

JOURNAL

PROJECT

APPLAUSE - Alien Plant Species from harmful to useful with citizens' led activities

♀Ljubljana, Slovenia

TOPIC

Circular economy

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APPLAUSE Journal 5: Delivering public services and urban innovation in times of COVID-19





UIA Expert Jorgina Cuixart reports "COVID-19 has had a noticeable effect on APPLAUSE and the plans the consortium had for this last phase of project implementation. Faced with the new reality and the uncertainties that surround it, the City of Ljubljana and its partnership has quickly adapted and found the solutions that enabled the project to continue its activities during the past 8 months." Read more about the solutions in Journal 5!

Executive summary

COVID-19 has had a noticeable effect on APPLAUSE and the plans the consortium had for this last phase of project implementation. Faced with the new reality and the uncertainties that surround it, the City of Ljubljana and its partnership has quickly adapted and found the solutions that enabled the project to continue its activities during the past 8 months. The main impacts of this pandemic have been:

- Moving all face-to-face meetings of the consortium to online sessions,
- Cancelling most of harvesting campaigns with citizens except for one or two that could be done in early autumn with a reduced number of volunteers,
- Stopping temporarily the collection of IAPS in the city's collection centre,
- Stopping temporarily the activities in the paper and wood working workshops,
- Moving some of the workshop's activities to the schools' premises,
- Since no activities targeted to elderly population could be organised, the consortium produced packages of DIY products to use at daily
 activity centres for the elderly,
- Intensifying the communication via social media, specially through videos of DIY products and food recipes, and
- Finally, due to the COVID-19 restrictions, the mobile exhibition could only be displayed in a few locations. Nevertheless, the team is already planning to continue touring the exhibition beyond 2020, when the pandemic situation improves.

Such circumstances have not impeded the fulfilment of key milestones for the project, including:

- The completion of the IAPS ground survey of the land owned by the City of Ljubljana to almost 100%. With this data, the city now counts with an excellent inventory on the presence of IAPS in its territory. The project has collected 30,000 data entries for 121 plant species.
- Despite the cancellation of volunteering harvesting campaigns, the consortium has been able to collect the quantity of biomass necessary for the design and production of the IAPS-based products. A total of 15 tones herbaceous biomass and 60 m3 wood biomass has been harvested by APPLAUSE.

- APPLAUSE has now finalised the IAPS-based products which are now ready for commercialisation: letter paper with embedded IAPS
 flowers, New Year's decorations made of wooden and paper IAPS, wooden compost box, a memory game to help recognise IAPS, a set
 of balcony garden seeds and handcrafted and machine-made paper sheets made of IAPS.
- The go-to-market strategy for APPLAUSE has been finalised. This strategy which targets four customer segments (schools, tourists, families and locals) establishes three main distribution channels: online store, network of physical stores and social network/Instagram shopping. Partner VOKA-SNAGA is already working on the development of the online store which should be ready by the end of 2020.
- As mentioned before, given the difficulties to organise face-to-face activities with citizens during the pandemic, the project has focused
 more on digital activities with the development of multiple videos that empower citizens to take action while at home (on DIY products,
 recipes with IAPS ingredients...) some of them reaching more than 17,000 views on Social Media. The municipality has also strengthened
 its presence on national and local TV.
- Finally, the consortium has continued to develop the circular model for APPLAUSE, which includes four circular business models (paper products and workshop services, wood products and workshop services, IAPS machine-made paper and wood type letter printing workshop) and four other business solutions that act as enablers of APPLAUSE circular models (IAPS maps, IAPS management IT platform, specialised IAPS wood harvesting services and specialised herbaceous IAPS harvesting services). This work has been crucial in supporting the future continuation of APPLAUSE activities once the project finishes in December 2020.

All this has been possible thanks to the capacity of the consortium to adapt to the new circumstances. The city leadership could have very well stopped all non-essential projects, including APPLAUSE. However, the decision was the contrary, to continue business-as-usual, as much as possible, while giving priority to essential services. One of these essential services is waste management which is the responsibility of the public company VOKA-SNAGA, a key partner in APPLAUSE. During the pandemic, VOKA-SNAGA has had to deal with increased levels of waste generated (single use plastic, increased packaging and fly tipping) while in short of personnel. Nevertheless, the company has remained actively involved in APPLAUSE.

While this situation is likely to continue for some time, many governments and private sector actors have realised that the circular economy holds the key to a greener post-pandemic recovery. And APPLAUSE can contribute to this by linking the circular economy to the conservation of urban biodiversity, all with the support of its environment conscious citizens.

1. Introduction

In March 2020, as I was finishing the previous journal for APPLAUSE, none of us would believe that eight months later, the world would still be at stand still, trying to fight the 2nd wave of the COVID-19 pandemic. COVID-19 has disrupted our lives, our health services, our economy and of course, the projects that municipalities, companies and organisations were implementing such as the UIA Initiative.

In APPLAUSE, certain activities had to be modified, completely reinvented or, on some occasions, discontinued. The capacity of the APPLAUSE consortium to adapt, manage the risks and finding alternative ways of overcoming challenges has been remarkable.

After a 2-month extension granted by UIA to the consortium to mitigate the effects of COVID-19, the project is officially finishing on 31 December 2020. The next chapters summarise the activities that have taken place in APPLAUSE in the last 8 months to wrap up the project and prepare its post-project phase while dealing with a global pandemic. Many learnings can be taken from such resilient consortium!

2. Account on the progress made by the project since March 2020

2.1 Plant identification and biomass harvesting

One of the key milestones reached during this period has been the completion of the ground survey of the land owned by the City of Ljubljana to almost 100%. Such remaining fieldwork took place from July to mid October 2020 when only minor restrictions were imposed due to COVID-19.

Overall, this fieldwork has provided the City of Ljubljana with an excellent inventory on the presence of IAPS in its territory. All this data is gathered in a digital platform, which was also finalised only recently. The platform not only facilitated the collection of the data by digitalising the ground survey on the spot, but also provides a complete management system for green area managers to process orders, arrange biomass collections and organise deliveries. Besides, it includes a Web Portal Service for Citizens' initiatives which enables citizens to enter their own observations of IAPS in the territory. The data coming from citizens is then checked by City of Ljubljana's employees and if validated, it is incorporated in the database. This is one of the key outputs that will continue to be used after the project.

TAKE AWAY POINT > Multisource database for enhanced

management of IAPS

The APPLAUSE project has proved the feasibility of collecting and managing multisource and multimethod data for IAPS management. The method is more complex than standard fieldwork since the data obtained, including data coming from citizens, can be quite large, heterogeneous, and dynamic (the project has collected 30,000 data entries for 121 plant species). However, such exercise of data collection sets precedent on how a high-quality dataset can support the delivery of public services. Besides, the development of a user-friendly digital platform to manage this database and arrange the collection and removal of IAPS has been a great advancement for the city. For example, before APPLAUSE, for the removal of ragweed, the City of Ljubljana needed approx. 25 hours to manually prepare a list of locations and eradication maps. This information is now ready in half time and collections can be arranged online.



In 2020, APPLAUSE had planned the remaining harvesting campaigns of IAPS with volunteers. These were often organised together with high schools or other groups of adults. But in the end, only 3 could be organised, one in March (before the restrictions), one in May and another one in October with a limited number of participants. The COVID-19 situation during the

summer would have allowed more activities to be organised outdoors, but summertime is not the right season for IAPS harvesting.

Despite the challenges faced in 2020, over the course of 3 years, APPLAUSE has managed to organise 25 harvesting actions (5 less than originally planned) and plans to organise one or two more each year, after the finalisation of the project. These campaigns have been very attractive to high school and university students, becoming a great education resource to teach nature conservation to younger generations.

Even if APPLAUSE could not organise all the citizens' harvesting campaigns they had planned, the consortium has been able to collect the quantity of biomass necessary for the design and production of the IAPS-based products, thanks to the green area management services provided by one of its partners, TISA. A total of 15 tones herbaceous biomass and 60 m3 wood biomass has been harvested by APPLAUSE.

2.2 Finalising the products and preparing their market introduction

The product design and production has not been greatly affected by the COVID-19 crisis. The paper products are now finalised and ready to be commercialised. Some designs for wood products needed to be adjusted, and both partners – TRAJNA and the Department of Wood Science and Technology from University of Ljubljana are finalising the more complex products such as the windmill or the 3D printer.



Part of the design team with a <u>circular Christmas tree made of IAPS</u> (Source: Department of Wood Science and Technology).

Luckily, the market research on the wood and paper products, which was based on surveys to potential customers from identified target segments (schools, tourists, families and residents) had already been finalised by the time the COVID outbreak arrived. Based on the results of this research, over the past few months, APPLAUSE has further developed its go-to-market strategy.

The final set of selected products for APPLAUSE for an initial market introduction are:

- Letter paper with embedded IAPS flowers
- New Year's decorations made of wooden and paper IAPs
- Wooden compost box
- A memory game to help recognise IAPS
- A set of balcony garden seeds
- IAPS paper sheets (handcrafted of machine-made)

To better understand users' needs, APPLAUSE developed several "Personas" for the four main customer segments: schools, tourists, families and locals. These are fictional characters that, based on the market research, better represent user types that might use a service, product or brand in a similar way.



IME: Marc & Linda
ŽIVITA V: Nemčiji
KUPNA MOČ: \$\$
ZANIMANJA: Potovania, ur

Potovanja, umetnost, kultura, glasba, koncerti.

Pomembna jima je skrb za okolje in naravo. Rada se družita z lokalnimi prebivalci, saj ju zanima, kako živijo.

Example of a persona for the tourist customer segment. Translation: Marc and Linda / Living in: Germany / Purchase power: \$\$ / Interests: Travel, art, culture, music, concerts. It is important for them to take care of the environment and nature. They like to socialise with locals, they are interested in how people live. (Source: Technology Park Ljubljana).

The use of such design and marketing technique has really helped APPLAUSE to better identify the three main sales channels:

- An online store that exclusively sales IAPS-based products and services.
- An initial network of physical stores that display APPLAUSE products and services. The focus is on stores that sell a certain type of "lifestyle" that values the importance of the environment (boutique and interior stores, home products, modern concept shops, souvenir shops...). Larger retail shops may also be suitable for specific products such as the compost box.
- Social network/Instagram shopping that will lead individuals to the web purchase and at the same time build a community of interested individuals.

The go-to-market strategy for APPLAUSE products also defines a marketing mix that should lead potential customers to the different sales channels. These include: social networks (mainly Facebook and Instagram), online campaigns (on Facebook, SEO, Google AdWords, YouTube...), media (print, online, TV, promotional activities for journalists) and project partners' communication channels (City of Ljubljana newsletters and social network profiles, partners' branches and shops).

As a result of this work, APPLAUSE has identified the top 3 priorities for the initial deployment of its go-to-market strategy:

- To develop and optimise the online store
- To arrange at least one point of sale in a physical store
- To launch social networks and publish regularly

VOKA-SNAGA, the City of Ljubljana's water and waste management public company, is leading the market introduction of APPLAUSE products and services. They are already working on the development of a website that will serve as online store of APPLAUSE products but also as the main information source for APPLAUSE educational resources and workshop activities. The website, named www.paplab.si, will go live in December 2020, and will be a crucial channel to enable the continuation of APPLAUSE activities, once the UIA project ends in December 2020.

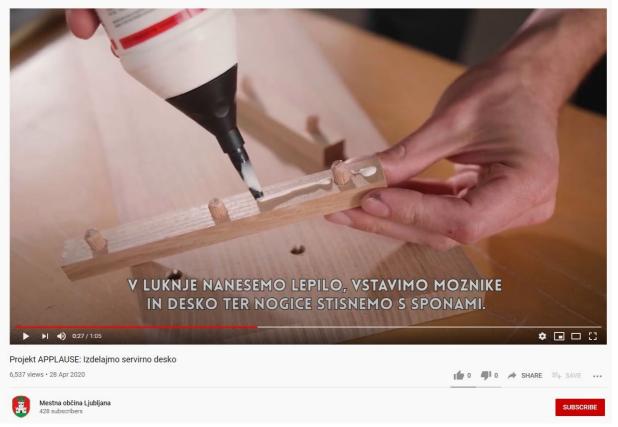
2.3 Moving the workshops to schools and homes

APPLAUSE has supported the construction of two new facilities for the city where to promote circular economy, nature conservation, crafts and arts, and the preservation of cultural heritage: the wood working workshop and the paper-making workshop. Located in Pov **š**etova collection centre, the workshops had to close down for some months due to the pandemic. Alternative options were sought. The workshop activities for children were brought into schools. After an introduction to IAPS in the classrooms, children experimented with the wood products and the papermaking set outdoors in the schoolyard. In total, APPLAUSE has managed to organise 93 workshops for children. Given the risk of COVID-19 for the elderly population, no face-to-face workshops could be organised with this target group. APPLAUSE then prepared a set of DIY products that could be used at daily activity centres for the elderly. As an alternative to these face-to-face activities, during these months, the project has also invested in the production of more videos on DIY products, which have been widely promoted via social media

channels to adults and families. The <u>one that shows viewers how to make a woody bird house with the green roof</u> has had more than 17,600 views on YouTube. Also, videos showcasing culinary recipes with fruits and tubers from IAPS have been quite popular, especially the <u>one that shows how to make a cherry plump smoothie</u> which had more than 41,300 views on YouTube. Promotional videos have also been released on local and national TV.

TAKE AWAY POINT à Empowering citizens in times of COVID-19

Since the very beginning, APPLAUSE has had a mission to empower citizens, encouraging them to take action to recognise, reuse or hand-over IAPS. In times of COVID-19, many of the activities aimed at citizens had to be cancelled or postponed. Nevertheless, the project has continued to empower them, this time, by encouraging them to remain active while being at home. It is not possible to calculate the impact that APPLAUSE has had on easing the solitude and stress caused by strict lockdowns. However, judging by the popularity of its videos and the feedback received, we can say that APPLAUSE has done its bit in making the lockdowns more bearable while inspiring citizens to take action on the environment.



2.4 Defining the circular model for APPLAUSE

Despite COVID-19, the project partners have continued to meet and discuss online how to further define the circular model for APPLAUSE. A key principle of the circular economy is the necessity to build a systemic approach that encompasses circular thinking that benefits societies and the environment with economic development that provides a return to businesses. In the context of APPLAUSE, this principle is fulfilled by four different circular business models and four other business solutions that act as enablers of APPLAUSE circular models:

APPLAUSE Circular business models

Enabling solutions of APPLAUSE circular business

- IAPS Craft-made paper products and workshop services (VOKA-SNAGA
- IAPS wood products and workshop services (VOKA-SNAGA / TRAJNA)
- IAPS machine-made paper (ICP)
- Wood Type Letter Printing workshop (TIPO)

- IAPS maps (Space-SI)
- IAPS management IT platform (GDI)
- Specialised IAPS wood harvesting services (TISA)
- Specialised herbaceous IAPS harvesting services (VOKA-SNAGA)

TABLE 1: APPLAUSE business models and enabling solutions and their responsible lead partner/s.

For each circular business model and enabling solution, partners prepared a business model canvas. This strategic management tool developed by Alexander Osterwalder in 2009, describes in a one pager the main elements of a business model, from its value proposition, to the customer segments, the resources and infrastructure needed to carry out the operations or the main costs and revenue sources.

Key partners

- · City of Liubliana
- · Educational institutions · Relevant resellers of sustainable and local products
- Supporters of DIY culture and green citizenship
- . Tisa (cuts the trees)
- The saw (cuts them into half products) • Dryer (dries the wood,
- unless drying is done at JP VOKASNAGA)

Key activities

- · Production of wood products,
- Workshop facilitation · Business strategy & marketing
- · Offer of other services (repair, renew)

Key resources

Knowledge, staff, and

equipment for work Workshop facilities enough wood

Cost structure

- · Operating costs (equipment, energy, subcontractors -
- · Staff cost (workshop master, salesperson, overhead
- · Wood and material costs for paper & products PR & Marketing costs

Value proposition

General VP: The establishment of a wood workshop as a place for the development of sustainable wood products, implementation of educational events and the possibility of repairing products in the public interest (COL) or repairing the products produced and already sold there.

VP1: Production and sale of attractive and functional craftmade wood products made from IASP that promote circular economy and sustainable living (price range: 5-euro bag holder, 4000-euro 3d printer). Some products are designed to be made at the workshop, at home or meant to be rented around the

VP2: Through workshop activities, participants will gain new knowledge about IAPS while learning hand wood working skills sustainable approach to IAPS management.

public street wood furniture and repair services for sold products

Customer relationship

- · Returning /recurring clients: Contract with COL for public maintenance, community of DIY enthusiasts, regular contact with educational institutions (for workshops and educational events)
- · Non-returning clients (e.g. foreign tourists)

Channels

Digital promotion, in store (second-hand store, tourism Ljubljana offices, artisans and local souvenir shops); Salesperson and resellers, workshops and IAPS presentations, library of things, Trajna events

Customer segments (CS)

CS1 wood products: local community, tourists, educational institutions, business clients (e.g. gardeners)

CS2 workshop activities: Educational institutions and NGO's, DIY and creative community, families.

CS3 repair service: COL's urban furniture, individuals as DIY enthusiasts

Revenue streams

- Sales of products/services/space and machines/products for rent
- Municipal funds for manufacture and repair services of public wood furniture
- EU funds for workshop program development, inclusion of vulnerable social groups

Example of the business model canvas for the IAPS wood products and workshop services (Source: VOKA-SNAGA)

VOKA-SNAGA and the City of Ljubliana have been coordinating this work together with the partners that own the different business models. The overall concept and the individual business model canvases were presented to the Project Steering Committee, chaired by the Vice Mayor, in June 2020 to a great success. The members of the group validated the approach taken and highlighted the possibility to scale-up production by collaborating with other municipalities. While APPLAUSE business model and products have not been designed for mass production, finding alliances with neighbouring municipalities to sustainably increase production could be a good strategy to maximise the use of the workshops and increase their financial viability.

Following this work, VOKA-SNAGA has engaged with one-to-one meetings with the concerned partners to continue refining the business models and explore future cooperation deals. The municipal company has also been working on the development of the 2021-2025 financial projections for the two workshops. These projections show a progressive ramp up of sales and workshop services that could make the operation of both workshops economically sustainable by 2025. For the first years (2021-2022), sales projections are rather conservative as they consider the potential negative impact of the COVID-19 crisis and the subsequent economic crisis. In Slovenia, the GDP is expected to shrink by 6-10% in 2020 and the level of employment may fall by as much as 4%. Given this economic situation, VOKA-SNAGA expects less workshop visits and lower demand for IAPS-based paper and productions. However, on the longer run (2023-2025), the situation could greatly improve thanks to the political impetus (at local level) and the legal framework (EU level) that incentivise a more circular economy. The socio-cultural context in Ljubljana, with a clear preference for greener lifestyles and the increasing interest of younger generations in the environment, is expected to lead to higher demand for the type of products and activities proposed by APPLAUSE.

TAKE AWAY POINT à Planning the future of APPLAUSE with sound financial projections and backing from the top leadership

The development of a sound business model for APPLAUSE products and services has not only enabled project partners to test the viability of a new circular approach for IAPS management. It has also been a crucial element that has allowed VOKA-SNAGA to plan the continuation of the project activities and present them to its leadership both in economic and strategic terms. As a result, for the next 5 years, the municipal company intends to sustain the operations of the paper-making workshop with their own funds and work towards the development and positioning of its commercial offering that enables a longer-term financial sustainability. As for the wood workshop, the current model should be self-financing thanks to the provision of repair services to the City of Ljubljana (e.g. for public benches, fences, etc.) and additional revenues from workshops services and product sales. At the same time, VOKA-SNAGA aims to explore opportunities to co-finance the operation of their workshops, for example by participating in tenders at local, national or European level.

3. Delivering public services and urban innovation in times of COVID-19

These past months have been challenging for everyone. The COVID-19 pandemic has disrupted the day-to-day life of our citizens and hence of our cities. So how does a city react to it? How does it continue with its day-to-day activities? This chapter aims to summarise the experience of City of Ljubljana both within and outside the APPLAUSE context.

In March 2020, to respond to the COVID-19 pandemic, the City of Ljubljana set up a crisis working group led by the Mayor. One of the first decisions of this group was to instruct most of its staff to work from home, so that they could stay safe and take care of their families while continuing to develop most of their tasks. Of course, the priority of the City was also to provide an immediate response to the health crisis, habilitating a space in the city centre where exposed medical personnel could rest while they were caring for COVID-19 patients.

Basic public services such as waste collection and water supply were also a top priority. The municipal company VOKA-SNAGA had to prepare a contingency plan that would allow them to continue to deliver public services in case there were infections among its staff. However, in the case of the waste collection service, this was not possible at all times. On some occasions, waste could not be disposed according to the scheduled plan due to the absence of utility workers. In those circumstances, the remaining workers had to work extended hours, often having just one person operating the garbage truck, and even then, they did not have the time to empty all containers according to plan. To address this, many teams had to work on Saturdays, when waste collections are not planned, to carry out the remaining collections.

During the first COVID-19 wave, VOKA-SNAGA also noticed a number of irregularities related to fly-tipping. This was partly because the Collection Centre was closed, and the collection of bulky waste was temporarily stopped. They have also recorded an increasing amount of waste generated, mainly due to the changes in shopping routines (more consumption of plastic and paper packaging and disposable products). Unfortunately, the pandemic disrupted the excellent quality of waste collection services provided by the city and diminished (hopefully temporarily) the exemplary behaviour of its citizens. Now that we are in the second wave of COVID-19, it is clear that the focus is still on the delivery of essential public services. However, VOKA-SNAGA is already planning additional efforts in campaigning and environmental education in order to recover the high levels of compliance and participation prior to the pandemic.

In these circumstances, the priority for a city is to focus on the delivery of essential public services such as health, policing, social services, street cleansing or waste collection. But one of the key learnings of the City of Ljubljana is that it is possible to continue to deliver non-essential services, including urban innovation projects such APPLAUSE. The main experiences from the APPLAUSE team are summarised below:

- According to the APPLAUSE team, the transition to remote working was smooth, and they did not face major challenges. In the municipality, working times were adapted and became more flexible, especially for those who had children in their care. The team even managed to develop an even major sense of solidarity and team spirit, trying to help those that had a higher workload or were struggling the most in managing their work-life balance. Also, within the consortium, the fact that APPLAUSE is in its final year meant that partners were already used to working together. Therefore, moving face-to-face meetings to remote was not too challenging.
- The consortium already had in place a monthly monitoring scheme that allows the project coordinator to keep abreast of ongoing developments. This system has also helped the consortium to anticipate potential risks related to the COVID-19 pandemic and quickly adapt to the changing circumstances.
- Within the APPLAUSE consortium, partners faced different situations. Some, like universities and research institutes, had to close down their labs temporarily, meaning that the remaining tests had to be postponed. Luckily, as the situation improved during the summer, these partners managed to re-start the lab operations. Likewise, the studios or workshops that were organising various activities aimed at citizens also had to stop their operations.
- To mitigate the impact of such closures, the consortium decided to intensify the level of digital communications. Budget set aside for the final conference of APPLAUSE has been reallocated to online dissemination and the production of videos on the overall project results as well as on the activities performed by different partners. These videos have been widely promoted on social media. In addition, partners have disseminated them through their own communication channels and have showcased them during online conferences and workshops. In addition, the consortium has participated in live broadcasts and recordings on National TV Slovenia (TV Good morning) and additional broadcasts are planned on regional TV (show Za zdravje). In general, the consortium has found these videos and broadcasts on TV to be extremely effective in reaching out to a wider audience from all parts of Slovenia.
- A few public events could still be organised during the summer as well as in the autumn, before the second wave of COVID-19. In that period, the consortium adapted the events (harvesting campaigns, IAPS reuse festival or the visits to schools) to the measures and limitations dictated by the health authorities. Partners, especially those working in academia, have continued to promote the results of APPLAUSE at national events and international conferences (even if these were held online).
- One of the activities that has been more severely impacted by COVID-19 has been the mobile exhibition on the results of APPLAUSE that was supposed to tour around Ljubljana and other Slovenian cities during 2020. The aim was to host the exhibition in 20 different locations however, due to COVID-19 restrictions, it could only be hosted in 6 locations, with one being the municipality building Kresija in the city centre, where the exhibition was displayed from a window shop for citizens to see, without breaching national decrees. To further exploit this result, even beyond the project duration, the team in Ljubljana is already looking for new locations where to display the exhibition next year, once the COVID-19 restrictions are lifted.
- Finally, despite the challenging circumstances faced in the past few months, the consortium has found the time to explore potential synergies with other initiatives that could support the future continuation of APPLAUSE, once the project finishes on 31 December 2020. They are currently in discussions with three nature conservation projects, two European projects ARTEMIS and ALPTREES and one from the National Environmental Agency, to exchange data NarcIS project. The Department for Environmental Protection from the City of Ljubljana has also started to collaborate with the Department for Commercial Activities and Traffic on a project that aims to improve the current management practices of both public and private forests URBforDAN project. The Department for Environmental Protection is bringing all its knowledge on the circular management of IAPS and both departments are even discussing the possibility to organise joint harvesting activities from next year onwards.

How can APPLAUSE contribute to a more resilient and environmentally friendly post-pandemic reality?

Ljubljana, as many other cities, has seen an increase in the level of waste generated (single use plastic, increased packaging, fly-tipping) as a result of the pandemic. One could think that the circular economy faces now a more arduous path ahead. However, many think the contrary: the circular economy holds the key to a greener recovery. This has been recognised by many governments as well as private sector circular economy pioneers. According to the Ellen McArthur Foundation, policy-makers can help to pave the way by: setting a common direction of travel towards a resilient recovery with the circular economy; shaping incentives to enable a circular, low carbon economy; fostering collaboration to obtain system-level solutions; and unlocking circular investment opportunities to meet key public priorities.

APPLAUSE circular business model contributes to this vision with its systemic approach to IAPS management. While the city is already a pioneer in circular economy, APPLAUSE has made the link between the circular economy and the conservation of biodiversity. As we build a greener future, the importance of preserving our natural habitats is set to increase. And APPLAUSE does that by encouraging citizens to act (in identifying IAPS, reusing them or disposing them appropriately). Importantly, the city does not do it alone. Thanks to APPLAUSE, it has built a community of local actors (universities, companies, NGOs, schools...) who are willing to continue to collaborate in the future to upscale the circular models for the management of IAPS and transfer the knowledge to others locally, nationally as well as at European level.

4. Summary on implementation challenges

The different projects within the Urban Innovative Actions programme face similar implementation challenges. These have been grouped in seven thematic areas. The following table provides an overview of how these challenges are impacting the APPLAUSE project (red: high importance, yellow: medium importance and green: low importance). Arrows indicate if they have raised in importance (\tilde{n}), lowered in importance (\tilde{o}), or remained the same (\tilde{o}) compared to the previous journal.

Challenge	Observation
Leadership for implementation Challenge level	This challenge has been of a high priority throughout the project duration. However, with the COVID-19 outbreak, it has taken a slightly different angle. Political leadership has enabled projects like APPLAUSE to continue. Within the consortium, the team in the municipality has managed to keep the spirit, find alternative solutions when necessary, and continue to support partners in delivering their tasks adapted to the changing circumstances.
Public procurement Challenge level	APPLAUSE has not faced any significant challenge in relation to public procurement in this later stage of the project execution.
Integrated cross-	Integrated cross-departmental working has often been rather easy in Ljubljana, mainly

departmental working

Challenge level



because its working culture already foresees such level of cooperation within departments. In addition to the ongoing collaborations with the Pre-School Education and Schooling Department, during this period the APPLAUSE team has already started to collaborate with the Department for Commercial Activities and Traffic on a parallel project dealing with forest management (see further details in section 4).

Adopting a participative approach

Challenge level



Partners and the wider network of stakeholders have continued to be engaged, even if it has been done mainly on remote. The good working relationship and the regular contact that had already been established prior to the pandemic, has made this task easier. Regular teleconferences, phone-calls and a limited number of face-to-face meetings have been sufficient to maintain such participative approach.

Monitoring and evaluation

Challenge level



As the project reaches its end, the task of evaluation remains highly important. In these last months, the project has produced a publication on <u>lessons learned</u> and a <u>project playbook</u> on how to establish a circular model for the management of IAPS step-by-step. Both documents compile the experience of all partners gathered during the 3 years of project implementation.

Also, the project has set up an internal monitoring scheme where Activity leaders fill in a short progress report to be sent to the coordinator every three months. This reporting system, which was implemented since the project start, allows partners to report on progress, potential risks and key challenges that affect the activities to be undertaken. In addition, the consortium meets on a monthly basis (currently online) to discuss progress. This reporting and interaction have been very useful during the pandemic to address potential impacts in a timely and efficient manner. While such regular monitoring and evaluation will stop once the project ends, partners will continue to work on IAPS and collaborate with each other in the implementation of the post-project strategy (see "Upscaling" below).

Communicating with the target beneficiaries

Challenge level



As explained in previous chapters, as a result of the COVID-19 pandemic, APPLAUSE has had to intensify the level of communication with target beneficiaries via online channels. Many of the videos produced, especially those promoting DIY activities, have been highly successful and have contributed to empower citizens, giving them ideas on how to spend time at home.

Upscaling

Challenge level



Despite the current circumstances, APPLAUSE partners have continued to advance towards the definition of their post-project phase in which different partners take ownership for one or more of the business models created. This work in being led by VOKA-SNAGA who has already put in place a sound go-to-market strategy for APPLAUSE products and services to be deployed early next year in cooperation with other project partners (TRAJNA, ICP, TISA and TIPO). In such post-project strategy, the City of Ljubljana plans to continue supporting the community of project partners and promote APPLAUSE to the wider population, in particular to the younger generations. Finally, research partners also plan to continue expanding their knowledge on IAPS both for educational purposes as well as for research (several patents and a spin-off company are well underway).

All projects have had to adapt its activities to this "new normality" of the COVID-19 pandemic. After documenting these past few months in this journal, I can say that APPLAUSE has done exceptionally well. On one side, we could argue that the fact that the project had been running for more than 2 years already, played as an advantage. The partnership was consolidated, the majority of activities were set up, and the bulk of work had already taken place (especially as regards fieldwork, analysis of IAPS, product design, set up of the workshops, etc.). However, the last year of a project is pivotal in preparing the future legacy of the project. In this sense, the consortium has showed its determination in preparing a robust post-project strategy that will see the continuation of the APPLAUSE business models, including the commercialisation of its products and services, while continuing expanding its reach through strategic collaborations with other projects and initiatives.

In a few months, I will write the last of the APPLAUSE journals. This final report will specifically focus on what has happened in this post-project phase and how APPLAUSE and its partners have adapted to a new reality (hopefully COVID-19-free) without the grant support from UIA. Right now, it looks very promising.

Circular economy

See on UIA website

