

- Emphasize the **importance of networking** i.e. creating more synergy among projects in their respective countries – in the North and South.

Recognition of credits and integration in course curriculum
When applying for ECTS recognition several elements are set by the local institutions internal regulations. The following elements should be kept in mind:

- **Check the number of hours** associated with educational credits in the national and institutional environment.
- **Keep track of all actions taken to adapt the course to**

- **the real training needs**, to demonstrate to the own institute the potential of the course to satisfy real student needs.
- Consider including a **test phase**, where the validity and feasibility of the course is assessed in a real environment. After the test phase collect feedbacks and re-adjust the course structure. Keep track of the adjustments to show how the course will be feasible and acceptable for potential participants.

To make your educational offer available to different types of learners, **recognition of credits should go in parallel with recognition of competences.**

- Describe your modules in terms of learning outcomes with a clear identification of the competences acquired by participants.

Collaborative curriculum development

The **collaborative experience** of URBAN GREEN TRAIN enabled to integrate state of the art multidisciplinary educational resources, also leading to comparative analysis of business models adapted to varied international environments. This represents a key result of the project, with an educational curriculum that differs from all existing offer since it gives a clear and comprehensive overview of the sector and its potentials.

The **strong involvement of entrepreneurs** in the definition of the educational needs and their contribution in the development of the curriculum has led to the creation of educational materials that fill existing gaps of the sector. To follow this track, the following actions must be taken:

- Collect a comprehensive needs analysis for training and research in the sector;
- Involve entrepreneurs as students in the pilot course test;
- Involve entrepreneurs in the preparation of the educational material.

Key results

- The document **New Urban Agriculture initiatives towards a mindset change**
- **27 innovative urban agriculture SMEs** are presented in the Inventory of UA Enterprises.
- **27 Educational opportunities related to urban agriculture entrepreneurship** are available in the Inventory of UA Educational Offer.
- The **full set of URBAN GREEN TRAIN Modules and Educational Resources** are available in English, Italian, German, French, Dutch and Portuguese
- **5 Video tutorials presenting innovative urban agriculture enterprises** including Rotterzwam (NL), Uit Je Eigen Stad (NL), Le Jardin de l'Avenir (FR), ARVAIA (IT) and Eta Beta (IT).
- Final project video.
- The document **"Model and Recommendations for an UA Entrepreneurship Curriculum"** presents to European Higher Education Institutes and training providers the international curriculum developed by URBAN GREEN TRAIN, as prototype and model for collaborative creation of further courses/curricula in urban agriculture.

All resources are available on: <http://www.urbangreentrain.eu/>.

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Erasmus + URBAN GREEN TRAIN

Education for Urban Agriculture and Urban Green Entrepreneurship

Education for enterprising urban agricultural innovation

URBAN GREEN TRAIN (URBAN GReen Education for ENTeRprising Agricultural INnovation) aims to encourage pioneering business oriented initiatives in urban agriculture based on knowledge exchange and cooperation among SMEs, policy makers and Higher Education Institutions as to meet the global demand for urban green innovation. URBAN GREEN TRAIN wants to provide lifelong learning opportunities to adult learners through a flexible path that can be entered at different life stages. The project's general objective is to strengthen the knowledge triangle between Education, Research and Business in the field of urban agriculture and more specifically:

- To **raise awareness of potential employers and entrepreneurs** for enabling the environment for green economy
- To **innovate curricula and learning methods** in Higher Education, expanding existing forms of University-Society-Business Cooperation and crossing sectoral, disciplinary and national boundaries
- To **build capacity of youth** to create their own business
- To **respond to the EU labour market need** of highly qualified and entrepreneurial graduates in this field
- To **increase awareness** on the role of new green enterprises in creating more sustainable cities from the side of **local governments, consumers and other actors.**

URBAN GREEN TRAIN curriculum

The aim of the URBAN GREEN TRAIN curriculum is to respond to the global demand for urban green innovation (environmental technologies, eco-friendly products and services, sustainable design and healthy food) by equipping actual and future entrepreneurs with the set of useful skills and competences needed to start business oriented initiatives in urban agriculture. Innovative, sustainable urban agriculture entrepreneurship initiatives are needed by EU members states to deal with the 21st century challenges of food and nutrition security, human prosperity and employment, climate change, environmental and energy issues as well as natural resource scarcity. Urban farms, green enterprises and many other initiatives covering the so called "farm to fork" linkages connecting rural to urban areas as well as all non-food agricultural production and activities are growing all over EU, and so is the need for highly qualified and entrepreneurial graduates, able to make them innovative and sustainable. The course content and structure have been defined based on an analysis of the training needs of relevant key actors in urban agriculture, carried out by project partners in their respective countries.

The document 'New Urban Agriculture initiatives towards a mindset change' presents the project methodology and shares the results of a comparative analysis of 27 international case studies, the current educational offer on urban agriculture entrepreneurship as well as the results of a survey on training needs of future entrepreneurs in Italy, France, Germany and the Netherlands.

The main URBAN GREEN TRAIN course areas and the overall course structure, have been defined and designed according to the results of the training needs assessment. The course is structured into 5 Modules with a total duration of 150h.

Pilot course

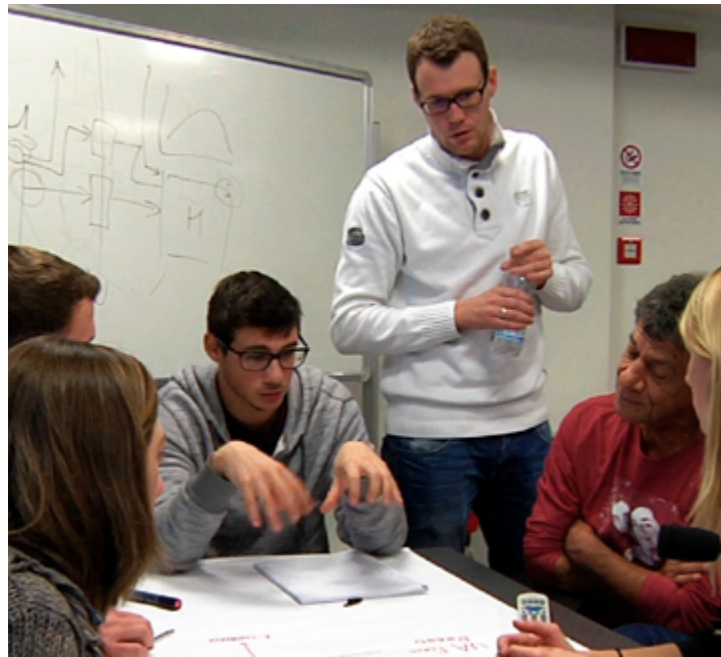
The course has been tested from August 2016 to January 2017 into two different modalities: full eLearning (at distance learning delivered through Moodle) and blended (combining online activities and face to face lessons). Participants were requested to actively participate in the testing of educational materials and activities and to provide their feedbacks to the URBAN GREEN TRAIN partners, with the



Hei-tro Prototype Vers. 1.0 Home-Aquaponics



purpose of improving the educational offer of Higher Education Institutions, as well as of private and public adult learning providers. For those experiencing the blended modality, a two week at presence course was held in Bologna in November 2016. The course brought together students from various European countries at the University of Bologna. The main benefit students perceived was the ability to have a discussion and exchange of ideas between people with different backgrounds, nationalities, ages, roles, visions and professional interests.



Pilot course in Bologna November 2016

URBANAG: A cluster on entrepreneurial urban agriculture

In recent years, growing interest in urban agriculture initiatives has led to the sprouting of several networks and think tanks of researchers, entrepreneurs as well as the wider public. To extend the impact of URBAN GREEN TRAIN an international and interdisciplinary Cluster on Entrepreneurial Urban Agriculture (URBANAG) is created. The cluster involves different actors: higher education institutions, research centres, SMEs, NGOs and policymakers into a forum addressing research, policy and market priorities, and organising thematic workshops and informational events.

The cluster, constituted as a working group, will schedule periodical discussion forums, meetings and newsletters to:

- Create a knowledge exchange platform on the most innovative entrepreneurial forms in urban agriculture and main potentials and challenges;
- Connect experts from different disciplines to create a discussion network on how to implement interdisciplinary training in urban agriculture;
- Respond to the needs of both the private sector and civil society to address research questions and promote topics and initiatives to main funding agencies.

Interested? Sign up at dipsa.rescue-ab@unibo.it.

Module 1: Introduction into urban agriculture concept and types

The main concepts and challenges related to urban agriculture are presented, as well as their worldwide evolution depending on the historical or geographical context. Participants acquire knowledge on cities features, society and professional trends shaping the urban agriculture environment. Urban agriculture functions and services are addressed as a basis for activities development. This module provides a framework for analysing urban agriculture situations.

Module 2: Resource use from a challenge perspective

Participants are introduced to the relationship between urban agriculture and urban ecology. Strategies for improving the role of urban agriculture in reducing the city ecological footprint are defined and critically addressed. Students explore the different elements contributing to resource efficiency and waste management, as well as to citizen's wellbeing. After the module, students can identify and assess entrepreneurial opportunities and innovation possibilities for each challenge.

Module 3: Urban agriculture types/production systems and short food chains

This module introduces and illustrates the various urban agriculture types found in cities around the world. Various urban agriculture production systems are discussed in terms of their characteristics, location, functions, technical aspects, development challenges and support needs. Also, urban agriculture input supply, service delivery; processing and marketing systems are discussed.

Module 4: Networking and governance

This module considers the importance of policy schemes and regulations, communication with (private and public) stakeholders, and the building of social networks for successful urban agriculture initiatives. Policy schemes and regulations can be a constraint for urban agriculture initiatives, but on the other hand offer opportunities for support. Social networks and communication are key for effectively mobilising resources and constructing markets for specific products and services. The module covers different governance approaches and highlights several practical examples of governance and networking.

Module 5: World of business and urban demands

This module focuses on entrepreneurial and economic dimensions of urban agriculture. Basics in economics including demand and supply theory, agrarian markets and marketing build the backbone to pass through the process of developing an own business plan. This module is – apart from introductory lectures – mainly based on participants' own work on an urban agricultural business plan. Frequently used business strategies and business models in urban agriculture are presented to stimulate participants in developing own business ideas. (Virtual) excursions to good-practices are included to get in direct contact to urban farmers and their underlying business ideas. Presentations of participants' own business ideas finalise this module.



Project team field visit in Germany

Recommendations

The URBAN GREEN TRAIN project succeeded in giving a good overview of the relevant state of art on UA entrepreneurship, UA educational offer and UA training needs and provided an adequate basis for developing relevant training modules and educational resources supporting new entrepreneurship. Some of our key conclusions and recommendations from the project are related to:

Different business realities

- It is important to **attune the training offer to different business realities**, not only in terms of underlying economic business models, but also in terms of starting point, types of actors and relevant networks;
- Income generated from traditional agricultural activities (primary production) are often of secondary importance, rather services and value added activities emerge as key component for the UA business strategy. Therefore, training should incorporate the **differentiated need for skills and knowledge** to implement a diversified range of activities.
- In view of this, the **training offer should be flexible, both in form and content**, to adequately address specific training needs and business realities.

Target audience and learning needs

- Besides developing resources for students at Bachelor or Master level also consider training needs and interests of **professionals, side-entrants or policy makers**.
- There is a need for **integrated and multi-/interdisciplinary training support** for new urban agriculture initiatives or as described by a Dutch SME: *"UA is often small-scale and versatile, but current education is large-scale and specialised"*.
- Our training needs analysis confirms the interest in **practice-oriented forms of education**, such as life-long learning and blended forms of non-formal and formal education.
- To bridge the world of education and that of work, it is essential to ground your offer to a **clear competence framework**.
- Also, there is a need for **co-creation of knowledge** between trainers, participants and actors involved in projects.

Online course structure

- Provide a clear **online structure and agenda**
- Open a course for at least 10-12 weeks and schedule **intermediate deadlines and milestones** to be timely reached by students to keep momentum and sustain commitment.
- Consider creating a **place for FAQ/ technical issues** and a place for sharing general resources.
- Have students **peer-review** each other's assignments. This peer-reviewing can be part of the requirements to finish the course and receive a certificate.
- **Tutors** provide additional feedback and guidance.
- Use a **mix of resources**, assignments, quizzes, online reading and short audio / video fragments to make it more appealing.

Face to face / blended course teaching

- The training should aim for a **mixture of f2f course teaching and learning methods** including lessons, group work, short presentations of participants (pitches/competitions) and excursions.
- Blended forms of training (combining practical and distance learning) **enhances their online learning experience**.
- **Social events** for team building purposes and to motivate participants should not be underestimated.
- Spend adequate time on introducing the course; **refer to online modules** in the first classes, but make sure not to repeat too much.
- **Field visits** provide great illustrations for types of UA businesses and encourage learning from a more practical angle.
- **Involve entrepreneurs** also in the teaching, having them to introduce their business and describe opportunities and main experienced difficulties in UA activities.
- Also **focus on "social" aspects of UA** and topics such as community development instead of solely on its "commercial" aspect. Too much emphasis on only the economics fails to involve people like potential practitioners and customers.