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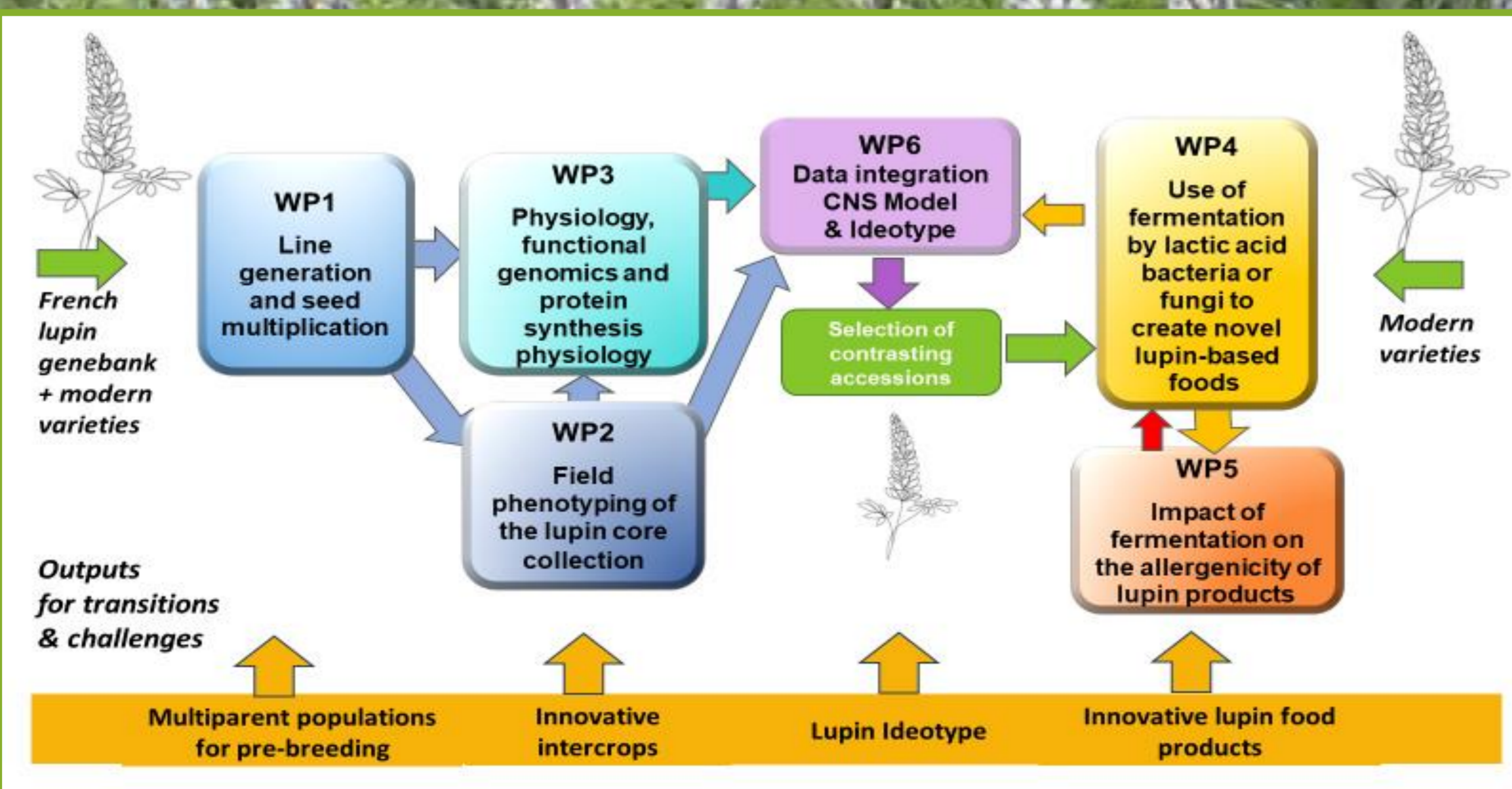
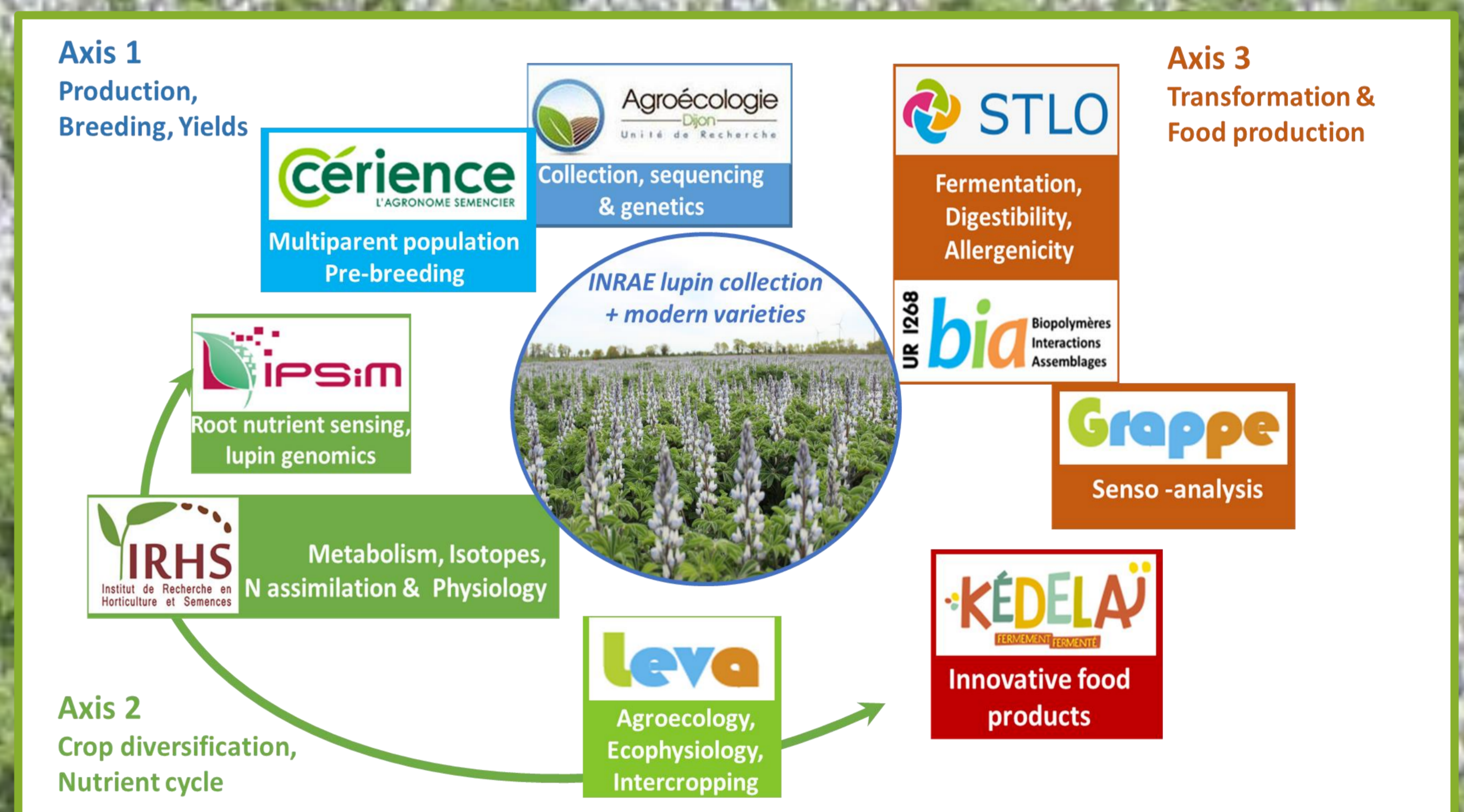
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Lupin, a legume such as peas, beans, lentils, peanuts and soybean, has a seed rich in proteins, fiber, essential amino acids, microelements and Omega 3s, making it a valuable component of a healthy and balanced diet.

Among legumes, lupins are close to soybean in terms of protein content, but they are richer in fiber. Their agronomic and environmental benefits are of great interest. Lupins, like all legumes, are able to fix nitrogen from the air, but they can also improve soil phosphorus availability thanks to their particular root system. It is also an attractive melliferous species for pollinators.

Despite these remarkable qualities, lupins are still largely unknown to the general public as a foodstuff, and as a result, production is struggling to develop in France. Its consumption, which was significant in the past, has gradually declined over the last few decades due to the massive use of nitrogen fertilizers and a lack of varieties adapted to changes in farming practices and climate.

The **PULSAR** project (**Protein Utilization and production in Lupinus: Species Association-driven Reviving of an orphan legume species**) is being run by a multidisciplinary consortium of four partners (ESA, INRAE, Cérience and Kedelai) with the aim of rehabilitating this little-known and neglected crop. The aim of the **PULSAR** project is to explore the genetic potential of white lupins and propose new ways of incorporating them into cropping systems and diets to meet the challenge of climate, food and environmental change.



To this end, the **PULSAR** team is exploring INRAE Dijon's heritage collection of white lupins (*Lupinus albus* L.) to identify relevant accessions for improving the productivity of sustainable agricultural practices offering greater resilience to climate hazards, such as intercropping.

By studying fermentation processes using lactic bacteria or filamentous fungi, the **PULSAR** team is seeking to improve the digestibility of lupins and mask any allergenicity, paving the way for a wide range of lupin-based food products. Sensory analyses will be carried out to assess consumer taste preferences and attitudes towards lupin-based products, to ensure that they meet market requirements and the expectations of modern consumers.

The **PULSAR** project aims to improve the resilience of cropping systems in the face of climate change while helping to revolutionize the way we think about food by introducing lupins as a versatile and sustainable source of plant protein, thereby helping to promote a diet that is diverse, nutritious, tasty, reduces the risk of diabetes and allergies, and strengthens the immune system.

