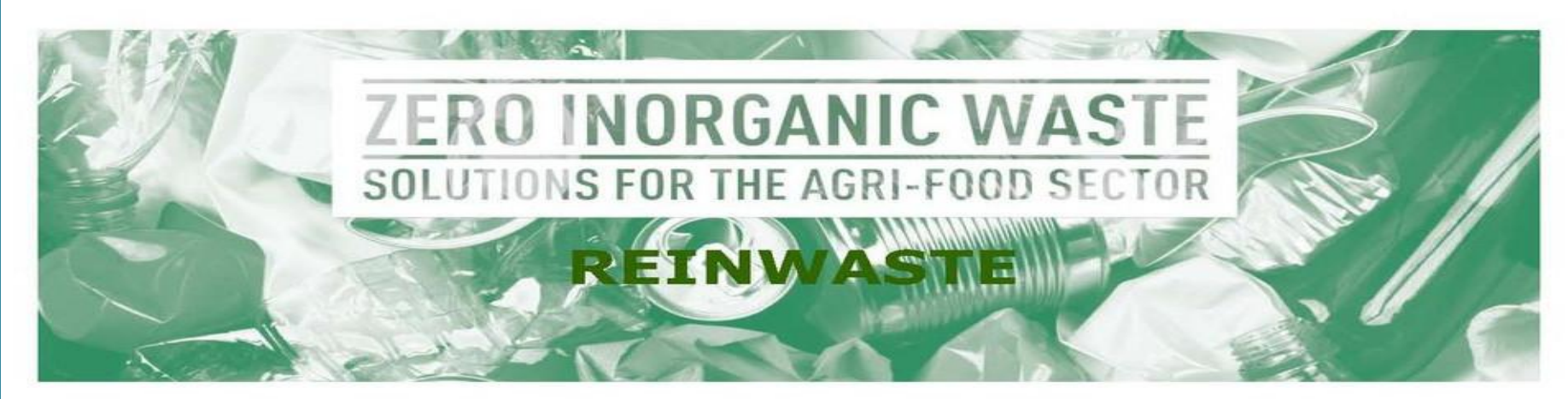


SUSTAINABLE MANAGEMENT OF INORGANIC WASTE IN HORTICULTURAL SECTOR:

NEW APPROACH FOR IMPLEMENTING A BIOECONOMY FARMING SYSTEM IN ALMERÍA (S. SPAIN)

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Introduction, objectives and method

REINWASTE (REmanufacture the food supply chain by testing INNovative solutions for zero inorganic WASTE) is an INTERREG-MED project which aim is to bring a concrete contribution to the reduction of inorganic waste, favouring the adoption of greener innovative concepts by agriculture&food industry, According to a initial analysis combining advanced tech-solutions (from EU R&D projects,R&I centres) with real companies’ requirements, it will test them within 3 value chains (IT_diary; ES_horticulture; FR_Meat). In this poster the first results obtained in relation to the protected horticulture are exposed.

Almería province is in the southeast of Spain, on the Mediterranean coast and concentrates 30.456 hectares of greenhouses, with a production of 3,286,385 tons of horticultural products in the 2016-2017 crop year, with an average of 10.79 kg/m².

Data gathered in this study is based on documentary review of empirical studies and reports. In addition to the above and based on expert knowledge and informal interviews performed in 2018, a typology is made, and the waste produced in the primary sector and some innovative practices to reduce these waste is performed.



Landscape of the main greenhouse cropping of Almería: The “Plastic See”

Main Results

Analysis of the Processing Steps

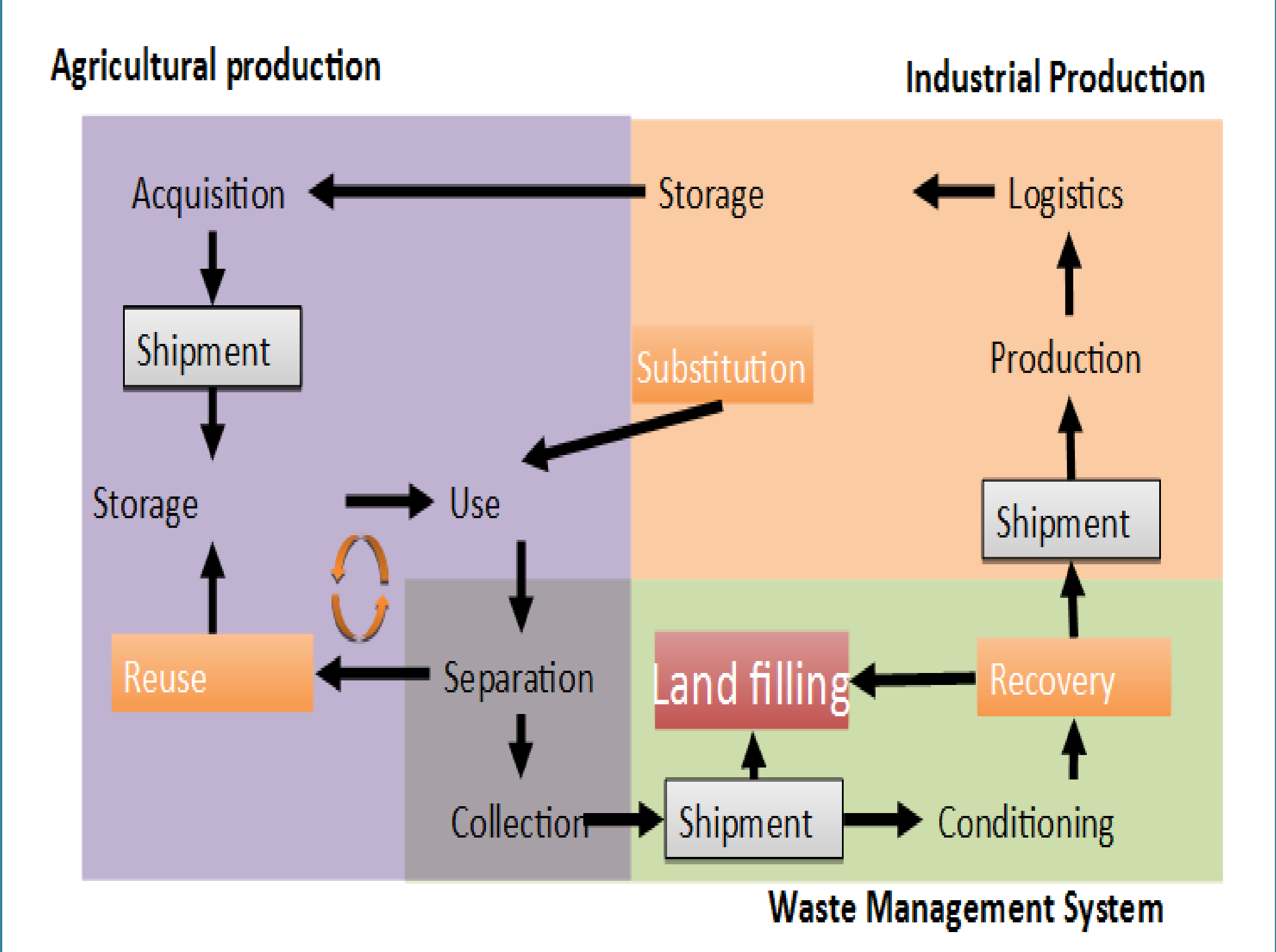
1.- Maintenance or renovation of agricultural infrastructures.
Structure of greenhouses; Irrigation systems; Replacement of covers; Maintenance of ventilation systems.

2.- Preventive plant health measures.
Physical barriers in the soil, chromotropic plates or pheromones.

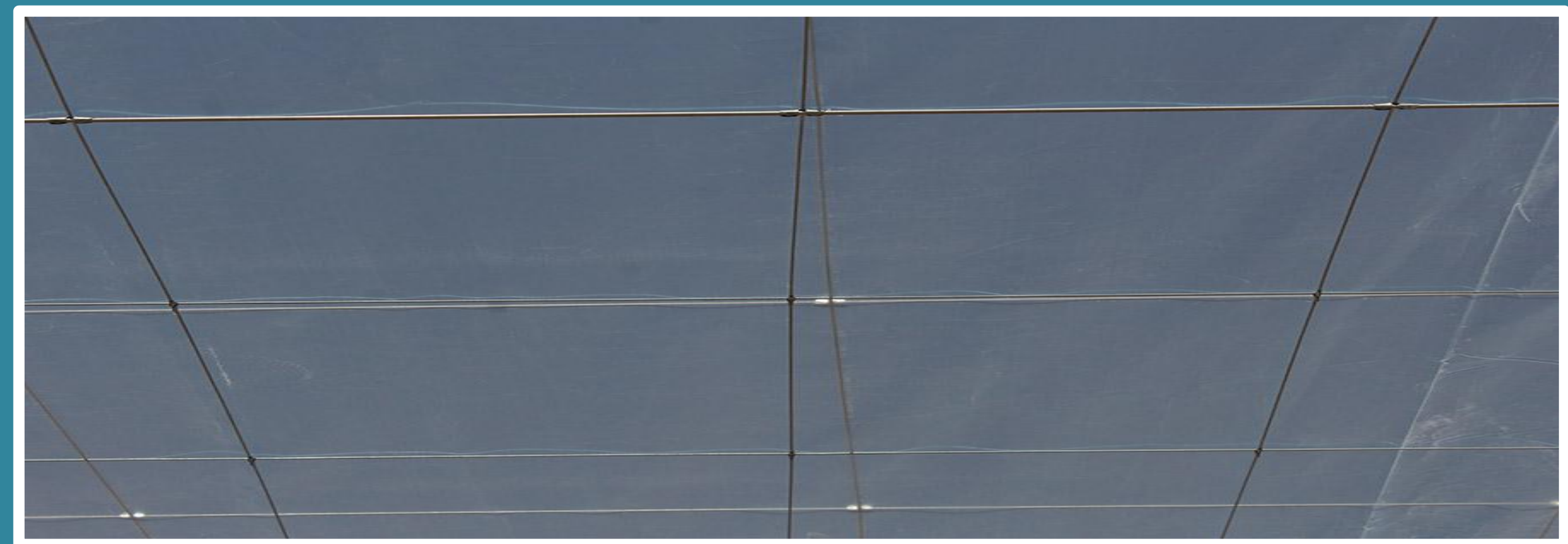
3.- Sowing or transplanting.
Plants are directly sowed in the soil or in specialised nurseries. Seedlings are transported in trays of seedbeds with plastic cases in cars (in occasions protected with a plastic film)

5.- Plant health treatments and fertilisation.
Inputs are bought in the inputs store and then stored according to the legislation in force in order to manage them in accordance with the SIGFITO indications derived from regulations. Some fertilizers supplying companies may not be included in the SIGFITO management system.

6.- Pruning, defoliation and Fruit thinning.
Pruning and defoliation processes need to take especial prophylaxis measures such as the use of gloves and cutting tools



4.- Biological control.
Auxiliary insects are transported to inputs warehouses or farms in plastic packagings kept inside refrigerated porexpan boxes.



Detail of the roof of a greenhouse Almeria type: plastic between wires

7.- Harvesting.
This process produces a great flow of plastic and wood material

8.- Crop removal
Biodegradable Raffia; Reused plastic raffia; Plastic Raffia.

9.- Plant training systems. These systems use plastic and metallic by-products such as: raffia, clips, staples, hooks and complex training systems. Exceptionally, they are separated when crops are removed.

10.- Soil disinfection:
Plastics are needed for solarisation and chemical disinfection. It is difficult to manage plastics as they usually contain dust and sand. Disinfectants packings are included in the SIGFITO system.

Innovative practices to reduce inorganic waste

- Natural Compostable String
- Cellulose-rayon biodegradable string
- Synthetic second generation oil
- White compostable clip
- Long lasting plastic cover

- Biodegradable string of jute fibre
- Natural Compostable Chromotropic Trap
- Black biodegradable mulching plastic
- Biodegradable and compostable clips
- Fine plastic rolls for flowpack



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