Istituto Zooprofilattico Sperimentale del Lazio e della Toscana *M. Aleandri*

UNITÀ OPERATIVA APICOLTURA

BPRACTICES

NEW INDICATORS AND ON-FARM PRACTICES TO IMPROVE HONEYBEE HEALTH IN THE AETHINA TUMIDA ERA IN EUROPE

PROJECT OVERVIEW

Giovanni Formato

Honey Bee Health Laboratory
Istituto Zooprofilattico Sperimentale del Lazio e della Toscana “M. Aleandri”

Istituto Zooprofilattico Sperimentale del Lazio e della Toscana *M. Aleandri*

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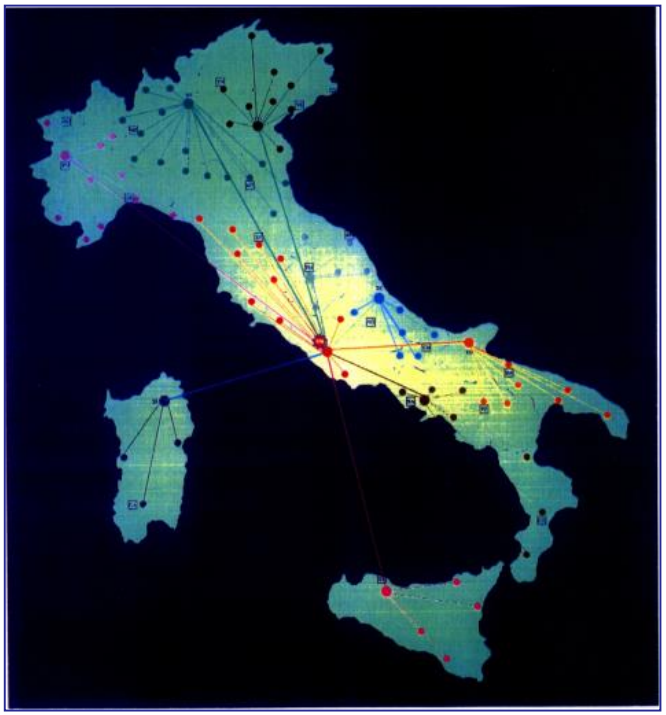
Ministry of Health
Dept. Of Food Safety and Veterinary Public Health

II.ZZ.SS. (Istituti Zooprofilattici Sperimentali)
diagnostic service/research and scientific support to Ministry of Health and breeeders, creating a **network of official laboratories**

10 Headquarters

+

90 Provincial localization



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The Institute "IZS"

of Latium and Tuscany (LT) Regions

(IZS - Istituto Zooprofilattico Sperimentale)

IZSLT is a **government laboratory under the Ministry of Health** that **provides services and research** related to **animal health** and **food safety** (microbiological, chemical and physical analysis; diagnosis of animal diseases); it performs **epidemiological surveillance**, continuous **training** and **international cooperation activities**.

All laboratory services are provided with UNI CEI EN ISO / IEC 17025 accreditation system

IZSLT has been appointed by the Ministry of Health for running some National Reference Laboratories (e.g. GMOs, antibiotic resistance, horse diseases).

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IZS Apiculture Unit

tasks and services

Diagnosis of honey bee diseases

Research activities

Support for Government Institutions to draw-up legislation

Collaboration with other laboratories (e.g. for analitical purposes, international cooperation, etc.)

Melisso-palinology

Technical support and training for operators

Morphometrical analysis and morpho-functional evaluation of honeybees colonies

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CONSORTIUM

1. Istituto Zooprofilattico Sperimentale del Lazio e della Toscana M.Aleandri
2. University of Namik Kemal
3. Agricultural Institute of Slovenia
4. Centro de Investigación Apícola y Agroambiental de Marchamalo (CIAPA)
5. Austrian Agency for Health & Food Safety
6. Mississippi State University
7. Istituto Zooprofilattico Sperimentale delle Venezie

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in collaboration with:

University of Genova

European Union Reference Laboratory for Bee Health (ANSES)

International Federation of Beekeepers' Associations (Apimondia)

FAO (TECA Beekeeping Exchange Group) TECA

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The project aims to develop ***new management practices (Good Beekeeping Practices - GBPs)*** adopting new clinical methods, biomechanical and innovative biomolecular techniques respecting the natural behaviour of bees.

These will include the application of new and revolutionary diagnostic techniques like biosensors from honey and PCR analyses from hive debris, protecting the honeybee health and avoiding in the meantime the application of chemical treatments guaranteeing quality and safety of hive products.

This sustainable production system, that stimulates the natural behaviour of honeybees to increase their health, will be communicated to the consumers through to an innovative informative technology (QRCode/RFID system) that will allow to know all the production details.

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The outputs of the project will be:

1. Good Beekeeping Practices (GBPs) guidelines, harmonized within partner countries in the project;
2. Guidelines on innovative laboratory diagnostic methods, harmonized among project partners, with the collaboration of the European Union Reference Laboratory for Bee Health (ANSES);
3. Sustainable honeybee diseases control guidelines in respect of bee welfare and hive products quality;
4. Economic study concerning the impact of the innovative GBPs system application;
5. Dissemination of results and technical assistance/training, that will benefit from the transnational participation of Apimondia and FAO TECA platform and the release of a free web-application to act as a dynamic surveillance system on colony health status and a on-going training and up-skilling for beekeepers.

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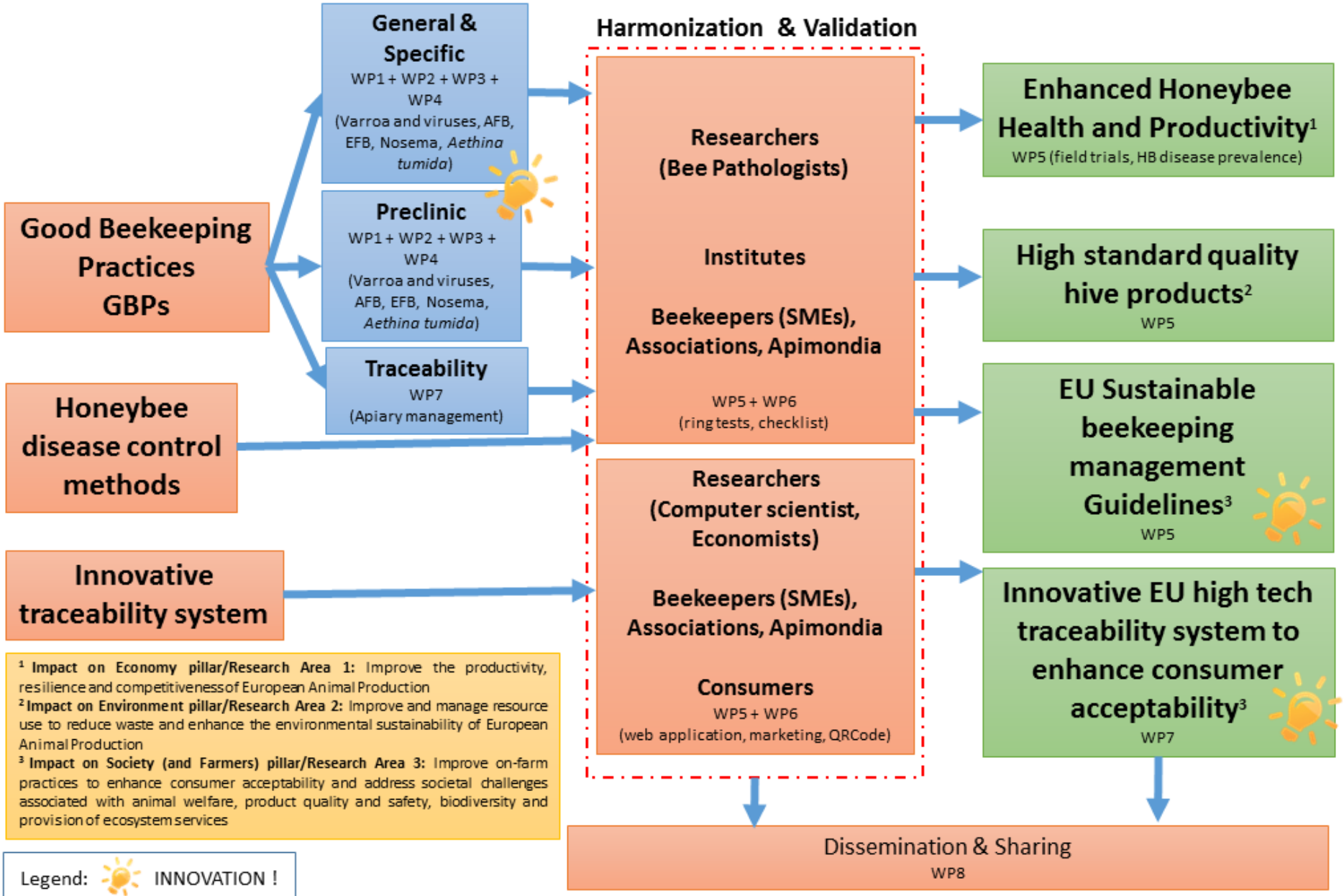
36 month project structured in **8 Work Packages (WPs)**

WP 1 - "Varroosis and virosis"	Lead: Partner 3
WP 2 - "American Foulbrood and European Foulbrood"	Lead: Partner 5
WP 3 - "Nosema"	Lead: Partner 4
WP 4 - "Aethina tumida"	Lead: Partner 1, Partner 6
WP 5 - "Validation"	Lead: Partner 2
WP 6 - "Economic impact"	Lead: Partner 2
WP 7 - "New traceability system"	Lead: Partner 1
WP 8 - "Dissemination and sharing"	Lead: Partner 7


General & Specific
WP1 + WP2 + WP3 + WP4
(Varroa and viruses, AFB, EFB, Nosema, Aethina tumida)
Preclinic
WP1 + WP2 + WP3 + WP4
(Varroa and viruses, AFB, EFB, Nosema, Aethina tumida)
Traceability
WP7
(Apiary management)
Good Beekeeping Practices GBPs
Honeybee disease control methods
Innovative traceability system
Harmonization & Validation
Researchers (Bee Pathologists)
Institutes
Beekeepers (SMEs), Associations, Apimondia
WP5 + WP6
(ring tests, checklist)
Researchers (Computer scientist, Economists)
Beekeepers (SMEs), Associations, Apimondia
Consumers
WP5 + WP6
(web application, marketing, QRCode)
Enhanced Honeybee Health and Productivity[1]
WP5 (field trials, HB disease prevalence)
High standard quality hive products[2]
WP5
EU Sustainable beekeeping management Guidelines[3]
WP5
Innovative EU high tech traceability system to enhance consumer acceptability[3]
WP7
Dissemination & Sharing
WP8
[1] Impact on Economy pillar/Research Area 1: Improve the productivity, resilience and competitiveness of European Animal Production
[2] Impact on Environment pillar/Research Area 2: Improve and manage resource use to reduce waste and enhance the environmental sustainability of European Animal Production
[3] Impact on Society (and Farmers) pillar/Research Area 3: Improve on-farm practices to enhance consumer acceptability and address societal challenges associated with animal welfare, product quality and safety, biodiversity and provision of ecosystem services
Legend: INNOVATION !

WP 1 - "Varroosis and virosis"

Lead: Partner 3

Kmetijski inštitut Slovenije
Agricultural Institute of Slovenia

Objectives:

- Identification of GBPs to submit for beekeepers' approval

- Identification of innovative GBPs for prevention of clinical cases and colonies mortalities: sampling (apiary level) and laboratory analysis

- Identification of sustainable protocols for disease control

WP 2 - "American Foulbrood and European Foulbrood"

Lead: Partner 5

Objectives:

- Identification of GBPs to submit for beekeepers' approval

- Identification of innovative GBPs for prevention of clinical cases and colony mortalities: sampling (apiary level) and laboratory analysis

- Identification of sustainable protocols for disease control

WP 3 - "Nosema"

Lead: Partner 4

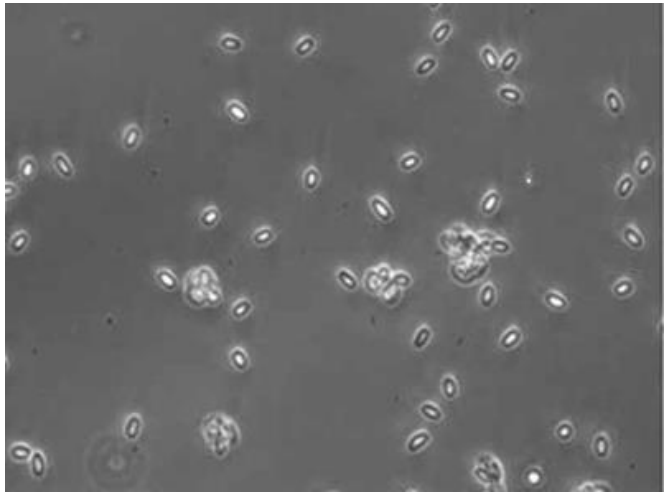
Castilla-La Mancha

Objectives:

- Identification of GBPs to submit for beekeepers' approval

- Identification of innovative GBPs for prevention of clinical cases and colony mortalities: sampling (apiary level) and laboratory analysis

- Identification of sustainable protocols for disease control



WP 4 - "Aethina tumida"

Lead: Partner 1, Partner 6

Objectives:

- Identification of GBPs to submit for beekeepers' approval

- Identification of innovative GBPs for prevention of clinical cases and colony mortalities: sampling (apiary level) and laboratory analysis

- Identification of sustainable protocols for disease control

WP 5 - "Validation"

Lead: Partner 2

Objectives:

- Collaboration with WP1, WP2, WP3, WP4 and WP 7

- Validation at the apiary level

- Validation of the laboratory methods

- Analysis of the compliance and feasibility of the innovative production system for hobbyist and professional beekeeping at international level

WP 6 - "Economic impact"

Lead: Partner 2

Objectives:

- Collaboration with all WPs

- Evaluation of European beekeeping productivity, competitiveness and resilience

- Evaluation of economic impact of BPRACTICES project

WP 7 - "New traceability system"

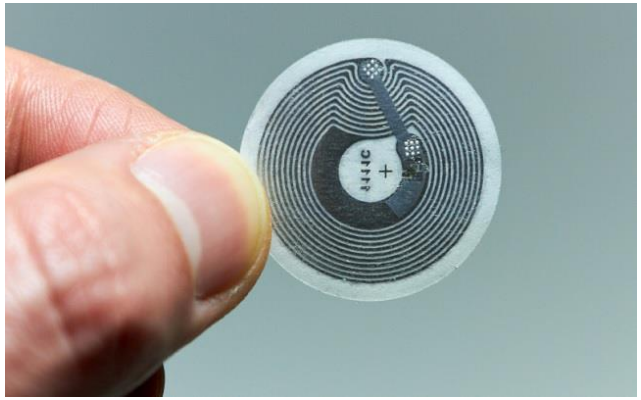
Lead: Partner 1

Objectives:

- Identification of GBPs on traceability to submit for beekeepers' approval

- Development of an innovative traceability system based on QRCode/RFID technology

- Analysis of consumers' knowledge and perception on beekeeping practices and definition of a consumer's panel test of the traceability system to be implemented



WP 8 - "Dissemination and sharing"

Lead: Partner 7

Objectives:

-Dissemination and sharing for researchers

-Dissemination and sharing for beekeepers

-Dissemination and sharing for general public and consumers

BPRACTICES

PROJECT TIMING

During the first year:

Partners P1, P2, P3, P4, P5 and **P6**, in collaboration with **Apimondia** and the **FAO TECA** platform, will identify a cross-EU valid list of general and specific GBPs (from management to traceability issues), to be applied at the apiary level, and innovative GBPs for diseases prevention.

The goal will be achieved by **WP1, WP2, WP3** and **WP4** regarding the main honeybee diseases and **WP7** regarding the traceability GBPs.

At the beginning of the second year:

all the laboratory methods adopted by **partners P1, P2, P3, P4, P5** and **P6** will be harmonized and new techniques will be defined and standardized.

During the second and third year:

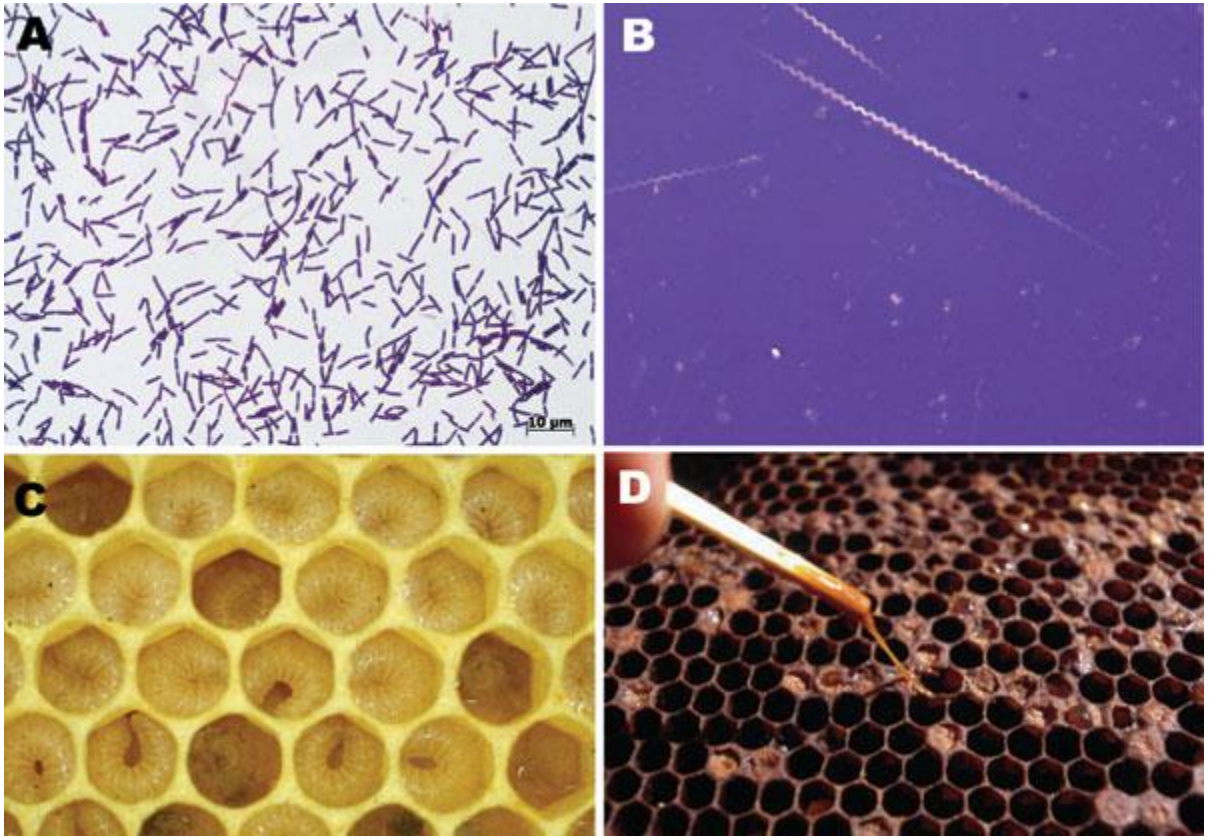
the best disease control methods previously identified will be verified with specific field trials carried out by **partners P1, P2, P3, P4, P5** and **P6** to check the variations in quality and quantity of hive productions and colony survival rates.

During the first two years:

To determine the validity of the new management system, **WP5 (Partners P1, P2, P3, P4, P5** and **P6)** will analyse the GBPs and provide specific ratings in order to judge the compliance and feasibility of their application for hobbyist and professional beekeeping through the publication of a checklist.

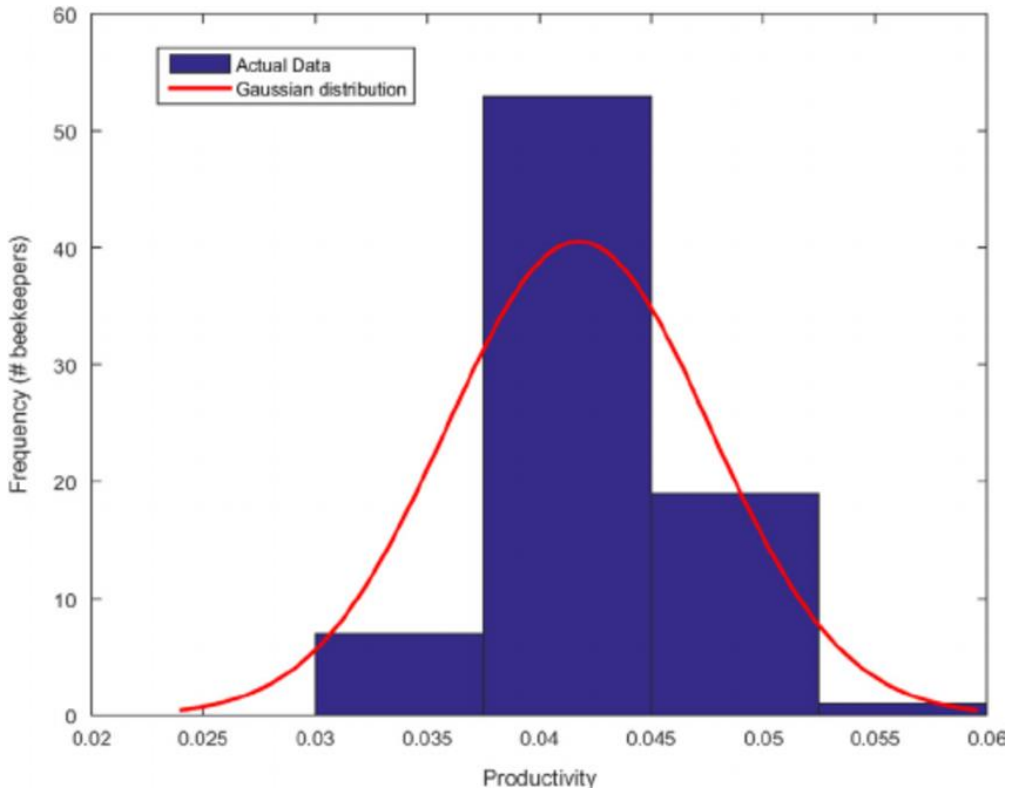
During the third year:

International ring tests on the laboratory methods adopted by **partners P1, P2, P3, P4, P5** and **P6** will be organized to validate them.



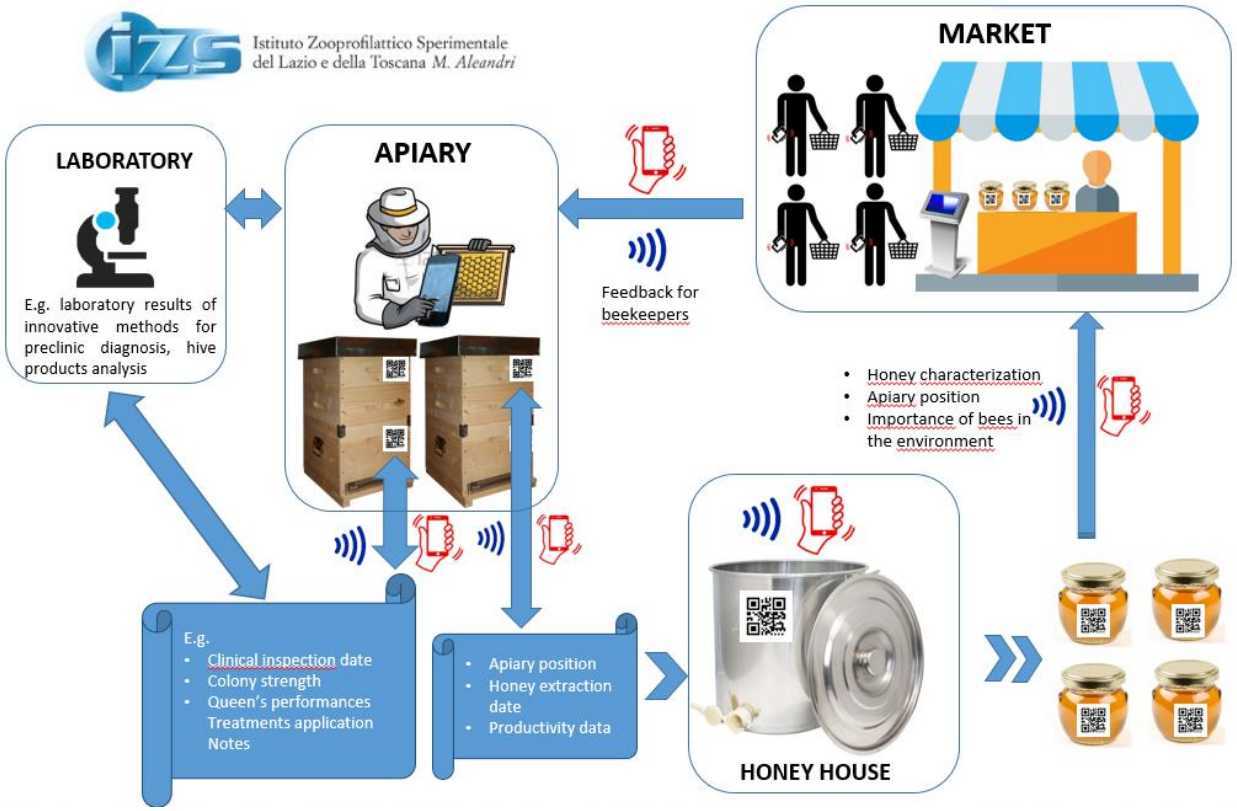
During the whole duration of the project:

WP6, in collaboration with **Apimondia** Regional and Scientific Commissions and Working Groups, will provide an evaluation of the productivity and competitiveness of European beekeeping and its resilience and adaptation to market fluctuations.



During the whole duration of the project:

an innovative traceability system based on QRCode/RFID technology and a user-friendly web application will be set up in the **WP7**, which will interact with producers and consumers. The application will be developed by **partner P1** and will receive updates and technical improvements by **all partners**, **Apimondia** and the **FAO TECA** platform.



During the whole duration of the project:

The traceability system will be implemented on the basis of the recommendations of a consumers' panel, that will be carried out during the second and third year of the project by **Partner P7** through a social research technique.

During the whole duration of the project:

WP8 will disseminate the new management method, the guidelines and the web application at European level thanks to the involvement of **all partners**, **Apimondia** and **FAO TECA** platform. Publications for beekeepers, scientists and for the general public will be produced.