In general, all partners are involved in each output (on differentiated level – as in the budgets).

The leaders of each output are indicated in the Output description.

Start and end of the Output work: formal as in description of the Outputs. We can start immediately gathering info, documents etc.

Intellectual outputs description:

O1. Basic and advanced tree assessment – development of cues for tree assessment and standards for education (international and national linked to national regulations)

Start: 10-2019

Finish: 31.03.2020

Pages: 200

Format: a text file, a pdf file

The result concerns both basic and advanced tree assessment, and covers developing minimal standards in the scope of tree assessment at its different levels, as well as training in this subject. Various levels of tree assessment will be included: inventory, basic tree assessment, advanced tree assessment and the use of its results, standards for tree assessment training process, and dissemination of knowledge among target groups.

The result will include a description of activities related to tree assessment at various levels, available procedures, tools, expected effects and criteria for their acceptance. One will also take into account recommendations and limitations of procedures and tools, together with the references to national and European standards or regulations, if they exist. One will prepare an appropriate description of qualifications corresponding to individual levels of tree assessment, and a process of training designed to obtain them. Educational standards will be developed in accordance with the National and European Qualifications Framework in the field of obtained learning outcomes (knowledge, skills, competences). The result will also cover extensive bibliography and comparative references.

1. Collection of existing norms and standards

The starting point will be existing national norms and standards used in Western European countries - Germany: ZTV Baumpflege, FLL Baumkontrollrichtlinie, DIN 18 920 - Vegetation technology in landscaping, British Standards BS 5837 - Trees in relation to design, demolition and construction and BS 3998 - Recommendations for tree work. An important contribution will be already existing Polish guidelines of the Project Partner - the Tree Institute (Sustainable Development Company brands) for tree inspection (published in the materials of the "Certified Tree Inspector" course), currently prepared Polish (project of the Institute for Sustainable Development Foundation) and Czech standards.

All partners will participate in these activities.

2.   Preparation of the result outline:

3.   . Assignment of tasks and activities between Partners

4.   Discussion on the initially developed content in remote communication.

5.   Compilation of the content into one document and evaluation/discussion with target groups representatives

6.   Draft of final version will be prepared for the second project meeting. The document will be discussed and final version will be prepared based on opinions and suggestions – in English… After collecting opinions and suggestions, the final version of the result will be prepared - in English and 3 national languages of the Partners.

Partner 1 (Poland) will be responsible for developing the final version of the O1. Partner 2 (Latvia) and Project Leader will be jointly responsible for methodical supervision over prepared educational outcomes and their formal compliance with the European Qualifications Framework. The result of the work will be the creation of a universal version, meeting the needs of all Partner countries and applicable in other European countries.

O2. Basic and advanced tree assessment – development of education instruments for trainers for tree assessment training

Start: 01-2021

Finish: 30-06-2021

Format: A database (XLS), Internet, a text file, a pdf file

Pages: In total, approximately 240 pages of a text file and a database (in xls format) including questions, scores and an answer key with formats helpful in quick score counting.

The O2 will be prepared after O1, O4 and O5. It will supplement them with a methodological aspect and substantive content relevant to trainers.

The result will consist of two parts.

1.   **Basic tree assessment level will include**:

1a. Tests checking knowledge and initial competences: in the field of tree biology and tree management, helpful in assessing the initial qualifications of candidates for tree assessment training. These will be ready tests for direct use by the education centre/trainer consisting of a minimum of 40 questions/tasks to be solved by candidates, together with an answer sheet and answer key.

1b. Trainer's guide with guidelines and tips for conducting training courses and using initial tests, textbooks and exam questions/tasks.

1c. A pool of exam questions/tasks that will be later used to create final tests in and exams necessary to complete the training course.

This part will consist of approximately 120 pages of a text file and a database (in xls format) including questions, scores and an evaluation sheet with formats helpful in quick score counting.

2.   A**dvanced tree assessment level will include:**

2a. Tests checking knowledge and competences in the field of basic tree assessment and tree crown access enabling the qualification of trainees for an appropriate training mode. In order to evaluate competences in the field of basic tree assessment, education centres/teachers will be able to use pre-prepared tests consisting of a minimum of 40 questions/tasks to solve by the candidate, together with an answer key and evaluation sheet. To evaluate competences within tree crown access (for candidates who declare they are qualified in accessing tree crowns with the use of ropes/ telescopic boom lifts), one will prepare set of tasks to be performed by the candidate it will be supplemented by evaluation sheet.

2b. Trainer's guide with guidelines and tips for conducting training courses and using initial tests, manuals and exam questions/tasks.

2c. A set of exam questions/tasks which will be the basis for use in final tests and exams necessary to complete the training course.

This part will consist of approximately 120 pages of a text file and a database (in xls format) including questions, scores/ marks and an answer sheet with formats helpful in quick score counting. We assume that trainers conducting arboriculture training courses do not often have any pedagogical or methodological preparation. Therefore, materials which they are going to use must be prepared in a way facilitating training conduction, and must contain easy-to-use solutions.

1.   Exchange of experience of Partner institutions in the field of training and the needs of trainers in this area.

2.   Developing the final structure and outline of the content of materials for trainers.

3.   Development of the initial version of materials for trainers. It will be the result of consultations in a group of employers, exchange of Partners' experiences and opinions of trainers gathered during the preparation of previous results. It will require preparation and collection of graphic material (drawings, photographs) and videos (films) showing the assessed objects and constituting the basis for tests. This task will involve all Partners but their roles will be strictly defined – each of them will be responsible for the area they specialise in and the content

assigned to this area. An important aspect will be the experience of people participating in the project on the part of Partner 2 (Latvia) managing the preparation of the O2 and employed to prepare it, including their long-term experience in conducting formal education and pedagogical work.

4.   Consultations with potential users of the result.

5.   Verification of the content and form through consultations between Partners.

6.   Development of the final version of the materials.

Partner 2 (Latvia) will be responsible for creating the final version of the O2. Other organisations participating (the Project leader, Partner 1 and Partner 3) in the project will make corrections to the parts they prepare on their own and will have a consultative and advisory role. The result of the work will be the development of a universal version that meets the needs of all EU countries.

O3. Basic and advanced tree assessment - development of education instruments for trainees

Start: 01-2021

Finish: 30.06.2021

Pages: 100 pages of text files, 2 tests with a database of minimum 200 questions.

Format: a CD database, interactive resources, photos, a text file.
The O3 will be prepared after the development of O1, O4 and O5. It will supplement them with a methodological and content-related aspect relevant for trainees.

The result will consist of two parts:

1. In terms of basic tree assessment, it will cover: Tests for self-study, checking knowledge and competence in the field of basic tree assessment.

2. In terms of advanced tree assessment, it will cover: Tests checking knowledge and competence in the field of instrumental tree assessment, tree crown assessment and access techniques.

In each part, the tests will be prepared in two forms – as a set of tasks and questions in a text file (approx. 50 pages) and as programmed online tests meant for self-study, checking knowledge on one's own and obtaining score (minimum 100 questions/tasks). In total, one expects to prepare approx. 100 pages of text files and 2 tests with a database of minimum 200 questions.

The answers will also include the examples of work results (e.g., an inventory table, the content of a basic tree assessment form or an example of sonic tomography or resistography result interpretation).

Online tests will be programmed with the use of free and reliable tools, with the possibility of maintaining them for at least the required period of project durability (the material used for test programming as a database will be prepared in a compressed file and on a CD). The tests will consist of single and multiple-choice questions, as well as questions with graphic and video material.

The Result has no equivalents in partner countries. However, also outside them it can be treated as a supplement to training courses and can be used by students, trainees and candidates preparing themselves for certification in other fields of arboriculture, e.g., CID, ETT, ETW.

1. Development of the areas of result content. Developing the areas that should be available for self-study for future tree assessors. They will be determined based on previously prepared O1, O4 and O5, and own experience of Partners and training centres. In addition, one will collect opinions among people already dealing with tree assessment in areas requiring individual work and self-testing. Partner 1 (Poland) will conduct an online survey among graduates of their training courses and trainers. Other Project Partners will gather similar opinions among tree assessors and teachers in their own countries.

2. Development of substantive content of tests – questions, graphic materials, answer key and evaluation system. Preparation of content – all Partners; development of multimedia content – project team members and external technical specialists. Preparation will include content development, its evaluation and applicability. Questions will be evaluated by experts. For the final version of the Result, one will choose questions with statistically appropriate discriminatory power, internal and external validity, consistent and unambiguous, and appropriate to the evaluated level of knowledge. Statistical analysis of test results, carried out by Partner 1 and the Leader, will be helpful in this evaluation.

3. Development of final tests in the form of text files. The files will contain typical exam tests and examples of correct effects of a tree assessor's work.

4. Development of tests in the form of interactive software. The work will be outsourced to an external specialist and will be supervised by the Leader, who will manage this Result and who has significant experience in creating online materials for self-study. This stage will also include the selection of software best suited to the needs of tests.

5.   Testing of programmed online tests. This task will involve a trial test completion, error analysis and comparison of results.

6.   Evaluation of prepared tests by potential stakeholders – trainees and trainers.

7.   Development of the final version of the result and carriers.

All Partners will participate in the work, and their roles will be strictly defined - each Partner will be responsible for the area they specialise in and the content assigned to this area. Recommendations as to the final content of the product will be made as part of the Partners' meeting. An important aspect will be the exchange of experiences from the period of consultations of individual organisations, both due to the specificity of countries and contacts with specific groups of stakeholders. The result of the Partners' meeting will be the development of the final version of the materials.

The project Leader will be responsible for developing the final version of the O3. Other organisations (Partners 1,2,3) participating in the project will prepare language versions and will have a consultative and advisory role. The result of the work will be the development of a universal version that meets the needs of all EU countries.

O4. Basic tree assessment - a set of manuals

Start: 02-2020

Finish: 01 -2021

Pages: 400

Format: a text file, a pdf file using plenty of graphic materials illustrating assessment objects and applied methods. Online file for downloading onto one's carrier but also with the possibility of ordering its printed version owing to a special file for offline printing.

It is planned to prepare 5 parts of the manual with the most important content of already conducted training courses and new topics relevant for tree assessment:

1.   Basic tree assessment with the use of visual methods and hand tools,

2.   Fungi and their impact on the vitality and statics of trees,

3.   Guide for determining tree species throughout the year

4.   Assessment and protection of trees in investment areas

5.   Valorisation of trees

Parts 1-3 will refer to the compendia already used by Partners or manuals available in some countries, but adapted to tree assessment training and using previous experience, and will partly use the experience and materials already prepared for current tree assessment training (PL). Parts 4 and 5 are innovative and not applied so far in similar sets used e.g., in German certification of FLL, and helpful in extending the scope of works performed by tree assessors and in their training.

1.   Exchange of opinions and experiences regarding the substantive needs of training - basic tree assessment.

2.   Determining the final areas/parts of the manual and its structure according to the O1. **At the stage of preparing the project concept, one developed an initial list of such areas (described above), but it can be extended, detailed or changed as a result of work on the O1**. The exchange of experiences preceding this stage is also aimed at analysing conditions in EU countries other than those represented by the project Partners. The final structure and content of the manual will meet the needs of a wider group of potential stakeholders within the geographical area. This will enable an effective impact of the project in many member countries.

3.   Division of work and employment of specialists to prepare content of the manual.

4.   Preparation of graphic materials for the manual - graphics and photos. We assume that a significant part of the materials can be obtained free of charge from people who deal with trees and fungi in a professional or amateur way, but it will be necessary to bear the costs associated with their proper graphic editing or adding the missing materials by a specialist hired for that purpose.

5.   Development of the initial version of the manual. All Partners. The materials developed in the entire group will be consulted on a regular basis (electronic exchange of information, materials, comments, ideas, etc.). An important aspect is consulting the content with specialists - dendrologists, mycologists, construction engineers, architects or experts in tree assessment. The extensive contacts of Partners in various expert groups as well as environments and organisations will be useful in this respect.

6.   Consultations in the group of users.

7.   The verification of content as part of the Partners' meeting. Consultations in user groups will be conducted by each of the Partners. Development of common recommendations regarding the final content of the product will be performed as part of the Partners' meeting. The Partners' meeting will result in the development of the final version of the manual.

8.   Development of the final version of the manual.

Partner 1 (Polish) will be responsible for developing the final version of the manual. Other organisations participating in the project (Partner 2 and 3, the Project Leader) will make corrections to their parts and will have a consultative and advisory role.

O5. Advanced tree assessment - A set of manuals

The Result will cover the development and publication of a manual consisting of several parts. It is planned to publish an online file for downloading onto one's own carrier but also with the possibility of ordering its printed version owing to a special file for offline printing. In the future, the manual can be extended by adding further parts along with the development of knowledge and experience in this field e.g., as part of the Tree Assessor's Library.

It is planned to develop 5 parts of the manual:

1.	Crown assessment: forks, branch strength, cavities (particularly important due to the high number of events/accidents associated with parts of the crown falling down),

2.	Inspection of mechanical safeguards in the crown (particularly important due to the diversity of materials and technologies

3.	Instrumental tree assessment (a part which will enable gathering and organising currently poor and fragmented knowledge about tree assessment with the use of advanced tools such as sonic tomography, tree drills, or load tests, and new dynamic technologies in assessing tree statics),

4.	Calculators and software helpful in tree assessment (some will allow for reviewing applications for tree assessment and creating a guide with tools in the form of short manuals for those of tools most often used),5. Crown access techniques for tree assessment (rope techniques, telescopic boom lifts) helpful in the assessment of tree crown.

All areas are new in Partner and most EU countries.

Each part of the manual can be used separately during training courses, school education, university education and non-formal education.

1.	Exchange of opinions and experiences concerning the substantive needs of tree assessment training.

2.	Determining the final areas/parts of the manual and its structure according to the O1.

3.	Division of work and employment of specialists to prepare the content of the manual.

4.	Preparation of graphic materials for the manual - graphics and photos.

5.	Development of the initial version of the manual.

6.	Consultations in the group of users.

7.	Content verification as part of the Partners' meeting.

8.	Development of the final version of the manual.

Partner 3 (Hungary) will be responsible for developing the final version of the manual.

Partner 1 (Poland) will also have an important and substantive contribution (all parts, especially part 1 and 4). Other organisations participating in the project will make corrections to their parts and will have a consultative and advisory role. The result of the work will be the creation of a universal version that meets the needs of all EUcountries.