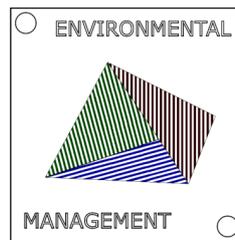


AGROECOLOGICAL ANALYSIS OF THE INTERNATIONAL STUDENTS COMMUNITY GARDEN AT SZENTISTVÁN UNIVERSITY IN GÖDÖLLŐ – HUNGARY

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ABSTRACT

The current document presents the agro ecological analysis of the International Student Community Garden, based on a set of principles developed for its specific context within four dimensions: socio-cultural, political, economic and environmental. This garden is a student-based project moving to a next phase of development with the vision of becoming a reference of agroecology in Hungary. The analysis of applicability of principles helped to categorize the main activities carried on in the garden and its correspondent agroecological principle, with the objective to identify the dimension in which the next phase should emphasize to achieve balance.

With the use of literature review, participatory research and the development of indicators were identified, with the highest incidence, the principles of participation, public policy, diversity and ecological management. However, updating the set of principles to the new objectives of the project as well as prioritizing economic diversification and local identity will be necessary to move forward in the new phase of the garden and achieve its objectives.

KEY WORDS: *agroecology; agroecological principles, student-based organization; Hungary*

1. Introduction

The International Students Community Garden at Szent István University (SZIU) has the objective of becoming a reference of Agroecology in Hungary. As it moves to a second phase of development, it is crucial to analyze if the practices and results carried on in the first phase of the garden project respond to the principles of agroecology and at to what extent. The result of this analysis will guide the actions to implement in the next phase of the project to increase the applicability of the agroecological principles.

1.1 Background of the International Students Community Garden

When the measures of a lockdown in Hungary due to COVID-19 pandemic were announced in April of 2020, the “International Students Community Garden” at SzentIstván University in Gödöllő, Hungary emerged as student-based initiative to alleviate the physical, emotional and economic impacts of the lockdown through the promotion of outdoors hands-on work, social development and the regular provision of healthy, fresh and affordable food for the members of the group.

The project was announced through social media with a positive response of 61 students registered initially. The garden was established in a 400sqm field at the Horticulture Institute of SZIU with the constant participation of about 25 students who prepared beds, planted seeds, transplanted

seedlings and water the garden in daily turns. The garden work was complemented with activities such as field visits to local gardens, participation in workshops to learn how to make compost and a natural fertilizers, harvesting events were the students could cook on the site and share traditions of different countries, planning and evaluation meetings among others.

The work of the students was recognized and supported by the University and the community of Gödöllő as the garden initiative was featured in a local newspaper and the webpage of SZIU. These appearances got the attention of the university's authorities, national government representatives and national celebrities who visited the garden and shared time with the students.

After just 2 months of work, the students began harvesting some of the 68 different varieties of the 42 species of vegetables, fruits, medicinal and culinary herbs, and flowers that were grown in biological way without the use of any artificial input[1]At the end of October, the garden provided about 850kg of food harvested, with an approximate commercial value of 1 million Hungarian forints (3000 EUR). The food collected was distributed to the members of the garden free of charge. In addition, the excess products were available for sale every Thursday in a Community Market outside the university dormitory. Students and the university community in general, who did not participate in the garden work, had access to fresh affordable vegetables on a donation-based price. At the end of the growing season a Solidarity Market established inside the dormitory to provide food for students in need.



Fig.1. Students planting corn in the garden.

The diverse group of participants (nationalities, ages, faculties) in the project were able to learn innovative agroecological principles and put them in practice, develop leadership skills, alleviate the stress caused by the uncertainty of the circumstances, increase their awareness about food and environmental issues, diversify their diet and save money, among other important lessons.

The success of the project was shown by the institutional recognition and the motivated group of participants who aspire to turn this initiative into a long-term project. The “International Students Community Garden” will move to a new phase of development. In this new phase, it aims at becoming a reference point for agroecology in Hungary and provide topics and the space for research to Hungarian and international students alike.

Agroecology as a framework

Agroecology is a transdisciplinary, participatory, and action-oriented approach[2] It is considered with different focus and contexts in different parts of the world as science, a practice and a social and political movement (pillars)[3][4]. It is applicable at different scales evolving since its origins from the field, farm and agroecosystem to involve the whole food system[5][6].

It is a system that emerged as an alternative to conventional agriculture. Agroecology focus on designing complex systems following the tendency of nature toward complexity[3] and it is closely linked to the concept of food sovereignty for their strong efforts to promote a healthy relationship between nature and people. In addition, resilience and sustainability are at the core of the goal of agroecology.[7]

Even though agroecology is not a new concept, in the last years it has gain recognition from grassroots social movements to the FAO, governments, universities and corporations[8]. In Europe, agroecology is better known mostly in the western countries such as France and Portugal, consequently, in Central European countries such as Hungary, agroecology has received little attention so far[9]. Nevertheless, the interest is raising in the last few years as shown in recent ongoing projects and publications in the topic[10].

1.3 Importance of the agroecological principles

Principles are basic ideas or rules that explain or control how situations or activities happen or work[11]. Agroecology consist on a set of principles that guide its understanding and therefore, its application at any level (farm, agroecosystem and food system) and in any context.

In order to be applied, principles need to be materialized in the form of technology or practice[3]. For instance, the agroecological principle of economic diversification at farm level takes the form of crop production, food processing or rural tourism in the practice. These activities promote processes that are fundamental for the development of the whole system, providing a livelihood to the farmer and her/his family, development of the community and preservation of the local culture and traditions.

On the one hand, the use of principles allows for flexibility, especially since they can be studied with or without context. However, agroecological principles which can be identify in the literature, can take on various, sometimes completely different, forms within the same territory or between different territories[12]. On the other hand, in order to know if the principles are being applied correctly, the construction of a set of more precise and restrictive indicators is necessary. Since the beginning of the study of agroecology, different set of principles have been developed as the scale at what agroecology was applied kept evolving, from the plot/farm to include the whole food system. For the first phase of the International Students Community Garden project, a preliminary set of principles was developed from three main publications by Alexander Wezel, CIDSE and FAO.

In his article, Wezel[5] presents 13 principles which are a consolidation mostly from an extensive literature review from the beginning of the nineteenth century up to the present time. Followed by an articulation to what constitute a principle and finally a combination to obtain the lowest possible number of principles from the literature.

CIDSE[8] presents 24 principles in 4 dimensions as a report and an online resource which will be updated every 1.5 years. They synthesize the work from various actors within the agroecological movement and builds on pre-existing principles from 1995 to 2016.

The FAO[13]10 Elements of Agroecology were developed from different seminars, workshops, multi-actor meetings, and the revision of the literature of experts in the field such as Altieri and Gliessman with a final revision by international and FAO experts.

For the purpose of this research, the set of principles to be used are the same ones used in the first phase of the garden work and are described as follow:

- Socio-cultural dimension: food sovereignty, knowledge sharing, diversity of peoples, relationships based on trust and local identity.
- Economic dimension: economic diversification, local/territorial networks, monetary and non-monetary value and economy of solidarity.
- Political dimension: ownership and control, participation and public policy.
- Environmental dimension: living soil, close system, diversity and ecological management.

These principles comprise both normative aspects (values, e.g. solidarity, justice) and causative aspects (e.g. to more participation more awareness) and are applicable at any scale and dimension[5] It should be mention that the principles listed above will be revised and upgraded as the work continues in the garden project, to represent as much as possible what agroecology really is in the practice.

1.3.1 Methodology

The methodology used to develop this research is based on participants observation. As a developer of the project and as a researcher, I was part of the everyday activities, therefore, I was able to record all the practices carried on in the garden as well as the comments expressed and outcomes attained by the participants in this initiative. These records along with the feedback gathered in the evaluation meeting provided the elements to evaluate the practices applied in the garden project in correspondence to the agroecological principles.

Some questions from two different surveys conducted within the frame of the project were used as reference; however, these surveys were not created exclusively for this research.

This evaluation shows an analysis of a set of principles implemented together in a specific context, rather than examine them separated, to look at the consistency of a system and find balance.

To obtain the percentage of applicability of the principle, it was developed a system to assign values to each indicator. These values are an equivalent of the sum of the total value of the principle within a dimension assessed as 100% as seen in Table 1 below. Each indicator was evaluated as YES if it was identified in the outcomes and NO if it was not reported. For a response YES, the indicator got the value assigned and for a NO, the indicator records 0. At the end, the sum of the assigned values gives the total value of each principle for this specific project.

Dimension	Principle	Indicator (for all participants)	Value
100 Socio-cultural	Food sovereignty (20)	Healthy/diverse diets	4
		Culturally appropriate diets	4
		Affordable food products	4
		Members own decision of what to grow	4
		Available food all year round	4
	Knowledge sharing (20)	New knowledge available	4
		Innovative approach	4
		Farmers - researcher are equally important	4
		Farmer to Farmer knowledge exchange	4
		Farmer - Consumer knowledge exchange	4
	Diversity of peoples (20)	Diverse participants	4
		Local (Hungarian) - international interaction	4
		Members and non-members interaction	4
		Men - Women equal opportunity of participation	4
		Not discrimination for participation (race, religion, etc.)	4
	Relationships based on trust (20)	Not expensive quality certification	5
		Farmer - Consumer trust	5
		Alternative quality certifications	5
		Trust among members	5
	Local identity (20)	Local culture demonstrations	5
Local traditions practice		5	
Local and ancestral knowledge shared		5	
Awareness of local food and farming issues		5	
100 Economic (100)	Economic diversification (20)	Provide employment to youth and women	3.33
		Provide livelihoods to people in the system	3.33
		Diverse on-farm income	3.33
		Financial independence at farm level	3.33
		Reduction of expenses (food) of participants	3.33
		No dependent on external aid	3.33
	Local/territorial networks (20)	Local provision of materials	5
		Local provision of inputs	5
		Short distribution and networks	5
		Local workers	5
	Monetary and non-monetary value (20)	Fair prices for farmers	6.6
		Fair prices for consumers	6.66
		Respond to real needs of local market	6.66
	Economy of solidarity (20)	Solidarity actions	6.66
		Wellbeing and dignity	6.66
Prioritize people and environment		6.66	
100 Political (100)	Ownership and control (33.33)	Ownership of resources	11.11
		Ownership of decisions about their needs	11.11
		Change power relationships (we take control)	11.11
	Participation (33.33)	Different governance structures	8.33
		Self-organization	8.33
		Collective management	8.33
		Different levels network	8.33

		Supportive public policy (regulations)	11.11
		Supportive institution (university)	11.11
	Public policy (33.33)	Supportive policymakers (authorities)	11.11
Environmental (100)	Living soil (25)	High organic matter content	8.33
		Presence of beneficial microorganisms	8.33
		Optimal structure of the soil	8.33
	Close system (25)	Composting	8.33
		Low external inputs	8.33
		Use of own seeds/seed saving	8.33
	Diversity (25)	Hugh number of plant species	5
		Presence of diverse pollinators	5
		Edible and functional plants	5
		Locally adapted varieties	5
		Different species of the same family	5
	Ecological management (25)	Ecological pest control	6.25
		Ecological weed control	6.25
		No use of synthetic inputs	6.25
		Low disturbance in the soil	6.25

Table 1. Value matrix by indicators.

1.4 Presentation and analysis of results

1.4.1 Results by dimensions

After calculating the percentage of applicability of the agroecological principles by dimension, Chart 1 shows that the activities in the garden in higher percentage correspond to the political (89%) and environmental (75%) dimensions, followed closely by the socio-cultural dimension (72%). It responds to the fact that it was a bottom up, self-organized, student-based activity that addressed a specific need affecting the community as a whole. The project was also taken as an opportunity to strengthen the student community bond through the share of experiences and peer-to-peer knowledge exchange. The high correspondence with the environmental principles shows the great efforts the participants made to leave a positive impact on the environment rather than the negative effects associated to conventional agriculture.

At the bottom of the list is placed the economic dimension with a 56.7% incidence. Since the beginning of the project, the main objective was to provide food to the students, and it was not designed as an economic activity (profits). It started with financial support from the international office of the university, the participants used the materials and water provided by the Horticulture Institute and donations of seeds from a local NGO. The financial dependence of this garden is clearly shown in the results. However, some positive outcomes (of monetary and non-monetary value) can be seen as the students who participated in the share of products showed a reduction in their grocery expenses during the project period and students participants and non-participants also benefited from the solidarity market initiative.

As the garden project moves forward to a next phase with the aim of becoming an example of agroecology, it should also be economically viable to achieve a balance in all dimensions facilitating the interest and replicability by other actors.

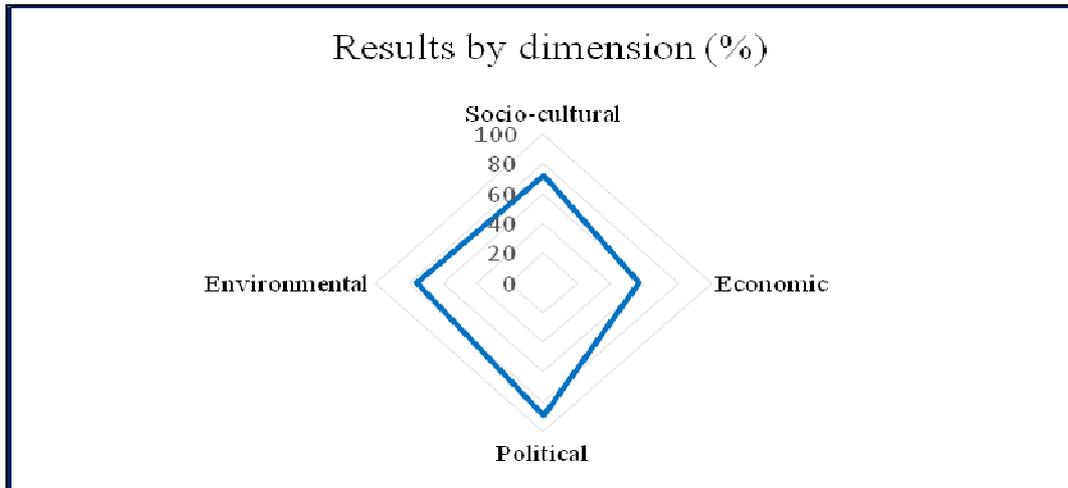


Chart 1. Results of the applicability of principles by dimension

1.4.2 Results by principles

In the analysis of the principles together, Chart 2 belows hows the importance of the principles of participation, public policy, diversity and sustainable management performing higher values than the others. This indicates that in the specific case of the International Students Community Garden the work towards the political and environmental dimension was stronger. Nevertheless, economic diversification and local identity are the principles that scored lower which indicates the need to emphasize their development in the future.

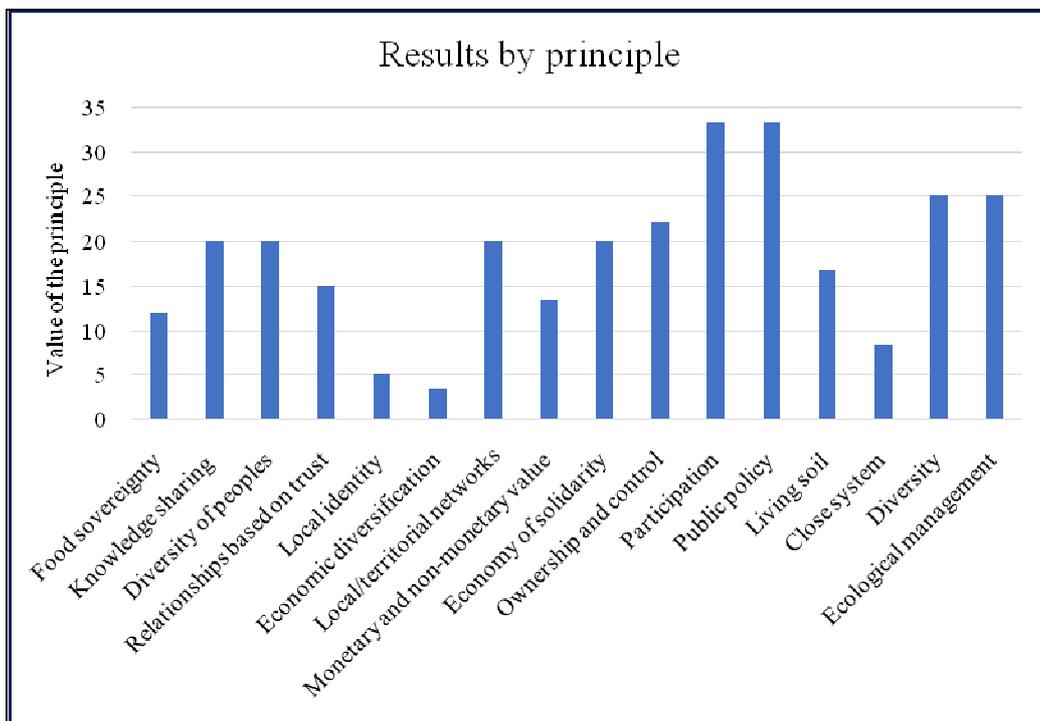


Chart 2. Analysis of the applicability by set of principles

In general, the International Students Community Garden shows an important performance regarding the application of principles of agroecology with more than 50% of applicability for all the dimensions. As a project started by self-organized students, with a strong vision of sustainability, the more applied principles during the project period were the ones related to the political and environmental dimension. Strategies must be developed in the next phase of the project to strengthen the socio-cultural and economic dimension focusing on economic diversification and promoting the local identity. In addition, a plan should be put in place to update the set of principles according to the specificities and new objectives of the garden in its new phase.

Regarding the goal of being a reference of agroecology in Hungary, this garden presents a good foundation of the application of principles, however, the first phase set a high bar that should be surpassed by the new garden project finding a balance among principles, making this experience attractive to be replicated by other actors interested not only in the social or environmental impact of the agroecological approach but also as a way to create livelihoods for the local community.

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