

2 – BIO-TECH TRAINERS' WORKSHOP, UL



2.1 Introduction

The Trainer Workshops are a 3 days intensive programme to train experts that will be teachers in the student's programs and get them familiar with concepts belonging to other disciplines. This trainer's workshop will support a Semester Student programme, on biotechnology, design for urban resilience and business through inter/ transdisciplinary approaches.

The first Trainer Workshop, Bio-Tech Trainers' Workshop, took place on the 11th, 12th and 13th of March 2019 in Nancy, France. Bio-Tech Trainers' Workshop aimed at providing partners coming from the field of architecture and business with the basic learning about biology concepts, in order to allow them to face the transdisciplinary students' programmes.

2.2 Workshop Structure

Bio-Tech Trainers' Workshop was a three - day event. HEIs ensured the participation of 2 staff people, from each of their teaching and training team delivering the programme and 1 staff representative from each SMEs. They shared knowledge, concepts, and methods in order to overcome the disciplinary barriers and to discuss the innovative modules and test them internally in peer learning sessions.

Detailed workshop programme:

Day 1 - Knowledge sharing on "Urban Renaturalisation and Resilience" and Educational courses

Understanding basic Concepts of Urban Ecology: What is an urban ecosystem / Ecological engineering / Case studies, link between services, functions and quality of urban ecosystems for sustainable cities

09:30-10:15	Lesson 1: Introduction to Urban Ecosystems
10:30-11:15	Lesson 2: Biodiversity in urban habitats
11:30-12:15	Lesson 3: Methodologies and Tools
12:30-13:45	Lunch break
14:00-14:30	Lesson 3: Green roof (GR) as Solution for the mitigation of Urban Heat Island (UHI) and Urban Water Management (UWM) Issues
14:40-15:10	Lesson 4: Phytomanagement as Solutions to reclaim degraded Areas and to enhance the Quality of urban Environment
15:20-16:00	Lesson 5: BioTech Companies/Case Study

Bio-tech Education

16:15-16:30	Lesson 6: ENSAIA-UL educational programmes
16:45-17:15	Lesson 7: Educational Case Studies
18:00	Social event (visit of Musée de l'Ecole de Nancy)

Day 2 - Case studies in Nancy

Applications of Bio-tech

08:30-10:00	Case Study 1: Visit of the Experimental Green Roof Platform
10:30-12:00	Case Study 2: Urban wandering from mineral to vegetated sites
12:15-13:45	Lunch break

Facility for education on reclamation of brownfields: GISFI experimental platform in Homécourt

14:00-18:00	Case Study 3: GISFI experimental Platform
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Day 3 - Workshops

Innovative educational programs development

10:00-11:30	Workshop 1: Yearly transdisciplinary programmes development – BIO-TECH Semester
12:00-13:30	Workshop 2: Intensive transdisciplinary programmes development – BIO-TECH Intensive Course

2.3 Objective

The aim of evaluation is contributing to improve educational activities -while they are happening, as well as to provide insights to design better educational activities.

The evaluation of all educational activities will include analysis of:

- the effectiveness of the workshops/learning programme including its reach of the target audience
- the impact of the programme on students understanding about Biotech methods
- the skills, competencies and dispositions gained during the programmes
- the application of the knowledge and skills gained
- the strengths and weaknesses of the education approach used
- recommendations for changes to the programme so the programme may be implemented in new courses.

In this document we present a summary of the evaluation results that we have done to support the improvement of the programme.

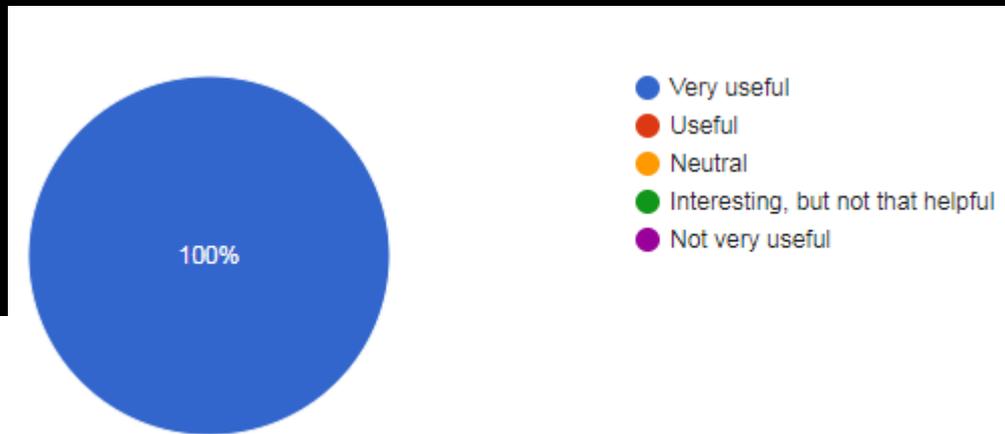
2.4 Methodology

We carried out an evaluation survey which included a mix of qualitative and quantitative feedback to evaluate the success and impact of the event.

2.4.1 Survey Results

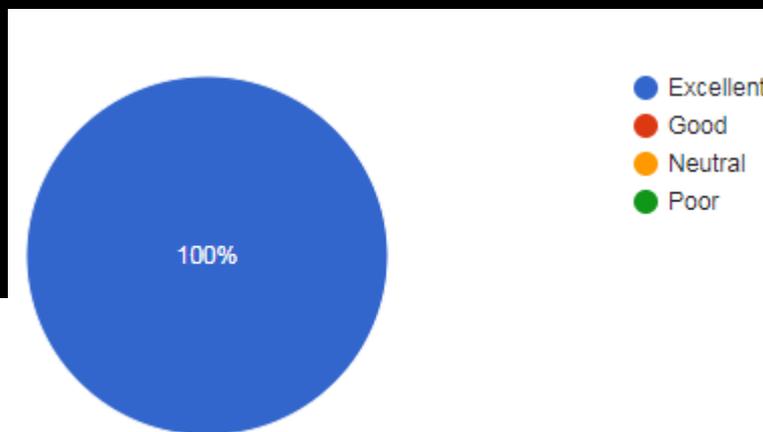
5 partners answered the survey.

Q1 - How useful did you find the content of the Bio-Tech Trainers' Workshop?



All of the partners responded that the content of the Bio-Tech Trainers' Workshop was very useful.

Q2 - How would you rate the overall experience?



All of the partners responded very positively about the overall experience.

Q3 – What aspects of the Bio-Tech Trainers' Workshop did you enjoy the most?

We received five positive, distinct responses to this question:

- Multidisciplinary of the trainers. Local and international transfer of knowledge.

- We shared a lot of ideas, opinions and expertise, during classes and during field trips.
- Meeting and chatting with other partners.
- I enjoy the mix of content back group with field work activities.
- The field experience. It was interesting to see the empirical research they are conducting.

Q4 – What did you learn during the Bio-tech Trainers' Workshop that you anticipate using in the transdisciplinary students programmes?

Most of the partners shared their comments regarding the new things that they've learned in this trainer's workshop:

- To be prepared to transfer an adapted knowledge to these students.
- Nature is complex, and nature needs to be built with the human inside nature.
- Adapting the level of our courses to students from other disciplines.
- I learnt that urban and industrial soil have only been studied in the last 30 years, and that we have to study them in order to renaturalise our cities. Soils are the source of many important services- habitat of many species, water filter, they are our physical support.

Q5 – Was there anything you did not understand during the Bio-tech Trainers' Workshop? Please provide specific examples.

All but one partner understood everything during the workshop. Only one partner still had a doubt about how to use biological properties to build urban intelligent solutions.

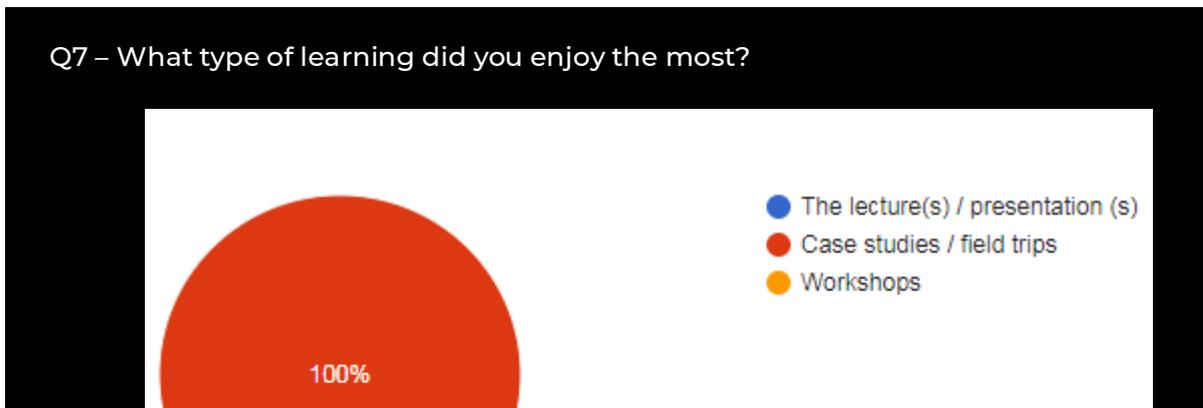
The comments expressed were:

- It was clear.
- I was one of the trainer.
- I still have many doubts about how to use biological properties to build urban intelligent solutions.

Q6 – What questions do you still have about the biology and bio-tech concepts?

Most partners have reported some questions about the biology and bio-tech concepts:

- What kind of environmental challenges are the students facing in Barcelona?
- How to answer all the nature's needs in urban bio-tech?
- I was one of the trainer.
- I would like to have some figures about the cost & benefits, impact of using green roofs to mitigate urban heat islands?



All partners enjoyed the most case studies/field trips as type of learning.

Q8 – What other specific comments do you have?

These are the specific comments reported by partners:

- Happy to join the program and to contribute to build innovative formations.
- thanks to all!
- I would like to have the opportunity to discuss with the other partners about the content of our lectures.

2.4.2 Feedback from BIO-TECH Trainers' Workshop

At the end of the Bio-tech Trainers' Workshop, some of the participants highlighted the following:

Christian Rammel – WU: *"I learnt that there is a big difference between pollution and contamination and about complexity of the soil; there are no easy solutions out there. I also realised that we need a common language and understanding to further develop build solutions project."*

Aishwarya Krishnan – WU: *"I think is interesting the different challenges that the different institutions in the city of Nancy face. I think that is something that the students really have to understand when they are trying to innovate and try to engage and embed themselves in a city."*

Claire Hazotte – Econick: *"It is a good opening opportunity to develop bioeconomy products."*

Marjolein Helder - Plant-e: *"We will like to add to this program the real-life experience of starting a startup and the type of skills students need to know..."*

Chiara Farinea – IAAC: *"I learned a basic concept that it's the mobility of nutrients or pollutants through the different ecosystems and I think that it is a very important concept that we will need to transfer to architecture students in order to make better projects."*

Marite Guevara – ERSILIA: *"It was a surprise to me that soils have only been studied in the last 30 years, so we do not know much about urban soils. If I tell you my dream city, I see many green areas, orchards, fruits, vegetables, clean air and clean water, and if we do not have healthy soils, which are the source of all these services, how can we have the cities in which we would like to live?"*

2.5 Conclusion

A common underlying expectation of this workshop organizers was to provide partners coming from the field of architecture and business with the basic learning about biology concepts, in order to allow them to face the transdisciplinary Students' Programmes.

This was achieved, and key to the workshop success was the numerous lessons learned including:

- Nature is complex, and nature needs to be built with the human inside nature.
- Adapting the level of our courses to students from other disciplines.

- I learnt that urban and industrial soil have only been studied in the last 30 years, and that we have to study them in order to renaturalise our cities. Soils are the source of many important services- habitat of many species, water filter, they are our physical support.

All partners were very satisfied with the first Trainers' Workshop. Since trainers have to get familiar with concepts belonging to other disciplines, in this case biology and bio-tech concepts, there were still some questions and doubts that needed to be further explained at the end of the workshop. Because of that there was a discussion among participants based on their answers