

## **PILLAR 5. QUALITY, SAFETY AND SUSTAINABILITY: IMPROVED PRE-HARVEST CHAIN MANAGEMENT**

The objectives of this Pillar are achieved by three areas that are critical for the Pillar's objectives. Each of these areas is addressed by a WP :

**WP 5.1 - Safe European fruit from a healthy environment (*ECOFRUIT*)**

**WP 5.2 - Optimised resource use for top quality fruit (*SMARTFRUIT*)**

**WP 5.3- High-quality fruit from profitable production systems (*PROFITFRUIT*)**

The overall objective of *ECOFRUIT* is to improve the inherent fruit quality for making fruit more attractive and safe, i.e. meeting quality standards required by markets and consumers, particularly through a drastically **reduced exposure of trees and fruits to pesticides and tree nutrients** and **increase their efficient and effective use**.

A drastic reduction is achieved with precision dosing and crop oriented application of plant protection products and fertilizers. The objective of the activities in the first 18 months is to make the crop adapted application systems for crop protection and nutrition work and develop models and methods for demand driven tree nutrition. They could then be tested, evaluated and possibly improved or modified during the following project months before the results are disseminated. Sixteen partners are involved, activities are started in the 7 tasks simultaneously for developing technical devices and models, while later in first field tests are planned. Task 4 shall overlook and coordinate the multiple field activities particularly with regards to crop adapted spraying addressed by Tasks 1 to 3. Tasks 5 to 7 address the objectives of the WP objectives with regard to tree nutrition with Task 7 focusing even more specifically on fertilization aspects in organic orchards. 14 deliverables are listed between months 3 and 18.

*SMARTFRUIT* aims at a meeting the fruit quality standards required by the market and consumers through an optimised, i.e. **respectful and well-directed resource use**, being sustainably produced top quality fruit a prerequisite of meeting consumer demand and therefore contributing to increasing fruit consumption. The various approaches for addressing this objective are taken up in field and lab experiments at different levels of practicability. In some cases, adaptation work in the first 18 months wants to make the technology ready for practice (e.g. developing easy-to-use protocols and device for directed orchard shading for various purposes). The tasks group activities that have a similar adaptation progress level. The WP activities will be developed with dynamic interactions between its 3 tasks. 7 deliverables are listed between months 2 and 18.

And *PROFITFRUIT* aims providing knowledge and methods for **improving the capacity of farms in economical terms to deliver more fruits with the desired quality standards**. Economical and social profit for fruit producers must be improved. For this purpose, management of integrated and organic fruit farms must be improved. To achieve this, the WP focuses with tasks 1 and 2 on creating and analysing farm data and developing modelling tools supporting farm management, including the identification of key factors for farm success. A case study is conceptualized (tasks 3) for the next work period. 4 deliverables are listed between months 7 and 18. Even if the focus of the WPs is very clear, the processes addressed are timewise and physiologically related and overlap in the pre harvest chain.