



# Multifunctionality in a vegetable garden

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**Abstract** – Activities to add value to crop productions and enhance the development of agricultural sector in the urbanizing regions were developed in a farm vegetable garden in Ancona (Italy). A self-service vegetable garden was designed and established in order to reduce the distance between food production and consumption. The vegetable garden was equipped with a glasshouse used to implement didactical, recreational and social natural themed activities dedicated to children and families. A pedagogic project, called “Summer in the countryside”, was activated in the same year offering summer weekly educational and ludicmodules for children in the agricultural environment and using the vegetable garden as an open classroom. Moreover, a care farming project called “Evergreen” was carried out for over-65-year-old seniors with the objective to diffuse knowledge of vegetable self-production techniques, promote cultural exchange and evaluate the benefits of motor and cognitive activities held in the countryside. The implemented activities allowed the farm to diversify the range of offered services and to improve visibility among customers. The number of participants to educational activities increased over time. The “vegetable garden” environment proved to be an effective location to host didactical, educational, recreational and therapeutic activities and to fulfil the multifunction objectives.

**Keywords** – children, didactical activities, elderly, family, farm, recreational activities, social activities.

## INTRODUCTION

Farm multifunctionality (Van Huylbroeck et al., 2007) represents one of the pivotal factors to add value to crop productions and enhance the development of agricultural sector in the urbanizing regions. Projects to bring customers closer to food production areas and didactical, social and recreational activities (Barbieri and Valdivia, 2010) may diversify the services provided by the farms. The need of awareness about food production stimulated the development of projects addressed to different population groups (children, adults and seniors) in order to train new generations on environment and food production issues and promote the interaction between generations, since respect for nature grows from experience as a child (Keys et al., 2013).

## MATERIALS AND METHODS: THE PROJECTS

Innovative enhancement activities were developed by H.O.R.T. company in a farm in Ancona (Italy) on a plot (1500 m<sup>2</sup>) cultivated as vegetable garden.

### *Self-service garden*

A self-service vegetable garden was designed and established in 2011 as pilot project (not replicated, yet). The project intended to allow citizens to handpick their own fresh vegetables. The vegetable garden was equipped with a drip-irrigation system, a glasshouse for visitor's reception and labels to identify the plant genotype. The glasshouse was used as crucial centre to implement several didactical, recreational and social natural themed activities dedicated to children and families.

### *Summer in the countryside*

In the same area, a pedagogic project, called “Summer in the countryside”, was activated since 2011 and replicated in the following years. The project intended to promote children to become more confident with natural environment, plant growth and vegetable food production. During the school vacation, weekly educational and ludicmodules in the agricultural environment were offered for 4-11 years old children. The modules were focused on five main themes: adventure (plants and natural materials to build wild encampment), learning (vegetable and countryside as teaching tools of English language), natural environment (observation of the biodiversity), horticulture (practical learning on vegetable growing), and recreation (game and theatre with natural objects). In every activity, the vegetable garden was pivotal and used as an open classroom. The natural environment served as source of materials to be used by children to experiment, learn and amuse, modelling toys with their own hands. At the end of the modules, a sample of 15 parents was asked to evaluate the experience.

### *Evergreen*

The care farming “Evergreen” project was established in 2015. It was dedicated to over-65-year-old seniors and implemented to improve the quality of life, encourage relational services, evaluate the benefits of activities held in the countryside, enhance the knowledge and the diffusion of vegetable self-production techniques and promote the pass down from one generation to another through cultural exchange. The project was composed of two social sessions: “Senses awakening” and “Countryside for everybody”. In the first one (20 meetings), elderly people were involved in practical activities, related to the care and maintenance of vegetables, and in exercises for the mind to improve the mnemonic performances and promote the recall of emotionally pleasant experiences. The plants were grown in an aboveground garden in order to facilitate the movements. In the second session, people were

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provided with horticulture lessons and a plot was made available for each one to cultivate vegetables. The project was carried in collaboration with INRCA Scientific Institute (Ancona), providing specialized staff to supervise the health conditions of the beneficiaries, and the senior centre of the "Amore e Vita" company providing guests and psychologists.

## RESULTS

### *Self-service garden*

The self-service vegetable garden was active for 4 months (June-September), produced 18 types of vegetables and around 900 kg of products were sold. Other activities held in the glasshouse involved around 100 people. The investment for the farm consisted of the glasshouse and the establishment of the garden with irrigation system. The costs were partially refunded through the vegetables sale. Further, the garden promoted the knowledge about the food sources and showed how the plants look like and where they grow. Customers were encouraged to pick the vegetables at the right maturation stage in order to enjoy the full taste and flavour.

### *Summer in the countryside*

The project is well consolidated and 44 weekly modules were activated. The number of participants increased over time (Fig.1): about 190 children were involved during 4 years and relationship between their families and the farm was implemented. Both male (47.2%) and female (52.8%) children (age:  $7.2 \pm 1.9$  years, mean  $\pm$  SD) took part in the modules. The children participation was mainly oriented to adventure, learning and horticulture (24.8%, 23.9% and 22.4% respectively) modules. Parents appreciated the project: 86.7% declared the intention to enjoy again of the activities in future and 73% of them affirmed that they chose the service to introduce nature and countryside to their children. The choice of the modules was made 50% according to the theme and 50% to the timing; 60% of families preferred the adventure modules and 53.3% also appreciated the other themes. The project resulted economically sustainable: families paid the module to the activities provider that consequently paid the farm owner for the rent portion of the farm.

### *Evergreen*

Eleven women (age:  $88.3 \pm 6.3$  years, mean  $\pm$  SD) participated in the first session of the "Evergreen" project, and an average of seven people joined all the meetings. Eleven men (age:  $76.6 \pm 5.9$  years, mean  $\pm$  SD) participated in the second session and started cultivating the parcels. Around 165 hours of labour were required to manage the garden and support the seniors. Meeting between seniors and children (from the summer project) occurred and promoted sharing of experiences and knowledge.

## DISCUSSION AND CONCLUSIONS

The "vegetable garden" environment proved to be an effective location to host didactical, educational, recreational and therapeutic activities and to fulfil the multifunction objectives. Adventurous activities confirmed to be very effective to introduce children to nature (Keys et al., 2013) and to plants, vegetables and food knowledge. The participation to the pilot projects for adult and elderly people encourages the development of similar projects. The proposed activities are replicable in other farms involving specialized staff dedicated to recreation, education and care. The projects allowed the farm to diversify the range of offered services and to improve visibility among customers.

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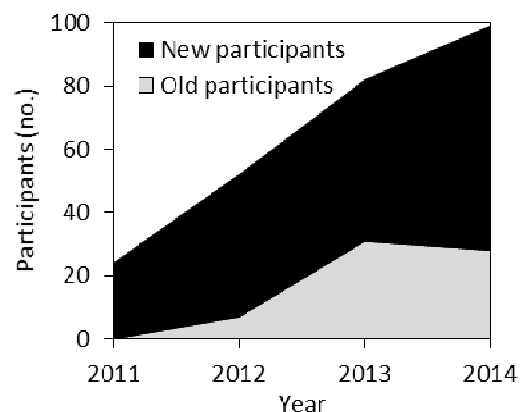


Figure 1. Annual participants of "Summer in the countryside" project.