

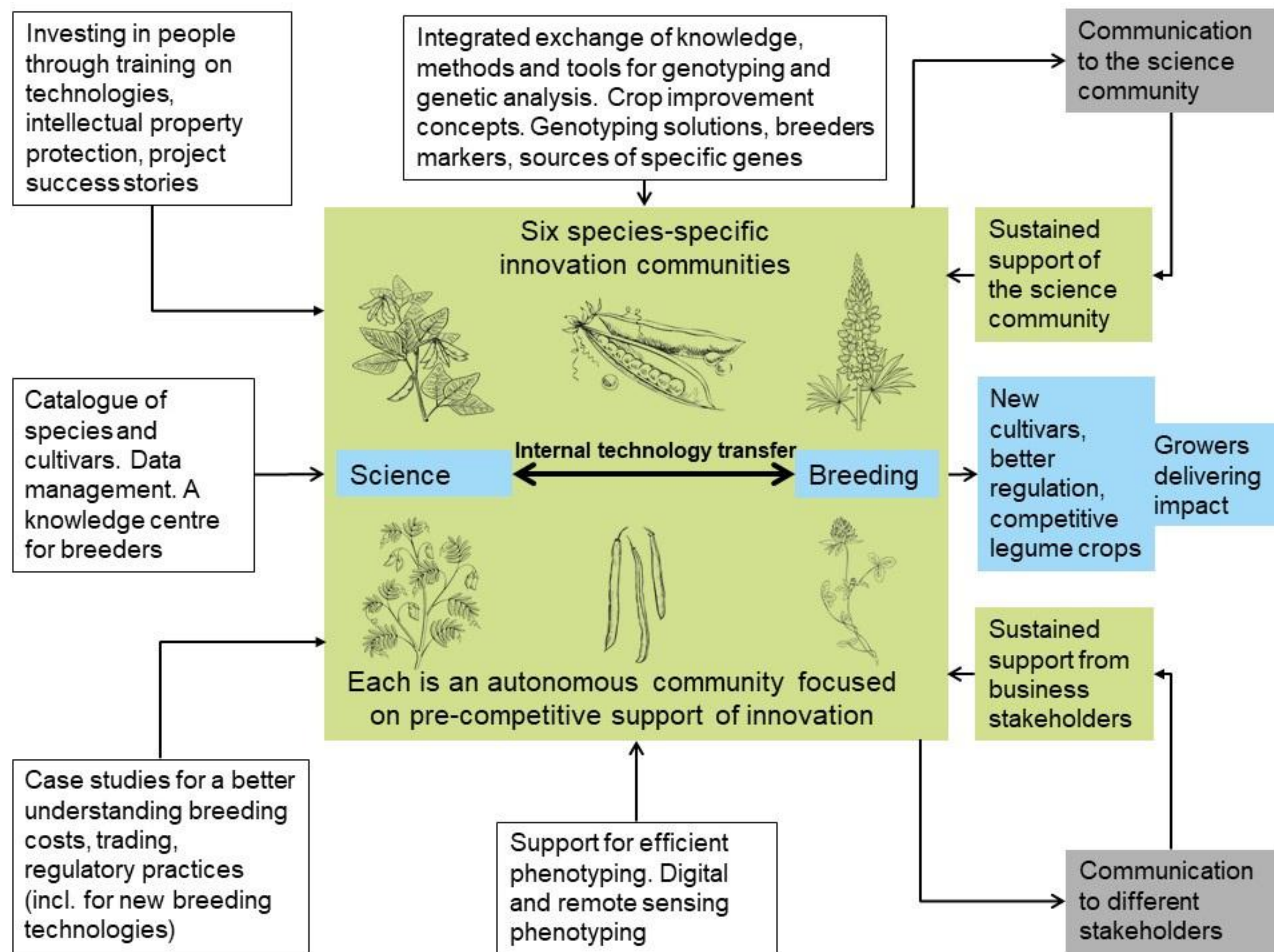
Introducing Legume Generation

Boosting innovation in breeding for the next generation of legume crops for Europe

Lars-Gernot Otto¹, Johann Vollmann², Fred Eickmeyer³, Sanu Arora⁴, Elizabeht Ninou⁵, Jose De Vega⁶, Maria Skrabisova⁷, Ivo Rieu⁸, Juan Jose Ferreira⁹, Amelie Detterbeck¹⁰, Jasmin Karer¹¹ and Donal Murphy-Bokern¹² (Contact: donal@murphy-bokern.com)

¹Leibniz Institute of Plant Genetics and Crop Plant Research, Germany, ²Boku, Austria, ²ESKUSA GmbH, Germany, ⁴John Innes Centre, UK ⁵Department of Agriculture, International Hellenic University, Greece, Earlham Institute, UK, ⁶Palacký University, Czechia, ⁷Radboud University, Netherlands, ⁸SERIDA, Spain, ⁹Euroseeds, Belgium, ¹⁰Donau Soja, Austria, ¹¹independent researcher, Germany

Innovation is risky and requires an entrepreneurial spirit to drive and manage change. Funded by the European Union as an Innovation Action, Legume Generation combines the entrepreneurial spirit and ambition of breeders with the inventiveness of the supporting research base. Six species-specific innovation communities link practical breeding with the research-base focused on soybean, pea, lupins, lentil, phaseolus beans, and clovers. In boosting 32 breeding and 43 pre-breeding programmes, our innovation communities are supported by insights into ideotype concepts and beneficial traits; a catalogue of legume species and cultivars; and breeding methods assembled in the Legume Generation Knowledge Centre; the production and validation of novel resources; screening, demonstration and testing of germplasm; training to support breeding gains; and governance and financial models. All this is supported by the extension of the already existing European Legume Hub. The project supports innovation up to the point where newly-bred germplasm and cultivars are proven on farm. Our innovation communities are open to all relevant actors and provide a direct route for the dissemination of results to other users and interested stakeholders. Their sustainability will be supported by business plans.



Legume Generation boosts breeding by funding breeder-led, species-specific innovation communities. The consortium has established six innovation communities, supported by cross-cutting activities in data management, genetics and genomics, phenotyping, training, governance and finance, and communication. Each community reflects the biology and research landscape of its crop, focusing on targeted genetic improvement. These investments foster new ways of working between breeders and researchers, with potentially lasting impact. The species-specific approach enables pre-competitive collaboration tailored to each crop, supported by governance frameworks that allow genetic resources, data, and expertise to move efficiently and securely while protecting commercial interests and aligning with farmers' needs. Partners exchange seed and breeding lines under material transfer agreements to accelerate trials while maintaining traceability. Innovation communities also align on data governance, using harmonised trait descriptors and coordinated multi-site, multi-year trials. An Open Science approach promotes early internal sharing of data and insights, followed by academic publication that safeguards intellectual property, balancing collaboration with competitiveness. By organising research around breeding structures rather than disciplines, the consortium ensures breeders more directly guide and benefit from research while strengthening precompetitive collaboration. This is particularly important as grain legume yields in Europe have lagged behind major crops, underscoring the need for active breeding.



Legume Generation (Boosting innovation in breeding for the next generation of legume crops for Europe) has received funding from the European Union through Horizon Europe under grant agreement No 101081329 and co-funding from UK Research and Innovation (UKRI) from the UK government's Horizon Europe funding guarantee. It also receives support from the governments of Switzerland and New Zealand.

www.legumegeneration.eu



@legumehub.bsky.social



[linkedin.com/company/legume-hub-eu](https://www.linkedin.com/company/legume-hub-eu)

