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Participation in Higher Education Curricula Development in Armenia and Possible Effects for the Labour Market—The Case of an "Organic Agriculture" Master's Program

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Abstract: Weak or unstructured stakeholder participation in higher education curricula development still remains a problem in Armenia. Change in outdated curricula development processes is needed, as they often do not meet students' needs; do not adopt innovative teaching methods or tools; and do not fit the labour market's demand. This paper traces the evolution of the participatory curriculum development process of the Organic Agriculture Master's program at the Armenian National Agrarian University (ANAU). Prioritizing mainly qualitative methods of research, five relevant stakeholder groups with approximately 10–12 members each at varying levels were involved in this action research. Additionally, paper-based and online surveys were conducted with 290 ANAU students. The results focus on the conceptual mapping of the process of participatory action research, bridging its relevance to the Armenian labour market's needs. Moreover, the results highlight lessons learned from the process—shaping them around significant theories for participatory action research—and underline the possibilities of the Organic Agriculture Master's development process as a model program at ANAU and perhaps elsewhere.

Keywords: Armenia; participatory curriculum development; higher education; labour market; organic agriculture; participation; stakeholders

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1. Introduction

In the early 1990s, after the collapse of the Soviet Union, many former member countries were confronted with a newfound independence and accompanying responsibilities. In Armenia, among many other new challenges, the higher education system was in dire need of reassessment (Heyneman 2010; Karakhanyan et al. 2012). Since then, higher education in Armenia has undergone major changes; however, challenges of outdated curricula and corresponding teaching methods continue to persist. Such issues raise questions regarding the current higher education system and its relevance to the needs of students and the labour market. Particularly interesting is the lack of strategies, policies, and approaches to widening participation in developing higher education (Burke 2013).

The lack of cohesion of stakeholders in the majority of curricula development in Armenia has been recognized as a contributor to a disbalance of the labour market (Shahverdyan 2009). The skills of university graduates and their completed study programs often do not meet the requirements of the labour market or address real-world problems (Bardak et al. 2011). These challenges are shared by many higher education institutions; yet Armenia, and perhaps other post-Soviet countries, after having to rebuild many systems since the 1990s, exhibit acute labour market challenges. This is visible through the current centralized system of Armenian higher education, which is not flexible to changes

in the market, let alone competitive changes in higher education occurring more rapidly in universities in the US and Europe (Hovakimyan et al. 2021).

We hypothesise here that stakeholder participation in curriculum development is a way to strengthen the ties between higher education and the local labour market through a more specific and relevant match of competencies and skills needed in the labour market (Shahverdyan 2009; Karakhanyan 2011). Thus, this article is concerned with the possible contribution that participatory curriculum development could have towards assuaging this gap. Here, we argue whether and how participation of relevant stakeholders in curriculum development could better facilitate a skilled workforce to enter the labour market, using the case of Organic Agriculture Master's program in Armenia.

The following three objectives were defined to help address the above problem statement:

1. To describe the process of participatory curriculum development using the case of the Organic Agriculture Master's program in Armenia;
2. To understand the role of the stakeholders in participatory curriculum development—to fulfil the gap of organic professionals in the labour market; and
3. To illustrate what participation in higher education has to offer to the current Armenian labour market through the Armenian Organic Agriculture Master's program.

In this article, we will first describe the Armenian labour market's challenges, and embed participatory curriculum development in the literature that exists, shaping the research around participatory action research theories. We then give a description of what materials and methods were used, followed by the results. Further, we discuss the results and lessons learned from the case used in this research, and finally end with conclusions that describe the contribution this article offers to its field.

1.1. Background

1.1.1. Challenges of the Armenian Labour Market

The Armenian labour market has been riddled with challenges such as high unemployment and low economic activity since 1991, and has set a turbulent base for its development (Bardak et al. 2011). With a population of slightly less than 3 million, the total number of those employed in Armenia is a little over 1 million. From the total number of the employed population, the agricultural sector holds a higher share of jobs than any other sector in Armenia (Statistical Yearbook of Armenia, 2020, www.armstat.am, accessed on 22 August 2021), although this may not reflect the real situation, as the data collection was spotty. Another duality in the labour market is the high number of unemployed people with a higher education. Having a typical post-Soviet labour market with hidden unemployment (Hartwell 2010), the percentage of people entering the workforce with a higher education in Armenia is nearly universal, with around 99% of youth completing at least secondary education, and around 35% completing the tertiary level (Serrière 2014). Ultimately, around 16% of people with a higher education are currently unemployed (Statistical Yearbook of Armenia, 2020, www.armstat.am, accessed on 22 August 2021). However, a major challenge for the labour market in Armenia still remains the fact that young graduates often move abroad for seasonal jobs, leaving an imbalanced education vs. workforce.

1.1.2. Participatory Curriculum Development (PCD); towards Student-Centred Higher Education and "Real-World" Relevance

In the early 1980s, people-centred initiatives became fashionable (Cornwall and Brock 2005). Participation in all fields became well advocated as a driver of change, but the gap between rhetoric and the real world still remains (Chambers 1994, 2002). This gap is significant in educational programs as well, meaning that curriculum experts are not enough to develop a modern curriculum unless it involves high range of "stakeholders", who have relevant experience in the field (OECD 2018). In the past decade, PCD has become more popular, as it was stressed that the universities should "not be isolated from the community" (Dahal 2017). Scholars increasingly emphasize the need for dialogue

among stakeholders that bridges science and practice perspectives (Goldwasser 1992; Rosenblatt et al. 2006). Stakeholder integration, specifically in curriculum development processes—where curriculum is seen as one of the main mechanisms by which education affects labour market (Ionescu and Cuza 2012)—has exhibited benefits to the respective programs both in student interest and participation, rigor of the studies, and real-world application, such as impact on the labour market (Shahverdyan 2009). The stakeholders, particularly for curriculum and program development in higher education, are essential in developing place-based programs that can accurately reflect the needs, benefits, and risks of different aspects during and after development and implementation (Patrucco et al. 2017).

1.2. The Case: Organic Agriculture Master's Program at the Armenian National Agrarian University

This article uses empirical evidence to discuss the processes, achievements, and lessons learned regarding participatory curriculum development (PCD) in the contexts of the Armenian higher education discourse and labour market.

Here, we address what PCD—and particularly its emphasis on constant stakeholder integration—could offer in the modernization of the current Armenian higher education system, as well as what could make it more relevant to the Armenian labour market. To do so, we used a case study of PCD at the Armenian National Agrarian University (ANAU) named the Organic Agriculture Master's program (the development and implementation of this master's program was part of a larger project; please see Annex 1). This master's program was founded based on the need for highly skilled professionals in the Armenian organic agriculture sector, which was seen to have a high potential for development as a relatively new field in Armenia. The existing lack of professionals trained in the Armenian organic movement agenda, as well as its linkages to science, education, and training of young professionals ready to enter the workforce, made an Organic Agriculture Master's program the ideal candidate for PCD. Specifically, the resulting demand for trained and skilled Armenian organic practitioners in the labour market was interesting for this article.

2. Theoretical Framework

Participatory action research (PAR) is associated with the application of a wide variety of methods; however, most of them share a fundamental principle: an opposition to the classical expert model with its top-down approach (Caspari 2006). One primary aim of participatory action research is to *initiate and perform* a certain change (Berardi 2002). Participatory research methods are employing people in the research process whose "life" will be affected (Bergold and Thomas 2012). Therefore, participatory research is a study of a certain problem with wide engagement of those affected by it (Breitbart 2010), creating the respective "action".

Bergold and Thomas (2012) shared four principles key to PAR. The first principle, "democracy as a precondition for participatory research", highlights the importance of a democratic social and political context in successful participatory research. In other words, the possibility of conducting participatory research is a test of society's democratic self-concept. The second principle is to provide a "safe space" for participants, which allows them to share their personal values and experiences (Dentith et al. 2012). It is of high importance for the researcher to provide a space that will create openness and avoid conflicts because of diverse opinions (Cook 2012). The third principle is to deal with the question "Who participates? How is the 'community' defined?" Generally, PAR is defined as research that includes any groups of people that are impacted by that particular research. The target is usually capacity building, knowledge co-creations, and empowerment of those groups (Bergold and Thomas 2012). Within this principle, a common challenge is found in sampling. Stakeholder selection must be done with care, as inappropriate stakeholders may lead to uncertain results (Caspari 2006). The fourth principle is to recognize "different degrees of participation". In order to find out if the research is truly participatory, a question needs to be asked: "Who are the decision makers?" Scholars also argue that it is more appropriate to describe the decision-making process in each significant step of

the study, instead of classifying types of participation (Bergold and Thomas 2012; Goeke and Kubanski 2012). To be able to assign the activities we performed during participatory curriculum development (PCD) to certain types of PAR, and thus, to better understand the process of participation, we used the typology of non-manipulative PAR by Berardi (2002) as presented below:

→ Participation by consultation, when participants are usually experts and they are being interviewed, and the project team has no obligation to follow ideas of interviewees;
→ Functional participation, when usually external participants are part of the project and objectives are identified in advance;
→ Interactive participation, when participants are also decision makers and action-plan developers, and they are actually participating in data analysis as well; and
→ Self-mobilization, when participants initiate a project themselves independently.

Berardi (2002) added to shaping the principals and the typology of PAR: (1) there must be partnership and trust between researcher and participants; (2) there should be a mutual goal for researcher and participant groups, or at least the interests should complement each other; (3) a negotiated agreement among all groups is a key; (4) participation of the community contributes to the research to help understand the problems better; (5) participants find the change important.

Participatory methods are not meant to replace traditional research methods; rather, they should complete or complement them (Berardi 2002). This results in several challenges in integrating PAR into a conventional research process. It also underlines the fact that each PAR is unique, and may cause unpredictable challenges for researchers and their teams and sharply change the direction of the study. We will navigate through general challenges experienced in the process of PCD of Organic Agriculture Master's program in the last sections of this article.

In the traditional research format, the researcher's role seems to be identified—neutral. In PAR, this neutrality is usually exchanged for reflective subjectivity. However, the role of the researcher in PAR is not fixed, it instead changes, impacted by time or new tasks. Researchers usually enter the PAR as "outsiders", and in the best case, they become "mentors" (Bergold and Thomas 2012).

3. Materials and Methods

This research was mainly carried out through participatory observation, stakeholder involvement through repeated focus groups, qualitative interviews, workshops, and being part of a stakeholder committee driving decisions for curriculum development. In accordance with Caspari (2006), qualitative methods predominated, such as interviewing, designing, and using questionnaires in the research; and involving different focus groups. Interviewing included the process of planning for interviews, making contacts, targeting an audience to take part, and issues around face-to-face interviewing. Running different focus groups presented an opportunity to recognize the benefits and limitations in the research. According to the principles of participatory action research (PAR) stipulated by Bergold and Thomas (2012), different groups of people play an active and influential part in decisions that affect their work and lives; in our case, these were, among others, students, professors, and farmers. In total, 21 qualitative interviews, 5 focus group discussions, and 2 surveys (a paper-based and an online survey) were conducted; 3 public presentations were held; and, throughout the whole PCD process, a total of 9 newsletters were sent out to the stakeholders. Participatory observation notes were taken and synthesis of mentioned methods was conducted as well. Therefore, we initiated and performed "the change" in the curriculum development process that Berardi (2002) described for PAR in general; i.e., involving in the process "people whose life are affected", as Breitbart (2010) and Bergold and Thomas (2012) highlighted.

In Figure 1, the methods of the empirical data collection, participants, and the outcomes are presented accordingly:

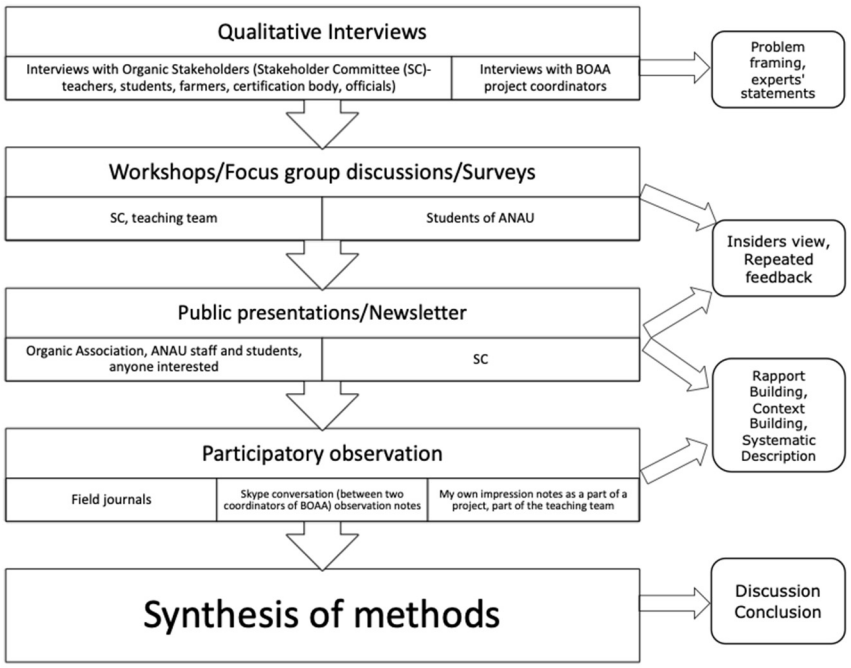

Figure 1. Methods, participants, and outcomes of participatory action research in curriculum development of the Organic Agriculture Master's program.

Qualitative interviews—with open questionnaires, conducted between 2018 and 2021—generated a descriptive representation of the current system of Armenian higher education; the field of organic agriculture; the needs of the related labour market; and the values of the lecturers, students, organic practitioners, and members of the project team. Thus, the results of these interviews served to frame the research problem.

Workshops and focus groups were organized to capture the perception of the stakeholders towards the Organic Agriculture Master's program (course topics, teaching methods, learning outcomes) and its connection to the "real world". Paper-based and online surveys (with multiple answer options and open answer options) were designed to determine the current challenges in higher education from the students' perspectives, and to highlight their preferences for particular teaching methods, practical classes, and cooperation with practitioners. This enabled us to gain learners' views and to navigate a repeated feedback.

Public presentations and newsletters built rapport with all participants, and served as a way to keep stakeholders involved and raised awareness on the topic of organic agriculture. Participatory observation provided an opportunity to observe the participatory process of curriculum development in its entirety and assured the connectedness of the various steps and phases of the whole process; e.g., it was important for the researcher, who was not necessarily part of all the activities.

4. Results

4.1. Conceptual Mapping of the Participatory Curriculum Development

"There is need for a revolution in curriculum development."

Lecturer interview N2

In this subsection, we will describe the process of participatory curriculum development (PCD) within the case of the newly established Organic Agriculture Master's program by identifying the types of participation by Berardi (2002) described above, and highlight the need of a strong connection among practitioners and science that would better fill the gap of organic professionals in the labour market by showing the formation of the Stakeholder Committee.

Figure 2 visualizes some of the important steps in the entire PCD process. It does so relatively chronologically, although in some cases the activities had significant overlaps and were part of interactive processes. Figure 2 also identifies types of participation according to Berardi (2002).

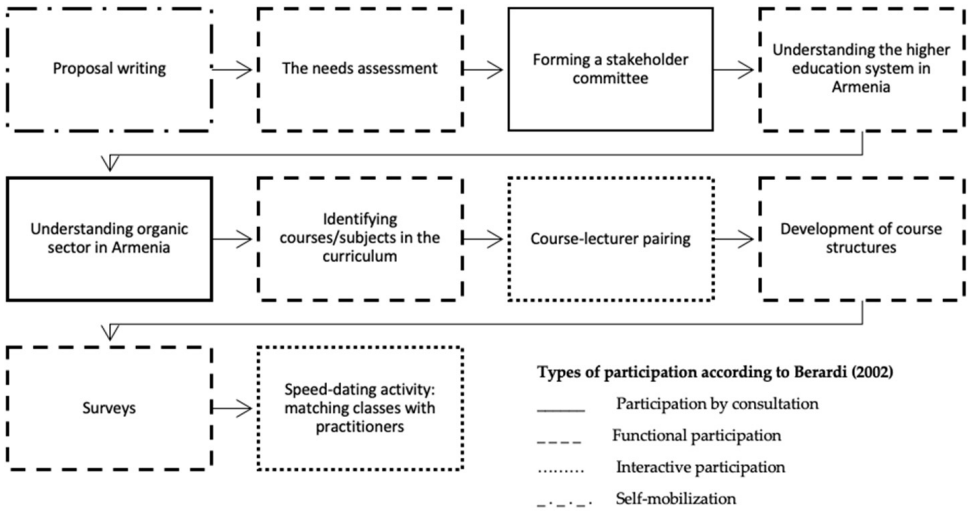

Figure 2. Conceptual mapping of participatory curriculum development of the Organic Agriculture Master's program and types of participation.

Proposal writing: The proposal of participatory development curriculum project (please see Annex 1) was written by the Armenian and Austrian project team members. An initial participation in the sense of participatory action research was absent.

The needs assessment: The initial needs assessment was done in 2016 as part of a previous EU project: "Organic Agriculture Support Initiative" (OASI https://www.entwicklung.at/en/ada/news/detail-en/organic-agriculture-support-initiative-oasi-project-launch-2, accessed on 22 August 2021). The results of this needs assessment were based on the analysis of semi-structured interviews and roundtable discussions. The lack of organic agriculture professionals in Armenia was underlined with the absence of an educational program in the country that could offer a degree in Organic Agriculture (OASI, Internal report, 2016). The need for a higher educational program was proven by focus group discussions with farmers and university representatives later in 2017 by our team.

Forming a stakeholder committee: From all the groups of participants, one or two representatives were selected as members of stakeholder committee. The reason for forming a stakeholder committee was to narrow down the participation and to have regular discussions; to filter out the ideas that were underlined during different focus groups, and to identify the possibilities for the implementation of those ideas. Stakeholder committee members were contacted more intensively throughout the project, and their contributions to the entire curriculum development process were significant.

The need for a strong connection among practitioners and science that would help to better fill the gap in the labour market was continuously stressed by the majority of the participants, and is also well elaborated in the literature both at the national and international levels (Shahverdyan 2009; Bardak et al. 2011; Ionescu and Cuza 2012; Serrière 2014; Patrucco et al. 2017). The stakeholder committee demonstrated that connection between practitioners and the university through regular meetings. The members of the stakeholder committee were the following:

1. University representatives:
   - Two students from previous focus groups were elected amongst themselves to represent their voice in the stakeholder committee;
   - Three lecturers (a so-called core team of lecturers) representing teaching staff of the master's program, who also were knowledgeable about administrative requirements of the University regarding curriculum.
2. Organic production representatives:
   - Three organic processors and two producers who wanted to shift to organic.
3. Certification body representative:
   - Ecoglobe LLC—the only national organic certification organization—was represented by either the head of the organization or by the head of one of its departments.
4. Representative from the Ministry of Education:
   - One member to fulfil the requirements of the curriculum license.
5. Project team:
   - Project coordination from ANAU;
   - The PhD researcher.

Figure 3 presents the map of the stakeholders involved in the curriculum development, where stakeholder committee can be seen in the middle.

General stakeholders' groups are presented in Figure 3 as follows: project leaders from both universities; BOKU project coordinator; lecturers from BOKU, which continuously trained ANAU lecturers involved in the project, and exchanged the experiences; 12 lecturers of the Organic Agriculture Master's program; ANAU students involved in the focus groups; the ANAU student community; the ANAU administrative staff; the Ministry of Education of Armenia; and the Armenian organic community.

Understanding the higher education system in Armenia: A literature review was conducted to better understand the current higher education system in post-Soviet countries, particularly in Armenia (Hovakimyan et al. 2021). In addition, two focus groups with students were conducted to further underline the problems existing in the classrooms—poor teaching methods, lack of practical classes, and absence of modern equipment in the classrooms. The results also highlighted a high level of bureaucracy in Armenian higher education and the existing "old style" curricula (Hovakimyan et al. 2021). During curriculum development, the team was confronted with those challenges. Having a quite inflexible structure, Armenian higher educational institutions worked with old curricula, and only few efforts were made towards modernizing the educational system, both in content and teaching methods.

Understanding the organic sector in Armenia: Qualitative interviews and focus groups with organic farmers, the certification body representative, and organic pioneers in Armenia enabled a full picture of the country's organic sector.

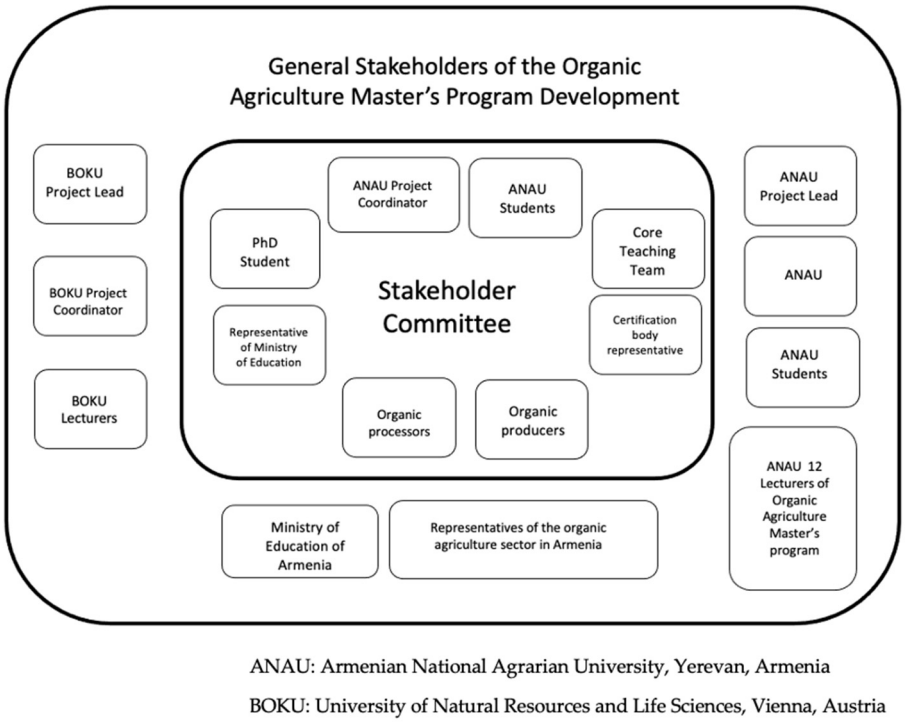

Figure 3. Stakeholder map of the Organic Agriculture Master's program and the Stakeholder Committee.

Participants stated that the agricultural sector in Armenia continues to be one of the most important sectors contributing to the country's GDP. However, the absence of infrastructure strongly limits high profitability of the small holder farmers. This leads to a focus on high-value agricultural production in the niche markets, and thus, the introduction of organic farming was highly prioritized by the government over the last decade (ICARE 2016). Most of the practitioners in the interviews mentioned that the services of certification for organic agriculture are costly, and that it is a challenge for a farmer to go through all the paperwork and organization. Practitioners also stressed that the Armenian organic market is mainly producing for export, as in the country there is a huge problem/gap of organic awareness, and therefore the true value of organic produce is in doubt. Main organic production consists of dry fruits (figs, apricots, persimmons, etc.), wild harvest of tea production (thyme, mint, etc.), and honey production. Organic livestock is still absent in the market.

Despite the existence of the law on "Organic Agriculture" in Armenia since 2008, and the Armenian language literature on organic agriculture, practitioners were concerned about the organic awareness of the Armenian consumer.

List of the courses for curriculum defined/identified: Several focus groups were organized for identifying the need of the skills that future Organic Agriculture Master's graduates should have. Many subjects were mentioned for inclusion in the curriculum during focus groups that were later on discussed in a team to meet administrative requirements by the university for a new curriculum, as well as the Ministry of Education, and finally, the draft list of courses was formulated (please see the final list of the courses in Annex 2 and the ANAU student focus group discussion questionnaire in Annex 3). According to the results of the focus groups, the suggested subjects by the stakeholders became either one subject in the curriculum, or a module in one of the subjects. Though the coordination team did their best to consider all opinions, the results showed that some of the subjects mentioned during the discussions were dropped from the final list.

Course–lecturer pairing: Twelve lecturers from ANAU were involved in this process, beginning with the course naming and through the entire course structure development, finalisation, and submission to the officials. As a result of this activity, each lecturer was

assigned a subject (in some cases two subjects) from the Organic Agriculture Master's program, and was responsible for that subject throughout the whole PCD process and further through teaching.

Development of the course structures: As a follow-up of the previous activity, each lecturer took over the course structure development that was assigned to them. Course structures included all the modules, teaching methods, learning outcomes, timelines, and so on. After each section accomplishment, the entire team of lecturers reviewed each other's courses and helped to strengthen the courses' learning outcomes. Several discussions were held to identify courses' overlapping topics, and those were avoided. Here, international professors stepped in with their expertise and offered joint trainings for the entire group and individual discussions with respective course lecturers. It took the team three years to develop the structures of 12 courses of the Organic Agriculture Master's program.

Surveys: Several members of the teaching team were involved in designing the surveys, designing the questionnaire, conducting the surveys, and analysing the data. In order to reach out more participants and to gain more opinions, we conducted two surveys. Together with a member of the teaching team, a paper-based survey among ANAU students (mainly bachelor students) was conducted in October 2019 to determine their awareness of the master's program, their interest and readiness to continue their education in master's, as well as their desired learning methods. Overall, 124 results from all the regions of Armenia and Republic of Artsakh were collected. According to the results of the survey, the Organic Agriculture Master's program was a demanded curriculum in the labour market (68.5%), and students valued the strong connection between industry and the university within this program (52%). For the selection of an educational program to study, the most attractive factors were the following: highly qualified lecturers (scoring 5 out of 5), new teaching methods (scoring 4.4 out of 5) and international cooperation (scoring 4.3 out of 5). The teaching team was proud to state that all three factors were strongly relevant to the master's program. The students' most reliable source of information for the educational programs were the university staff (43%) and official webpages (41%). All participants in the survey (100%) said they would like to continue their education in the master's program, and more than half of the participants said they would like to be notified about the program's newsletter (52%).

The second survey was organized online in the summer of 2020, right before the official kick-off of the master's program. It contained more specific questions on teaching methods, connection with practitioners, etc. We received 170 results from ANAU students with various higher education backgrounds in Armenia (as it is possible to apply for the Organic Agriculture Master's program from any bachelor background, not necessarily from an agricultural sciences background). The significant outcomes from the teaching/learning method preferences for the survey are represented in Table 1 below.

Table 1. ANAU students' teaching/learning method preferences (based on the online survey).

	Teaching/Learning Methods	Participants' Choice (with Possibility to Choose More than One Answer)
1	Practical classes	75%
2	Real case studies	70%
3	Group discussions	60%
4	Presentations	55%
5	Learning by doing	50%
6	Lecturing	37.5%
7	Online learning	5%
8	Other	2%

For the second survey, 85% of students agreed that they should have an active role in curriculum design, and 96% of participants mentioned that they were never asked for their ideas for a curriculum design before. These results once again proved that we were on the right path to achieve the goal of a participative curriculum design.

Speed-dating activity: In order to match a course and a practitioner/farmer/organization for practical classes, a speed-dating activity was organized: on one side lecturers, and on the other side practitioners. We periodically had them rotate with one person left; all lecturers had a short conversation with the practitioners, and they could define for themselves which course had to "hire" (to work with) which practitioner. For some courses, several practitioners were chosen. As a follow-up of the meeting, the teaching team provided three possible organic practitioners for whom the course content would be a better fit (please see an example in Annex 4), and the project team, together with the researcher, made the course–practitioner pairing suggestions in order to avoid overloading (or missing) any practitioner. Though the course–practitioner pairing activity was conducted in a participatory way, in the end the project team gathered suggestions from the teaching team and intervened in the pairing process.

4.2. Effective Collaboration Possibilities between ANAU and the Agricultural Sector for Graduates' Better Employability

As a large number of interviews and discussions stressed the effective collaboration between the university and the "real world", it became key to the educational program's success. In order to better understand effective collaboration methods between the university and the agricultural sector from the practitioners' perspectives, we dedicated one of our group discussions with stakeholder committee members to this topic. The goal of the discussion was to discuss and review the most effective ways for the university and the agricultural sector to cooperate (for the details about the group discussion, please see Annex 5). Some significant results on how to improve cooperation between the university and the practice that would increase the employability of the graduates are presented below:

1. Creating a platform that is accessible to all stakeholders; this would first of all build a network of the organic stakeholders, and will further build a solid base for a dialogue between university staff and practitioners;
2. Planning the cooperation at least one semester ahead, taking into account the needs and opportunities of both sides;
3. Mutual visits, invited lecturers, presentation of success stories (for theoretical, methodological, and practical inputs); the university should not be isolated from the "real world", and therefore visits of the lecturers and students to the farms and practitioners' visits to the classroom should be on a regular basis;
4. Legal long-term regulation of collaboration (laws, agreements, contracts). In order to have a long-term collaboration, a state regulatory framework is needed; for instance, it should be stated in the labour codex on which regulatory basis the students can be paid for their internships (the income tax paid by the learner to the state should be returned to the student for paying a tuition fee), or how the practitioner will be taxed for employing a student, etc. Agreements or contracts need to be signed between the university and the practitioner for more reliable collaboration.

To those suggestions, additional course-specific suggestions were added, such as how the student can become a middle person for the farmer and the organic certification organization, practicing service-learning or work-based learning.

In general, stakeholders demonstrated a strong will to be part of university activities, and collectively established a good collaboration, which was a strong signal for future employability of the students armed with needed skills and knowledge of practice.

4.3. The Possible Effect of Participatory Curriculum Development in Higher Education on the Labour Market in Armenia

Based on the qualitative interview results with organic practitioners in Armenia, the possible impact of participatory curriculum development on the labour market of organic agriculture will not be significant in the early phases. The following reasons were mentioned by the practitioners:

- "Education takes time, so it is not possible to have a rapid effect";
- "The sector of organic agriculture is rather small in Armenia, so the effect on the labour market will not be significant, either";
- "The awareness of organic agricultural products is quite low; there is still work that needs to be done here".

However, according to the stakeholders' perspectives, education is a fundamental factor in carefully planned change. The "seeds" of participation are strengthening the ties between higher education and labour market. Relatively fast effects can be expected:

- In the export field of organic products;
- In the field of consultancy; not only in the production of organic produce, but also in organic certification services; and
- When students become practitioners themselves and use their own knowledge for producing organic products on their own.

5. Discussion

> *"No change is easy, but we must do it if we want to change something in our educational quality."*
>
> *Focus group with organic stakeholders of Armenia*

This article reflected on the process of participatory action research implemented in Armenia during recent years. A curriculum was developed using a participatory approach that counted the needs of those whose lives would be affected. Without any exception, and throughout all focus groups, the existing system was described by students as including many "boring" lectures and a lack of practical classes—which are key for entering the labour market. Another discussion with lecturers presented an idea of the need for a "revolution" in curricula, and the system surrounding it in Armenia.

As the organization of larger group discussions, transcribing, and analysing are time- and resource-consuming, the participation was narrowed down to the stakeholder committee, in which representatives from each stakeholder group were involved. It helped to create efficient organization and more interactive and informative discussions. In general, we achieved the main goal of this action research, to build a curriculum in which each group contributed on a certain participation level. The Organic Agriculture Master's program is now offered at ANAU as a two-year full degree program with a young, professional team of lecturers; modern teaching methods; active participation with stakeholders within classes for field trips and class assignments; and most importantly, that offers knowledge and skills that the labour market is seeking.

The results presented above illustrate the conceptual mapping of the entire participatory curriculum development (PCD) process—which can be used as a model for other universities in PCD—showing the need for a strong connection among practitioners and science that would better fill the gap of organic professionals in the labour market, as well as the effective collaboration possibilities between the university and the agricultural sector for graduates' better employability.

We witnessed that during PCD, four main principals presented by Bergold and Thomas (2012) were strongly followed, and the typology of participation offered by Berardi (2002) was present, which validated our results on the theoretical level as well.

Although attempted, the participatory action research did not always succeed. Below we discuss the lessons learned.

Lessons Learned

The PCD process was neither easy nor straightforward. A similar experience was outlined by Laskov et al. (Bolander Laksov et al. 2020). The concept of participation in curriculum development was new to almost all participants, and since different stakeholders had different working styles and ideas about the program, this sometimes caused misunderstandings, and brought about a need for a systematic effort to balance powers.

Below are some aspects of PCD based on our experience that are worth further scientific discussion:

Study representativity: While conducting a sampling of the stakeholders of the process, there was always a risk of not having a trustworthy sampling of a particular group represented. The team had to make sure no group was under-represented. For example, in the Stakeholder Committee, only two students were represented. Was this a representative sample among 4000 ANAU students?

Time consumption and flexibility: Organization of any participatory action is time-consuming in terms of gathering necessary information about participants, contacting them, obtaining consent, and inviting them for an action. Before starting participatory action, based on our experience, we recommend readopting the initial time schedule continuously, and to be ready and flexible enough to make significant changes.

Resource consumption: The necessary resources for this participatory action research were provided by the project (Annex 1), such as space, materials, transport. In any other case, this can be a challenge. In comparison to non-participatory curriculum development this approach requires a certain budget.

Playing different roles: Is the participant–observer relation a limitation or an advantage? A significant challenge was that the observer was part of the program as a member of the teaching team, and also had a role in observing the process and a role in facilitation of all the stakeholder meetings. This further developed a risk of conflict of interests, and efforts were needed to avoid those. It is worth mentioning that being part of the process helps to understand the working ethics and the system of the change better, which one can hardly understand being apart from the process (observer).

Cultural aspects: The success of participatory action research highly depends on a cultural aspect of the country where it occurs. Local knowledge of culture and locals plays a huge role here. For example, sometimes during official qualitative interview, one could gain less information than in an informal "coffee discussion" (Armenian culture). The issues highlighting hierarchies between academic and non-academic were relevant as well. The post-Soviet tradition in education was another obstacle when trying to achieve participation. The participants in the beginning constantly sought direction to follow, rather than stating their own opinions and knowledge, which for the American–European coordinator was a challenge, particularly for a participatory process. The coordinating team did their best to cultivate and facilitate an open and supportive atmosphere for participants. However, such differences were particularly evident when working within a rigid university system that is still somewhat embedded in Soviet-era requirements and expectations.

Better performance: The team can perform better if the network of participants is set up before starting the PCD. In the beginning we needed ice-breaking activities, but in the end, the stakeholders were coming up with new ideas on their own, because a strong network and friendship was continuously being developed during the entire course of the research. Mutual understanding and friendship in Armenian environment can do more than any official document (probably in many other cultures as well). For network strengthening, but also for scientific discussions, the project team members developed a "book club" activity, which was meant for discussion of scientific articles on topics of organic agriculture. It served as a perfect example for participatory decision making among teaching team members, as each time the takeover of a discussion was led by one of the teaching team members, and the paper was selected by the group among three suggested papers by the project coordinator.

"Newsletter" as a follow-up and strengthening the network: In participatory research, follow-up is important, as it keeps the stakeholders updated on the topic. This gives them a stronger feeling of connection and responsibility to continue the collaboration. After several significant events, the project's relevant news was put together and sent out to all the participants interested and involved in the process. Each time the design and the content of the newsletter was discussed between the Armenian coordinator and the researcher, designed by the researcher, and reviewed by the Armenian coordinator.

6. Conclusions

In this article, we have affirmed that the participation of a large stakeholder base in a project can link science and practice together. In our case, participatory curriculum development (PCD) provided an opportunity for a number of stakeholders from diverse disciplines to collaborate, analyse the existing situation, identify existing problems, and needs, and then act upon the found knowledge to create a resulting master's program. Here, we illustrated some of the main steps of program development and where PCD was most valuable. As PCD has many challenges, with time and resource limitations being among the largest, we also shared lessons learned. Specifically challenging was balancing expectations for involvement of voluntary stakeholders, which brought up renumeration and motivation possibilities. What was incredibly rewarding was the innovation that came from the interactive process with the stakeholders, resulting in strong course structures integrating stakeholders in individual course assignments and projects; training of trainers towards student-centred methods; and specific activities such as the speed-dating pairing of lecturers and practitioners.

This article significantly contributes to a new and emerging literature base in participatory curriculum development within higher education. As stakeholder participation has become increasingly popular and credible in science—as seen in inter- and transdisciplinary studies and action research—the role of stakeholders in PCD is strengthened. Particularly, the lessons learned here allow for future program developers to be more prepared and flexible.

The procedure of the PCD for the Organic Agriculture Master's Program shaped the research around tools, which also offered the possibility for better reflection on the process, high collaboration, and most importantly, development of a tight network and ownership. Participation was a key for this program, which has not previously been used by Armenian universities in curricula development. We believe that it is participation that leads to sustainable higher education, based on the needs of students and the labour market. We experienced that there are many arguments for increasing curricula quality by a participatory development approach, and that this can strengthen the connection between any higher education and the real word, and in Armenia specifically, the education sector and the labour market.

Supplementary Materials: The following are available online at https://www.mdpi.com/article/10.3390/socsci10090331/s1, Annex 1: Building Organic Agriculture in Armenia; Improving the knowledge and skills of organic stakeholders through participatory curriculum development and outreach | BOAA, Annex 2: The course list of "Organic Agriculture" Master's Program by semesters and credits, Annex 3: Focus group discussion with students, Annex 4: Example of a course-stakeholder pairing, after speed dating activity, Annex 5: Workshop with Stakeholder Committee members, feedback and evaluation papers.

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Abbreviations

ANAU	Armenian National Agrarian University, Yerevan, Armenia
BOKU	University of Natural Resources and Life Sciences, Vienna, Austria
PAR	Participatory action research
PCD	Participatory curriculum development

Glossary

Course structure	The structure of a single subject within a curriculum, including topics, teaching methods, literature, and learning outcomes.
Course	A separate subject within the Organic Agriculture Master's program curriculum.
Curriculum	An entire educational program, such as the Organic Agriculture Master's program.
Curriculum development	Includes the initiating, design, and implementation of the curriculum.
PCD	Includes the initiating, design, and implementation of the curriculum in which participatory methods dominate.
Stakeholders	Students, farmers, organic producers, lecturers, organic certification body representatives, officials, and "Organic Armenia" Association representatives.

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