waste has gained a lot of attention over the last decade because of its destructive nature in the wild, leaving a reduction necessary. This research aims to look at how the plastic waste is being handled at aquaculture facilities and how it could be improved. The pie chart below shows the estimated share of plastic-containing gear waste in Norway in 2023, from aquaculture (blue), fishery (green) and recreational fishing (orange) (Miljødirektoratet, 2024).



2

Methodology

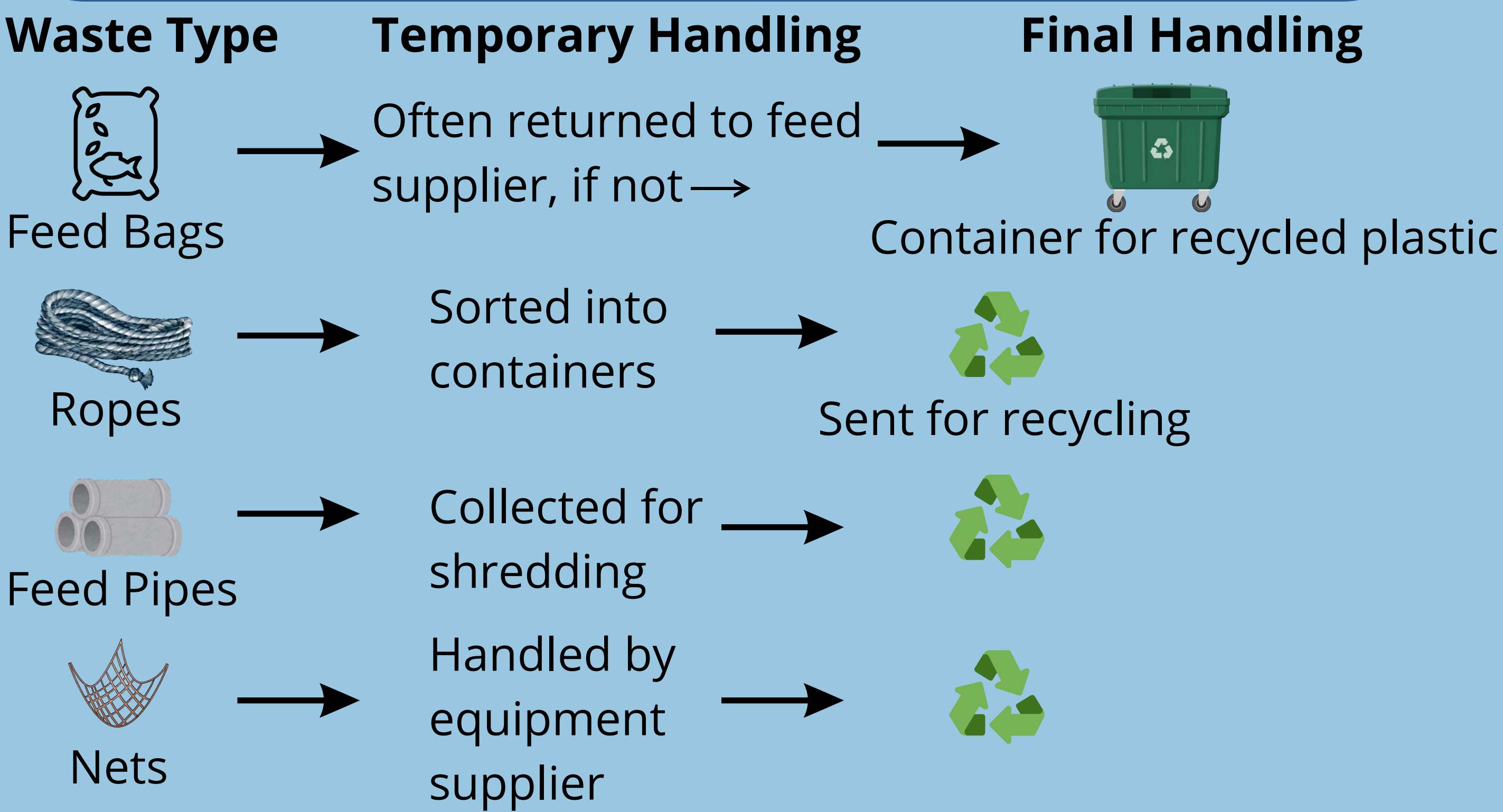
The main methods of choice consisted of:

- Field trips
- Literature review
- Questionnaire
- Interviews



3

Example of how plastic-based equipment is handled at one aquaculture facility



4

Research results

Below are some results from the conducted questionnaire and interviews, highlighting the lack of recyclability amongst a lot of aquaculture equipment:

| Equipment | Equipment taken in by each recycling company | | | |
|--------------------|--|-----------|-----------|-----------|
| | Company A | Company B | Company C | Company D |
| Mooring rings | | - | | - |
| Floatation rings | | | | |
| Floating walkways | | | | |
| Floating buoys | | - | | - |
| Ropes | | - | | - |
| Bottom ring | | | | |
| Nets | | - | | - |
| Feed hoses | | - | | - |
| Liceshirts | | - | | - |
| Lumpfish shelter | | - | | - |
| Poles for bird net | | - | | - |
| Bird net | | - | | - |
| Hamster wheel | | | | - |

Recyclable

Partially recyclable

Non-recyclable

Do not accept

5

Improving waste handling at aquaculture facilities

- More extensive documentation of waste practices in the aquaculture industry. This also makes it easier to apply standards, making every waste handling process more similar across facilities.
- Equipment and waste temporarily stored at aquaculture land bases must be managed in a way that prevents littering and pollution of the site and nearby shoreline.
- Minimize waste transport through local handling to reduce emissions and environmental impact.
- Increase focus on equipment repair, maintenance, and reuse to improve sustainability.
- Increase financial support on waste handling allowing for more time and effort to optimize processes.

6

Conclusion

Plastic waste in aquaculture remains a challenge, but it's not unfixable. This research shows that with targeted improvements in areas such as documentation, management and handling, it is possible for the industry to move towards a more circular practice.

