Attaining food self-sufficiency through the Edible Landscaping (EL) Technology: Assessing the Promotional Activities of EL in the Philippines, amidst the COVID-19 Pandemic

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Abstract. The sustainability of the food supply seems to be a never-ending concern of many households in the Philippines. This concern is most especially felt in this time of pandemic wherein many Filipinos are struggling on where to get their food to feed their families. The adoption of edible landscaping has become more in demand because of the current situation caused by the pandemic. As such, having a sustainable edible garden is very much recommended because it can provide the household a “garden to table” food which can help in making the household food self-sufficient. There is a current need to promote edible landscaping technology primarily through trainings and seminars and it should be intensified to inform and educate the people on food self-sufficiency amidst the COVID-19 pandemic. Edible landscaping (EL) as an approach that merges the science of crop production and the art of landscaping, is continuously being promoted using different strategies and one of which is the conduct of trainings and seminars all over the Philippines. This study assessed the different ways by which the Edible Landscaping Team of the University of the Philippines Los Baños delivered promotional activities such as webinars and e-training amidst the context of the COVID-19 pandemic. This research was conducted using the qualitative approach, specific case studies, and the data gathered were analyzed using thematic analysis. More than 39,000 individuals in the Philippines have already been reached and educated on the technology through the conduct of e-trainings and webinars. The presentations and lectures on edible landscaping were modified based on the needs of the requesting institution and were discussed using a combination of English and Filipino languages. The duration of the eight webinars ranged from a minimum of 30 minutes to a maximum of almost 5 hours (in discussion is written ‘almost 4 hours). Based on the comments, most of the online viewers gave affirmative responses.

Keywords: edible landscaping, food sufficiency, promotion

1. Introduction
With the growing number of coronavirus disease (COVID-19) cases all over the world, the World Health Organization declared on 11 March 2020 the COVID-19 outbreak as a pandemic [1]. On 3 September 2020, the Philippines’ Department of Health reported an additional 1,987 confirmed cases making the total cases 228,403. Out of the 228,403 total cases, 65,240 are active cases on that day[2].

The pandemic caused by the coronavirus disease (COVID-19) did not only cost lives but also the livelihood of people. In the Philippines, when the government first declared an enhanced community quarantine or lockdown in Luzon, the movement of the people was restricted, only allowing a limited percentage of the population to go outside. With the
numerous times of community quarantine extension which were not anticipated by many, source of food has become a problem to many. In addition to this, many individuals have lost their jobs. According to the Philippine Statistics Authority, the unemployment rate rose to 17.6 percent in April 2020 with 7.2 million unemployed individuals [3]. The Department of Labor and Employment even estimated that 10 million workers may lose their jobs due to the pandemic [4]. Since not everyone is privileged enough to still earn a living despite the lockdown, workers who are no-work-no- pay struggle where they would get their everyday living. Thus, the dilemma on the source of food. As the government’s response to the dilemma on the source of food, the Philippines’ Department of Agriculture implemented the Plant, Plant, Plant program which is a “centerpiece initiative to ensure sustained food production and availability, food accessibility and affordability amidst the threats of COVID-19” [5]. With this, edible landscaping can be considered as a way to ensure food self-sufficiency.

Edible landscaping (EL) is an approach that merges the science of crop growing and the art of landscaping as it follows the basic tenets of designing as its guiding principles. It has some differences with conventional landscaping and backyard vegetable gardening. The difference between EL with conventional landscaping lies in the planting materials used. In conventional landscaping, ornamental plants are used as major planting materials. In EL, the major planting materials are vegetables, fruits, herbs, and medicinal plants. On the other hand, the difference between EL with backyard vegetable gardening is based on the area it occupies. In backyard vegetable gardening, vegetable plots occupy the back spaces of home gardens while EL occupies the premium spaces like the front spaces of the house and public areas of residential lots. EL has four goals namely, aesthetics, functionality, health and wellness, and food-sufficiency. According to de Guzman et al. [6] with aesthetics, people can be encouraged to engage in gardening through the beautiful and attractive environment that can be created; with functionality, edible gardens can be established based on the needs of the end-users; with health and wellness, end-users will be provided with safe and nutritious food; and with self-sufficiency, households will be provided with garden to table food. EL potentially provides a way of addressing food self-sufficiency at the household level. The adoption of edible landscaping has become in demand in this time of pandemic wherein food source has become one of the major concerns of many. Considering the current situation, having a sustainable edible garden is very much recommended because it can provide the household readily available food right in??their yards.

To attain self-sufficiency, the following promotional strategies and activities are being done: (a) exhibits; (b) conventions/ conferences/ publications; (c) media; (d) promotional products; (e) trainings and seminars and; (f) establishment of demonstration gardens. Since social gatherings are prohibited, because of the pandemic, only a few promotional strategies can be done at the moment. As such, the focus is given on the conduct of online trainings or webinars. This paper documented and explored the different ways by which the EL Team of the University of the Philippines Los Banos (UPLB) promotes the EL technology amidst the context of the COVID-19 pandemic. In general, this paper argues that the onset of pandemic poses an opportunity rather than a challenge in the conduct of training and webinars on edible landscaping technology. The pandemic specifically has called for the conduct of more extensive and intensive, as well as sectorally responsive promotional activities apart from the training and seminars to contribute to the attainment of the goal of food self-sufficiency.

2. Methodology
To achieve its main objectives, this paper utilized a qualitative approach, specifically case studies of the eight (8) webinars or e-seminars and e-trainings conducted from June to August 2020. Also included in the study are some descriptive statistics that provide observations on reactions, views, comments, and suggestions relating to the webinars, and
other quantifiable aspects of the activities/webinars conducted. The information and set of data obtained from the webinars are analyzed and described narratively, while also providing broad overall themes when apparent. Quoted individuals in the discussion section were also given pseudonyms to protect their identity. The observations made were then used as the basis for recommendation, mainly about the ways by which the content and delivery of the webinars can be improved.

3. Results
This section specifically discusses the nature and other main characteristics of the webinars and e-trainings conducted for the promotion of edible landscaping technology in the Philippines, at the onset of the pandemic. Narrated in the case format are the webinars and e-training conducted by, or in collaboration with the members of the EL project, being the main and leading experts of the topic in the Philippines. The webinars are arranged based on the chronological order or date of their conduct.

Case 1: A Webinar for the General Filipino Public

![Figure 1 ATI@Home: Live Seminar on Edible Landscaping (Tanim na Pagkain, Gawing Maka-Sining [Artistic Way of Crop Production]), last 11 June 2020 [7]]

The Agricultural Technologies thru Internet at Home, or ATI@Home, featured live seminar series on urban agriculture as a support to the DA's Plant, Plant, Plant Program. The seminar, entitled, “ATI@Home: Live Seminar on Edible Landscaping (Tanim na Pagkain, Gawing Maka-Sining [Artistic Way of Crop Production])” was held on the 11th of June, 2020, via Facebook. The resource speaker from the UPLB EL Team used a mix of English and Filipino languages in discussing the brief history of edible landscaping, its goals, components, phases, and some ideas in doing an edible landscape garden. There was no hands-on activity for the webinar. However, between discussions, there was an interactive part which was a review portion wherein the online participants answer the prepared activity questions through the comment section. The live seminar, which lasted 1 hour, 40 minutes, and 47 seconds, has gathered more than 1,600 views, 1,100 comments, and 566 reactions from the online participants/viewers. There was also a question-and-answer portion wherein the resource speaker answered the questions in the comment section. Most of the other comments in the comment section commended the resource speaker for a very informative webinar.
Cases 2 & 3: Recorded Pre-COVID-19 EL Trainings

![Figure 2 Online Seminar on Edible Landscaping Part I, last 23 June 2020 [8]](image)

The Department of Agriculture-Bureau of Agricultural Research has streamed seminars on urban agriculture in June 2020, in celebration of the Farmers and Fisherfolk month. Edible landscaping was one of the three topics that were streamed in two parts. The first part of the seminar tackled the basics of edible landscaping specifically its definition, goals, and phases. It lasted 32 minutes and 43 seconds, with more than 8,900 views on Facebook, 93 comments, and 324 reactions from online viewers. Meanwhile, the second part of the seminar focused on edible landscaping ideas. The recorded video lasted 56 minutes and 25 seconds, which obtained more than 5,600 views on Facebook, 106 comments, and 298 reactions from online viewers. The English and Filipino languages were used in both seminars. Since it was just streaming of recorded EL trainings, the UPLB EL Team answered questions through the comment section. No hands-on activity took place.

![Figure 3 Online Seminar on Edible Landscaping Part II, last 30 June 2020 [9]](image)

Case 4: A Webinar on the Potential of EL Technology on Sustainability amid Population Growth

![Figure 4 Edible Gardens: A Sustainable Solution for Growing Communities, last 17 July 2020 [10]](image)

Edible landscaping has also been considered to be one of the featured episodes of the AboitizLand Webcasts of AboitizLand, Inc. To uphold its core of sustainability and community-building, the UPLB EL Team was invited to discuss the setting up of edible
gardens in a community and the importance of a sustainable edible garden amid a pandemic. The webcast was live-streamed via Facebook on 17th of July, 2020. The webcast lasted around 1 hour, and 39 minutes, with more than 14,300 views on Facebook, 395 comments, and 384 reactions from online viewers. The viewers’ comments range from their excitement to questions on how to start an edible garden. The resource speakers used a combination of English and Filipino languages for the whole duration of the webcast.

Case 5: EL Technology as Plant-based Adaptation for Climate Change

Figure 5 Good Nutrition and Edible Gardens in the New Normal: A Webinar on Plant-based Solutions for Climate Change, last 22 July 2020 [11]

Edible landscaping has also been the subject of a particular webinar that addressed climate change through plant-based solutions or adaptations. Plant-based solutions were elucidated as involving the aspects of consumption and food production, and during the particular event, diets leaning on plant foods, as well as the production of food plants were the primary modes of adaptation practices that are being promoted to address the threat of climate change, especially in the context of vulnerable countries like the Philippines. This event was held via the video conferencing platform, Zoom in coordination with the Philippine Department on Environment and Natural Resources (Region IV-A), as well as with the Food and Nutrition Institute of the Department of Science and Technology on 22nd of July, 2020. The webinar lasted one (1) hour, seventeen (17) minutes, and fifty-one (51) seconds, and gathered around more than 1,500 viewers across the archipelago through the social media networking site, Facebook. During its live stream, the event also received fourteen (14) comments and thirty-four (34) reactions from the online audience. A combination of the official languages of the country, English and Filipino, was utilized as the main medium of instruction and discussion during the webinar. The event did not include any hands-on activities. In the comment section, viewers mainly inquired on what type of food plants or crops can be planted in urban areas with limited spaces, as well as the costing estimates in constructing an edible garden. Others commented or sought to inquire on when there will be a training session for edible landscaping in their province or near their locale.
Case 6: Practicing the Edible Landscaping Technology in Philippine Schools

School-based vegetable gardening is embedded in the fabric of the educational system in the Philippines and is mainly institutionalized through the “Gulayan sa Paaralan Program” (School Vegetable Garden) or GSPP. Implemented in primary and secondary schools, this specific program hopes to attain the objective of establishing school gardens and consequently, ensuring the continuous supply of vegetables for the school-based feeding programs. While edible landscaping has been promoted and widely popularized as ideal in households and community spaces, its practice in school settings has still a lot of room for expansion and growth. It is in this regard that the South East Asian Regional Center for Graduate Study and Research in Agriculture coordinated with the Edible Landscaping project, and the regional office of the Department of Education in organizing and conducting edible landscaping and school garden planning sessions as part of the series of e-training on 13th of August, 2020. The training was planned and delivered for the 200 teachers of the seven schools (primary and secondary) from the island of Busuanga, province of Palawan. While the events’ main participants were gathered via Zoom, the training session was live live-streamed on Youtube and has garnered one-hundred and fifty-seven (157) views, as well as five (5) comments. The e-training lasted for around four (4) hours, fifty-nine (59) minutes, and twenty (20) seconds. Just like with the previous webinar engagements, the resource speakers from the edible landscaping team utilized English and Filipino as mediums of instruction during the e-training. During the event, concepts and principles in edible landscaping were explained and a discussion on the utilization of indigenous plants as softscape materials in school edible gardens were included. The event also featured hands-on training focusing on the creation of a school-based edible landscape garden, as well as a garden plan to ensure sustainability. Designs were assessed by the resource speakers and they gave suggestions and recommendations. The e-training received favorable reactions from the audience and has inspired other attendees in organizing similar events on the same topic.
Case 7: EL in the Context of Alternative Food and Livelihood Sources

The College of Agriculture and Food Science (CAFS) at the University of the Philippines Los Banos reaffirmed its commitment to the Filipino people and orientation towards public service by organizing and conducting a webinar series entitled, “Aggie Ps Talk”. The series primarily aimed towards the dissemination of knowledge on agricultural techniques and technologies developed in the college to inform the general public of the possible measures by which they can manage the socioeconomic impacts of lockdowns and restrictions on mobility due to the COVID19 pandemic. The edible landscaping technology is among these techniques and practices deemed as useful and adaptive measures as the availability and supply of food is threatened. The EL technology was featured in the mentioned webinar series on 14th of August, 2020. The said webinar lasted for around one (1) hour, twelve (12) minutes, and thirty (30) seconds, and gathered more than three thousand (3,000) viewers during its live stream on the social networking site, Facebook. Additionally, the video live stream garnered one-hundred and nineteen (119) Facebook reactions, and fifty-four (54) comments from the online audience. “Taglish” or the mix of the English and Filipino language served as the medium of communication during this event. The lecture presentation included a discussion on engaging with edible landscaping at the community-level. Towards the end of the webinar, one of the online participants asked a question related to community-based edible landscape gardens. Discussing the benefits of engaging in edible landscaping at both the household and community level has drawn interest among cause-oriented individuals and groups who attended the webinar. The webinar also managed to gather positive feedback and reactions from its audiences based on the responses that can be observed in its comment section.

Case 8: A Student-led and Organized Webinar on EL

Providing an example of how the Filipino youth can demonstrate initiative and involvement in agriculture-related topics, the members of the university-based organization, UP Horticultural Society, organized a webinar series that featured topics in
the discipline of horticulture, aptly titled, “Agventure with Hortsoc: An Agricultural Webinar”. The series of webinars also served as the contribution of the student organization in helping to address the problems posed by the COVID-19 pandemic and its consequent lockdowns in the country. On the 29th of August, 2020, the webinar series featured the edible landscaping technology and tapped a resource speaker from the Edible Landscaping team of UPLB. The student-led webinar on edible landscaping lasted two (2) hours, four (4) minutes, and thirty-nine (39) seconds, and was live-streamed through Facebook. It gathered around more than 3600 viewers and an audience of varied backgrounds, from all over the country. The webinar also managed to draw positive reactions based on the 196 reactions, and a total of two-hundred sixty-seven (267) comments was received. Some of the webinar participants hoped that their local governments would adopt the EL technology, while others were inspired to transform their existing ornamental gardens into one that is edible.

Discussion
This section provides a summary of the main patterns observed based on thematic analysis. At the time of the COVID-19 pandemic, the webinars and e-training conducted by the Edible Landscaping project team demonstrated variation in terms of content and themes, number of viewers, and length of duration. The delivery of the presentations varied based on the type of audience as exemplified by the first (general public) and fourth (schoolteachers) cases. Online audience and viewers totaled around 39,000 but varied across the webinars and e-training included in the study. The webinar and e-training sessions also varied in terms of duration, ranging from as short as thirty-minute audio-visual pre-recorded presentations to full-scale training sessions that lasted for almost four (4) hours. The e-training (Case 4) included in the study was the only one with a hands-on activity, while the webinar with an interactive feature was Case 1. Incorporating hands-on and interactive activities in webinars and e-training proved to be challenging as the internet connectivity of some audiences is unstable, and due to the general viewers attention limit span. The background of the collaborating and organizing teams also ranged from national and local government institutions, private companies, to university-based student organizations.

On the other hand, there were also some similarities among the eight (8) webinars and e-training analyzed. The lectures and discussions were delivered in both English and Filipino languages as these are the two official languages of the Philippines. The webinars and e-trainings were live-streamed mainly on the social networking site, Facebook, while others also posted video recordings via YouTube. In general, however, most of the online webinars involved the use of the popular video conferencing software, Zoom. These promotional activities also received generally positive reactions and feedback from the audiences online. The comments sections of the live-streamed videos have also shown that the delivery of the presentations was effective in evoking interest and inspiration among the audience. Inquiries about the technology ranged from technical concerns to ones that involved costing and wide-scale adoption. While the conduct of technology promotion activities such as webinars and e-training has been more challenging at the onset of the pandemic. The heightened awareness and interest of the public towards edible landscaping technology have provided an opportunity to showcase the importance and relevance of EL to the present needs of the country.

4. Conclusion
Ever since 2009 when the DA-BAR funded EL, the UPLB EL Team has been working closely with different agencies, schools, and institutions to promote the technology and address food self-sufficiency at the household level, especially in this time of the pandemic. Its use and importance were more highlighted at present due to the pandemic wherein food
sufficiency is a concern. The overwhelming requests for webinars show that the potential of EL in sustaining food sufficiency has already been realized by many. The affirmative responses during the webinars and e-trainings have also demonstrated that the promotional activities conducted by the edible landscaping team, were in some way effective. The conducted webinars and e-training have also demonstrated the expansive utility and versatility of the edible landscaping technology in addressing social problems currently being experienced by the country as a whole. Through the promotional activities of EL that can help in addressing food sufficiency, it is expected that local communities and even those at the household levels will be encouraged to replicate and practice EL in the confines of their homes for them to have a readily available garden to table food. Hence, the UPLB EL Team’s tagline, “no Filipino should be hungry”.

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