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### **Permaculture as a new opportunity for the younger generations**

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## Abstract

*Large youth unemployment in Slovenia as well as in Europe demand search for new work opportunities especially for young people. Permaculture as a complex approach connects environmental, social and economic aspects. Due to the innovative approaches and natural appearance is interesting for both; the young and the elderly. We made the four-year study, where we monitored the attitudes of young people (students) to permaculture at the learning polygon for self-sufficiency in the municipality Poljčane. We found that interest in permaculture is growing and there is a growing need to deploy permaculture in practice. Therefore, permaculture means a new opportunity for work for the younger generation who will have to deal with saving natural resources and ensure a higher degree of self-sufficiency.*

**Key words:** students, permaculture, self-sufficient supply, educational polygon

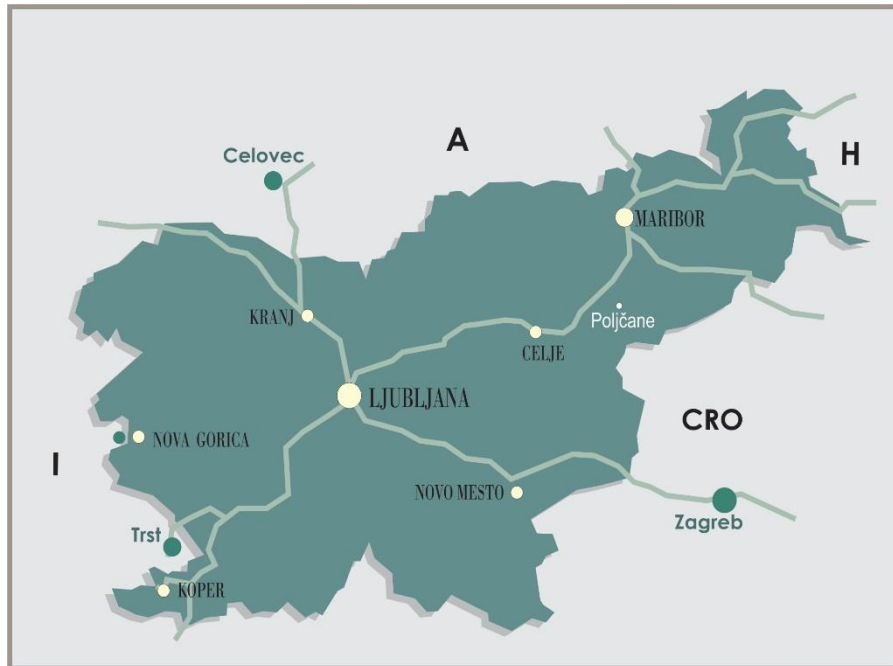
## I. Introduction

Permaculture is an ecological design system for sustainability in all aspects of human endeavor. It teaches us how to design natural homes and abundant food production systems, regenerate degraded landscapes and ecosystems, develop ethical economies and communities, and much more. As an ecological design system, permaculture focuses on the interconnections between things more than individual parts (Permaculture institute, 2013). Permaculture is much more than a land-use planning, the combination of stocking and food production, water supply, energy, waste water treatment with ecoremediation and cohabitation with animals (Whitefield, 2012). Permaculture is an increasingly popular trend around the world and, whether they achieve it fully or not, many gardeners aspire to its basic principles. Permaculture is all about design; it is a way of creating everything from abundant and self-sustaining homes and gardens to truly meaningful community projects (Permaculutre Free Presse). It is increasingly recognized that only industrial production and processing of food and the globalized approaches are not the ways to provide healthy food and water as well as the required standard for all people. Therefore, the necessary initiatives at the local level were established to promote sustainable modes of food production and life, to create new jobs and many services and

activities at the local level. Food security is the basis of survival of mankind (Raman, 2006), it is therefore a key challenge for any economy sustainable provision of adequate quantity and quality of food for the population. Although agriculture is the need we should take into the account of the natural capacity for food production (Pierce, 1990), are the main natural sources fertile soil and water quality. Natural soil fertility reduces the degradation processes such as erosion, flooding, drought and disease. The strategy of providing food safety for each country includes sustainable self-sufficiency by the use of domestic that is locally grown and processed products. Merely that creates jobs, innovative occupations, motivate people for sustainable technologies and reduce energy consumption (less mobility, use of local resources) and, most importantly, increases the value of the subsistence country and allows the employability of people.

According to FAO we could require current food production until 2050 increased by 50%, whereas it is not enough of additional arable land at the disposal, it is necessary to deal with the land extremely carefully and efficient production approaches must be used by permaculture (permanent culture, the way of food production with special care for the earth and water) and ecoremediation (taking into account of natural processes in nature). In the middle of the 21st century there will be about 10 billion people in the world for whose current eating habits we do not have enough fertile land and, consequently food. Vegetarian food habits require between 700 and 800 m<sup>2</sup> of cultivated land per person, meat-and-dairy food habits is 4000 m<sup>2</sup> (Sage, 2012). In Slovenia we have 858 m<sup>2</sup> of cultivated land per capital, the lowest across the EU (the EU average was 2080 m<sup>2</sup>) (Plut, 2012). All this forces us to think about getting a land where we could grow food, regardless of land ownership (even those who have no agricultural land and live in cities). Passive people's attitude to a situation of self-sufficiency can mean even greater deterioration of the situation, for which we are all responsible. Therefore it is to increase self-sufficiency to put great responsibility in education that can bring closer this content to everyone (from kindergarten to lifelong learning) and to incorporate it into everyday learning. Self-sufficiency is extremely wide, and is not only the domain of the agricultural profession. These are the reasons why we in Slovenia in the municipality of Poljčane (Picture 1) created a learning polygon for self-sufficiency based on permaculture, which can be mainly used for young people to learn about food and sustainable ways of living by the experiential method.

Picture 1. Education polygon in Poljčane in Slovenia.



With educational programs on the learning polygon in Dole, we found a high likeability of permaculture to young people. Therefore, we monitored the responses of young people to participate in educational seminars for permaculture and got an insight into the transfer of knowledge from learning polygon in the local environment. In the four years of monitoring the responses of young people (we have limited the student population between the ages of 19 and 24 years), we found that permaculture has great potential for shifts in thinking in particular of young people and their acceptance as an attractive, thrifty and easy way to self-sufficiency (Picture 2).

Picture 2. Self-sufficient classroom in the nature in Dole for real learning.



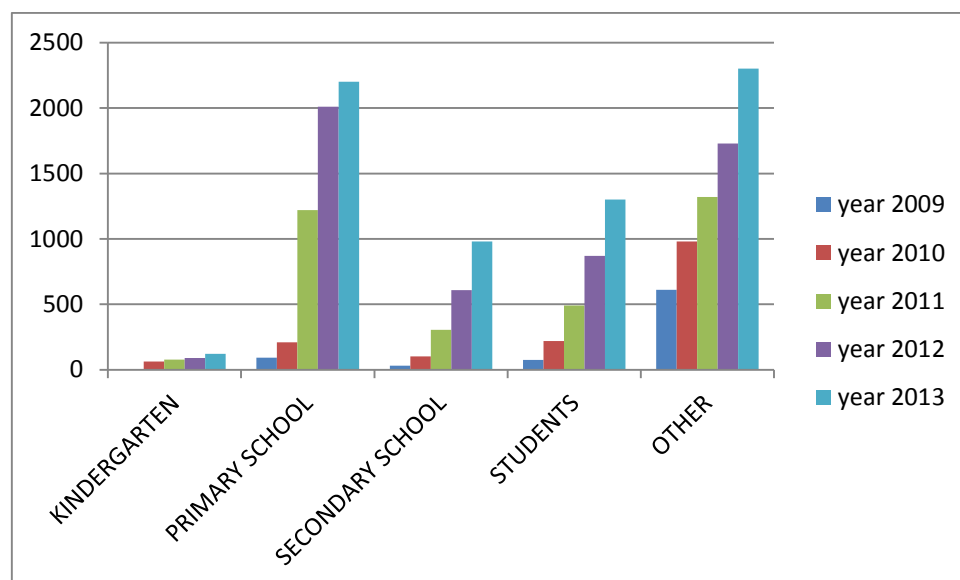
## II. Methodology

In 2009, we established in Poljčane municipality in eastern Slovenia a learning polygon for self-sufficiency based on permaculture. This is the first such polygon in Slovenia and is mainly intended to support experiential education and understanding of sustainable

approaches. Because this polygon also works as the area for teaching practice and students' fieldworks of different orientations for geographers, ecologists, environmentalists, technicians, farmers and social scientists, we have established as the implementation of educational programs a system of monitoring visitors to this polygon.

From 2009 to 2013, we also tracked the number of visitors to the site and teaching permaculture and the responses of young people to transfer permaculture practices into everyday life. With the aim to obtain quantitative data on the number of visitors and the relationship to permaculture, we systematically monitored students' population and their relationship to permaculture. In four years, we collected data on the number of students and their interest to visit the site and learning. We were also interested why they want to learn permaculture or have an interest to develop these systems at home. In a period of four years was the largest visit between April and October each year, when there is the vegetative period and when permaculture arrangements look very attractive. At this time polygon visited 87% of all visitors, the total number of the visit was 6941 visitors, of which 42.5% were students (Graph 1).

Graph 1. Number of visits on the learning polygon Dole



The data collected was analysed by simple statistical methods and explained with the trends of the visit of selected target groups during four years of 2009 - 2013. We were especially interested in the student population and their relationship to permaculture and transfer of knowledge in their own practice. It is important to realize that in Slovenia permaculture means a new opportunity for self-sufficiency, self-employment, service industry and many of the survival modes. Therefore, we can claim that permaculture for the younger generation means a new opportunity.

### The educational polygon for permaculture

The polygon is located in the village of Dole in the Poljčane Municipality in Slovenia and covers 1.2 ha. It is intended for the purposes of education on self-sufficient supply, from the level of preschool education to the level of lifelong learning. Many geographical contents represent part and parcel of this polygon, from planning the use of space according to relief, exposition and inclination, soil characteristics, water availability, to



field research on landscape components. Together with land use energy is a crucial issue in self-sufficient supply. The focus of the educational polygon is in identifying the possibilities of using natural resources for self-sufficiency in energy, which is closely related to mathematics, geography, geomorphology, climatic geography, hydrogeography, vegetation geography and soil geography.

The educational polygon for self-sufficient supply in the settlement of Dole is based on the compliance with the principles of permaculture and eco-village. The educational polygon features a yurt (a mobile nomadic dwelling), where it is also possible to stay overnight (Picture 3). The polygon is grown over with autonomous plant species, namely chestnut, walnut and fruit trees.



Picture 3. Yurt and solar energy system for education.

The whole principle is based on considering limited natural resources and rational spatial use. The following plantations are shown: a meadow orchard, a forest garden, a field with mixed plants as well as a fruit and vegetable garden. There is also a field and an area of natural succession. The elements of a sustainable way of living that are shown include: a solar collector for heating water, photovoltaic modules for electrical energy, a rainwater tank, a constructed wetland for the treatment of spring water and a spring water reservoir. A living building with willows, a fence with berries, a windward shield and an element of water with plants all serve to enrich the space in terms of landscape and ecosystem. The basic aim of the entire concept of the classroom in nature is thus to develop and strengthen the capacity of individuals to recognize and understand processes that take place in nature and the environment, to form visions and alternative suggestions for solving numerous environmental problems, and to make assessments and decisions in favour of sustainable development, which are also the key principles of the education for the sustainable development strategy.

The aim of the educational polygon for self-sufficient supply is to present the possibilities of an individual's self-sufficiency in view of available resources and at the same time to explore new possibilities of an economic relationship towards nature and environment in innovative ways. The educational polygon offers various knowledge contents in the field of permaculture and the natural way of living. The key objective of the education on self-sufficient supply is to connect – through experiential learning.

The experiential educational process provides pupils with an opportunity to learn with all senses and through experience. Students reach new knowledge by themselves and they assimilate it permanently as they participate in a real environment, which is the object of their learning, and there is no abstraction involved (Tal and Maroag 2009). Among the teaching methods we use, the prevailing ones are observation, comparison, planning, fitting into the environment, evaluation and group work. Only this kind of learning environment enables us to place the students into a concrete situation, where she or he can learn about self-sufficiency from many perspectives. Experiential learning is based on the principles of permaculture and ecoremediation, where students can deal with landscape's interrelationships and mutual dependencies in an experiential manner (Dunphy, Spellman, 2013).

The educational centre is located at the top of the hill, which gives it the greatest insolation – a fact that is important for self-sufficiency in energy. Students discover that the plants which are most frequently used in households and which require most nurturing are grown closer to home, while the plants which are seldom used and which are more adaptable to different weather conditions tend to be found at more remote locations. They learn that each plant species is associated with a particular function and that they are all connected to each other, which can be best seen in permaculture gardens, where plants mutually support each other. Students can make plans for their own gardens with the help of the knowledge obtained at the educational polygon for self-sufficient supply. Their designs are very concrete, as they plan where they could set up their garden, how they could optimally use the energy of celestial bodies, and how they could grow their own produce and highlight the pleasant appearance of the environment. They are also able to choose the necessary equipment and they learn to identify compatible plant groupings and to plant herbs and trees. They are taught to evaluate the work they carry out, since they continuously monitor it in the light of the investment of their time and the final product. They discover by themselves that permaculture gardens do not require much work, as most of the work is carried out by nature itself, while these gardens also produce healthy food (Picture 4). Students generally experience joy when observing the fruits of their work (design sketches for a garden, or a garden patch).



Picture 4. Permaculture as learning by doing.

At learning polygon we learn about the variety of options we have around us, but often we do not know them. If we dispose with little soil, many arrangements that can be seen on the polygon can be used at home. For those who live in the skyscrapers or blocks of flats are balcony permaculture arrangements appropriate, because they do not need a lot of space. As stated Monica Green (2012), the space is still conceptual framework is a way for understanding the fundamental geographic and other interactions, so those who want to be self-sufficient must see and learn about these systems in nature, only literature is not enough.

### III. The results of the monitoring of visitors in a learning polygon Dole focusing on student population

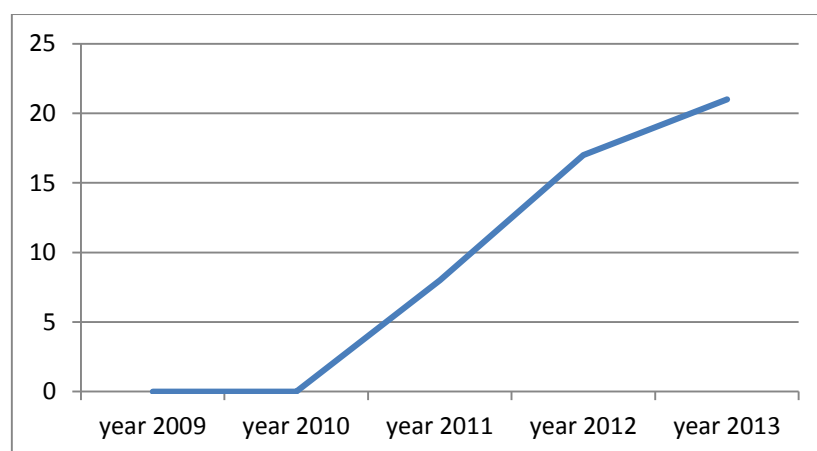
From June 2009 to June 2013, we collected data of the number of visitors as well as monthly and yearly follow-up with the aim of understanding of the dynamics of the visit. It is important to emphasize that the polygon is dedicated to research and education, and that it is not a tourist destination, so we did not carry any commercials. During the main season from May to June and September, the interest of the schools to explore on polygon is great, so we do not use propaganda techniques to attract visitors. As shown in Graph 2, the number of target populations over 4 years increased the most in the target group of elementary school because it has become experiential education a compulsory part of the school. The first year in the polygon there was no children from the kindergartens, because preschool teachers thought that the content was for children on the polygon too complicated. Once it has spread good reputation to the polygon, the smallest children of neighbouring schools are permanent visitors. From elementary school are children from all over Slovenia. From the secondary schools are particularly from



eastern and central Slovenia. It is interesting that different orientations of pupils come to the polygon. Their main objective is to identify sustainable development in practice. Students are from the University of Maribor, University of Ljubljana, College of Velenje and from the University of Primorska. In the second group are members of societies, members of a third university, families, tourists, teachers and heads of tourist organizations and various associations (Graph 2).

In order to monitor the relationships of the student population of permaculture we are having educational programs conducted guided interviews. During the implementation of education we recorded motivation for the visit, with the aim of monitoring the transfer of knowledge into practice).

Graph 2. Visitors' interests on permaculture polygon Dole.



Interestingly, it was the first great interest only to see the learning, and now every year reinforces the desire to learn about the permaculture. In 2012 and 2013, this was the main motive for visiting the learning polygon. 17, 1% of students would like to have permaculture at home (Table 1). Field group of students who expressed interest that they want to have a home permaculture, are being monitored today in order to obtain information, which permaculture arrangements have created. From the group has expressed that it wanted to have a home permaculture (505 people), by the home actually made 46, which is 9% of the total. Due to the fact that in recent years the interest of those who practice permaculture exposed at home increases (from 2011 to 2012, the interest increased by 47% and in the period between 2012 and 2013 by 20%), we expect a rise of interest).

Table 1. Practical implementation of permaculture at home

Table 1

Year	Implementation at home
year 2009	0
year 2010	0
year 2011	8
year 2012	17
year 2013	21

The choice is dominated by the raised beams, tumulus beams, forest gardens, meadow orchards, growing vegetables in containers and garden arrangements with a focus on care for the ladybugs, beneficial insects and regulation of water reservoirs.

#### IV. Permaculture as a motivation of young people for self-sufficiency

Permaculture systems increased self-sufficiency and in recent years established itself as an attractive approach for the production of food. Permaculture is like scientific way of an integrated design used in all areas of life. The basic permaculture ethics are care for the Earth, care for people and care for sharing of surpluses and permacultural design principles. The main feature of permaculture planning is the placement of things in the right place in space with respect to their relations with other elements of the system, which allows efficient use of time, energy and resources. An example of permacultural approach to the house is such that a spiral beam with herbs is placed near the kitchen because it is required several times a day; compost pile placed away from the entrance to the house that we do not mind any odour, water intake is placed to take advantage of gravitational energy. In planning are the main source of knowledge ecosystems and their natural features. Permaculture is a versatile. Never determined regulations are not underwritten only by one function. For example: in a hedge plant are some plants which are bee pasture and give us edible fruits, firewood, enriching the soil and are consistent with natural ecosystems. Therefore we should avoid planting cypresses because it has only mulch function and do not perform, the new ecosystem roles. With such concrete examples we approach young people responsibilities for deciding on care for the environment and nature.

The loss of importance of agricultural production, unemployment, emigration of young people and population ageing are the most significant of these changes. Inhabitants of the countryside can see the development of rural areas mainly in the promotion of tourism, development of agro-tourism or rural tourism, and thus in the adequate diversification of activities. This brings about new ways of thinking and behaviour of the rural population (Jakešova, Vaishar, 2012).

#### V. Conclusion

At the learning polygon for self-sufficiency we teach permaculture to different generations. In four years' increased, the number of school-age children in the learning polygon and the number of others, including a large population of pensioners. For the intergenerational transmission of knowledge is permaculture ideal because the older still know the consideration of natural principles, younger have interest to use this in practice. The second group is also significant potential generation of pensioners which is still active and can be as permaculture owner again actively involved in society. It is also a recognition that the content of sustainable development in primary school is compulsory, so all students have the opportunity to learn about permaculture as an approach to achieve sustainability. From 2009 to 2013, the number of target groups increased, student generations want to have practice during the study to obtain their own professional experience. Here again has proved permaculture as an ideal approach for innovative practical education and a responsible attitude to natural resources, increase of self-sufficiency and as a contribution to social responsibility. With permaculture, we develop green jobs, the possibility of supplementary activities in rural areas, and thus the possibility of self-employment. Since the permaculture in Slovenia starts to have lot of adherents in this area it is opening up new opportunities for young people that some have used.

## References

- Graham, B. (2010). *Permaculture garden*. Ljubljana: ARA Publisher.
- Green, M. (2012). Place, Sustainability and Literacy in Environmental Education: Frameworks for Teaching and Learning. *RIGEO Review of International Geographical Education Online* ISBN: 2146-0353, p. 326-346.
- Dunphy, A., Spellman, G. (2009). Geography fieldwork, fieldwork value and learning styles. *International Research in Geographical and Environmental Education* 18:1, 19-28. DOI:10.1080/10382040802591522.
- Jakešova, L., Vaishar, A. (2012). Sustainable inner peripheries? A case study of the Olešnice micro-region (Czech Republic). *Moravian Geographical Reports*, Vol. 20, No. 4, p. 13-25.
- Praterious, P. (2006). A Permaculture School Garden. *Teaching green*. Nr. 78, pg. 6 – 10.
- Piercea, J. (1990). *The food resource*. New York, Longman Scientific & Technical, 334 pg.
- Plut, D. (2012). Prehranska varnost sveta in Slovenije. *Dela* 38, p. 5-23. Ljubljana.
- Raman, S. (2006). *Agricultural sustainability – principles, processes and prospects*. New York: Food products Press, 474 pg.
- Stutz, F. Warf, B. (2005). *World economy. Resources, location, trade and development*. Upper Saddle River, N.J., Pearson/Prentice Hall, 543 pg.
- Tal, T., Morag, O. (2009). *Reflective Practice as a Means for Preparing to Teach Outdoors in an Ecological Garden, Teacher Education*. London: Springer Science, 2009, pp. 242 – 265.
- Sage, C., (2012). *Environment and food*. Routledge, 320 pg.
- Whitefield, P. (2012). *Permaculture in a Nutshell*. Permanent Publications. London: Permaculture Association.
- Permaculture institute (2013). Retrieved from: ([http://www.permaculture.org/nm/index.php/site/key\\_concepts/#sthash.Nosg7Nlc.dpuf](http://www.permaculture.org/nm/index.php/site/key_concepts/#sthash.Nosg7Nlc.dpuf))
- Permaculture Free Presse (2013). Retrieved from: <http://permaculturefreepress.com/?p=401>.
- Classroom in nature (2013). Retrieved from: [www.ucilnicavnaravi.si](http://www.ucilnicavnaravi.si)