

THE ROLE OF INNER SETTLEMENT GARDENS IN SELF-SUFFICIENCY

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Abstract: *The current study examines back-yard gardening practices within the Hungarian-Serbian border region. The project aims to explore possibilities to exploit unused capacities in the inner settlement gardens for promoting local and household self-sufficiency and supplemental income generation. The paper presents results of the survey and recommendations for future regional rural development utilization.*

Key words: *rural development, own-consumption, local products*

INTRODUCTION

In rural development the topic of self-sufficiency appears on two levels. The first one concerns regional self-sufficiency as it applies to the ability of a region, sub-region or village to be able to more or less independently produce their own products. Several programs have been launched in this direction within the European Union and also in Hungary. This issue also appears in the 2014-2020 EU CAP reform, where member countries address this problem in the context of a short supply chain thematic sub-program. The second level of self-sufficiency regards the individual, family or own supply, which essentially means the production in gardens around the house. Of course, this subject matter is not only important in the context of rural development but also as it pertains to social and economic prosperity.

Since 2007 EU SILC (Statistics on Income and Living Conditions) has paid special attention to the income derived from the price of goods and services produced for own consumption in its publications. In the Eurostat surveys, only food is considered as a product or service for self-sufficiency. Based on the data, 4.9% of households produce for their own consumption, which accounts for 0.25% of their total income [2].

Domestic trends are also confirmed by an international survey which indicates the decrease of production around the houses and in the so-called hobby gardens since the beginning of 1990's [1]. Today we estimate about 200,000 hectares of gardens in the inner settlements of Hungary, which is regarded as the "national gold reserves of the agriculture" [6]. In the past two decades the owners of inner settlement gardens have become unaccustomed to cultivating their gardens and keeping animals around the house. It is especially true for gardens in towns because, since the political and economic system has changed, big food trade chains and hypermarkets supply ample fruit, vegetable and meat. Most of the gardens are instead planted with perennial ornamental plants and annual flowers. During this process, knowledge of cultivating these gardens diminished as the experienced older generation cannot pass this know-how on to younger generations who migrate to towns. Only recently do young garden owners, who live in little towns, realize the opportunities of the garden and they need to have knowledge and information to cultivate it. This change in attitudes is well demonstrated by the program which stimulates local production and sale in inner settlement gardens.

The main purpose of these gardens is to self-supply owners and, if the land is big enough, commercial production is possible. It is essential to have a crop structure that adapts to the size of the garden, crop rotation, proper selection of varieties and plant associations [3]. Small garden owners should have an adequate knowledge in order to use Smart Gardener Landscape architecture program which helps them to form small parcels

even at the garden size of 40m² [5]. According to the already existing plans, a net of small garden horticulture advisors will be formed to provide small garden owners with help [7].

MATERIALS AND METHODS

The research was carried in cooperation with the Institute of Field and Vegetable Crops in Novi Sad in the frame of a Mutual Hungary-Serbia Cross Border IPA cooperation. Both of the institutions have been researching the possibilities of enlarging capacities of small plots with intensive gardening (SPIN farming). The main purpose of the cooperation is to work out a model for inner settlement garden production which helps to optimize self-sufficiency and can provide a supplementary income for families. One of the elements of this research was a rural development survey with the intention to evaluate the role of the inner settlement gardens in self-sufficiency and commercial production in the regions observed.

The survey has been completed on both sides with 200-200 questionnaires each. On the Hungarian side Tiszakécske, Fülöpháza and Borota were included in the sample. Sampling was random and therefore it is not representative in any way. A more detail discussion of the Serbian results can be found in Vlahović's analysis [4].



Figure1 The area of IPA cross-border cooperation [8]

The territory on both side of the border (Fig 1) is characterized by a high percentage of unemployment (Vojvodina about 24%, Dél-Alföld about 10%) and those living on welfare, of which a significant number lives in rural areas. Poverty in rural regions is twice of that in urban areas (Serbia: 9.8%: 4.3%). High unemployment in the region is paired with low educational level of the population. Elderly households possess an average of 500-1000 m² of excellent quality land which is either not cultivated or is used only for their own needs (about 75% of land). Additional negative trends are that small farms are disappearing as owners lease their land to large commercial producers, or that due to migration the rural areas are slowly becoming deserted. Although, there are large amounts of uncultivated, high quality lands available, utilization of these backyards is very low efficiency. One of the limiting factors of production is a still unregulated market and the presence of a large number of retailers, who often "dictate" an extremely low price so

producers regularly realize losses and thus are not economically motivated to extend any effort.

RESEARCH RESULTS

In the first group of questions we wanted to examine how widespread this type of production is today, how big these gardens are and what are the main crops produced. We got a high proportion of the answers for the first question on both sides. As a result, 83.5% of the surveyed households have their own garden in Hungary while this ratio in Serbia is 100%. The rate is higher on the Serbian side because multinational retail chains are not present there thus traditional retail and markets have a greater role in agricultural trade. In addition, it is important to point out that while the unemployment rate is high in these regions of Hungary, in Serbia it is even double of that. For this reason, and because of the other types of ownership in agriculture and differences in the social systems, agricultural production has a more significant role in self-employment.

The average size of the gardens around the houses is bigger in Serbia than in Hungary 730 m² and 854 m² respectively. The size and distribution of gardens are shown in Table 1.

Table 1

Size of garden (m ²)	Hungary (%)	Serbia (%)
< 300	30	30
301-600	17	25.5
601-900	9.5	13
900 <	26.5	31.5

A significant portion of fruit and vegetable demand of an average four-person family can be provided by a 200-400 m² garden, depending on the method of cultivation and skill [1]. This means that both countries have substantial potential in direct home production. If we take the general social situation into account (contributions graders share, unemployment) it can be said that rural development plans should definitely be focused on this area. These producers and their products could be linked to a short supply chain to distribute fruits and vegetables to local public kitchens and restaurants. These products could also be used as raw materials for special crafts which could also contribute to international agricultural trade. In this way globalization would work for the local communities' benefit and not against it.

As far as plant types concerned similar results were obtained on both sides. In most of the gardens either vegetables or fruits or only vegetables are grown. There were, however, great differences in the use of ornamental plants as they are not at all typical on the Serbian side. The difference, however, is most likely due to the size of the plots. In a separate survey, we have found that plots under 300 m² are usually covered by lawn and owners plant perennial ornamental plants, such as thuja. For larger plots it is more characteristic to have a front garden with flowers and a back garden with fruits and vegetables. The structure is shown in the following table:

Table 2

Production Structure		
Plant Types	Hungary (%)	Serbia (%)
Vegetables	149	140
Fruits	112	20
Mixed	103	80
Ornamental plants	82	10

In the next group of questions we wanted to see what portions of the crops produced in the gardens are used by the families themselves and how much of it is sold on the market. We also wanted to know what percentage of the family income is derived from these gardens and what channels are usually utilized for distribution. On the Serbian side 18.5% of the respondents sell their fruit and vegetable on the local market. In Hungary only 13% of the respondents sell the surplus in the market.

In the questionnaires, which were filled in Bacs-Kiskun County, we also asked the respondents to estimate the percentage of monthly income that comes from the sale of these products. The data showed that this rate is about 10% on an average (those respondents who produce only for sale were also included). The way of how products reach the market is varied. In 15 cases products were sold both on the market and at the house. In 6 cases products were sold only at the house while 3 respondents reported that retailers buy up the excess. Fruits and vegetables are often also exchanged or bought among neighbors.

We tried to find out how much of the fruit and vegetable that is grown in the garden is used for the family itself. According to the Serbian respondents it is 59.5%, while the Hungarians said it is 30.5%. The difference may be due to the size of the gardens (they are bigger in Serbia), and the production structure as well (more ornamental plants in Hungarian gardens). In order to gauge whether the amount of product that is produced in the gardens sufficiently covers family needs we also asked about shopping practices at the local market. Only 2% of the respondents replied that they do not buy in local markets at all, the rest of them makes use of primary producers and only compensates the family's vegetable and fruit needs from their own garden.

An important question of the questionnaire was related to the method of production. Only fertilizers and pesticides were taken into consideration in our analysis. We found that these chemicals are widespread in both countries. In Serbia 66% of the respondents use them while in Hungary this ratio is 32%. This shows that growers are aware of the fact that these chemicals are necessary if they want to have a good yield and effective pest management. The overall use of pesticides and fertilizers also means that these products cannot be considered organic. They are excluded from bio-products. Thus, their use must be controlled and, for the sake of food safety, a random sampling is needed.

We asked people if they know about laboratory soil testing. The answer is a good indicator whether the owners of the gardens properly apply fertilizers. The Serbian respondents have almost three times as many soil testing done as their Hungarian counterparts, 93% of them makes use of this service. In the Hungarian survey only 7% of respondents took their soil samples to a laboratory.

In the next group of questions we wanted to know whether respondents (especially young people) consider the propagation and dissemination of this type of garden culture important. In both countries, responses indicate that there is a need for this activity. 99% of respondents in Hungary and 96% in Serbia think so. On the Serbian side older respondents had a negative opinion. They recommended that local producers should only be introduced to modern production methods, specifically the organic or ecological farming [4]. When we examined the involvement of family members in gardening we found that on the

Serbian side 70% of the respondents take part in family gardening while on the Hungarian side only 58% . Related to the previous question we asked whether young family members are interested in horticulture management and animal husbandry. The Hungarian results are more encouraging. Although only 73 people responded 'yes' (37%), it is still much higher than that in Serbia (11%). While the questionnaires were being filled we had conversations with respondents. Older people were quite worried whether the young generation will take over the knowledge from them. Farming, gardening is not attractive to young people, they typically do not want to make a living in agriculture.

In the next set of questions we examined the practice of animal keeping around the house. Slightly more than half of the respondents, that is 110 people, are engaged in animal husbandry in Hungary (45%). In Serbia this ratio is greater, 61%. The reasons why they don't keep animals are: the lack of space, high feed prices and marketing difficulties of animals. Those farmers who have 800-1600 m² of land not only keep poultry but also pigs and cattle. The distribution of animal species is seen on Figure 2.

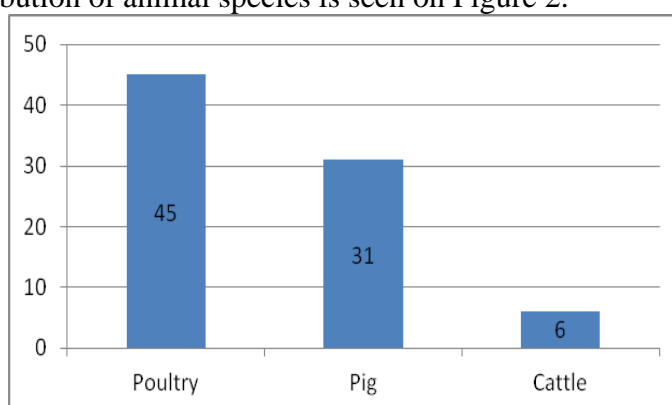


Figure 2 The share of animals in the gardens of Hungary

Poultry represents the highest rate among animals. They are popular, because they provide both meat and egg and they need a relatively small space and investment. In a larger size garden it is sufficient to separate a smaller area and to provide the fowls with indoor space for the night. Swine and cattle husbandry declined considerably in small gardens in recent decades. Cattle are mostly kept for milk and not for meat production (Figure 3). The sight of cattle herds, returning from the pasture in the evening, is a thing of the past. The reasons include high feed prices, higher investment costs and the lack of necessary skills. The proportion of cattle on the Serbian side is slightly higher (10%) and, probably due to the tradition, more people are engaged in goat and sheep farming than in Hungary. In recent years, there is an increasing need for organic goat dairy products, but the customer segment is relatively narrow.

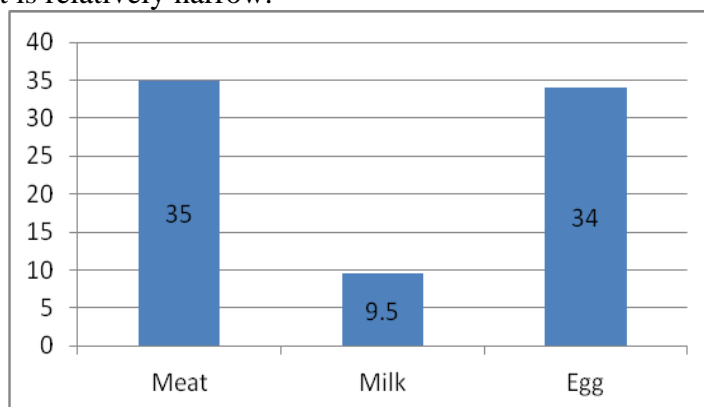


Figure 3 Purpose of animal husbandry

Beekeeping has a long tradition in Hungary. The country is among the EU's largest honey producers, and small family farms play an important role in this. We have also met beekeeper families in our Hungarian survey, although only one person in the two hundred respondents was dealing with this activity.

If self-sufficiency is the purpose of animal keeping, the main motivation is not profitability but the production of good quality meat, milk and egg. However, if the owner does not have sufficient land to produce feed, they will most likely quit animal husbandry due to high feed prices and will go to the supermarkets instead to buy meat and dairy products.

CONCLUSIONS

Inner settlement gardens are common on both sides of the border, however there are significant regional differences. Respondents strongly feel that it would be crucial to transmit this knowledge to younger generations. This is particularly true in practical organic farming. Study gardens of agricultural and horticultural education institutions in the region could be linked to the education system to be developed. This is especially important because people (especially the younger generation) are becoming more health conscientious.

Our results show that the average size of the gardens allows production of fruit and vegetable for self-sufficiency. This production can provide goods for catering, hospitality and tourism, and based on local recipes, craft products could also be made. In connection with these services and products short supply chains could be developed that could be included in local development programs. In this way they could substantially improve living conditions and economic situation. In addition, this would allow long-time unemployed people to again feel a useful part of the community and have a better chance to get back to the labor market.

Food safety and testing are important issues because the widespread use of fertilizers and pesticides. Regional laboratories could be set up to monitor these products continuously. Local production does not automatically mean high quality goods. Therefore, according to the 6th priority of rural development in the new 2014-2020 period, a complex program of inner settlement gardens should be worked out to assist the thematic sub-program of short supply chains and food safety in favor of rural development as well as job creation. Although, this is a small-scale rural development program it can have a strong multiplier effect in respect to a settlement or region.

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