RE.CAP

Reinforcing CAP

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INTRODUCTION

This report is the fourth Deliverable of WP4 "Deployment and Operation" of the RECAP project and presents the main outcomes related to the deployment of the RECAP Platform within 5 pilot participating counties (Greece, Spain, Lithuania, U.K. and Serbia) and the evaluation of the user experience.

The deployment of the RECAP Platform was carried out with the aim of testing the RECAP Platform in 5 different operational environments taking into account local needs and specificities; and involving the different target groups (e.g. Farmers, Organic Farmers, Agricultural Consultants, Inspectors, Certification Bodies and Paying Agencies) in the testing of the Modules and Functionalities of the RECAP Platform.

Following the global methodology defined in the frame of the Pilot Plan (D4.1.), the Pilot Teams performed a set of activities (e.g. Recruitment of Pilot Participant, Training Activities, Testing Activities, etc.) for deploying the RECAP Platform at local level; and involved the corresponding end-user groups from their territories.

In each territory, Pilot participants were involved in both, the Testing and the Evaluation of the RECAP Platform. In total, more than **1.025 end-users have been involved** in the frame of the Testing Activities; and more than 566 of them also participated to Evaluation Activities.

Evaluation Activities were carried out with the aim of collecting feedback and analysing experiences of the different target groups; and more precisely for determining their satisfaction with the RECAP Platform and its services, evaluating how the RECAP Platform is meeting with the initial expectations, gathering effective feedback to enhance the RECAP Platform, getting their perceptions and insights for future application, etc.

This report presents:

- Part 1. **Deployment of the RECAP Platform**;

- Part 2. **Technical outcomes and achievements**;

- Part 3. **Evaluation of the Pilots**;

- Part 4. **Evaluation results of the User Experience**;

- Part 5. **Perceptions of the end-users on the RECAP Solution**;

- Part 6. **Main findings & Recommendations at local level**.

1. Deployment of the RECAP Platform

The deployment of the RECAP Platform within 5 pilot participating counties (Greece, Spain, Lithuania, U.K. and Serbia) was carried out with the aim of: i) **testing the RECAP Platform in 5 different operational environments** taking into consideration local needs and specificities; and ii) **involving the different target groups** (e.g. Farmers, Organic Farmers, Agricultural Consultants, Inspectors, Certification Bodies and Paying Agencies) in the testing of the Modules and Functionalities of the RECAP Platform .

The implementation of the Pilots has followed the global methodology defined in the frame of the Pilot Plan (4.1) which relies on the following phases:

- **Pre-pilot phase** that consists in carrying out all the necessary activities prior to the organization of the testing of the RECAP Platform; and includes the **Recruitment** and **Training** of the Pilot Participants;

- **Pilot phase** that consists in performing all the needed activities for organizing the Testing of the RECAP Platform; and includes the **Filling in the farm details** and the **Testing Activities** organized with the different target groups;

- **Post-pilot phase** that consists in realizing **Evaluation Activities** for collecting feedback and analysing experiences of the Pilot Participants.

These 3 phases took place over a period of 15 months, during the whole duration of the WP4; and the preliminary calendar defined in the Pilot Plan (D4.1) was reviewed, as shown below:

PILOT DEPLOYMENT: phases and calendar	2017								2018						
	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O
	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Pre-Pilot phase															
Pilot phase															
Post-Pilot phase															

Due to some differences between the 5 participating countries such as local needs and specificities of the territories, profiles and competences of the organizations involved, etc., each participating country defined their **own scenario, procedure and planning** for the deployment of the RECAP Platform.

Depending on the profiles and competences of the Pilot organizations, the **focus** of the Pilots was slightly different:

- <u>Public organizations:</u> the pilot implementation was more oriented on the **delivery of public services** for **checking cross-compliance and informing farmers** (Spain, Greece and Lithuania);

- <u>Private agricultural consultants:</u> the pilot implementation was more centred on the **delivery of personalised services** to their customers for **complying with cross-compliance rules or organic certification requirements, legislative standards and obligations** (UK and Serbia).

In comparison to the other Pilots, which were focused on CAP regulations (cross-compliance and greening inspections); the **Serbian Pilot** had the particularity of being oriented to the support of the administrative **monitoring of the organic subsidy scheme**.

Nonetheless, the 5 participating countries carried out similar activities. The main activities performed in the frame of the deployment of the RECAP Platform are the following ones:

>> PRELIMINARY ACTIVITIES:

- **Setting up of Local Teams:** each participating county, and the corresponding organizations, set up a Pilot Team in charge of implementing its Pilot. Different members (e.g. Pilot Coordinator, Facilitator, ICT Specialist, other staff) have been designed and their role in the Pilot implementation have been described;

- **Setting up of Internal Procedures**: each participating county set up Internal Procedures (e.g. coordination and communication, technical support, etc.) within the Pilot Team in order to ensure the proper development of the Pilot implementation in their territory;

- **Testing of the RECAP Platform by the Local Teams**: in each territory, Pilot Teams reviewed the RECAP Platform and tested its functions in order to make sure that the adaptation made at local level properly fits with the initial requirements and the local specifications;

- **Training of the Pilot Team**: in each territory, all members of the Pilot Team have been trained to the RECAP Platform in order to ensure that they can properly play their role in the Pilot implementation (e.g. Training Sessions, Testing Activities, etc.).

>> RECRUITMENT & TRAINING ACTIVITIES:

- **Defining a Local Training Strategy** : each Pilot Team has defined its own Local Training Strategy in order to ensure the training of its Pilot Participants on the correct use of the RECAP Platform and its functionalities by defining the type of Local Training Materials (e.g. User Guides and Manuals, Videos, etc.) and the type of Training Activities (e.g. General Workshops, Specific Training Sessions, Individual Trainings, etc.) which are suitable to their Pilot case and their Pilot Participants; and has produced the corresponding Local Training Materials in Local Language;

- **Recruitment of Pilot Participants**: each Pilot Team has defined its own methodology for recruiting its Pilot Participants (e.g. Sending of invitation, Dissemination Workshops, Contact with local stakeholders and networks, etc.); has informed the potential Pilot Participants about the RECAP Project and the specific Pilot activities (e.g. training, testing, evaluation) and its timeline; and has collected the agreement of Pilot Participants trough the Consent Form in the RECAP Platform during their registration;

- **Training of Pilot Participants**: each Pilot Team has organized the Training Activities (e.g. General Workshops, Specific Training Sessions, Individual Trainings, etc.) for the different end-user groups according to their Local Training Strategy in order to ensure the proper access to the RECAP Platform by all the Pilot Participants and in all the devices that will be used in the frame of the Pilots (e.g. PCs, tablets and smartphones); to train the Pilot Participants on the use of the RECAP Platform and its functionalities; and to revise and get feedback on the Local Training Materials.

>> FILLING IN THE FARM DETAILS: depending on its specific situation (e.g. availability of data from the current annual declaration, connexion with other software, etc.), each Pilot Team has worked on the collection and transfer of the necessary Farm Details and Information (e.g. annual declaration of Farmers for

BPS – Basic Payment Scheme, annual declaration of Organic Farmers for OSOS – Organic Subsidy/Organic Certification) into the RECAP Platform in order to properly start and run the Testing Activities.

>> TESTING ACTIVITIES:

- **Defining a Local Testing Strategy**:   each Pilot Team has defined its own Local Testing Strategy according to its own context (e.g. local specificities, the type of the organizations involved in the Pilot Teams, etc.) in order to ensure the testing of the RECAP Platform and its functionalities by the different target groups in its territory, by defining the exact scope of its Pilot (e.g. location and geographical scope, pilot scenario, end-users groups and number of pilot participants directly involved, target outcomes, etc.) and the operative procedures (e.g. methodology, planning, etc.) for organizing the Testing Activities to be run by the different end-user groups (e.g. Farmers, Organic Farmers, Agricultural Consultants, Inspectors, Certification Bodies and Paying Agencies);

- **Testing of the RECAP Platform by the different end-users**: each Pilot Team has organized the Testing Activities (e.g. Specific Testing Sessions, Individual Interviews, etc.) and the corresponding tasks (e.g. Cross-Compliance Checks, On the Spot Checks, etc.), according to their Local Testing Strategy, in order to ensure the correct testing of the Modules and Functionalities of the RECAP Platform by the different end-user groups in its territory. For instance:
    o   The FARMER & AGRICULTURAL CONSULTANT Module has been tested by Farmers, Organic Farmers and Agricultural Consultants;
    o   The INSPECTOR Module has been tested by Inspectors (or consultants ensuring their role when the Paying Agency was not involved in the Project – the UK Pilot);
    o   The CERTIFICATION BODY Module has been tested by Certification Bodies' staff (or consultants ensuring their role);
    o   The PAYING AGENCY Module has been tested by Paying Agencies' staff (or by Partner' staff).

1.1   The Pilot in Greece

- *Pilot organization:*

The Greek Pilot has been conducted by **OPEKEPE**, the Greek Paying Agency of Common Agricultural Policy (CAP) Aid Schemes. It is supervised by the Ministry of Agricultural Development and Food and its mission is to manage funds of the E.A.G.F., E.A.F.R.D. and E.F.F. and the prevention and coalition against any fraud and recovery of unduly paid amounts. On an annual basis, OPEKEPE controls and makes payments to almost 900.000 beneficiaries at an amount of approximately 2,7 billion euro from community subsidies.

- *Location:*
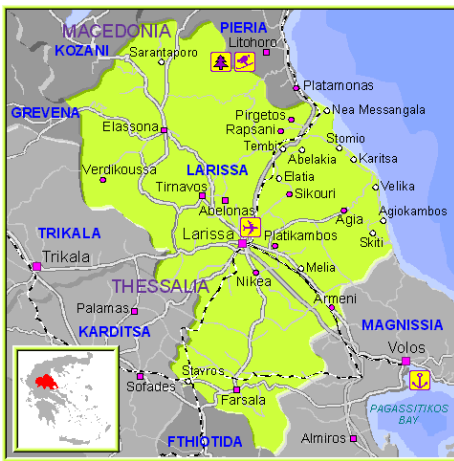
The Greek Pilot took place in **Larissa area** (Nitrogen Vulnerable Zone - NVZ), which is the capital and largest city of the Thessaly region.

This region is the most important agricultural area of Greece, and its heavy agri-production implies environmental problems, extra Cross Compliance (CC) rules and stricter CC requirements (Nitrate Vulnerable Zone).

- *Scenario & Focus:*

The Greek Pilot has been designed as a **support for public administration for a better implementation of inspection procedures of cross compliance**, as well as for the purposes of self-assessment for the Farmers, and stimulating new added value services for Agricultural Consultants. Its main objective is to validate how the RECAP Platform enables to monitor the obligations of farmers imposed by the CAP, and increases efficiency and transparency of inspection procedures.

- *Pilot Participants & Specificities:*

Farmers and **Farmers' Cooperatives** have been involved through OPEKEPE, which has disseminated the project activities to them and motivate them to take part in the pilot implementation in Greece.

Agricultural Consultants have also taken part in the Greek Pilot. In Greece, there are Consulting Bodies that assist farmers to apply for Basic Payment Claim (BPS) and Regional Development Program (RDP) measures which are certified by OPEKEPE. About 98% of the farmers apply though these Agricultural Consultants.

Inspectors from OPEKEPE were directly involved in the Pilot and performed the Cross Compliance Inspections.

Paying Agency staff has been represented by OPEKEPE staff. In Greece, the Greek Paying Agency OPEKEPE has both competences; it is in charge of inspections and payments.

- *Target indicators and outcomes:*

✓ Number of Farmers testing RECAP: **140**
✓ Number of Cross Compliance Inspections carried out remotely with RECAP: **85**
✓ Number of On The Spot Checks carried out with RECAP: **30**
✓ Reduction of Administrative Cost for paying agencies: **> 25%**
✓ Reduction of Administrative Burden for farmers: **> 25%**

- *Main activities performed:*

1. Recruitment & Training Activities:

* Workshops were organized for presenting the RECAP Platform and launching training activities with Pilot Participants: 1 Workshop mainly oriented to Agricultural Consultants (December 2017) and 1 Workshop mainly oriented to Farmers (January 2018).

* Recruitment of Farmers was mainly ensured by the sending of invitation and the organization of Workshops.

* Training Materials were prepared and provided to Pilot Participants: 1 Training Manual and 1 Training Presentation for Farmers and Agricultural Consultants; 1 Training Guide for Inspectors.

* Training Sessions for Inspectors were also organized just before the testing activities (September 2018).

Workshop with Agricultural Consultants

2. Filling in the Farm Details:

* Farm data from the 2018 annual declaration of the farmers for BPS were used. The declarations have been exported from IACS and they have been imported into the RECAP Platform.

3. Testing Activities:

* Individual Sessions with Farmers and their Agricultural Consultants were organized (December 2017-September 2018) with the aim of testing and evaluation the RECAP Platform. In total, **140 Farmers** have participated.

* Testing Activities by Agricultural Consultants (December 2017-September 2018) consisted in testing the FARMER & AGRICULTURAL CONSULTANT Module that presents the same functions than the ones for Farmers. **88 Agricultural Consultants** have participated and showed interest in the RECAP Platform.

* Testing Activities by Inspectors (June-September 2018) consisted in carrying out the inspections. In total, **85 remotely inspections** were carried out with the RECAP Platform, as well as **30 on-the-spot checks**.

4. Evaluation Activities:

* Individual Sessions with Farmers and their Agricultural Consultants were organized (December 2017-September 2018) for testing the RECAP Platform, as well as for ensuring the collection of evaluation questionnaires and Farmers' impressions and suggestions. In total, **140 Farmers** and **88 Agricultural Consultants** participated to these sessions.

* Evaluation Questionnaires were filled out by **4 Inspectors / PA staff** from OPEKEPE; **129 Farmers** and **11 Agricultural Consultants**.

1.2   The Pilot in Spain

- *Pilot organization:*

The Spanish Pilot has been conducted by the Institute for Agrifood Technology and Infrastructures of Navarra, **INTIA**, a public company attached to the Department of Rural Development, Environment and Local Administration (DRMAyAL) of the Government of Navarra, which has as appointed as the public service responsible for advising Farmers on Common Agriculture Policy in Navarra. INTIA provides advisory service for complying with the CAP to over 70% of farmers receiving CAP aids in Navarra; and also offers advanced market-oriented services such as GIS, Remote Sensing, ICT and process automation for the development of agrifood sector based on quality, efficiency and innovations to the farmers.

- *Location:*

The Spanish Pilot took place in Navarra and more precisely in **Valdizarbe valley**, in the central zone of the Region.

The Pilot involves Farmers and Agricultural Consultants from the Agricultural Cooperative **ORVALAIZ** which is relevant in the sector of cereals production, with more than one thousand CAP declarants; and which also presents other alternative crops and a small area with irrigated horticultural crops: WINTER CEREAL 70% 22,626 Ha, OIL CROPS 7% 2,390 Ha., LEGUME CROPS 7% 2,370 Ha.

- *Scenario & Focus:*

The Spanish Pilot has been designed as a **support for public administration** related to the CAP declaration: **cross compliance and greening inspections.** Its main objective is to validate how the RECAP Platform enables to monitor the obligations of farmers imposed by the CAP, and increases efficiency and transparency of inspection procedures.

- *Pilot Participants & Specificities:*

Farmers have been mainly involved through the **Agricultural Cooperative** ORVALAIZ which uses advisory services from INTIA; and encouraged Farmers from the cooperative, as well as its staff, to take part in the Pilot activities (e.g. testing of the RECAP Platform for better compliance with the cross-compliance scheme). In the Spanish Pilot, there are two figures to distinguish: Farmers (the real actors for both, the crops and the administrative control of CAP) and CAP-declarants in the RECAP Platform. A Farmer usually represents an average of 3-5 CAP-declarants.

Agricultural Consultants have also been involved in the Spanish Pilot through INTIA consultants that are used to support Farmers with their CAP claims.

Inspectors have been represented by a specialised technician from INTIA (specialist in conditionality, greening and CAP) since the inspections for on-the-spot checks have been delegated to him by the Inspection Service of the Paying Agency (DRMAyAL). Nonetheless, the inspection authority of the Government of Navarra participated in the pilot by taking part in the evaluation activities.

Paying Agency staff has been represented by INTIA that tested the platform from the public authorities' perspective.

- *Target indicators and outcomes:*

> ✓ Number of Farmers testing RECAP: **120**
> ✓ Number of Cross Compliance Inspections carried out remotely with RECAP: **80**
> ✓ Number of On The Spot Checks carried out with RECAP: **25**
> ✓ Reduction of Administrative Cost for paying agencies: **> 25%**
> ✓ Reduction of Administrative Burden for farmers: **> 25%**

- *Main activities performed:*

1. Recruitment & Training Activities:

* **Recruitment of Farmers** was made in collaboration with the Agricultural Cooperative ORVALAIZ. Farmers using the sigAGROasesor Platform, and that who are also regular collaborators of INTIA, were invited (September 2017).

* **Training Materials** were elaborated and sent to Pilot Participants: **1 User Guide** for Farmers and **1 Presentation** on conditionality 2018 for Farmers.

* **Training Activities** were organized with Pilot Participants: 1 day of information for Inspectors during the period of inspections (June 2018)

2. Filling in the Farm Details:

* **Preliminary testing** (2017): once the first version of the RECAP Platform was available, some parcels and farmers (17 Farmers-declarants) were imported in the platform in order for the users to be able to start the testing phase.

* **First round of Testing** (February-March 2018) started with the **preparation of the necessary resources** (e.g. massive import of parcels in the RECAP Platform with its CAP attributes, massive import of all the plots of the the Agricultural Cooperative in the Platform sigAGROasesor, connectivity of the necessary information, etc.). Then, once the first set of parcels (25 claims of 25 Farmers-declarants) was imported with the information of the crops established in November 2017, the RECAP Platform was ready to be tested with real information.

* **Second round of Testing** (Mai-July 2018) was organized after the period of declaration of Farmers, once all the parcels declared were imported in the RECAP Platform (194 Farmers-declarants).

In total, **236 Farmers-declarants** were registered in the RECAP Platform.

3. Testing Activities:

* **Training & Testing Activities with Farmers and Agricultural Consultants** were ensured by the realization of a program of monitoring of the conditionality rules that affect Farmers, taking advantage of the **technical meetings** organized by the Agricultural Cooperative in November 2017, April 2018 and August 2018.

3 Agricultural Consultants from INTIA participated in the whole process, and supported Farmers for filling out their cross compliance notebooks, exploitation notebooks and vulnerable zones. In total, **35 Farmers** have been directly involved with a total of **219 CAP-declarants** registered in the RECAP Platform in 2018.

In addition, **2 Workshops with Farmers** (August-September 2018) were organized by the Local Team in order to present the RECAP Platform in its final version, to ensure the testing and the collection of evaluation questionnaires, and to organize a Focus Group meeting for collecting impressions and suggestions. In total, **10 Farmers** participated with a total of **50 CAP-declarants** registered in the RECAP Platform in 2018.

* **Testing Activities with Inspectors** (June-July 2018) relies on the realization of **107 cross-compliance inspections (80 remotely** and **27 on-the-spot checks)** with 11 different crops, by **1 Inspector**.

Spanish Workshop with Farmers (30/08/2018)

Spanish Workshop with Farmers (06/09/2018)

4. Evaluation Activities:

* **Evaluation Questionnaires** were filled out by **9 Farmers** representing 45 Farmers-declarants, **1 Agricultural Consultant** from INTIA having participated to Testing Activities with Farmers and **1 Inspector** having performed the OTSC.

* **Focus Groups** meeting with Farmers, Agricultural Consultants and Inspectors, was organized by INTIA (September 2018) in order to discuss and get more précised observations and suggestions from the end-users.

1.3   The Pilot in Lithuania

- *Pilot organizations:*

The Lithuanian Pilot has been conducted by two partners:

NMA, the National Paying Agency of Lithuania, belonging to the Ministry of Agriculture, which is the only accredited institution in Lithuania managing the measures of support for agriculture, rural development and fisheries. Among other activities, the Agency is in charge of the implementation of agricultural, rural development and fisheries support measures (included in situ checks).

LAAS, the Lithuanian Agricultural Advisory Service, a public institution that develops a farmers' advisory system covering the whole country (48 offices in total). Every year, almost 18.000 farmers and rural dwells use the advisory system or take part in trainings, which are organized by LAAS consultants. LAAS is also a certified advisory institution which provides services and helps farmers to evaluate and improve their activity in the implementation of Cross Compliance requirements.

- *Location:*

The Lithuanian Pilot involved participants from the different regions of the country.

The following main crops have been be tested: winter wheat, perennial pastures or meadows (5 years and more), spring wheat, peas, spring barley, black fallow, agricultural plant mixtures where protein crops are not dominant, winter triticale, clover, agricultural plant mixtures where protein crops are predominant, winter rye, buckwheat, beans, oats, spring rape, winter rape, pasture or meadow, perennial grass up to 5 years, corn, spring triticale, sugar beet, potatoes, winter barley, green fallow, herbaceous plant mixtures where protein crops are predominant, Lucerne.

- *Scenario & Focus:*

The Pilot in Lithuania has been designed as a **support for public administration for a better implementation of inspection procedures**, as well as for providing advisory services on the compliance with the CAP requirements (cross compliance and greening inspections) to farmers. Its main objectives are i) to validate how the RECAP Platform enables public administration to provide farmers with advisory services on their compliance with the CAP requirements; and ii) to validate how the RECAP Platform enables to monitor the obligations of farmers imposed by the CAP, and increases efficiency and transparency of inspection procedures.

- *Pilot Participants & Specificities:*

Farmers from the different regions of the country have been involved in the Lithuanian Pilot through LAAS and its regional offices. Farmers were selected taking into account a **variety of different features related to their parcels (e.g. size, type of crops, location, etc.)**

Agricultural Consultants have been represented by the Advisors from LAAS. Some of them, from the regional offices, have been involved for supporting Farmers with the Pilot activities (e.g. crop specialists, animal husbandry specialists familiar with cross compliance requirements); and others, from headquarters, for testing and evaluating the RECAP Platform and the development of new services (e.g. crop specialists, specialists of precision farming, IT or remote training specialists, etc.).

Inspectors from regional on-the-spot-check units of **NMA participated in the Pilot, and performed the OTSC** for cross-compliance.

Paying Agency staff has been represented by NMA staff that tested services and functions of the PA Module.

- *Target indicators and outcomes:*

✓   Number of Farmers testing RECAP: **150**
✓   Number of Cross Compliance Inspections carried out remotely with RECAP: **90**
✓   Number of On The Spot Checks carried out with RECAP: **35**
✓   Reduction of Administrative Cost for paying agencies: **> 25%**
✓   Reduction of Administrative Burden for farmers: **> 25%**

- *Main activities performed:*

<u>1. Recruitment & Training Activities:</u>

* Recruitment of Farmers was mainly ensured by Advisors from the regional offices of LAAS: each one in its region was responsible to find 3-4 farmers of young age, having computer literacy and using smart phones and apps. Advisors were provided with information and materials in order to explain the RECAP Project and the Pilot Activities to Farmers. Additional Farmers, partners of LAAS, were also included in the list of Farmers. In total, **151 Farmers** participated in the Pilot Activities.

* Supporting Documents for Advisors were prepared in order to support them during the Pilot Activities: a Memo-note, an Invitation letter for Farmers to test the RECAP Platform, an Informed consent form, a User guide, a List of participants, Zipped shape files and Evaluation Forms for Farmers and Advisors.

* Video Materials were produced by NMA and LAAS: **2 videos** explaining the importance of the project and the use of similar tools in the future; **9 short videos** on how to use the Platform (step-by-step guide).

* Training Sessions for Advisors were organized through LYNC to provide them with information on how to register to the platform, how to use video materials, how to understand the project activities, etc. **6 online training sessions** were organized for **61 Advisors**: 20 Advisors trained in order to be able to test and evaluate the Platform, and 41 Advisors trained for further testing activities with Farmers.
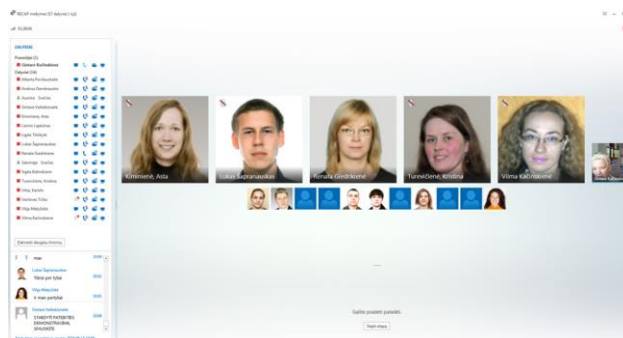
2. Filling in the Farm Details:

* Farm data from the 2018 annual declaration of the farmers for BPS were used. Declaration data (shp files) were provided by the National Paying Agency once the declaration period had finished. Then, Advisors together with Farmers uploaded declaration and other data to the RECAP platform.

3. Testing Activities:

* Individual Sessions with Farmers were organized by Advisors in the regional offices of LAAS for presenting, testing and evaluating the RECAP Platform (15.06.2018-05.07.2018): **151 Farmers** participated to those sessions with the support of 42 Advisors.

* Testing Activities by Advisors relies on both, the 42 Advisors that worked with and accompanied Farmers in the frame of the Individual Sessions, and the 20 Advisors that tested the Platform with regards to the development of new services.

* Testing Activities by Inspections consisted in the execution of **133 OTSC** (97 remotely and 36 on the spot), which were run on Farmers from the central area of Lithuania where remote sensing data was made available. First, in July 2018, **a Training Session** for Inspectors was organized and some part of the physical OTSC was carried out; then, OTSC were carried out through RECAP (01.08.2018-24.08.2018). In total, **8 Inspectors** from 6 regional on-the-spot-check units of NMA were involved.

4. Evaluation Activities:

* Evaluation Forms for Farmers were filled out by **151 Farmers** based on the Individual Sessions they attended in the regional offices of LAAS.

* Evaluation Forms for Advisors were filled out by **42 Advisors** that participated to the Individual Sessions with Farmers, and **20 Advisors** that tested the Platform regarding to the development of new services.

* Focus Groups meeting with Farmers, Advisors and specialists of IT Department, was organized by LAAS (11/10/2018).

* Evaluation Questionnaires were filled out by **8 Inspectors** from the regional on-the-spot-check units of NMA; **9 Paying Agency staff** from NMA; and **3 Farmers & 10 Advisors**.

1.4   The Pilot in the U.K.

- *Pilot organization:*

The Pilot in the United Kingdom has been conducted by two partners:

Strutt & Parker is a multi-disciplinary property partnership operating throughout the UK in 55 offices, and its farming department is one of the largest specialist teams in the UK. Its professional team consists of 40 agricultural consultants for advising farmers with regards to the cross-compliance, the Basic Payments Scheme and the Common Agricultural Policy as well as highly detailed knowledge of how the schemes and the inspections regimes work; and also include in-house researchers who in cooperation with agricultural consultants have reviewed, condensed and simplified guidance on the new Common Agricultural Policy from the United Kingdom government and the Rural Payments Agency, for farmers. The organization also provides a simple tool for farmers to use in applying the new CAP which allows them to plot what crops and ecological focus areas they need in order to meet national requirements.

UREAD, the School of Agriculture, Policy and Development at the University of Reading, is ranked 81st in world rankings for Life Sciences and 11th for Agriculture and Forestry; and address fields such as food production, sustainability of agro-systems, food security, adaption and mitigation to climate change, food chains and health, animal welfare and behaviour, poverty alleviation, international development and consumer behaviour and choice.

- *Location:*

The Pilot in the United Kingdom took place in **England** only, with the involvement of Farmers from the whole country.

- *Scenario & Focus:*

The Pilot has been designed as **a support for agricultural consultancy in order to enhance services to farmers** for complying with CAP regulation and increasing the environmental productivity / sustainability of their holdings. Its main objective is to assess whether the RECAP platform is (i) a source of guidance on cross-compliance for farmers and a store for documents for farmers to demonstrate their compliance; (ii) a detailed compliance programme which can deal with the real detail of cross-compliance, such as recording the locations of buffer strips, rights of way, splits in field geometry and other functionalities.

- *Pilot Participants & Specificities:*

Farmers across England have been involved in the U.K. Pilot, and have been reached through **Strutt & Parker** network of contacts with hundreds of farmers and other stakeholders (e.g. the National Farmers' Union, Farmers Weekly magazine, etc.).

Agricultural Consultants from **Strutt & Parker** have also taken part in the Pilot.

Inspectors have been represented by consultants from **Strutt & Parker** and researchers from UREAD that have ensured their role and performed the inspections.

Paying Agency staff has not directly taken part in the U.K. Pilot. However, the Ministry of agriculture (DEFRA) and the Paying Agency (Rural Payments Agency) have been kept informed of the progress of the pilot.

- *Target indicators and outcomes:*

> ✓ Number of Farmers testing RECAP: **150**
> ✓ Number of Cross Compliance Inspections carried out remotely with RECAP: **50**
> ✓ Number of On The Spot Checks carried out with RECAP: **25**
> ✓ Reduction of Administrative Cost for paying agencies: **> 25%**
> ✓ Reduction of Administrative Burden for farmers: **> 25%**

- *Main activities performed:*

1. Recruitment & Training Activities:

* **Recruitment of Farmers** was ensured by Strutt & Parker thanks to its wide networks of contacts, which presented the summarise benefits of using the RECAP Platform to Farmers. **1 Promotional Leaflet** for Farmers was also elaborated and distributed. In total, **150 Farmers** were recruited.

* **Training Materials for Famers** were elaborated and distributed to Pilot Participants: **1 User Guide** for Farmers and Agricultural Consultants.

* **Training Activities for Famers** were ensured though the organization of **Individual Sessions** with Farmers on their Farms. Training Strategy for Farmers was based on face-to-face individual sessions with their field parcel data uploaded onto the RECAP Platform, in order to let them use the Platform on their own (and not in a classroom) closer to the scenario they would experience if they bought the software commercially.
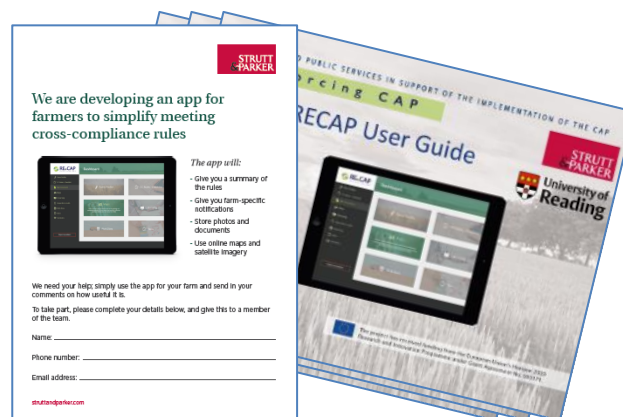
2. Filling in the Farm Details:

* **Farm data** from the 2016 declaration was uploaded in the RECAP Platform, which the individual farmers could access and add more up-to-date data (e.g. additional cross compliance user-generated data) when taking part in the Pilot.

3. Testing Activities:

* **Individual Sessions with Farmers** were organized (July-October 2018) in order to ensure the testing and the evaluation of the RECAP. In total, **150 Farmers** participated to these face-to-face individual sessions.

* **Testing Activities by Inspectors** consisted in the realization of mock inspections that were carried out by consultants from Strutt & Parker and researchers from UREAD. In total, **50 remote and 25 on-the-spot Farmers' declaration inspections** were performed.

4. Evaluation Activities:

* Individual Sessions with Farmers were organized (July-October 2018) for testing and also for evaluating the RECAP Platform. These on-site visits ensured the collection of evaluation questionnaires as well as Farmers' impressions and suggestions. In total, **150 Farmers** participated to these face-to-face individual sessions.

* Evaluation Questionnaires were filled out by **136 Farmers**, as well as by **6 Inspectors** (persons that ensured the role of inspector and performed the mock inspections).

1.5   The Pilot in Serbia

- *Pilot organization:*

The Serbian Pilot has been conducted by **INOSENS**, an innovative company, founded as spin-off of the University of Novi Sad. Its mission is to accelerate the transfer of innovative ICT technologies to the agrifood sector. INO is engaged in design and development of sensors, deployment of Wireless Sensor Networks and application of advanced remote sensing techniques for optimizing economic performance and environmental sustainability in agriculture. Building upon solid ICT and engineering background, INO promotes Internet of things-enabled technologies such as remote sensing services and sensor development.

- *Location:*

Organic Farmers participating in the Serbian Pilot are from the Northern province of Serbia - Vojvodina, and two municipalities from Central and South-east of Serbia.

Most of Organic Farms are from **Vojvodina** and the following municipalities: Subotica, Novi Sad, Zrenjanin, Sombor (Telecka village – group of organic farmers), Backa Topola.

2 groups of Organic Farmers are having farms located in **Central and South-east Serbia**: Blace Municipality, Babusnica Municipality.

- *Scenario & Focus:*

The Serbian Pilot has been designed as **a support for consultancy in order to enhance services related to the organic subsidy scheme**, and it is focused on the **monitoring of the entire process of subsidy claims for organic agriculture**. Its main objective is to validate how the RECAP Platform enables to monitor the obligations of farmers imposed by the Organic Agriculture subsidies, and increases efficiency and transparency of inspection procedures.

As an EU candidate country, Serbia does not implement CAP yet. However, Organic Subsidy Scheme is similarly structured and monitored to the cross-compliance scheme in CAP. Therefore, the RECAP Platform was adapted for Serbia in order to support the entire process of subsidy provision for Organic Farmers, Certification Bodies (and Agricultural Consultants) and for the Public Authority tasked with implementing, managing and controlling this payment scheme.

- *Pilot Participants & Specificities:*

Organic Farmers and **Farmers in conversion** to organic production have taken part in the Serbian Pilot. They have been reached through INO network, Organic Associations and Certified Groups of Organic Farmers.

Certification Bodies Staff and **Consultants** have also has been involved in the Serbian Pilot for testing the usefulness of the platform together with Organic Farmers, and evaluating how can the platform fits in their

regular workflow. 4 out of the 5 Certification Bodies in Serbia were involved, especially TMS – Technical & Management Service – and OCS – Organic Control System.

Paying Agency staff from the Serbian Directorate for Agrarian Payments-DAR also participated in the Pilot activities for performing OSOS (Organic Certification & Organic Subsidy provision) monitoring.

- *Target indicators and outcomes:*

> ✓ Number of Farmers testing RECAP: **75**
> ✓ Reduction of Administrative Cost for paying agencies: **> 25%**
> ✓ Reduction of Administrative Burden for farmers: **> 25%**

- *Main activities performed:*

1. Recruitment & Training Activities:

* Training Materials for Pilot Participants were developed and distributed: **3 Training Materials** on how to use the RECAP Platform – 1 for each Module of the RECAP Platform; and **1Manual** about Maps and graphical indicators for the Paying Agency and Organic Farmers.

* Recruitment of Farmers was mainly done through INO networks and cooperation with Organic production Cooperative, Organic production Organisations, Organic Associations and Certified Groups of Organic Farmers; as well as the organization of **3 Workshops for Farmers and Agricultural Consultants** (September-November 2017).

2nd Workshop (Subotica, 11/10/2017)

3rd Workshop (Novi Sad, 06/11/2017)

2. Filling in the Farm Details:

* First round of Testing was organized (March 2018), with the cooperation of the Certification Bodies staff, in order to support Farmers with the creation of their Farm Profiles and the filling of all the necessary data related to their farms (e.g. crop type, area of production, valid organic certificate, etc.): **50 Organic Farmers** got registered in the RECAP Platform with their Farm Profiles, and communicated with Certification Bodies and Agricultural Consultants.

3. Testing Activities:

* Individual Session with Organic Farmers were organized (April-May 2018) with all the registered users in order to test and use the RECAP Platform. Additional Training was proposed to Farmers and Training Materials were sent again as reminder. At this stage, **30 additional Farmers** joined the Pilot Activities.

* New functional usage of RS component (June 2018) was the occasion to provide Organic Farmers and PA representatives with the Manual about Maps and graphical indicators, and to support them with the additional features of the RS component.

* Second round of Testing was organized (July-September 2018) once the Platform was fully functional, through the organization of **Individual Sessions** (e.g. online, on-site visits, etc.) with Organic Farmers, Certification Bodies staff (after the on-spot control visits of Farmers) and PA representatives with the aim of testing and evaluating the RECAP Platform.

* Testing Activities by CB staff (July-September 2018) consisted in the use of the RECAP Platform as a preparation tool for the control visits of Farmers on their farm (on-spot checks) and the review of all necessary data of the Farmers (e.g. review of the documentation, preparation of potential breach and non-compliance with the rules of Organic Certification, etc.); as well as in the completion of the on-spot checks seasonal visits. During the on-spot-checks, CB staff used the check list and performed the control (e.g. documentation, parcels, area of cultivation, the respective rules of organic production, etc.). In total, **20 checks** were performed remotely, and **5 on-spot-the-checks** have been organized.

* Testing Activities by PA staff (August 2018) consisted in testing the usefulness of RECAP platform as a support for organic subsidy provision, control of quantities of produced organic products and verification of information provided by Farmers (e.g. crop type, area of production, organic certificate, etc.). In total, **10 OSOS** were monitored by 4 PA representatives.

4. Evaluation Activities:

*Individual Sessions (Jul – September 2018) in the form of on-site visits were organized by Local Team with selected Pilot Participants in order to ensure the testing of the RECAP Platform, the collection of evaluation questionnaires and a close interview with them for collecting impressions and suggestions. This selection was made taking into consideration the involvement of participants from the co-production phase (1 Organic Farmer and 1 CB staff) and the wide representation of users (e.g. age, IT skills, members of the Group of Organic Farmers, experience, etc.).

* Evaluation Questionnaires were filled out by **22 Organic Farmers**, **3 Certification Bodies** and the **Serbian Paying Agency** representative.

1.6   Impact and Results achieved

The realization of the Testing Activities within the 5 pilot participating counties (Greece, Spain, Lithuania, U.K. and Serbia) allowed the direct involvement of Pilot Participants from different end-user groups (e.g. Farmers, Organic Farmers, Agricultural Consultants, Inspectors, Certification Bodies and Paying Agencies); and the realization of concrete tasks (e.g. Cross-Compliance Checks, On the Spot Checks, etc.) depending on Pilot Participants' profile.

The main outcomes from the Testing Activities are summarized below:

- *Involvement of Pilot Participants:*

More than **1.025 Pilot Participants** directly participated to the Testing Activities, as described below:

Pilot Participants :	Total nº	1. Greece	2. Spain	3. Lithuania	4. U.K.	5. Serbia
* Farmers / Organic Farmers :	757	140	236*	151	150	80
* Agricultural Consultants / Advisors (supporting Farmers):	205	88	3	62	50	2**
* Inspectors (or consultants ensuring their role):	21	6	1	8	6	n.a.
* Certification Bodies staff (or consultants ensuring their role):	22	n.a.	n.a.	n.a.	n.a.	22
* Paying Agency :	3	1	0	1	n.a.	1
* Paying Agency staff (or similar):	20	6	1	9		4

n.a. (not applicable)
*35 Farmers; 236 CAP-declarants in the RECAP Platform.
** In Serbia, AC ensures the role of CB.

- *Realization of Testing Activities:*

More than **465 Inspections** were performed in the frame of the Testing Activities, as described below:

Testing Activities :	Total nº	1. Greece	2. Spain	3. Lithuania	4. U.K.	5. Serbia
* Cross Compliance Inspections : >> *Remotely:* >> *On The Spot Checks:*	312 118	85 30	80 27	97 36	50 25	n.a.
* Organic Certification Inspections : >> *Organic Certifications remotely monitored by CB:* >> *On-spot-control visits by CB:*	20 5	n.a.	n.a.	n.a.	n.a.	20 5
* OSOS (Organic Certification & Organic Subsidy provision) remotely monitored by PA :	10					10

n.a. (not applicable)

- *Final values of Impact Indicators:*

As a brief overview, the realization of the different Pilot Activities allowed to reach the below values:

Impact indicators	Target Value	Total result	1. Greece	2. Spain	3. Lithuania	4. U.K.	5. Serbia
Number of user downloads of the mobile app	5000	75*/5000	33%	11%	19%	5%	-
Classification techniques can accurately identify cross compliance breaches	0,9	~ 0,9/0,9	See part 2.				
Number of end users (farmers) in pilots	635	757/635	140/140	236/120	151/150	150/150	80/75
Number of cross compliance inspections carried out remotely with RECAP	305	332/305	85/85	80/80	97/90	50/50	20
Number of on the spot checks carried out with RECAP	115	123/115	30/30	27/25	36/35	25/25	5
Reduction of administrative cost for payment agencies	>25%	>25%	See section 4.2.				
Reduction of administrative burden for farmers	>25%	>25%	See section 4.2.				
Agricultural consultants interested in the RECAP platform	470	>1,400**/470	88/50	50/100	62/50	250/75	22/45

Among the most popular countries having downloaded the mobile app, there is also India (12%);

*** In addition to Agricultural Consultants having participated to Testing Activities and expressed their interest in the RECAP Platform; this value also includes additional AC reached by others activities such as dissemination actions (e.g. +200 in UK, +47 in Spain, + >1,000 in other countries);*

Analysing the RECAP access data we can identify a divergence between usage and type of platform within the RECAP users. This divergence in terms of using the RECAP web and downloading-engaging with the RECAP mobile App can be justified in a number of reasons.

Firstly, due to the remote sensing coverage. The initial aim of the RECAP project was to provide remote sensing results in a national level coverage for the pilot countries, engaging and involving the maximum possible number of users. However, this approach was quite ambitious and entailed a lot of restrictions. Obtaining and processing remote sensing data for a national level coverage requires high storage capacity, more CPU/RAM intensive and faster and more secure servers and instances. All these would result in higher costs, costs that would make the pilot testing non-financially feasible. On the contrary, RECAP focused on the quality of the results instead of the quantity, while demonstrating improvements in the use of the remote sensing algorithm. In that sense, it was essential to focus on specific tiles for each pilot country, decreasing the number of potential mobile users that could download and use the mobile application which also includes the remote sensing component.

Secondly, users are in their majority reluctant to use mobile apps. Users are nowadays highly selective about which applications they select to install to their phone and if they do, they compare the functions and usefulness they receive of having the application installed to the functions and usefulness they receive while browsing the available web version. The RECAP solution offers a user-friendly web application, allowing the

users to view the presented information in a detailed and harmonized way and eliminating the complexity of download and installation to their mobile device. More specifically the farmers, which are one of the main target groups of RECAP, are even more reluctant in the use of mobile applications, exception being the younger farmers who tend to and showcase a greater willingness to adopt mobile applications and maximise the use of their smartphones. Similarly, inspectors also preferred to use the web application instead of installing the mobile one. The ones that have downloaded and utilised the mobile application, were the ones that knew in advance that no reception would be possible at the fields for inspection.

⇨ **Expect** the Impact Indicator referring to **the mobile app**, the other **indicators have been reached and present higher values** than target values initially set.

2. Technical outcomes and achievements

The RECAP project has led to the development of the RECAP Platform, which has been built as a tailor-made solution and a supporting tool for 1) delivering services that enable the improved implementation of the CAP – cross compliance and greening inspections; and assisting Farmers, Agricultural consultants, Inspectors and Paying Agencies in their respective CAP obligations; and 2) delivering services to support the administrative monitoring of the organic subsidy scheme in Serbia; and assisting Organic Farmers, Certification Bodies and Paying Agency in their respective Organic Certification (OC) and Organic Subsidies (OS) obligations. Moreover, the Testing Activities performed within the 5 pilot territories, and especially the realization of the Inspections, have also led to technical outcomes and achievements related to the Remote Sensing Tool.

The RECAP Remote Sensing (RS) tool provides automated earth observation processing workflows to assist paying agency inspections with respect to farmers' compliance to their CAP obligations. The methodology is founded on **the accurate crop type classification via machine learning application on a time-series of combined Sentinel 2 imagery and relevant vegetation indices**. The monitoring of compliance was algorithmically addressed for specific CC and Greening requirements (see *Box 1*).

RECAP case study participants commented on the practicalities of using RS information and machine learning to successfully classify crop types and identify compliance with environmental requirements (e.g. GAEC, greening, etc.):

"Different description of crop types would imply different spectral signatures for the crop classes and thereby different classification results. Additionally, there are differences in the percentage of correctly declared cultivated crop types that accordingly affect the training of the machine learning algorithms. In Navarra, Spain declarations are almost completely correct and therefore results are excellent. In Greece, however, there is a significant percentage of falsely declared crop types that affects the classification accuracy. Nonetheless, the algorithm is indeed robust; in the sense that if 20% of declarations are wrongly stated this would roughly mean only 5% reduction in accuracy. Finally, in countries such as Lithuania, where cloud coverage is significant throughout the year algorithmic modifications are necessary. For example, it was found that a different machine learning algorithm performed best for the Lithuanian case.

The main pillar of the agriculture monitoring scheme is the accurate crop type classification. The practicality of the classification is straightforward. However, RECAP attempted to specifically address the compliance of farmers to their actual CAP obligations (GAECs, SMRs, and Greening). For some CAP obligations, such as Greening 1, crop classification is indeed all that is needed to decide on the compliance of the farmers. Another such case of direct decision making is the monitoring of GAEC 6, where the stubble burning classification output of the RS component can identify burnt parcels with 90-95% reliability (user's accuracy).

Now, for other obligations such as SMR 1 (Reduce water pollution in nitrate vulnerable zones), the RS component of the RECAP platform provides a risk assessment on the soil loss and runoff to nearby watercourses, for each parcel. This is indeed a prerequisite for the farmers in order to comply with SMR 1, but the rule also extends to manure spreading obligations that cannot be addressed by remote sensing. Therefore, even though the remote sensing information provided with respect to SMR 1 is useful, it is not complete for compliance decision making."

Box 1: Evaluation of remote sensing (RS) and machine learning (ML) tools to classify crop types and monitor environmental requirements.

The 5 pilot territories were provided by different Remote Sensing products, as described below:

- **UK and Serbia:** The crop identification products were not provided for those two pilots, as farmers' declarations for the training of the algorithms could not be attained due to administrative and bureaucratic obstacles. The RS tool, however, includes the time-series of true color composites of Sentinel-2 imagery, along with pertinent vegetation indices (e.g. NDVI, NDWI, SAVI, PSRI…), soil erosion indices, slope maps, aspect maps, and other GIS layers provided by the users themselves (e.g. roads, hydrographic network, etc.).

- **Greece, Spain and Lithuania**: Those three pilots were provided with the full suite of Remote Sensing products, including all aforementioned maps, images and layers. They were additionally provided with the crop type identification, stubble burning identification and runoff risk assessment products, along with other intermediary byproducts or derived products.

The practicality of the output RS information ranges from direct decision making (e.g. for Greening 1) to simple indicators of potential noncompliance (e.g. for GAEC 4 and GAEC 5). This depends on the complexity of the individual CAP obligation and the relevance of RS information in addressing it.

The RS component comprises of three principal processing chains, namely the crop type mapping, the runoff risk analysis and the identification of stubble burning. The relevance of the developed RS solution to the CAP monitoring challenge is essentially based on the accuracy of the crop type classification. Validated results showed an overall crop type mapping accuracy in the range 80-90% for the identification of 9-13 different crop types, depending on the case study, which explain more than 90% of the regional agricultural zone (Source: Pers. comm, case study participants, July 2018).

The algorithm provides satisfactory results, namely 75-85% accuracy, even for datasets that include satellite imagery only until mid-late June. This is very important, since paying agencies require accurate information at the time of the farmers' applications, in order to better target their sampled on-the-spot inspections to parcels that constitute potential breaches of compliance.

The crop type classification accuracy depends on three parameters: 1) Percentage of truthful declaration; 2) Cloud coverage; and 3) Parcel size.

In one of the case studies—Navarra, Spain—where 90% thematic accuracy was achieved, all these parameters were optimal. This means more than 97% of truthful declarations, limited cloud coverage, and an average parcel size of 2 ha, which is considered sufficiently large for a Sentinel-2 based classification.

When a considerable percentage of declarations are not truthful, then similar crop types, both in spectral characteristics and phenology—e.g. wheat, barley, oats—might not be well discriminated. Hence, merging of such crop types into spectrally coherent clusters (e.g. Cereals) would be necessary for an adequately accurate result. Therefore, the thematic accuracy of the crop identification products depends on the type of information one is aiming for.

Finally, as a rule of thumb, for parcel sizes larger than 0.5 ha one can have high confidence in the algorithm estimations.

Performing both Inspections, remotely with RECAP and on-the-spot, in the frame of the Testing Activities were supposed to allow the verification of compliance and the definition of the accuracy level of classification techniques; especially for the crop type identification product of the RS tool.

The following sub-sections only present the statistics and quantitative metrics for the RS results obtained for the 3 Pilots of Greece, Spain and Lithuania, as they were the only ones provided with products of measurable quality.

2.1   Results related to Crop type identification product

The **crop type identification accuracy** was evaluated by NOA for entirety of the datasets against the farmers' declarations; as well as, against validated ground truth information, collected by the pilot inspections (in selected subsets of the datasets).

Moreover, the RS results were provided in **two iterations**:

✓ The **first** iteration was in late June 2018, right after the completion of farmers' applications; and refers to the classification performed **using satellite imagery** until late June 2018;

✓ The **second** iteration was in late August 2018; and refers to the classification performed **incorporating additional imagery (new Sentinel-2 acquisitions)** that was acquired throughout the summer.

Accuracy against declarations	Overall Accuracy
1. Greece	Iteration 1: **0,909** Iteration 2: **0,912**
2. Spain	Iteration 1: **0,887** Iteration 2: **0,922**
3. Lithuania	Iteration 1: **0,706** Iteration 2: **0,766**

- *Pilot – Spain:*

Crop type nomenclature:
Soft Wheat
Corn
Barley
Oats
Sunflower
Broad beans
Rapeseed
Vinification vineyard
Cherry trees
Shrubby grass of 5 or more years

Overall Accuracy:	
Iteration 1 - late June	Iteration 2 - late August
88,7%	92,2%

⇨ Based on the inspections performed by INTIA using the late August 2018 iteration of the RS results, 105 out of the total 107 parcels inspected were found to be correctly classified. This amounts to **98,1% overall accuracy**.

Crop type:	PA Accuracy*		UA Accuracy**	
	Iteration 1	Iteration 2	Iteration 1	Iteration 2
Soft Wheat	92%	95%	89%	93%
Corn	91%	94%	85%	93%
Barley	91%	94%	90%	92%
Oats	77%	87%	86%	92%
Sunflower	84%	89%	88%	93%
Broad beans	72%	84%	86%	95%
Rapeseed	92%	91%	94%	95%
Vinification vineyard	79%	85%	83%	80%
Cherry trees	74%	74%	73%	100%
Shrubby grass of 5 or more years	64%	72%	80%	85%

PA = Producer's Accuracy is the map accuracy from the point of view of the map maker (the producer). This is how often are real features on the ground correctly shown on the classified map or the probability that a certain land cover of an area on the ground is classified as such.

**UA = The User's Accuracy is the accuracy from the point of view of a map user, not the map maker. The User's accuracy essentially reveals how often the class on the map will actually be present on the ground.*

The concept of the traffic light system has been introduced in order to enable a smart sampling methodology for the paying agency inspections. Each parcel is characterized with the posterior probability confidence of its classification decision, separating all parcels into confidence intervals (green, yellow, red and unreliable). One smart sampling scenario is to isolate the parcels for which the estimated crop type does not agree with the declared one but with high confidence. These occurrences are thought to be potential breaches of compliance. Reading the table below, for this particular scenario, there are 84% (Iteration 1) and 89% (Iteration 2) of the parcels in the area of interest which are found to be classified confidently.

Crop type:	Confidence Statistics – Iteration 1		Confidence Statistics – Iteration 2	
	% in dataset	Correctly classified	% in dataset	Correctly classified
Green	84%	94%	89%	96%
Yellow	6%	70%	4%	75%
Red	5%	56%	4%	62%
Unreliable	5%	52%	3%	53%

- *Pilot – Lithuania:*

Crop type nomenclature:		
Crop description:	merged classes	% of dataset
Oats Spring triticale Spring wheat Spring barley	Spring Cereals	28,00
Winter triticale Winter wheat Winter barley Winter rye	Winter Cereals	16,00
Pasture or meadow, perennial grass up to 5 years Perennial pastures or meadows 5 years and more	Pastures	24,62
Green Fallow Black Fallow	Fallow	7,14
Buckwheat	-	2,55
Corn	-	2,80
Spring rape	-	2,46
Winter rape	-	3,55
Potatoes	-	1,51
Sugar beet	-	0,61
Beans	-	2,22
Peas	-	4,24
Clover	-	2,88
Lucerne	-	1,38

Overall Accuracy:	
Iteration 1 - late June	Iteration 2 - late August
70,6%	76,6%

⇨ It should be noted that the validated dataset, acquired through the Lithuanian Paying agency inspections, revealed an actual **overall accuracy of 76,2% in late June and 80,0% in late August** out of 3.319 parcels inspected.

	PA Accuracy		UA Accuracy	
Crop type:	Iteration 1	Iteration 2	Iteration 1	Iteration 2
Spring Cereals	91%	93%	66%	72%
Winter Cereals	84%	84%	78%	79%
Pastures	90%	92%	76%	77%
Fallow	40%	43%	46%	73%
Buckwheat	17%	70%	58%	70%
Corn	40%	85%	49%	77%
Spring rape	12%	58%	81%	91%
Winter rape	84%	82%	96%	97%
Potatoes	<10%	<10%	33%	60%
Sugar beet	18%	85%	89%	91%
Beans	<10%	24%	85%	92%
Peas	36%	37%	79%	88%
Clover	<10%	<10%	70%	86%
Lucerne	<10%	<10%	100%	100%

	Confidence Statistics – Iteration 1		Confidence Statistics – Iteration 2	
Crop type:	% in dataset	Correctly classified	% in dataset	Correctly classified
Green	52%	88%	61%	90%
Yellow	14%	71%	13%	72%
Red	15%	54%	12%	56%
Unreliable	19%	36%	14%	38%

- *Pilot – Greece:*

Crop type nomenclature:	
Crop description:	merged classes
Durum wheat Other cereals	Cereals
Maize Maize for animal feed	Maize
Vineyards for wine Vineyards for table use	Vineyards
Cotton	-
Olive trees	-
Legumes	-

Overall Accuracy:	
Iteration 1 - late June	Iteration 2 - late August
90,9%	91,2%

⇨ The parcels/ farmers that were chosen for OTSC/ RS are classified with high confidence to different crop types than the declared one. Out of 30 parcels that were visited during OTSC, 17 were found with different crop than the declared and verified by the crop type classification. Out of 85 parcels that were photointerpented by the PA, 9 were declared correctly (classification was wrong) and 76 were declared wrong (classification was correct). This clearly indicates the success of the traffic light system. Out of the 85 parcels that were supposedly wrongly classified based on the declarations, **almost 90%** of them were found to agree with the estimated crop type.

	PA Accuracy		UA Accuracy	
Crop type:	Iteration 1	Iteration 2	Iteration 1	Iteration 2
Cereals	96%	96%	92%	93%
Maize	52%	59%	83%	81%
Vineyards	57%	56%	83%	80%
Cotton	92%	92%	93%	94%
Olive trees	92%	92%	88%	87%
Legumes	68%	71%	86%	86%

	Confidence Statistics – Iteration 1		Confidence Statistics – Iteration 2	
Crop type:	% in dataset	Correctly classified	% in dataset	Correctly classified
Green	92%	94%	92%	94%
Yellow	3%	62%	3%	62%
Red	3%	55%	3%	56%
Unreliable	3%	46%	3%	50%

The performance of the crop identification algorithm has been additionally assessed against the validated inspection samples from the three pilot sites.

Validated accuracies:	Conditions:	Overall Accuracy:
1. Greece	Nº of correctly classified parcels (late August) from the ones inspected: **76** Nº of total parcels inspected: **85** **(Note: visiting only parcels that have been wrongly classified according to the declarations)**	**89,4%**
2. Spain	Nº of correctly classified parcels (late August 2018) from the ones inspected: **105** Nº of total parcels inspected: **107**	**98,1%**
3. Lithuania	Nº of correctly classified parcels from the ones inspected (late June 2018): **2530** Nº of correctly classified parcels from the ones inspected (late August 2018): **2654** Nº of total parcels inspected: **3319**	Iteration 1: **76,2%** Iteration 2: **80,0%**

2.2   Results related to Stubble and residue burning identification product

Moreover, the **stubble and residue burning identification accuracy** was evaluated by NOA **using photointerpretation**; and main comments from the different pilots are displayed below:

- *Greece:*

As Greek farmers tend to burn parcel during September and October, the burn scar mapping algorithm had to be tested with data from last year (given the fact that the pilot implementation was finalized in September 2018). Thus, photointerpretation took place with Sentinel-2 images from August to October 2017.

# parcels	PA (%)	UA (%)
115	89,3	93,3

- *Spain:*

There were no burning parcels among the Spanish inspections. Therefore, the RS algorithm could not be evaluated for burning identification. Nonetheless, no parcels have been identified as burnt by the RECAP System in the frame of the inspections.

- *Lithuania:*

According to the agriculture practices, the pastures are burnt in spring season and cereal fields – in autumn. It has been observed that burning marks in the fields disappear completely after a month. Therefore, it was not possible to control the correctness of the algorithm in that field when pilot was implemented in August 2018. However, taking into consideration the nature of spring cereals, parcels cannot be burnt in spring, if in August normal vegetation of spring cereals is observed. As a result, it has been assumed that 4 parcels out of 46 marked as burnt could be a reality. But in order to put this value into perspective, it is important to realize the big picture. This means that those 46 parcels were selected out of the total of 3 716 pilot parcels. Therefore, thousands were excluded as not burnt, which is a job on its own.
When the actual mass burning of cereals residue and stubble takes place in autumn, the algorithm is expected to perform much better. Also, additional fine tuning based on the training of the actually burnt

parcels will take place at that time (September-October). On this end based on the late August iteration, when a lot more parcels were found burnt as the cereal stubble and residue burning had started, we performed a photointerpretation-based evaluation of the accuracy (see Table below).

# parcels	Burnt (%)	Probably Burnt (%)	Probably Not Burnt (%)
307	30,3	38,4	31,3

2.3   Results related to Cross-compliance requirements checking

Based on the Inspections carried out by the pilots, the below table presents main comments on the possibility to check Cross-compliance requirements using only RECAP:

Main comments on Stubble and residue burning identification:	
2. Spain	The contribution of the RS Tool has been positively assessed by Farmers for the identification of errors that they could have made in the CAP crop declaration. In this way, penalties derived from these errors could be avoided. Thus, the RS Tool is an opportunity to correct these errors before inspections.
3. Lithuania	It has been observed that: * 2 out of 20 cross-compliance standards (GAEC 5 and GAEC 7) can be fully checked in RECAP Platform by reviewing appropriate layers, the remote sensing data regarding the crop type determined and geotagged evidences provided by farmers; * 4 out of 20 cross-compliance standards (GAEC 4, GAEC 6, GAEC 2 and SMR 1) can be partly checked in the RECAP Platform by reviewing the remote sensing data regarding the crop type determined and by asking geotagged evidences for pastures and other documentation, in such a way reducing the extent of OTSC, but in all cases for GAEC 4, GAEC 6, GAEC 2 and SMR 1 the farm visit is still mandatory.

2.4   Technical evaluation of the RS

Those technical outcomes and achievements contribute to the initial objective of RECAP, which consists in demonstrating how RS technology, among all other platform functionalities, can assist the farmers, the agricultural consultants and predominantly the paying agencies in their respective CAP obligations.

The RECAP Platform and its RS component, in its current version, cannot completely automate and solve the monitoring of CAP obligations. However, the RS component has sawn a great potential to provide the RECAP Platform with classification techniques for identifying compliance breaches with cross-compliance rules, legislative standards and obligations.

Indeed, some implementations developed throughout the course of this project have demonstrated its technical capacity for crop type identification, burning identification cross compliance checking, etc.; and should be seen as a stepping stone towards a complete monitoring of the CAP.

The algorithms, methods, functionalities of the platform are a proof of concept at a pre-operational level. Functioning as a helpful tool in an operational environment needs the appropriate fine tuning, modifications, large scale application, etc.

3. Evaluation of the Pilots

3.1   Methodology

In addition to the Testing Activities, the 5 pilot participating countries (Greece, Spain, Lithuania, U.K. and Serbia) also carried out Evaluation Activities in order to collect feedback and analyse experiences of the Pilot Participants.

The specific objectives of these Evaluation Activities were mainly: i) **determining the satisfaction of end-users** with the RECAP Platform and its services; ii) **evaluating the extent to which RECAP is meeting the overall objectives established** for the solution; iii) **gathering effective feedback to enhance the RECAP platform**, iv) **getting perceptions and insights from end-users** for future application (e.g. short term use, perspectives offered, sustainability, etc.); and v) **drawing recommendations** to deliver more effective and efficient services, etc.

The Evaluation of the RECAP Solution by the Pilots Participants has been mainly based on the following **Evaluation Tools and Activities**:

- *Global Evaluation Questionnaire* consists in a common basis, for producing the evaluation questionnaires, that was designed in order to evaluate the experience of Pilot Participants as user of the RECAP Platform, as well as to collect consistent basis of information from the different end-user groups (e.g. Farmers, Organic Farmers, Agricultural Consultants, Inspectors, Certification Bodies and Paying Agencies). Based on this common basis, a set of **Evaluation Questionnaires** were designed for the different end-user groups, adapted to local specificities, translated to local languages and converted in Google Forms in order to ease the data collection;

- *Individual Interviews* consists in the organization of close and individual Interviews (e.g. face-to-face on site, online, via phone, etc.) with Pilot Participants in order to guarantee a proper understanding of the Evaluation Questionnaire, as well as its correct completion.

- *Focus Groups* consists in the organization of specific meetings or events at local level, with a reduced and selected group of end-users, in order to explore and discuss more in deep the collected feedback with the Evaluation Questionnaire and validate the main insights and observations made by pilot participants. Discussions of Focus Groups were especially centred on main aspects for ensuring the sustainability, transferability and wider take-up of the RECAP Platform, such as i) outlining the perceptions of the end-users on the RECAP Solution, ii) drawing recommendations for enhancing the Platform and its services, etc.

>> EVALUATION ACTIVITIES:

- **Defining a Local Evaluation Strategy**: each Pilot Team has defined its own Local Evaluation Strategy, adapted to its Local Testing Strategy, in order to ensure the appropriate evaluation of the RECAP Solution and the experiences of the Pilot Participants in its territory, by defining the means of collecting feedback (e.g. Google Forms, Own Evaluation Forms, etc.) from Pilot Participants and the type of Evaluation Activities (e.g. Individual Interviews, Focus Groups, etc.) to be performed with the different end-user groups;

- **Collecting feedback from Pilot Participants**: each Pilot Teams has collected feedback from Pilot Participants, for all the end-user groups directly involved in their Pilot, by asking them to fill out Forms (e.g. Google Forms, Own Evaluation Forms, etc.); and, in some cases, through the organization of Individual Interviews in order to guaranty a precise collection of feedback.

- **Précising the main findings from the different end-user groups:** Pilot Teams that did not collected feedback from Pilot Participants in the frame of close and individual interviews, also organized Focus Groups (with the more relevant end-users group for its organization) in order to discuss deeply and validate insights and observations from the different end-user groups.

3.2   Procedures used by the Pilots

The 5 pilot participating countries (Greece, Spain, Lithuania, U.K. and Serbia) have been provided with the above methodology - with the corresponding Evaluation Tools and Activities - for the evaluation of the RECAP Solution.

However, some liberty has been given to Pilot Teams in order to run Evaluation Activities due to the fact that there are some differences between the Pilots (e.g. specific local needs, pilot scenario, type of organization involved in the Pilot Teams, access and proximity to the different end-user groups, etc.).

The **Evaluation Activities** carried out within the 5 pilot participating counties (Greece, Spain, Lithuania, U.K. and Serbia) are summarized in the below table; and involved more than **566 Pilot Participants** as described below:

Evaluation Activities:	Data collection from:	Data analysis:
1. Greece	. **129 Farmers** (EQ) . **11 Agricultural Consultants** (EQ) . **4 Inspectors / PA staff** (EQ)	. **Individual Interviews** with Farmers, Agricultural Consultants, Inspectors/PA staff.
2. Spain	. **9 Farmers** (EQ) . **1 Agricultural Consultants** (EQ) . **1 Inspectors** (EQ)	. **Focus Group** with Farmers, Agricultural Consultants and Inspectors.
3. Lithuania	. **151 Farmers & 62 Agri. Consultants** (EF) . **3 Farmers** (EQ) . **10 Agricultural Consultants** (EQ) . **8 Inspectors** (EQ) . **9 Paying Agency staff** (EQ)	. **Focus Group** with Farmers, Advisors and specialists of IT Department.
4. U.K.	. **136 Farmers** (EQ) . **6 Inspectors** (EQ)	. **Individual Interviews** with Farmers.

5. Serbia	. 22 Organic Farmers (EQ) . 3 Certification Bodies staff (EQ) . 1 Paying Agency staff (EQ)	. **Individual Interviews** with Farmers, Certification Bodies and Paying Agency.

EQ - Evaluation Questionnaire
EF - own Evaluation Form

3.3   Profile of the Pilot Participants involved in the evaluation process.

In total, the Pilot Teams collected and analysed feedback from **more than 566 Pilot Participants** through the different Evaluation Tools and Activities; belonging at the different end-user groups:
- **Farmers / Organic Farmers**;
- **Agricultural Consultants** / Advisors;
- **Inspectors** (or consultants ensuring their role);
- **Certification Bodies staff** (or consultants ensuring their role);
- **Paying Agency staff** (or similar).

Displayed data in this section 3.3., and in the part 4. of the report, correspond to feedback from **357 Pilot participants** collected through the **Evaluation Questionnaires.**

1. Repartition and characteristics of pilot participants

Pilot Participants presents the below **repartition and characteristics** in terms of:

- Country;
- End-user Profile;
- Age;
- Education;
- Experience in their fields;
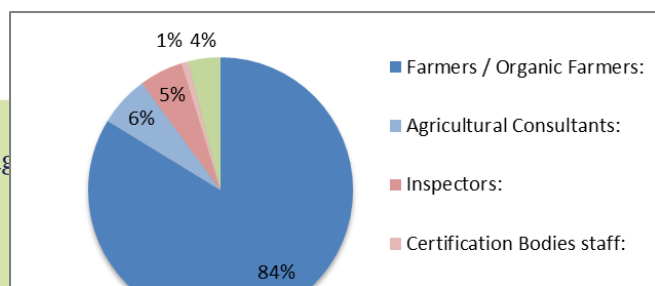- Use of ICT or apps.

- *Repartition by COUNTRY:*

Repartition:	Number	%
Greece:	148	41,5%
Spain:	11	3,1%
Lithuania:	30	8,4%
UK:	142	39,8%
Serbia:	26	7,3%
Total:	357	100,0%
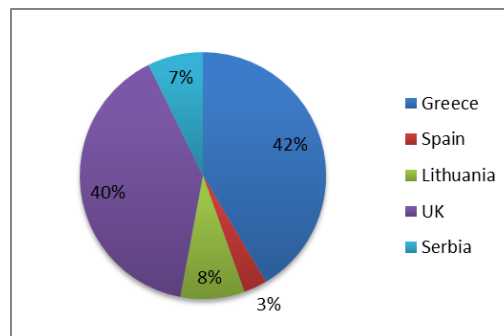
- *Repartition by END-USER PROFILE:*

Repartition :	Number	%

Farmers / Organic Farmers:	299	83,8%
Agricultural Consultants (supporting Farmers):	22	6,2%
Inspectors (or consultants ensuring their role):	19	5,3%
Certification Bodies staff (or consultants ensuring their role):	3	0,8%
Paying Agency staff :	14	3,9%
Total:	**357**	**100,0%**

- *Characteristics of FARMERS / ORGANIC FARMERS:*

Characteristics :	Age			Education			Experience in **Agriculture** (nº of years)			User of **ICT or apps**		
		Number	%		Number	%		Number	%		Number	%
Farmers / Organic Farmers:												
	< 30	32	10,7%	University	121	40,5%	< 10	49	16,4%	at home	232	77,6%
	30 ≤ x < 40	64	21,4%	School	102	34,1%	10 < x < 20	79	26,4%	NA	7	2,3%
	40 ≤ x < 50	77	25,8%	No formal qualifications	69	23,1%	> 20	163	54,5%	at work	218	72,9%
	≥ 50	119	39,8%	NA	7	2,3%	NA	8	2,7%	NA	7	2,3%
	NA	7	2,3%	-	-	-	-	-	-	-	-	-
Total:		**299**	**100,0%**		**299**	**100,00%**		**299**	**100,00%**		**299**	**100,00%**

- *Characteristics of AGRICULTURAL CONSULTANTS:*

Characteristics :	Age			Education			Experience in **Agriculture** (nº of years)			User of **ICT or apps**		
		Number	%		Number	%		Number	%		Number	%
Agricultural Consultants (supporting Farmers):												
	< 30	0	0,0%	University	21	95,5%	< 10	4	18,2%	at home	21	95,5%
	30 ≤ x < 40	7	31,8%	School	1	4,5%	10 < x < 20	7	31,8%	NA	-	-
	40 ≤ x < 50	7	31,8%	No formal qualifications	0	0,0%	> 20	11	50,0%	at work	17	77,3%
	≥ 50	8	36,4%	NA	-	-	NA	-	-	NA	1	4,5%
	NA	-	-	-	-	-	-	-	-	-	-	-
Total:		**22**	**100,0%**		**22**	**100,00%**		**22**	**100,00%**		**22**	**100,00%**

- *Characteristics of INSPECTORS / CERTIFICATION BODIES STAFF:*

Characteristics :	Age	Education	Experience in **Inspecting Basic Payment Scheme (BPS) Declaration / Monitoring Farmer's Compliance (nº of years)**	User of **ICT or apps**

		Number	%		Number	%		Number	%		Number	%
Inspectors *(or consultants ensuring their role):*												
	< 30	2	10,5%	University	11	57,9%	< 10	11	57,9%	at home	17	89,5%
	30 ≤ x < 40	8	42,1%	School	8	42,1%	10 < x < 20	8	42,1%	NA	-	-
	40 ≤ x < 50	8	42,1%	No formal qualifications	0	0,0%	> 20	0	0,0%	at work	18	94,7%
	≥ 50	1	5,3%	NA	-	-	NA	-	-	NA	-	-
	NA	-	-	-	-	-	-	-	-	-	-	-
Total:		**19**	**100,0%**		**19**	**100,00%**		**19**	**100,00%**		**19**	**100,00%**
Certification Bodies staff *(or consultants ensuring their role):*												
	< 30	0	0,0%	University	3	100,0%	< 10	1	33,3%	at home	3	100,0%
	30 ≤ x < 40	1	33,3%	School	0	0,0%	10 < x < 20	2	66,7%	NA	-	-
	40 ≤ x < 50	1	33,3%	No formal qualifications	0	0,0%	> 20	0	0,0%	at work	3	100,0%
	≥ 50	1	33,3%	NA	-	-	NA	-	-	NA	-	-
	NA	-	-	-	-	-	-	-	-	-		
Total:		**3**	**100,0%**		**3**	**100,00%**		**3**	**100,00%**		**3**	**100,00%**

- *Characteristics of* PAYING AGENCIES STAFF:

Characteristics :		**Age**			**Education**		**Experience in processing Comon Agricultural Policy (CAP) Declaration / inspecting OSOS Declaration (nº of years)**			**User of ICT or apps**		
		Number	%		Number	%		Number	%		Number	%
Paying Agencies staff :												
	< 30	0	0,0%	University	14	100,0%	< 10	7	50,0%	at home	12	85,7%
	30 ≤ x < 40	5	35,7%	School	0	0,0%	10 < x < 20	7	50,0%	NA	-	-
	40 ≤ x < 50	8	57,1%	No formal qualifications	0	0,0%	> 20	0	0,0%	at work	14	100,0%
	≥ 50	1	7,1%	NA	-	-	NA	-	-	NA	-	-
	NA	-	-	-	-	-	-	-	-	-		
Total:		**14**	**100,0%**		**14**	**100,00%**		**14**	**100,00%**		**14**	**100,00%**

2. Some observations related to their testing experience

Based on their **testing experience**, Pilot participants made the below **observations/declarations** regarding:

- The necessary time to get used with the RECAP Platform;
- The Dashboard's options used / tested;
- The use of the Mobile RECAP apps.

- *Time considered as necessary to get used with the RECAP Platform:*

Repartition :	less than 2 hours	between 2-3 hours	between 3-4 hours	between 4-5 hours	between 5-10 hours	more than 10 hours	Total:
Farmers / Organic Farmers:	134	114	33	15	0	3	**299**
Agricultural Consultants (supporting Farmers):	0	6	10	4	1	1	**22**
Inspectors (or consultants ensuring their role):	8	5	1	2	3	0	**19**
Certification Bodies staff (or consultants ensuring their role):	0	0	1	2	0	0	**3**
Paying Agency staff :	6	4	1	1	2	0	**14**
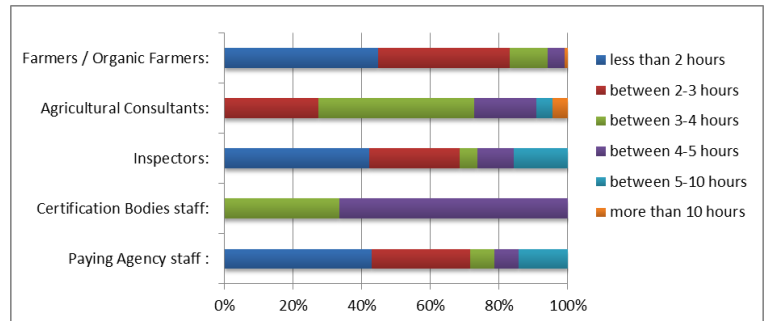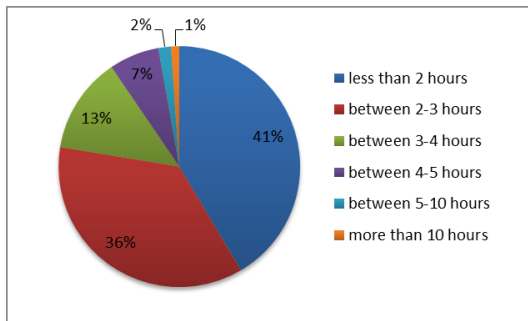
- *The Dashboard's options used / tested by FARMERS / ORGANIC FARMERS*

In the frame of the testing activities, Farmers / Organic Farmers declared to have used/tested **more than 56%** of the available options in the Dashboard of the Farmer & Agricultural Consultant Module, as described below:

Repartition :	Number of Farmers/Organic Farmers	yes	no	not answered
1. Farm profile	299	98,0%	2,0%	0,0%
2. CC rules – checklist **2'. Data Management***	299	68,6%	30,4%	1,0%
3. My documents	299	67,2%	30,8%	2,0%
4. Work diary	163**	35,0%	65,0%	0,0%
5. Roles	299	23,1%	34,8%	42,1%
6. Reminders	299	73,9%	22,1%	4,0%
7. Maps	299	89,0%	8,7%	2,3%
8. BPS history **8'. OSOS history***	299	42,1%	15,7%	42,1%
9. Help	299	53,5%	41,1%	5,4%
10. Self-Assessment	299	51,8%	46,5%	1,7%
11. Greening calculator	163**	36,8%	63,2%	0,0%
12. Contact PA **12'. Contact CB***	163**	33,7%	66,3%	0,0%
13. Report a problem	299	20,4%	37,5%	42,1%

* For the Serbian Pilot.

** Not tested in the UK Pilot: based on the users' needs and requirements identified, the Work dairy was not part of the UK platform.

* For the Serbian Pilot.

** Not tested in the UK Pilot.

* For the Serbian Pilot.
** Not tested in the UK Pilot: no PA directly involved
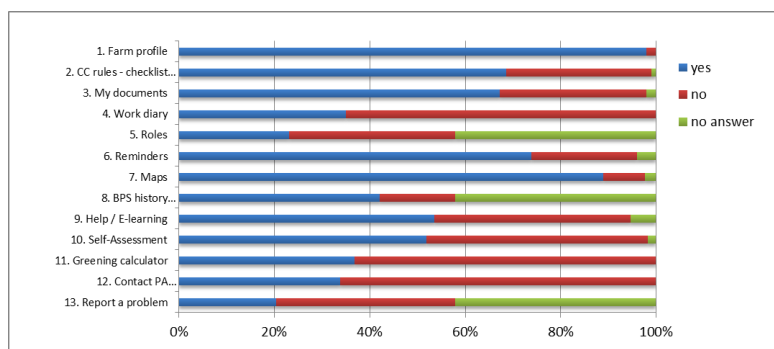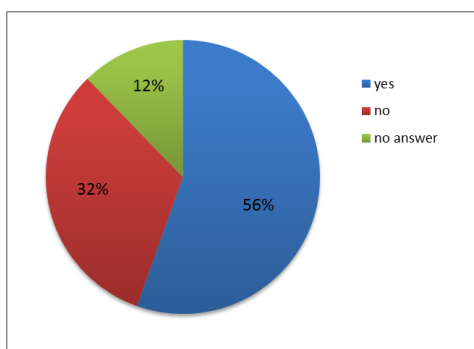
- *The Dashboard's options used / tested by AGRICULTURAL CONSULTANTS*

In the frame of the testing activities, Agricultural Consultants declared to have used/tested **55%** of the available options in the Dashboard of the Farmer Module, as described below:

Repartition :	Number of Agricultural Consultants	yes	no	not answered
1. Farm profile	22	95,5%	4,5%	0,0%
2. CC rules – checklist	22	50,0%	50,0%	0,0%
3. My documents	22	81,8%	18,2%	0,0%
4. Work diary	22	45,5%	54,5%	0,0%
5. Roles	22	40,9%	59,1%	0,0%
6. Reminders	22	81,8%	18,2%	0,0%
7. Maps	22	100,0%	0,0%	0,0%
8. BPS history	22	36,4%	63,6%	0,0%
9. Help	22	27,3%	72,7%	0,0%
10. Self-Assessment	22	31,8%	68,2%	0,0%
11. Greening calculator	22	31,8%	68,2%	0,0%
12. Contact PA	22	31,8%	68,2%	0,0%
13. Report a problem	22	63,6%	36,4%	0,0%
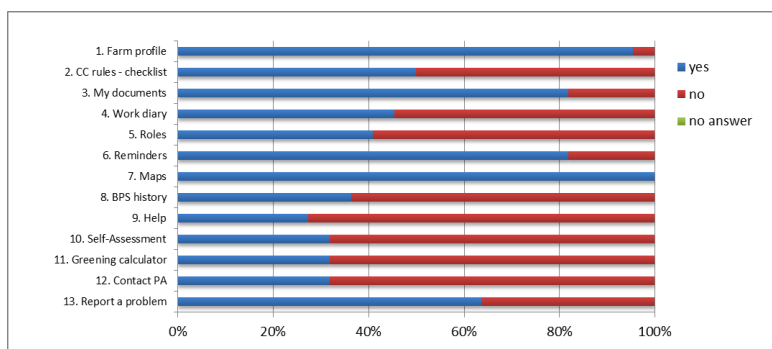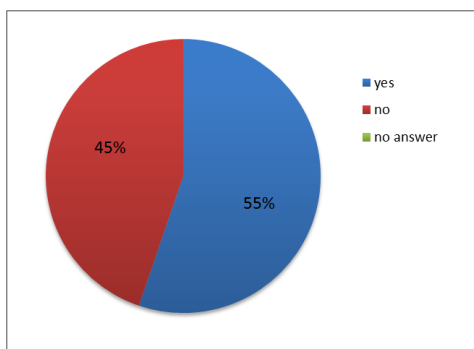
- *The Dashboard's options used / tested <u>by INSPECTORS</u>*

In the frame of the testing activities, Inspectors declared to have used/tested **69%** of the available options in the Dashboard of the Inspector Module, as described below:

| Repartition :	Number of Inspectors	yes	no	not answered
1. Inspection Forms	19	89,5%	10,5%	0,0%
2. Inspections	19	94,7%	5,3%	0,0%
3. Scheduler	19	63,2%	36,8%	0,0%
4. My documents	19	63,2%	36,8%	0,0%
5. Farmer's Work Diary	19	47,4%	52,6%	0,0%
6. Maps	19	78,9%	21,1%	0,0%
7. Inspection History	19	47,4%	52,6%	0,0%
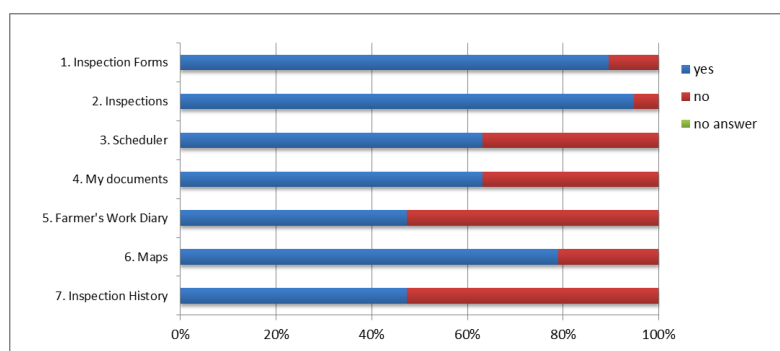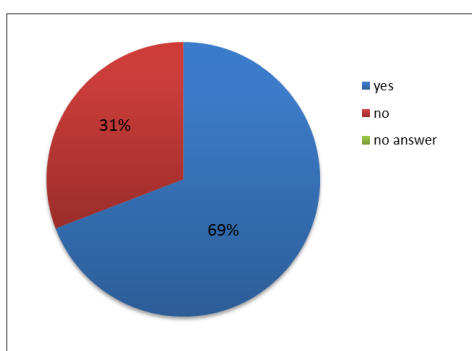
- *The Dashboard's options used / tested <u>by CERTIFICATION BODIES</u>*

In the frame of the testing activities, Certification Bodies staff declared to have used/tested **100%** of the available options in the Dashboard of the Inspector Module, as described below:

Repartition :	Number of Certification Bodies staff	yes	no	not answered
1'. Farmers	3	100,0%	0,0%	0,0%
2'. My documents	3	100,0%	0,0%	0,0%
3'. Messages	3	100,0%	0,0%	0,0%
4'. Maps	3	100,0%	0,0%	0,0%
5'. OSOS Form	3	100,0%	0,0%	0,0%
6'. Data Management	3	100,0%	0,0%	0,0%
7'. User documents	3	100,0%	0,0%	0,0%
8'. Work Diary	3	100,0%	0,0%	0,0%

- *The Dashboard's options used / tested by PAYING AGENCIES*

In the frame of the testing activities, Paying Agencies staff in Serbia declared to have used/tested **67%** of the available options in the Dashboard of the Paying Agency Module, as described below:

Repartition :	Number of Paying Agencies staff	yes	no	not answered
1'. Inspection Forms	1	100,0%	0,0%	0,0%
2'. Maps and Remote Sensing Results	1	100,0%	0,0%	0,0%
3'. Communication with Farmers	1	0,0%	100,0%	0,0%

In the frame of the testing activities, Paying Agencies staff in the other participating countries declared to have used/tested **69%** of the available options in the Dashboard of the Paying Agency Module, as described below:

Repartition :	Number of Paying Agencies staff	yes	no	not answered
1. Inspection Forms	13	100,0%	0,0%	0,0%
2. Inspections	13	61,5%	38,5%	0,0%
3. Scheduler	13	61,5%	38,5%	0,0%
4. My documents	13	61,5%	38,5%	0,0%
5. Farmer's Work Diary	13	61,5%	38,5%	0,0%
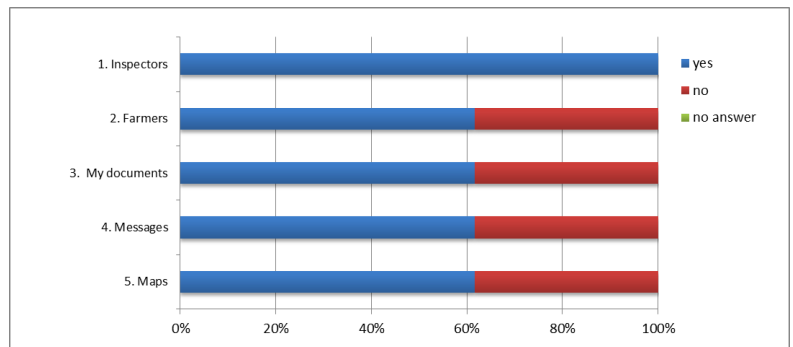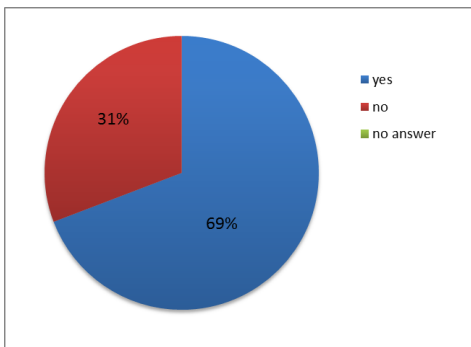
- *Use of the Mobile RECAP apps*

85% of Pilot Participants declared to have **used the RECAP Mobile apps**, as described below:

Repartition :	never (0)	seldom (from 1 to 5 times)	occasionally (from 6 to 10 times)	frequently (more than 10 times)	NA	Total:
Farmers / Organic Farmers:	38	202	56	3	0	**299**
Agricultural Consultants (supporting Farmers):	6	12	3	1	0	**22**
Inspectors (or consultants ensuring their role):	6	6	5	2	0	**19**
Certification Bodies staff (or consultants ensuring their role):	0	0	0	3	0	**3**
Paying Agency staff :	4	5	4	1	0	**14**
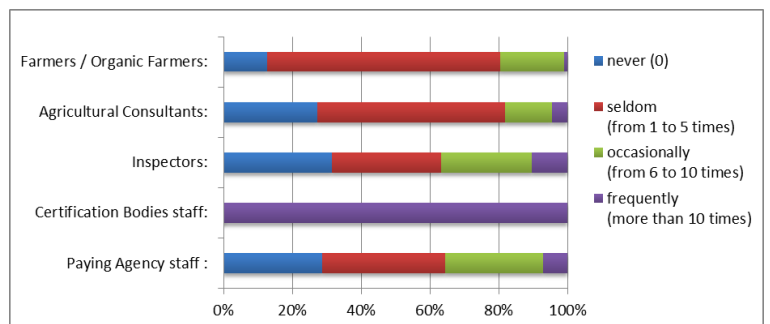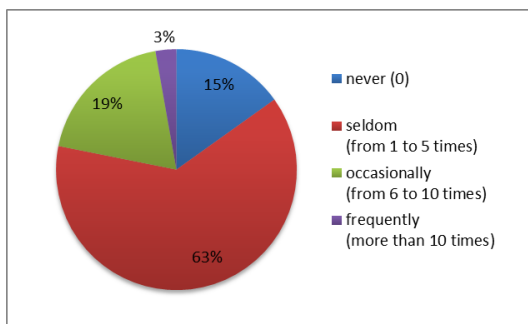
4. Evaluation results of the User Experience

Evaluation Questionnaires were used for evaluating the Testing Experience with the RECAP Platform; and collecting a consistent basis of information from the different end-users in terms of insights and recommendations.

This part of the report displays the data analysis of the User Experience and the results obtained for the 5 Pilots.

4.1   The satisfaction of end-users with the RECAP Platform and its services.

With the aim of determining the satisfaction of end-users with **the RECAP Platform and its services**, the different end-user groups / Pilot participants were asked about the below items:

4.1.1 Assessment of the FUNCTIONS tested by the end-users.

- *Global assessment of END-USERS:*
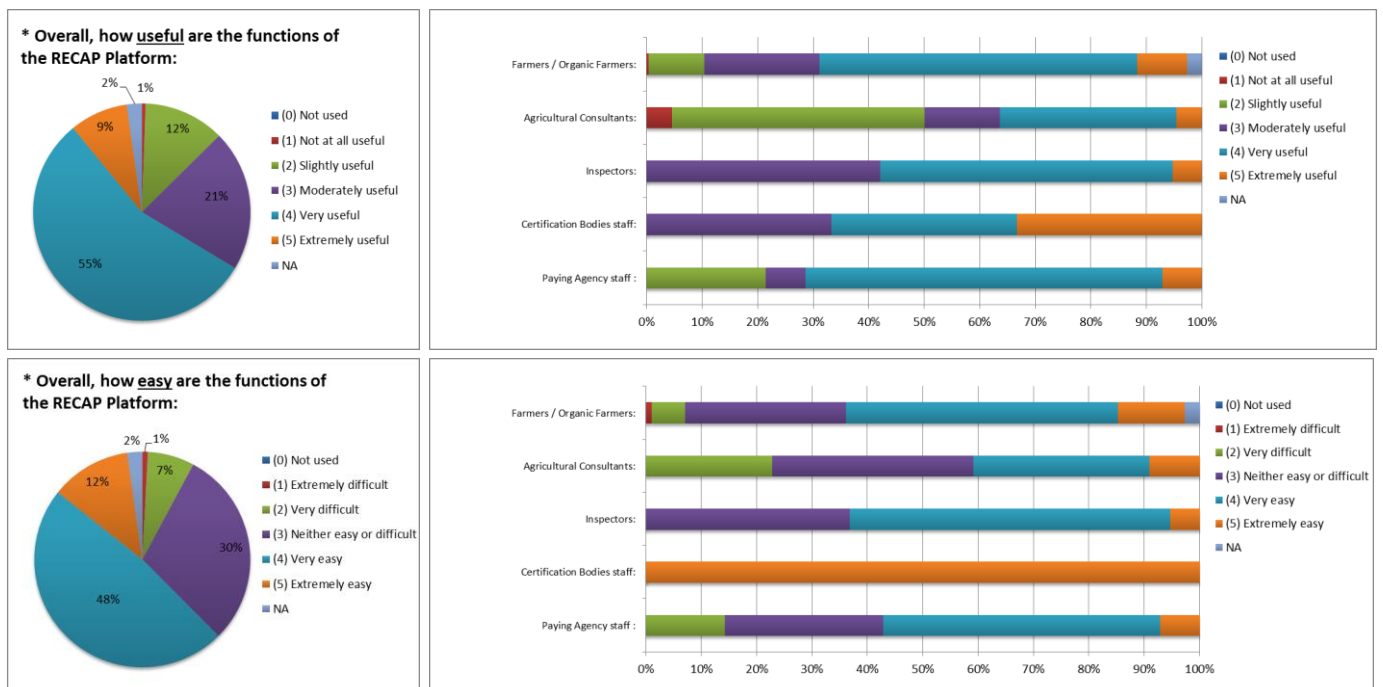
⇨   **64% of end-users** globally consider **the functions** of the RECAP Platform **very useful** and more;
⇨   **60% of end-users** globally consider **the functions** of the RECAP Platform **very easy** and more;
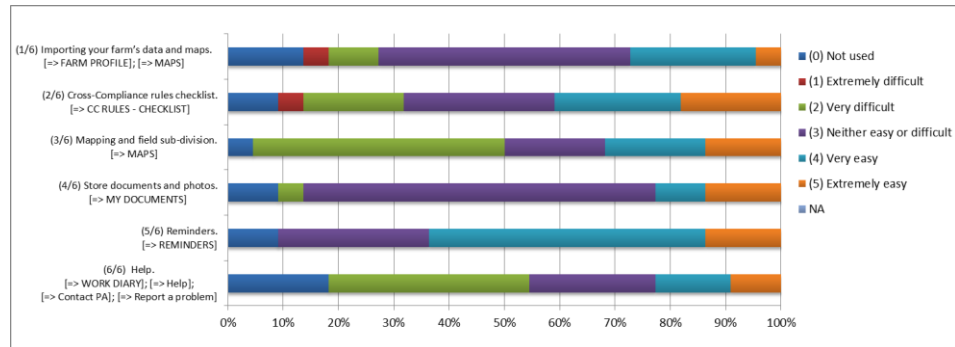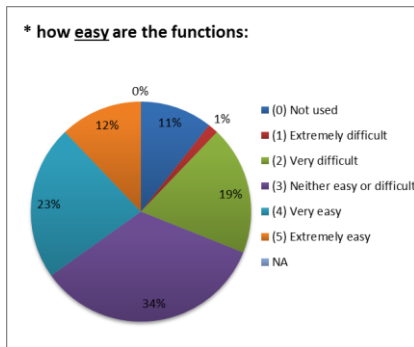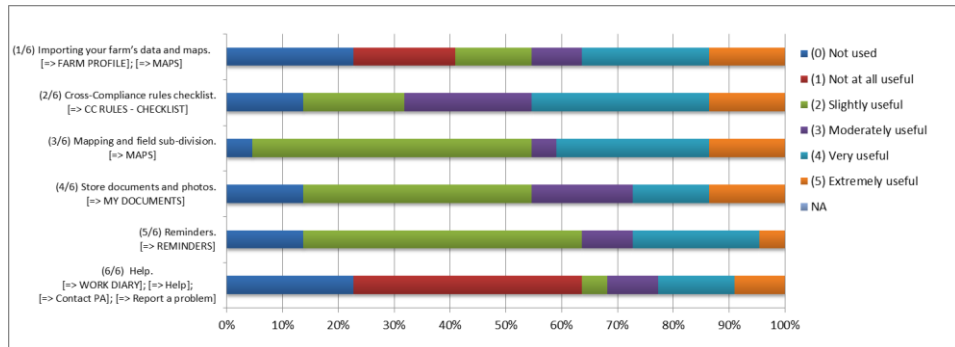
- *Assessment of ORGANIC FARMERS:*
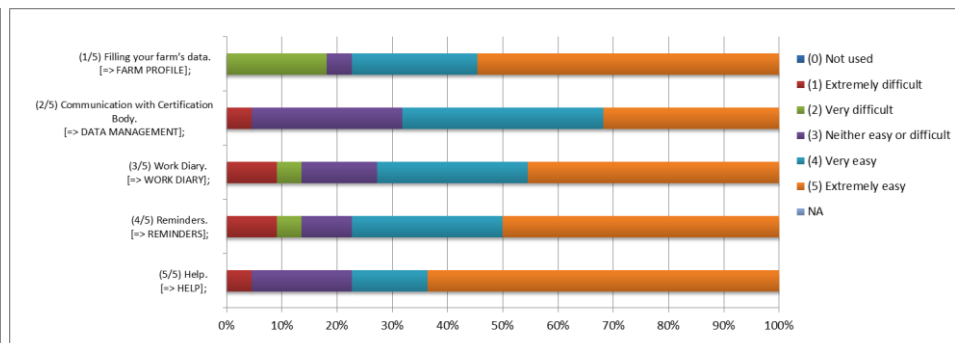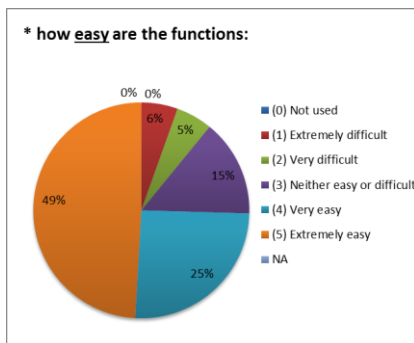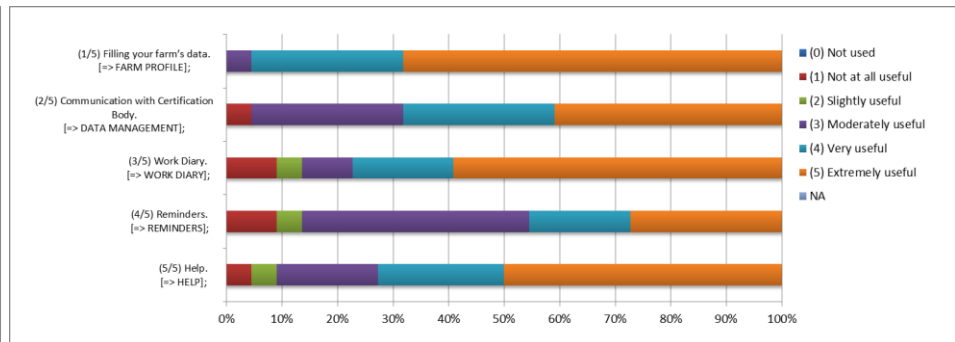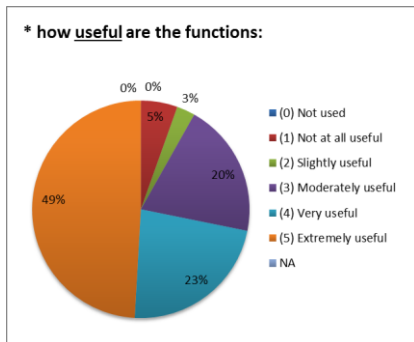
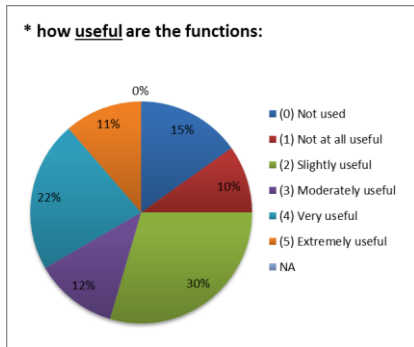

⇨   **72% of organic farmers** consider **the main functions** of the RECAP Platform **very useful** and more;
⇨   **74% of organic farmers** consider **the main functions** of the RECAP Platform **very easy** and more;
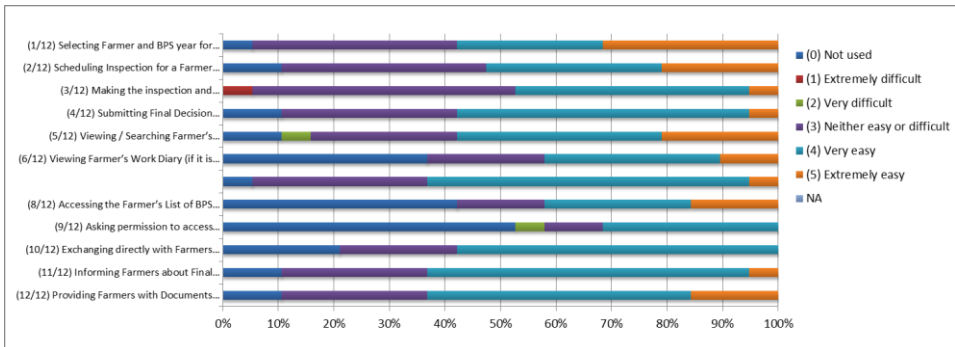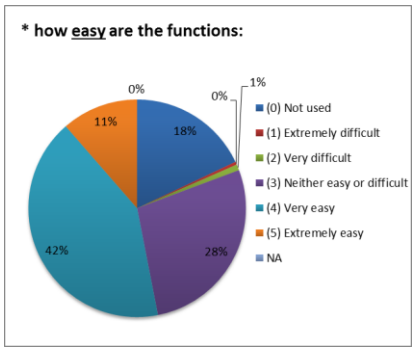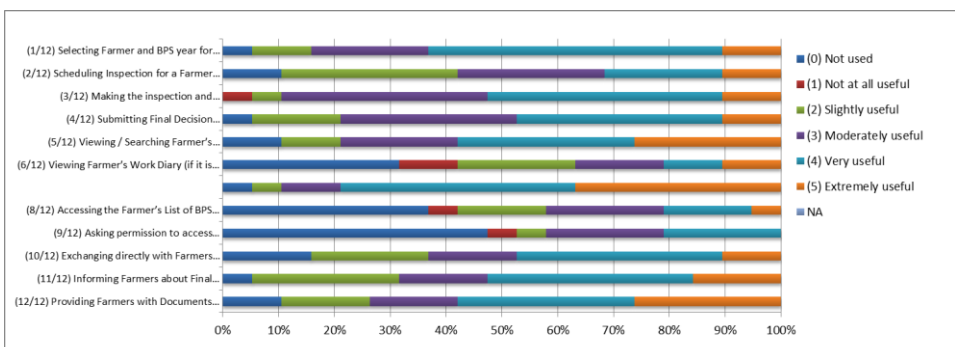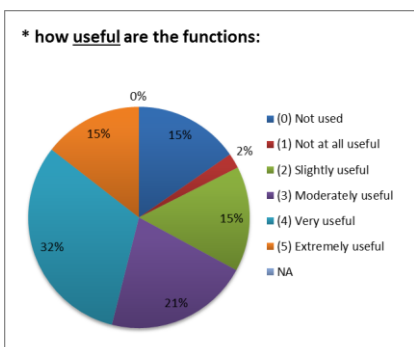
- *Assessment of FARMERS:*
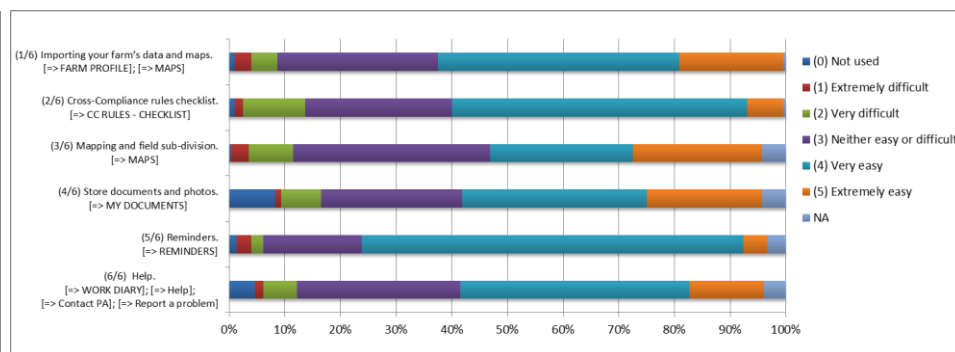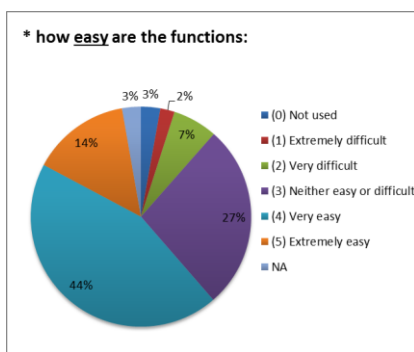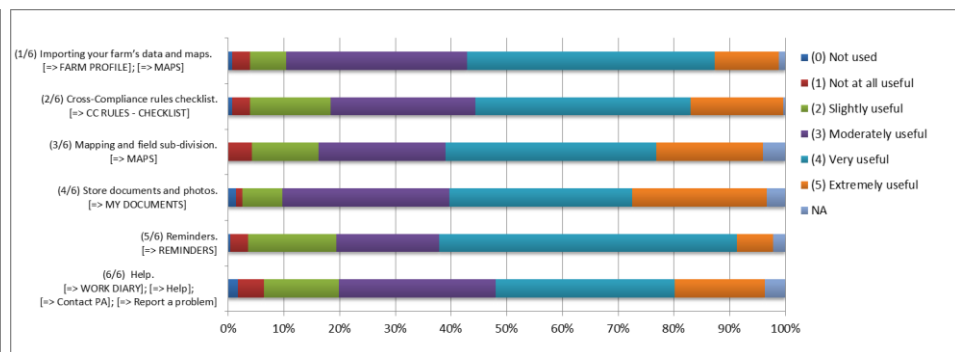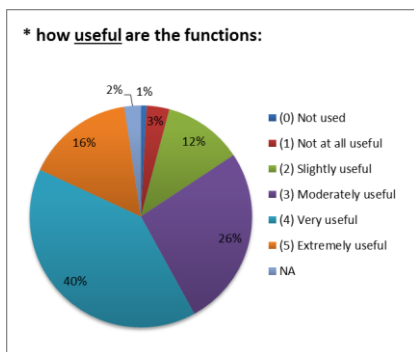
⇨   **56% of farmers** consider **the main functions** of the RECAP Platform **very useful** and more;
⇨   **58% of farmers** consider **the main functions** of the RECAP Platform **very easy** and more;

- *Assessment of AGRICULTURAL CONSULTANTS:*

⇨ **33% of agricultural consultants** consider **the main functions** of the RECAP Platform **very useful** and more;
⇨ **35% of agricultural consultants** consider **the main functions** of the RECAP Platform **very easy** and more;

- *Assessment of INSPECTORS:*

⇨ **47% of inspectors** consider **the main functions** of the RECAP Platform **very useful** and more;
⇨ **53% of inspectors** consider **the main functions** of the RECAP Platform **very easy** and more;

- *Assessment of CERTIFICATION BODIES STAFF:*

* how useful are the functions:

* how easy are the functions:
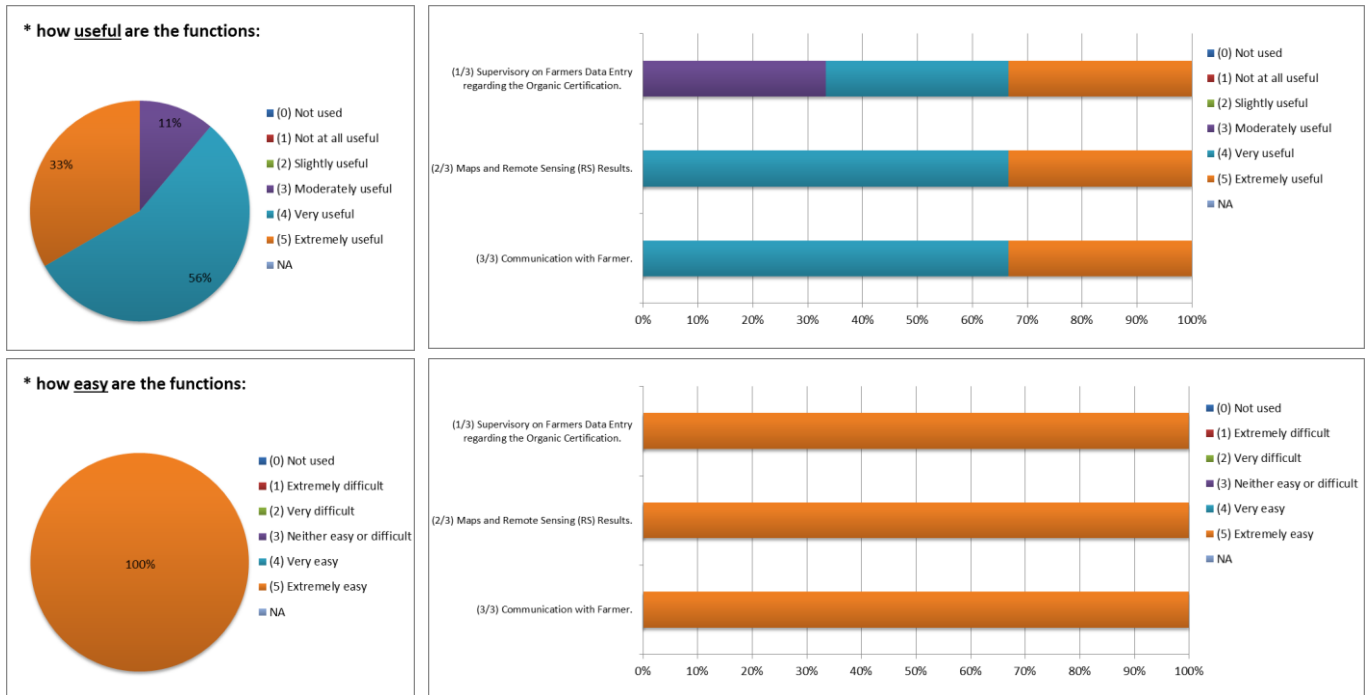
⇨ **89% of certification bodies** consider **the main functions** of the RECAP Platform **very useful** and more;
⇨ **100% of certification bodies** consider **the main functions** of the RECAP Platform **extremely easy**;

- *Assessment of PAYING AGENCIES STAFF:*

> From Serbia:

* how useful are the functions:

* how easy are the functions:
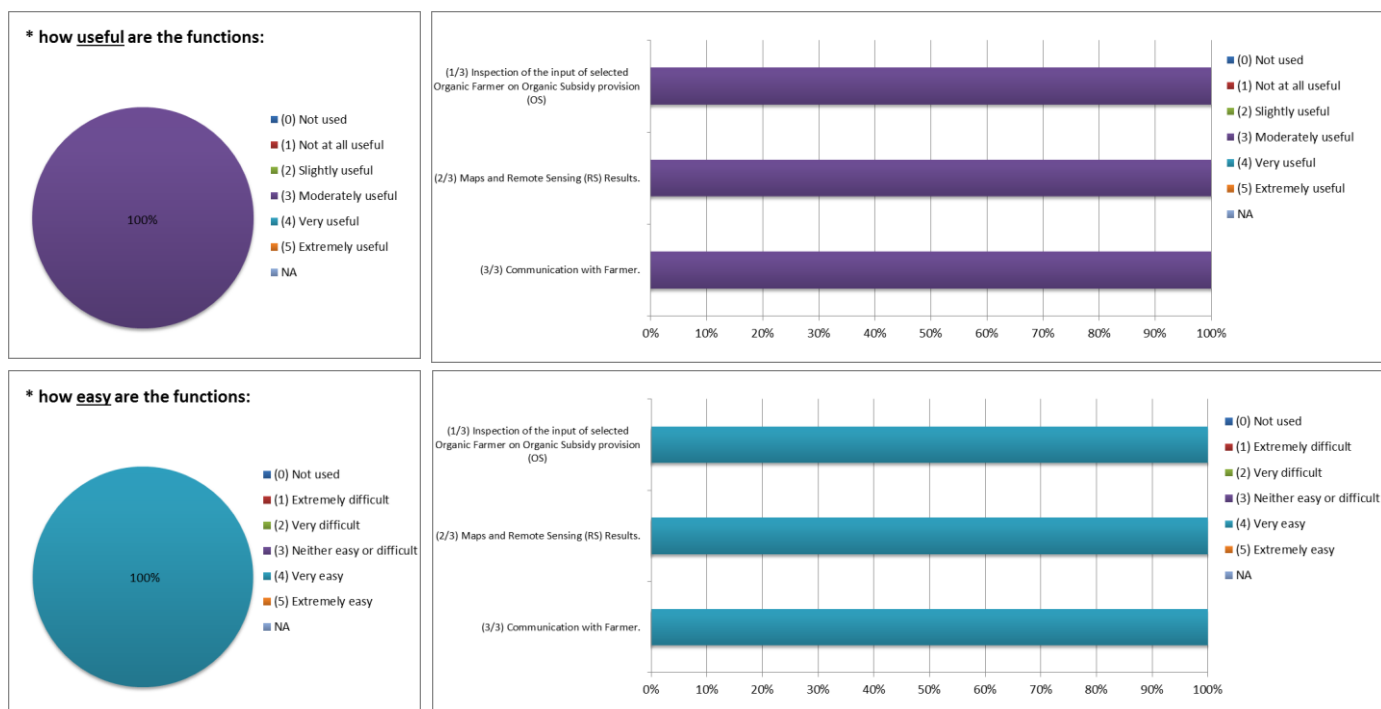
⇨ The **Serbian PA representative** consider **the main functions** of the RECAP Platform **moderately useful** and **very easy**;

> From the other participant countries:

* how <u>useful</u> are the functions:

⇨   **74% of PA staff** consider **the main functions** of the RECAP Platform **very useful** and more;
⇨   **57% of PA staff** consider **the main functions** of the RECAP Platform **extremely easy**;

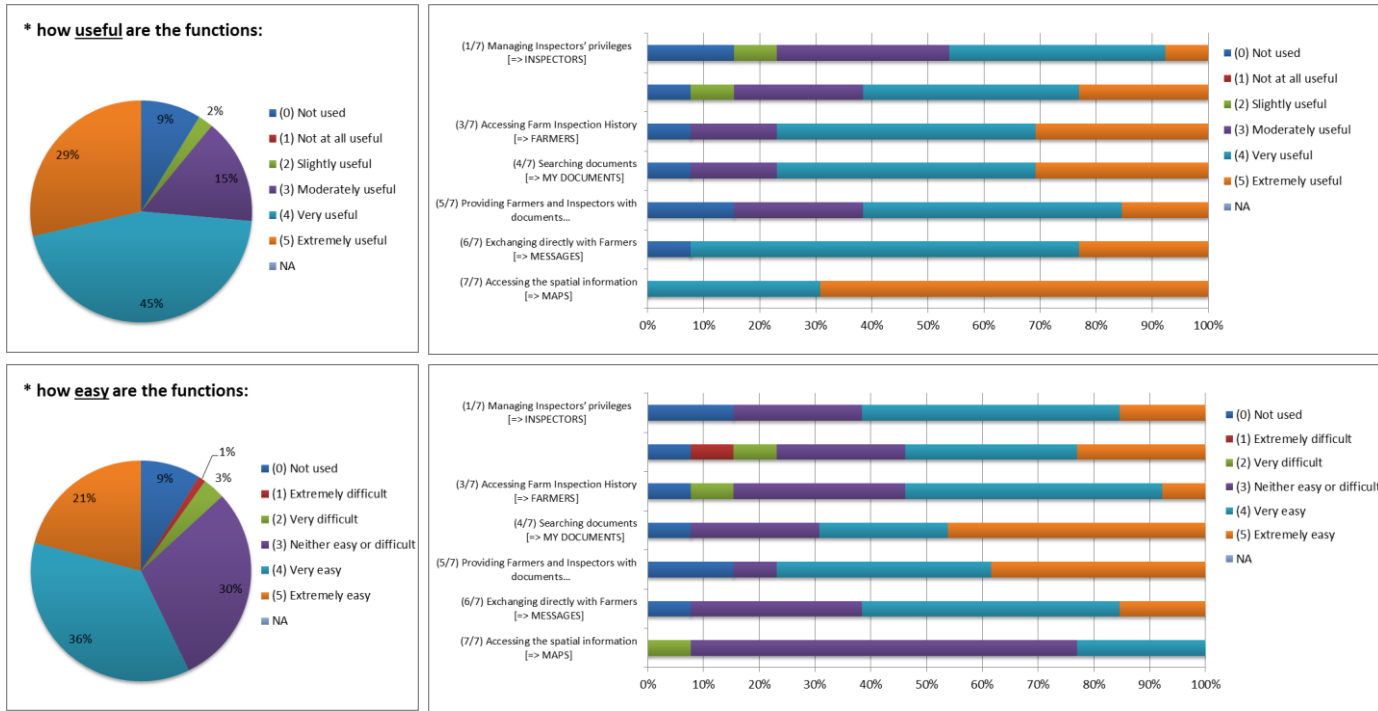## 4.1.2 Degree of satisfaction with <u>the TOOL</u>.

- *Global assessment of <u>END-USERS:</u>*
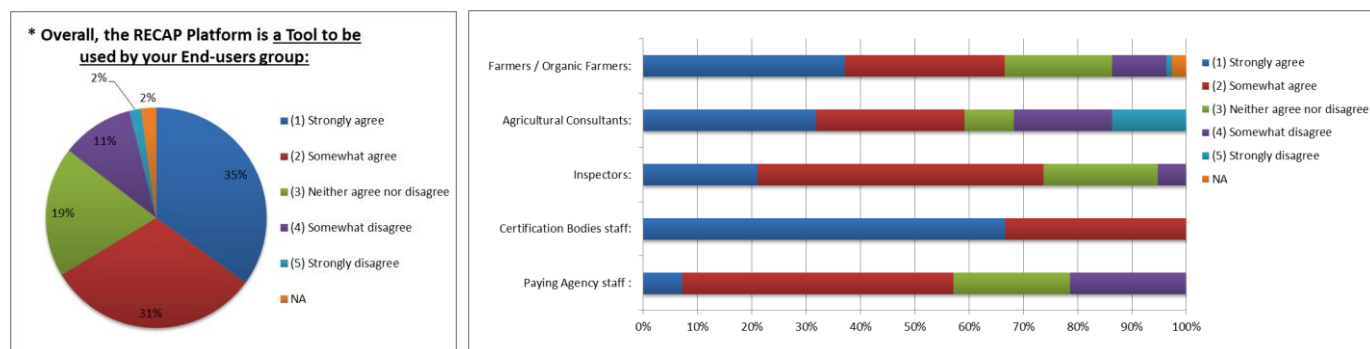
⇨   **66% of end-users** are **somewhat agree** and more with the fact that the RECAP Platform is **a Tool to be used** by them;

- **Assessment on _GENERAL ASPECTS:_**
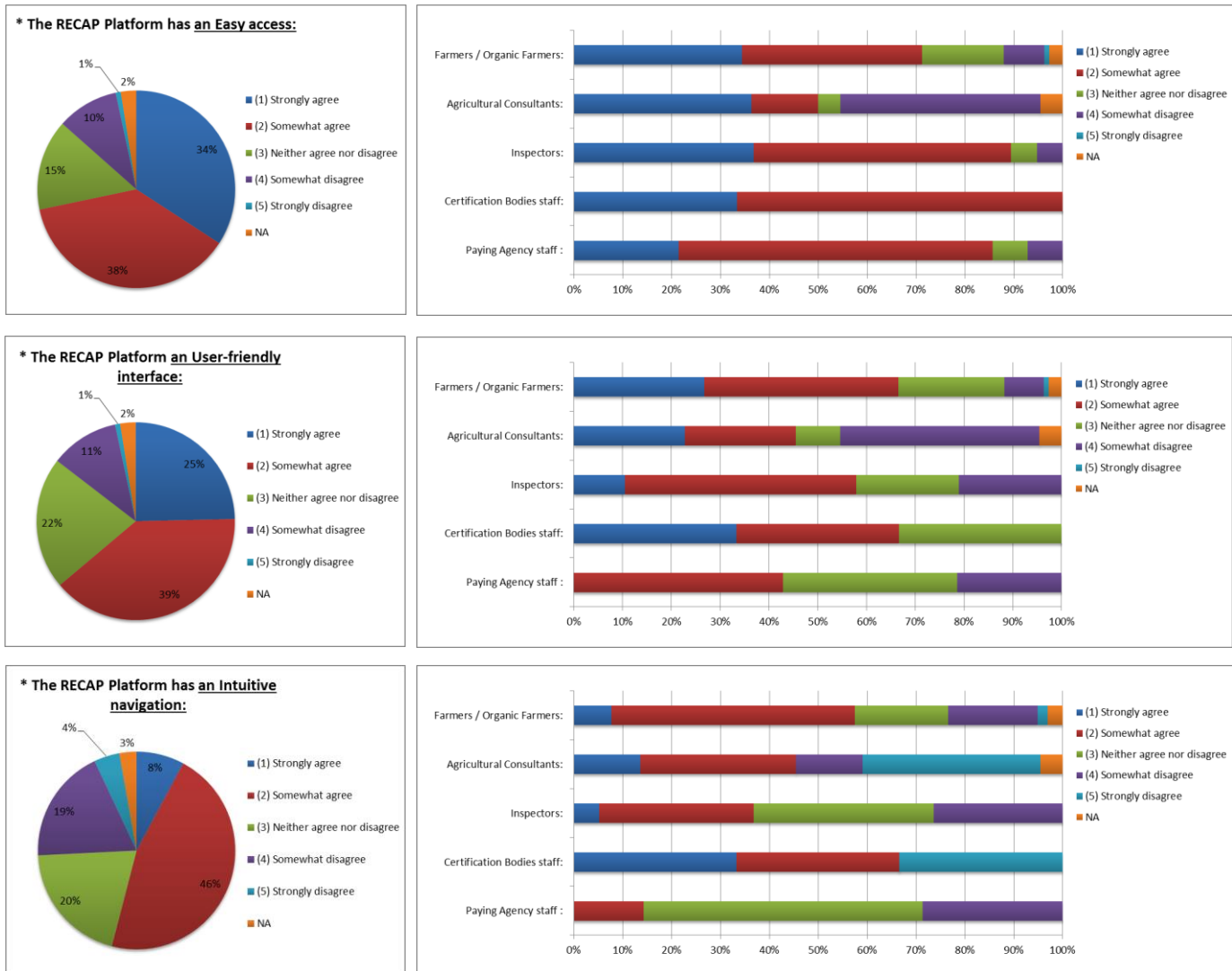
- ⇨ **72% of end-users** are **somewhat agree** and more with the fact that the RECAP Platform has **an easy access**;
- ⇨ **64% of end-users** are **somewhat agree** and more with the fact that the RECAP Platform has **a user-friendly interface**;
- ⇨ **54% of end-users** are **somewhat agree** and more with the fact that the RECAP Platform has **an intuitive navigation**;

4.2   The evaluation of end-users regarding the initial expectations.

With the aim of evaluating how the RECAP Platform is achieving the **initial objectives and expected results**, the different end-user groups / Pilot participants were asked about their degree of satisfaction with the <u>main expected features</u> of the corresponding Module of the RECAP Platform, and their assessment of <u>some technical aspects</u> (e.g. Remote Sensing Tool), as displayed in this section.

4.2.1 Assessment   by   <u>FARMERS,   ORGANIC   FARMERS   &   AGRICULTURAL CONSULTANTS.</u>

This sub-section presents results referring to the FARMER & AGRICULTURAL CONSULTANT Module that was tested by i) Farmers and Agricultural Consultants in Greece, Spain, UK and Lithuania; and ii) Organic Farmers in Serbia.

a)   *From Greece, Spain, UK and Lithuania:*

- *Increase of the <u>understanding of Cross-Compliance (CC) rules:</u>*
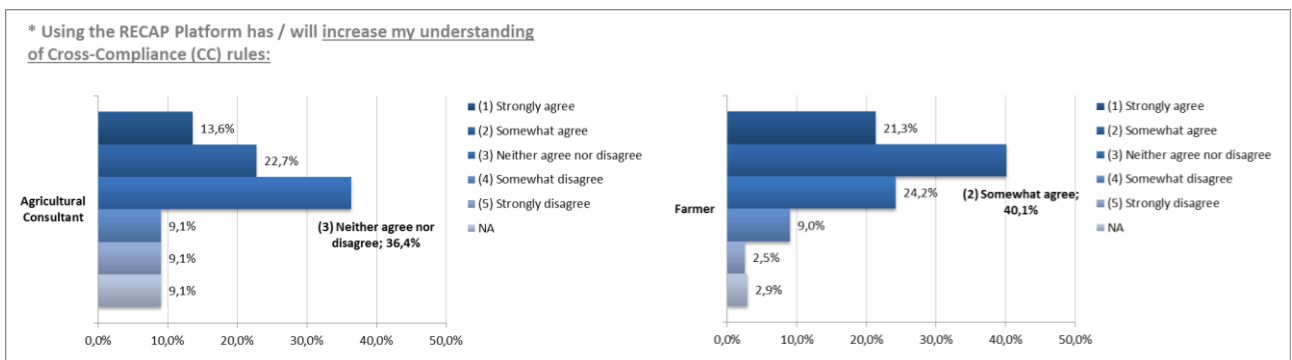
⇨   **36% of agricultural consultants** are **somewhat agree** and more with the fact that the RECAP Platform **increases their understanding of CC rules**;
⇨   **61% of farmers** are **somewhat agree** and more with the fact that the RECAP Platform **increases their understanding of CC rules**;

- *Decrease of the <u>likelihood of breaking CC rules:</u>*
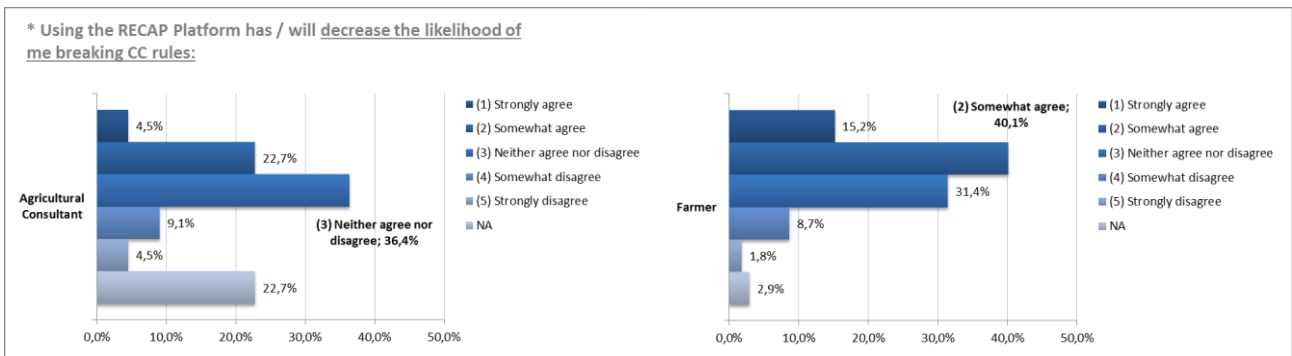
⇨   **27% of agricultural consultants** are **somewhat agree** and more with the fact that the RECAP Platform **decreases the likelihood of their breaking CC rules**;
⇨   **55% of farmers** are **somewhat agree** and more with the fact that the RECAP Platform **decreases the likelihood of their breaking CC rules**;

- *Reduction of administrative burden for Farmers:*

For evaluating the reduction of administrative burden for Farmers, Pilot Participants have been asked about the necessary time for the below tasks:

✓ Task 1: **preparing Basic Payment Scheme (BPS) application (hours)**;
✓ Task 2: **preparing the documents for checking adherence CC rules (hours)**.

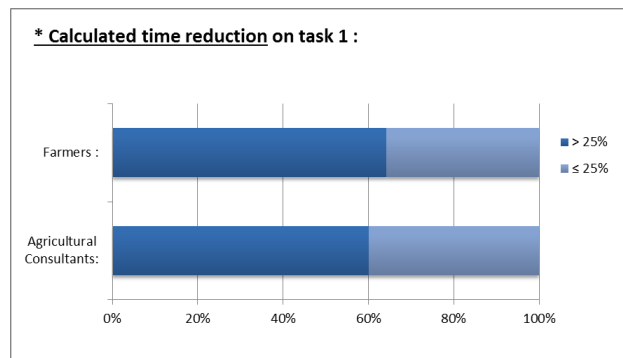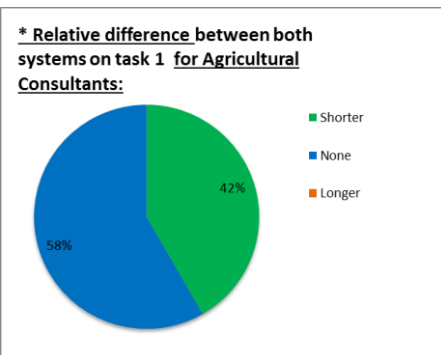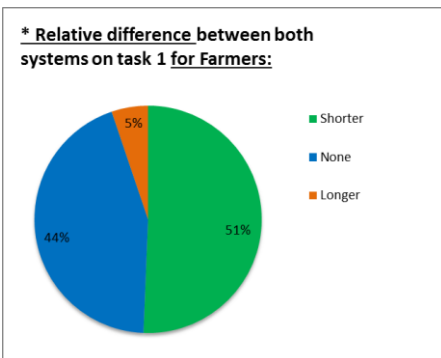| Task 1:	Farmers:		Agricultural Consultants (supporting Farmers):	
	Number	%	Number	%
* In previous years, overall, how long did preparing your Basic Payment Scheme (BPS) application take (hours)?				
Answered:	231	83,4%	12	54,5%
NA / No exploitable answer:	46	16,6%	10	45,5%
* Using the RECAP Platform, overall, how long do you think preparing your BPS application would take (hours)?				
Answered:	231	83,4%	12	54,5%
NA / No exploitable answer:	46	16,6%	10	45,5%
Pilot Participants having answered to both questions:	**231**	83,4%	**12**	54,5%

* Relative difference between both systems on task 1 for Farmers:

* Relative difference between both systems on task 1 for Agricultural Consultants:

* Calculated time reduction on task 1 :

⇨ **42% of agricultural consultants** having answered, declared that the necessary time for **preparing Basic Payment Scheme (BPS) application** will be **shorter** using the RECAP Platform; and the corresponding time reduction is **>25% for 60%** of them;

⇨ **51% of farmers** having answered, declared that the necessary time for **preparing Basic Payment Scheme (BPS) application** will be **shorter** using the RECAP Platform; and the corresponding time reduction is **>25% for 64%** of them;

Task 2:	Farmers:		Agricultural Consultants (supporting Farmers):	
	Number	%	Number	%
* In previous years, overall, how long did <u>preparing the documents for checking adherence CC rules take</u> (hours)?				
Answered:	232	83,8%	12	54,5%
NA / No exploitable answer:	45	16,2%	10	45,5%
* Using the RECAP Platform, overall, how long do you think <u>preparing the documents for checking adherence CC rules would take</u> (hours)?				
Answered:	232	83,8%	12	54,5%
NA / No exploitable answer:	45	16,2%	10	45,5%
Pilot Participants having answered to both questions:	**232**	83,8%	**12**	54,5%

* Relative difference between both systems on task 2 for Farmers:
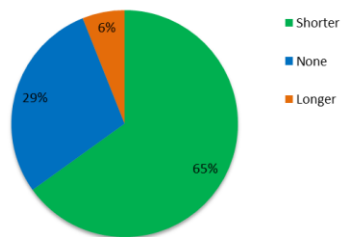
* Relative difference between both systems on task 2 for Agricultural Consultants:
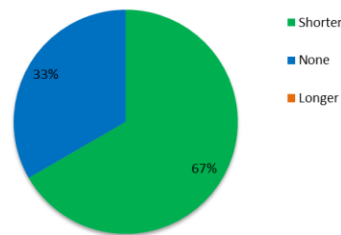
* Calculated time reduction on task 2 :
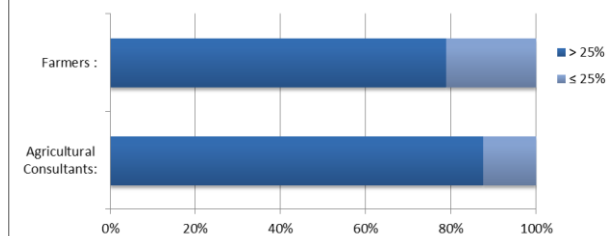
⇨ **67% of agricultural consultants** having answered, declared that the necessary time for **preparing the documents for checking adherence CC rules** would be **shorter** using the RECAP Platform; and the corresponding time reduction would be **>25% for 88%** of them;

⇨ **65% of farmers** having answered, declared that the necessary time for **preparing the documents for checking adherence CC rules** would be **shorter** using the RECAP Platform; and the corresponding time reduction would be **>25% for 79%** of them;

In addition, Pilot Participants have been directly asked about the <u>reduction of administrative burden for Farmers:</u>

* Overall, the RECAP System is allowing the reduction of administrative burden for Farmers:
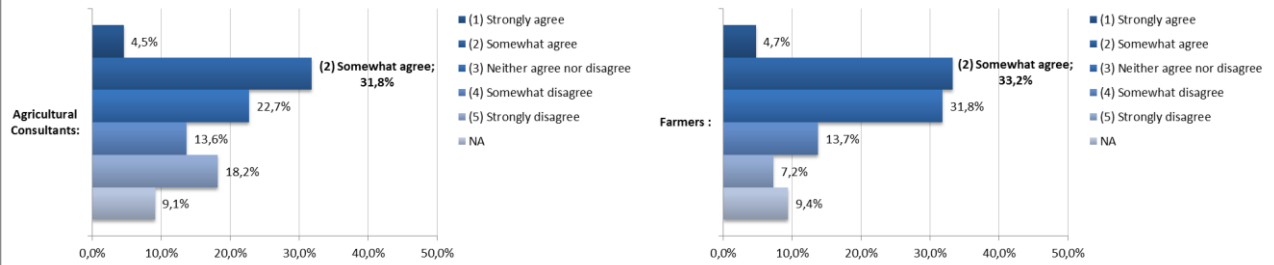
⇨ **36% of agricultural consultants** are **somewhat agree** and more with the fact that the RECAP Platform is allowing the **reduction of administrative burden for Farmers**;

⇨ **38% of farmers** are **somewhat agree** and more with the fact that the RECAP Platform is allowing the **reduction of administrative burden for Farmers**;

- *Assessment on Technical issues:*

Moreover, Pilot Participants have been asked about the **Remote Sensing Tool (RST)** and some other **specific aspects** related to their use of the RECAP Platform, such as:

- ✓ Aspect 1: **RST** - its potential **to assist in Self-Checking Compliance**;
- ✓ Aspect 2: **RST** - its potential **to assist in the Application Process**;
- ✓ Aspect 3: **RST** - its usefulness **for Monitoring crops**;
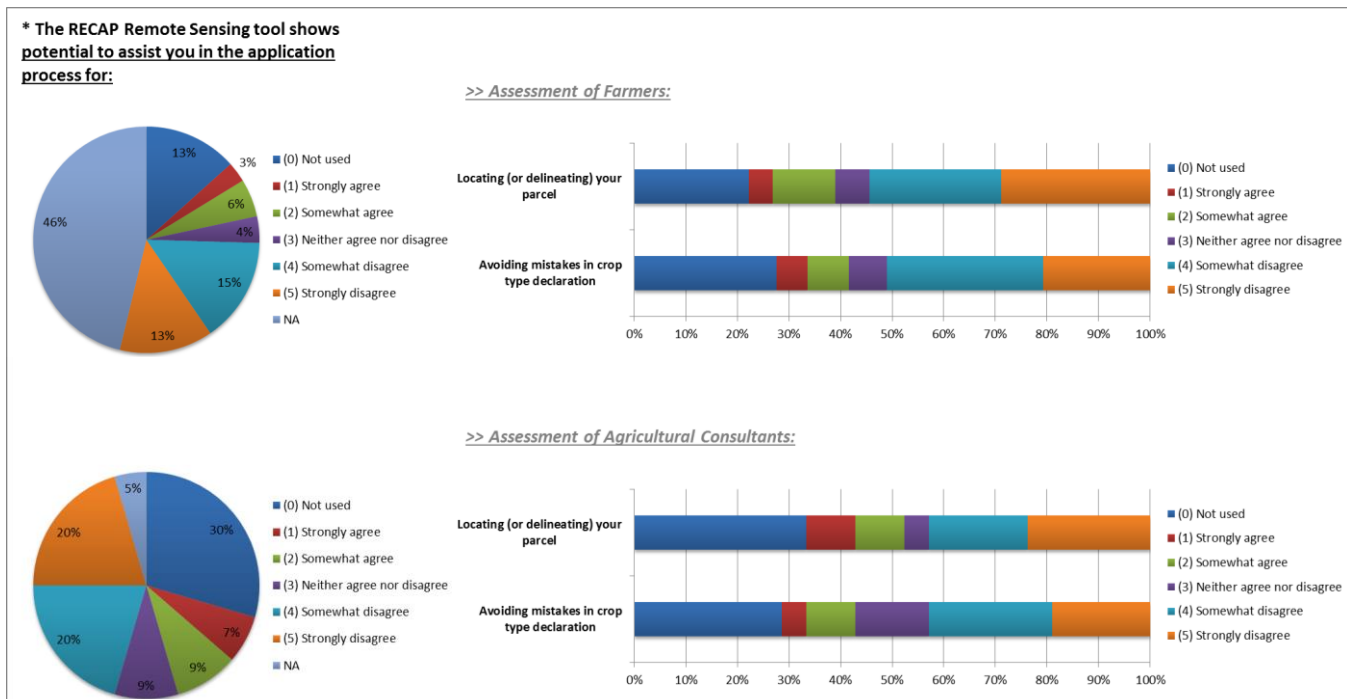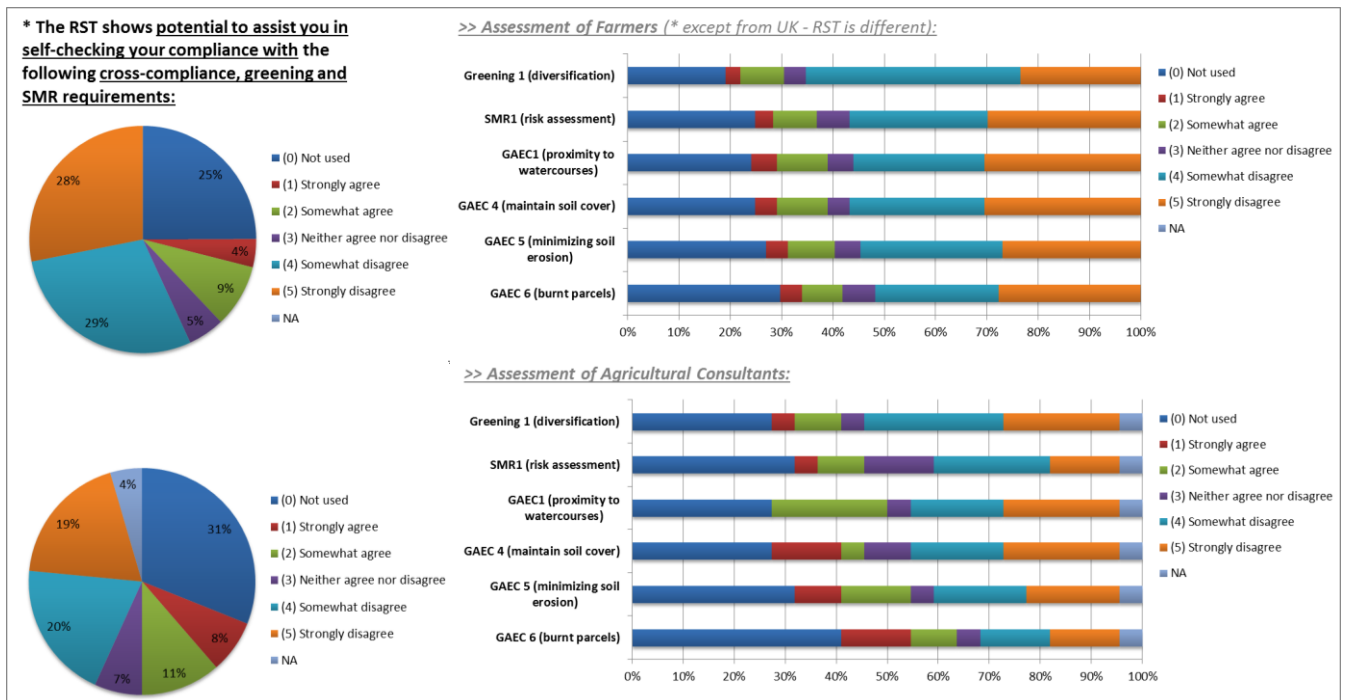
* The RECAP Remote Sensing tool is <u>useful</u> for monitoring your crops, in the following contexts:

⇨ **29% of agricultural consultants** and **17% of farmers** having used the RST, are globally **somewhat agree** and more with the fact that the **RST shows potential** to assist them **in self-checking their compliance**;

⇨ **24% of agricultural consultants** and **21% of farmers** having used the RST, are globally **somewhat agree** and more with the fact that the **RST shows potential** to assist them **in the application process**;

⇨ **29% of agricultural consultants** and **13% of farmers** having used the RST, globally declared that the **RST is very useful** and more **for monitoring their crops**;

b)   *From Serbia:*

- *Increase of the <u>understanding of Compliance with Organic Certification (OC) and Organic Subsidies (OS):</u>*
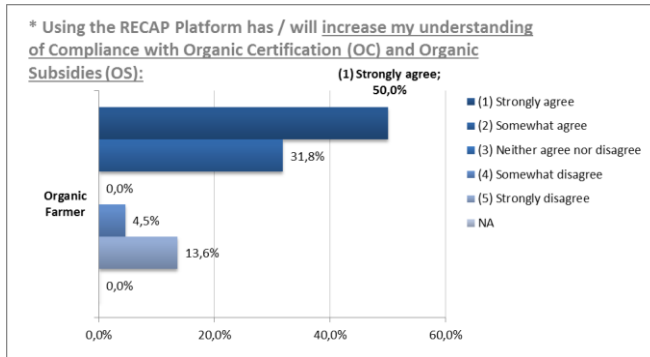
⇨   **82% of organic farmers** are **somewhat agree** and more with the fact that the RECAP Platform **increases their understanding of Compliance with Organic Certification (OC) and Organic Subsidies (OS)**;

- *Help with the <u>following of the Requirements for Organic Subsidy Organic Certification (OSOC):</u>*
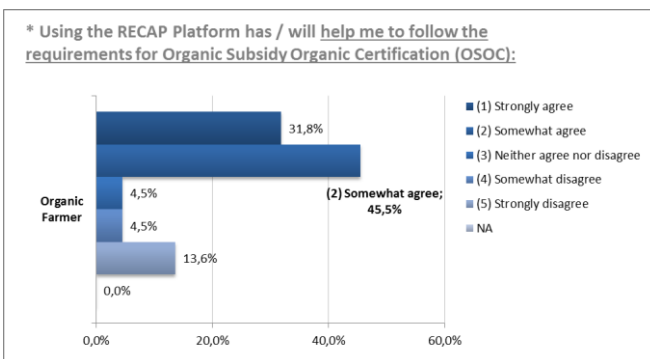
⇨   **77% of organic farmers** are **somewhat agree** and more with the fact that the RECAP Platform **helps them to follow the requirements for Organic Subsidy Organic Certification (OSOC)**;

- *<u>Simplify the document management</u> and therefore <u>save time:</u>*
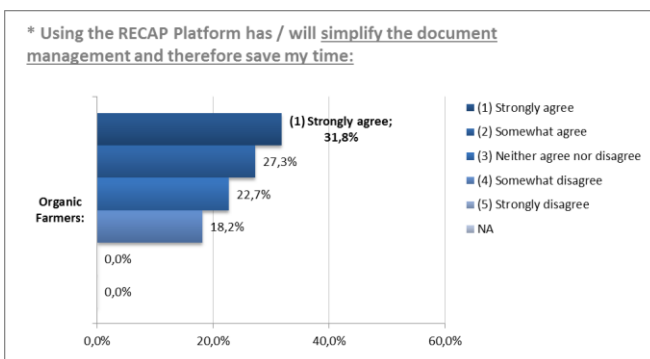
⇨   **59% of organic farmers** are **somewhat agree** and more with the fact that the RECAP Platform **simplifies the document management** and therefore **save time**;

- *Reduction of administrative burden for Organic Farmers:*

For evaluating the reduction of administrative burden for Organic Farmers, Pilot Participants have been asked about the necessary time for the below task:

✓ Task 1: **presenting Compliance with Organic Subsidy Organic Certification (OSOC) (days)**.

Task 1 :	Organic Farmers:	
	Number	%
* In previous years, overall, how long did <u>presenting Compliance with Organic Subsidy Organic Certification (OSOC) take</u> (days)?		
Answered:	22	100,0%
NA / No exploitable answer:	0	0,0%
* Using the RECAP Platform, overall, how long do you think <u>presenting Compliance with Organic Subsidy Organic Certification (OSOC) would take</u> (days)?		
Answered:	22	100,0%
NA / No exploitable answer:	0	0,0%
Pilot Participants having answered to both questions:	**22**	100,0%

* Relative difference between both systems on task 1 for Organic Farmers:

- Shorter 91%
- None 4%
- Longer 5%

* Calculated time reduction on task 1 :

Organic Farmers: > 25% / ≤ 25%
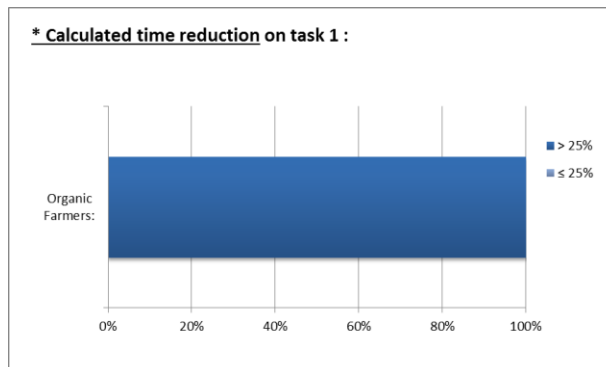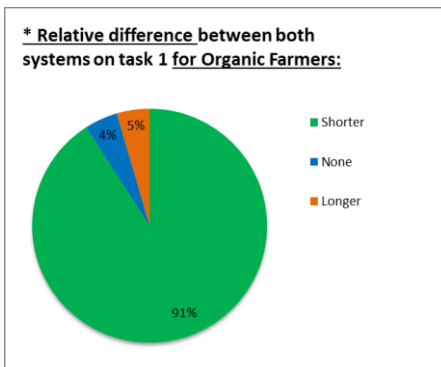
⇨ **91% of organic farmers** having answered, declared that the necessary time for **presenting Compliance with Organic Subsidy Organic Certification (OSOC)** would be **shorter** using the RECAP Platform; and the corresponding time reduction would be **>25% for all** of them;

In addition, Pilot Participants have been directly asked about the <u>**reduction of administrative burden for Organic Farmers:**</u>

* Overall, the RECAP System is <u>allowing the reduction of administrative burden for Organic Farmers:</u>

Organic Farmers:
- (1) Strongly agree; 72,7%
- (2) Somewhat agree 9,1%
- (3) Neither agree nor disagree 13,6%
- (4) Somewhat disagree 4,5%
- (5) Strongly disagree 0,0%
- NA 0,0%
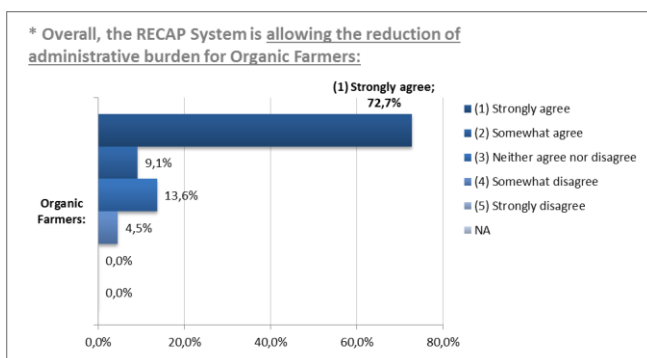
⇨ **82% of organic farmers** are **somewhat agree** and more with the fact that the RECAP Platform is allowing the **reduction of administrative burden for Organic Farmers**;
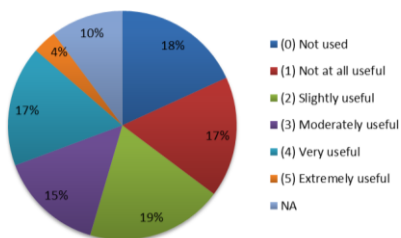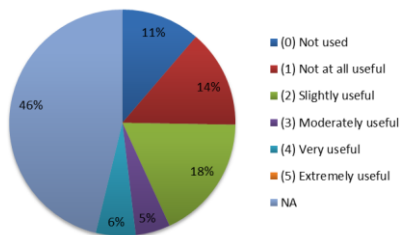
- *Assessment on Technical issues:*

Moreover, Organic Farmers have been asked about the **Remote Sensing Tool (RST)** and some other **specific aspects** related to their use of the RECAP Platform, such as:
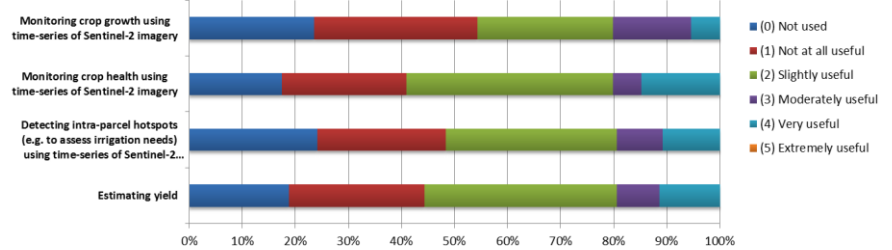
- ✓ Aspect 1: **RST** - its potential **to assist in the Application Process**;
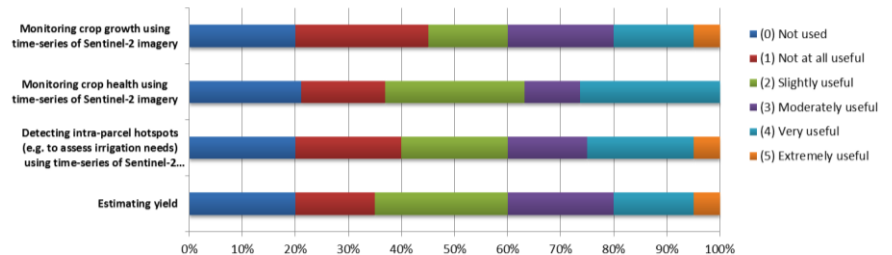- ✓ Aspect 2: **RST** - its usefulness **for Monitoring crops**;
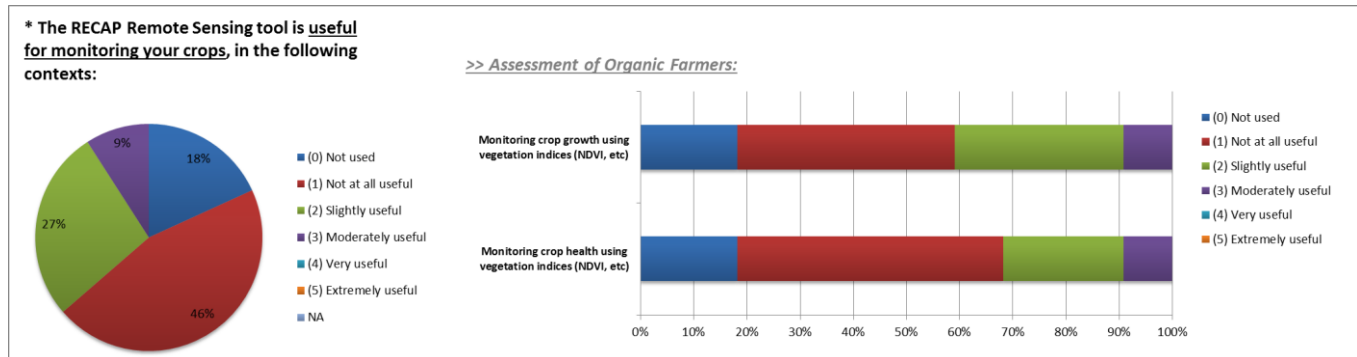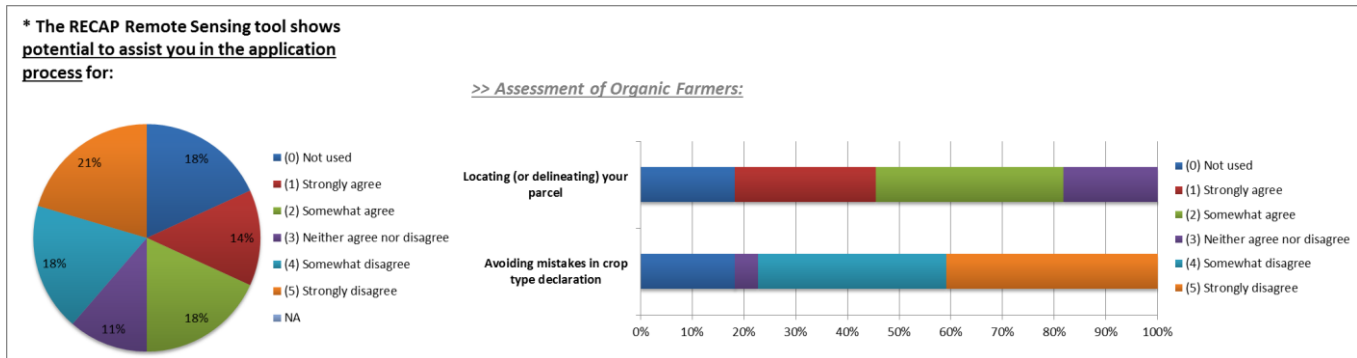
⇨ **39% of organic farmers** having used the RST, are globally **somewhat agree** and more with the fact that the **RST shows potential** to assist them **in the application process**;

⇨ **organic farmers** having used the RST, globally declared that the **RST is slightly useful (33 %)** and **moderately useful (11 %) for monitoring their crops**;

4.2.2 Assessment by INSPECTORS.

This sub-section presents results referring to the INSPECTOR Module that was tested by Inspectors (or consultants ensuring their role) in Greece, Spain, UK and Lithuania.

- *Make more transparent the Cross-Compliance procedure:*
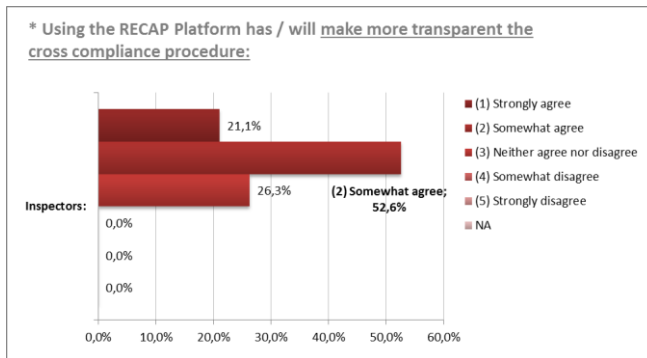
⇨ **74% of inspectors** are **somewhat agree** and more with the fact that the RECAP Platform **makes more transparent the cross compliance procedure;**

- *Increase the accuracy of the On-The-Spot-Check (OTSC) for Cross-Compliance:*
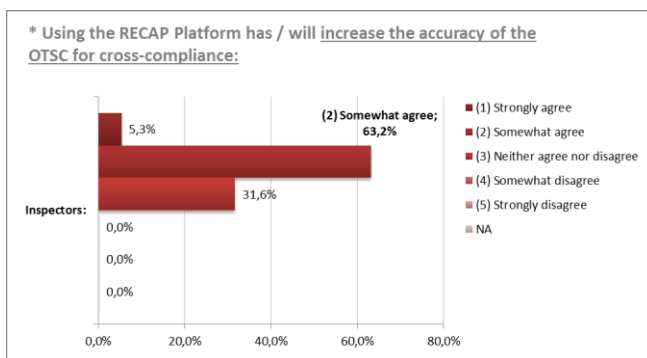
⇨ **68% of inspectors** are **somewhat agree** and more with the fact that the RECAP Platform **increases the accuracy of the OTSC for cross compliance;**

- *Reduction of administrative burden for Inspectors:*

For evaluating the reduction of administrative burden for Inspectors, Pilot Participants have been asked about the below tasks:

- ✓ Task 1: **inspecting a Farmer (hours)**;
- ✓ Task 2: **inspected plot (nº/day)**.

Task 1:	Inspectors (or consultants ensuring their role):	
	Number	%
* In previous years, overall, how much <u>time</u> did you need <u>to inspect a Farmer</u> (hours)?		
Answered:	16	84,2%
NA / No exploitable answer:	3	15,8%
* Using the RECAP Platform, overall, how much <u>time</u> do you think you would need <u>to inspect a Farmer</u> (hours)?		
Answered:	16	84,2%
NA / No exploitable answer:	3	15,8%
Pilot Participants having answered to both questions:	**16**	84,2%

Task 2:	Inspectors (or consultants ensuring their role):	
	Number	%
* In previous years, overall, how many <u>plots</u> did you <u>inspect per day</u> (nº/day)?		
Answered:	16	84,2%
NA / No exploitable answer:	3	15,8%
* Using the RECAP Platform, overall, how many <u>plots</u> do you think you would <u>inspect per day</u> (nº/day)?		
Answered:	16	84,2%
NA / No exploitable answer:	3	15,8%
Pilot Participants having answered to both questions:	**16**	84,2%

* Relative difference between both systems on task 1 for Inspectors:

* Calculated time reduction on task 1:

* Relative difference between both systems on task 2 for Inspectors:

* Calculated increase of plot number on task 2:
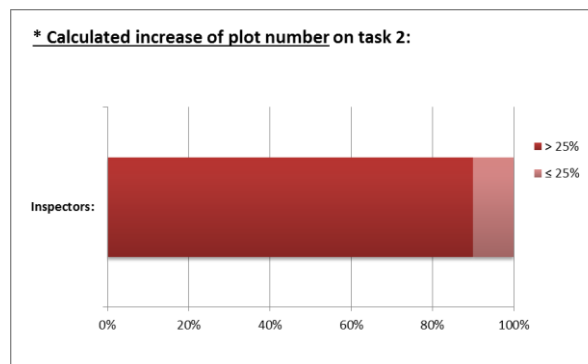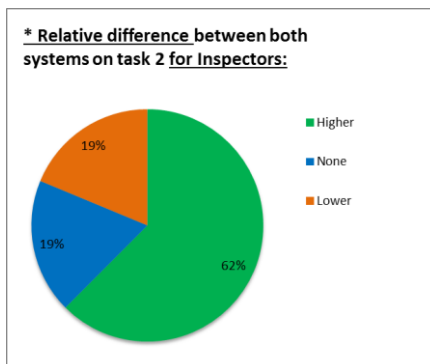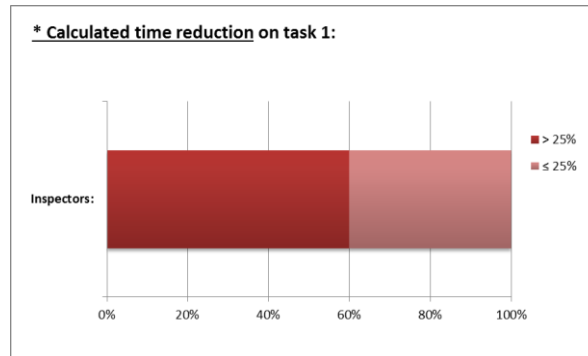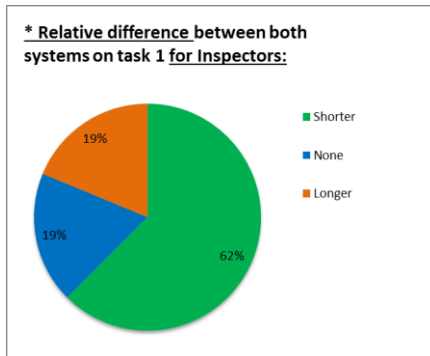
⇨ **62% of inspectors** having answered, declared that the necessary time for **inspecting a Farmer** would be **shorter** using the RECAP Platform; and the corresponding time reduction would be **>25% for 60%** of them;

⇨ **62% of inspectors** having answered, declared that the **number of plots inspected** per day would be **higher** using the RECAP Platform; and the corresponding increase of plot would be **>25% for 90%** of them;

In addition, Pilot Participants have been directly asked about the **reduction of administrative burden for Inspectors:**


* Overall, the RECAP Platform is <u>allowing the reduction of administrative burden for Inspectors</u>:
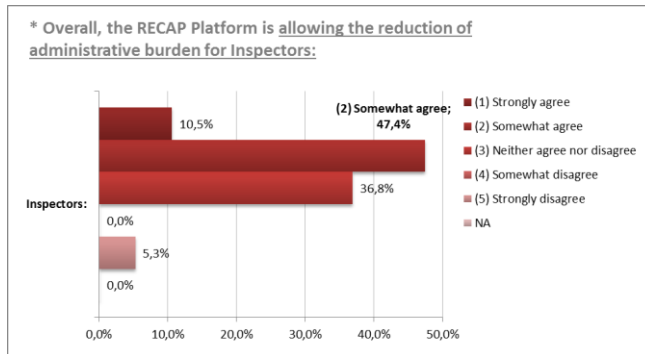
⇨   **58% of inspectors** are **somewhat agree** and more with the fact that the RECAP Platform is allowing the **reduction of administrative burden for Inspectors;**

- *Assessment on <u>Technical issues:</u>*

Moreover, Inspectors have been asked about the **Remote Sensing Tool (RST)** and some other **specific aspects** related to their use of the RECAP Platform, such as:

✓   Aspect 1: **RST** - its potential **to assist in operational Cross-Compliance Checks;**

⇨   **48% of inspectors** having used the RST, are globally **somewhat agree** and more with the fact that the **RST shows potential** to assist them **in operational cross-compliance checks;**

4.2.3 Assessment by CERTIFICATION BODIES.

This sub-section presents results referring to the CERTIFICATION BODY Module that was tested by Certification Bodies' staff (or consultants ensuring their role) in Serbia.

- *Help with Organic Certification (OC):*
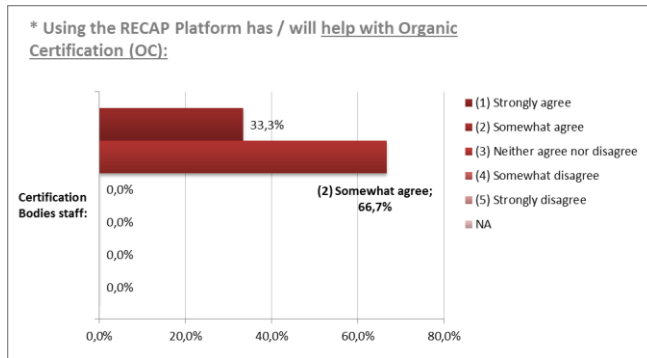
⇨ **100% of certification bodies** are **somewhat agree** and more with the fact that the RECAP Platform **helps with Organic Certification (OC)**;

- *Reduction of administrative burden for Certification Bodies:*

For evaluating the reduction of administrative burden for Certification Bodies, Pilot Participants have been asked about the necessary time for the below task:

✓ Task 1: **monitoring Farmer's Compliance (day)**.

Task 1:	*Certification Bodies staff (or consultants ensuring their role):*	
	Number	%
* In previous years, overall, how long did monitoring Farmer's Compliance take (days)?		
Answered:	3	100,0%
NA / No exploitable answer:	0	0,0%
* Using the RECAP Platform, overall, how long do you think monitoring Farmer's Compliance would take (days)?		
Answered:	3	100,0%
NA / No exploitable answer:	0	0,0%
Pilot Participants having answered to both questions:	**3**	100,0%
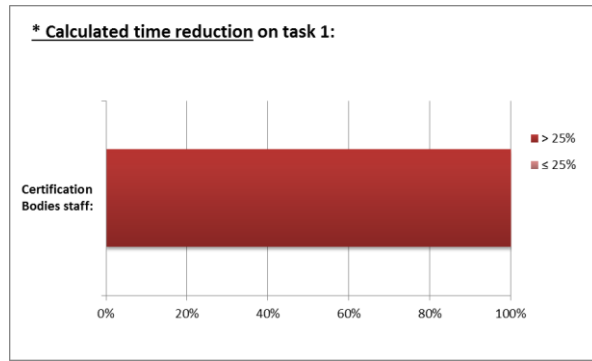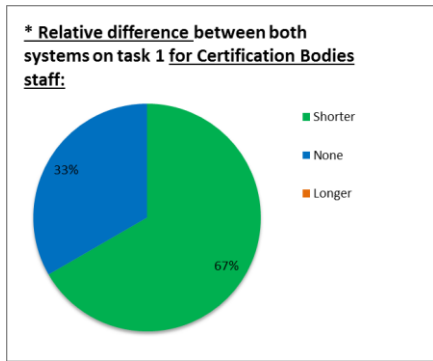
⇨ **67% of certification bodies** declared that the necessary time for **monitoring farmer's compliance** would be **shorter** using the RECAP Platform; and the corresponding time reduction would be **>25% for all** of them;

In addition, Pilot Participants have been directly asked about the **reduction of administrative burden for Certification Bodies:**
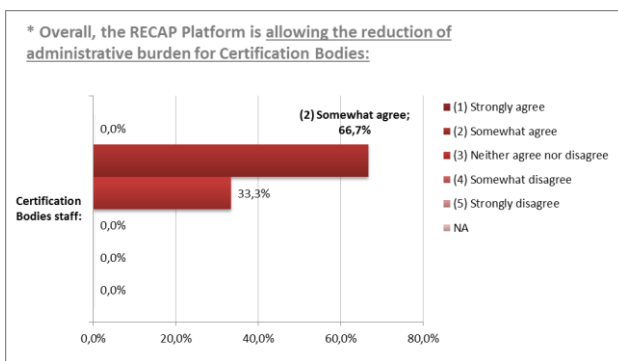
⇨ **100% of certification bodies** are **somewhat agree** and more with the fact that the RECAP Platform is allowing the **reduction of administrative burden for Inspectors**;

- *Assessment on Technical issues:*

Moreover, Certification Bodies have been asked about the **Remote Sensing Tool (RST)** and some other **specific aspects** related to their use of the RECAP Platform, such as:

✓ Aspect 1: **RTS** - its potential **to assist in operational Compliance to Organic Certification;**

⇨ **100% of certification bodies** are **strongly agree** with the fact that the **RST shows potential** to assist them **in operational compliance to organic certification** with the **preparation for on-site-checks;**

4.2.4 Assessment by PAYING AGENCIES.

This sub-section presents results referring to the PAYING AGENCY Module that was tested by Paying Agencies' staff (or similar) in the 5 participating countries. Since the role of the PA in Serbia is different from the other Pilots, results are displayed separately:

a)   *From Greece and Lithuania:*

- *Make more efficient the Cross-Compliance monitoring:*
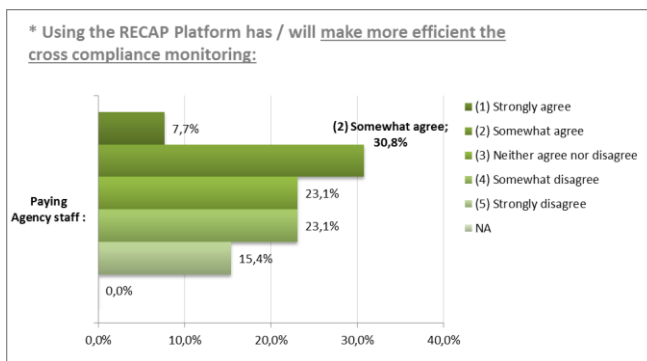
⇨ **38% of PA staff** are **somewhat agree** and more with the fact that the RECAP Platform **makes more efficient the cross compliance monitoring**;

- *Increase the accuracy of the On-The-Spot-Check (OTSC) for Cross-Compliance:*
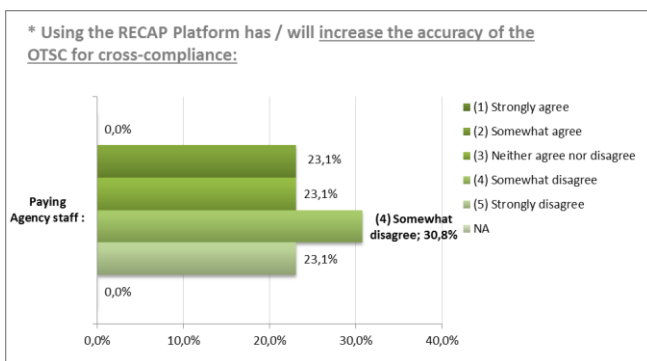
⇨ **23% of PA staff** are **somewhat agree** with the fact that the RECAP Platform **increases the accuracy of the OTSC for cross-compliance**;

- *Reduction of administrative cost for Paying Agencies:*

For evaluating the reduction of administrative cost for Paying Agencies, Pilot Participants have been asked about the cost of the below task:

✓ Task 1: **the monitor of the Farmer's Cross-Compliance (€)**.

However, 12 out of the 13 Paying Agency staff from Greece and Lithuania indicated that they were not able to express it in Euros or did not reply to both questions:

> * In previous years, overall, how much did the monitor of the Farmer's cross compliance cost (€)?
> * Using the RECAP Platform, overall, how much do you think the monitor of the Farmer's cross compliance cost (€)?

Nonetheless, Pilot Participants have been directly asked about the **reduction of administrative cost for Paying Agencies**, and their **estimation:**
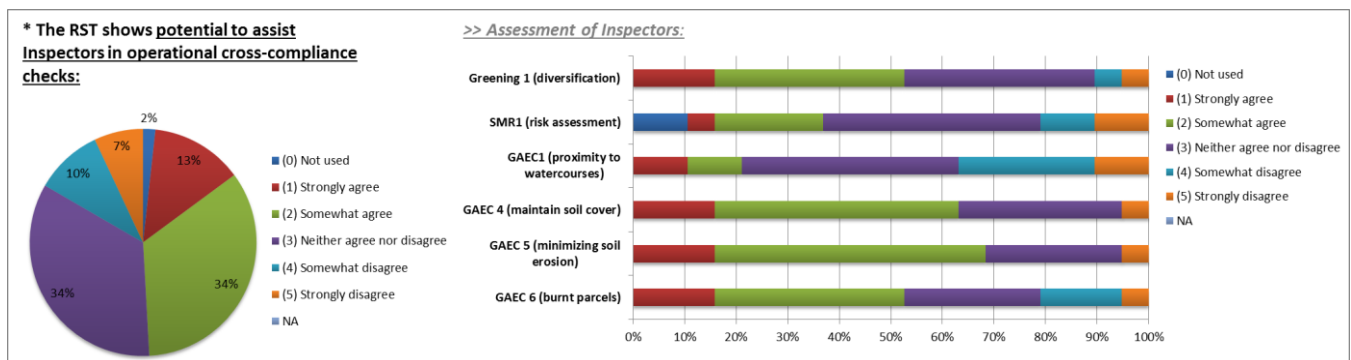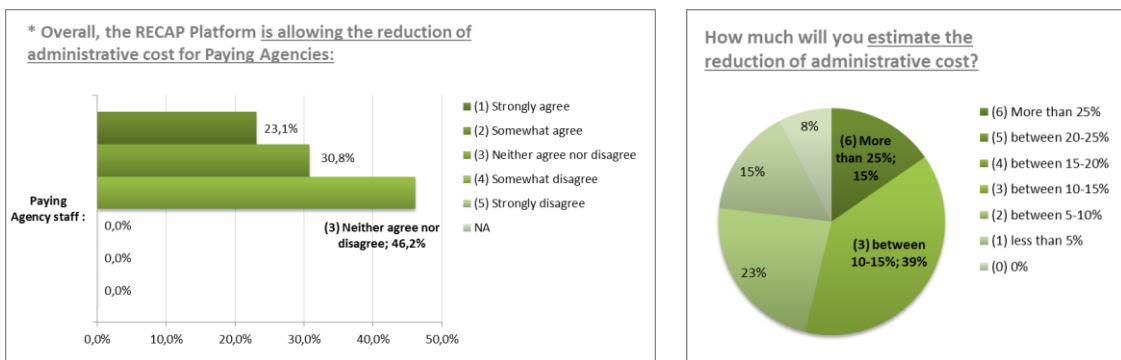

⇨ **54% of PA staff** are **somewhat agree** and more with the fact that the RECAP Platform is allowing the **reduction of administrative cost for Paying Agencies**;

⇨ **15% of PA staff** estimate that the **reduction of administrative cost** would be **more than 25%**; and **39%** of them **between 10-15%**;

- *Assessment on Technical issues:*

Moreover, Paying Agency staff has been asked about the **Remote Sensing Tool (RST)** and some other **specific aspects** related to their use of the RECAP Platform, such as:

✓ Aspect 1: **RST** - its potential **to assist in operational Cross-Compliance Checks**;
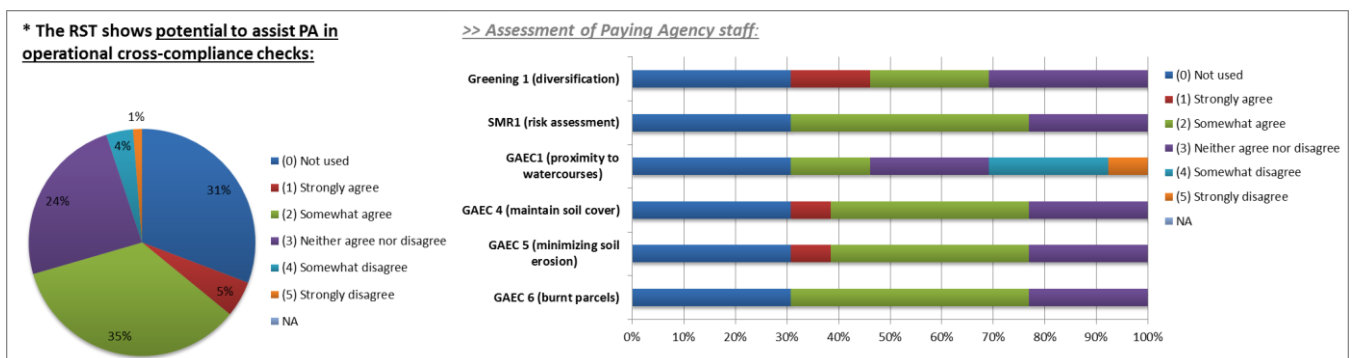
⇨ **58% of PA staff** having used the RST, are globally **somewhat agree** and more with the fact that the **RST shows potential** to assist them **in operational cross-compliance checks**;

b)   *From Serbia:*

The representative of the Serbian Paying Agency made the below declaration:

⇨   **strongly disagree** with the fact that the RECAP Platform **helps with Organic Subsidies (OS)**;

⇨   **neither agree nor disagree** with the fact that the RECAP Platform **provides a good quality of the parcel geometry** drawn by Farmers and therefore **reduce the time for monitoring of Organic Subsidies (OS)**;

⇨   **somewhat disagree** with the fact that the RECAP Platform **makes more efficient the monitoring of Organic Subsidies (OS) process**;

- *Reduction of administrative cost for Paying Agency:*

For evaluating the reduction of administrative cost for Paying Agencies, the representative of the Serbian Paying Agency has been asked about the cost of the below task:

✓   Task 1: **the inspecting of Organic Subsidy (OS) Declaration (€)**.

However, he was not able to answer to the below questions and/or express his reply in Euros:

* In previous years, overall, how much did inspecting Organic Subsidy (OS) Declaration cost (€)?
* Using the RECAP Platform, overall, how much do you think inspecting Organic Subsidy (OS) Declaration would cost (€)?

Nonetheless, he made the below declaration regarding the **reduction of administrative cost for Paying Agencies**, and his **estimation:**

⇨   **somewhat disagree** with the fact that the RECAP Platform is allowing the **reduction of administrative cost for Paying Agencies**;

⇨   estimate that the **reduction of administrative cost** would be **between 20-25%**;

- *Assessment on Technical issues:*

Moreover, the representative of the Serbian Paying Agency has been asked about the **Remote Sensing Tool (RST)** and some other **specific aspects** related to the use of the RECAP Platform, such as:

✓   Aspect 1: **RST** - its potential **to assist in Compliance with Organic Subsidies requirements**;

The representative of the Serbian Paying Agency made the below declaration:

⇨   **strongly agree** on the fact that the **RST shows potential** to assist PA in Compliance with Organic Subsidies requirements with **identifying cultivate crop types using photointerpretation** based on the available vegetation indice (NDVI, etc);

⇨   **somewhat agree** on the fact that the **RST shows potential** to assist PA in Compliance with Organic Subsidies requirements with **monitoring parcel area using vegetation indices** (NDVI, etc);

5. Perceptions of the end-users on the RECAP Solution

The process of evaluation also included some qualitative aspects that were evaluated thanks to the Evaluation Questionnaires, own Evaluation Forms, the Individual Interviews as well as the Focus Group; allowing the Pilot Teams to get the perceptions of the different groups of end-users on the RECAP Solution.

Indeed, the Evaluations Tools and Activities focused on both axes, an internal evaluation centred on factors internal to the RECAP Solution (e.g. services, functionalities, etc.) leading to the identification of the main strengths and weaknesses; and an external evaluation based on factors external to the RECAP Solution (e.g. territories' specificities, local trends, etc.) leading to the definition of the main opportunities and threats.

Moreover, some observations were also collected regarding the potential impact of the RECAP Solution, its sustainability and its transferability in the 5 participating territories.

This part of the report displays <u>the perceptions and the most relevant observations made by the end-users</u> from each of the 5 Pilots at local level.

5.1   Perceptions in Greece

- *SWOT analysis:*

STRENGTHS	WEAKNESSES
⇨ [F] – 1. **easier compliance** with cc rules; ⇨ [F] – 2. **easy data management**; ⇨ [F] – 3. **direct communication** with PA; ⇨ [AC] – 1. **easier compliance** with cc rules; ⇨ [AC] – 2. **easy data management**; ⇨ [I/PA] – 1. **no use of paper**; ⇨ [I/PA] – 2. **easy to handle, easy to learn**; ⇨ [I/PA] – 3. **comply with CC rules**; ⇨ [I/PA] – 4. **communicate with PA**;	⇨ [F] – 1. **risk that data will be accessible** to Inspectors; ⇨ [F] – 2. **no familiarization with apps and ICT**; ⇨ [F] – 3. **complexity**; ⇨ [F] – 4. **requires training**; ⇨ [F] – 4. **no strong motivation for using the app**; ⇨ [AC] – 1. **requires training**; ⇨ [AC] – 2. **risk that data will be accessible** to Inspectors; ⇨ [I/PA] – 1. **it could not work correctly**; ⇨ [I/PA] – 1. **complex**; ⇨ [I/PA] – 2. **lack of direct connection with IACS**; ⇨ [I/PA] – 3. **rather long time to learn RECAP**;
OPPORTUNITIES	**THREATS**
⇨ [F] – 1. As CC rules become more difficult **RECAP will become more necessary**; ⇨ [F] – 2. **Agricultural population becomes more familiarised with apps and ICT** as younger people get into the job; ⇨ [AC] – 1. As CC rules become more difficult **RECAP will become more necessary**; ⇨ [I/PA] – 1. CAP (and CC rules) will became more and more complicated so **need for apps like RECAP**; ⇨ [I/PA] – 2. **younger people with higher familiarization with ICT and apps will get involved** in agriculture;	⇨ [F] – 1. **CC rules will change dramatically in the new CAP** and RECAP will need vast reengineering; ⇨ [F] – 2. **other comparative apps will appear** (e.g. cross-compliance monitoring system); ⇨ [AC] – 1. **CC rules will change dramatically in the new CAP** and RECAP will need vast reengineering; ⇨ [AC] – 2. **other comparative apps will appear** (e.g. cross-compliance monitoring system); ⇨ [I/PA] – 1. **low ICT literacy of the users**; ⇨ [I/PA] – 2. **other apps will appear** (competition); ⇨ [I/PA] – 3. **new demands require continuous development** of RECAP;

[F]: Farmers; [AC]: Agricultural Consultants; [I]: Inspectors; [PA]: Paying Agency staff.

- *Observations of end-users in Greece:*

✓ **Part / Functionality** of the RECAP Platform that has the <u>biggest potential</u> for further enhancement:	* *(Farmers):* **The registries (inputs-outputs and work diaries); CC rules compliance check; Mapping functionality; Remote sensing; Communication with PA.** * *(AC):* **The registries (inputs-outputs and work diaries); CC rules compliance check; Remote sensing; Mapping functionality.** * *(Inspectors/PA):* **CC rules compliance and registries.**
✓ **Part / Functionality** of the RECAP Platform found the <u>less useful:</u>	* *(Farmers, AC):* **Remote sensing** (because farmers know what their crops are)**; Mapping** (because parcel are digitized already in the declaration of the BPS)**.** * *(Inspectors/PA):* **none.**
✓ **Acceptance and conditions for using** the RECAP Platform <u>in end-users' context/role:</u>	* *(Farmers):* **I would only use it if it was free of charge** (59%); **I would not use it even if it was free of charge** (38%); **I am willing to pay for it** (3%). * *(AC):* **I would only use it if it was free of charge** (64%); **I would not use it even if it was free of charge** (27%); **I am willing to pay for it** (9%). * *(Farmers, AC):* **RECAP would be useful for all Agricultural Consultants, but only very few farmers would be interested to use it** (62%); **Most Agricultural Consultants would be interested in RECAP, but only very few farmers would be interested in it** (26%); **Very few Agricultural Consultants would be interested in RECAP and practicaly no farmers would be interested in it** (12%). * *(Inspectors):* **acceptance rather positive** (tool to be used by inspectors in their job when it will be ready, tool that is considered of interest for the Single Payment Agencies);
✓ **Willing to have the RECAP Platform (or a similar one)** <u>as an integral part of CAP implementation</u> in the future:	* *(Farmers, AC):* **Yes, it is useful to have such a system to facilitate me. We should ask the PA to implement it in Greece** (61%); **I would not like it as the control with RECAP (or similar tool) is very pressing. I do not like to transfer it in Greece** (39%); * *(Inspectors/PA):* **Yes.**

- *Potential Impact, Sustainability and Transferability in Greece:*

✓ **Potential Impact** of the RECAP Solution in the short term:	* **Improvement of the compliance with CC rules** *(Farmers, AC);* * **Reduction of administrative burden** *(Farmers, AC, Inspectors/PA);* * **Increase of inspections' speed** *(Inspectors/PA);*
✓ **Potential Impact** of the RECAP Solution in the future (5 year-time):	* **Improvement of the compliance with CC rules** *(Farmers, AC);* * **Reduction of administrative burden** *(Farmers, AC, Inspectors/PA);* * **Increase of inspections' speed** *(Inspectors/PA);*
✓ **Sustainability:**	* **Sustainable if Agricultural Consultants offer this service** *(Farmers, AC);* * **Sustainable only if it is offered for free** *(Farmers, AC);* * **It depends on how Farmers will work with the RECAP** *(Inspectors/PA);* * **Sustainability depends on the speed of incorporation of such an app by Farmers and Agricultural Consultants – it should be quick enough to avoid long depreciation period.** *(Inspectors/PA);*
✓ **Transferability:**	* **A request should be made to the PA for implementing such a tool in Greece** *(Farmers, AC);* * **A better promotion should be made to the PA** *(Inspectors/PA).*

5.2   Perceptions in Spain

- *SWOT analysis:*

STRENGTHS	WEAKNESSES
✓ **Excellent tool for communication** between actors, inspection, farmers and technicians; ✓ **A very nice and friendly way to inform farmers** of their compliance rules.	✓ The **specific CC requirements of the plots should be uploaded automatically by the paying agency** as practical information given to the users. ✓ **Advisors should have access to several Farmers' accounts** at the same time.
⇨ [F] – 1. **a very nice way to be informed of the CC and Greening requirements** for each specific plot in their farms; ⇨ [F] – 2. **practical tool to receive messages from paying agency or technicians** at the precise moment. ⇨ [AC] – 1. **the role of the consultants as CAP advisor is developed with different services and open to new ones**, especially one to several advised farmers, that is absolutely necessary. ⇨ [AC] – 2. **advisors can have access to the Sentinel images helping their farmers to use this new source of data as a support for the decision** to be taken in their plots. ⇨ [I] – 1. **a direct way of communication with farmers, giving them precise information of the CC requirements** for their plots. ⇨ [PA] – 1. **a valuable way to comply with their obligation to inform farmers**.	⇨ [F] – 1. The **CAP Declaration should be offered as a tool to upload and download the administrative information** of the plots to the Recap platform. **Farmers should be free to prepare their CAP Declaration to be sent to the Paying Agency at the beginning of the crop season.** Also **users should be able to download their CAP Declaration from the RECAP Platform.** ⇨ [F] – 2. The **specific CC requirements of the plots should be uploaded automatically by the paying agency as practical information** given to the users. ⇨ [F] – 3. **Connections with the sigAGROasesor Platform** are demanded for the users. ⇨ [AC] – 1. **Advisors should have access to several Farmers' accounts** at the same time; and be able to send the same message to a group of farmers. ⇨ [I] – 1. The RECAP Platform should be **connected or integrated to their own platform of inspection**.
OPPORTUNITIES	THREATS
✓ **Paying Agency in Navarra is open to have a service to maintain farmers well informed in CC rules in the future.** RECAP could be one of the available solutions. ✓ **Decision Support Tools as sigAGROasesor is interested in the implementation of individual and collective services to inform farmers about CAP and CC rules.** ✓ **Big Data is a new opportunity to create added value for users, farmers, advisors or paying agencies.**	✓ **Competition with other on-line tools**.

⇨ [F] – 1. RECAP could be in the future **a common space of communication for CAP**;	⇨ [F] – 1. **Connectivity with DST platforms and Traceability Platforms currently used** by farmers (sigAGROasesor).
⇨ [AC] – 1. **collective management of services** to final users **is one of the businesses for CAP advisors** in the future.	⇨ [AC] – 1. **Connectivity with DST platforms and Traceability Platforms currently used** by farmers and advisors (sigAGROasesor).
⇨ [I] – 1. Inspectors have their **own on line tools that could be connected to RECAP Platform**.	⇨ [I] – 1. **Competition with other on-line tools**.
⇨ [PA] – 1. Paying Agencies have their **own on line tools that could be connected to RECAP platform**.	⇨ [PA] – 1. **Competition with other on-line tools**.

[F]: Farmers; [AC]: Agricultural Consultants; [I]: Inspectors; [PA]: Paying Agency staff.

- *Observations of end-users in Spain:*

✓ **Part / Functionality** of the RECAP Platform that has the <u>biggest potential</u> for further enhancement:	* *(Farmers, AC, Inspectors, PA):* **Current identification of crops with Sentinel and additional satellite services in the future;** * *(Farmers, Inspectors, PA):* **Communication between users, farmers, advisors and inspectors;** * *(AC):* **Communication with farmers: from one to several farmers;**
✓ **Part / Functionality** of the RECAP Platform found the <u>less useful</u>:	* *(Farmers, AC):* **Record of actions; Loading the data of the plots by hand; Help; Contact with PA.** * *(AC):* **Fill in the Work Diary.** * *(Inspectors):* **Proximity to water courses.**
✓ **Acceptance and conditions for using** the RECAP Platform <u>in end-users' context/role:</u>	* *(Farmers):* **would be used, only if it is free;** * *(AC):* **would be used, only if it is free as a service offered by the payment agency;** * *(Farmers):* **It is useful for all type of farmers** (56%); **for large farmers** (22%); **only for large farmers** (22%); * *(AC):* **It is useful for large farmers;** * *(Inspectors):* **no- because it does not do all the functions required at the moment; it may be of interest for the Single Payment Agencies;**
✓ **Willing to have the RECAP Platform (or a similar one)** <u>as an integral part of CAP implementation</u> in the future:	* *(Farmers):* **yes** (56%); **do not know** (44%); * *(AC):* **yes.**

- *Potential Impact, Sustainability and Transferability in Spain:*

✓ **Potential Impact** of the RECAP Solution <u>in the short term</u>:	* It is a first version of a line of services related to CAP that should be adapted to the situation in Navarra and Spain. Connectivity can be the best solution. * Paying Agency is open to have a service to maintain users informed in the future. RECAP could be one of the available solutions; * **Very limited use to the more professional farmers** *(Farmers)*; * **Services can be offered by cooperatives or collective groups** *(Agricultural Consultants)*; * **No additional value for INSPECTORS in Navarra** *(Inspectors)*; * **No additional value for PAYING AGENCY in Navarra** *(Paying Agency)*;
✓ **Potential Impact** of the RECAP Solution <u>in the future (5 year-time)</u>:	* RECAP could be overcome by other more powerful platform, doing similar services, but in controlled by TRAGSA. * **Services offered by RECAP will be incorporated in sigAGROasesor** *(Farmers)*; * **Services offered by RECAP will be incorporated in the new AgroGestor Platform** *(Agricultural Consultants)*; * **No future, except to be copied in new national Spanish platforms** *(Inspectors)*; * **No future, except to be used inspiring new Spanish Platform** *(Paying Agency)*;
✓ **Sustainability:**	* To establish a commitment with FEGA and TRAGSA to develop this kind of CAP services. * To have the Paying Agency of Navarra interested in the evolution of RECAP.
✓ **Transferability:**	* To be in contact with TRAGSA as the official provider of services for the Spanish PA;

5.3 Perceptions in Lithuania

- *SWOT analysis:*

STRENGTHS	WEAKNESSES
⇨ [F/AC] – 1. **Use of Remote Sensing Component**; ⇨ [F/AC] – 2. **Information about plants' vegetation** (vegetation indices); ⇨ [F/AC] – 3. **CC rules**; ⇨ [I] – 1. **Control of the parcels**; ⇨ [I] – 2. **Communication with farmers** by checking various journals; ⇨ [I] – 3. **Promoting beneficiaries to use technologies**, raising their awareness; ⇨ [I] – 4. **The possibility of transferring various documents to the electronic space** thus reducing the need and use of paper documents; ⇨ [I] – 5. **Possibility for the beneficiary himself to see the restrictions applicable to his declared fields** (water protection zones, sensitive areas for erosion, NATURA2000 territories etc.); ⇨ [I] – 6. **Comfortable maps**; ⇨ [I] – 7. **The possibility for the beneficiary himself to see the specific CC requirements applicable to him**; ⇨ [I] – 8. **Using of Sentinel indexes**; ⇨ [I] – 9. **Saving time with farmers**, since during the farm visit inspector can focus only on problematic issues that have not been controlled on the platform; ⇨ [I] – 10. It is **possible to control that farmer cultivate agricultural crops or black fallow**, **whether farmers are compliant with the** obligations for erosion sensitive areas, whether they do not burn agricultural crops, grass or meadows. ⇨ [PA] – 1. **Use of remote sensing tool** for the control of majority GAEC requirements, also mowing of pastures and crop diversification; ⇨ [PA] – 2. **Involvement of farmers**, the possibility for the beneficiaries themselves to see their declared fields, the actual limitations etc.; ⇨ [PA] – 3. **Provides the basis for the implementation of the monitoring**; ⇨ [PA] – 4. **Transparency during inspections**; ⇨ [PA] – 5. **Form a common approach** to a modern CAP; ⇨ [PA] – 6. **Process optimization** by refusing paper documents; ⇨ [PA] – 7. **Realization of convenient and prompt communication with farmers**.	⇨ [F/AC] – 1. **Active map site covering only part of the territory** of Lithuania; ⇨ [F/AC] – 2. Partly functioning of Self-assessment part; ⇨ [F] – 3. **Too much information has to be uploaded to the platform by hand**; ⇨ [I] – 1. **It is not possible to check all CC requirements**, farm visit is still mandatory, for instance, the control whether the farmer does not spread manure and / or slurry in water protection zones, whether the farmer, in one place having 5 – 100 LU, has a manure storage, whether farmer does not spread manure and / or slurry no later than 15 November and no earlier than April 1, **it is also not possible to check the plant protection requirements**; ⇨ [I] – 2. **Inconvenient selection of the parcels** in the Maps module; ⇨ [I] – 3. **Slow involvement of beneficiaries in modern technologies**; ⇨ [I] – 4. **Risk regarding the accuracy of data submitted by applicants** (schemes of manure storages, measurements of manure storages etc.); ⇨ [I] – 5. The **increased need for beneficiaries to use consultants' services and an increase in costs** accordingly; ⇨ [I] – 6. Inconvenient tools for platform management; ⇨ [I] – 7. Inaccurate remote sensing algorithm results. ⇨ [PA] – 1. **Farmers passivity** regarding the use of the platform; ⇨ [PA] – 2. **Insufficient remote sensing tool accuracy**; ⇨ [PA] – 3. **Lack of integration with other systems and registers**; ⇨ [PA] – 4. The platform **is too difficult for an unacknowledged user**; ⇨ [PA] – 5. **Lack of journal forms** used by farmers; ⇨ [PA] – 6. **The control and traceability of platform user's actions are not ensured**; ⇨ [PA] – 7. **Lack of information (messages) to the user's group** according to the results of checks, the status of checks, the characteristics of the farmers; ⇨ [PA] – 8. **Lack of restrictions on the erasure of information** (for example, the elimination of employees); ⇨ [PA] – 9. **Lack of audit information**; ⇨ [PA] – 10. **Lack of assignment of controls according to location of parcels** (preferably within the module Maps). ⇨ [PA] – 11. **Lack of abilities to communicate with the individual categories of platform users** (for instance, group of legal persons, group of farmers, declaring EFA etc.).

OPPORTUNITIES	THREATS
[F/AC] – 1. To use the platform for **remote monitoring of his/her parcels**; [F/AC] – 2. To use the platform for **declaration of parcels and crops**; [F/AC] – 3. To use the platform for **CC checklist**; [I] – 1. Would **allow to control some requirements remotely**, thus **accelerating the performance of OTSC for cross-compliance** and **less disturbing the farmer** (all relevant journals, geotagged photos would be in RECAP, thus document control and partly control of obligations would only be carried out through the RECAP platform); [I] – 2. The platform **should be attractive to bigger farmers (especially younger ones)**, who already use innovative portals and apps; [I] – 3. In the future, it **would be possible to include** not only the cross-compliance control, but also **the eligibility control** since a large part of the commitments (for instance, grazing, cultivation of fallow) can be checked on the platform without physical farm visits; [I] – 4. The platform **could be adapted to a wider context**, such as informing about the beginning / end of mowing, harvesting, informing about the management / elimination of inappropriate blocks by loading of geotagged photos, perhaps even to inform about the non-compliant areas of other farmers. [PA] – 1. The ability to **fill in all journals in the platform** only; [PA] – 2. The opportunity to **inform paying agency about the activities executed**; [PA] – 3. The opportunity to **perform OTSC for cross-compliance remotely**; [PA] – 4. The opportunity for farmers to **receive individual reminders on the deadlines** of the requirements; [PA] – 5. The ability to use this tool as **an educational tool for the improvement of knowledges** regarding agricultural policy, control process, the concept itself of remote sensing and showing its opportunities for farmers.	[F] – 2. **Fees for the use of the tool** will be too high; [F/AC] – 1. **Active map site will be left only in tiles 6 and 7** (not in all the territory of Lithuania); [F/AC] – 3. Self-assessment part will not be fully functioning; [I] – 1. **Too low accuracy** for determining crop types and burning facts; [I] – 2. **Low percentage of interested farmers** (the platform would only be useful if farmers would use it massively); [I] – 3. Risk regarding the **accuracy of the data provided by the farmers** (schemes of manure storages, measurements of manure storages etc.) and their timely submission; [I] – 4. It is impossible to check all cross-compliance requirements – farm visit is still mandatory. [PA] – 1. **Lack of adaptations to the new CAP period** with additional requirements; [PA] – 2. **Insufficient accuracy of remote sensing algorithm**; [PA] – 3. **Lack of traceability of operations**; [PA] – 4. **Insufficient involvement of farmers** in the use of this platform; [PA] – 5. **Changes of technology** and the creation of better remote sensing algorithms; [PA] – 6. Introduction of **new and better apps**; [PA] – 7. **Lack of integrations** with other systems and registers.

[F]: Farmers; [AC]: Agricultural Consultants; [I]: Inspectors; [PA]: Paying Agency staff.

- *Observations of end-users in Lithuania:*

✓ **Part / Functionality** of the RECAP Platform that has the <u>biggest potential</u> for further enhancement:	***** *(Farmers, AC):* **Remote Sensing Component**; **Layers** (with vegetation indices); **Self-assessment**; ***** *(Inspectors):* **Remote sensing algorithm; Map tools; Image quality of NDVI, NDWI, PSRI, SAVI; Completing the cross-compliance report;** The **ability to submit documents** through the platform**;** It is convenient to **calculate the amount of stored manure**, it is even more convenient than CC mobile apps used for real checks in Lithuania. ***** *(PA):* **Remote sensing algorithm**; **Messages**; **My documents module.**
✓ **Part / Functionality** of the RECAP Platform found the <u>less useful</u>:	***** *(Farmers):* **Contact PA; Report a problem** – the same can be done in part with "Contact PA"; **Work diary**; **My documents** – there is no need to store documents here; ***** *(AC):* **Work diary –** there are a lot of other programmes for farm management that are more improved**; Reminders**; ***** *(Inspectors):* **Module Farmer's Work diary** – it shall be upgraded by incorporating all journals maintained by farmers; **Module Final decision** – it has a doubled information which was already entered in the module Inspection forms; **Module Scheduler** has completely unclear functionality of the reminders' creation, and, moreover, the work of inspector is scheduled a few days ahead because of deadlines of the requirements, it may take time until the farmer responds to the sent message, it's considerably easier to call and plan work in this way; **Module Inspection history**, since today there is no useful information required for the control. ***** *(PA):* **Modules Farmers and Inspectors**, because the management of this data shall be on the basis of the map according to location of parcels; **Module Messages**, because it is not flexible, it is not possible to create groups of users, to whom the messages shall be sent.
✓ **Acceptance and conditions for using** the RECAP Platform <u>in end-users' context/role:</u>	***** *(Farmers):* **Would agree to pay 2 euros for services in the Platform** (52%); **Expressed a desire to use the platform for free** (30%); **Would agree to pay more than 2 euros for the use of the tool** (18%). ***** *(AC):* **Would be willing to pay 2 euros for 1ha for the possibility to use the platform** (70%); **suggested that the use of the platform should be free of change** (15%); **would agree to pay 3 euros** (8%); **would agree to pay 1 euro** (7%); ***** *(Farmers):* **It is useful for all type of farmers, but could be more adapted for some of them** (e.g. Famers owning 100 ha, Skilled Farmers, Farmers with free time…); ***** *(AC):* **It is useful for both, Farmers and Advisors; especially for mid-size & large farms (more than 50ha) of crop production and crop production advisors;** ***** *(Inspectors):* **would like to use it if the Platform is upgraded** (75%); **would not use it because not all cross-compliance requirements can be controlled** (25%); ***** *(Inspectors):* **Yes, it may be of interest for the Single Payment Agencies;**

✓ **Willing to have the RECAP Platform (or a similar one)** <u>as an integral part of CAP implementation</u> in the future:	* *(Farmers):* **would be willing to use similar tool in the future** (83%); **would not** (17%); * *(AC):* **Both groups of advisors** – advisors from LAAS' headquarters and regional offices – **agreed that the tool was really useful and they would be willing to apply it in practice in the future if certain parts are improved or changed; would be willing to use this tool in the future** (88%); **would not be willing to** (12%);

- *Potential Impact, Sustainability and Transferability in Lithuania:*

✓ **Potential Impact** of the RECAP Solution <u>in the short term:</u>	* **Remote Sensing Component could be used if maps within all the territory of Lithuania were activated** *(Farmers, AC)*; * **Would allow to control some requirements remotely, thus accelerating the performance of OTSC for cross-compliance and less disturbing the farmer** *(Inspectors)*; * **Would reduce the need of human resources, thus leaving the remaining salaries to rise** *(Inspectors)*; * **Would slightly increase the part of farmers, who use smart technologies, since the platform provides an attractive tool for communication with the paying agency and inspectors** *(Inspectors)*; * **Would ensure a more transparent control process, with every step of the verification (farmer-inspector) visible on the platform**. *(Inspectors)*; * **Reduces the burden for farmers and paying agencies** *(Paging Agency)*; * **Enhances transparency of the control process** *(Paging Agency)*; * **Improves the communication between farmer and paying agency** *(Paging Agency)*; * **Increases the number of checks performed remotely** *(Paging Agency)*; * **Increases farmers' involvement in the development of public services** *(Paging Agency)*.
✓ **Potential Impact** of the RECAP Solution <u>in the future (5 year-time):</u>	* **It depends on the scope functionalities of the tool are going to be improved** *(Farmers, AC)*; * **If the platform would be upgrading and the appropriate accuracy of the remote sensing algorithm would be achieved, it would be possible to reduce the cost of administration, to facility the work of the inspector and increase the number of remote sensing checks accordingly reducing the number of physical visits** *(Inspectors)*; * **Successfully integrated, this platform could be an excellent example of collaboration among farmers, advisory and control bodies** *(Inspectors)*; * **It would be possible to refuse the paper documents to be filled in, thereby reducing the use of paper** *(Inspectors)*; * **Increased farmer's interest to use modern technologies** *(Inspectors)*; * **Higher transparency of the control process and the reduction of administrative costs** *(Paging Agency)*;

✓ **Sustainability:**	* **The tool could be integrated with similar already existing tools** *(Farmers, AC);* * **If the platform would be upgraded, it could be used in the future, but talking about the execution of OTSC for cross-compliance, the data in RECAP platform would not be sufficient in any case, and therefore a more likely option would be when a part of the commitments are checked on RECAP platform using remote sensing algorithm results and the information submitted by farmers, but part of the commitments are still checked in the farm.** *(inspectors);* * **RECAP apps shall be made much friendlier to the user, not only the copy of existing platform by adding offline function. Lithuania uses much more advanced apps, thus RECAP apps is not attractive at all.** *(inspectors);* * **This platform could be used in Lithuania if some integration would be performed, the platform would be updated constantly, data traceability would be ensured, results from the remote sensing algorithm would be automatically applied, statistics module would be created, etc.** *(Paging Agency);*
✓ **Transferability:**	* **To provide more information about the advantages of the platform;** * **To reach an agreement with stakeholders in order to use the RECAP Platform for minimum price or free of charge**.

5.4   Perceptions in the U.K.

- *SWOT analysis:*

STRENGTHS	WEAKNESSES
✓ **Increase transparency** between PAs and Farmers; ✓ **Increase overall compliance with CC rules by Farmers** due to increased awareness and Reminders; ✓ **Farm Map and layers**.	✓ **Lack of paying agency involvement /endorsement**.
⇨ [F] – 1. **Increased compliance** through awareness of CC rules; ⇨ [F] – 2. **Personalised list of CC rules** for the farm; ⇨ [F] – 3. **Farm mapping tool** for crop management and split parcel measurement; ⇨ [F] – 4. **Reminders of CC rules;** ⇨ [F] – 5. **Storage of CC rule documents** from geo-tagged photos; ⇨ [AC] – 1. **Ability to view multiple farmer BPS;** ⇨ [AC] – 2. **Ability to store CC rule documents for multiple farmers;**	⇨ [F/AC] – 1. **Lack of paying agency involvement/endorsement** means RECAP is only a potential concept at the moment; ⇨ [F/AC] – 2. **Not linked to Gatekeeper or similar**/ Livestock recording software record keeping software, therefore potential for duplication or double entry – which negates time saving; ⇨ [F/AC] – 3. **Internet speed in rural areas** may affect performance; ⇨ [F/AC] – 4. **Aerial mapping data not the most recent images;** ⇨ [F/AC] – 5. **Time taken to accurately evidence all compliance;**
OPPORTUNITIES	THREATS
	✓ **Fall in CAP payments may reduce Farmer incentivisation;**
⇨ [F] – 1. **Templates for record keeping** – eg. Animal manure production for N holding limit; ⇨ [F] – 2. **Link to environmental stewardship agreements**, for record keeping in these; ⇨ [F] – 3. **Paying agency endorsement and link to BPS submission;** ⇨ [F] – 4. **IOS operating software / app**; ⇨ [F] – 5. **Ability for Farmers to create their own mapping change requests** (removing RLE1 paper forms); ⇨ [F] – 6. **Time saving for Farmers;** ⇨ [F] – 7. **Single portal for all CC rules / BPS / Farm Assurance / Environmental Stewardship;** ⇨ [F] – 8. **Higher resolution mapping;** ⇨ [F] – 9. **Smart Use of existing mapping data layers** – e.g. Mapping where a borehole/ watercourse is and automatically creating a spreading risk map. Another example is public rights of way and alerting the farmer is they have not been reinstated using high res NDVI imagery. ⇨ [F] – 10. **More detailed questionnaire at the start would give an even greater level of personalisation to the CC Rules.**	⇨ [F] – 1. **An alternative technology company trying the same system;** ⇨ [F] – 2. **Paying Agency not endorsing RECAP** preventing take up by Farmers;

[F]: Farmers; [AC]: Agricultural Consultants; [I]: Inspectors; [PA]: Paying Agency staff.

- *Observations of end-users in UK:*

✓ **Part / Functionality** of the RECAP Platform that has the <u>biggest potential</u> for further enhancement:	* *(Farmers, AC):* **Farm Maps** - higher resolution data/ more recent imagery. Increased 'smart' functionality by linking mapping layers to record keeping; **Integration with existing farmer software** to help with the Document storage; * *(Inspectors/AC):* **The Maps function** (e.g. layers, photos being uploaded and mapping of photos, etc.); **Higher resolution imagery to increase the number of GAECs which can be checked** (e.g. GAEC 1 watercourse buffers); **being able to interact with the Farmer directly**; **if Countryside Stewardship could be included**;
✓ **Part / Functionality** of the RECAP Platform found the <u>less useful</u>:	* *(Farmers, AC):* **Work Diary**; **Greening Calculator**; * *(Inspectors/AC):* **Scheduler** - Outlook used instead; **Work diary** - it wasn't used; **Unnecessary layers** within the map function; **The rules section is too wordy/ clunky to navigate quickly.**
✓ **Acceptance and conditions for using** the RECAP Platform <u>in end-users' context/role</u>:	* *(Farmers, AC):* **rather positive; would be a Platform of interest for certain type of Farmers (e.g. younger generations, etc.) and for all Consultants;** * *(Inspectors/AC):* **some would use it** if the satellite imagery was up-to-date and if it could incorporate Countryside Stewardship; **other would not** because it does not do all the functions required at the moment; **tool consider rather of interest for the Single Payment Agencies;**
✓ **Willing to have the RECAP Platform (or a similar one)** <u>as an integral part of CAP implementation</u> in the future:	* *(Farmers, AC):* **rather yes** * *(Inspectors/AC):* **rather positive**, but it would need an agreement from the Paying Agency.

- *Potential Impact, Sustainability and Transferability in UK:*

✓ **Potential Impact** of the RECAP Solution <u>in the short term</u>:	* **Increased transparency between PAs and Farmers;** * **Increase awareness and compliance of the CC rules** *(Farmers);*
✓ **Potential Impact** of the RECAP Solution <u>in the future (5 year-time)</u>:	* **Increased CC Rule compliance;** * **Time saving and increased CC Rule compliance** *(Farmers);*
✓ **Sustainability:**	* **Very sustainable if enough training given to Farmers and they were incentivised to use the platform** (e.g. through Earned Recognition);
✓ **Transferability:**	* **It would need an agreement from the Paying Agency.**

5.5   Perceptions in Serbia

- *SWOT analysis:*

STRENGTHS	WEAKNESSES
✓ **Showcase of how easy and less time-consuming can be processes of Subsidy Provision and Organic Certification**. ✓ **Better administrative control for public bodies.**	✓ **Low IT skills of Farmers**. ✓ **The usage is not obligatory.**
⇨ [OF] – 1. **Less documentation work and less time-consuming process**; ⇨ [OF] – 2. **"All in one place" solution**; ⇨ [CB] – 1. **Better monitoring, good preparation tool for on-site control** - more efficient process in general; ⇨ [CB] – 2. **RS Component has a potential to support more tasks** from the regular workflow of CB; ⇨ [PA] – 1. **Better administrative control**; ⇨ [PA] – 1. **RS Component has a bigger potential**;	⇨ [OF] – 1. **Work Diary should be more detailed**; ⇨ [OF] – 1. **Requires time for the effective usage** (low IT skills); ⇨ [CB] – 1. **Low IT skills of Farmers**; ⇨ [CB] – 2. **Platform should be accepted by authorities and the usage should be obligatory, or at least, stimulated**; ⇨ [PA] – 1. **Low IT skills of Farmers**.
OPPORTUNITIES	THREATS
✓ **Digitalization of public services in Serbia, especially in the field of Agriculture**; ✓ **Further improvements (RS Component) could expand the exploitation potential of the platform.**	✓ **Low IT skills of Farmers**; ✓ **The level of readiness for the usage of such solution.**
⇨ [OF] – 1. **More efficient process of Subsidy Provision** (and Organic Certification); ⇨ [OF] – 2. **Less documentation work**; ⇨ [CB] – 1. **More efficient process of Organic Certification** with the usage of RECAP; ⇨ [CB] – 2. **The goal of Serbian Authorities is the digitalisation of public services**, especially in the field of Agriculture – RECAP is in the line with it and can support it; ⇨ [PA] – 1. **Better administrative control** with RECAP; ⇨ [PA] – 2. **With further development, the RS Component can be even more useful**.	⇨ [OF] – 1. **Usage not to be obliged** (by the law); ⇨ [OF] – 2. **It takes time to learn how to use the platform**; ⇨ [CB] – 1. **Low IT skills of Farmers**; ⇨ [CB] – 2. **The usage should be obliged, or Farmers should be stimulated** to use the platform; ⇨ [PA] – 1. **Low IT skills of Farmers**;

[OF]: Organic Farmers; [CB]: Certification Bodies; [PA]: Paying Agency.

- *Observations of end-users in Serbia:*

✓ **Part / Functionality** of the RECAP Platform that has the <u>biggest potential</u> for further enhancement:	* *(Organic Farmers):* **Work Diary**; **Maps and RS Component.** * *(Certification Bodies, AC):* **Maps and RS Results**; **RS component can be further developed to support the on-spot control visits** (e.g. area verification, declared quantity of products…); **RECAP Platform can be further developed (e.g. communication with other CBs)** and be a good tool in prevention of double, fraud certification; * *(PA):* **Remote Sensing Component.**
✓ **Part / Functionality** of the RECAP Platform found the <u>less useful:</u>	* *(Organic Farmers):* **Communication with CB** – easy and similar to the current one (via e-mail) still Farmers prefer to use the e-mail communication. * *(Certification Bodies, AC):* **Everything is OK; Work Diary** - should look better; * *(PA):* **Everything is OK.**
✓ **Acceptance and conditions for using** the RECAP Platform <u>in end-users' context/role:</u>	* *(Organic Farmers, Certification Bodies, AC):* **would be used for the purpose of OSOS; would pay for services if the quality of the RECAP services is improved** (e.g. additional development based on their comments) **and the price is affordable**; * *(Certification Bodies, AC):* **yes.**
✓ **Willing to have the RECAP Platform (or a similar one)** <u>as an integral part of OSOS / Organic Certification / Organic Subsidy implementation</u> in the future:	* *(Organic Farmers):* **rather positive.** * *(Certification Bodies, AC):* **yes** - obligated by law; * *(PA):* **yes.**

- *Potential Impact, Sustainability and Transferability in Serbia:*

✓ **Potential Impact** of the RECAP Solution <u>in the short term:</u>	* **Improved efficiency of the public services in Serbia (both processes Organic Certification & Organic Subsidy Provision);** * **One step forward to a better adoption rate of digital solutions in general in the field of Agriculture and public services;** * **More effective process, easier and less time-consuming** *(Farmers);* * **Improved documentation work** *(Farmers);* * **Effectiveness of the Organic Certification process could be more effective** *(Certification Bodies);* * **Improved IT skills of Farmers** *(Certification Bodies);* * **Step forward to future digitalisation of Agriculture in Serbia** *(Paying Agency);* * **Better administrative control** *(Paying Agency);*

✓ **Potential Impact** of the RECAP Solution <u>in the future (5 year-time):</u>	* **Platform will foster the adoption of new technologies in general, especially among Farmers;** * **Serbian Pilot as an introduction into the future CAP implementation;** * **More efficient process** *(Farmers);* * **Less documentation work** *(Farmers);* * **More efficient process** *(Certification Bodies);* * **Improved IT skills of Farmers** *(Certification Bodies);* * **Improved IT skills of Farmers** *(Paying Agency);* * **Better administrative control** *(Paying Agency);*
✓ **Sustainability:**	* **The usage of the platform should be obligatory;** * **Stimulation for the usage of platform;**
✓ **Transferability:**	* **An improved version should be developed; and it should be obligated by law** *(Certification Bodies).*

6. Main findings & Recommendations at local level

The full process of Pilot Activities based on the realization of Testing and Evaluation Activities allowed the 5 participating countries i) **setting some observations on technical aspects** for enhancing the RECAP Platform and delivering more effective and efficient services; and ii) **drawing some recommendations** for ensuring the transferability and the sustainability in their territory.

This part of the report presents <u>the main findings and recommendations</u> at local level for each Pilot.

6.1   Main Findings and Recommendations in Greece.

1) TECHNICAL ISSUES: to enhance the RECAP Platform; and to deliver more effective and efficient services.	* **To simplify the RECAP tool and its app** as much as possible; * **To add direct connection with IACS**; * **To incorporate more schemes and measures.** Further observations and some proposals of upgrading the Platform in Greece can be seen in ***Appendix 1.***
2) ENVIRONMENTAL ASPECTS: to ensure the transferability and the sustainability in your territory.	TRAINING: * **To work with local training organization** in order **to reinforce Farmers' skills on ICT**; * **To work with Farmers' Cooperative** in order **to implement specific training actions for Farmers** on how to use the RECAP Platform; PROMOTION: * **To set specific communication actions for Farmers and Agricultural Consultants** on i) the exact **data that is accessible to Inspectors**; ii) **benefits of using RECAP and its app**; * **To foster the RECAP Platform as a solution** in the upcoming context of **more complicated CC rules**; * **To promote the RECAP Platform** among the **younger agricultural population**; * **To promote the RECAP Platform to the Paying Agency**: i) the services and benefits offered by such a tool; ii) having a free service offered by the Agricultural Consultants; UPDATING/UPSCALING: * **To set a working group on the new CAP** in order to define which reengineering the RECAP Platform would need; * **To implement technology watch** in order **to identify comparative tools or apps** that appear on the market; * **To set a working group including all the end-user groups** in order to identify new needs or demands from them that may require to update the RECAP Platform.

6.2 Main Findings and Recommendations in Spain.

1) TECHNICAL ISSUES: to enhance the RECAP Platform; and to deliver more effective and efficient services.	* **To have the RECAP Platform fed automatically by the Paying Agency** with the specific CC rules requirements for each declared parcel (massive upload of info); * **To ensure the inspector that a photo really corresponds to the parcel** (e.g. exact location, date, etc.); * **To link CAP claim with the RECAP Platform:** it would be useful if CAP claim could be made using the platform or from it; * **To ensure the operability of the Map function and the Sentinel images,** guarantying a quick availability of images and a safe calculation of indexes (without cloud interfaces); * **To ensure that the massive upload of parcel claims** can be conducted for the interested users; which should be under the Paying Agency responsibility; * **To give the possibility to AC to access different users simultaneously** in order to allow i) the sending of a same message to a group of farmers; and ii) the visualization of parcels of interest even from different farmers; * **To give the possibility to Farmers that have several CAP claims** to visualize all the parcels at the same time; * **To develop the mobile App** for Iphone. Further observations and some proposals of upgrading the Platform in Spain can be seen in ***Appendix 2.***
2) ENVIRONMENTAL ASPECTS: to ensure the transferability and the sustainability in your territory.	TRAINING: * **To involve the Inspectors in training actions for Farmers** in order to indicate previously what the farmer should do to justify each commitment or requirement (e.g. photographs, documents, questionnaire, etc.); PROMOTION: * **To promote the RECAP Platform to the PA in Navarra** as a possible solution for keeping Farmers informed about CC rules; * **To promote and work on a single Platform and a common space of communication** for CAP in Navarra for all the end-user groups; **jointly with local actors (e.g. PA, TRAGSA, FEGA, etc.)**; UPDATING/UPSCALING: * **To merge tools and build a single Platform** in order to i) **avoid repetitive services** (e.g. visualization of parcels and work diary are already offered by Agroasesor) with other local Platform; and ii) **offer new services** of the RECAP Platform (e.g. list of cross-compliance norms, self-checking, greening, crop identification...); * **To implement technology watch** in order **to identify comparative tools or apps** that appear on the market; * **To guaranty that the massive upload of crop claims is conducted early on,** at the outset of the cropping season.

6.3   Main Findings and Recommendations in Lithuania.

1) TECHNICAL ISSUES: to enhance the RECAP Platform; and to deliver more effective and efficient services.	* **To extent the active map to the whole territory** of Lithuania; * **To work on automatic upload** and reduce the quantity of information to be uploaded by hand; * **To allow the Inspectors to check all CC requirements**; **and the plant protection requirements**; * **To rework the selection of parcels in the Maps module** and select a more convenient one; * **To work on** i) **how lowering risk and ensuring the accuracy of data** submitted by applicants; and ii) **how ensuring the control and traceability of users' actions** in the Platform; * **To improve the RS algorithm results** and **the RS Tool accuracy** (e.g. crop type and burning identifications); * **To simplify the RECAP tool and its apps** as much as possible; and **make it as comprehensive and informative as possible** (e.g. Greening Calculators, Maps, etc.); * **To improve the RECAP Platform from the PA perspective** by i) increasing information and messages to users (e.g. status and results of checks); ii) putting restrictions on the erasure of information (e.g. elimination of employee); iii) introducing audit information; iv) assigning controls according to the parcels' location; and v) improving the communication with categories of users (e.g. legal persons, farmers, declaring EFA…). Further observations and some proposals of upgrading the Platform in Lithuania can be seen in **_Appendix 3._**
2) ENVIRONMENTAL ASPECTS: to ensure the transferability and the sustainability in your territory.	TRAINING: * **To work with local training organization (e.g. LAAS)** in order **to reinforce Farmers' skills on ICT**; PROMOTION: * **To foster the use of modern technologies such as the RECAP Platform** within the beneficiaries; and work on the main barriers (e.g. low ICT skills); * **To promote the RECAP Platform (e.g. services and benefits) among Farmers**; and **work on how fostering its use**; UPDATING/UPSCALING: * **To set a working group on the integration with other systems, registers and existing tools**; * **To make sure that the RECAP Platform is replying to large farmers' needs**; and is **attractive for younger ones**; * **To work on the possibility to enlarge the scope** of the Platform; and evaluate the **inclusion of additional services** (e.g. the eligibility control, specific communications, the calculation of stored manure, etc.);

	* To work on how improving the services of the RECAP Platform for the execution of OTSC for cross-compliance (e.g. reducing even more on-spot checks); *** To set a working group on the new CAP period** in order to define which adaptations and additional requirements the RECAP Platform would need; *** To implement technology watch** in order **to identify** i) **new technologies** (e.g. RS algorithms) and ii) **comparative tools or apps** that appear on the market; *** To improve the Mobile app and be comparable with existing apps in Lithuania which are more advanced** by i) **making it much more friendly** (e.g. not a simple copy of the existing platform; and ii) **adding off-line function**; OTHERS: *** To work on how lowering cost** of the i) use of the RECAP Platform; and ii) increased Farmers' need to use consultants' services.

6.4   Main Findings and Recommendations in U.K.

1) TECHNICAL ISSUES: to enhance the RECAP Platform; and to deliver more effective and efficient services.	*** To improve the Maps Function** by i) adding more recent images for the aerial mapping; ii) increasing the resolution mapping so that more cross compliance rules can be checked; iii) making it easier to use; and iv) improving the save and download maps options. *** To improve the RECAP Platform and its services** (e.g. reducing the time needed by both farmers and PAs to accurately assess whether cross compliance rules are being complied with, smart use of existing mapping data layers, testing the accuracy of the platform's search function of uploaded documents); *** To develop the mobile App** for other operating software, such as Apple's IOS. Further observations and some proposals of upgrading the Platform in U.K. can be seen in ***Appendix 4.***
2) ENVIRONMENTAL ASPECTS: to ensure the transferability and the sustainability in your territory.	TRAINING & PROMOTION: *** To promote the RECAP Platform to the Paying Agency** explaining what the benefits and advantages of such a tool are for the different end-users groups; and **work jointly with the PA to get its endorsement for English farmers to use the Platform**; ***** If the Platform is endorsed by the PA, **work with it on how membership of approved schemes or programmes can give farmers 'earned recognition'**, which means they have a lower chance of inspection; *** To promote the Platform to Farmers** in order to i) **stimulate their use of the RECAP Platform** by informing them about services, benefits, etc.; and ii) **train them on how to use the RECAP Platform**; UPDATING/UPSCALING: *** To link the Platform to existing tools** (such as Gatekeeper or Muddy Boots) to reduce duplication or double entry of data and so save farmers' time; *** To work on the possibility to have a single Platform** for all CC rules, IACS submissions, farm assurance schemes and agri-environmental schemes. If this is too ambitious, the platform can provide information for farmers and paying agencies and other administrators on scheme rules and relevant GIS layers so that applications are based on up-to-date, relevant information. Notifications of deadlines and required management and new rules, such as on plant protection products can be very helpful in increasing awareness and compliance. *** To increase the level of personalization of cross compliance rules for farmers**, by using a more detailed questionnaire to collect data from the farmer and adding relevant GIS data layers; OTHERS: *** To work on reducing the impact of potential low internet speed in rural areas** by adding an offline function to the Mobile app and supporting programmes that improve internet and mobile connectivity throughout England.

6.5   Main Findings and Recommendations in Serbia.

1) TECHNICAL ISSUES: to enhance the RECAP Platform; and to deliver more effective and efficient services.	* To improve the RS Tool; * To rework the Work Diary and make it more detailed. Further observations and some proposals of upgrading the Platform in Serbia can be seen in *Appendix 5.*
2) ENVIRONMENTAL ASPECTS: to ensure the transferability and the sustainability in your territory.	TRAINING: * To work with Public Authorities (e.g. Ministry of Agriculture, Local Agricultural Authorities…) on the organisation of Training Activities in order to reinforce Farmers' skills on ICT; PROMOTION: * To promote the RECAP Platform to Public Authorities by explaining its services and benefits, it is in line with Local Policy (e.g. Digitalization of public services in the field of Agriculture); and ii) and work with them for stimulating its use (or even making it obligatory); * To set up specific actions for Organic Farmers in order to i) stimulate their use of the RECAP Platform by informing them about services, benefits, etc.; and ii) train them on how to use the RECAP Platform; UPDATING/UPSCALING: * To enlarge the scope of the RECAP Platform and developed additional services such as i) prevention of double, fraud certification by adding a service of Communication with other CBs; ii) support service for On-spot-visits (e.g. area verification, declared quantity of products…) by developing the RS Tool.

APPENDICES

- Appendix 1: Platform upgrade – Greece

- Appendix 2: Platform upgrade – Spain

- Appendix 3: Platform upgrade – Lithuania

- Appendix 4: Platform upgrade – U.K.

- Appendix 5: Platform upgrade – Serbia

Appendix 1. Platform upgrade – Greece

Proposals and observations for upgrading the RECAP Platform in Greece:

The FARMER & AGRICULTURAL CONSULTANT Module		Proposals and observations
	1.	Simplification of the app to be more user-friendly to farmers;
	2.	To include all measures and schemes.

Proposals and observations for upgrading the RECAP Platform in Greece:

The INSPECTOR Module		Proposals and observations
	1.	To incorporate more schemes and measures.

Appendix 2. Platform upgrade – Spain

Specific observations:

Cross-compliance norms, self-check and calculator:	* Farmers believe it is useful to have a tool allowing identifying each parcel with each cross-compliance norm it has to fulfill. It is however necessary that the platform is fed by the paying Agency with the specific requirements for each declared parcel (massive upload of info). * It is also interesting to be able to self-check what can or cannot do in each parcel and the way I will have to justify it. * It would be important to involve the Inspection to indicate previously what the farmer should do to justify each commitment or requirement, photographs, documents, questionnaire, etc. * Uploading of photos to verify that they are complying with the norm seems fine but not very "reliable". * The greening calculator is regarded as interesting and useful by everyone.
Crop identification:	Crop identification by remote sensing has been regarded as very useful by farmers. One of the strongest points of the platform is the "traffic light" procedure of classifying as "green", if the crop coincides, yellow if it is doubtful and red if it does not coincide. Famers regard this point as one of the strengths of the platform for correcting possible errors in the administrative claim. In this respect, it is regarded as important that the massive upload of crop claims is conducted early on, at the outset of the cropping season.
CAP claim:	It will be useful if the CAP claim could be made using the platform or from it.
Maps:	Farmers believe the information to be of great interest. It could be of help for crop monitoring through Sentinel images. However, they worry about the operability, that is, knowing if the images will be available quickly and the indexes calculated safely (without cloud interference).
Massive upload of parcel claims:	It is necessary and of utmost importance that a massive upload of parcel claims can be conducted for the interested users. This task should be on the Paying Agency.
RECAP vs. other local Platforms:	Some of the functions of the platform are already made by Agroasesor platform, so they seem quite repetitive. For example, the visualization of parcels. They think that the most efficient thing would be to have a single platform (it could be Agroasesor as it is more developed), and adding the new and interesting functions of recap platform to it (e.g. list of cross-compliance norms, self-checking, greening, crop identification...).
Role of Agricultural Consultant:	The advisor cannot visualize more than one farmer user at the same time. This is a disadvantage as it will be of help that he/she could access different users simultaneously in order to send general messages. The same applies for visualizing parcels. It would also be of interest if the advisor could visualize all parcels of interest at the same time, even from different farmers.
Farmers vs. CAP claims:	One of the greatest weaknesses /disadvantages is that each user corresponds to one CAP claim, while there are many farmers that have many CAP claims. The platform does not allow for them to visualize all parcels at the same time, only those corresponding to a single claim. This is regarded as a major hurdle for users and a very necessary modification to implement.
The mobile App:	The app only works with Android. It should also be made available for Iphone.
Work diary:	The work diary is not sufficiently operative. It is better to use other platforms to this aim, which prepare field notebooks tailored to the region or the user as is the case of Agroasesor.

Proposals and observations for upgrading the RECAP Platform in Spain:

The FARMER & AGRICULTURAL CONSULTANT Module		Proposals and observations
Farm profile	1.	It is necessary that the farmer and the declarant can be identified in a differentiated way; a farmer can present several CAP declarations.
Cross compliance rules	2.	* It would be useful upload the cross compliance data of each parcel as a massive scale. * Cross compliance management by the farmer can be based on a series of requirements recommended by the PA (for each action). The fulfillment of these requirements allows verifying compliance. The inspector can use this system to validate the cross compliance rules. * Keep the cross compliance table open for the PA administrator in order to manage these data. * Agricultural Consultant can't see if the inspector has checked the cross compliance rules of the farmer.
Work diary	3.	We recommend different titles and subtitles: For example, instead of writing en the titles: work diary 1-1, work diary 1-2, work diary 2-1, etc… write a specific title: Machinery inscription in ROMA, Number of inscription in ROPO, etc…
Greening calculator	4.	It doesn't work.
Maps	5.	* Creating geometry by drawing the shape over the map through "Draw parcel" is not accurate; the platform should suggest the geometry once the parcel is selected. * The list of indicators is interesting, it would be necessary to add an indicator for each index that offers intra-parcel variability. The percentile to which the parcel belongs would also be useful. * The percentile can be used to identify different situations (environmental risk, economic risk…) and therefore use that information to make decisions. * These data can be used to reduce, for example, field inspections. Parcels belonging to a percentile without risk are not visited. Also for the farmer these index are interesting. * Loading a new layer with different colors according to the crop declared. Green => Crop declared and inspected is the same; Yellow => It is not clear if the crop declared and inspected is the same; Red => Crop declared and inspected is different.
-	6.	At the end of the inspection, it would be interesting to generate a report.

The PA Module	Order	Proposals and observations
E-learning	1.	The paying agency can't upload documents in E-learning.

Appendix 3. Platform upgrade – Lithuania

Observations from Farmers and Advisors for upgrading the RECAP Platform in Lithuania:

The FARMER & AGRICULTURAL CONSULTANT Module		Proposals and observations
	1.	To enable active map site within the whole territory of the country;
	2.	To integrate the tool with other tools/systems in order to be able to upload some date automatically;
	3.	To improve Self-assessment part;
	4.	To link reminders and emails/SMS and other issues of operation of the tool.

Proposals from Inspectors for upgrading the RECAP Platform in Lithuania:

Platform module / functionality	Order	Proposals
Inspection forms	1.	It is very uncomfortable that right away before the start of the inspection, it is already necessary to enter the date and time when inspection was ended. Inspector does not know how long it will take to execute an inspection. It would be more logical to transfer this information to a separate last step of the inspection, because currently inspector shall enter whatever date and then after inspection was executed, come back to this step to change it, i.e. inspector shall perform the same action twice. It does not save time and also there is a high probability that the wrong end date and time will be left in the platform.
	2.	It is very uncomfortable that inspector shall enter the same data twice: right away before the start of the inspection, farmer's declared area shall be entered. When inspector enters this data and create inspection, entered data is automatically changed to the value "0,01". Farmer's declared area shall be re-entered, only then it is saved correctly. It does not save time and also there is a high probability that the wrong data will be left in the platform.
	3.	The number of declared mineral fertilizers allowed to enter is only four digits to the decimal point. It is impossible to enter 10 000. It shall be possible to enter five digits to the decimal point.
	4.	In the middle of August 2018 national legislation was changed and currently the quantity of mineral fertilizers shall be expressed in tones, therefore the title of the field "Amount of declared mineral fertilizers in kg" shall be changed to "Amount of declared mineral fertilizers in t".
	5.	The number of declared organic fertilizers allowed to enter is only four digits to the decimal point. It is impossible to enter 10 000. It shall be possible to enter five digits to the decimal point.

Inspection forms	6.	"Question-answer" form implemented in a very uncomfortable way. It would be much more logical to place answers next to the questions and simply tick the required box instead of opening the additional answer form for each question. There might be a comment box next to each question as well. It would allow to save time for inspector.
	7.	It is not possible to verify the specific requirements and Natura 2000 limitations. Farmer indicates such information next to each parcel, also this information exists in Natura 2000 layer, but it is not accessible for inspector. It shall be possible to see this information, otherwise it is not possible to control SMR 2 and SMR 3 standards. Even the actuality of these requirements to farmer cannot be checked.
	8.	By answering to questions VR38.2 and VR38.3 it is not possible to enter any digit after the decimal point. Bearing in mind that the dimensions of these data are in tons, currently it introduces some inaccuracies from real data. It shall be possible to enter five digits before the decimal point and at least two digits after decimal point.
	9.	When non-compliance is detected, in the 7th step only 10 parcels are displayed for selection. If the beneficiary has more than 10 declared parcels, then there is a high probability that inspector will not be able to fix the non-compliance detected, because it will not be possible to select the right parcel for what this non-compliance was detected. There shall be displayed all parcels declared by farmer.
	10.	It would be very convenient if the list of possible standards would be provided for the selection in the row "Irregularity on" (in the 7th step). It would allow to minimise the probability of human error as text would not be handwritten.
	11.	It would be very convenient if the automatic evaluation of the extent, severity and duration exposure would be introduced in cases when only one possible choice exists. It would allow some time saving and also would reduce the probability of a human error.
	12.	Functionality of the submission of the final decision is unclear. After the final decision was submitted, the platform shall in some way show such information, because now there is no difference at all, a final decision was submitted or not, inspector still can freely change any data. It shall not be possible without the confirmation from paying agency side, otherwise the possibility of fraud is enormous.
	13.	8-12 steps shall introduce the possibility to enter the capacity of the barn etc. These steps themselves are good, it facilitates the work, but there are cases when the farmer has a certificate of the barn or other manure storage, where only the information regarding the capacity of this construction is provided (an official form of registered manure storage), but not the exact dimensions. In such a case farmer can sent such certificate to inspector via RECAP, but inspector cannot enter this data and in all cases shall go to the farm and measure the dimensions. It would not be a mandatory visit if inspector could enter the capacity of the manure storage.

Inspection forms	14.	In the 7th step only a non-compliances actual for parcels can be entered, but if the non-compliance is detected at the holding level (the standard itself by its nature is actual for the holding, but not for the parcel), it is not possible to save such data, i.e. inspector cannot enter real data and fix the non-compliance detected. There shall be possibility to enter the non-compliance for both – parcel and holding.
	15.	The order of the questions in the 4th step shall be fixed, because currently after question VR43.1 goes question VR38.2.
	16.	Question VR40.1 in the 4th step shall be deleted at all as it is empty.
	17.	It shall be possible to delete the date when farmer was informed about the inspection, because it can be entered accidently for the wrong farmer.
	18.	The search of declared area, the amount of fertilizers used is mandatory in other registers despite the fact that this information was entered in farmer profile. Inspector cannot see this data entered by farmer and it takes considerably more time to check this data in additional registers.
Scheduler	1.	It is not useful module for inspector when only data at the farmer level can be seen. It would be more logic to have scheduler at inspector level, where he/she could see data of all inspections actual for him.
Recap apps	1.	When RECAP apps is used for the upload of pictures, these pictures are assigned not for the parcels which were marked during the upload process (for instance, inspector marked that he uploads a picture for parcel No. 1, but this picture goes next to parcel No. 2 in the platform). Therefore, if inspector/farmer goes to module "Maps" and looks at the parcel, he cannot see uploaded picture next to the right parcel in the section "Documents". The pictures shall be assigned correctly.
	2.	When RECAP apps is used for the upload of pictures, these pictures are turned upside down. The pictures shall be uploaded correctly.
My Documents	1.	It is very uncomfortable that inspector cannot see the full description of rule when uploading a new document and choosing an exact rule (the row is too short or too narrow). From what it is possible to see, it is hard to understand what requirement shall be chosen. The description of rule shall be seen fully.
	2.	It shall be possible to upload compressed documents, for instance, .shp files, which can be useful for farmer.
	3.	When inspector uploads a picture which is actual for all parcels and he/she marks that, it is impossible to save it, because the message is shown, that it exceeds the limit of 250 symbols. It is very uncomfortable and it takes considerably more time to upload the same picture for each parcel separately.
Farmer's work diary	1.	It would be very convenient to create all relevant journal forms used by farmers, for instance, fertilizer accounting journal, journal for plant protection products etc. Farmer could fill in the relevant data directly in the platform and in such a way to save time for scanning of the paper ones.

Inspections	1.	It would be useful to see the status, progress of the assigned inspections, for instance, if inspection has already been done and the final decision was submitted, this could also be seen here. It would be easier for the inspector to navigate among inspections which have not yet been performed.
Work in the platform	1.	While working in the system, it is often necessary to confirm the connection, despite the fact that actions are intensively carried out. It causes an inconvenience. Message "Oops! Your session has expired" shall only appear if the user has not taken any action for a long time.
Main access window	1.	There is a lack of information about the controlled farmer in the main access window between the icon of user picture and the notification icon. Currently it is shown only e-mail address, but this data quit often does not directly correspond to farmer name and surname, for instance, inspector checks farmer "Jonas Jonaitis", but he sees his e-mail phkml@yahoo.com, which means nothing for inspector. It is really difficult to not mix the data, when inspector has more inspections. The farmer's name and surname shall be also displayed. so be displayed in the main window.
	2.	When new notification appears and user choses to look, it would be convenient if by clicking the user would be automatically navigated to the module "Messages", if the notification announce about the new message received.
Maps	1.	It is very uncomfortable that the open layers on the left disappears when changing the location in the map. Inspector shall re-open and re-open layers for each parcel. It takes some time. It shall be fixed once opened and it shall not depend on the choice of the parcel.
	2.	When maps are displayed on a larger screen, for example 27 ', there is a plenty of empty space within the map area. This area could be used for the increase of the visible map area or for the display of normally looking information regarding parcels, for example, currently parcel ID and name for each parcel is displayed over 2 lines.
	3.	It would be convenient if parcel ID, crop type and area would be shown on each parcel geometry.
	4.	All NDVI, NDWI, PSRI, SAVI values shall be shown, not only some of them. It would be also very convenient if these values would be sorted according to the date starting from the oldest.
	5.	The accuracy of the remote sensing algorithm is very poor. It shall be considerably updated.

Observations from PA for upgrading the RECAP Platform in Lithuania:

Platform module / functionality	Order	Proposal
	1.	Recap apps shall be accessible with all mobile devices;

	2.	Access roles for PA users shall be limited to actual regions, because currently everyone can see all farmers, all inspectors, any PA user can initiate the OTSC by choosing any inspector and when regions of farmers and inspectors cannot be seen, it is possible that inspector who works in one part of the country will be assigned to control farmer who declares his parcels completely in different part of the country;
	3.	A wider possibility of searching and filtering of holdings is necessary (for instance, by area, by assigned inspector, by controlled farms (where OTSC have already been executed etc.);
	4.	Modules Farmers and Inspectors are not convenient, the better approach would be the management of inspections via Maps module according to the location of the parcels, because in any case some parcels shall be visited physically;
	5.	Control mechanism for the evaluation of OTSC quality shall be created (by using some simple cross checks) before the results are available for the farmer;
	6.	It would be more convenient to have a possibility to create user groups to whom some messages are actual avoiding to send the same message for every farmer separately;
	7.	It shall be possible to add a deadline until when OTSC shall be carried out, because currently it is not possible at all to control the work of inspector;
	8.	It should be possible to update an account when e-mail address was changed without deleting the account and creating a new one;
	9.	It shall not be possible to delete the results of OTSC without any traceability, currently inspector can simply delete OTSC when the final decision was already submitted;
	10.	It is unclear, how the results of OTSC would be available if inspector, who had executed OTSC left the job and deleted his account;
	11.	The principle of 4 eyes is not ensured, inspector executes OTSC and the results are accessible to farmer without any confirmation from the side of PA;
	12.	Possibility to freely add tags is necessary in the E-learning module. The list of possible tags cannot be exhaustive;
	13.	Despite the fact that all boxes are marked regarding the notifications, sometimes e-mails are not received when a new material is uploaded;
	14.	It should be seen to the user what size file can be attached to the message (currently it is unclear whether big files can be uploaded or not);
	15.	The number of digits shall be checked when the holding number is entered;
	16.	The row "Nustatyti ribas, naudojant tiesioginių išmokų paraiškos ID" in the Maps module shall be changed to "Nustatyti ribas, naudojant valdos numerį", because such data as „application ID" does not exist in RECAP;
	17.	It shall be shown the date when the message sent to farmer was read.

Appendix 4. Platform upgrade – U.K.

Proposals and observations for upgrading the RECAP Platform in U.K:

The FARMER & AGRICULTURAL CONSULTANT Module		Proposals and observations
	1.	Develop the mobile App for other operating software, such as Apple's IOS;
	2.	A more detailed questionnaire at the data entry stage of using the platform would give an even greater level of personalisation to the cross compliance rules;
	3.	Add templates for record keeping, such as for animal manure production on a holding to calculate its nitrogen limits;
	4.	Higher resolution mapping so the Platform can be used for more tasks, including testing and recording compliance, IACS administration, agri-environment scheme administration and applications, and improving productivity, for example by providing farmers with GIS data layers on crop shading, soil type and crop growth. Farmers really engaged with data that could increase productivity and profits, and save time, and increase their certainty of compliance, such as the NDVI (Normalized Difference Vegetation Index) imagery.
	5.	Smart Use of existing mapping data layers – eg. mapping where a water borehole or watercourse is and automatically creating a spreading risk map. Another example is public rights of way and alerting the farmer if they have not been reinstated as required legally. This can be done using high resolution NDVI (Normalized Difference Vegetation Index) imagery.
	6.	If IACS RLE1 forms (Rural Land and Entitlements) forms for mapping changes could be uploaded onto the platform and proposed mapping changes or land cover changes could be sent to the Farmer which he could then accept if he agrees that these have been carried out correctly. This would make a process that is very time consuming and has scope for inaccuracies more efficient. This could be a two-way process between farmers and PAs.
	7.	Amending the Greening calculator so that it functions properly.
	8.	Link to agri-environment schemes, for record keeping and also to identify the most significant habitats, species and issues, such as soil erosion, to include in an application. The notification / reminder function could be very useful in relation to agri-environment schemes for reminding farmers when the optimal time to carry out environmental works is on their farms (and, conversely, when not to do certain works, such as cutting hedges or applying pesticides or fertilisers).

Proposals and observations for upgrading the RECAP Platform in U.K:

The INSPECTOR Module		Proposals and observations
	1.	Ability to test a greater number of GAECs/SMRs through higher resolution data;
	2.	If RLE1 forms (Rural Land and Entitlements) forms for mapping changes could be uploaded onto the platform and proposed mapping changes or land cover changes could be sent to the Farmer which he could then accept if he agrees that these have been carried out correctly. This would make a process that is very time consuming and has scope for inaccuracies more efficient. This could work the other way too.
	3.	Ability to have integrated cropping maps produced by the BPS checker would speed crop checking.
	4.	If the Platform is endorsed by the PA, develop a simple explanation of the 'rules' PAs will apply when using the platform so that farmers trust them. For example, farmers must be sure that using the platform does not increase their chances of being selected for an inspection. Also, clear rules on the 'visibility' of farmers' data to PAs (and better functionality on this in the Platform so that users can turn visibility on field-by-field or document-by-document).

Appendix 5. Platform upgrade – Serbia

Proposals and observations for upgrading the RECAP Platform in Serbia:

The FARMER & AGRICULTURAL CONSULTANT Module		Proposals and observations
Filling the Farm Profile	1.	Missing number of the small cadastral municipality, but easy and clear form of the Farm Profile; Additional units for some missing information that can be useful for Farmers (history of crops, crop structure…);
Communication with Certification Body	2.	Easy and similar to the current one (via e-mail), but Farmers prefer to use the e-mail communication;
Work Diary	3.	Missing of the information on additional workers, subdivision of trade by parcel number, storage of a products, planting crops plan, information on former crop types, crop structure, additional units of the yield; It should be better organized, in a form of the table; more intuitive, to be easier for every day input of information (e.g. table view);
Reminders	4.	Useful;
Help	5.	Similar to a present practice – communication via e-mail, easy to adapt on it;
-	6.	* Graphical indices could be very useful and majority of them find the Maps as the most interesting part of the platform. * Roles as a very useful functionality, too. * Wide range of services is covered. * Work Diary needs to be reorganized and to cover more activities.

Proposals and observations for upgrading the RECAP Platform in Serbia:

The CERTIFICATION BODY Module		Proposals and observations
Supervisory on Farmers Data Entry regarding the Organic Certification	1.	Positive comments: Good documentation management, Very helpful tool for the preparation of the on-site control;
	2.	Missing: Notification - status of the Organic Farmer (conversion/organic) on the list of Farmers; Suggestion: Comment on the Organic Farmer (if there were some irregularities or not and on which parcel);
Maps and RS Results	3.	Positive comments: Layers can differentiate the parcel from surroundings, to explain the soil type; Maps can show some critical points for the control; Prevention of fraud (double) registration of one parcel in two or more certification bodies; Possibility for the record keeping;
	4.	Missing: Orientation of the parcel;

	5.	RS Component should be implemented to cover more tasks from the workflow of CB;
Communication with Farmers	6.	Even though the current communication via e-mail is very similar to the RECAP's way, Farmers are get used to e-mails (except the sending of a group information to all Farmers – which is recognised as very useful);
Work Diary	7.	It should be presented in a "table view" and input of information should be presented separately for each parcel;
-	8.	* Roles as a very useful tool for the monitoring and communication with certified groups of Organic Farmers.

Observations from PA for upgrading the RECAP Platform in Serbia:

The PA Module		Proposals and observations
Inspection of the input of selected Organic Farmer on Organic Subsidy Provision	1.	* Missing the information on specific bank account number of Organic Farmer (account only for the purpose of Organic Subsidy provision); * The document management of the RECAP platform is very good and clear;
Maps and Remote Sensing (RS) Results	2.	* Missing the crop classification result – the RS result could be useful and more developed; * More precise layer for the roads – missing the smaller roads around fields; * More improved RS Component (e.g. like in a Spanish pilot, including the crop classification algorithm…);
Communication with Farmer	3.	* Good for the future purposes (CAP implementation).