

## APPLAUSE project

# “Circular business models for IAPS management”

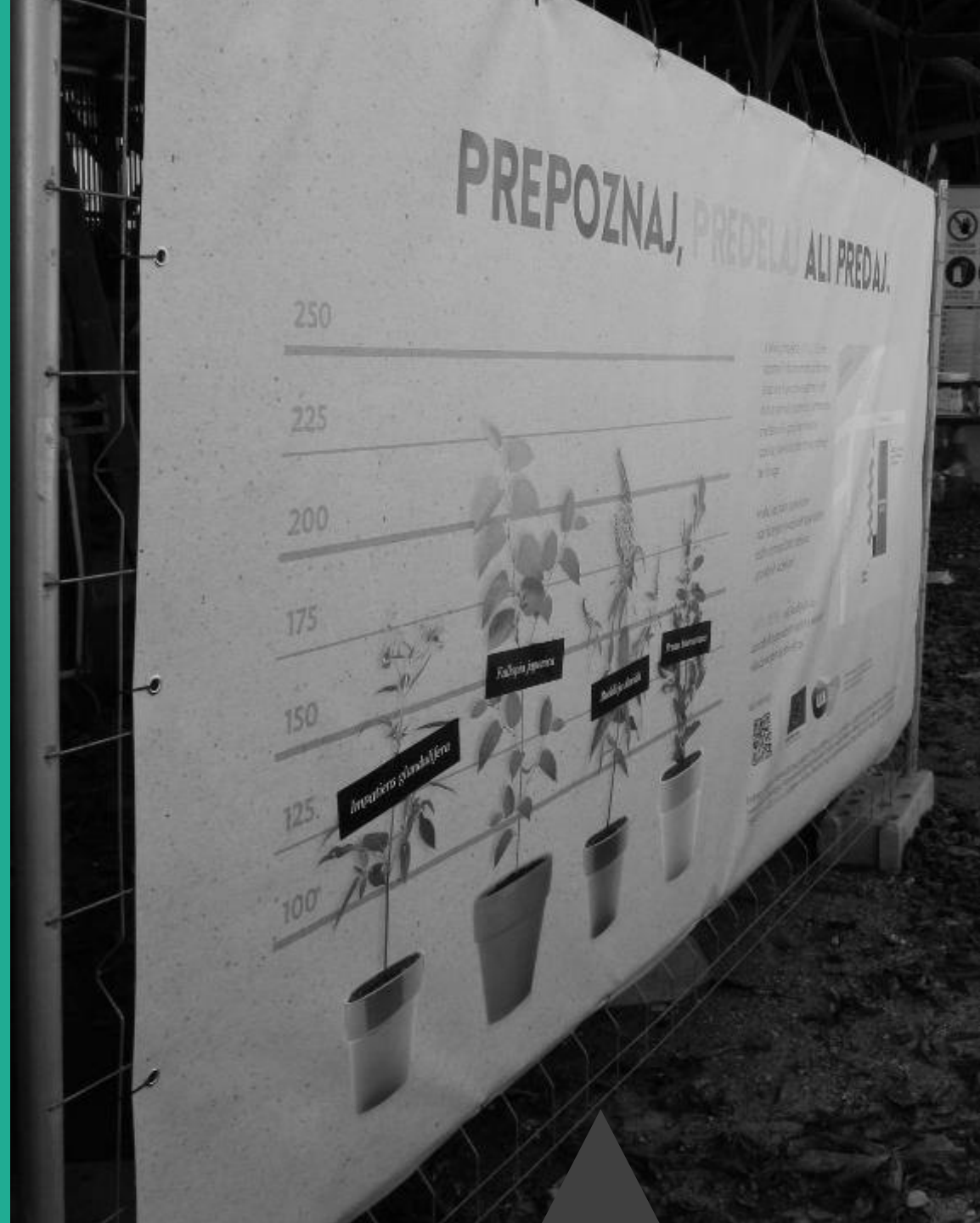
Zoom-In report 3 by UIA Expert Jorgina Cuixart, February 2021



EUROPEAN UNION  
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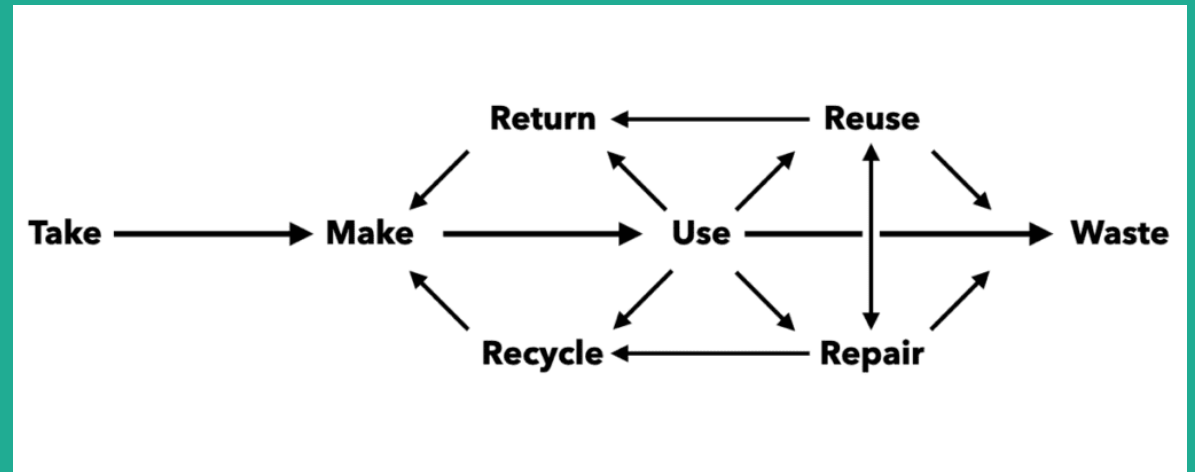


# Circular business models for IAPS management

## REPORT OUTLINE

1. Introduction to APPLAUSE circular management of IAPS
2. APPLAUSE business models
3. Measuring the impact of the new circular business models
4. Case study – Circular business model for the IAPS handmade paper products and paper workshop
5. Conclusions

*“A CIRCULAR BUSINESS MODEL ARTICULATES THE LOGIC OF HOW AN ORGANISATION CREATES, DELIVERS AND CAPTURES VALUE TO ITS BROADER RANGE OF STAKEHOLDERS WHILE MINIMISING ECOLOGICAL AND SOCIAL COSTS”*



The circular economy value journey

Source: Board of Innovation



# 1. Introduction to APPLAUSE circular management of IAPS

The APPLAUSE project (01/11/2017 – 31/12/2020) has piloted a new circular model for the management of invasive alien plant species (IAPS) in the City of Ljubljana, Slovenia.

IAPS are a major problem for European ecosystems. They not only threaten the local biodiversity but may also cause harm to human health, the economy and the ecosystem services delivered by local flora (floods and erosion prevention, climate change mitigation, etc.).

Approximately 150 Alien Plant Species (at least 30 of them invasive) are present in the green areas of the City of Ljubljana (some being Natura 2000 protected areas). APPLAUSE has changed the current linear model for IAPS management (collect, transport and dispose/incinerate) to a circular economy one. In this new model, IAPS are considered a useful resource that can deliver value to the environment, its citizens and the local economy, contributing towards Ljubljana's "Zero waste city" vision.

# Main characteristics of APPLAUSE circular economy model



## DIGITALISED DATA COLLECTION AND MANAGEMENT

APPLAUSE has created a database of 26,000 geo-localised entries covering 121 plant species. This database is supported by a digital platform that enables them to keep an inventory and organise IAPS removals and transportation.



## CITIZEN PARTICIPATION

The model seeks to engage citizens in all activities, from IAPS identification, removal to reuse following three principles: 1) the “Do it Yourself” which empowers citizens to take action independently, 2) the “Let’s do it Together” where citizens participate in community actions, and 3) the “Hand over” which allows citizens to simply bring IAPS to a local collection point.



## PRODUCTS AND SERVICES

After IAPS are harvested and pre-processed, value is created through educational and cultural activities (workshops) and the development of unique products made of IAPS (paper and wood items, dyes, organic pesticides, food ingredients and input materials for the industry).



## COOPERATION AND AWARENESS


APPLAUSE diverse partnership (botanists and green area managers, researchers, waste management experts, designers, business and communication specialists) has learned to work together to deliver APPLAUSE circular model and raise awareness in their respective fields.





During the 3-year project, APPLAUSE has been piloting this circular model for IAPS management, leading to the following **main achievements**:

- A complete inventory on the presence of IAPS in the land owned by City of Ljubljana.
- The harvesting of 60 m<sup>3</sup> of wood and 15 tons of herbaceous plants.
- The organisation of 28 voluntary harvesting actions involving 490 participants.
- The production of 9,100 Kg of paper used during the workshop activities and the development of prototypes.
- The design and prototyping of more than 20 wood products and 9 paper products made of IAPS.
- The organisation of 143 educational workshops involving 2,980 participants, 29 additional educational events, 44 videos, 12 publications and 2 exhibitions.
- Various research outcomes including a patent, 25 scientific articles and 70 conference presentations.
- A solid partnership composed of 11 organisations, involving a total of 185 people.



## What kind of circular economy business model has been developed in APPLAUSE?

The OECD, in its report Business Models for the Circular Economy, defines 5 types of circular economy models:

- **Circular supply models:** they replace traditional material inputs derived from virgin resources with bio-based, renewable, or recovered materials, reducing demand for virgin resource extraction in the long run.
- **Resource recovery models:** these models recycle waste into secondary raw materials, thereby diverting waste from final disposal while also displacing the extraction and processing of virgin natural resources.
- **Product life extension models:** they extend the use period of existing products, slow the flow of constituent materials through the economy, and reduce the rate of resource extraction and waste generation.
- **Sharing models:** they facilitate the sharing of under-utilised products and can therefore reduce demand for new products and their embedded raw material.
- **Product service system models:** where services rather than products are marketed, improve incentives for green product design and more efficient product use, thereby promoting a more sparing use of natural resources.



APPLAUSE circular economy model is based on **resource-recovery**. A material that was considered waste (IAPS) is turned into something useful not only for the environment (removes a harmful element of our natural environment) but also for society (promotes community engagement, preserves cultural heritage) and the economy (stimulates a greener local economy). In all its processes, from IAPS harvesting to the production of paper and wood products, the aim is to generate as minimum waste as possible and provide products and solutions that can replace virgin materials.

Importantly, given the source material (IAPS), this model cannot be scaled up to achieve high production throughput. On the contrary, it has been designed to remain lower scale and deliver impact at local level.

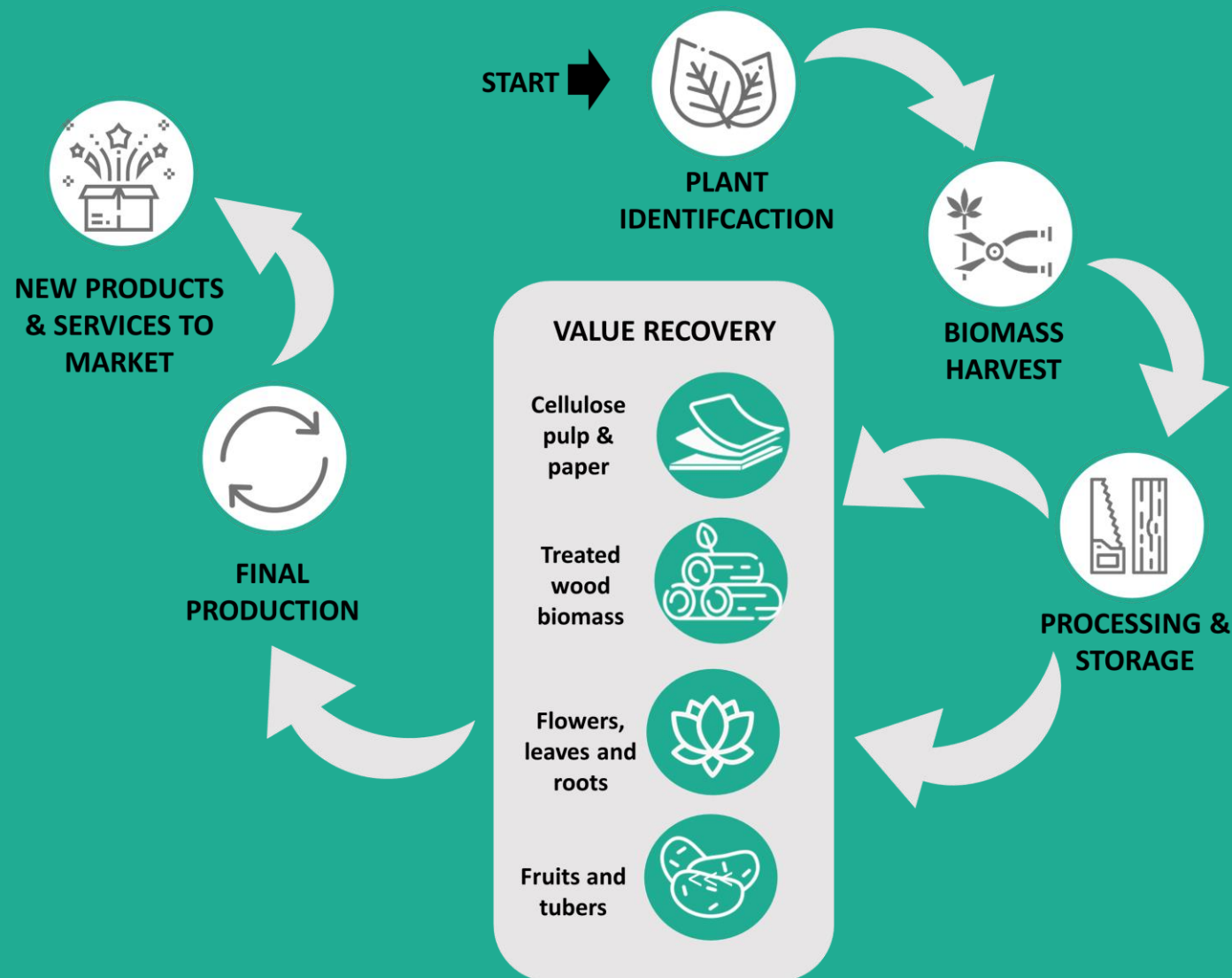


From IAPS detection, to  
wood treatment and product  
development



APPLAUSE circular economy model can be divided into 6 main processes:

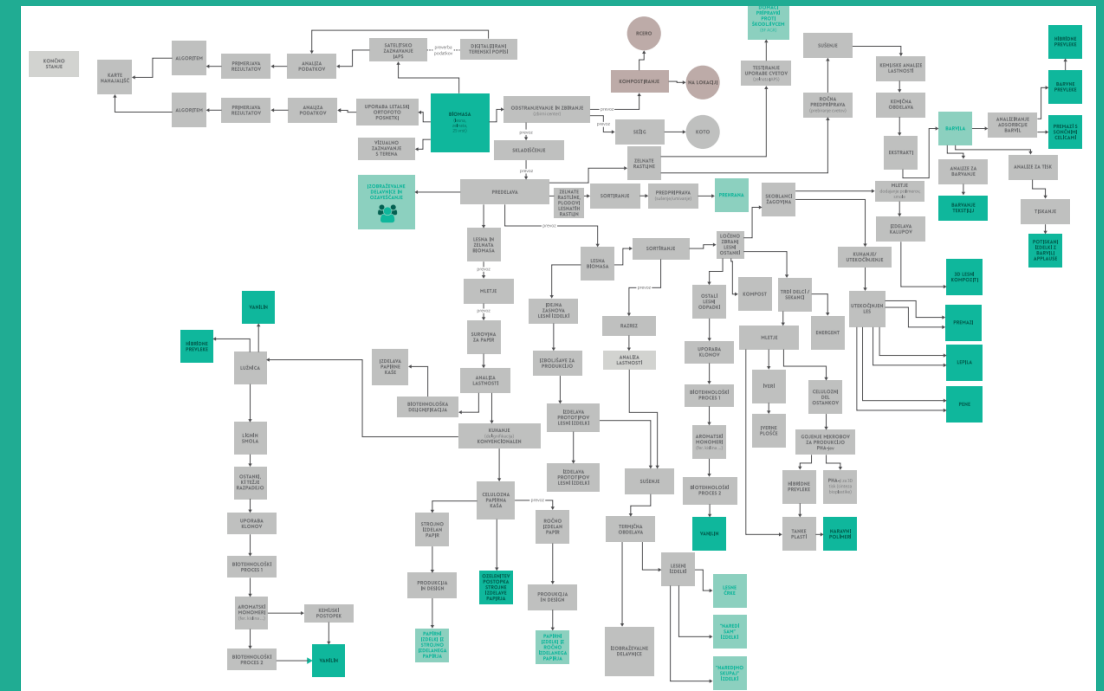
1. **Plant identification:** Geo-localisation and inventory of different IAPS in the territory.
2. **Biomass harvesting:** removal of IAPS according to seasonal patterns and producers' orders.
3. **Processing and storage:** preparation of wood and herbaceous plants for storage.
4. **Value recovery:** transformation of raw material in secondary materials (cellulose paper pulp, wood biomass..).
5. **Final production:** development of paper, wood items, dyes, extracts, chemical components for the industry.
6. **New products and services to market:** commercialisation of IAPS-based products and services.





For these six processes, the team in Ljubljana has mapped out more than 100 sub-processes which depend on the type of biomass to be harvested (wood or herbaceous) and the product to be developed (paper, wood, food formulations, dyes, organic pesticides, secondary materials for industry, etc.).

Different partners are responsible for these sub-processes. As in many circular economy models, APPLAUSE is not a single business model developed vertically by a single entity, it relies on a network of suppliers that collaborate together to transform IAPS into valuable products and services for different customer segments.



Mapping of all processes taking place in APPLAUSE circular management of IAPS – in Slovene (Source: VOKA-SNAGA).



## 2. APPLAUSE business models

One of the main aims of APPLAUSE is to deliver a circular economy model for IAPS management that is self-sustainable in the longer term.

To achieve this, it needs to be based on one or multiple business models that are capable of creating and capturing value that ultimately customers will be interested in purchasing.

The first step in business modelling was to identify:

- What value is provided? (**Value Proposition**)
- How the value is provided? (**Value Creation**)
- And how does it make financial, social and environmental gains? (**Value capture**)

## APPLAUSE value mapping

Value proposition	Value creation	Value capture
What value is provided?	How value is provided?	How can it make financial, social and environmental gains?
<ul style="list-style-type: none"> <li>• Helps to solve the IAPS problem in Ljubljana by transforming a harmful waste into something useful.</li> <li>• Promotes a green, circular story about paper and wood production.</li> <li>• Educates and empowers citizens in taking care of their local environment.</li> <li>• Revives craft traditions and sustainable design.</li> <li>• Promotes DIY (Do it yourself) culture and responsible consumption.</li> <li>• Provides sustainable materials for industry.</li> </ul>	<ul style="list-style-type: none"> <li>• Paper and wood products with intrinsic circular value which at the same time are attractive, functional and unique.</li> <li>• Products, guidelines and events that encourage citizens' participation (DIY products, catalogues, harvesting days...).</li> <li>• Hands-on workshops for handmade paper making, wood working and wood letters printing.</li> <li>• New scientific methods for developing sustainable materials for industry.</li> </ul>	<ul style="list-style-type: none"> <li>• Sale/leasing of paper and wood products to locals and tourists.</li> <li>• Supervised activities at the handmade paper and woodworking workshops.</li> <li>• Support from alliances and sponsorships.</li> <li>• Job creation (workshops).</li> <li>• Active engagement of citizens in green activities.</li> <li>• Contributes to Ljubljana's vision on zero waste.</li> <li>• Preservation of cultural heritage practices.</li> <li>• Valorisation (patents) of new biotechnological processes.</li> </ul>





Based on this value proposition, APPLAUSE partners developed 5 circular business models:

- The commercialisation of **IAPS handmade paper products** and the organisation of activities/services at the **paper workshop Pap Lab** (led by partner VOKA-SNAGA, with the collaboration of TRAJNA).
- The commercialisation of **IAPS wood products** and the organisation of activities/services at the **wood working workshop** (led by partner VOKA-SNAGA, with the collaboration of TRAJNA).
- The commercialisation of **complementary handmade paper and wood workshop activities at the creative laboratory Krater**(led by TRAJNA).
- The commercialization of **machine-made paper made of IAPS** (led by partner ICP).
- Activities and services organised at the **heritage Wood Type Letter Printing workshop** (led by partner TIPO).



Poster design at the heritage wood type letter printing workshop

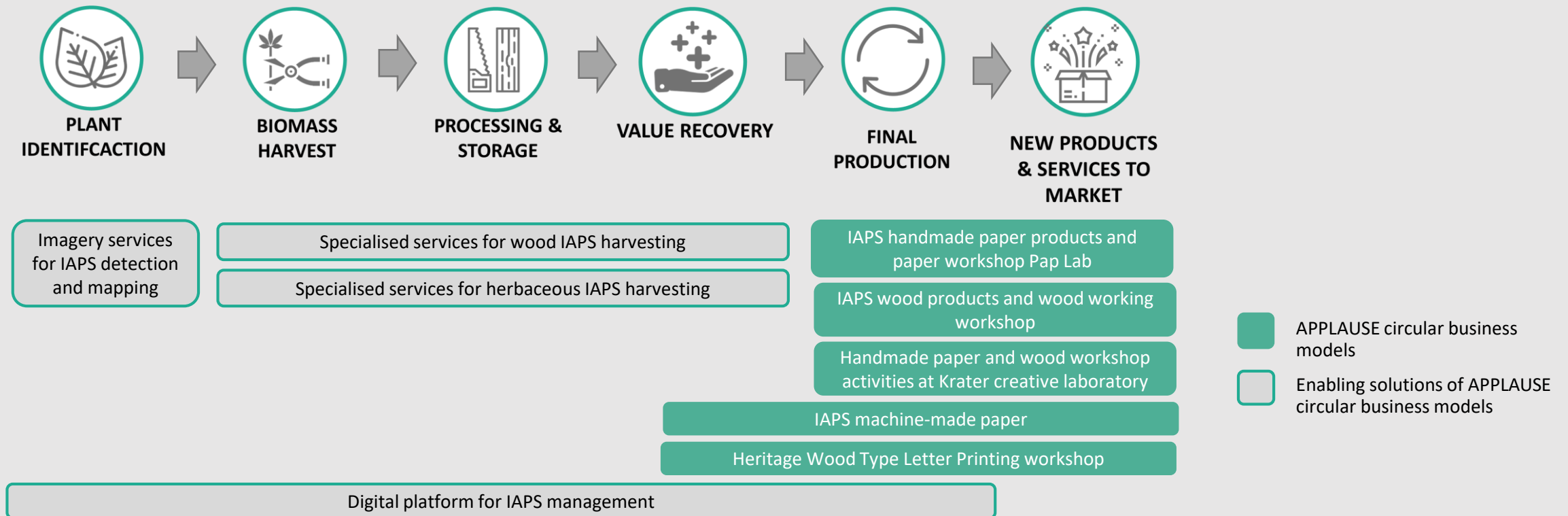


- **Imagery services for IAPS detection and mapping** (led by partner Space-SI).
- **Digital platform for IAPS management** (led by partner GDi).
- **Specialised services for wood IAPS harvesting** (led by partner TISA).
- **Specialised services for herbaceous IAPS harvesting** (led by partner VOKA-SNAGA).



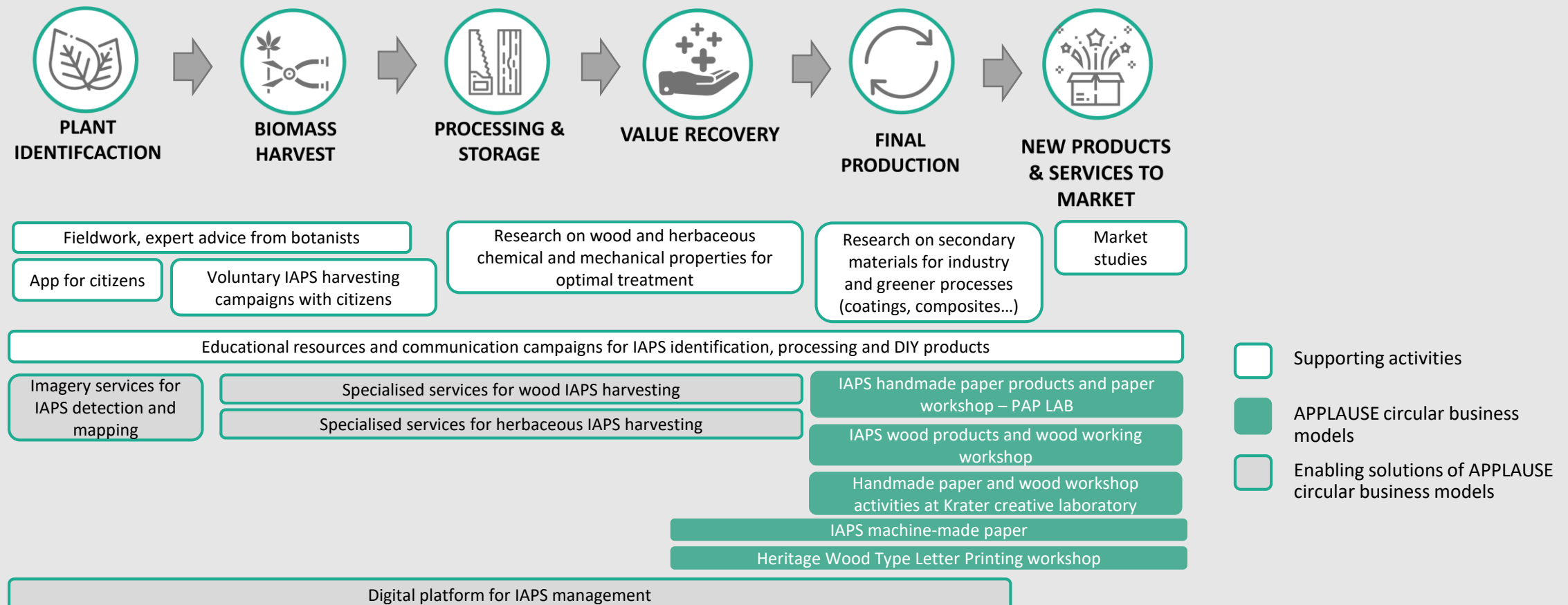
## APPLAUSE supply chain

All these business models interact during the 6 stages of APPLAUSE circular model in a common supply chain. They establish a network between the different partners (producers and suppliers) to develop and distribute the products and services to the final buyers/beneficiaries.




## APPLAUSE value chain

In addition to APPLAUSE business models that are part of the supply chain, there is a wide range of supporting activities that are needed to deliver APPLAUSE products and services. These other activities help to increase the value and efficiency of the business models. The business models together with the supporting activities make up APPLAUSE value chain.







### 3. Measuring the impact of the new circular business models

For APPLAUSE, it has been important to demonstrate to what extent this new approach to manage IAPS can deliver more circular practices and bring a systemic change that results in long-term benefits for the city.


To do so, they have analysed the impact of the project at two levels:

- A qualitative analysis for each of the consortium partners who are responsible for the different business models.
- An additional quantitative analysis for VOKA-SNAGA, to gain in-depth information about the potential impact of their specific business model in the public company.



After an analysis of different methods and approaches, the project decided to use and adapt a methodology developed by the Ellen McArthur Foundation for monitoring circularity. The data was gathered through surveys and in-depth interviews that analysed various aspects of a particular business. Input has been structured into 7 dimensions:

1. Objectives and strategy
2. People and organisational culture
3. Processes, structure and infrastructure
4. Networking / cooperation with external stakeholders
5. Inputs, materials and energy
6. Outputs, products and services
7. General environmental impacts

A close-up photograph of several bright yellow flowers with dark brown centers, set against a blurred background. The flowers are in the upper portion of the slide, above a teal banner.

To analyse the impact on consortium partners, only qualitative data was gathered for dimensions 1-4 and 7.

Progress was visible across all dimensions. As an example, the table on the right shows the results for dimension 2 “People and organisational culture”.

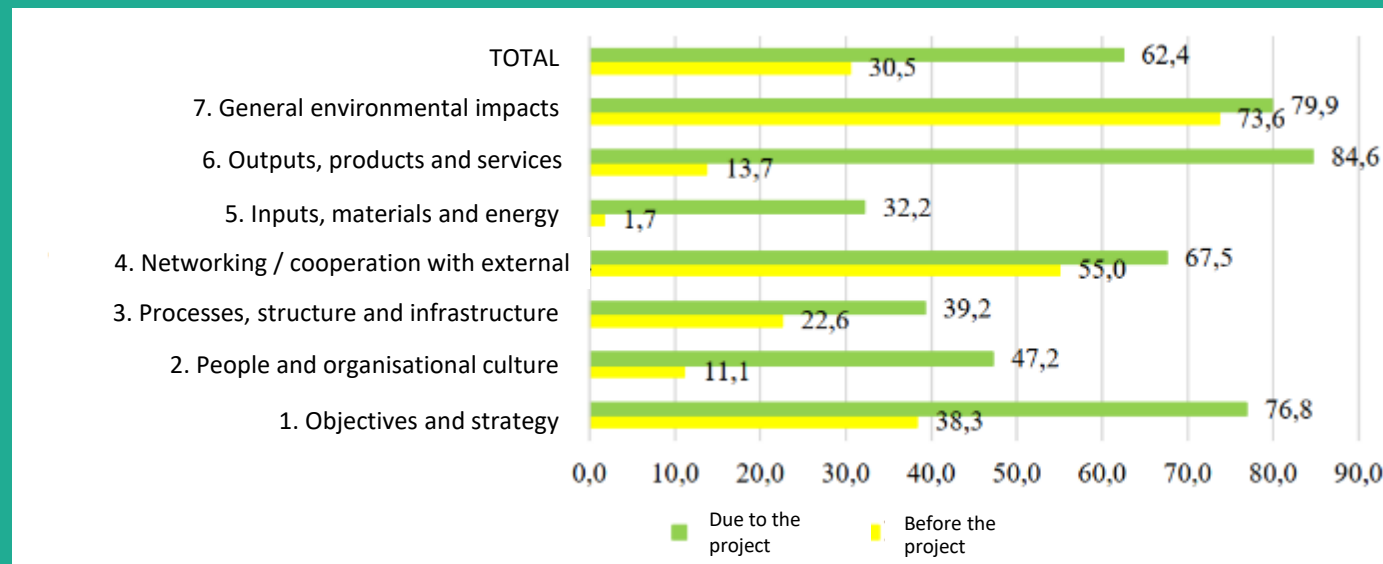
Source: VOKA-SNAGA. Surveyed partners: City of Ljubljana, VOKA SNAGA, ICP, TIPO and TRAJNA.

People and organisational change	Change	Explanation
Intensity of internal communication regarding the implementation of circular economy practices	++	The implementation plans have been more systematic in larger organisations. In smaller organisations, it is part of everyday processes, but not so systematized.
Involvement of employees in trainings related to circularity	+	More general education, APPLAUSE has provided financial resources to allow employers to provide additional training, although it has been more general, and not only focused on circularity.
Compliance of organizational culture with the principles of circularity	++	APPLAUSE has helped make progress. Smaller partners are already very circularly-oriented.





For VOKA-SNAGA, the impact was measured for all dimensions in a quantitative manner. Dimensions 5-7 were given more weight, as they represented greater impact in terms of circularity (actual reduction of material consumption, new products..) compared to dimensions 1-4. All answers were normalised to a scale 0 to 100, translating into different index points.



Source: VOKA-SNAGA.





VOKA-SNAGA's results show that the overall index point has more than doubled (from 35.5 to 62.4), with the greatest progress in dimension 6 (Outputs, products and materials). A more detailed analysis of the data gathered through the questionnaires shows that a greater share of products that can re-enter the technical and biological cycle (products processed or recycled) and the value of the services provided are the main factors that have contributed to such progress in dimension 6. The improvement in dimension 7 (general environmental impact) is not very significant, partly because the company already started with a very high index. Finally, there is some room for improvement in dimensions 3 (processes, structure and infrastructure) and 5 (inputs, materials and energy).


Measuring circularity is a complex issue. However, this methodology has provided APPLAUSE partners, in particular VOKA-SNAGA, with a framework on how to assess their progress in the implementation of circular practices in their respective business models. Such framework also supports decision-making for future actions aimed at improving the impact, by demonstrating its strengths and highlighting those dimensions where major improvements are still possible.



## 4. Case study – Circular business model for the IAPS handmade paper products and paper workshop

APPLAUSE circular business models have been developed further in order to ensure its future financial sustainability after the project's end in December 2020. Inspired by the methodology of lean-start up (build, measure and learn), APPLAUSE partners worked on the prototypes of the products and services to be offered and tested them with potential customers. Based on the market response, they have adapted their business model, forecasted the future financials and developed a go-to-market strategy.

This section summarises all this work for the circular business model for the handmade paper products and the paper workshop led by Ljubljana's municipal company VOKA-SNAGA in cooperation with NGO TRAJNA and ICP (Pulp and Paper Institute).



## 4.1 Prototyping the handmade paper products

APPLAUSE partner TRAJNA, a local association for the development of sustainable design, in collaboration with VOKA-SNAGA, led the design and prototyping of hand-made paper products made from IAPS.

Not all IAPS could produce high quality pulp paper to be used to develop the products, so the first step before starting the product development phase was to select the right IAPS. This task was performed by ICP who conducted multiple laboratory tests to characterise the different IAPS collected. The selection of species that could be used for paper products included:

- Japanese knotweed - *Fallopia japonica* (stems)
- Bohemian knotweed - *Fallopia × bohémica* (stems)
- black locust - *Robinia pseudacacia*
- cutleaf coneflower - *Rudbeckia laciniata*
- Canadian goldenrod - *Solidago canadensis*
- giant goldenrod - *Solidago gigantea*





With the cellulose paper pulp recovered from these selected IAPS, TRAJNA engaged into a creative process which led to the prototyping of 6 different paper items.

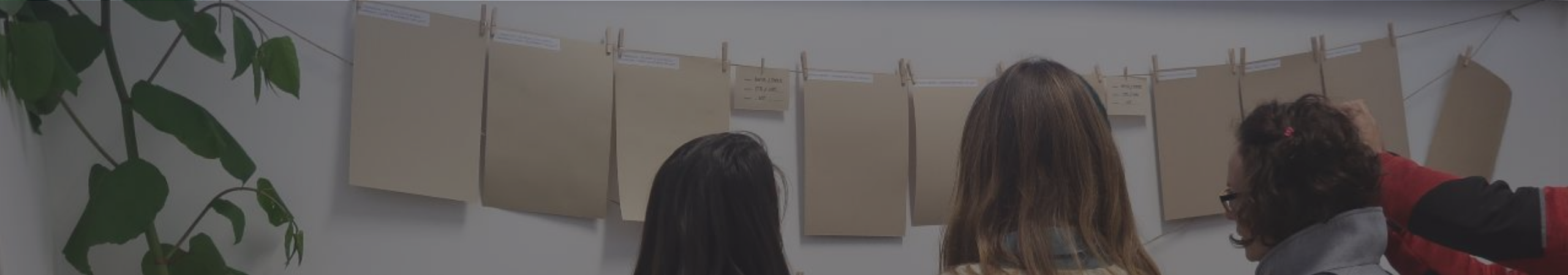
Nature-friendly approaches and circular principles guided this process to ensure that the end-product design and purpose responded to APPLAUSE value proposition for boutique products that convey values such as responsible consumption, solidarity and nature protection.

To boost such creative process, TRAJNA involved other partners as well as students from the Academy for Fine Arts and Design of University of Ljubljana who participated in a design workshop.



Design workshop – an object of change (Source: TRAJNA Association)





**Handmade products designed and produced included:** paper brick, Collection of Travelling Plants, Forager's Calendar, floral letter, pots for planting plants and paper decorations.



APPLAUSE prototypes of handmade paper products (Source: TRAJNA Association)



## 4.2 Setting up the handmade paper workshop

APPLAUSE has funded two new facilities in Ljubljana to promote circular economy, arts and crafts, and nature conservation: the handmade paper-making workshop and the wood working workshop.

The paper-making workshop is situated in a central location of Ljubljana within the premises of Povšetova collection centre, an area owned by the municipal company VOKA-SNAGA. It is primarily used to deliver supervised educational activities to kindergarten and primary school children as well as to citizens. It is also a place where product developers and students can have access to the machinery and raw material to design, prototype and produce new IAPS-based circular products.

To set up the workshop, VOKA-SNAGA had to:

- Refurbish the old warehouses in order to prepare the space and fulfil all health and safety requirements.
- Source the equipment and raw materials.
- Recruit and train the staff.
- Engage with kindergartens and schools in order to plan the different educational activities.





One of the main challenges has been to source and condition the various machines and equipment to be used to produce paper in the traditional way. Finally, the old machinery was found in a paper factory depot and could be purchased and reconditioned.

A retired employee from the same paper factory helped in the installation of the machinery and trained the young staff.



Traditional pulp mixer.



The educational activities have been carefully organised by the City of Ljubljana. The workshops for children were divided into 2 parts:

- A more educational part where children learn about IAPS and the problems they cause (45 minutes approx.)
- A hands-on part where children learn how to make paper, either with the machinery or hand-made (1.5 hours).

The workshop also has a small exhibition area displaying various APPLAUSE products and information about IAPS.

A total of 44 workshops have been organised by APPLAUSE at this facility.



Hands-on handmade paper-making at the workshop.





## 4.3 Surveying the market

APPLAUSE conducted a market survey to assess the response of potential customers to the different products. Products were segmented according to four main customer segments:

- Locals (L)
- Schools (S)
- Tourists (T)
- Families (F)

More than 500 respondents participated in the market survey (either by responding to online or paper-based questionnaires): 333 residents, 17 schools, 68 families and 140 tourists.

Participants were asked about their interest in Do-It-Yourself and green/sustainable products. Through dedicated questions, APPLAUSE partners investigated the purchase intention, the marketing and sales potential and the price customers would be willing to pay for a certain product or service.



Not all products could be tested in the market survey. In the case of paper products (both handmade and machine-made), the market assessment focused on:



An organic odour-free waste paper basket (targeted to L)



A puzzle game with Ljubljana motive (targeted to T)



A DIY set to create handmade paper (targeted to S)



Greeting cards and envelope for special occasions (targeted to L, T)



Collection of Travelling Plants (targeted to F, S)



A set of seed papers for balcony garden (targeted to L)



Paper ornaments for Christmas tree (targeted to T)



A calendar designed to educate on how to collect and use most common IAPS (targeted to L)



A board game "Searching for IAPS in Ljubljana" (targeted to F, T)

*Note: the photos used in the surveys were not the actual products of APPLAUSE which were still in prototyping but symbolic pictures that gave respondents an idea of the end products.*

Source: VOKA-SNAGA



# Results of the market survey – Paper products

Product	Target market	Average assessment product need (from 1 to 7)	Average assessment probability of purchase (from 1 to 7)	Rated own price: providers (in €)	Average maximum price: buyers (in €)	Share of surveyed respondents who would buy the product (%)	Market size	Sales potential (in pieces/year)	Sales potential (in €/year)
Organic odour-free waste paper basket	Locals	4.97	4.59	4	2.75	30.1	124,998	7,512	20,655
Puzzle game with Ljubljana motive	Tourists	2.73	2.89	15	10.81	5.2	965,111	75	810
A DIY set to create handmade paper	Schools	5.06	4.9	45	42.86	28.2	67	16	701
Greeting card with envelope for special occasions	Tourists	3.39	3.16	15	9.53	10.4	965,111	150	1,431
Creative Herbarium	Families	3.56	3.16	36	19.9	14.7	74,668	110	2,184
Creative Herbarium	Schools	5	4.59	36	30.53	25	67	42	1,280
Seed paper for balcony garden	Locals	3.14	3.19	20	11.51	12.8	49,999	64	738
Paper decorations for the Christmas tree	Tourists	3.08	3.15	22	12.52	8.7	965,111	126	1,577
Calendar for IAPS harvesting	Locals	2.87	2.57	15	10.09	6.8	124,998	85	855
Board game "Searching for IAPS in Ljubljana"	Families	4.27	3.99	40	24.26	19.1	74,668	143	3,461
Board game "Searching for IAPS in Ljubljana"	Tourists	3.19	3.29	40	26.75	9.5	965,111	138	3,679



### Main findings:

- Of all products, the ones that resulted with the highest market potential were the organic paper baskets for biowaste targeted to locals and the board game “Searching IAPS in Ljubljana” for families and tourists. The school segment was very interested in the selected products and services, but its market size, compared to other segments, was smaller.
- For most products, respondents rated the need for products with a higher rating than the likelihood of purchasing these products.
- The survey also showed large differences between the prices quoted by customers as acceptable, and the proposed prices set by the providers. The smallest difference was in the School segment.

Finally, it is important to point out that the sales potential and pricing is highly dependent on the marketing activities and branding positioning that the seller intends to carry out to attract customers.



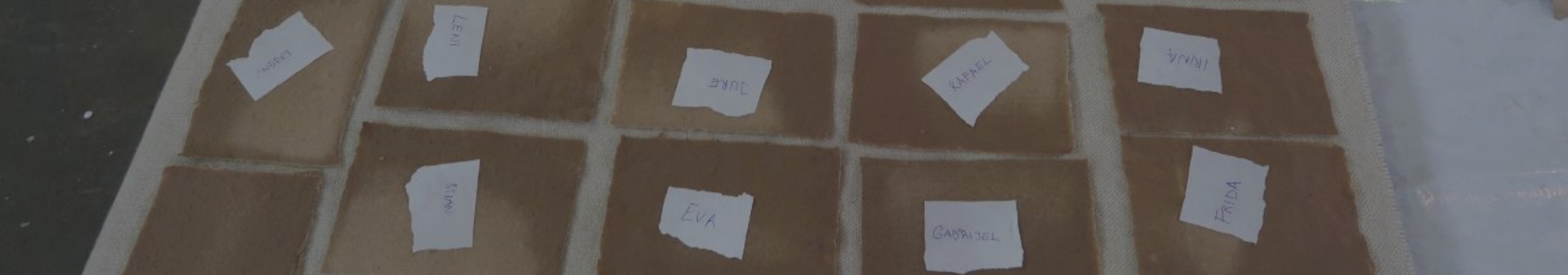


## 4.4 Developing the business model

VOKA-SNAGA, with the support of partner TRAJNA, is responsible for the business model for the hand-made paper products made of IAPS and the services at the paper workshop.

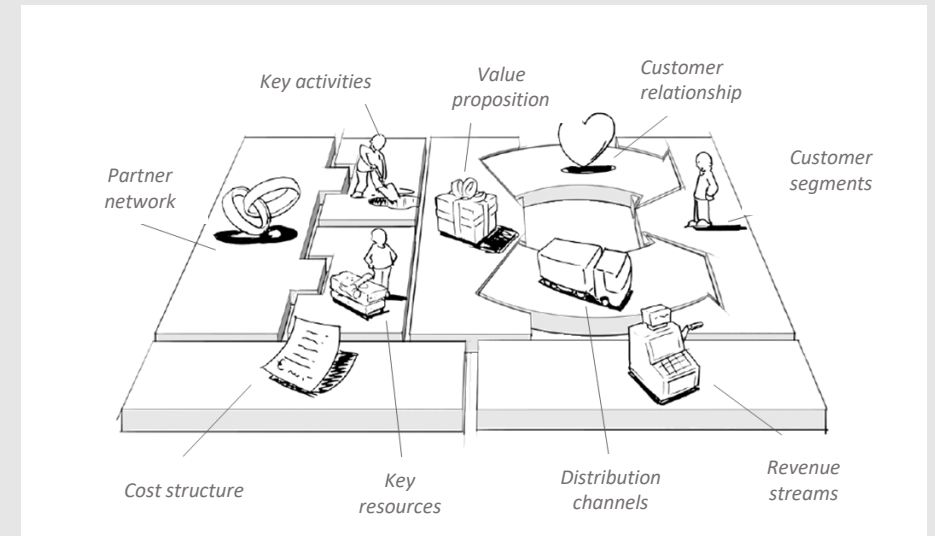
Based on the experience gained during the first 2,5 years of the project (setting up the new circular approach to IAPS management, analysing the properties of the different IAPS, running the workshop services, prototyping different product ideas and gaining insights from the market survey), the team worked on a more detailed business model.

They used the methodology developed by Alexander Osterwalder, the Business Model Canvas, to summarise in one single page all the information that describes the “what”, “to who”, “how” and “how much” of a business model.



Osterwalder's business model canvas is divided into 9 building blocks structured across 4 main areas:

- **Infrastructure** (3 blocks): The **key activities** undertaken by a company, the **key resources** needed to operate the model and the **partner network** that allows to optimise the business and lower the risk.
- **Offering** (1 block): The **value proposition** (collection of products and services) that meets the needs of the customer.
- **Customers** (3 blocks): the different **customer segments**, the **channels** used to deliver the value proposition to them and the **customer relationships** built to ensure longer term success.
- **Finances** (2 blocks): the main cost structure of the business and the different revenue streams that allow the company to generate an income.



Graphic representation of a business model canvas. Source: <https://www.strategyzer.com/>

## Business Model Canvas for the paper-making workshop and handmade paper products

Source: APPLAUSE [project playbook](#)

### KEY PARTNERS

City of Ljubljana  
Institute of Cellulose & Paper  
Collaboration with newly established public institute ROG as Ljubljana creative intersection  
Field experts & artisans  
Educational institutions  
Relevant resellers of sustainable and local products (Ljubljana Tourist Board)

### KEY ACTIVITIES

Paper workshop program  
Handmade production of paper, paper products  
Business strategy, marketing, promotion and trade of products.  
Offer of other services (rent, workshops, etc.)

### KEY RESOURCES

Knowledge, staff and equipment for work  
Workshop facilities  
Sufficient material (biomass and others)

### VALUE PROPOSITION

(1) Production of innovative, sustainable, attractive and functional craft-made products  
(2) Preserve the tradition of paper industry in Slovenia  
(3) Guided activities for children that combine awareness raising on IAPS and promotion of traditional handcraft  
(4) Access to machinery, affordable space for rent for artisans

### CUSTOMER RELATIONSHIP

Contracts with COL (supply of paper products)  
Contract with resellers of paper products  
Partnership with educational institutions (for workshops and educational events)

### CHANNELS

Direct sale through Sales person/representative (COL, producers, resellers)  
Company web page and online sales

### CUSTOMER SEGMENTS

Paper workshop participants: kinder gartens, youth organisations, elderly, tourists, interested locals  
COL as a promoter/payer of workshop activities  
Other users of the workshop facilities like artisans  
Business buyers (resellers of paper products)

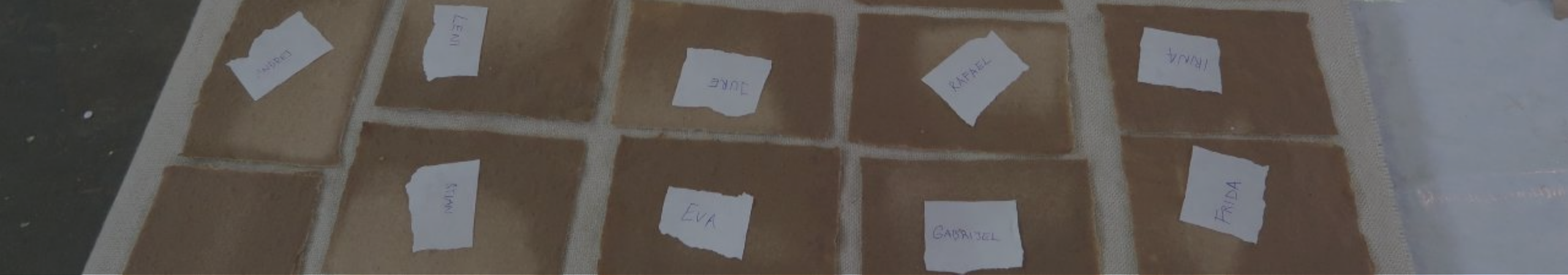
### COST STRUCTURE

Equipment & workshop facilitation costs  
Staff cost (workshop master, sales person, overhead costs)  
Biomass and material costs for paper & products  
PR & Marketing costs

### REVENUE STREAMS

Asset sale from (online & offline) products (price range from 5 to 5 euro) and services (events, rent the place, etc.)  
Guided educational workshops for various groups (schools, elderly, tourists, locals)  
EU, national and municipal funds for workshop program development, inclusion of vulnerable social groups





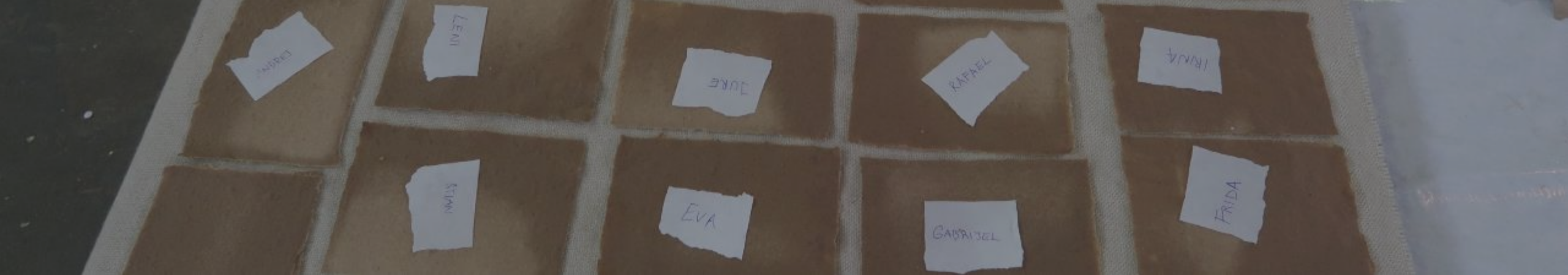
## Financial sustainability

Based on the results of the market study, the finalised prototypes and the business model, VOKA-SNAGA has prepared a financial model for the paper products and workshops. This financial model is based on the following:

### REVENUES

- Sales will take place in the domestic market only.
- For APPLAUSE products, they estimated that by 2021 they can sell 40% of the calculated sales volumes and by 2025 they could reach 100% of the sales potential.
- For handmade paper, the revenue estimation is based on a study from 2017 (IndexBox) which shows a global production of handmade paper of 0.185Kg/capita. Taking into account that their maximum production capacity would be 3,000 Kg, they estimated that they could reach 30% of the maximum production in 2021 and gradually approach 60% by 2025.
- For workshops and teambuilding events, they estimated they could offer 783 events per year (for schools, companies, residents...) with a gradual increase over the years.





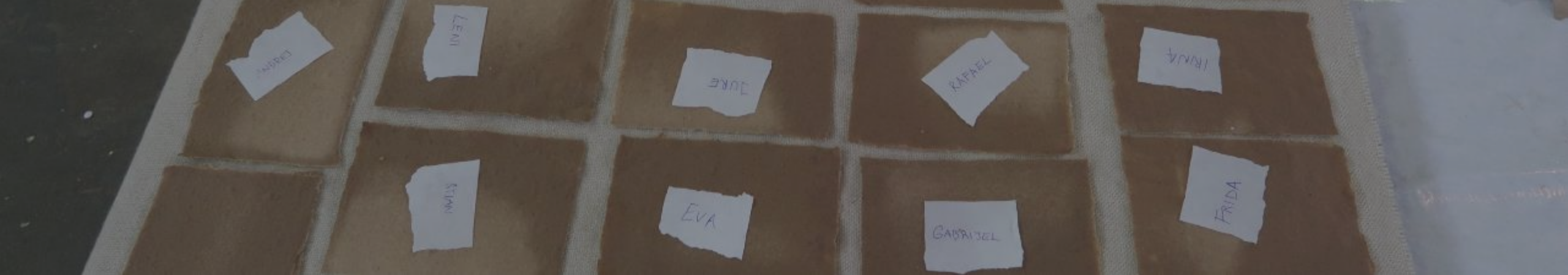
## COSTS

- The main cost item is labour. They have estimated partial employment for 3 people overseeing management, sales and marketing; then a master of the workshop and an apprentice who would be employed full time.
- The second highest cost is goods, materials and services. Within this category, the largest part is the materials used to obtain IAPS biomass and produce the different items, including electricity and water costs. In terms of services, VOKA-SNAGA has accounted for costs of promotional activities, external services needed for manufacturing the products (e.g. cooking the pulp), maintenance services for the old machinery and costs of heating, security and cleaning.
- There are no rental costs, since the workshop is already owned by VOKA-SNAGA.
- Finally, some depreciation costs have been accounted for fixed assets including the machinery and some computer equipment.

## Profit and Loss Statement for the paper workshop and handmade paper products

ITEM (all amounts are in EUR)	2021	2022	2023	2024	2025
<b>1. OPERATING REVENUES</b>	<b>123,285</b>	<b>156,128</b>	<b>188,970</b>	<b>221,813</b>	<b>254,655</b>
<b>1.1 Net sales revenue on the domestic market</b>	<b>123,285</b>	<b>156,128</b>	<b>188,970</b>	<b>221,813</b>	<b>254,655</b>
1.1.1 APPLAUSE products	4,860	6,683	8,505	10,328	12,150
1.1.2 Hand-made paper	108,000	135,000	162,000	189,000	216,000
1.1.3 Services (workshops and teambuilding)	10,425	14,445	18,465	22,485	26,505
<b>1.2 Net sales revenues in foreign markets</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>1.3 Other business income</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>2. OPERATING EXPENSES</b>	<b>129,903</b>	<b>166,170</b>	<b>201,909</b>	<b>238,230</b>	<b>252,912</b>
<b>2.1. Costs of goods, materials and services</b>	<b>45,303</b>	<b>68,571</b>	<b>80,027</b>	<b>91,681</b>	<b>103,335</b>
<b>2.2. Labor costs</b>	<b>80,700</b>	<b>93,700</b>	<b>117,427</b>	<b>141,983</b>	<b>145,010</b>
<b>2.3. Write-downs, depreciation</b>	<b>3,900</b>	<b>3,900</b>	<b>4,456</b>	<b>4,567</b>	<b>4,567</b>
<b>2.4. Other operating expenses</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>3. OPERATING PROFIT / LOSS</b>	<b>-6,618</b>	<b>-10,043</b>	<b>-12,939</b>	<b>-16,417</b>	<b>1,743</b>
<b>4. FINANCIAL REVENUE</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>5. FINANCIAL EXPENSES</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>6. OTHER REVENUE</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>7. OTHER EXPENDITURE</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>8. TOTAL PROFIT / LOSS</b>	<b>-6,618</b>	<b>-10,043</b>	<b>-12,939</b>	<b>-16,417</b>	<b>1,743</b>
<b>9. PROFIT TAX</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>10. NET PROFIT / LOSS</b>	<b>-6,618</b>	<b>-10,043</b>	<b>-12,939</b>	<b>-16,417</b>	<b>1,743</b>

Source: VOKA-SNAGA



## RESULTS

The financial forecast shows that the business model can only start to generate a small surplus from 2025 onwards. These projections are rather conservative due to the uncertainty with the COVID-19 situation.

Given such forecast, for the first 5 years of operation, VOKA-SNAGA plans to cover the costs with their own funds. They will operate the workshop and develop further the commercial services to enable future financial sustainability.

At the same time, they will explore opportunities for co-financing their operations, for example by participating in tenders launched by the city or actively seeking national or European funds.





## 4.5 Go-to-market strategy

During 2020, APPLAUSE partners finalised the prototyping and tests of the potential products. Some designs were abandoned because the end-result did not achieve the desired quality and aesthetic standards. In other cases, the manufacturing process was not optimal, or too expensive to make the product market-competitive. Also, for initial market introduction, the team could only focus on a limited number of products.

In addition to the paper workshop services, the following paper products were selected for initial market introduction:

- Letter paper with embedded IAPS flowers
- New Year's decorations made of IAPS paper
- A set of balcony garden seeds
- Handmade IAPS paper sheets

For all products and services that will be launched into the market in 2021, VOKA-SNAGA has developed a go-to-market strategy addressing the following aspects:



## Understanding the competitive advantages of the product and the purchase decision process

The three main competitive advantages are:

The story behind APPLAUSE  
products and services

Made of natural materials

By removing IAPS, they protect the environment and  
help to protect human health

Depending on the products, the purchase decision will be a long process where customers take more time to collect information, compare advantages and prices. This is the case, for example, for the balcony garden set or the services offered at the paper workshop. For other products, the purchase decision will be more impulsive. Such instant purchase decision happens for products that have a shorter life cycle and lower price (for example the letter paper or the Christmas decorations).



## Defining the different user persona

To better understand users' needs, the strategy defines several "Personas" for the four main customer segments: schools, tourists, families and locals.

These "Personas" 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.



**Name:** Milena

**Occupation:** Primary school teacher

**Lives in:** Ljubljana

**Purchase power:** \$\$

**Interests:** Literature, music, films... She wants to live in an urban environment that is healthy and green. She teaches younger generations to respect the environment and build a better society.

Example of a User Persona that represents the customer segment "Locals".  
Source: APPLAUSE go-to-market strategy.





## Sales channels and marketing mix

Finally, the strategy defines 3 main channels that will be used to reach potential clients. These are:

- An **online store** that exclusively sales IAPS-based products and services.
- An **initial network of physical stores** that display APPLAUSE products and services.
- And **social network/Instagram shopping**.

These three channels will be supported by various marketing and sales activities that support brand recognition, allow potential customers to better understand the products and services' value and trigger sales demand. These activities 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).

# 5. Conclusions of the third Zoom-in report

## RECOMMENDATIONS FOR OTHER LOCAL AUTHORITIES

- One of the key successes of APPLAUSE is to have, since the very beginning, the ambition to create a business model for the circular management of IAPS that is sustainable overtime. Such principle has guided the entire project.
- The circular model for IAPS management is complex with many processes and sub-processes. A mixed partnership and different supporting tools/activities (e.g. digital platform, specialized services for harvesting) are necessary for its success.
- APPLAUSE has followed quite a structured approach to business development, starting with the prototyping and initial market research to the design of the business model, final product selection and go-to-market strategy. Such approach has been fed constantly by new learnings, allowing them to develop the most suitable products and services that are workable from a practical/operational point of view, and at the same time, appeal to potential customers. Continuous learning and fine-tuning of the business model is necessary, specially given the current uncertainties posed by the COVID-19 crisis and the future post-COVID-19 scenarios (lower purchasing power, change in customer attitudes, etc).
- Working with a “business model” mindset is relatively new to local authorities who are most used to public service delivery approaches. When necessary, APPLAUSE partners have sought the expertise of business experts who have supported them in more business-like activities, such as the market survey or the strategy for commercialisation.
- Achieving a self-sustainable business model is not the only objective of APPLAUSE. That is why the team has invested thoroughly in assessing the impact of the project in terms of circularity and how it contributes to its ambition of a “Zero Waste City”. Performing such assessment not only proves the value of APPLAUSE but also helps the consortia to secure the commitment of decision-makers in the medium to longer term.

# Credits

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## APPLAUSE PARTNERS:

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