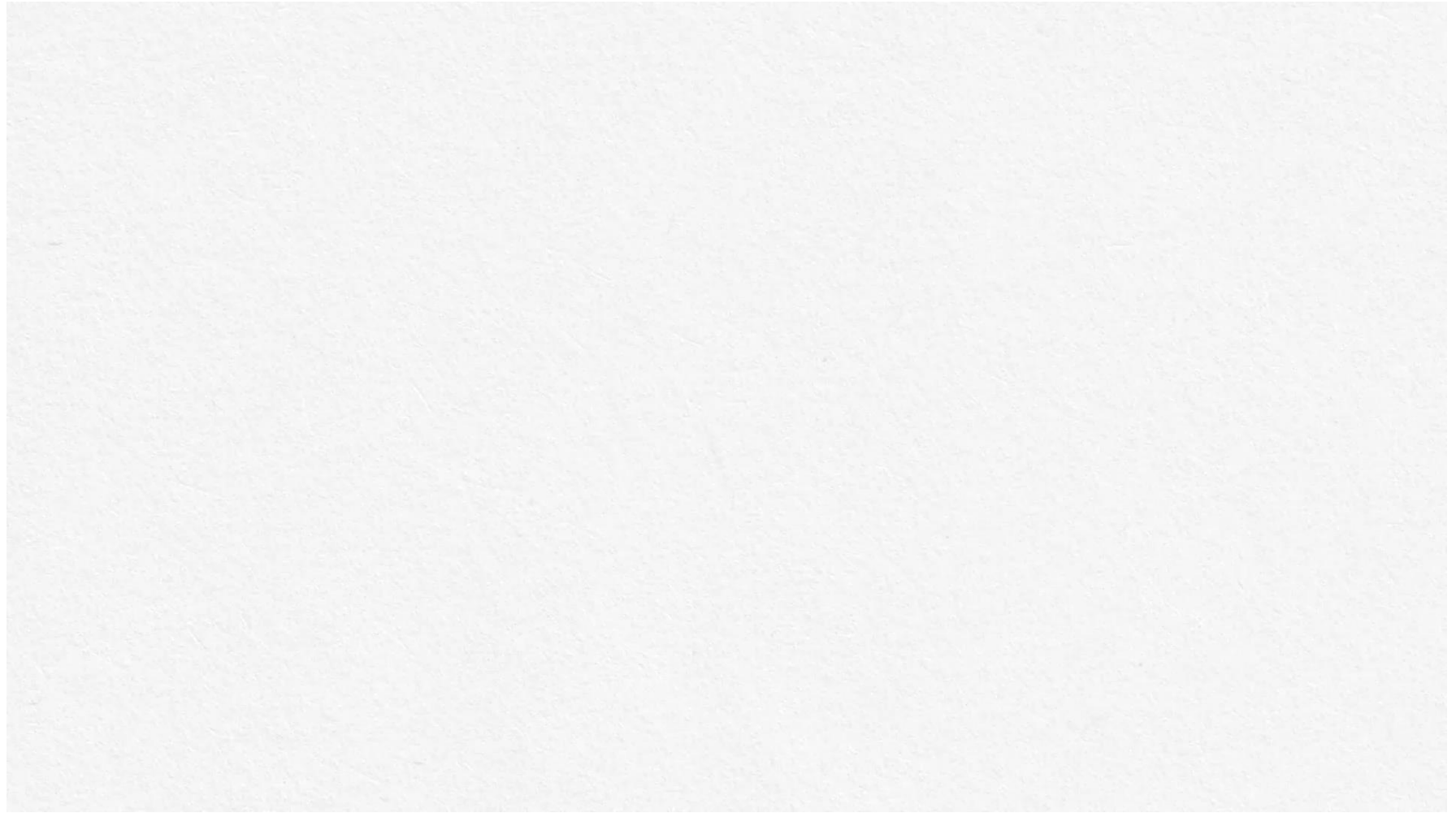
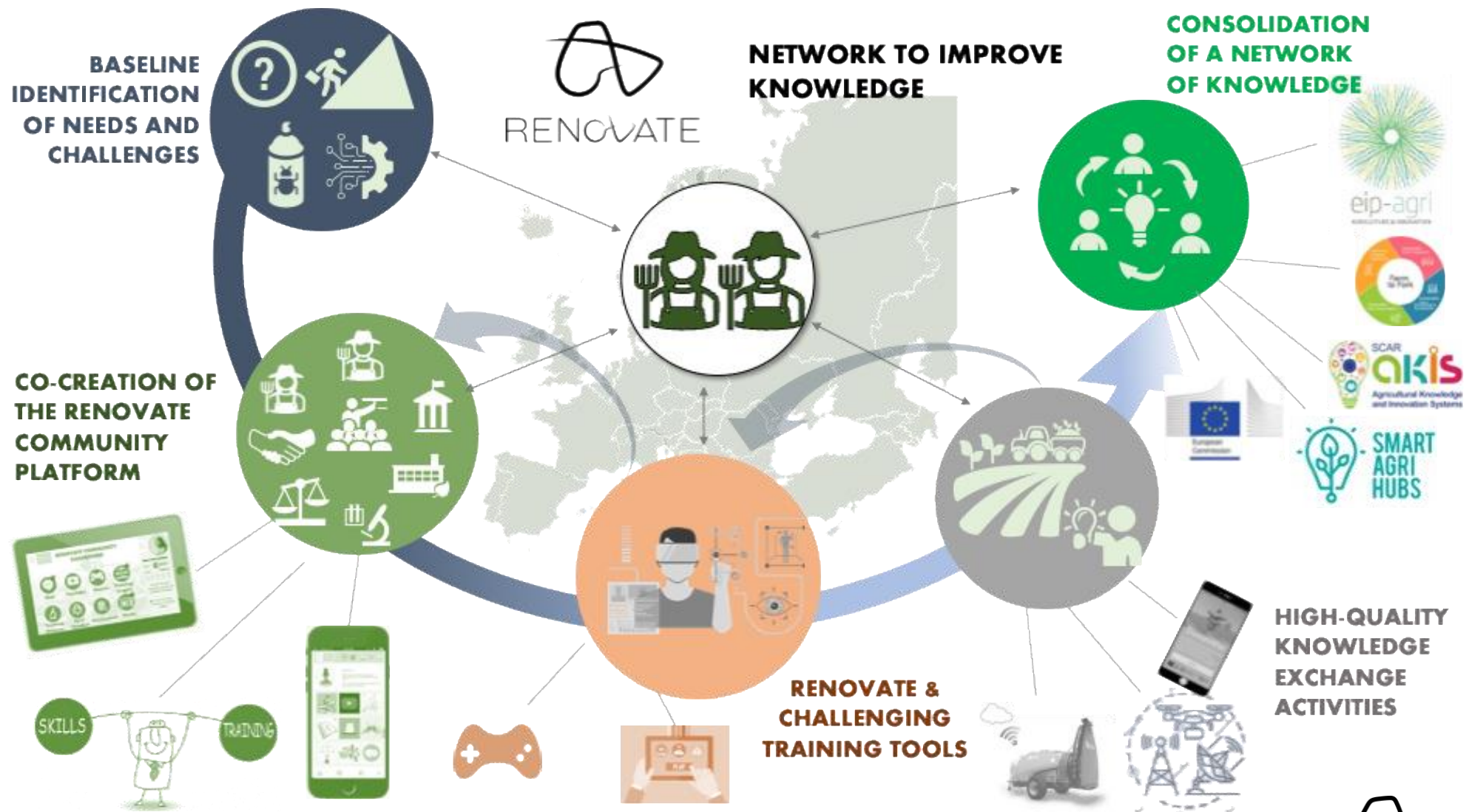




RENOVATE Project: A digital platform integrating AI and interactive technologies to support sustainable crop protection in Europe







Analysis of training offer in EU MS

Sustainable Use Directive (SUD) 2009/128/EC requires each EU MS to set up systems of both **initial and additional training** for **professional users and distributors** of pesticides as well as **advisors** consulting on pesticide use in order to:

- reduce the risks and impacts of pesticide use on human health and the environment
- promote the use of IPM and of alternative approaches.



Information collection

Definition of a common format for data collection from project partners in the 8 countries represented in the project:

- Title of training
- Participation
- Duration
- Type of training
- Recipients targeted by training
- Training providers / organizers
- Trainers
- Requirements for training providers
- Type of training materials
- Topics related to PPP application
- Certificate of completion
- Comments

TYPE OF TRAINING MATERIALS

(23) define: (P) printed; (D) digital; (PD) mixed

(24) define: (D) distributed during training

(brochures, pendrives, CDs);

(I) available on internet

(25) define: (F) flyers; (M) manuals; (P) presentations;

(V) videos; (A) applications;

(PPE) personal protection equipment;

(T) tools and small equipment

(eg. calibration tools, nozzles, anemometers,etc.)

Version of materials (23)	Availability (24)	Form of materials (25)	Others (define)
<i>D</i>	<i>I</i>	<i>M, P, V, A</i>	



Different approaches

PT, PL, IT, ES, CY	CZ
Various trainings strictly targeted to different groups of recipients: <ul style="list-style-type: none">• PPP applicators,• Advisors• Trainers• PAE inspection personnel,• IP growers• PPP distributors	Trainings with a graduated level of professional competence in the use of PPPs: <ul style="list-style-type: none">• 1st grade for PPP Users• 2nd grade for PPP Users + PPP Providers + Administration• 3rd grade for PPP Users + PPP Providers + Administration + Advisors & Trainers
Initial and additional (refreshing) trainings	Initial and additional (refreshing) trainings
FR	BE
A wide spectrum training: <ul style="list-style-type: none">• for PPP users, advisors and PPP providers• possible also other categories of recipients• adapted content with mandatory key topics	No fixed schedule for mandatory training. Instead: <ul style="list-style-type: none">• many ad hoc options offered for growers (PPP users)• they have to follow 5 approved trainings over 5 years
Initial and additional (refreshing) trainings	Constantly refreshing knowledge in a 5-year cycle

Socio-demographic data

A total of **266** questionnaires was collected.



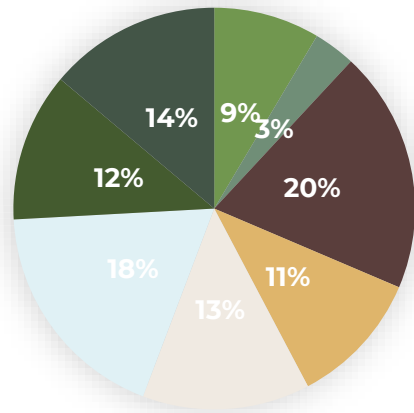
20.8% females
79.2% males



39.7 years
(SD = 14.9)



2.3% primary school
15.8% secondary
33.6% upper secondary
34 % university degree
14.3% postgraduate



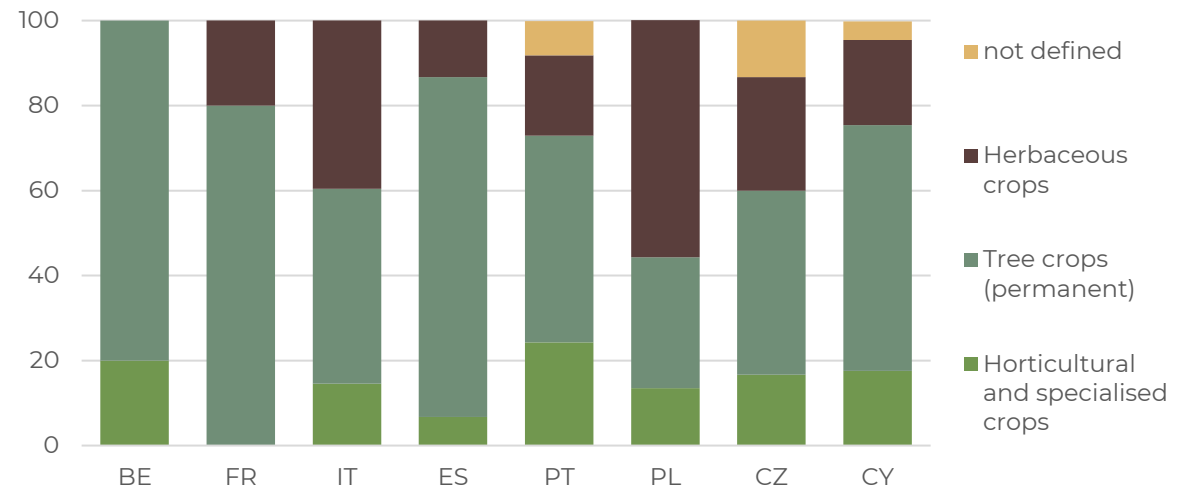
BE FR IT ES
PT PL CZ CY



38% Non-farmers
62% Farmers



14.5 years
(SD = 12.3)



RENOVATE

User motivational profile: Expectation and Learning Preferences

Indicate the extent to which the following statements are true for you when you think about the **RENOVATE platform** (1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree)

Expectancy for skills growth

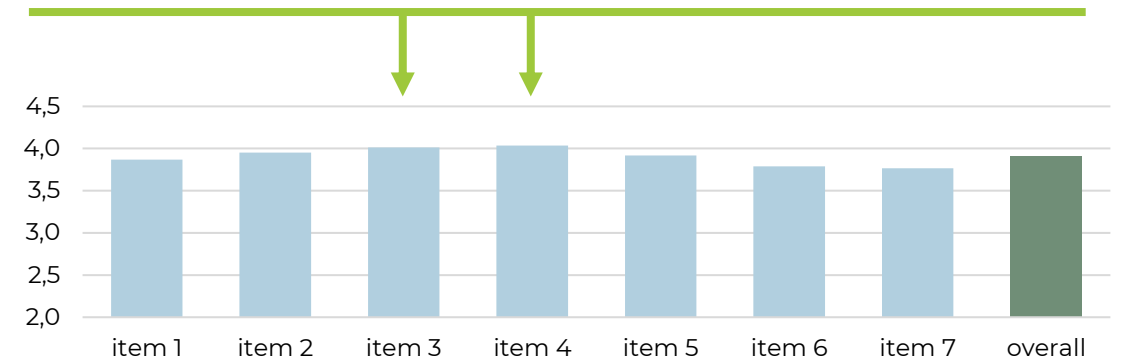
1. Playing the Renovate games, I expect to learn the best practices for applying PPP
2. I expect to learn the specifications regarding the dosage on labels
3. I expect to deepen my knowledge of the regulations on the application of PPP
4. I expect to learn challenges/barriers/opportunities on PPP optimal use
5. The digital platform would be useful to carry out my farm tasks
6. Using a digital platform would make it possible to carry out farm tasks faster than before
7. The use of a digital platform would make my farm more productive

Thinking about your knowledge about use of pesticide, indicate the extent to which the following statements are true for you (1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree)

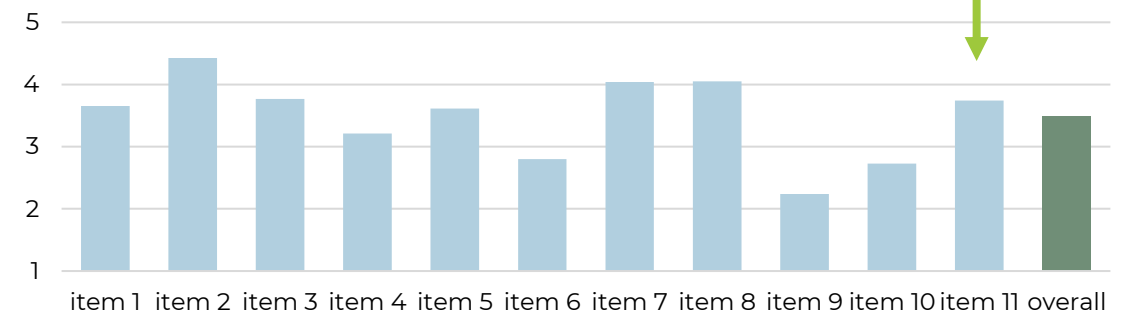
- ...
3. I put a lot of effort into learning about this topic
 10. I think that current training resources are boring
 11. I think that other training resources are needed

Positive scores:

Acquiring knowledge of PPP regulations (item 3) and of understanding challenges, obstacles, and opportunities related to the optimal use of PPPs (item 4).



need for more engaging and interactive resources was clearly expressed



RENOVATE

Focus Groups common findings

Platform Development Needs:

- **User-friendly, intuitive, and easily accessible platform**
- **Including elements to enhance engagement**, audio-visual content, simulators and gamified features replicating real-life tasks
- **Content validation and credibility**, to build trust
- **Possibility to filter contents and personalization**
- **Ensuring platform relevance in the medium and long term**
- **Offer practical, problem-solving features that address day-to-day needs**
- **Importance of human connection and community**



Focus Groups common findings

Adoption of Technologies and EU Legislation:

- **Investments in precision spraying technologies:** the decision is taken on the base of cost-effectiveness, operational efficiency and practical usability and trust in digital tools
- **Legislation:** complexity and overlapping of European, national, and regional regulations are obstacles to practical implementation of technologies and innovations
- **Need for better support:** in interpreting and comprehend labels, using digital tools, and managing sustainable spraying practices

Training gaps:

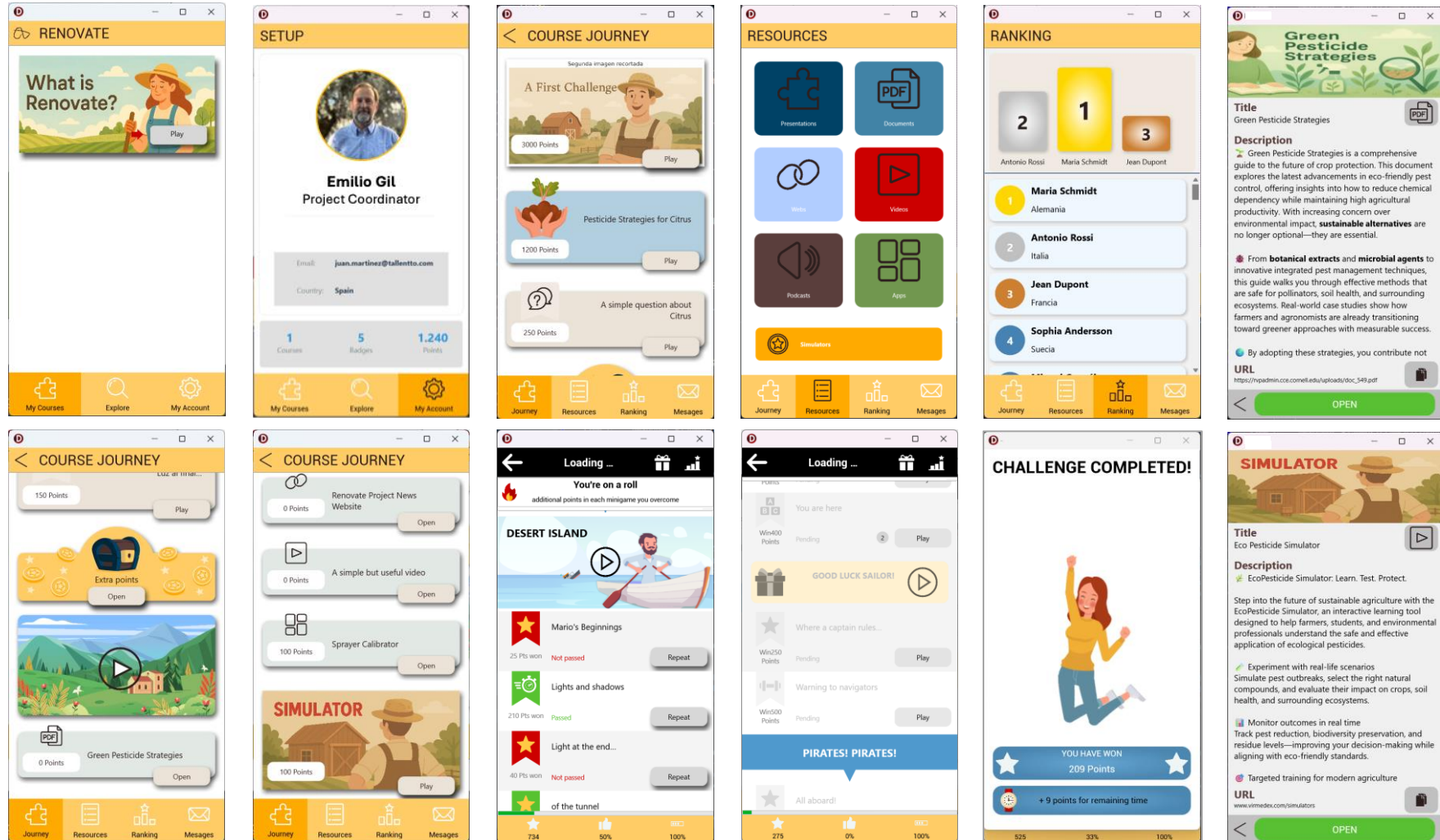
- **On-field demonstrations, hands-on sessions, and practical exercises:** this needs to include the use of modern equipment and simulation tools
- **Ongoing professional training:** continuous training is essential to keep the pace with technological advances, strengthen knowledge in dosage adjustment and bio-PPP knowledge
- **Regulation information:** need for clear, concise and easily accessible information on EU and national (IT, FR) regulations





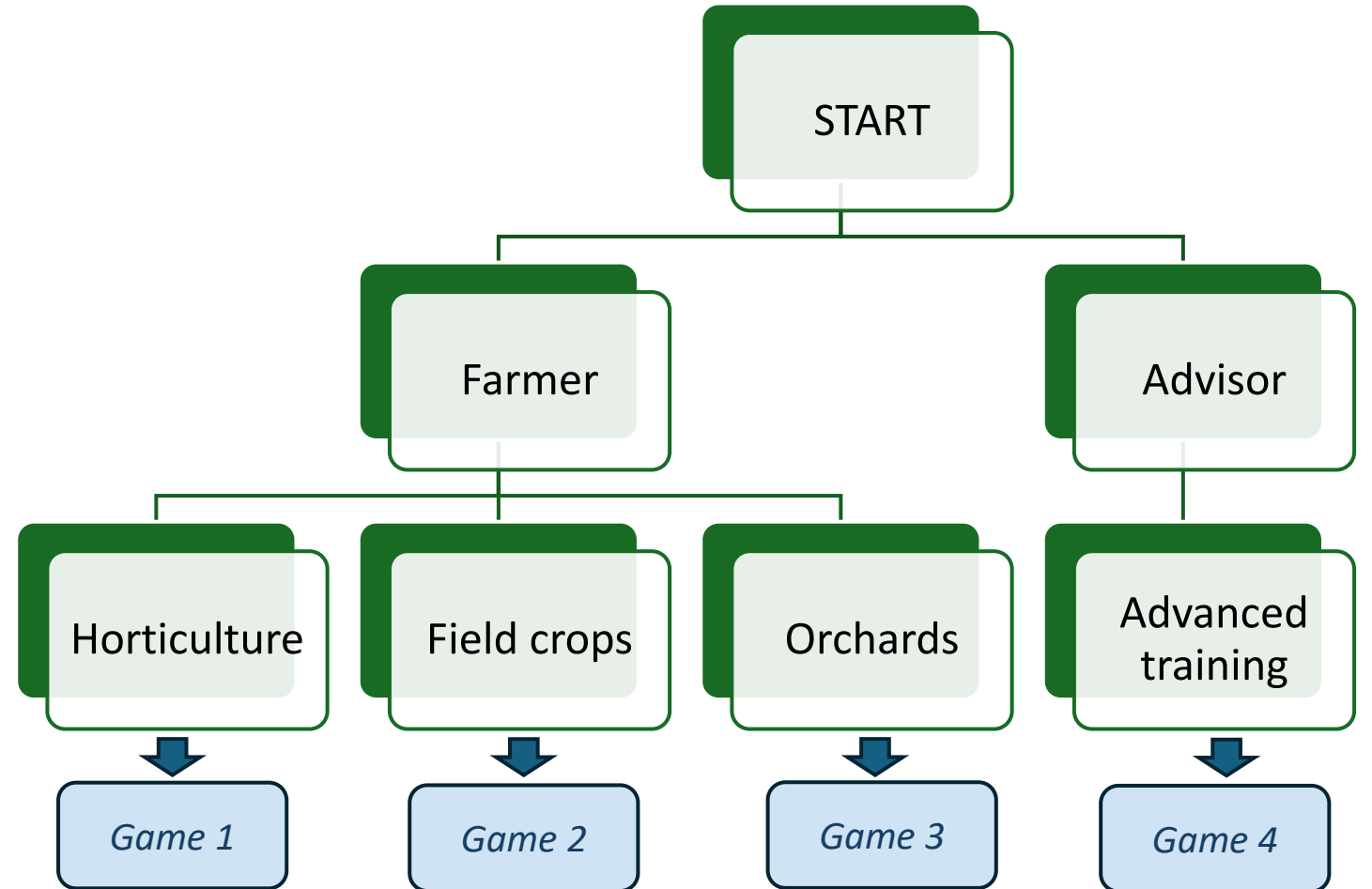
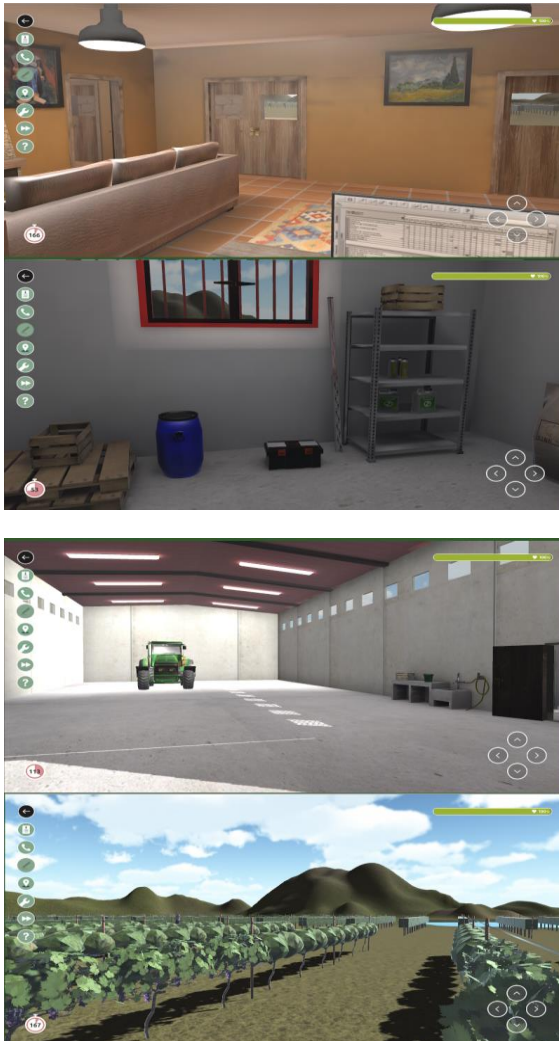
RENOVATE

RENOVATE mobile APP screenshots



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Simulator development



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Advanced Knowledge Transfer Activities



VRA apples – OPTIMA H2020



DSS - OG DOSAOLIVAR



Drift Evaluation Tool - TOPPS



H3O – LIFE PROJECT



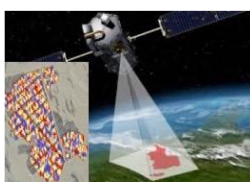
CITRUSVOL – LIFE PERFECT



VRA vineyard – OPTIMA H2020



DSS – OG GOPHYTOID



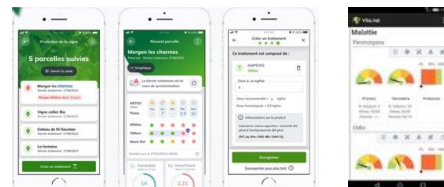
Satellites – NOVATERRA H2020



SIKA - PICORE

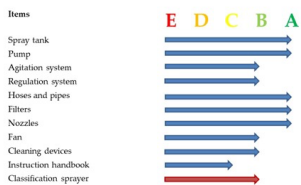


EVA – PCFRUIT



DECITRAIT

VITE.NET



SPRAYEREVA



IRRORASAR

DROPS - Decrease Residues frOm Point Sources

Best Management Practices to keep pesticides out of water from point sources

SELF ASSESSMENT AND TRAINING



Field Crops

Bush & Tree

TOPPS - DROPS

AKTA type	Technological focus	Main objectives	Target participants	Expected outcomes
Smart sprayers	VRA, PWM	Optimize PPP efficiency and reduce drift	Farmers, advisors, technicians	Better calibration, lower PPP use
Decision Support Systems	Digital pest and disease forecasting tools	Support decision-making and promote IPM	Advisors, trainers, advanced farmers	Improved timing and DSS adoption
Drone applications	Unmanned aerial spraying systems	Demonstrate safety, regulatory compliance, and field feasibility	Drone pilots, farmers, service providers	Increased awareness and safe integration
Remote/Proximal Sensing	Imaging and data-based prescription maps	Enable variable-rate and site-specific application	Researchers, advisors, precision technicians	Enhanced data-driven management



RENOvATE

Advanced Knowledge Transfer Activities

T5.1. Development of AKTA implementation principles and guidelines.

T5.2. Building advanced knowledge base for AKTAs

T5.3 Cost-benefit analysis (CBA) of the implemented innovative solutions during the AKTAs

T5.4 Designing four training packages tailored for different countries according AKTAs results

Guideline



Knowledge Base

- Equipment
- Software



Cost-Benefit Analysis



Training Packages



RENOVATE training experiences and *networking* for farmers in the field of sustainable crop management.

An easy-to-use platform to provide farmers and advisors with centralized access to new and existing training resources, legislative information applicable, best practices, practical and real data in the field of plant protection optimization.

↓ Learn more



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