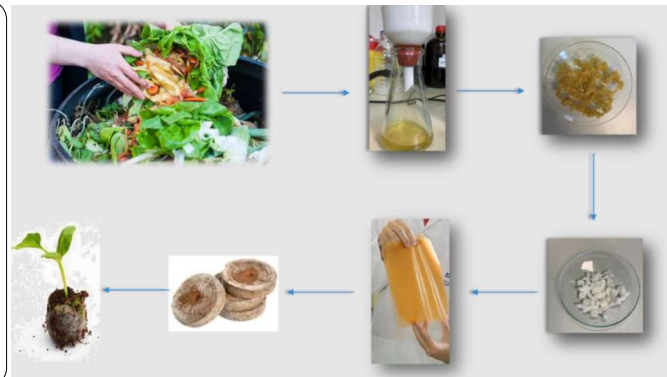


ECODESIGN OF A BIODEGRADABLE BIO-BASED PLUG SUPPORT IN A CIRCULAR ECONOMY PERSPECTIVE: THE BBPLUG PROJECT

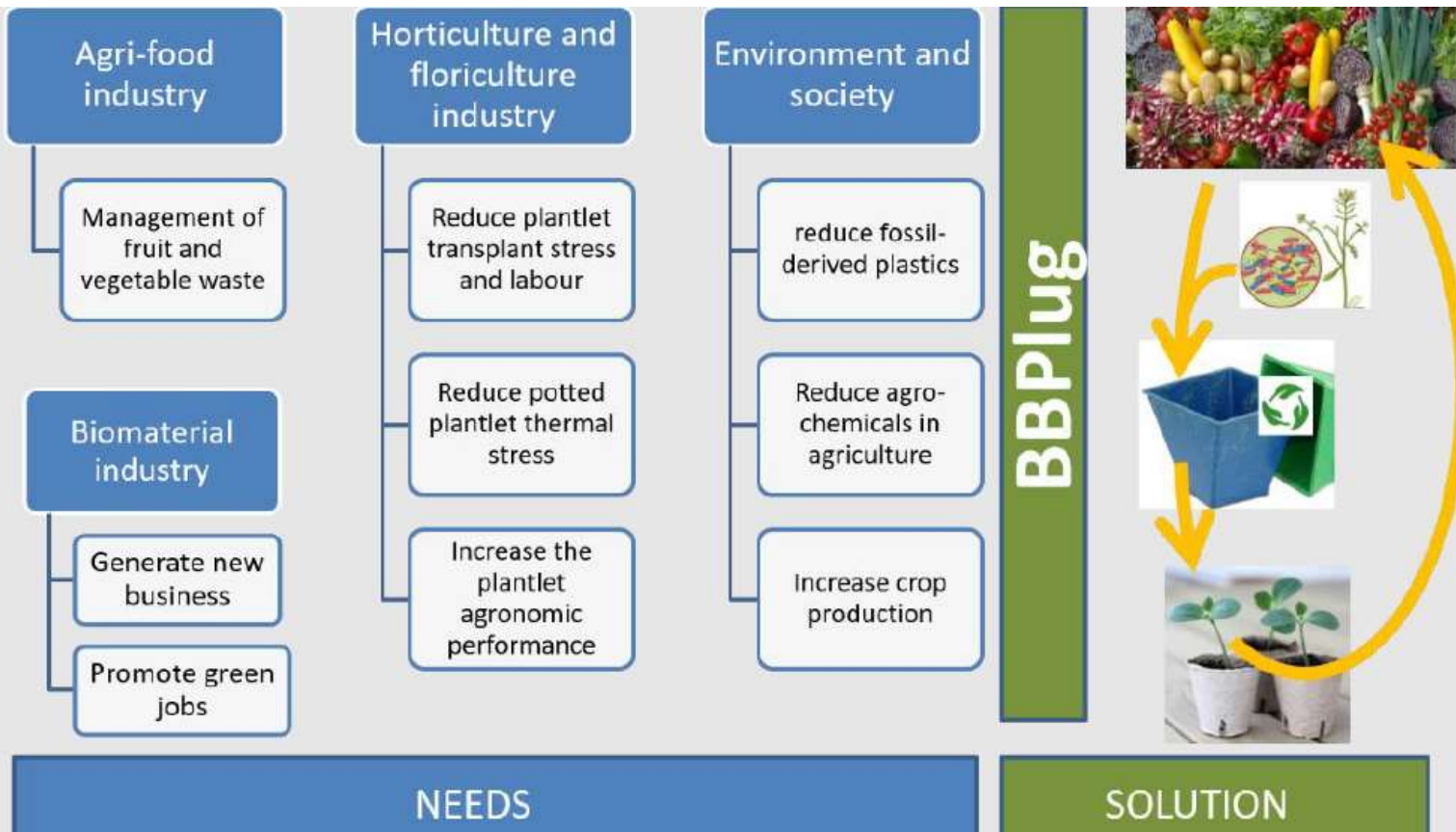
Chiara Latella, Michele Zoli, Michele Costantini, Jacopo Bacenetti*

¹ Department of Environmental Science and Policy, Università degli Studi di Milano

INTRODUCTION The obtainment of biodegradable plugs would be strategic for the horticulture sector, considering that the current plugs are largely made of fossil-derived plastic polymers (e.g., polystyrene, polyethylene, and polypropylene) thus representing a disposal cost. Besides fossil resource-independence, further significant advantages of bio-based materials particularly derived from food waste are that they do not compete for resources and land with food production and do not foresee raw material costs.



The project BBPlug. The use of plastic materials in the horticultural sector has a non-negligible environmental effect both considering the energy used for plastic manufacturing and the end-of-life of the plastic containers. The same occurs for bioplastics whose environmental results is controversial, mainly due to the waste management operations. In this context, the substitution of plastic pots with bio-based 100% biodegradable materials involves environmental benefits related to the reduction of plastic consumption and the elimination of disposal. Furthermore, the development and adoption of nature-based solutions to increase farm productivity in an environmentally sustainable way is of compelling interest. In this framework, innovative bio-based materials embedding beneficial microorganisms isolated and selected from the plant microbiome, plant waste-derived biostimulants and thermal adsorbing particles would be extremely useful, having the potential to improve plantlet growth and agronomic performance since the nursery stage and limiting physiological stresses related to transplant. In this context, the **BBPlug** project takes place **“Circular Agri-Food systems: development of biodegradable and biostimulant plant multiplication plugs from fruit and vegetable wastes”**



UNIVERSITÀ
DEGLI STUDI
DI MILANO



For more info:

<https://bbplug.unimi.it/>
Jacopo.bacenetti@unimi.it