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SMARTeR – A european project on selection of efficiency and resilience in small ruminants with strong ICAR commitment and implication

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SMARTER (SMAll RuminanT breeding for Efficiency and Resilience) is an H2020 EU multi-actor project (number 772787) with a large consortium gathering 26 academic and non-academic partners from the 10 European countries that dominate the small ruminant breeding sector and from 3 non-European countries. It is coordinated by Carole Moreno-Romieux from INRA GenPhySE in Toulouse (France). Through 9 work packages, SMARTER will develop and deploy innovative strategies to improve resilience and efficiency (R&E) related traits in sheep and goats. The outcome of SMARTER will be accurate genomic predictions for R&E traits in different environments across different breeds and populations. SMARTER will also create a new cooperative European and international initiative that will use genomic selection across countries. This initiative will make selection for R&E traits faster and more efficient. SMARTER will also characterize the phenotype and genome of traditional and underutilized breeds. Finally, SMARTER will propose new breeding strategies that utilise R&E traits and trade-offs and balance economic, social and environmental challenges.

With regards to ICAR, SMARTER will help to produce recommendations on R&E related traits phenotyping, that will enrich the ICAR guidelines on small ruminant. SMARTER will also build 3 prototypes (meat and dairy sheep, dairy goat) of across country genetic evaluation. This undertaking might result in a future routine international evaluation whose business model will be outlined in the project. Through its phenotyping and evaluation oriented purpose, SMARTER will also help lay the foundations for a European reference center

for small ruminants, as mentioned in the European breeding regulation, for which ICAR could be a relevant candidate. Finally, ICAR, along with EAAP, is in charge of the dissemination and exploitation of the result of SMARTER through its vertical network of farm service providers and breeding organisations.

Keywords: small ruminants, sheep, goat, efficiency, resilience, novel phenotypes, international evaluation, genomics