



## Article

# Securing Commitments from Stakeholders in 10 EU Member States—The Organic Seed Declaration to Foster Stakeholder Involvement

Freya Schäfer <sup>1,\*</sup> , Kaja Gutzen <sup>1</sup>, Maaïke Raaijmakers <sup>2</sup>, Katharina Meyer <sup>1</sup>, Xenia Gatzert <sup>1</sup>, Martin Sommer <sup>3</sup>, Ágnes Bruszik <sup>3</sup> and Monika M. Messmer <sup>4</sup> 

<sup>1</sup> Research Institute of Organic Agriculture (FiBL Germany), 60486 Frankfurt am Main, Germany; kaja.gutzen@fibl.org (K.G.); katharina.meyer@fibl.org (K.M.); xenia.gatzert@fibl.org (X.G.)

<sup>2</sup> Bionext, 6711 JC Ede, The Netherlands; raaijmakers@bionext.nl

<sup>3</sup> IFOAM Organics Europe, 1000 Brussels, Belgium; martin.sommer@organicseurope.bio (M.S.); agnes.bruszik@organicseurope.bio (Á.B.)

<sup>4</sup> Research Institute of Organic Agriculture (FiBL Switzerland), 5070 Frick, Switzerland; monika.messmer@fibl.org

\* Correspondence: freya.schaefer@fibl.org

**Abstract:** The new European organic regulation 2018/848 aims to phase out the use of non-organic seeds in organic farming by 2036. At present, achieving this goal in countries with a poorly developed organic seed sector is difficult, and therefore there is a great need to increase organic seed supply by promoting the development of the organic seed sector in Europe. This paper presents a conceptual framework to secure voluntary stakeholder involvement in the process of a gradual increase in the supply of organic seeds for organic farming. Stakeholders showed a high motivation to commit to concrete action points for moving forward. In addition, further actors were involved in the fulfillment of the commitments, a sign of a positive network effect in favor of organic seed production and use. The study indicates application potential and can complement mandatory policy instruments. Further progress monitoring is necessary to ensure that established structures maintain their function, and to keep the shared sense of responsibility alive.

**Keywords:** organic seeds; voluntary commitments; stakeholder involvement; policy measures; European organic legislation



**Citation:** Schäfer, F.; Gutzen, K.; Raaijmakers, M.; Meyer, K.; Gatzert, X.; Sommer, M.; Bruszik, Á.; Messmer, M.M. Securing Commitments from Stakeholders in 10 EU Member States—The Organic Seed Declaration to Foster Stakeholder Involvement. *Sustainability* **2022**, *14*, 9260. <https://doi.org/10.3390/su14159260>

Academic Editor: Philip H. Howard

Received: 27 June 2022

Accepted: 23 July 2022

Published: 28 July 2022

**Publisher's Note:** MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



**Copyright:** © 2022 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

## 1. Introduction

In the European regulation (EC) 834/2007 [1] on organic production and labeling, and further specified in its implementing regulation (EC) 889/2008 [2], it is stated that the use of organic seed and vegetative propagating material is mandatory in organic farming. Because for many plant species there is a shortage of organic seed, derogations for the use of chemically untreated non-organic seed can be granted. The option of derogations, however, impedes the development of the organic seed market, and results in a lack of availability [3,4]. The new European regulation (EC) 2018/848 [5]—which came into force 1 January 2022—foresees a phasing out of these derogations by 2036. To reach the aim of 100% organic plant reproductive material (organic PRM) for all crop species grown on organic farms in the EU, there is a urgent need to mobilize everyone involved—directly or indirectly—in the production and use of organic PRM, i.e., organic farmers and seed producers, control bodies, seed authorities, national authorities, and researchers. Past analysis [3] showed that implementing individual measures can increase organic seed supply, but this did not directly lead to a reduction of derogations for the use of non-organic seed. A complex set of factors affect farmers' use of organic or non-organic seeds, with strong regional differences across Europe [4]. Aspects that impact organic seed use by farmers include the availability of suitable cultivars, marketing strategies for the organic

products, and time since the farm converted to organic production. Thus [4] (p. 11) concludes, that “if derogations for the use of untreated non-organic seed are to be phased out by 2036, the issue of seed use needs to be more widely addressed, beyond the short and specialized organic supply chains”. Therefore, the instrument of a voluntary seed declaration was proposed—a concept based on voluntary commitments from all actors involved as a tool to initiate bottom-up processes, especially in countries with a poorly developed seed sector. According to [6] (p. 555) commitments are defined as “agreements between two or more social actors to carry out future actions”.

In game theory, joint commitments among all players prior to the game have been shown to increase their payoffs, ultimately reaching a goal more efficiently as if acting individually [7]. The concept of voluntary commitments was chosen to be able to respond to the urgent lack of organic PRM in a more cost- and time-efficient way. As the actors are themselves responsible for the content of the seed declaration, voluntary commitments allow flexibility and adaptation to local circumstances and practices [8]. This is crucial as the use of organic PRM is inconsistent across Europe and for the different crop sectors: Orsini et al. [4] find higher values of organic seed use in Northern and Central Europe as compared to Southern and Eastern Europe; and higher values in the vegetable sector, followed, in descending order, by the arable, forage, and fruit sectors.

Besides these advantages, voluntary commitments create the opportunity for network effects by involving further actors in their fulfillment [6]. In this way, the seed declaration can involve actors beyond those that have been present in its negotiation, and can act as a pioneering example in other countries [9]. The seed declaration, if communicated in simple language to a broad audience, could shape public and political discourse. As a result, consumers could exert a market force, and value chain actors might follow the social pressure in favor of organic PRM [8–10]. This is important, as farmers’ decisions on using organic PRM are often influenced by social norms [4].

From 2003 to 2013, the European Consortium of Organic Plant breeding [11] conducted several stakeholder workshops to foster the development of the organic seed sector. However, mostly the Central European Member States have participated in these workshops and there are only a few other examples of stakeholder involvement. In recent decades, however, voluntary commitments have found their way into environmental law and climate negotiations. These commitments are often industry-driven, involving companies, organizations, networks, but also individual actors [8,12,13]. According to [8] (p. 88) this phenomenon is described as “bottom-up empowerment”. Apart from that, there are government-led mandatory approaches in the form of regulations or tax-based economic incentives [14]. Politicians often welcome voluntary commitments as these allow them to avoid confrontation with industries [12]. Thus, voluntary commitments should not be seen as a replacement for these mandatory approaches, but as a complementary tool [13], especially when there is an insufficient political will to implement legislation [15]. This is particularly the case for organic PRM. The European Commission is showing a certain degree of political uncertainty as the phasing out of derogations may lead to shortages in the organic seed supply—if no complementary measures are taken [16]. Thus, legislative measures are not implemented, which in turn discourages seed producers from investing in organic PRM [3,17]. Analysis conducted within the EU Horizon 2020 project LIVESEED reveals political obstacles and bottlenecks in the implementation of the organic regulation concerning organic PRM [18]. The main obstacle to its implementation is that in most EU Member States the production or use of certified organic seeds is not actively encouraged. The analysis further calls for the implementation of the new organic regulation to include clear rules for the establishment of stakeholder seed expert groups, to monitor the progress of the production and use of organic seed across Europe, and to implement strict national derogation standards [18]. This is illustrated by the example of the organic seed database. According to (EC) 2018/848 [5] and its delegated regulation (EC) 2020/1794 [19], each EU Member State is required to establish a seed database indicating the availability of organic PRM and in-conversion to organic PRM. However, as the regulation only contains

minimal requirements, the implementation of such databases ranges from computerized databases [20] to Excel spreadsheets [21]. With the latter, it is not possible to provide an up-to-date overview of the organic PRM available on the national market, leading to unfounded exemptions for the use of conventional seed [18,22].

While mandatory policy instruments are still needed to reach the aim of 100% organic PRM, voluntary commitments might be a tool to counteract the political stalemate in many EU Member States regarding the production and use of organic seeds. To this extent, voluntary commitments should aim to establish partnerships within and between the seed sector and governments, and to facilitate mutual learning processes and the exchange of best practices [10,13,23]. Due to the non-binding nature of voluntary commitments and to ensure its effective implementation, it is necessary to monitor compliance, report on progress, and ensure transparency and accountability [6,8,23].

A successful example of voluntary commitments in the organic food sector is the potato covenant in the Netherlands. The idea of the covenant arose from the extensive damage caused in organic potato production by *Phytophthora* in 2016. In the Netherlands, where the use of copper is prohibited, the only solution against *Phytophthora* is the use of resistant or robust varieties. Thus, 28 stakeholders came together to sign the covenant “accelerated transition to robust potato varieties” with the aim of reaching 100% robust organic potatoes in 2020. To speed up market introduction, stakeholders committed to giving priority to robust varieties in breeding, seed production, cultivation, and sales. Within three years, 25 robust potato varieties could be introduced into the Dutch market by these means. On top of that, a positive network effect could be observed as a similar covenant was signed in Flanders and Wallonia [24,25].

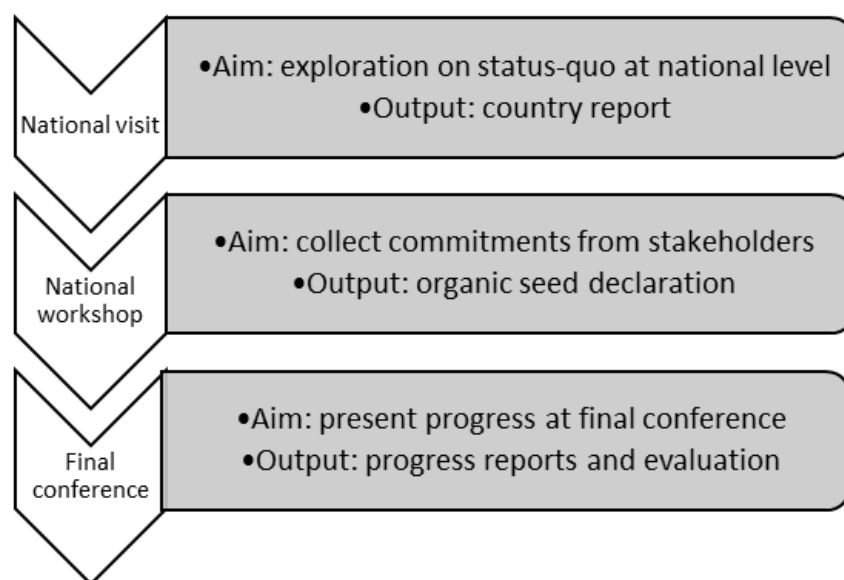
## 2. Materials and Methods

The research presented in this paper results from an application study within the EU Horizon 2020 project LIVESEED (June 2017–September 2021) [26]. Following a status-quo analysis of organic seed use in all 28 EU Member States, 10 countries were selected based on three criteria: (i) high number of yearly reported derogations for the use of non-organic seed; (ii) limited national availability of organic seed; and (iii) limited data available on the national organic seed market and actors involved. The selected countries—Bulgaria, Estonia, Greece, Hungary, Italy, Lithuania, Latvia, Poland, Romania, and Spain—met at least two out of the three criteria.

The implementation of the concept followed a three-step process consisting of national visits, national workshops, and a final conference (Figure 1). The national visits were organized from September 2017 to September 2018, in cooperation with a national project partner. The aim was to get an overview of the main threats and opportunities. Therefore, one-on-one interviews were conducted with all the relevant stakeholder groups on their attitudes towards organic seeds and how production and use could be stimulated. The outcome were country reports—including results of the previous status-quo analysis—which were published on the LIVESEED website and disseminated among national actors [27].

Secondly, from January to October 2019, national workshops were conducted in each of the 10 selected EU Member States—except for the Baltic States, where Latvia, Estonia and Lithuania participated in one joint workshop held in Riga, Latvia. At these workshops, all national organic seed sector stakeholder groups, such as farmers, seed producers, breeders, regional and national authorities, organic control bodies, and researchers were invited. The workshop aimed to collect information on how to make progress and define concrete action points. Therefore, to gain high actor involvement, the concept of the organic seed declaration, based on voluntary commitments from all actors involved, was developed. In a participatory approach, dialogues between all participants were encouraged to create a sense of cooperation to reach a common goal, i.e., to foster the production and use of organic seeds at the national level. The discussion was guided by the following four categories: (i) improvements to national seed databases; (ii) implementation of incentives to increase the production and use of organic seeds; (iii) increasing information on varieties

suitable for organic production; and (iv) increasing cooperation among the stakeholders. The outcome of the workshops was the organic seed declaration, containing action points and policy measures which are formulated by the participants in the form of a covenant. This way, the declaration acknowledges the unique characteristics of the participants and the conditions in the respective country. Ideas for actions mentioned during the workshop for which there were no volunteers were not included in the declaration. At the end of each workshop, the participants were asked to show their commitment by signing the declaration, which is not legally binding. To trigger a positive network effect, efforts were made to ensure transparency and raise awareness by communicating the seed declaration using different channels such as social media and the LIVESEED website [28].



**Figure 1.** Three-step concept to develop and monitor the national organic seed declarations.

The final step was the organization of a final stakeholder conference, held online in November 2020, in which the national project partners from the 10 involved EU Member States presented the implementation of action points. These were evaluated and compiled in national progress reports [29].

When assessing the impact of voluntary commitments on the organic seed sector, Alberini et al. [14] propose to measure its effectiveness and efficiency. The work presented focuses on effectiveness and hypothesizes that the seed declaration, based on the concept of voluntary commitments, is an effective tool to increase the level of organic seed production and use in the respective country. To measure effectiveness, Alberini et al. [14] propose to take into account three factors: the number of participants, the extent to which the action points are achieved by the participants, and the impact on the organic seed sector. Taken alone, the participation level is an insufficient measurement, but it gives a good first indication and allows us to analyze participation incentives for future interventions. With regard to the other two factors, a regular reviewing and monitoring process was set up. One year after each workshop, a progress report was written to analyze and evaluate which of the intended action points and policy measures have been implemented. These progress reports create a follow-up of the workshop and ensure that the realization of the various action points is monitored.

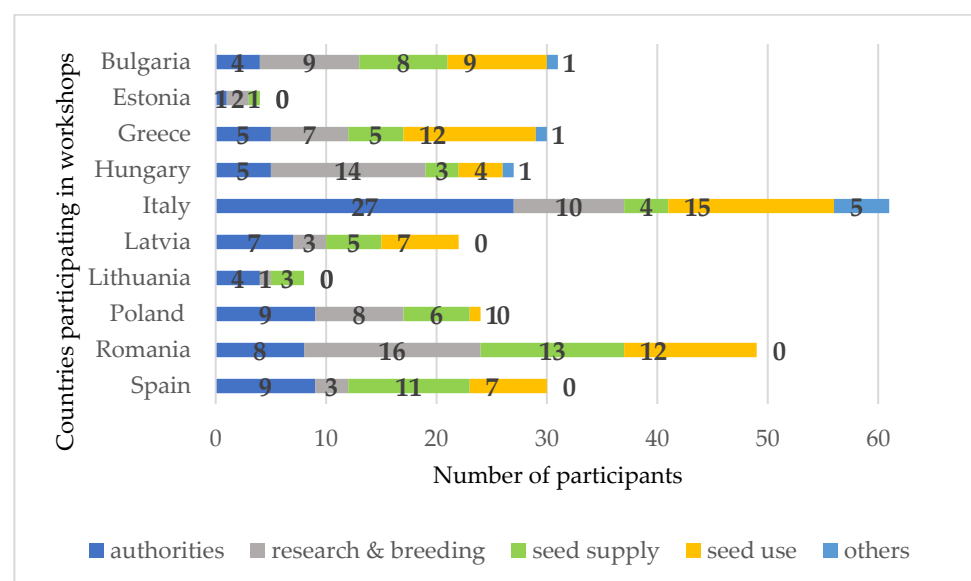
In the analysis, the participation rate and the number of commitments made in the seed declaration is assessed. Additionally, with the help of the progress report, the individual action points were evaluated and the share of fulfilled, partly fulfilled, and not fulfilled commitments calculated. The analysis was based on the four categories that guided the group discussion. As these categories were extracted from stakeholder interviews, a deductive approach to extending prior research was chosen [30]. The deductive approach

allows moving from the more general categories to the more concrete and specific action points [31]. Thus, the individual action points of the seed declaration were allocated to the four categories. Action points that did not fit into any of the categories were marked as such. In addition, the wording and the complexity of the commitments and background information on the situation in each country were analyzed.

However, the high diversity of organizational structures and differences between countries limit the ability to directly compare the commitments and draw common conclusions. The presented paper focuses on the analysis of the theoretical concept that voluntary commitments can lead to an increase in stakeholder involvement, which then indirectly leads to an increase in organic seed supply and use. The possibility of an extensive country-wide analysis is limited, as this would leave out the individuality of each country.

### 3. Results

The number of participants per national workshop varied per country, with the lowest number of participants reported in Estonia (4) and the highest number in Italy (61). Figure 2 illustrates the composition and number of stakeholders per country. Individuals who solely participated in the workshop for facilitation reasons were excluded from Figure 2. Stakeholders were grouped into five categories: (i) authorities (e.g., national ministry, regional ministry, seed database manager, seed certification authority, control body); (ii) research and breeding (e.g., researchers from universities, breeding institutes, or breeding organizations); (iii) seed supply (e.g., seed producers, seed traders, seed associations, seed banks, seed savers); (iv) seed use (e.g., farmers, farming associations, farm advisors) and (v) others (e.g., food traders, civil society organizations, journalists, industrial investors). Actors falling into more than one group, e.g., an organic farmer who also produces organic seed for retail, were grouped according to the main focus of their activities. All stakeholders who participated in the workshops joined the invitation organizer. The set-up of the workshop was envisaged to ensure a balanced composition between stakeholders, except for the stakeholder group “others”. Depending on the organizational structure of each country and responses from invited actors, a balanced composition of stakeholders was not always attainable. With higher representation from the authorities (e.g., Italy), research and breeding (e.g., Hungary), the seed sector (e.g., Spain), or farmers (e.g., Greece) were recorded in the other workshops.

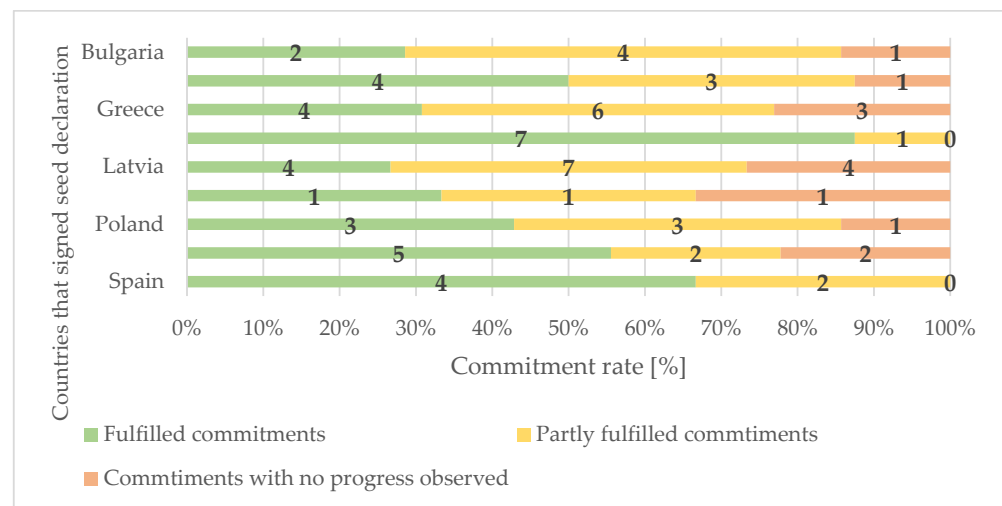


**Figure 2.** Number of participants per stakeholder group participating to the national workshops.

In all except one country (Italy), the workshop resulted in an organic seed declaration that was signed by all or most of the participants. The people that signed were, to a large



extent, the people that had their name or organization linked to one of the action points in the declaration. Only in a few cases, people were hesitant to sign the declaration, possibly because they did not trust or understand the impact of it. Another reason for not signing was that some participants had already left the workshop at that point. Due to time limitations and the workshop setup, the participants of the Italian workshop did not sign their organic seed declaration. Nevertheless, the group discussion revealed several potential action points and commitments. To that effect, Italy was excluded from the quantitative, but included in the qualitative analysis. The nine countries that signed the seed declaration made a total of 76 commitments. The progress report revealed that 34 out of 76 commitments (44.74%) have been fully implemented, and 29 out of 76 commitments (38.16%) have been partly implemented by the participants. Yet, for 13 out of 76 commitments (17.11%) no progress could be observed. Figure 3 illustrates how these values differ among countries. Hungary (87.50%) and Spain (66.67%) have the highest shares, whereas Latvia (26.67%) and Bulgaria (28.57%) have the lowest shares of fulfilled commitments. However, it should be noted that the number of commitments per country ranges from three (Lithuania) to 13 (Greece), as well as the complexity of each commitment. Nevertheless, the high percentage of fulfilled commitments is a first indicator of a positive effect of the seed declaration on stakeholder involvement. It remains to be further investigated whether the seed declaration is an effective tool that contributes to the development of the organic seed sector. For this, the quality of the commitments was analysed in greater detail.



**Figure 3.** Number of commitments declared in the national organic seed declarations, and respective share of fulfilled commitments, partly fulfilled commitments, and commitments with no progress observed as stated in the progress report.

Table 1 summarises the commitments made in the national organic seed declarations. The table visualizes that all countries have committed to action points that correlate with category (iii), to increase information on varieties suitable for organic production. Additionally, this category contains the highest number of action points. In terms of content, the action points relate to research, training, and communication. This might be due to the fact that most of the research institutes and seed companies present at the workshops have the means to organize demonstration fields or field trials, unlike smaller farmer cooperatives. Hungary and Spain stand out from the rest of the countries in that they have only made commitments in two categories: (iii) increasing information on varieties suitable for organic production and (iv) increasing cooperation among the stakeholders.

**Table 1.** Summary of commitments categorized according to the four key points on which the discussion was based. The verbs are highlighted to illustrate whether stakeholders took over the responsibility themselves (*active verb*) or handed over the responsibility to a third party (*passive verb*).

Country	(i) Improvements of National Seed Databases	(ii) Implementation of Incentives to Increase Production & Use of Organic Seed	(iii) Increase Information on Varieties Suitable for Organic Production	(iv) Increase Cooperation among the Stakeholders	(v) Other
Bulgaria	<i>propose</i> improvements of database or to return to organic seeds <i>request</i> to make derogation report public;	<i>ask to</i> fund registration of varieties suitable for organic production; <i>ask to</i> fund organic seed production & use	<i>organize</i> demonstration fields; <i>collect and disseminate</i> information on difference between organic and conventional seed	<i>start</i> social media group	/
Estonia	<i>improve</i> database	<i>suggest</i> support for the use of organic seed; <i>ask to</i> fund seed production equipment; <b>include</b> organic seed production & use in action plan	<i>test</i> varieties in organic field trials and <i>improve</i> dissemination of trial results; <i>continue</i> knowledge transfer program and <i>organize</i> information days	<i>establish</i> expert group	<i>include</i> varieties suitable for organic production in a breeding program
Greece	<i>propose</i> improvements of database; <i>consider</i> recommendations	<b>put</b> organic seed on meeting agenda	<i>publish</i> most recent derogation report; <i>organize</i> workshop on organic seed; <i>set up</i> course on organic seed production; <b>put</b> education & training on meeting agenda; <i>discuss</i> advantages of organic seed; <i>disseminate</i> information about advantages of organic seed; <i>conduct</i> farmer survey	<i>activate</i> scientific committee for organic farming; <i>suggest</i> organizing social media platform	<i>get involved</i> in organic seed production
Hungary	/	/	<i>continue</i> on-farm tests of varieties and landraces; <i>process</i> data collected on variety use and certification results; <i>disseminate</i> methodology; <i>organize</i> field day; <i>launch</i> farmer training; <i>share</i> information on EIP Agri portal; <i>share</i> summary of national workshop	<i>coordinate</i> consultation between seed producers	/
Latvia	<i>improve</i> user-friendliness of database; <b>include</b> more information in database	<b>raise</b> criteria to apply for derogations; <i>propose</i> area-based subsidies for the use of organic seed; <i>request</i> support for the use of organic seed	<i>test</i> varieties in organic field trials; <b>support</b> educational activities; <b>carry out</b> educational activities; <i>ask for</i> support of educational & research activities	<b>expand</b> functions and membership of expert group; <b>participate</b> in expert groups and <b>express</b> coherent opinion; <b>promote</b> cooperation in seed production and <b>create</b> EIP groups for research on seed production	<b>strengthen</b> control institutions
Lithuania	<i>propose</i> technical improvements of database	/	<i>ask to</i> develop organic production trainings; <i>propose</i> definition of “variety suitable for national organic production”	/	/
Poland	<i>analyse</i> how to improve database	<b>inform</b> about legislative barriers regarding organic plant breeding; <b>monitor</b> drafting process of action plan; <i>suggest</i> subsidies for farmers	<i>conduct</i> farmer survey; <b>initiate</b> educational activities and <b>demonstrate</b> advantages of organic seed	<i>discuss</i> the roles of an expert group	/
Romania	<i>suggest</i> improvements of database; <b>inform</b> about database existence	/	<i>test</i> varieties in organic field trials; <b>organize</b> meeting on organic seed; <b>organize</b> event on organic seed; <i>offer</i> support for soybean seed multiplication; <i>offer</i> technical support to organic farmers	<b>involve</b> stakeholders in debates regarding the implementation of new organic regulation; <i>start</i> social media group	/
Spain	/	/	<i>analyse</i> causes for derogations; <b>improve</b> dissemination on organic seed; <i>share</i> initiatives and successful results; <b>compile</b> info on benefits of using organic seed; <i>gather</i> information to develop organic seed for legumes	<i>Request</i> creation of a working group	/
Italy *	<i>improve</i> database	/	<b>set up</b> experiments to facilitate registration of varieties suitable for organic production	<b>improve</b> work of the expert group; <i>ask for</i> support in the discussion of delegated acts of the new organic regulation	/

\* Output from the group discussions only.

Table 1 further illustrates whether the wording of the commitment contains an active or passive verb; in other words, whether the stakeholders took over the responsibility themselves or handed over the responsibility to a third party. Examples of passive verbs are “propose”, “ask for”, or “request”; examples of active verbs are “organize”, “set up”, “start”, or “analyze”. Hungary is the only country that did not use passive verbs in its seed declaration. This might have contributed to the fact that Hungary reached the highest share of fulfilled commitments. The difference in wording becomes most evident in the category (i), improvements of national seed databases. Stakeholders either committed to suggesting improvements to the ministry, or stakeholders directly committed to improving the database—also because the responsible person was not present at the workshop. This is illustrated by the examples below:

*The Tulcea farmers will send a letter to the Ministry of Agriculture and Rural Development in which they will suggest the possibilities for improvement of the database*

(LIVESEED Declaration of Organic Seed, Romania, 19 June 2019) [28].

*K. R. from the Estonian Seed Association will cooperate with the Agricultural Board to improve the organic seed database*

(LIVESEED Declaration of Organic Seed, Latvia, 31 January 2019) [28].

*E. S., on behalf of PIORIN, takes the initiative to analyze what is possible to improve in the database based on the recommendations, concerning its interactivity, user-friendliness [ . . . ]*

(LIVESEED Declaration of Organic Seed, Poland, 13 May 2019) [28].

The progress report revealed that in Poland, where the database manager herself took over the responsibility, improvements have been made regarding the functionality and update frequency of the database. The database now includes information on the amount of seed material offered by the seed supplier. However, seed producers are still not allowed to add and modify offers in the database. In contrast, in Estonia, the seed database is still an Excel file and requires considerable improvement to live up to the requirements of the New Organic Regulation EC 2018/848 [5]. The progress that could be noted here was that organic seeds can be now found more easily in the general seed production database. In Romania, no progress could be observed. The Agriculture Ministry in Romania does not share the perception that a database can make a substantial change to increasing the production and use of organic seeds. This might indicate that the commitment is more likely to be fulfilled if the responsible person, in this case, the national authority, is included in the process of discussing, formulating, and signing the seed declaration. This is supported by the example of Italy, the only country where no official seed declaration was signed.

Another peculiarity in the wording is that most commitments are clearly allocated to one responsible person or institution. Interestingly, the seed declaration in Spain was formulated in a more generalized way. This, however, did not seem to have a significant effect on the progress reported at the final LIVESEED stakeholder conference. The difference in wording is illustrated by the examples below:

*We will organize two organic demonstration fields. Agricultural University in Plovdiv will provide fields, Vitalis will provide vegetable seeds. Bonevi Perfect will provide fields, Research Institute Sadovo will provide seeds for cereals. Bioselena will provide publicity for both field demonstrations*

(LIVESEED Declaration of Organic Seed, Bulgaria, 2 October 2019) [28].

*Compile information on the benefits of using organic seeds to promote incentives for its use*

(LIVESEED Declaration of Organic Seed, Spain, 8 April 2019) [28].

Furthermore, the complexity of the individual commitments varied greatly. For instance, some action points relate to sharing a methodology or starting a social media group, while other action points involve the organization of field trials, advocacy work, or the establishment of an organic seed expert group. Accordingly, in the latter cases,



the completion of a task can take up to several years and, as a result, the commitment is declared as “partly fulfilled”. This exemplifies that a quantitative content analysis alone provides only limited information about the effectiveness of the seed declaration. The progress is ongoing and continuous progress monitoring is necessary to assess its effectiveness. In addition, the monitoring has shown that progress does not only depend on the commitment of the stakeholders but can be hampered by unforeseeable external events. Notably, the pandemic caused by COVID-19 interfered with stakeholder meetings and educational activities. Other reasons for non-compliance were loss of contact persons, legislative restrictions, or lack of funding.

Another aspect to consider is the limited comparability of countries. For instance, at the time of the national workshop, Italy and Latvia already had an established organic seed expert group. Both countries are committed to expanding the functions and membership of the expert group. Estonia committed to the more complex task of establishing an expert group for the first time. Not only the initial situation of a country is important, but also the resources that allow the stakeholders to follow up on the progress. It should be noted that Estonia and Lithuania did not participate in the LIVESEED project but were included in the joint workshop of the Baltic States. Despite their lack of co-financing, Estonia (50.00%) and Lithuania (33.33%) fulfilled a considerable number of their commitments.

Lastly, at the final stakeholder conference, participants not only reported on committed actions but also on non-committed actions in favor of organic seed production and use. Additionally, further actors were involved in the fulfillment of the commitments. This could be due to a positive network effect in favor of organic seed production and use. In general, the progress report revealed positive developments compared to the years prior to the organic seed declaration. Project partners reported that the area of land used for growing organic seed crops is showing a clear increasing trend. This progress cannot be ascribed directly to the seed declaration, since the actions could have taken place without the seed declaration. Nevertheless, the results reveal that the seed declaration improved communication, created a shared sense of responsibility, and raised awareness on the matter of organic seeds. Participants showed a high motivation to commit to concrete action points for moving forward. Based on their feedback, they appreciated the national workshops as there have only been a few, if any, such events bringing together actors from all stakeholder groups to jointly discuss subjects related to organic seeds.

#### 4. Discussion

The analysis indicates that the organic seed declaration, based on the concept of voluntary commitments, had a positive impact on stakeholder involvement. In addition, it could be shown that the process of discussing, formulating, and signing the seed declaration is essential to guaranteeing effectiveness. This is in line with [12] who argue that progress monitoring is not enough to guarantee effectiveness. They state that commitments must be clear and demanding, and should result from intensive mutual negotiations to create a sense of commitment among participants.

The time between the national visits and the final LIVESEED stakeholder conference was less than 2 years. The LIVESEED project provided funding, a platform, and facilitators. However, progress is ongoing and further in-person meetings are needed to create continuous opportunities for the exchange of experiences, challenges, and possibilities, facilitating a mutual learning process [13]. It remains to be seen whether the stakeholders involved will remain committed and the progress will continue after the LIVESEED project.

The area of land used for growing organic crops is showing a clear upward trend [32]. However, it remains unclear if the area of organic seed multiplication is increasing at the same pace. To attribute a positive effect on the organic seed sector developments to our seed declaration, one would have to look at the efficiency. To this effect, the voluntary instrument should be compared to no interventions or to other instruments, for instance government-led mandatory approaches [14]. To quantify efficiency in terms of costs or performance, a counterfactual reference scenario is needed that describes what would have

happened in the absence of voluntary commitments. According to [12], two counterfactual reference scenarios are proposed: The status-quo-conserving scenario assumes that the changes in the level of organic seed use result solely from voluntary commitments. This scenario overestimates the effects of the instrument, but it is often used when there is a lack of data. The business-as-usual or trend scenario considers developments of organic seed use that would have taken place even without the instrument, such as changing economic conditions. This scenario requires sufficient data prior to the policy instrument. Due to these difficulties, we have limited our analysis to effectiveness. However, we have achieved our goal of stimulating progress.

The superiority of voluntary instruments lies in their cost- and time-efficiency [8]. This means that voluntary commitments can respond to new problems more quickly and in a more flexible way compared to legislative negotiations that are often time-consuming and involve high transaction costs. According to [12], a necessary condition for the effectiveness of voluntary commitments is the involvement of regulators in the intensive negotiations. However, this would reduce the cost- and time-efficiency of the instrument. Based on our results, we can equally conclude that if stakeholders from national authorities take over the responsibility themselves, for instance, to improve the organic seed database, the commitment is more likely to be fulfilled—thereby, improving efficiency in terms of performance. Even though voluntary commitments are increasingly used in environmental law and climate negotiations, to our knowledge there is no research that addresses efficiency.

Examples from the agricultural sector show that voluntary commitments can take different forms. The authors of [15] assessed the effectiveness of voluntary sustainability standards in sugarcane production. Voluntary sustainability standards are a set of criteria that are developed with stakeholder involvement to promote sustainable production, and that are monitored by an independent certification system. Their analysis shows that voluntary sustainability standards may be an effective tool to reduce negative environmental impacts, but there is limited understanding of economic and social costs. Equally, DeFries et al. [33] evaluated different voluntary certification programs, such as Fair Trade, and their impact on the production of tropical agricultural commodities. They conclude that voluntary sustainability standards can have a positive effect on meeting sustainable development goals. However, they are often not enough to address economic and social outcomes for small-scale producers.

To tackle the shortage of organic cultivars, Winter et al. [17] proposes a value chain partnership. As the entire value chain is affected by the shortage, the financing of organic breeding should also be borne by all stakeholders involved, rather than only by farmers and breeders, as it is often the case. Thus, in a so-called cross-sector funding strategy, the entire value chain commits to investing in organic breeding. This way the burden is distributed, and the entire value chain takes over the responsibility. Their conclusion is based on an extensive stakeholder dialogue in which many interviewees indicated the necessity of committing the entire value chain. However, Winter et al. [17] also addressed the problem of the voluntary nature of the strategy: “as long as there are no binding agreements between the actors to invest, they may prefer to maximize their short-term interests. The awareness-raising and communication element of the pool funding strategy is a crucial framework condition to mitigate this risk”. While this example is theoretical, Winter et al. [17] refers to some existing examples. One example is the Fair Breeding<sup>®</sup> initiative, a small-scale value chain partnership in Germany. The initiative was launched by Kultursaat and Naturata International in 2007 with the objective of involving value chain actors in cultivar development and conservation. Over a period of 10 years, value chain actors committed to channeling a small share of their revenue into organic vegetable breeding. Through this partnership, three open-pollinating cauliflower cultivars have been brought to variety registration and release [34]. By increasing organic breeding activities, both examples of [17] can indirectly and positively affect organic seed supply, but this does not directly relate to the target of the organic regulation to use 100% organic seed by 2036.

The results of this paper support the important role of the concept of organic seed expert groups [35]. Organic seed expert groups consist of stakeholders involved in the organic seed supply chain. National organic seed expert groups have the mandate to advise their national competent authority on implementing the regulation on organic seed in the country. At present, 11 EU member states (mainly Central and Northern European countries) have implemented such organic seed expert groups [35]. While expert groups differ in terms of implementation between countries, these groups can provide the framework for getting to intensive mutual negotiations, as requested by [12]. Looking at the commitments in this paper, we find that six out of ten countries (Estonia, Latvia, Poland, Romania, Spain, and Italy) committed to either establishing a seed expert group, expanding the functions and membership of expert groups, discussing the role of an expert group, involving stakeholders in debates regarding the implementation of new organic regulation, or requesting the creation of a working group or improving the work of the expert group.

These theoretical and practical examples show that voluntary commitments can have positive effects. Due to the diverse nature of these voluntary commitments, it is difficult to compare instruments and draw a general conclusion. Government-led mandatory approaches might be needed to reach sustainability goals. However, as long as the European Commission shows a high degree of political uncertainty and reluctance—as illustrated by [18]—voluntary commitments will play an important role in the future.

## 5. Conclusions

In this paper, we have discussed the effectiveness of the organic seed declaration based on the concept of voluntary commitments. Our aim was to gain stakeholder involvement and active participation to jointly foster the development of the organic seed sector in the 10 selected countries. The presented results demonstrate that the organic seed declaration was successful in engaging and connecting stakeholders, and in instilling a sense of commitment to a common goal. Coinciding with our organic seed declaration, positive developments were observed in the organic seed market. Through qualitative methods of analysis, we addressed how the wording of action points in the covenant can influence the degree to which they are fulfilled. This revealed that, despite positive network effects, all stakeholders, especially authorities, should be included in the process of discussing, formulating, and signing the seed declaration.

Practical and theoretical examples from the agricultural sector show that voluntary commitments can be applied in various forms and have a positive impact. Despite these positive results, and in order to take into account any limitations of this instrument, it is important to communicate voluntary commitments as a complementary tool to mandatory policy instruments. To reach the aim of 100% organic PRM, European and national authorities should not rely on voluntary commitments through stakeholder involvement alone, but should address existing political obstacles and bottlenecks. A mixture of instruments—voluntary and mandatory policy instruments—may be needed to reach the goal of 100% organic PRM in the EU by 2036.

To conclude, the voluntary organic seed declarations have made the first steps in the right direction. The question now is whether the progress will continue without the funding provided by the LIVESEED project; for instance, if the newly established seed expert groups and other built-up structures will remain in place and continue to function. It will be necessary to continue progress monitoring to keep the shared sense of responsibility alive. Further workshops promoting the national and transnational exchange of information are needed to harmonize the implementation of the rules for organic PRM in the new European regulation (EU) 2018/848 [5].

**Author Contributions:** Conceptualization, F.S. and M.R.; Data curation, F.S., M.R., K.M., X.G., M.S. and Á.B.; Funding acquisition, M.M.M.; Methodology, F.S.; Project administration, F.S.; Supervision, M.M.M.; Writing – original draft, F.S. and K.G.; Writing – review & editing, F.S., K.G., M.R., K.M., X.G., M.S., Á.B. and M.M.M. All authors have read and agreed to the published version of the manuscript.

**Funding:** This research was funded by the European Commission Horizon 2020 Research and Innovation program through the project LIVESEED, under grant agreement No 727230, and by the Swiss State Secretariat for Education, Research, and Innovation under contract number 17.00090.

**Institutional Review Board Statement:** The study was conducted in accordance with the LIVESEED Ethical Issue Plan, D7.4, August 2017.

**Informed Consent Statement:** Informed consent was obtained from all subjects involved in the study.

**Data Availability Statement:** All reports of the national visits, national workshops and progress reports are published at [www.liveseed.eu](http://www.liveseed.eu) (assessed on 23 June 2022).

**Acknowledgments:** We are grateful for the cooperation of the national partners who provided contact to national stakeholders and enabled the implementation of the national visits, national workshops, and seed declarations. The national affiliations we acknowledge are AEGILOPS, Volos, Greece; AREL, Riga Latvia; BIOSELENA, Karlovo, Bulgaria; ECOVALIA, Sevilla, Spain; EKOAGROS, Kaunas Lithuania; NARDI, Fundulea, Romania; IUNG, Pulawy, Poland; OEMKI, Budapest, Hungary; RETE SEMI RUALI, Scandicci, Italy, SEAE, Catarroja, Valencia, Spain; UNIVPM, Ancona, Italy.

**Conflicts of Interest:** The authors declare no conflict of interest. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript, or in the decision to publish the results.

## References

1. (EC) 834/2007 Council Regulation (EC) No 834/2007 of 28 June 2007 on Organic Production and Labelling of Organic Products and Repealing Regulation (EEC) No 2092/91; European Union: Brussels, Belgium, 2007.
2. (EC) 889/2008 Commission Regulation (EC) No 889/2008 of 5 September 2008 Laying Down Detailed Rules for the Implementation of Council Regulation (EC) No 834/2007 on Organic Production and Labelling of Organic Products with Regard to Organic Production, Labelling and Control; European Union: Brussels, Belgium, 2008.
3. Döring, T.F.; Bocci, R.; Hitchings, R.; Howlett, S.; Lammerts van Bueren, E.T.; Pautasso, M.; Raaijmakers, M.; Rey, F.; Stubsgaard, A.; Weinhappel, M.; et al. The Organic Seed Regulations Framework in Europe—Current Status and Recommendations for Future Development. *Org. Agric.* **2012**, *2*, 173–183. [[CrossRef](#)]
4. Orsini, S.; Costanzo, A.; Solfanelli, F.; Zanolini, R.; Padel, S.; Messmer, M.M.; Winter, E.; Schaefer, F. Factors Affecting the Use of Organic Seed by Organic Farmers in Europe. *Sustainability* **2020**, *12*, 8540. [[CrossRef](#)]
5. (EU) 2018/848 Regulation (EU) 2018/848 of the European Parliament and of the Council of 30 May 2018 on Organic Production and Labelling of Organic Products and Repealing Council Regulation (EC) No 834/2007; European Union: Brussels, Belgium, 2018.
6. Lenney, P.; Easton, G. Actors, resources, activities and commitments. *Ind. Mark. Manag.* **2009**, *38*, 553–561. [[CrossRef](#)]
7. Kalai, A.T.; Kalai, E.; Samet, D. *Voluntary Commitments Lead to Efficiency (No. 1444)*; Northwestern University, Center for Mathematical Studies in Economics and Management Science: Evanston, IL, USA, 2007.
8. Weiss, E.B. Voluntary commitments as emerging instruments in international environmental law. *Envtl Pol’y L* **2014**, *44*, 83.
9. Brannstrom, C.; Rausch, L.; Brown, J.C.; de Andrade, R.M.T.; Miccolis, A. Compliance and market exclusion in Brazilian agriculture: Analysis and implications for “soft” governance. *Land Use Policy* **2012**, *29*, 357–366. [[CrossRef](#)]
10. Sutton, M.A.; Erismann, J.W.; Oenema, O. Strategies for controlling nitrogen emissions from agriculture: Regulatory, voluntary and economic approaches. *Int. Fertil. Ind. Assoc. Paris* **2007**, 245–259.
11. European Consortium of Organic Plant Breeding—ECO-PB. *Report of ECO-PB Workshop 2013*; European Consortium for Organic Plant Breeding: Brussels, Belgium, 2013.
12. Böhringer, C.; Frondel, M. *Assessing Voluntary Commitments: Monitoring is Not Enough!* ZEW Discussion Papers; Zentrum für Europäische Wirtschaftsforschung (ZEW): Mannheim, Germany, 2002.
13. Ramstein, C. *Rio+ 20 Voluntary Commitments: Delivering Promises on Sustainable Development*; IDDRI’s Publication: Paris, France, 2012.
14. Alberini, A.; Segerson, K. Assessing Voluntary Programs to Improve Environmental Quality. *Environ. Resour. Econ.* **2002**, *22*, 157–184. [[CrossRef](#)]
15. Smith, W.K.; Nelson, E.; Johnson, J.A.; Polasky, S.; Milder, J.C.; Gerber, J.S.; West, P.C.; Siebert, S.; Brauman, K.A.; Carlson, K.M.; et al. Voluntary sustainability standards could significantly reduce detrimental impacts of global agriculture. *Proc. Natl. Acad. Sci. USA* **2019**, *116*, 2130–2137. [[CrossRef](#)] [[PubMed](#)]
16. Padel, S.; Orsini, S.; Solfanelli, F.; Zanolini, R. Can the Market Deliver 100% Organic Seed and Varieties in Europe? *Sustainability* **2021**, *13*, 10305. [[CrossRef](#)]



17. Winter, E.; Grovermann, C.; Aurbacher, J.; Orsini, S.; Schäfer, F.; Lazzaro, M.; Solfanelli, F.; Messmer, M.M. Sow What You Sell: Strategies for Integrating Organic Breeding and Seed Production into Value Chain Partnerships. *Agroecol. Sustain. Food Syst.* **2021**, *45*, 1500–1527. [[CrossRef](#)]
18. Raaijmakers, M.; Schäfer, F. D1.9 Report on Political Obstacles and Bottlenecks on the Implementation of the Rules for Organic Seed in the Organic Regulation. 2019, Volume 9. Available online: <https://orgprints.org/id/eprint/42346/> (accessed on 23 June 2022).
19. (EC) 2020/1794 Commission Delegated Regulation (EU) 2020/1794 of 16 September 2020 Amending Part I of Annex II to Regulation (EU) 2018/848 of the European Parliament and of the Council as Regards the Use of In-Conversion and Non-Organic Plant Reproductive Material; European Union: Brussels, Belgium, 2020.
20. OrganicXseeds—Organic Seed Database Tool Used by 7 EU Member States and Switzerland as Official National Organic PRM Database (Belgium, Denmark, Germany, Ireland, Luxemburg, Sweden, Switzerland, and United Kingdom). Available online: [www.organicxseeds.com](http://www.organicxseeds.com) (accessed on 23 June 2022).
21. Solfanelli, F.; Ozturk, E.; Orsini, S.; Schäfer, F.; Zanolli, R. Improving the Quality of National Organic Seed Databases to Increase the Use of Organic Seed and Propagation Materials in Europe. *Comput. Electron. Agric.* **2022**, *198*, 107006. [[CrossRef](#)]
22. Solfanelli, F.; Ozturk, E.; Zanolli, R.; Orsini, S.; Schäfer, F.; The State of Organic Seed in Europe. *Liveseed Booklet*. 2019, pp. 1–28. Available online: <https://orgprints.org/id/eprint/37977/> (accessed on 23 June 2022).
23. Neumann, B.; Unger, S. From voluntary commitments to ocean sustainability. *Science* **2019**, *363*, 35–36. [[CrossRef](#)] [[PubMed](#)]
24. Heining, N. The Dutch potato covenant—A successful model for transition of the organic potato sector into a more sustainable system. *Bionext* **2021**. Available online: [https://www.google.com.hk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwj3xaPUtpX5AhUaSGwGHWDtCfgQFnoECAYQAQ&url=https%3A%2F%2Fagro.au.dk%2Ffileadmin%2Ffeuroblight%2FWorkshops%2FZoom\\_2021%2FM2\\_Heining.pdf&usg=AOvVaw1sAJuSSIdp9dsYPvZuZgfl](https://www.google.com.hk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwj3xaPUtpX5AhUaSGwGHWDtCfgQFnoECAYQAQ&url=https%3A%2F%2Fagro.au.dk%2Ffileadmin%2Ffeuroblight%2FWorkshops%2FZoom_2021%2FM2_Heining.pdf&usg=AOvVaw1sAJuSSIdp9dsYPvZuZgfl) (accessed on 10 March 2022).
25. Bionext. The potato covenant, a successful model for transition of the organic potato market into a more sustainable system. Available online: [https://www.google.com.hk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwjtx9yItpX5AhUsS2wGHVUOAikQFnoECAIQAQ&url=https%3A%2F%2Fbionext.nl%2Fapplication%2Ffiles%2F1615%2F8936%2F2350%2FPotato\\_covenant\\_english.pdf&usg=AOvVaw3\\_WBtNffZqs4p2xlSeiWtj](https://www.google.com.hk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwjtx9yItpX5AhUsS2wGHVUOAikQFnoECAIQAQ&url=https%3A%2F%2Fbionext.nl%2Fapplication%2Ffiles%2F1615%2F8936%2F2350%2FPotato_covenant_english.pdf&usg=AOvVaw3_WBtNffZqs4p2xlSeiWtj) (accessed on 10 March 2022).
26. EU Horizon 2020 Project LIVESEED—Improve Performance of Organic Agriculture by Boosting Organic Seed and Plant Breeding Efforts Across Europe. European Union’s Horizon 2020 Research and Innovation Programme under Grant Agreement No 727230 and by the Swiss State Secretariat for Education, Research and Innovation (SERI) under Contract Number 17.00090. Available online: <https://www.liveseed.eu/> (accessed on 30 May 2022).
27. LIVESEED Reports on the National Visits—LIVSEED National Visits T1.2.1—Country Reports. 2018. Available online: <https://www.liveseed.eu/wp1/reports-national-visits/> (accessed on 28 April 2022).
28. LIVESEED Reports with Policy Recommendations and Declarations of Organic Seed—LIVSEED Regional/National Workshops T1.4.1. 2019. Available online: <https://www.liveseed.eu/wp1/reports-liveseed-national-workshops/> (accessed on 28 April 2022).
29. LIVESEED Task 1.4.2 National Progress Reports—LIVSEED National Progress Reports on the Production and Use of Organic Seed. 2020. Available online: <https://www.liveseed.eu/wp1/task-1-4-2-national-progress-reports/> (accessed on 28 April 2022).
30. Hsieh, H.-F.; Shannon, S.E. Three Approaches to Qualitative Content Analysis. *Qual. Health Res.* **2005**, *15*, 1277–1288. [[CrossRef](#)]
31. Graneheim, U.H.; Lindgren, B.-M.; Lundman, B. Methodological challenges in qualitative content analysis: A discussion paper. *Nurse Educ. Today* **2017**, *56*, 29–34. [[CrossRef](#)] [[PubMed](#)]
32. Willer, H.; Trávníček, J.; Meier, C.; Schlatter, B. (Eds.) *The World of Organic Agriculture. Statistics and Emerging Trends 2022*; In Research Institute of Organic Agriculture FiBL: Frick, Germany; IFOAM—Organics International: Bonn, Germany, 2022.
33. DeFries, R.S.; Fanzo, J.; Mondal, P.; Remans, R.; Wood, S.A. Is voluntary certification of tropical agricultural commodities achieving sustainability goals for small-scale producers? *A Rev. Evidence. Env. Res. Lett.* **2017**, *12*, 033001. [[CrossRef](#)]
34. Fleck, M. Partnerschaft für biodynamische Gemüsezüchtung: FAIR BREEDING—eine Bilanz. *Lebendige Erde*. 2016, Volume 2. Available online: <https://www.kultursaat.org/aktuell/einzelansicht/news/fair-breedingR-partnerschaft-fuer-biodynamische-gemuesezeuechtung.html> (accessed on 11 March 2022).
35. Fuss, A.; Kovacs, T.; Pedersen, T.M.; Raaijmakers, M.; Schäfer, F.; Gatzert, X.; Brühl, K.; Bocci, R.; Petitti, M. How to Implement the Organic Regulation to Increase Production & Use of Organic Seed. 2018, pp. 1–24. Available online: [http://www.liveseed.eu/wp-content/uploads/2020/05/FNL-WEB-LIVSEED-All-Pages-Booklet1Changes\\_compressed.pdf](http://www.liveseed.eu/wp-content/uploads/2020/05/FNL-WEB-LIVSEED-All-Pages-Booklet1Changes_compressed.pdf) (accessed on 11 March 2022).