



**P.S.S. & DIGITAL REPUTATION TO ENABLE
SMALL & YOUNG ORGANIC FARMERS.**

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Abstract */Italiano*

L'aumento della consapevolezza riguardo la salute e l'ambiente ha portato ad una maggiore sensibilizzazione verso la produzione e la coltivazione di prodotti biologici. Da una ricerca è emerso come l'industria biologica sia monopolizzata dai grandi agricoltori e rivenditori, rendendo i piccoli agricoltori biologici emarginati nel mercato. Inoltre, essendo l'età media degli agricoltori italiani intorno ai 58 anni, sono state prese iniziative a livello nazionale e internazionale, per salvare e promuovere i giovani agricoltori biologici e per avere un approvvigionamento alimentare stabile e sicuro in futuro.

Questa tesi organizza tutte le argomentazioni che spiegano perché i piccoli e giovani agricoltori biologici sono cruciali per la società e l'ambiente, dando vita alla motivazione per trovare uno spazio per sostenere questo movimento attraverso il sistema prodotto-servizio. Sono stati intervistati diversi giovani e piccoli agricoltori biologici per trovare le loro motivazioni e discutere riguardo ai loro problemi. Sono state condotte sessioni di co-design, prototipazione multipla e test delle ipotesi con gli agricoltori e gli altri stakeholder del loro settore. Questo ha infine portato alla realizzazione che la reputazione digitale può essere il catalizzatore per risolvere la maggior parte dei bisogni pragmatici e urgenti di questi agricoltori biologici in modo da aiutarli a mantenersi nel loro settore.

Infine, la ricerca si è conclusa con un progetto che ha permesso agli agricoltori di creare reti professionali con le parti interessate, grazie alla reputazione digitale che ne deriverebbe dalla piattaforma che agirebbe anche come strumento per aiutare gli agricoltori a essere informati e aggiornati sulle attività importanti e le opportunità che li circondano, tenendo conto delle loro esigenze.

Le parole chiave:

*Agricoltura biologica,
Piccoli agricoltori,
Giovani agricoltori,
Reputazione digitale,
Rete professionale.*

/English

Increase in the awareness amongst people about health and environment led to a rise in consciousness towards producing & growing organic products. Upon research it was found how the organic industry is monopolized by big-scale farmers and retailers, making the small-scale organic farmers marginalized in the market and political arena. Moreover, the average age of the Italian farmers being around 58 years old, it has been alerted and also initiatives have been taken nationally & internationally, to save and promote young organic farmers to have a stable & safe food supply in the future.

This thesis organizes all the arguments that explain why small and young organic farmers are highly crucial for the society and the environment, which gave the motivation to find a scope to support this movement through product-service system. Various young and small organic farmers were interviewed to find their inner motivations and unsaid problems. Co-design sessions and multiple prototyping and testing of the hypothesis were conducted with the farmers and other stakeholders of their sector. This finally led to the realization that digital reputation can be the catalyst to solve the majority of the pragmatic and urgent needs of these young and small organic farmers that can help them sustain themselves in their sector.

Finally, the research was concluded with a design proposal, which enabled farmers to create professional networks with their important stakeholders, driven by the digital reputation that they would generate in this platform. It also acts like a tool to help the farmers to be aware and updated about the important activities and opportunities around them, keeping in mind their unique needs.

Keywords:

*Organic farming,
Small farmers,
Young farmers,
Digital reputation,
Professional network.*

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Introduction

We are living in a time where we are bombarded with information. Due to advancement in communication media, each and every human, from urban to rural, is getting informed about various topics. Thanks to this phenomena, a good amount of people are getting conscious about the ill effects of their actions and habits on the health, society and environment.

One of the focus being food, there has been a notable change seen in the eating and food buying habits. The increase in awareness about the health and environmental effect has lead to upliftment of the concepts of vegetarianism, veganism, fruitarianism, GMO conscious, celiac diets and many more. According to European vegetarian Union: There are over 6 million vegetarians in Italy which is the highest in Europe with 10% of its population. Apart from these major adaptations, most of the people are tending towards buying organic food or food without antibiotics, where they don't mind spending 15% more on premium and natural food (According to Anabio).

Living in Italy for 2 years, I learnt how Italians are so passionate and fond of not just their food but even the quality of the ingredients. The 'Made in Italy' campaign also worked wonders as people understood the value of their local food products. It also helped them to reduce the distribution chain to help the local economy and reduce carbon emission due to shorter transportation. 2/3 Italians (68%) stated that they would consume organic food if they were labelled 'Made in Italy'. (according to coldiretti.it - National association of Italian farmers)

In a systemic level, there were even bigger movements to promote organic and clean food like the Slow Food Movement and the concept of Urban farming. Even the government started initiatives in ensuring clean and organic food in public services. In Rome, 70% of the food served at school cafeterias is organic, which was enforced by the European Union and WHO.

This increasing number of people's and government's interest in organic food motivated me to do my thesis on the topic focusing on organic food. But the key motivation was when I met an Italian young organic farmer in Erba who runs a small farm all by himself. After talking to him I realized how difficult it is for a young and small farmer like him to do all the work, from managing, to farming to selling.

With him and a bunch of other like-minded friends, we debated why agriculture is still a good career prospect for younger generations. However, the sad reality is that, because of all the physical and mental stress in this field with very low returns, many young farmers leave the farms.

Hence, I decided to take up this challenge to see how I as a Product Service and System designer can contribute towards this issue and what new lenses can be used to produce a useful solution with an innovative approach.

The following index would explain the methodology & process used to approach this topic, find the problem and test solutions.

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● *Design Proposal*

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Problem ¹ Setting

METHODS USED: DESK RESEARCH



POLICY WEBSITES



SCIENTIFIC PAPERS

CONFERENCE PROCEEDINGS



ONLINE ARTICLES

Organic Farming

Organic farming as we know is not just farming without the use of chemicals and pesticides. It is a holistic ecosystem management where all the actions done from ploughing to harvesting, environmental and societal impacts are taken into consideration.

“Organic agriculture is a holistic production management system which promotes and enhances agro-ecosystem health, including biodiversity, biological cycles, and soil biological activity. It emphasizes the use of management practices in preference to the use of off-farm inputs, taking into account that regional conditions require locally adapted systems. This is accomplished by using, where possible, agronomic, biological, and mechanical methods, as opposed to using synthetic materials, to fulfill any specific function within the system.”

(FAO/WHO Codex Alimentarius Commission, 1999)^[1]

Hence the main aim of organic farming is:



Preventing any degradation of the environment
& improve the quality



Prevent pest and diseases



Territorial management
to scale up the production

What drives organic agriculture?

According to FAO three main driver that lead to the production and the sale of organic produce are as follows:



CONSUMER OR MARKET DRIVEN:

Consumers are strongly influenced by the certifications that conveys the clean production process, its handling and even the marketing. These consumers are conscious buyers. 1.3 mil Families have become habitual customers of organic products where they **purchased organic products worth 1.3 billion € in 2017 compared to 166 million € in 2016.** ^[2]

The major reason of the customers to buy organic food is ^[2]

- **76% Safety for health** (care about certificates or as advised by the pediatrician)
- **34% Superior quality of products**
- **29% sustainability and environment.**



SERVICE DRIVEN

Government initiatives, such as by The European Union, incentives and programs like incubations is provided to businesses for generating environmentally sustainable goods and services. These incentives as like a good financial benefits driver for organizations to start taking steps in sustainable ways.

Young & small organic farmers



FARMER DRIVEN

Farmers who volunteeringly take up organic farming because they are the activists of the environment and are passionate about producing without harming the nature. These farmers usually do not posses certificates and labels. Hence In developed countries, these farmers are increasing getting involved in the direct channel with the customers where they have interpersonal relations and sell their uncertified products, example the farmer's markets.

Where as, in developing countries organic farming is taken up to improve family health, reduce external costs of pesticides and to be self reliable. In United States of America, farmers marketing small quantities of organic products are exempted from certification.

Italian agricultural sector is highly dominated by big farmers in terms of income and Utilized agricultural area (UAA), and by old aged farmers too. The agricultural policies and the market are extremely favourable for them leaving very less scope to the marginalized communities like the small farmers and more over to the young farmers to sustain themselves. Below is the explanation of who are these 2 groups of farmers, what defines them, their proportion in Italy and their journey in this sector.

Small Farmers

Defining a small farmer has always been a challenge for even the academician and government as it has complex factors to be considered. These factors also differ from country to country depending on their natural conditions for farming, demographics and economy.

According to Anna Gioia & Eco Ruralis^[3], The European commission^[4] and eurostat^[5], we can assume the following dynamics:



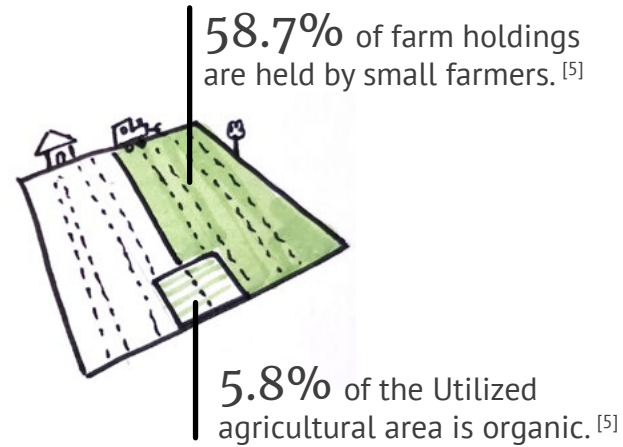
Size of the farm: Less than 5Ha
(average being 12Ha in Italy)

Income : 2.066 - 4 ESU
(**ESU:** European size unit, is a standard gross margin of EUR 1.200 that is used to express the economic size of an agricultural holding or farm.)

No. of Labour : Considering 1-2 Full time labour.
(Information not available for Italy, however it is derived through 2nd level research and reference of UK)

SCALE

The minimum size for a commercial farm is 4 ESU, while farms under 4 ESU but with sales higher than 2.066 euros or with a surface area of more than 1 ha are defined as small commercial farms. Below this threshold, farms are considered subsistence or semi-subsistence farms and are therefore excluded from statistical surveys. Given that the average economic size of Italian farms is around € 25.000 SO, we can assume that, below this threshold, a farm may qualify as small in economic terms.^[3]



*SO: The standard output of an agricultural product (crop or livestock), abbreviated as SO, is the average monetary value of the agricultural output at farm-gate price, in euro per hectare or per head of livestock.

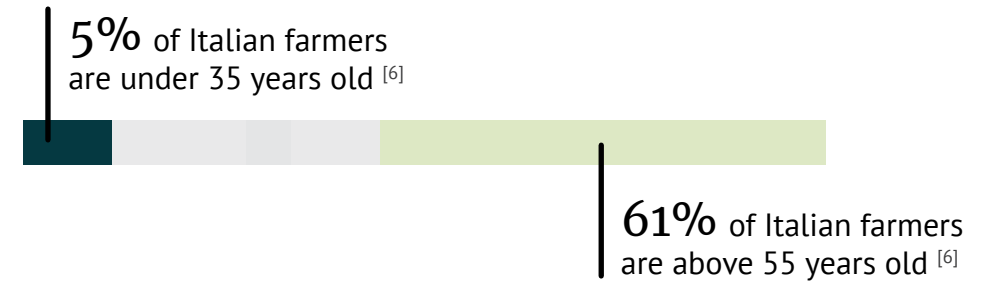
GENDER RATIO

The gender ratio of single farmers in the general farming scenario of Italy who come under small farmer categories is dominated by males.



Young Farmers

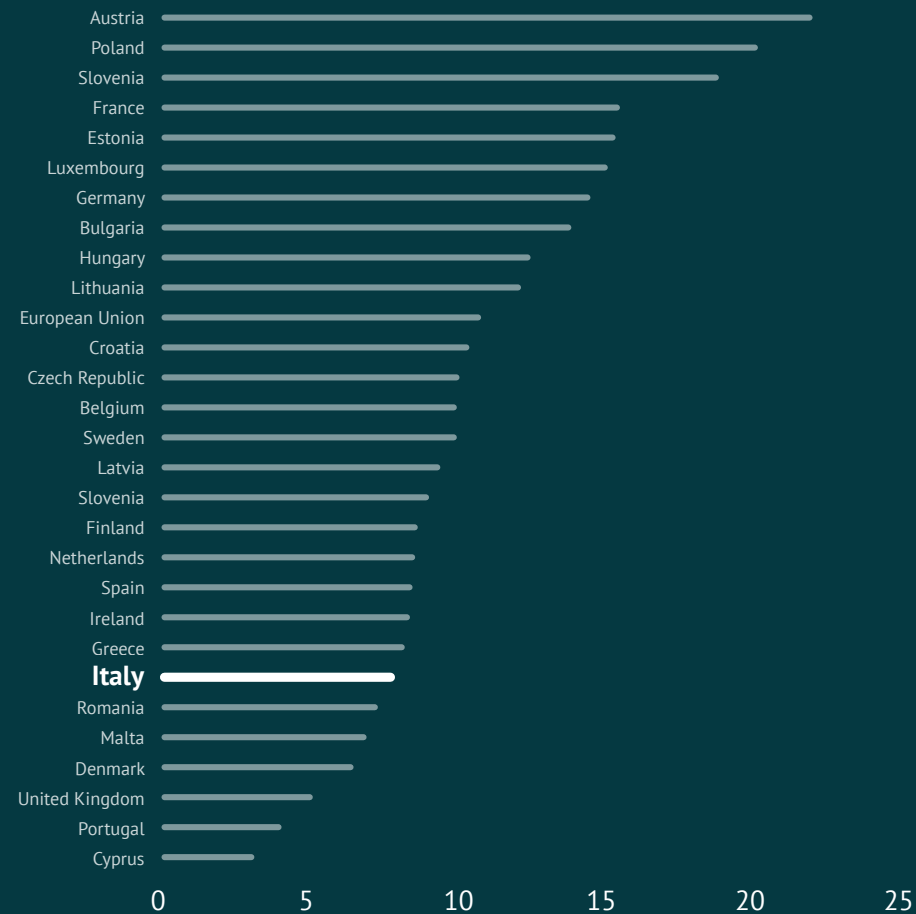
Young farmers according to Common Agriculture Policy are considered as a farmer who is under the age of 40.



Slowly the percentage of young farmers coming from a diverse background is increasing yearly. These people are **attracted to farming mainly due to the economic crisis**, that led them to take up **family businesses** or take up **self employed opportunities**.

According to some media, these young farmers have a **good share of women, graduates in different fields or have work experience in different sectors**. This suggests why most of them have less technical knowledge about farming and are **always doing research and development** during their practical work in the fields.

PROPORTION OF FARM MANAGERS UNDER 40 AGE 2016 (%)*



*Eurostat 2016

Taking reference of the paper : Young farmers' needs in Italy^[7], where 102 young Italian farmers were interviewed along with a focused group discussion with 10 participants, we can derive 3 archetypes of young farmers:



FARMER A
Restarting old family farm



FARMER B
Upgrading current family farm



FARMER C
New entrant

WHY DID THEY START FARMING

Farmer A is taking over his great grandparent's family farm to start self-reliant career with existing family property.

Farmer B wants to help his existing family farming business.

Young farmer C chose to start farming after doing 2 years of service as an engineer .

WHAT'S THEIR STATUS

He has lost touch of farming and managing skills.

He wants to propose new business model to compete with the growing and competitive market.

He has theoretical knowledge but lacks practical support.

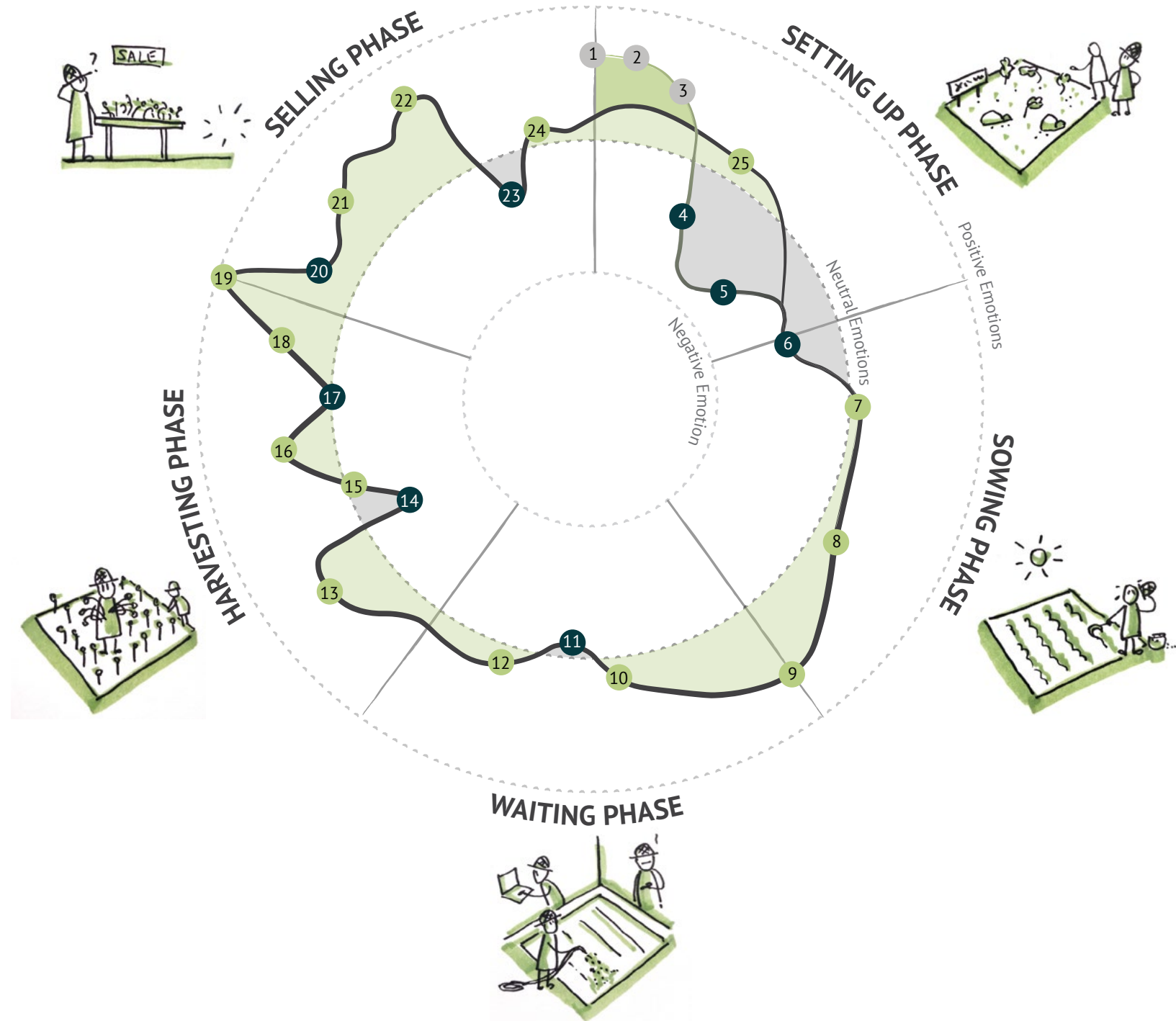
THEIR SPECIFIC NEEDS

Wants to learn innovative marketing skills.

Wants to learn greater managing skills

Needs support and guidance for setting up his new career which requires at least 2-3 years to be stable. He wants to learn innovative production techniques to reduce cost & physical efforts & increase yield.

User Journey of a new entrant young & small organic farmer



KEY

- SETTING UP PHASE**
 - 1 Starts the career with high motivation
 - 2 Gets motivated by other farmers
 - 3 Starts research
 - 4 Understands the problems of bureaucracy, land and the whole risk.
 - 5 Finally manages to clear the bureaucratic procedure.
 - 6 Extremely difficult to find native organic seeds.
- SOWING PHASE**
 - 7 Finds a vendor for seeds
 - 8 Preparing the land
 - 9 Looing patience as the farmer weeds and waters
- WAITING PHASE**
 - 10 Land is ready
 - 11 Does research and attends agricultural events. Gets motivated
- HARVESTING PHASE**
 - 12 Land is ready
 - 13 Gets happy to see the crops growing
 - 14 Finds a technique from a friend. Learns a lesson
 - 15 Pest attack
 - 16 Finally manages to clear the disease
- SELLING PHASE**
 - 17 Starts harvesting, but needs help to finish harvesting before it's too late.
 - 18 A friend offers help to harvest
 - 19 Finally finishes harvesting. feels satisfied
 - 20 Difficult to find a place to sell.
 - 21 Manages to get a contact to sell the produce.
 - 22 Happy to see sale
 - 23 Does not get enough clients and half of the produce is wasted,
 - 24 Distributes it to friends and family
 - 25 Learns from past mistakes, does better planning

Quoting from the CUESA discussion called “Growing New Farmers”^[8] below are the opinions of some young farmers.

“It’s a gamble every year,” said 30-year-old farmer Kenny Baker of Lonely Mountain Farm. “There are a lot of variables and you’re pretty much not in control. You’re just trying to manage what’s going on out there and not mess up.”

Kenny are up against, many are able to find much deeper rewards. “Farming has freedoms that other jobs wouldn’t have,” he said. “It’s about having a long-term vision for your life.”

*Wiig put it, **“A lot of people come into agriculture because they’re fascinated with growing plants or working with animals, not recognizing that you will spend a lot of time adding up numbers, communicating with customers, and doing logistics.”***

Taylor says, “You may not start out with all the biggest, shiniest gadgets, but if you’re a creative person, if you have friends, if you barter, if you build... you can do things for less than what the industry may say you need.”

Meeting with other farmers is important not only for exchanging knowledge, experiences, and resources, but also for political organizing and raising public awareness about issues that farmers face.

“You can’t compete with the commodity prices, so you really do have to tell a story. Hopefully it is one of doing something differently, something that’s more fair, just, and ecologically minded, and something that’s going to support rural economy.”

General set of problems and needs of young farmers

PROBLEMS

- Public information for the farmers are too fragmented, unintelligible and confusing.
- There is excessive bureaucracy (legislation)
- Limited quality in terms of information about public services.
- Lack of time, replacement in the farm and lack of investment is a great hindrance in their development.
- Limited access to land & capital
- Excessive physical hardwork with respect to really slim profit margin & uncertain income.

OPPORTUNITIES

- Due to lack of effective training and knowledge exchange initiatives, young farmers are open to gain skills in variety of technology & managerial knowledge.
- They rely on relatively informal source of knowledge. Exchange with peer to access useful and practical information.
- They get knowledge related to tailored needs.

WISHES

- They wish to improve their networking skills
- Increase farm yields
- Improve managerial skills
- Increase marketing skills
- Increase the income

Why are they so important?

The activities of small and young organic farmers have plenty of benefits on our environment and society. According to FAO^[9], Below are some of the impacts:

LONG TERM SUSTAINABILITY

Organic farmers take proactive measures to have a medium - long term effects on the environment. They aim to produce food while protecting the environmental balance, maintain soil fertility and prevent pests by taking creative measures of not killing them.

IMPROVE SOIL STRUCTURE & FERTILITY

Organic farmers use creative methods of cultivation like crop rotation, regenerative farming, permaculture, cover crops, minimum tillage, etc that not only produces good yield but also improves the soil quality for long term. They encourage growth of fauna and flora in the soil, improves the structure of the soil formation and creates stable systems. This improves the retention capacities of nutrients and water as they don't have any chemical traces or synthetic minerals. To add to all these benefits, organic farming soils are so strong that they are resilient to soil erosion and floods.

PREVENT UNDERWATER POLLUTION

Regular agricultural practices lead to underwater pollution due to the chemical pesticides. Since Organic practices are strictly against the use of synthetic materials, It avoids such grave issue of pollution.

Traditional agricultural activities are responsible for **11-15%** of green house gas emissions.

They use fertilizers which kill fertility of the soil, & leads to emission of nitrogen oxide that creates dead zones.

Farm related **land clearing** and **deforestation** are responsible for **15-18%** of green house gas emissions.

Organic farming uses **45% less Energy** as most of those energy is used to produce pesticides & chemical fertilizers.

Regenerative organic farming could **sequester more than 100%** of current annual CO₂ emissions via a switch to widely available and inexpensive organic management practices.

Source:
Fair world project (2015)^[10]

In countries like France and Germany, conversion to organic farming is encouraged to restore the quality of groundwater.

AIR & CLIMATE CHANGE

Avoidance of using agrochemicals itself reduces the use of non-renewable energy that are required in the first place to produce them. Apart from that, organic practices lead to increase in carbon absorption property of the soil & raising productivity. The more the carbon retention in the organic soil, the more the mitigation potential of agriculture against climate change.

PRESERVING BIODIVERSITY

'Organic farmers are both custodians and users of biodiversity at all levels.' It has been said that,

At the gene level because of the traditional and adapted seeds, Organic produces crops that have higher resilience to climate change and diseases.

At species level, the use of diverse plants and animals increases the nutrient and energy cycle.

At the ecosystem level, it maintains the natural ecosystem in and around the production area, creating a favourable environment for new colonies of species, creating a healthier gene pool.

FOOD SECURITY

As organic practices leads to making the soil resilient and promotes retention of underwater, It provides a great sense of reliability for the future food security when climate change is the biggest obstacle. It also reduces the chances of low production and yield failure.

'In rain-fed systems, organic agriculture has demonstrated to outperform conventional agricultural systems under environmental stress conditions.'^[11]

Did you know?

Only 12 plants and 5 animal species make up to 75% of what the world eats.^[12]

Food systems are vulnerable to natural disasters and disease outbreaks. Keeping variety alive is essential as climate changes.^[12]

Small farmers bolster biodiversity and increase food security, as especially the ones who practice sustainable farming are highly productive.^[12]

Major threats in their career

Below are the 4 discovered systemic level hindrances in the career of small and young organic farmers of Italy which is creating a huge bottle neck in not just the on-boarding of youngsters in this career but also slowing down the progress of the existing ones, eventually making them leave the field.

MARKET

As mentioned before, organic food market is growing in a very fast rate in Italy because of people's increased awareness and consciousness while buying. However, these businesses are monopolized by big distributors and retailers.

According to Nielson, May 2018 ^[13]

- The whole domestic organic food and beverage market had reached a volume of 2.7 billion € in 2016 where the sale within larger scale retail exceeded by 1.5 billion €
- The sale of their organic products increased by 18% (**Supermarkets gained 15.8% and hypermarkets gained 11.7%**)
- **Hence Large scale retail gained more strength.**

Looking at the trend in last 100 years, a shift from small family farms to large scale industry farms was seen. This indeed helped them reach out to the growing demand of food, increase their profit and buy all the small and medium sized land around them. This growing trend is making all small and mid sized farms loose business, giving very less opportunities to small & new farmers.

CERTIFICATION

Attaining biological certificates and labels are very expensive for small farmers even if they fully meet all the requirements. The absence of these makes them difficult to sell through bigger distributor or avail certain policy benefits. These farmer believe in the core intent of growing organic food more than the label. Their produce is usually consume within the family or through close circle of loyal customers.

In countries of Europe, there are local farmers market where these farmers get to sell their produce and have a direct face to face relations with the customers.

"Some cases have been documented where non-certified organic agriculture increases productivity of the total farm agro-ecosystem, and saves on purchasing external inputs."^[14]

POLICY BENEFITS

The European Union made CAP (Common Agricultural Policy) in 1960 that provided various policy support to small and family farms. However, Through a lot of interviews, many small farmers were not satisfied by the policy as it was not sufficient for them and they provided subsidies favourable only to larger scale farmers to improve their business. Also accessing to these opportunities is difficult as it's difficult for small farmers have higher hygiene regulations and they miss out because of quotas. This as a result, leads small farmers who are getting non-profitable to sell their lands to big farmers.

CLIMATE CHANGE

Lastly, even if organic farming helps fight climate change, the new entrant farmers are still becoming susceptible to unplanned, natural calamities like spells of drought, changes in rain pattern, etc. These weather anomalies makes it difficult especially to fight against unwanted diseases and pests, as they are anyway not using any sort of chemical pesticides.

Why we need to save them?

There are 2 strong argument to start actions to save the young and small organic farmers.

AGE

The average age of farmers in Italy is 58 (as per 2016 reports). This means that in less than 1 decade half of all farmers are likely to retire.^[15] There are not enough young farmers joining this career to replace the old farmers leading to a rising risk to the future agricultural sector and food security.

Moreover, many youngsters, also the ones with family farms are opting other career for better growth opportunity. The very few ones who opt by themselves to farm have issues of land access, knowledge access, bureaucracy, market access, etc,which makes them drop out from this career very soon.

TO SAVE THE ENVIRONMENT

Living in 2019, everyone is fully aware of the global warming and immediately climate actions have been initiated throughout the globe. Saving small organic farmers will save the indigenous knowledge and practices to produce food by enriching the ecosystem. These farmers also possess native and organic seeds that are resilient to hard climatic conditions and are preserving native breeds of plants.

Small scale farmers across the planet are endangered. Part of them rely on family farms and have to fund the functioning out of their own pockets, the rest are landless only working on fragile contracts on leased fields which does not give them security of work.

Little by little these organic farmers will be driven from their land, undermined in the market space and marginalized in the political arena.

In this process we will lose the biodiversity and traditional knowledge to move forward.^[14]

Present call for actions

European Context ^[16]

The European Union has many schemes and policies made to support small farmers along with rural development plans. One such important policy is CAP, common agricultural policy, launched in 1962. It is in partnership between agriculture and society, and Europe with its farmers. The CAP is a common policy for all EU countries. It is managed and funded at European level from the resources of the EU's budget.

THEIR AIMS ARE TO SUPPORT:

Farmers and improve agricultural productivity, ensuring a stable supply of affordable food.

- Safeguard European Union farmers to make a reasonable living.
- Help tackle climate change and the sustainable management of natural resources
- Maintain rural areas and landscapes across the EU.
- Keep the rural economy alive by promoting jobs in farming, agri-foods industries and associated sectors.

WHAT DOES CAP DO FOR EU FARMERS:

- Income support
- Market measures
- Rural development measures

BENEFITS OF CAP



ONE OF THE KEY OBJECTIVES OF CAP : BOOSTING INNOVATION

For having a smart, resilient and sustainable agricultural sector; knowledge and innovation are utmost essential. The future strategies of CAP is designed **to encourage investments in research and innovation, enable farmers and rural communities.**

Therefore, it is '*essential to build stronger agricultural knowledge and innovation systems (AKIS) to boost initiation and development of innovation projects, to disseminate their results and to use them as widely as possible.*'^[17]

To utilize AKIS in the basic strategy of CAP, the structuring and organization of innovation ecosystems would be incentivized by the EU. This is to ensure that AKIS activities are well functioning throughout the EU, avoiding necessary duplication, save costs, increase the impact of the EU and national funding and speeds up innovation.

Successful AKIS strategies include four main group of actions

- Enhancing knowledge flows and strengthening links between research and practice
- Strengthening all farm advisory services and fostering their interconnection within the AKIS
- Enhancing cross-thematic and cross-border interactive innovation
- Supporting the digital transition in agriculture

'The European Commission has proposed to set aside €10 billion from the Horizon Europe programme for research and innovation in food, agriculture, rural development and the bioeconomy.'^[18]

GREENING SCHEME

Another scheme under European Union is the Green direct payment or a.k.a. Greening. This scheme supports farmers who adopt methods and practices of farming that supports the environmental and climate goals. This support is offered through reward system as the farmers are preserving natural resources and providing public goods, which is the benefit for the society and the ecosystem and not having any cause and effect in the market

EU countries have to allocate 30% of their income support to "greening".^[26]



Global Context

There are a number of conferences and initiatives taken by global leaders and organizations to work towards marginalized agricultural communities to fight against climate change.

Once such conference at the **United Nations Framework on Climate Change Convention (UNFCC), organized by CGIAR**^[19] is taken as an reference. In this conference, various global leaders from Kenya, Philippines, Guatemala, Colombia and South Africa were present and took part in the discussion.

Below are the important points discussed and concluded in the event:

COLLABORATION AMONG FARMERS, RESEARCHERS & THE GOVERNMENT.

It was been voiced by the leaders that there is a need to increase the collaboration between the farmers, researchers and the government to be climate change resilient and to ensure food security. Small holding farmers are full of important resources of sustainable methods and processes. The need for protecting these small farm holders was spoken, and also the need to help them in all possible ways to increase their yield. In order to achieve this, it was discussed to increase the collaboration between farmers and international climate change negotiators to produce an impactful and useful solution.

REVISING POLICY FRAMEWORK

All the global leaders took an oath to put the policy framework in place for supporting small scale farmers in their countries as they all accepted that working towards them would help them fight against climate change and have food security.

01 / Problem Setting

Possible scope for intervention

“In against climate change adaptation, small holders provide an amazing opportunity of having a multiple benefit approach that cannot be done with large scale farmers,” said Julien Goncalves International Institute of Rural Reconstruction (IIRR) in the Philippines ^[19]

PROMOTING PARTICIPATORY RESEARCH

Often when farmers and researchers collaborate, the researchers fail to understand the real needs of the farmers. This leads to an invention that is mismatched and does not suffice farmer’s needs. In the conference this issue was highlighted and was concluded to have more participation from the farmer’s side, give them more access to the special seed variety and give ownership to the project, that would help them to create a perfect environment for a better innovation for both the stakeholders.

JOINING HANDS WITH FARMER’S ORGANIZATIONS

It was discussed in the conference that, in order to implement the new plan of actions, it was necessary to make it accessible to small farmers. They mentioned that in such a case, spreading these services through local farmer’s organizations like associations and cooperatives would be very useful. This is because small farmers are highly reliable on these organizations for guidances and reaching out to public and private services.

“Farmers are the biggest dream catchers in the world,” he explained. *“If you paint a good dream to a farmer and show him how to get there, in the next five years he will have done what you told him and surpassed it. The only problem we have is not sharing these dreams with our farmers,”* ^[19]

**BOOSTING INNOVATION
& KNOWLEDGE TRANSFER**

**FOSTERING INTERCONNECTION &
CROSS FERTILIZATION ACROSS DISCIPLINES**

SUPPORT DIGITAL TRANSITION

ENABLE YOUNG & SMALL FARMERS

**PROMOTE MENTORING &
ADVISORY SERVICES**

IMPROVE POLICY FRAMEWORK

SUPPORT IN DECISION MAKING

01 / Problem Setting

General Problem Statement

How might we foster support to small & young organic farmers of Italy through Product-service system to make them resilient and sustainable in the current agricultural sector?

Diving² deep

METHODS USED: SECONDARY RESEARCH



PERSONAL INTERVIEWS



*INTERACTIVE TOOLS:
MAPS & CARDS*



DESK RESEARCH

Meeting the Farmers

After completing primary research about organic farmers, it was concluded that there is a urgent need to work towards small and young organic farmers of Italy. The next steps were to have a in-depth qualitative research with the young farmers of this particular field.

THE AIM

The aim of this phase was to understand the underlying core motivations of these farmers in their lives and careers, and know the stories and journeys of their agricultural career. This phase will help me as a designer to empathize with the target segment, analyze their journeys and try finding the area that needs to be intervened for Product Service System solution.

METHOD

Qualitative interviews with some probes were used with 4 farmers to get in-depth information about their journey.

1st Interview - orientation interview:

This was a formal interview but an orientation method that took place for 5 hours in total in 2 different sessions. This interview helped me in orienting myself into this problem area and making tools to talk to other farmers better.

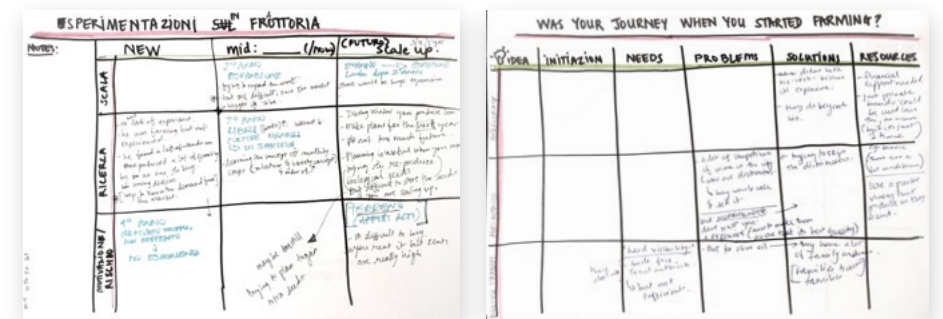
Outcome of 1st orientation:

- 1/ List of all the problems young farmers have.
- 2/ Finding a focus area on Experimentation and Orientation
- 3/ Designing better probes and tools to take interview.

Especially making it easier to guide the interviewer (who was an Italian translator).

The following interview questions were later re-designed with the below sequence of tools and topics:

1. Basic introduction to the thesis project and show my research.
2. Introduction by the farmer and understanding their background.
3. Their motivations and goals.
4. Step by step story of when they started the business. Fill the tool.



5. Their farming techniques and experimentation.
6. Their network, partners and clients.
7. Card sorting tool: Different cards with different topics related to farming, along with some empty cards for them to add more elements. The task was to rearrange these cards to explain better the priorities of various topics in their career.





Claudio, 25 & Lisa, 21 Azienda Agricola Bonfanti

Erba, Italy.
Started in January 2017

BACKGROUND: Claudio is qualified in Bachelors in Industrial Chemistry. With his great passion for farming, he took a brave leap of joining this industry with 3 of his university friends. They worked for 2 years and later split because of lack of motivation, too much of hardwork and changes in personal careers.

Claudio now runs the business on his own with the help of his sister Lisa, who gives a helping hand in harvesting and most of the time in finding government or private loan schemes and business strategy.

FARMING METHODS: Permaculture

LAND: They don't own the land however. they work in a leased land of a slow food restaurant.

BUSINESS STRATEGY: Claudio grows organic vegetables and fruits for the restaurant and whatever grows extra is sold under his private business initiative.

SHOP: He sells his vegetables every Saturday-Sunday in his family owned shop.

CLIENT: Limited and niche clientele from the neighborhood.

PROMOTION STRATEGY: Word of mouth and instagram (small scale)

SIDE BUSINESS: Volunteers in helping 'Farmbot' initiative during Lario Fiera agri-festival in Milan. Specifically consulting them with his permaculture knowledge.

FARM PRODUCE: Organic vegetables and fruits grown with Permaculture Ideology. Also specializes in experientive produce with mixed and exotic properties of different vegetables.

NUMBER OF FARMERS: 1 (himself), Lisa helps in marketing and finding funding schemes.

URGENT NEEDS:

Certificates: don't have as it's expensive

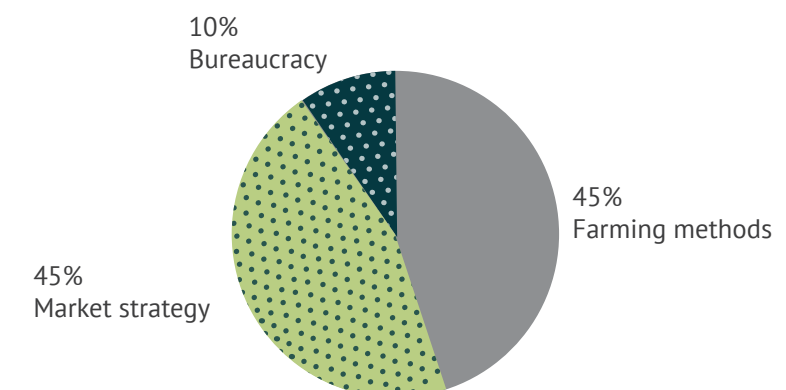
Market: needs contact and a spot in farmer's market

Customers: need contacts and good marketing.

Money: consistent funding schemes

Labour: Can not afford

EFFORTS NEEDED IN THE RESPECTIVE FIELDS.



PHYSICAL LABOUR

Needs external help for ploughing. Usually the extra worker is paid by the restaurant owner. If he is working for owns benefit, calls a friend and offers to pay for his fuel in return.

GUIDANCE

He does not know how to get more customers.

He feels the need to be a part of a cooperative to increase his market.

Needs guidance to scale up their production.

TIME

Has no time to focus on the marketing of the enterprise.



Luca, 36
Single Farmer

Varese, Italy.
Started in 2017

EXPERIMENTATION AND INNOVATION

Claudio is constantly experimenting and bent to find innovative techniques to:



RESEARCH METHODS

- Internet
- Youtube influencer
- General books
- Permaculture books
- Inspiration from Agro fairs and acquaintance

PROBLEMS

Because of lack of time, he does research only in the winters when the work is very less.

Need confidence and trust on his resources to take the risk of experimentation.

BACKGROUND: Luca finished his graduation in engineering and worked in the industry for 9 years. Fed up of working in the industry, he decided to work on his own, on something he was passionate about - organic farming.

FARMING METHOD : Micro ecosystem, regenerative farming, synergy farming, natural farming.

LAND : He does not own any enterprise or land. He works in an old lady's empty plot.

BUSINESS STRATEGY : From the produce, he provides fresh food to the land owner and sells the rest in farmer's market.

SHOP: Temporary stand in Arci Bellezza Market, near Porta Romana, Milan.

CLIENT: Farmer's market's walk in customers.

PROMOTION STRATEGY : None, only relies on contacts with people in authority with the farmer's market.

FARM PRODUCE : Bio vegetables and fruits.

NUMBER OF FARMERS : 1 (himself)

RESEARCH TIME AND METHOD : reading books

URGENT NEEDS:

Certificates : don't have as it's expensive

Market : needs contact and a spot in more farmer's market

Customers : need contacts and good marketing.

Money : consistent funding schemes

Labour : Can not afford

Vendors : For seed collection

FUNDING

A single young farmer can not take part in government schemes/ loans as they need money to even access it.

SEEDS

As a bio farmer, it is not easy to find different biological seed vendors.

LAND

No one lets people to farm in their land as this initiative is not very profitable for them.

Hence, single farmers like Luca get the work only through contacts.

MARKET

For a new farmer, access to open their stand in the farmer's market is impossible. One needs good contacts for the entry too.

EXPERIMENTATION AND INNOVATION JOURNEY

2017

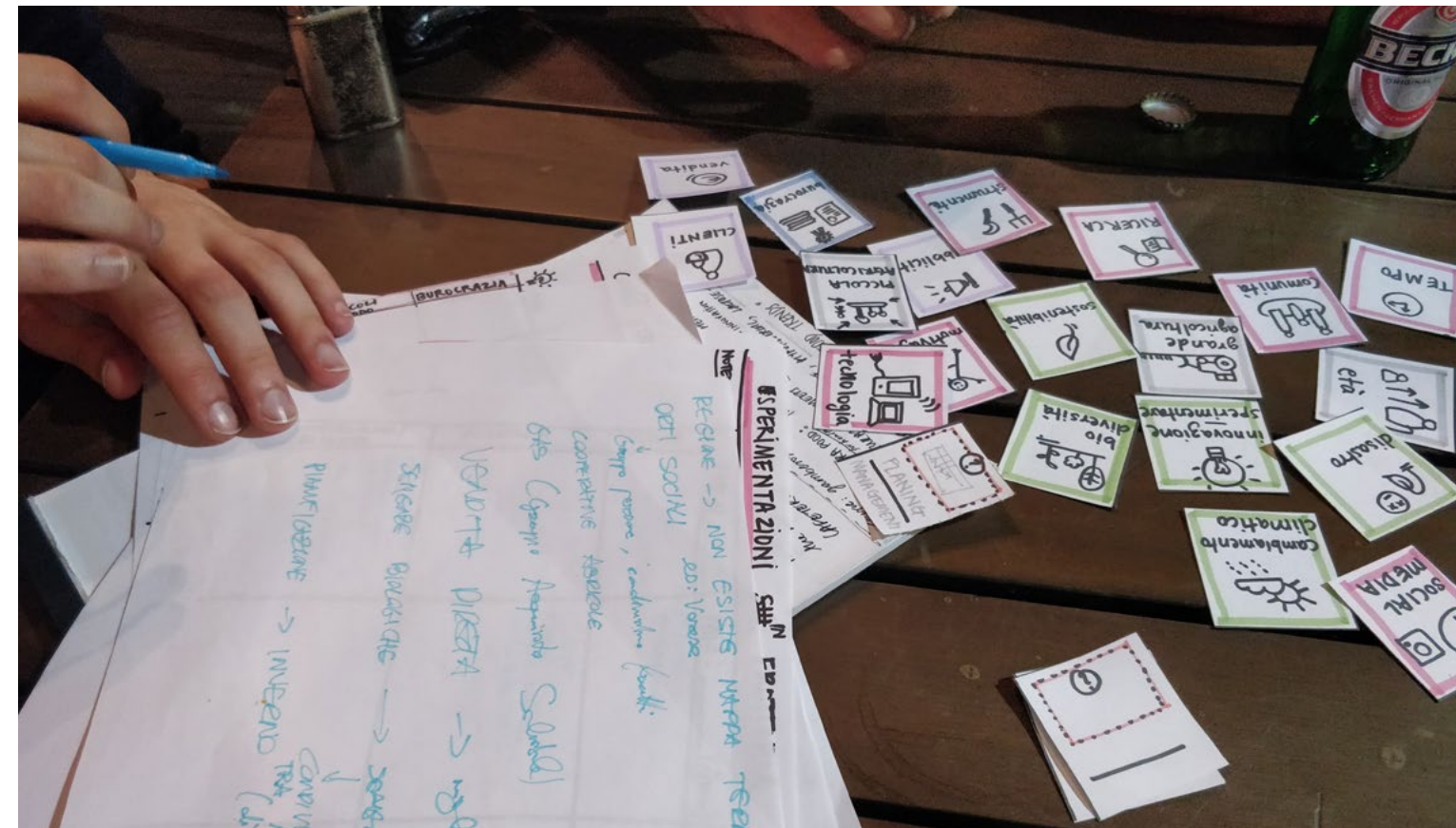
- Lack of experience led to making many mistakes.
- Once he produced a lot of potatoes but no one was ready to buy them.
- I was very important for him to know the current demand of the particular produce.

2019

- Presently he is trying to expand the most but it's very difficult.
- Currently into learning concept of crop rotation technique to avoid diseases and improve production.

Future

- Wants huge expansion.
- Would like to utilize winter time to plan for scale up the production along with the ability to produce more biological seeds from past production and sell them.





Rosalia, 40 Managing family farm

Sicily, Italy.
Started a brand in 2017

BACKGROUND: Rosalia is a teacher in high school in Milan. Her father invented the homeopathic treatment method 10 years ago and since then they started producing their own wine and oil and sold it to their friends and families. Past 2 years Rosalia and her sisters started marketing the products and selling them in Milan and UK.

FARMING METHOD : Agro homeopathy

LAND : Family owned 7 Hectares land in Sicily

BUSINESS STRATEGY : Attending conference, going personally to every restaurant to sell the idea. Website for international clients to order the products.

SHOP: Have agent in UK to sell the products to the UK client. Rosalia is the agent for north Italy.

CLIENT: New and growing.

PROMOTION STRATEGY : Website & meetings

FARM PRODUCE : Olive and grapes. Process it into wine and oil.

NUMBER OF FARMERS : 4-5 Family members.

RESEARCH TIME AND METHOD : Father completed the research 30 years ago.

URGENT NEEDS:

Certificates : don't have as it's beyond 'Bio'. Also Bio certificate is expensive.

Market : wants people to understand the quality and value of their products

Customers : need contacts.

Money : consistent funding schemes are required.

COST v/s QUALITY

Distributors buy other products in bulk and sell them to the clients. Rosalia loses the battle in the cost of the product, as they go in the premium range.

MIDDLE MEN

Rosalia wishes to have a direct relation with the customers to cut middle men fees.

RADICAL METHOD

Rosalia and the current small community of agro homeopathy would like to spread this method to other farmers. However, people relate it to homeopathy medication and dismiss their fact.

VISIBILITY

Rosalia wishes to have more visibility of her product in trade fairs, social media and many more to have direct clients.

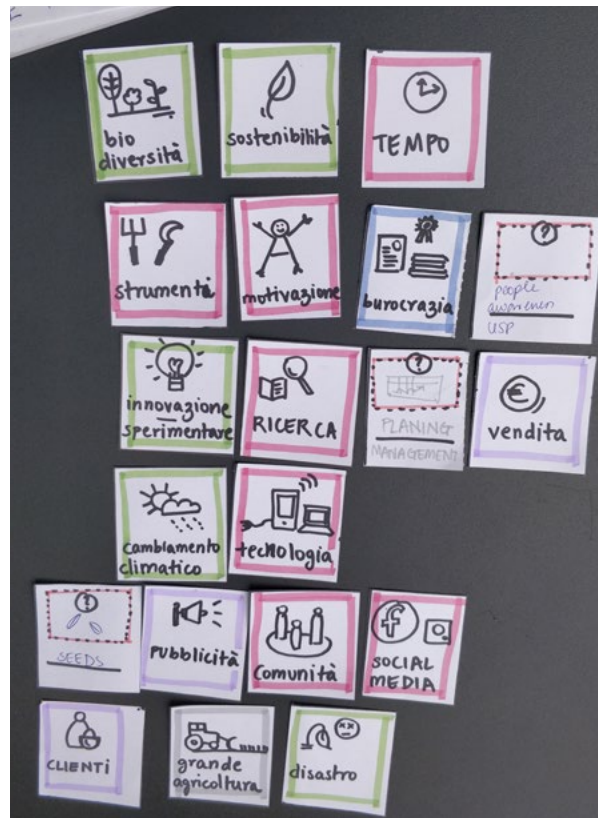
02 / Diving deep Insights from the meetings

EXPERIMENTATION AND INNOVATION JOURNEY

Rosalia's father is an agro technician and is working in this field since 30 years.

He took 8 years to crack the innovation to make stronger molecular structure of the plants through homeopathy.

They have backup data from scientific papers of University of Bologna, however the customers don't tend to trust the value of their product and tend to buy cheaper and weaker products from the market.



ORDER OF PREFERENCE

According to Rosalia's order of preference, she would give 1st priority to advocate the Homeopathy method of production everywhere.

Followed by the tools, motivations and bureaucratic process, the research, planning of the fields and selling.

The least worried about her marketing and sales, as it is in place for her right now.

She mentioned that disasters and diseases are not her fear as her production is strong enough to be resilient against them.

Positive aspects



PASSION

The young farmers interviewed were extremely passionate about organic cultivation. Most of them left their career and started cultivating to be the owner of their own job and gain satisfaction for contributing to the sustainability of the environment.

High risk margin, low profit, extreme need of patience and hardwork, all these obstacles does not put them down. Instead they are always striving to become better.

In case of farmers with family farm, they are really passionate about helping their family business, and they are using their knowledge of the other career to manage it and increase the clientele.



KNOWLEDGE & INNOVATION

Another plus point of these farmers is their level of curiosity. Firstly organic farming is a big subject with various organic techniques inside it. All the farmers who were interviewed were experts in at least one or two of the methods and used them in their fields. Since most of them were self taught farmers, they did all the research by themselves through scientific papers, books and Internet or through limited but high quality guidance from peers.

Secondly, they are constantly thinking of how to manage diseases and pests, and with that how can they scale up in the next cycle. Since most of them are solo farmers, they are also doing experimentation to increase the yield with least resources and costs.



COMMUNITY

The farmers that were interviewed had a sense of community spirit with each other. They all are conscious about the difficulties in their career and business, hence they survive through peer to peer support. They all are part of at least one association or a cooperative, which keeps the collaborative spirit alive.

They are also open to meeting new people to discuss about the various issues of small scale farming and try to figure out solutions, only if time permits.

General problems



RISKY JUGGLER

Most of these farmers are working in the field either all alone or with the help of some family members for certain activities. However most of the pressure of managing the farm falls on the young farmer's shoulder. They have manage the farm, manage business, sell the product, do bureaucracy, work whole day in the farm, do research, all of this just alone.



UNABLE TO CONVINC

Some farmers said that they maintain a personal relationship with the customers to explain them the value of their products and develop loyalty. However, the organic farmers like Rosalia who produces top quality oil said her potential customers find it difficult to understand her product's value because it's more expensive than the standard oil available in the market.



JUST A SMALL FARMER?

The market and the consumers only see farmers as someone who grows food and does hardwork. They are not seen as an ambassador of scientific knowledge or activists for environmental sustainability apart from the government.



NEED CONTACTS

It was found out that farmers need contacts and reputation not just to have more customers and increase their sale, but to even get land, a spot in farmer's market & contacts with retailers, restaurants and distributors.



PLATFORM

Small farmers don't have a public, common and accessible platform to showcase their activities or even sell their products.



CERTIFICATION

Biological certificates and labels are very expensive to attain & have high hygiene level. Hence young and small organic farmers, who's turnover margin is either zero or very low, can not afford to apply for these certificates. It does not bother them till they have their own set of customer circles to sell in the farmer's market but restricts them to gain some policy benefits or reach out big distributors.



LOW PROFIT

Most of the young farmers from the interview had very low profit from their sales. As happened to Luca, even if the produce were a lot, just because there are no clients or the distributors available, the yield goes to waste and leading to loss.



UNSUITABLE PUBLIC POLICIES

Public policies like CAP and various funding programs designed to incubate innovative organic solutions, all are inaccessible due to costs, insufficient funding or unsuitable quotas. This had made the farmers have no hopes from the government.



NEED ADVISES & GUIDES

As a new farmer in the community, these farmers have very limited connections with other farmers to discuss about problems and find solutions. For an unusual solution, they have to reach out to scientific papers and books to find solutions, which is not very quick to access.

01 / Diving deep Market study

With a diverse range of urgent needs and problems of small scale farmers, market study was done to see how the existing services are catering to their needs. This method was done through desk research and as recommended by farmers.

In the end, all these services were mapped with all the deliverables to figure out a possible pattern that is missing out to cater some important needs that we figured in the previous chapters.

Below are the selected best case studies:



L'ALVEARE CHE DICE SI!

Where people can pre-order and collect fresh produce from local farmers. These farmers can sell their products at their rate in clusters / Hives.

Location : south-west EU

Type of organization : Online farmer's market

Target users : Small farmers & local consumers



FARMERS SOSTERIA AGRICOLA

An organic farm-to-table restaurant and store that runs on the trust of city-based customers.

Location : Rome, Italy

Type of organization : Restaurant cum Retail

Target users : Small selected farmers & Bio consumers



ANGA

Under 40 association.
Mostly for family owned young farmers.
'Build intelligent supply chain'

Services : Legal advice, trade and financial info, company management, bureaucracy taxation, news feed, articles, farmer of the month, information links.

Location : Italy

Type of organization : Association

Target users : young farmers



CEJA

the European Council of Young Farmers – is the voice of Europe's next generation of farmers to the European institutions.

Location : EU

Type of organization : EU council

Target users : Young farmer representatives



SALSA PROJECT

SALSA effectively engages with stakeholders and decision-makers relevant to small farms and food and nutrition security, and facilitates a dialogue that cuts across classical boundaries in research, policy and practice.

Location : EU & Africa

Type of organization : Research for policy making

Target users : Researchers & small farms and businesses.



ENRD

It serves as a hub for exchange of information on how Rural Development policy, programmes, projects and other initiatives are working in practice and how they can be improved to achieve more.

Location : EU

Type of organization : EU Initiative

Target users : All inclusive



FARM SUCCESS

Training and succession process of family farms through innovative methods. (95% are family farms in Italy) Provide motivation, improve economic situation, improve conditions of rural areas (purpose: low motivation and high number of problems lead to young farmers to leave the business)

Location : EU

Type of organization : Consultation platform

Target users : Family farmers



AGRI OPEN DATA

Provide Block chain technology to provide digital traceability to convince the customers, provide smart certificates, quick payment systems, IOT technology to monitor farms and do risk mitigation.

Location : south EU

Type of organization : Digital & blockchain technology

Target users : Medium & large scale farmers



CEF

Examine short food supply chains in Europe and aims to identify innovative methods that may overcome the current challenges food producers face.

OUTPUTS: Training to food producers by researchers on business, promote innovation & create employment. Web portal that will exchange knowledge amongst farmers.

Location : EU + UK

Type of organization : Training & peer to peer web platform

Target users : Small farmers & researchers



SEMA

This Platform is to enable direct contact of adequate entrepreneurs aiming at a mentoring relation. With a cross-fertilization of successful entrepreneurs (mentors) young innovative farmers (mentees) regarding farming process, business strategies and decision making process.

Location : EY

Type of organization : Digital platform (research)

Target users : Young farmers & successful farmers



QUADERNO DI CAMPAGNA

Online software to archive farm actions which helps the farmers in farm management and crop protection. This database is later used for prediction, government regulation and e-learning content for agricultural students.

Location : Rome, Italy

Type of organization : Online software

Target users : Small & medium organic farmers



HORTA

'From research to field'. Provides Digital Support Systems (DSS) to monitor the agricultural activities and productions for better and accurate management of the production along with disease mitigation. They also provide 'demo days' where they spread new innovative techniques from research centers.

Location : Italy

Type of organization : Digital service (research)

Target users : Medium - Large scale farmers



AGRICOLUS

Cloud platform that help in farm management and precision farming through data collection.

Location : Italy

Type of organization : online software

Target users : medium - large size organic farmers



YPARD

E-services for information dissemination and networking, blogs, news, thematic events and debates, supports and promotes agriculture to young audience, policy scouting, etc.

Location : Global

Type of organization : network of community leaders

Target users : young farmers



AIAB

AIAB is the networking of the biological movement through the promotion of organic agriculture as a model of sustainable development, based on the principles of safeguarding and enhancing resources, respect for the environment, animal welfare and of the health of those who consume.

Location : EU+UK

Type of organization : association

Target users : bio farmers, technicians & consumers



FARM DEMO

Share experiences in a farmer-to-farmer setting, and to support knowledge co-creation between farmers and other actors. They are provided KITs to hold their demos. PURPOSE: Knowledge co-creation, Innovation adoption, problem solving, Training, building awareness, networking, research & policy implementation.

Location : EU

Type of organization : DIY peer to peer service

Target users : all inclusive



ORGANIC FARM KNOWLEDGE

A platform that provides access to a wide range of tools and resources related to organic farming that can help improve production.

Location : EU

Type of organization : Digital platform

Target users : All inclusive



ORGANIC E-PRINTS

Online archive of papers and studies about organic farming.

Location : Global

Type of organization : digital platform

Target users : all inclusive



EIP-AGRI

Farmers can share innovative techniques with EIP, where they will receive appropriate matches with researchers and other stakeholders to further develop the idea. These ideas would be promoted by the research centers and will also be awarded fundings. OK Arable net was a part of it.

Location : EU

Type of organization : Funding, scouting & research

Target users : All farmers & funding bodies

Useful findings

VARIETY

There are various types of services helping farmers in various sectors available in the market.

However, all the farmers interviewed were not aware of most of the services.

Upon asking one of the best services of Italy to the farmers in the interviews, the following response was received.

- 1. Some use quaderno di campagna to keep a track of their cultivation and trace the path*
- 2. The marketing services (l'arveare) their business model was not suitable for them as it is favourable only to people who have higher demands and clients.*
- 3. The rest of the services they are not even aware of.*
- 4. The services that they knew was through word of mouth.*

INNOVATION

Services based on farm innovation are either knowledge sharing platforms or incubation services where farmers collaborate with research centers.

Apart from giving funds to only the top winning innovations, there are no other services that support small farmers leveraging on their knowledge and innovation.

BUSINESS MANAGEMENT

Services that support farmers in managing their agricultural businesses through either training, consulting or through digital monitoring.

These services occupy a lot of time and money of the small and young farmers, who lack both these aspects. Hence it becomes difficult for them to access these services.

AGRICULTURE 4.0

Agriculture 4.0 is growing faster as it is being used to help farmers take faster and right decision, in the area of farming techniques, weather predictions, market analysis. They also provide multiple benefits like smart certificates and quick finance flow.

These technologies are expensive and the cost of services are high too. Hence they are adopted only by medium-large farmers.

Limitations

- NOT ALL SERVICES ARE INCLUSIVE
- DIFFICULT TO ACCESS
- THEY DO NOT ENABLE THE FARMERS
- CROSS CONNECTING SERVICES ARE RESTRICTED TO FEW ACTORS
- LACK FULL POTENTIAL TO BE COLLABORATIVE
- THERE IS NO ONE COMMON CHANNEL FOR COMMUNICATION

Design **3** Iterations

METHODS USED: SECONDARY RESEARCH



CO-DESIGN SESSIONS



PROTOTYPING & TESTING



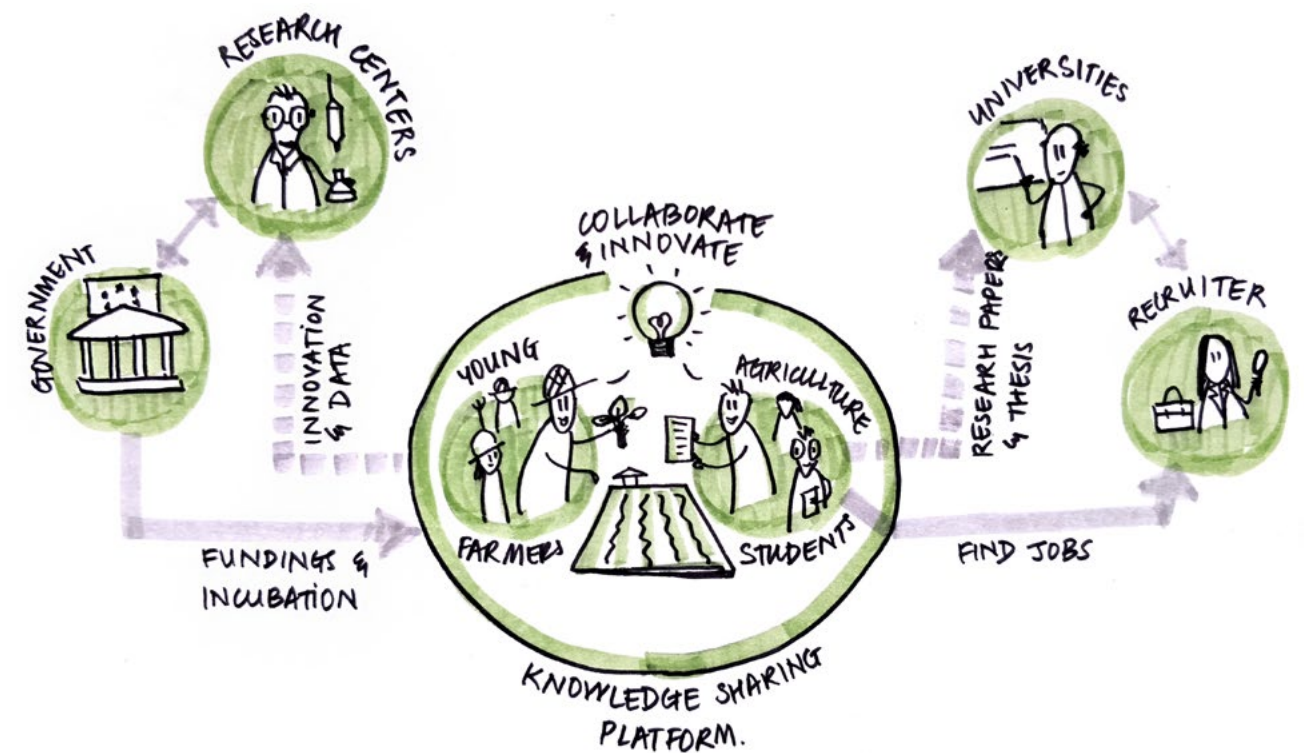
DESK RESEARCH

03 / Design Iterations Hypothesis 1

Collaboration between young organic farmers and agricultural students to create an informal environment to foster exchange of organic farm knowledge and lead to innovation, that would be recognition by the research centers and funding organizations and provide incentives.

AIM

To leverage of the knowledge bank and openness of innovation amongst young farmers and create a co-creation service that would benefit them through different incentives like funding and incubation of new ideas.



SYSTEM MAP

03 / Hypothesis 1 Co-design session

ASSUMED BENEFITS

PLATFORM

To create an informal environment that favours the generation of newer ideas and innovation from the interaction and collaboration between young bio farmers and the agricultural students.

YOUNG ORGANIC FARMERS

Since the organic farmers are very busy for conducting research and being up to date with newer technology and systems, they can get these updates and knowledge from the young students.

AGRICULTURE STUDENTS

Agricultural students are very thorough with theoretical knowledge. With this service they can test their ideas and gain more practical knowledge, guidances and framework from their farmer counterparts.

UNIVERSITIES

Universities can provide this platform for their students to develop their ideas and innovations. This will help them give a practical field to develop thesis and academic papers.

RESEARCH CENTERS & GOVERNMENT INITIATIVES

Research centers and incubators can retrieve these new innovation and knowledge bank (data) from the most innovative pairs of farmer and student, and provide them funding or incubation opportunities as a payback / incentive.

AIM

In order to test this idea, a co-design session was conducted amongst agricultural students and young biological farmers. In this session, they were given the following tools to understand their motivation and ideas to take this concept forward.

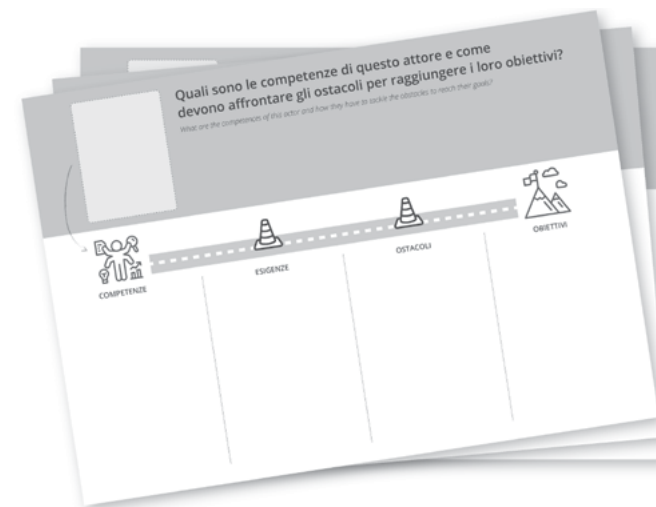
TOOLS & METHODOLOGY



PERSONALITY CARDS

Each participant would take a card related to their role and mention their level of stress, motivation, curiosity, potential and involvement in their respective fields.

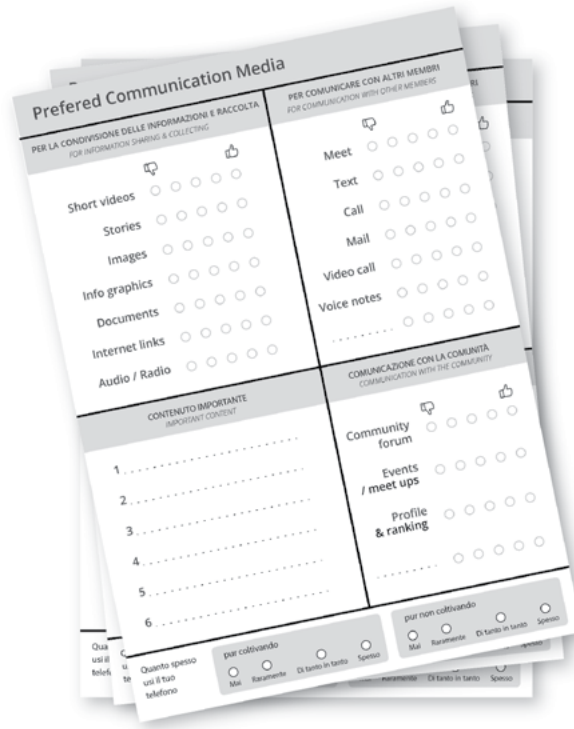
Every participant would introduce themselves to each other with these cards.



JOURNEY MAPS

Each participant had to place their personality cards on the map and explain their competences, objectives in their career, needs and obstacles.

At the end they had to share this with each other so that everyone could empathize and understand each other that would help them find potentials in each other.



COMMUNICATION CONTENT

In between the co-design session, the preferred content form was distributed to everyone for them to write what topics they prefer to share and gain from the community and in what formats. eg: physical meeting/ text messages/ calls/ videos, etc.



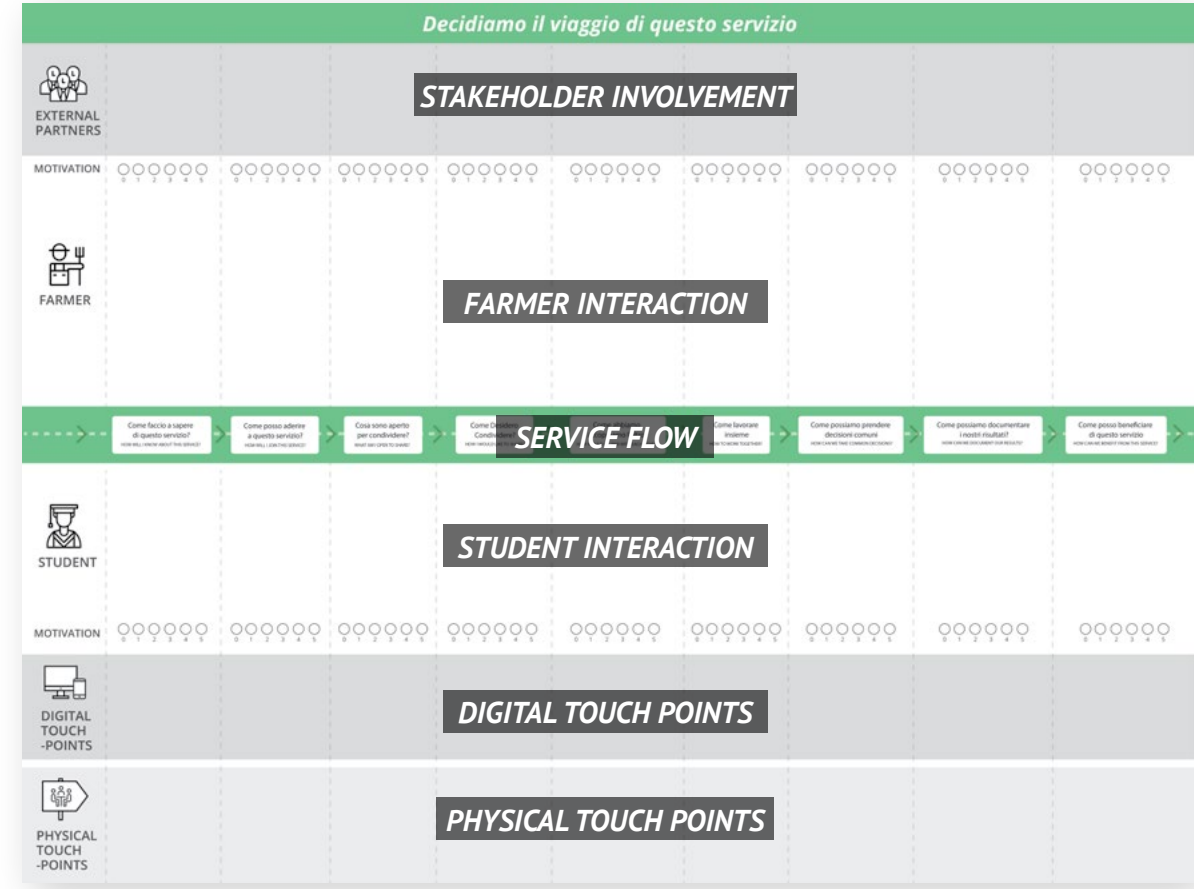
TRIGGER & SITUATION CARDS

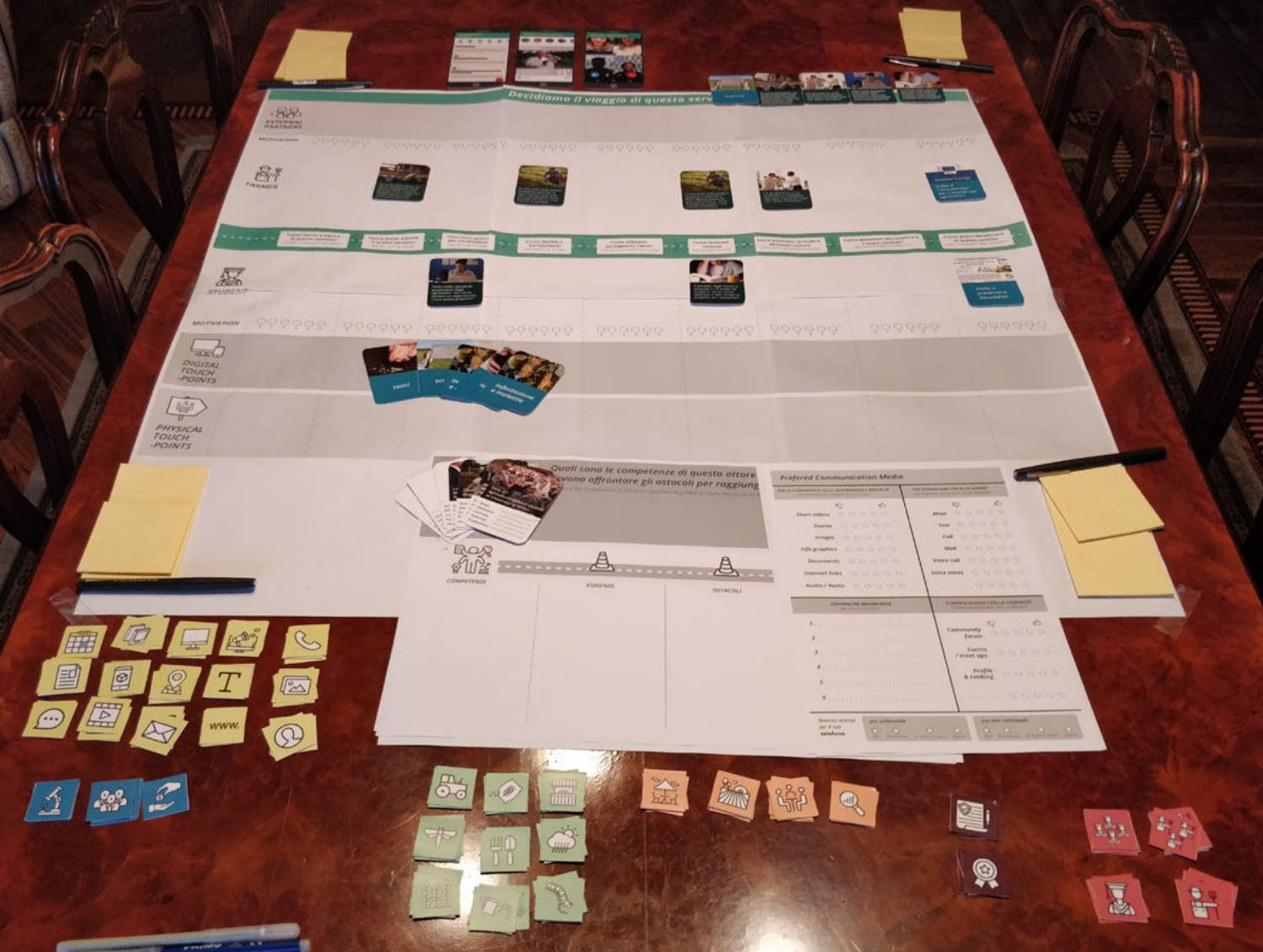
Trigger & situation cards were placed on the canvas and were revealed to the participants as they went further in the service journey. They spoke about different agricultural topics and rare but possible difficult scenarios in the actor's journey during this service. These cards made the service fool-proof and accident-proof.

CO-DESIGN MAP

The previous exercises being warm up activities, understanding the stakeholders and their needs and values, the participants then proceed to design the collaborative platform with each other.

This tool consists of the journey of the service where the participants have to decide together how the actors would interact with the service, the touch point and where external stakeholders can be added to add value to the service.





“Smaller the farmer, more the hands on experience.”
 - Gonzalos, Student

“1st I will see if the student is responsive on messages, then I will decide to meet him/her. I need to build trust.”
 - Maddalena, Farmer



03 / Hypothesis 1 Co-design output

Young Farmers

COMPETENCES



- Know agricultural techniques
- Understand weather conditions
- Aware of bureaucracy work
- Know how to interact with the clients about their products.
- Good physical stamina
- Know disease treatment methods
- Self supporting in finance

CAREER OBJECTIVES



- Have good business
- Find new customers
- Educate the clients about bio production.
- Scale up the production

Agriculture Students

- Professional and theoretical competences in the field of agriculture.
- Have adequate knowledge for small and big fields.

- Get a degree
- To be independent.

Young Farmers

NEEDS



- Earnings to be proportionate to the hardwork they put in.
- Having right sources
- Extra labor / substitute
- New & reliable terrain
- Timely and fair payments
- Accessible fundings

OBSTACLES

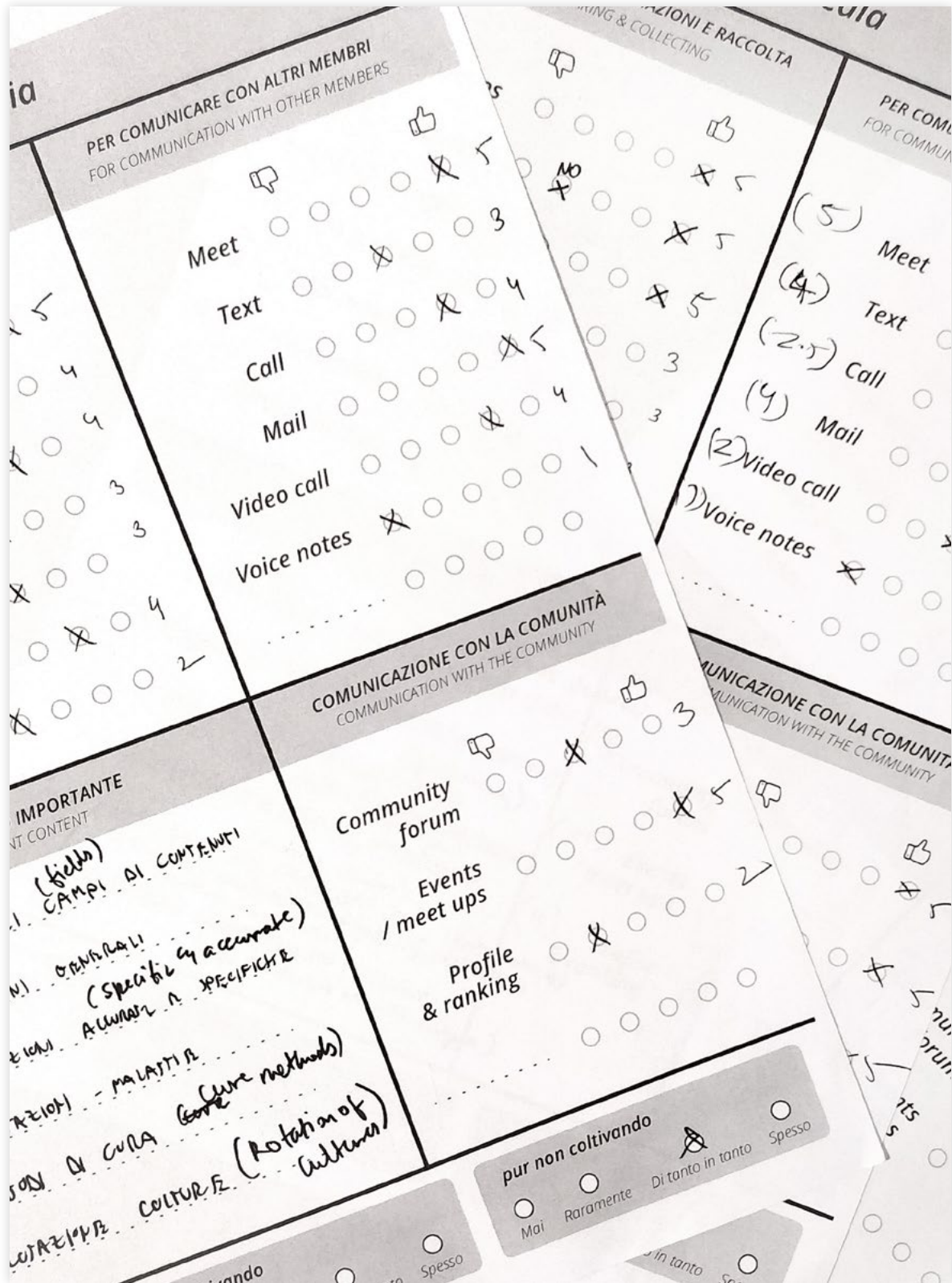


- Clients who don't understand the value of the bio products.
- Bureaucracy
- Having limited buyers
- Enter farmer's market
- Irrigation
- No time to work in the fields

Agriculture Students

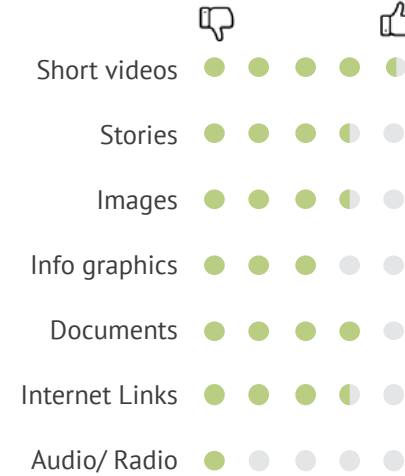
- Commitment in studies
- Enter the professional work
- Need constant updates about new agricultural techniques.

- Exams
- Afraid of not be able to handle professional work.

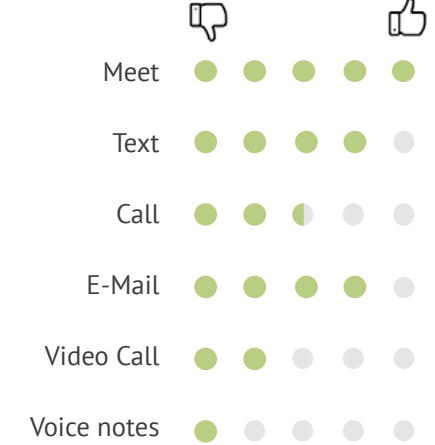


AVERAGE RESPONSE OF : MEDIA OF COMMUNICATION

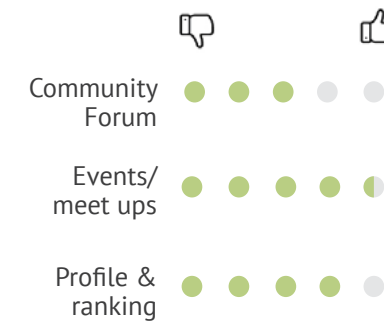
Information sharing & collecting



Communication with other members



Communication within the community



CONTENT PREFERENCE

- 1/ Infections & disease detection & prevention
- 2/ Disease curing methods
- 3/ New and specific biological production technique.
- 4/ Etymology of plants
- 5/ Product and material sourcing contacts
- 6/ Health assistance for animal husbandry
- 7/ Bureaucracy & finance

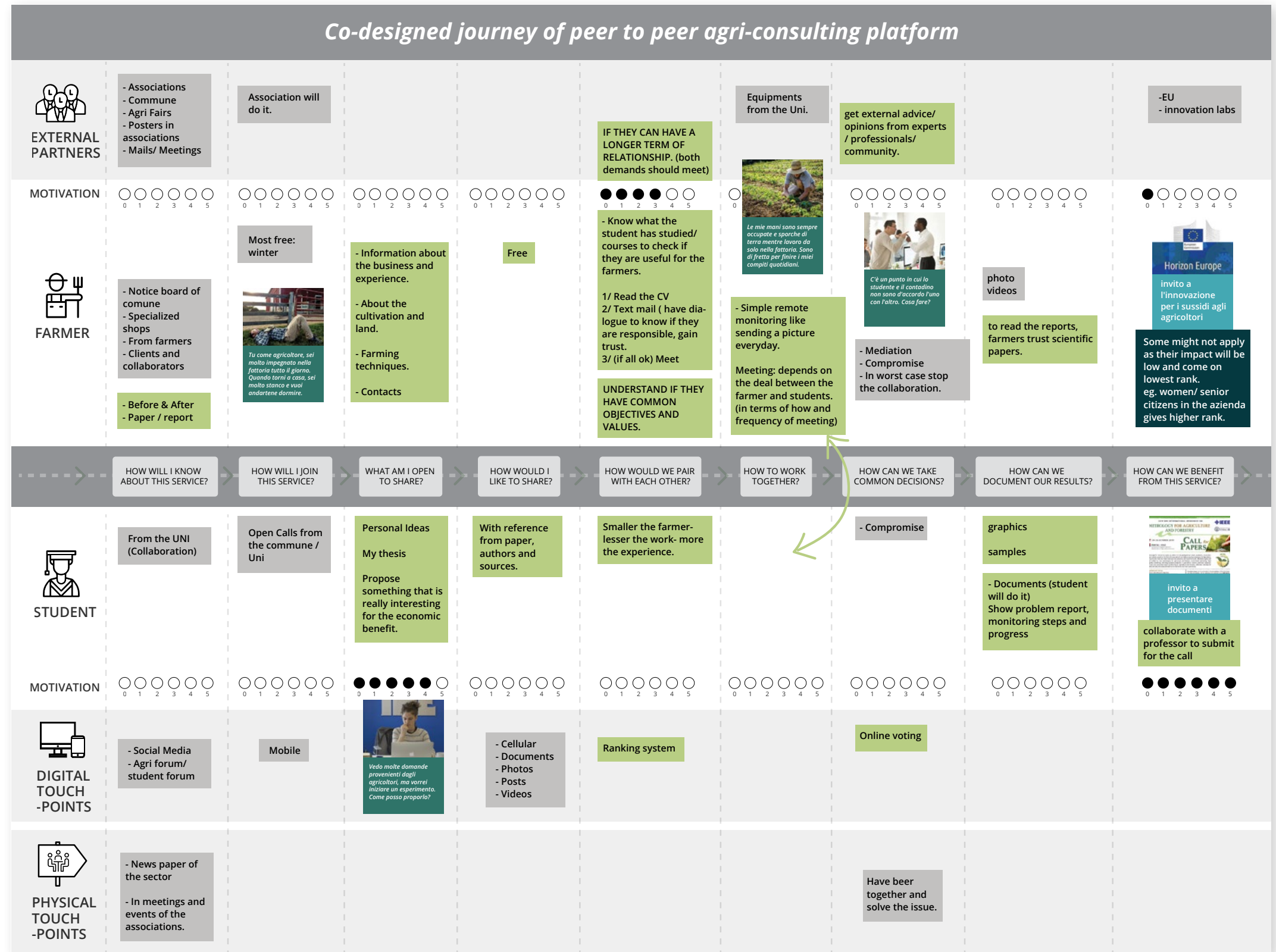
OUTPUT OF THE CO-DESIGN SESSION

KEY:

Neutral output

Useful output

Alarming output



03 / Hypothesis 1 Learnings

NEW POINTS

- Instead of having a mutual selection amongst students and farmers, there was **power play** coming into picture as the farmers were getting an upper power to select the students that they wanted to work with. This is because the farmer has to pay the rent and taxes of the land and face the loss of their valuable time and resources. Where as, the students were not losing anything apart from some academic hours.
- **Reputation came into the picture.** A longer discussion took place into how to define the reputation criteria to the farmers and the students for them to trust each other.
- The farmers accepted the students for collaboration, only the ones who already had innovative ideas to provide **economic benefits** to the farmers.
- The farmers **trust scientific papers** rather than opinions and innovative ideas from a person.
- The pair making activity did not seem easy. It is a very time consuming and step-by-step procedure to **gain trust** from each other.
- **Objective and values of farming** was a new discovered topic.
- There could not be any pre-defined rules for meeting and collaborating with each other. The participants demanded it to be very **fluid and dynamic**. Something that would be decided by both farmer and student with consensus.
- In the scenario of disagreements, the best solution for the problem would be selected through **voting** by the agricultural community and experts.

PROS

- The students were very motivated about the service as they were the ones earning credits for the innovation, scientific papers, develop a thesis and gain experience.
- In terms of external stakeholders, we discovered that the universities would willingly lend their equipments to do the experimentation in the fields.

CONS

- The farmers were not so motivated in this service as they saw very less benefits and more efforts coming from their side.
- Where as, the assumed partner : EU funding programs and incubators were not very effective as the farmers were very sure that they will never win the competition as they have many quotas, eg: number of women in the enterprise, number of senior citizens, etc.

FINAL CONCLUSION

As the service overall turned out to be beneficial only to the student than the farmers, and the motivation from the farmers was not at par, it was concluded to remove student as the stakeholder and look into different options.

Secondly, they mentioned that **innovation is not on high priority**, hence it would be nicer to look at a different approach which can help them **solve their current pragmatic problems**.

They are very confident with their own knowledge, expertise in the subject and their ability to do innovation. However, generating contacts, gaining clients and improving sales was not their expertise.

03 / Design Iterations

Hypothesis 2

NEXT STEPS

Focus more on helping or **enabling small young farmers** to solve their current **pragmatic issues**.

A product or service that is **completely accessible** to any community of farmers, **intuitive** and that can help them convey their farming values and **gain trust** towards each other.

How might we create an accessible PSS that would help young and small farmers gain trust from potential stakeholders, which would indirectly enable them to collaborate with them and improve their business activities.

Trust as a catalyst

After the last co-design session as it was learnt that young and small farmers would prefer focusing on current and pragmatic problems, the findings and analysis after the interviews were analyzed again. Looking at the what these farmers have as their pluses, they possess passion, knowledge and collaborative nature. These attribute all come from within a person, and that is why in the co-design the point of them being self sufficient emerged on the top.

What these farmers were lacking were external inputs. Example clients, distributors, market place, fundings and external help. Some even mentioned in the session that they are capable to dealing with these people on their own as they are self sufficient and self learnt, however they need something that would help them connect with these external aspects.

Hence all that is needed is something that would enable them to connect with the stakeholders, a catalyst that would help them solve most of the problems. And that was **trust**.

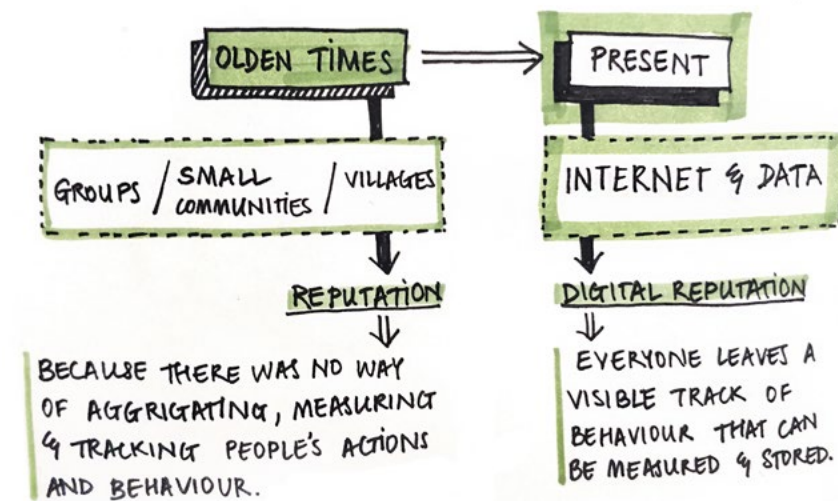


Reputation

Trust is gained when one truly understands the other person's or thing's true capabilities. This is usually gained when one sees or experiences the process and effects of their capabilities. **Hence capabilities and connections should be visible to gain trust.**

In times when there was no Internet or technology, people used to trust strangers because they were connected through some peer circle. Example, people gave their houses for rents to strangers from the same clubs, association or a family member of a friend. Hence **trust can also be gained through peer recommendation, provided one trusts their peer's capabilities and credibility.**

The indirect trust building relies on the 'reputation'. Which is an archive of one's trusts that they have gained through their actions. In close circle, people remember the experiences they had with other peers, hence they can build a reputation of each other and pass it on to the people in the community through word of mouth. In the digital world, this is increasing because of the digital traceability of one's actions.

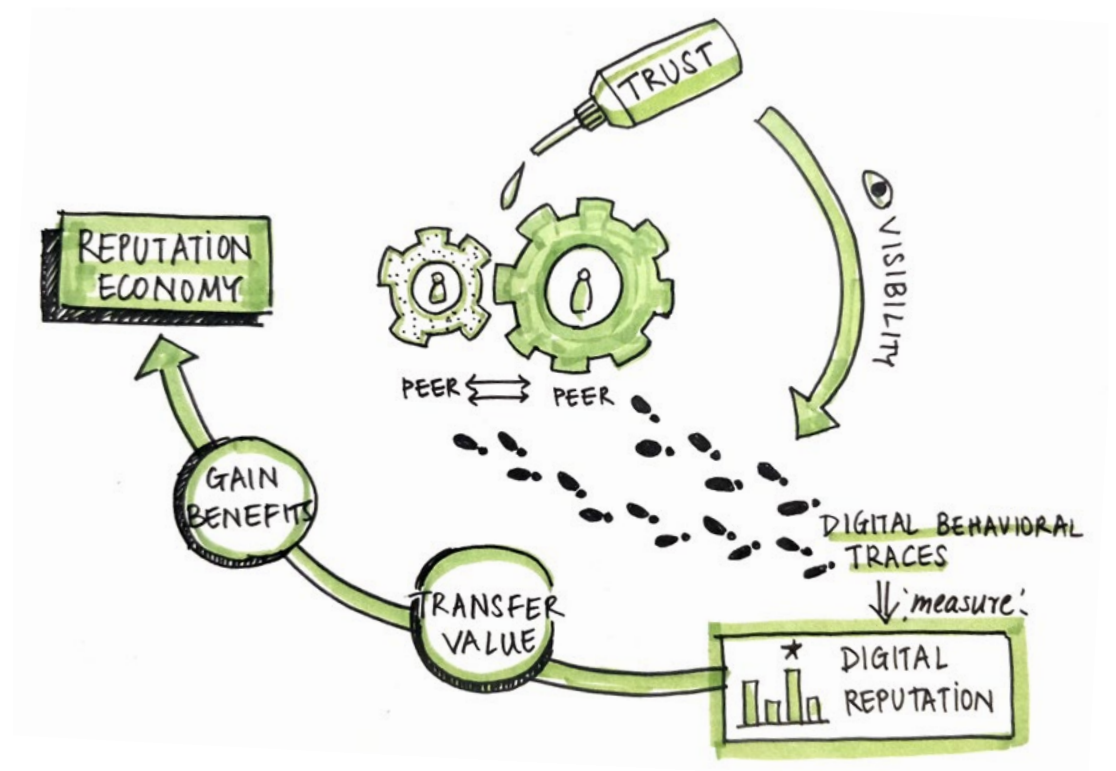


Digital trustworthiness, also digital reputation talks about the following points:

1. *How we behave online & offline.*
2. *What motivates us.*
3. *How peers view us.*
4. *How can we be trusted.*

This aggregation, measuring and tracking of one's behaviour online, is leading to the development of the phenomenon called 'Reputation Economy'. That's because these reputations gained and stored digitally acts as a set of capital and makes collaborative consumption easier to work and scale.

Trust based markets like banks and e-commerce traditionally relied on reputation of the customers. Another type is peer to peer market place, where the service works completely through co-creation and is been run by the users and for the users. In such places reputation or digital trustworthiness acts like a fuel for the service to keep it moving. More over, since the users in such services gain more benefits solely because of their reputation, this trust is hence termed as 'Reputation Capital' As this asset becomes more valuable, the users are driven to build better reputation online and are motivated to do favourable actions in the peer to peer platform, ending up providing a really good service to the other users.



*Network technologies
are digitally enabling
the trust we used to
experience face-to-face.*



Evidences

Below are the best case studies from the article of Wired ^[20] that demonstrated the expected and unexpected benefits of reputation in their peer to peer platform.

stackoverflow **STACK OVERFLOW**

Stack overflow is the mix of digital coding knowledge, wikipedia and ebay, where coding enthusiasts, students and professionals solve each other's queries and gain reputation points. The more the user gains points, the more incentives they gain, i.e. power to control the website.

Since it started, it gained a very big hit, with users passionately helping and contributing in the website to gain points. 'As soon as I touched it, I was hooked.' - Marc Gravell, 33 years old with more than 3,15,000 points (being the second highest contender)

This platform gains 24 million unique visitors per month, with 5500 questions per day.

UNEXPECTED BENEFIT:

The owners of this platform had also not expected the increase in the value in these reputation points. People even started mentioning their reputation points on their Curricular Vitae.

*The reputation gained in one community/
environment started gaining value beyond the
environment it was built.^[20]*

On recognizing this fact, the owners decided to launch Career 2.0 in 2011. This platform was a special invite only job searching board for very skilled programmers. Recruiters starting using this platform to search for best talents.



MOVEN BANK

Started in 2010, this bank was not like any other bank. As a normal bank, while they provide loans or benefits to their customers, they highly rely on the assess risk. Depending on your reliable assets, salary, job security, one gets more priority in gaining the service. However, Moven proved this theory wrong and started relying on the digital reputation of the users too.

They believe that services like banks lose almost half of their potential customers because of the traditional risk assessment. Moven bank considers the tradition risk model + individual's traditional credit score + social reputation + trust weighting.

Examples of one of these are checking how is their digital reputation on other peer to peer platform like their Ebay rating, AirBnB reviews that showed if they paid on time or not, etc.

Moven Bank is another example of connected reputation economy, which relies on other reputation platform.

With these information, they created their own scoring formal called the CRED score.

CRED score = Data + Assess risk + Potential value of the customers.

Where CRED stands for credibility and not credits.

Reputation has given the users a real life value.

22 billion£ has been lent in UK itself on peer-to-peer lending platforms.^[21]

30 million rides have been shared on carpooling services.^[22]



AirBnB which started in 2008, was based on the old house lending trust model, where one would stay in a stranger's house by paying advance or if they were somehow affiliated.

Airbnb is a perfect example that archives online reputation that is built on the basis of how the users act offline.

Now this service is spread across 34000 cities and 192 countries! The more the reputation one gets, the more the customers and business they gain. In the last 6 months, 5 million nights have been booked in Airbnb.

What we learn

What we conclude with reputation economy and it's real evidences:

1/ Digital trust is now transforming into Trust Capital. Where the users are gaining real life benefits out of their digital reputation.

2/ Trust is also being referred through other platforms where one's offline actions are traced online. Hence reputation is transferable. However, as designers of these services, we have to be very careful and take responsible decisions about choosing the right referral reputation. They have to be in the same context.

Facebook, LinkedIn, Twitter and all similar social media platform are measuring SOCIAL INFLUENCE and not reputation.

How might farmers cultivate and maintain their reputation?

According to an interesting article from Reputation Institute^[23] & Forbes^[24] on techniques to gain and maintain reputation in the present reputation economy, it was synthesized that following aspects are required to gain digital reputation.

- OPEN ACCESS
- TRANSPARENCY
- SOCIAL ENVIRONMENTAL RESPONSIBILITY
- ACTIVISM / DEDICATION
- BECOMING AN EXPERT IN A NICHE
- PROVIDING GOOD SERVICE

However, to translate them for the agricultural sectors, following adaptations should be taken into consideration:

1. OPENLY ACCESSIBLE INFRASTRUCTURE

The infrastructure or the platform needs to be open to access and affordable so that every stakeholder from agricultural sector can join and gain reputation. This will make the competition of reputation even. Hence open data access would be necessary to convert the offline actions or behaviors into online archive for people to access and assess.

There are 2 methods to go about this,

a. Through sensors or documentation of each step taken by the farmer. However this step is too cumbersome and expensive. Also small and young farmers can not afford to take such steps.

b. The concept used by existing peer to peer platforms where the users self certify or proclaim what they do and what they have. This data can be simply approved by authoritative peers, like expert farmers, researchers or farmer's associations and organizations.

2. TRANSPARENCY IN PRODUCTION PROCESS

Transparency is the key value that will help the users to gain trust and reputation from other users. The farmers would have to share useful data of how they produce the food and elaboration of their organic production technique will help them gain more trust from the customers and the distributors.

3. INTEREST IN SOCIAL AND ENVIRONMENTAL BENEFITS

Small and organic farmers are directly working towards the sustainability of the society and the environment. Hence people and companies would naturally be attracted towards this service in order to contribute their actions in this topic. Also, publicizing on the sustainability fact of each farmers itself increases the value of the service in the market.

4. ACTIVE PRESENCE

To build a better digital reputation, the farmers need to be active in the platform to create an archive of their actions and their influences. However, there needs to be a better alternative for this aspect as farmers do not have time to be on social media. They can only dedicate around 2-3 times a week in the online platform. A smart alternative that shows the other users that the farmer is active, but in his fields need to be invented.

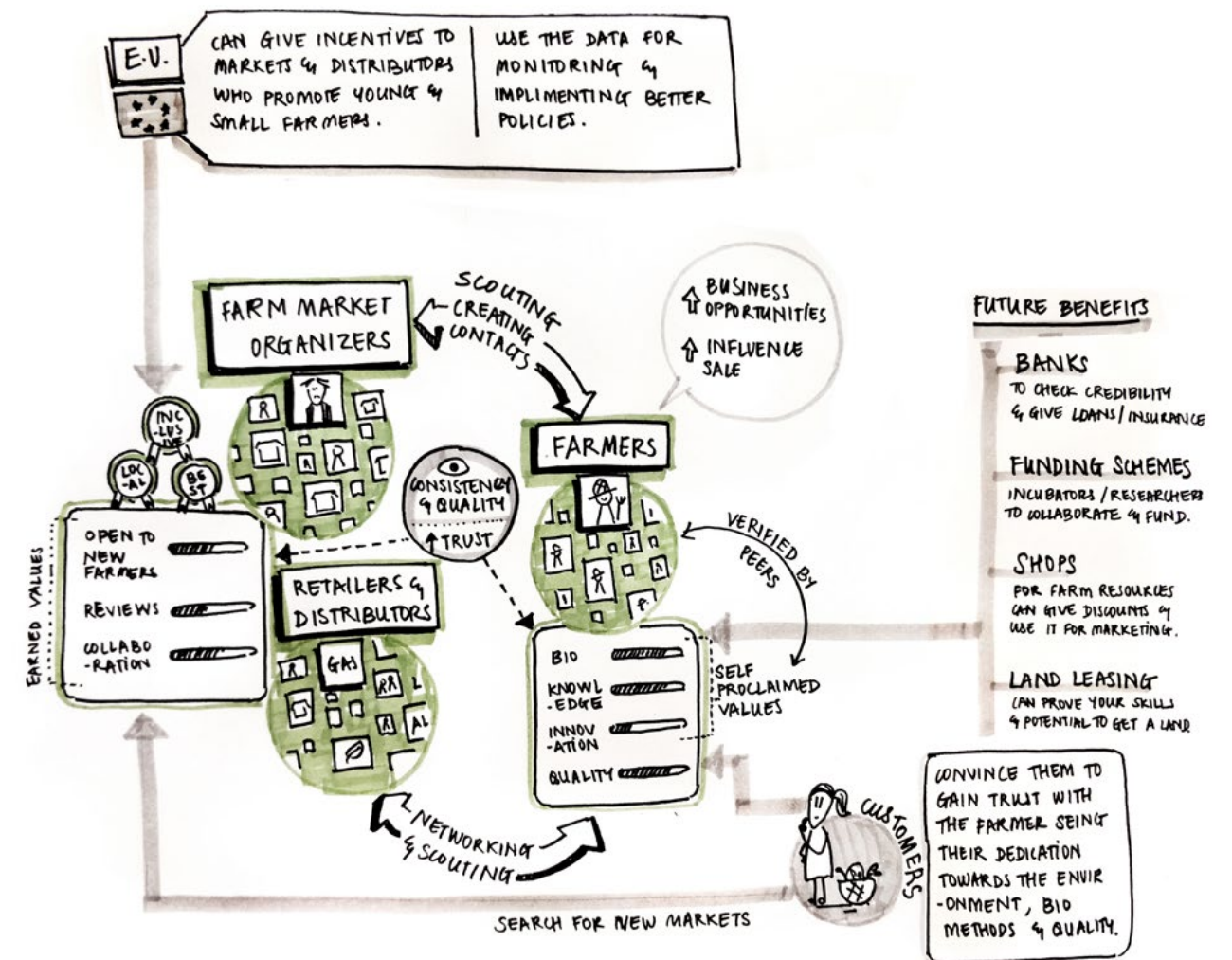
Assumed service flow

5. SHOWCASING SPECIAL VARIETY OF PRODUCTS

Becoming an expert in a niche product helps one gain more reputation than usual as it creates a special demand for it. Young organic farmers are often experimentive and are growing special variety of vegetables and fruits. With this platform, they will receive a higher stage to promote their products and gain more business.

6. GOOD SERVICE

While maintaining the reputation in the platform, naturally all the actors will start providing good service to their clients to gain more points. In this way, it will benefits everyone in the system and will reduce malpractices.



The new hypothesis can be drawn into a networking platform where stakeholders like farmers, retailer, distributors and market organizers can network with each other and collaborate for business activities. This networking will be based on the digital reputation that they will earned in this platform itself as they collaborate.

These actors will be able to build an impressive curricular vitae that would help them promote their values to each other.

ASSUMED DIRECT BENEFITS

FARMERS

Completely accessible platform where they can search & connect with all the registered distributors, market organizers and even associations and services around them.
In this platform, because of the earned reputation from the customers & other stakeholders, they can easily convince newer stakeholders to collaborate with them to improve their business.

*DISTRIBUTORS,
RETAILERS,
MARKET
ORGANIZERS.*

Accessible platform to network and scout for farmers they prefer for their business. Easy methods of checking each other's credibility, availability and contact details. They would gain more incentive if they collaborate with more young and small organic farmers.

CONSUMERS

Since the platform integrates all the markets and retails that sells fresh produce, the consumers can easily search for the farmers and markets around them. They can even check the recommendations and quality reviews to gain more trust and try to buy newer products from newer sellers.

INDIRECT BENEFITS

EU CAP

European Union's CAP policy can use this platform to gain data and ware abouts of all the farmers and other stakeholders. This will help them to easily monitor and evaluate their existing policies, which would save time and resources to design newer and better ones.

*RESEARCH &
FUNDING
SCHEMES*

Research centers, incubators and various funding schemes can refer to the digital reputation of the farmers and can help them evaluate better for the selection of the farmers for the various schemes.

BANKS

Similarly, Banks can look at the credibility and reliability of the farmers on this platform who would be applying for loans or insurance schemes.

SHOPS

Future assumption can be that shops and retailers selling resources to the farmers for farming techniques can leverage on the reputation of their current buyers. They can start giving discounts to the farmers with higher reputation and promoting to other farmers that they are the suppliers of the good quality farmers, hence attracting the new ones.

LAND OWNERS

Another far future assumption of digital reputation of the farmers is that it can be utilized by land owners to take decisions while giving their land for lease to small farmers. This platform can easily help them see their past activities and gain trust for their crop growing skills and profit gaining abilities.

03 / Hypothesis 2 Prototyping & testing

Methodology

In order to test the new hypothesis, a different approach was taken forward. The concept was defined well with the help of different scenarios and tools for communication. The prototype was designed in such a way that the stakeholders could see the application of the hypothesis and be able to imagine it in real context. In this way, the participants will be able to give useful inputs. Along with this, simultaneously online surveys asking indirect questions to the new stakeholder audience were done to understand the validity of the new functions that we added in this hypothesis.

PARTICIPANTS

The following stakeholders were tested:

- 1/ Young organic farmers who were involved in the whole project.
- 2/ Farm Market organizers & distributors
- 3/ Consumers
- 4/ Young and small farmers of a local farm market, who were not involved in the process.

TOOLS

Various tools and techniques were used to get feedback from different stakeholders.

A. STORY BOARD, SYSTEM MAP & SCENARIOS

B. DIGITAL PROTOTYPE OF A TOUCH POINT

C. USABILITY TESTING AND CONTENT STRATEGY

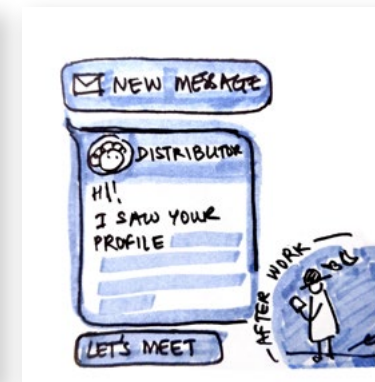
D. ONLINE SURVEY FEEDBACK (for the new actors)

TOOL A: Story board (assumed scenarios)

FARMER SCOUTING



Distributor scouts for a suitable farmer and sends him a message.



After a long day's work, the farmer checks the new message at night. It's an offer, he decides to go ahead.



The deal goes well and both the actors manage to fulfill their needs and do business. At the end they rate each other's experience as they were satisfied.

DISTRIBUTOR SCOUTING



Once a farmer had a big load of broccoli unsold after a farmer's market. He had to immediately sell them before they went bad. so he sends a location based announcement.



This announcement reaches all the local distributors and market organizers to let him sell his produce.



Luckily he gets a response from a farmer's market where he got to sell his leftover produce on a special stand.

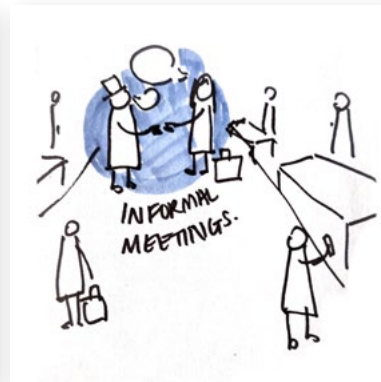
CONTACT BUILDING, INFORMAL MEETINGS



Farmers can also create a circle of peers to be updated with what is happening around.



Seeing a valuable distributor going to a farmer's event close to him, he books his tickets and asks for an informal appointment to network with each other in the event.



Thanks to the platform, the shy farmer could manage to meet this distributor and save his contact for future deals.



The application mails him the print version of his CV to put it up wherever he sells his produce. The farmer asks his valued customers to give him reviews from the QR code.



Impressed by the results, he finds an option to refer this service to his friend and earn some exciting incentives.

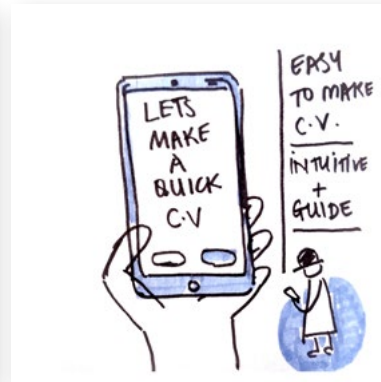


He convinces 5 of his friends showing how this service helped him in his business. Due to this, he wins a free stand in the agriculture fiera.

ON-BOARDING PROCESS



The on-boarding process is based on referral marketing. It all starts with farmers associations advising their members to join the service as it will be beneficial to them.



The farmer finds that the service is very intuitive and asks him to make a digital CV.



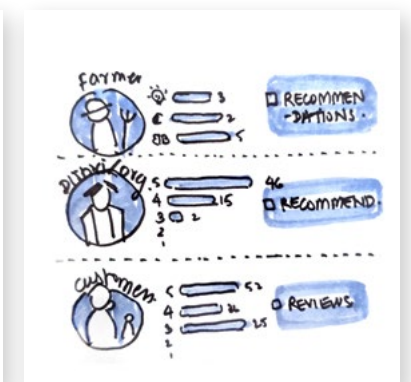
The CV making process was very fast and helpful. The farmer could see the results of the CV immediately and falls in love with the way it portrays his best qualities.



In that fiera, the service is publicized and all the members are told to install the app to start testing it.

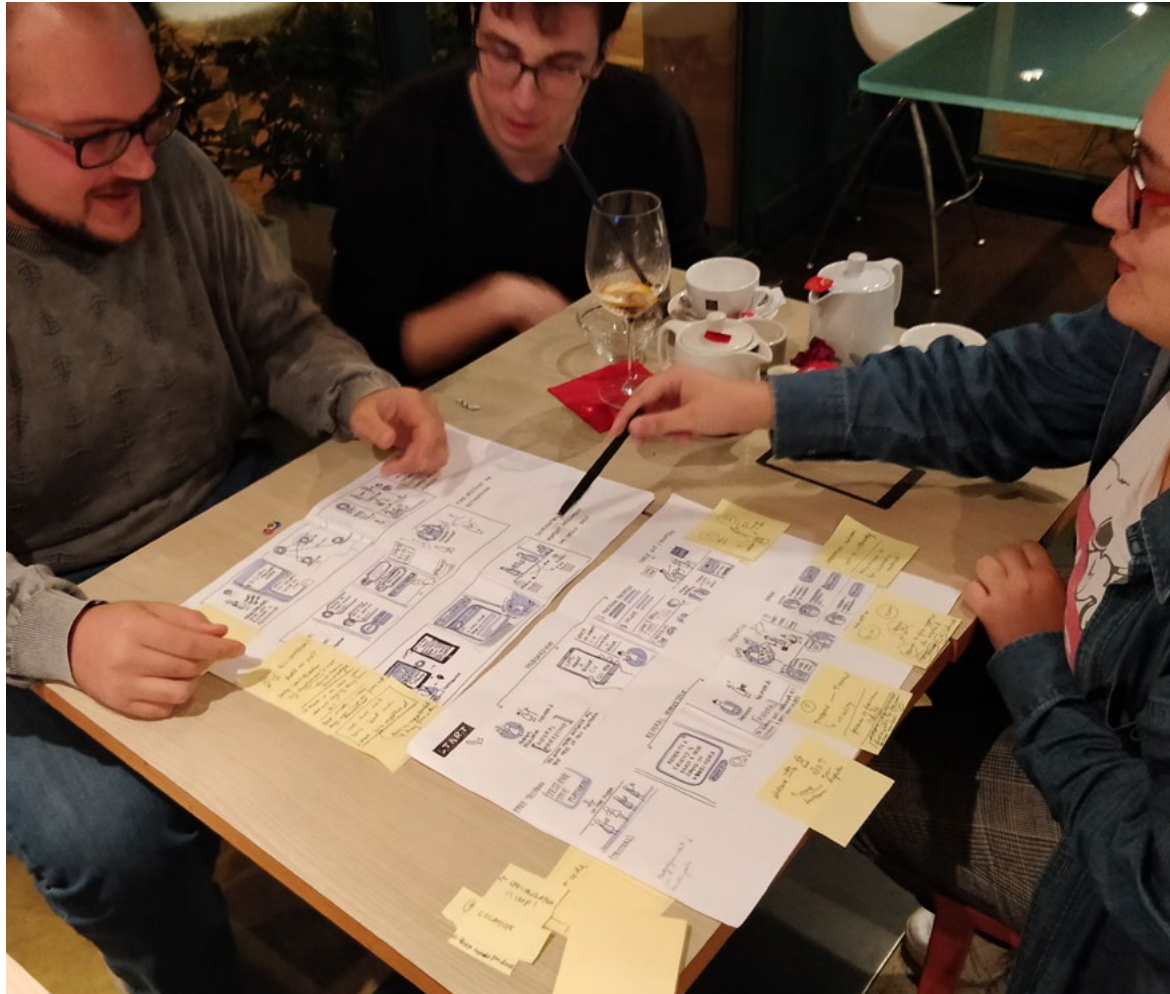


The farmer who gets a spot in the fiera, earns a lot more points not only from consumers but also from the distributors.



At the end, this service kick starts and gains basic level of reputation to fast forward the running of this service.

TOOL A: Testing with farmers who were a part of this project since day 1



“Including farmers from start till the end of the design process turned out to be very useful as I could understand well their difference in motivation for my different hypothesis. The reaction of the farmers compared to 1st hypothesis was very much positive. Since they understood the motive of the project, they volunteeringly spent more time debating and giving useful inputs.”

Testing with farmers market organizer



CINZIA, 42 years old.
Farmer's market organizer of
ARCI BELLEZZA, Milano.



When I had to scout for farmers, I had to walk miles and miles on the farm lands in the search for organic farmers. But later we found an association who gave us a list of contacts of farmers. We just stuck to those and word of mouth method.

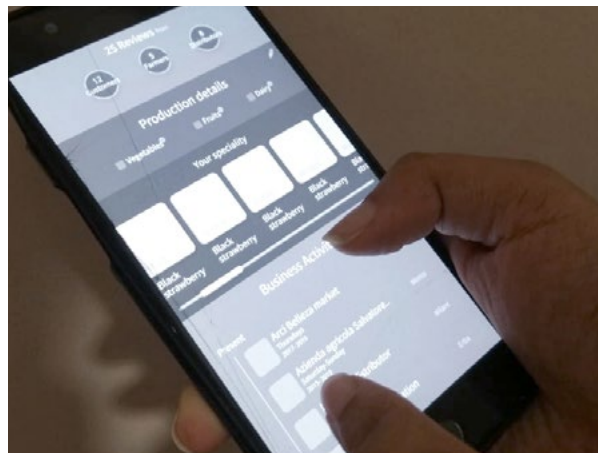
AFTER SHOWING THE CONCEPT:
This platform would be really useful as this job is not my only job. I am a freelancer in multi media field, hence it would be much easier for me to search for the farmers. Its like Trip advisor for farmers! I can also see if their values match my market's values.

TOOL B: Working prototype for feedback

Tool B was used to have a spontaneous feedback from farmers during the running of a farmer's market. This tool had to be very intuitive, easy and fast to understand as the aim of this testing was to talk to as many farmers as possible. To talk to these farmers, the farmer's market was the perfect place and hence the testing had to be very quick as they were in between their selling activities.

This working prototype was in the wireframe stage for them to understand that the service is still work in progress. This helps them give useful inputs. However the high definition prototype also helps them visualize the service in real.

SOFTWARE USED : Adobe XD



Basic 3 functions of the app was developed:

FEED SECTION: To be updated with the activities happening around.

DISCOVER SECTION: To find and network with other farmers, stakeholders and know new services and news.

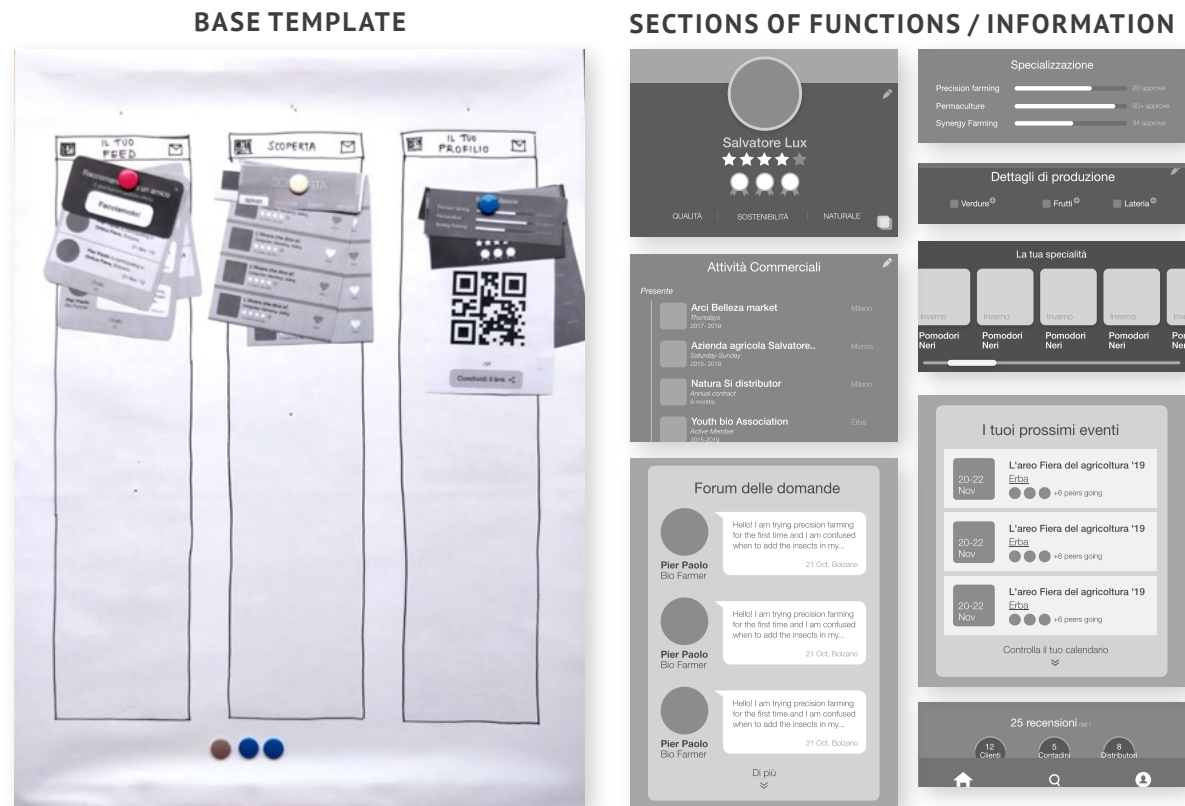
PROFILE SECTION: to edit and see how the final CV of the farmer will look like.



This test was conducted in Arci Bellezza's Saturday markets in Milano. A bunch of farmers and young farmers were asked to give feedback and we received positive results along with some useful feedback.

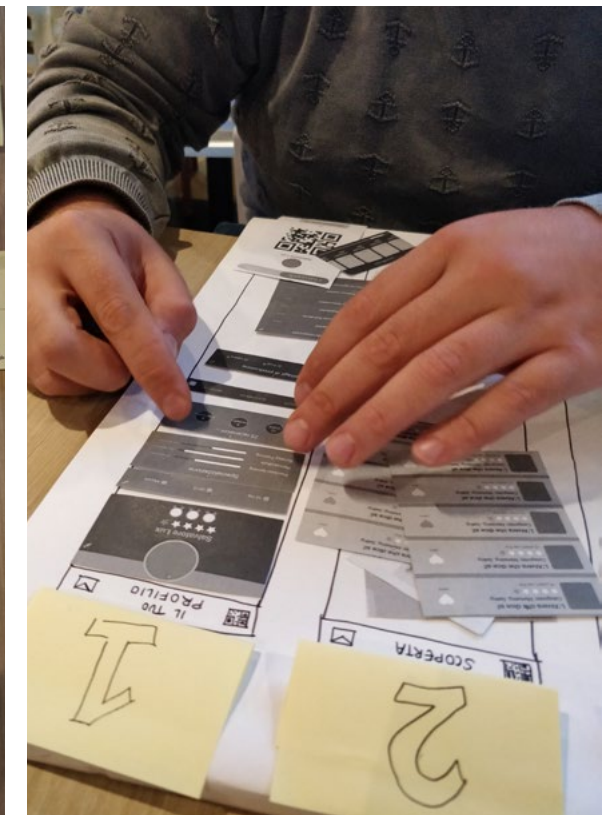
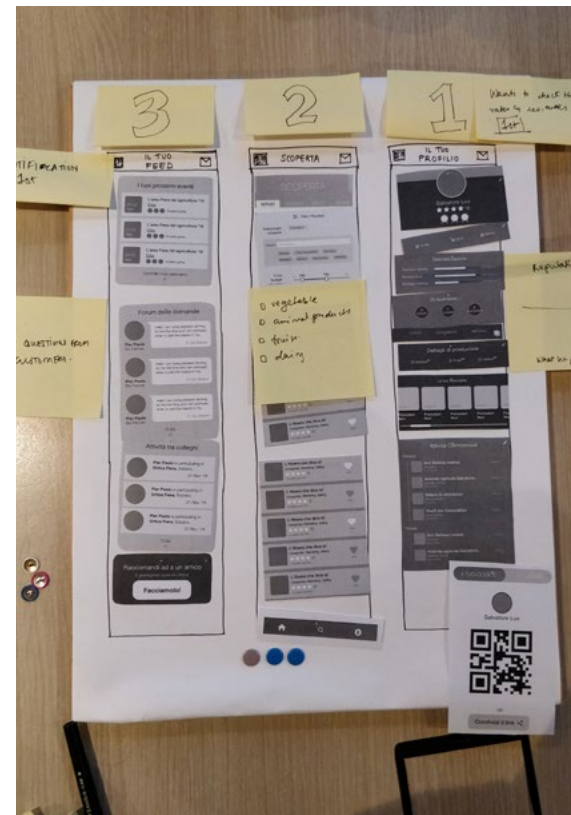
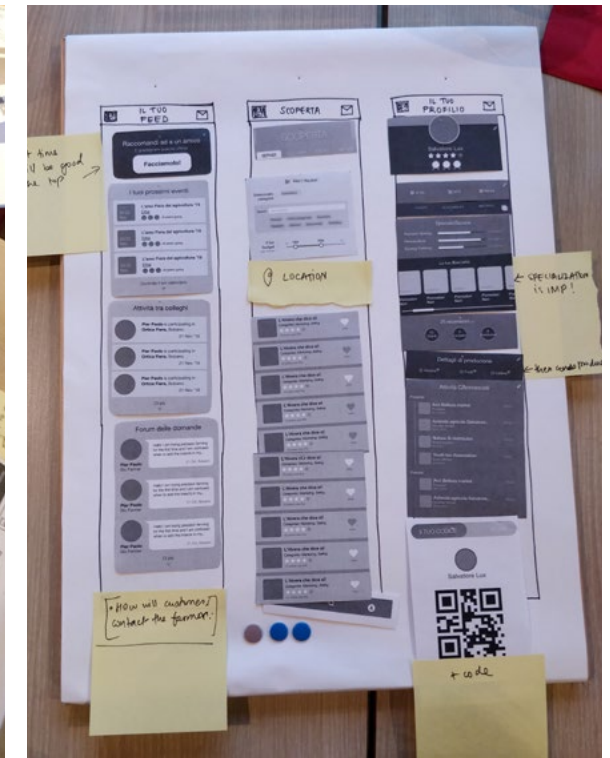


TOOL C: Information architecture



This tool was designed to understand what content do the farmers prioritize while promoting themselves and while searching and networking with rest of the stakeholders.

It was presented to the participants after giving them a glance of the application's prototype and it's functions. Later they would be told to re-arrange the information architecture or give new suggestions with a reason so that as a designer we can understand what information is important for them.



Tool D: Online Survey to understand consumer's point of view

Your Opinion: Organic food is good for:

I have no idea

Health

Bio companies to loot us

Environment

No special benefits

Local economy

I don't care about these labels

Other...

Rate how much precaution do you take to maintain your health?

0 1 2 3 4 5 6 7 8 9 10

Poor Very well

Rate your participation you towards a better ecosystem?

0 1 2 3 4 5 6 7 8 9 10

Poor Very well

Do you consciously every time / at least try to buy organic food?

Yes

No

Section 2 of 3

Section title (optional)

Description (optional)

Where do you buy them from?

Super markets

Farmer's market

Private services, example f'aliveare che dice si

My local farmer

Other...

Would you like to be informed about all the public and private farmers market?

No

Yes, through SMS

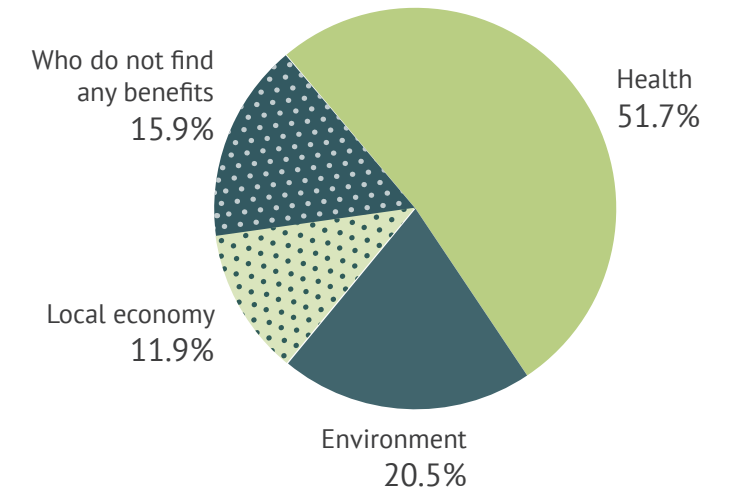
Yes, through email

Yes, through social media like facebook or instagram...

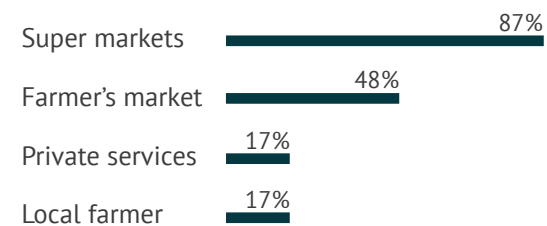
Since in this hypothesis, the customers have also become one of the drivers of this service, it was necessary to understand their needs in the organic market system to attract them to use the new proposed service.

A quick survey was conducted with 50 responses, to ask them how much they are aware about organic food, if they buy organic or not and what are the needs in the whole buying process.

UPON ASKING PEOPLE'S GENERAL OPINION ABOUT BENEFITS OF ORGANIC FOOD.



OUT OF ALL **46%** PEOPLE WHO SAID THEY USUALLY OR AT LEAST RARELY BUY ORGANIC FOOD they buy from:



99% of them said that they would like to be notified with the local private or public farmer's market happening around them through:

- Social Media
- Email subscription
- SMS subscription

OUT OF **54%** PEOPLE WHO SAID NEVER BUY ORGANIC FOOD. Upon asking why?

71% said that they are expensive.

From the ones who could afford it said:

- They did not know where are the 'good' markets.
- Don't know when and where are the local farmers markets.
- They don't have time and patience to wait for the weekly farmers market.
- Some did not even know the existence of private farmers markets.

Tool A



1. INVOLVING CUSTOMERS

The farmers asked if even the customers can be involved in this platform where they can be notified through the aspect of time and distance if a particular product is ready to be sold by farmers surrounding them.

2. BIO CERTIFICATE V/S BIO TECHNIQUE

There was a long debate if bio certificates should be displayed in the profile of the farmer or not. Because if they are displayed, medium and big scaled farmers will get an upper hand in terms of reputation and start to monopolize the platform. Whereas, for small farmers who do not have bio certificates, it is illegal to sell their products under any bio label.

Hence it was concluded that, since the current small organic farmers are selling organic produce under the title of organic 'methods of growing' and not labeling it that it is organic under any signage, we can use this technique in the platform. There would be no bio or green label, however more focus will go under the process and technique used.



3. REVIEWS FROM FARMERS - BOON OR BANE

Second important discussion was how the farmer will receive reputation and from whom? The previous assumption was that farmers, distributors and customers would give the farmer reputation points. However, when the topic of market competitor arose, reputation coming from the farmer became tricky.

They said that if another farmer is specialized in other types of produce or if there is a farmer growing similar produce like yours but lives very far from your market circle, only then the reviews would be truly honest. They mentioned that in some regions of Italy where there are a lot of farmers, the competition is high, and they might give fake false reviews to them.



At the end it was concluded that we would keep 3 types of review source:

A. CUSTOMERS : to get the reputation of loyal customers about the quality of the product.

B. DISTRIBUTORS/ MARKET ORGANIZERS : to gain reputation for the professionalism and trustworthiness of the farmer and the distributor for quality of collaborativeness to carry out a business together.

Tool B

C. FARMER'S ASSOCIATION : Almost every farmer is a part of an association to gain support to carry out their farming activity. In order to check if the methods of production of the farmer is really as organic as he is proclaiming, will be verified by their associations or cooperatives.

4. ON-BOARDING PROCESS

The farmers suggested to approach a agricultural fair only when the platform has reached a certain level of success. They suggested that instead, it would work well if the farmer's association would convert their members into the users of this platform, in order to gain more reviews and recommendations from these farmers itself. They also mentioned to use the incentives of sending recommendation can be an opportunity in a small and local markets and events, where even the market organizers can easily find participants to sell.



1. WHEN THE LIST OF SERVICES FROM THE RESEARCH WAS SHARED WITH THE FARMERS:

The farmers knew none of the services except for L'alveare che dice si! This service they got to know only through word of mouth.

Secondly, when asked how do they usually find these services they say through Internet searches or through suggestions of a friend.

2. OPINION ABOUT THE CONCEPT

The feedback was positive as the application was very intuitive for them to understand and they themselves started explaining its use cases.

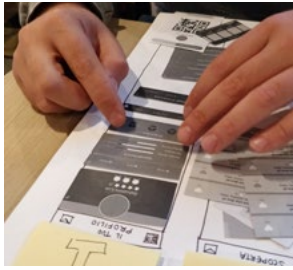
One farmer suggested that such service would be very useful for him when he had just started his career in farming as the association that he is a part of was of no help. Instead the association learnt a lot from these farmer's experiences.

3. WISHES OR CHANGES IN THE SERVICE

The farmers were not sure about keeping the QR code or the link as the customers are usually in a rush or are either old. Most of them would not understand the code neither how to operate with it.

Other farmers wished that they would like to print a poster of their farm, with pictures of their best products, links of social media, etc. They said that it would be good if there was a provision of putting this QR code on this poster, which will be displayed in the market.

Tool C



PREFERRED FLOW OF INFORMATION AND INTERACTION:

1. NOTIFICATIONS

The farmers mentioned that they would first like to check if they have got any mails or gained any reputation.

2. THEIR CALENDAR

To get a reminder of their upcoming events around them or the ones that they have signed for.

3. DEMANDS

If there are any demands or questions from the client or the distributor.

4. PEER ACTIVITIES

A list of all the activities their peers are doing to be updated with the events that are happening around them.

5. DISCOVER

In discover they mentioned to add a filter regarding the produce / animal husbandry, to find the exact service or people related to that product.

6. PERSONAL PROFILE

1 farmer suggested to place reputation and reviews before the list of products and specialties produced. While other farmers suggested to have special products produced before reviews as those are their USPs.

7. QR CODE

The farmers suggested to use an alternative to QR code as most of their customers are old and not tech savvy.

Tool D



ACCORDING TO THE OPINIONS OF THE CONSUMERS OF ORGANIC FOOD, FOLLOWING NEEDS WERE FIGURED OUT:

1. NOTIFY

Regular organic food buyers and also the potential buyers mentioned that it would be better if they were informed about the existence of various markets and selling activities of organic food.

2. UNDERSTAND THE VALUES

Since most of the buyers from the survey did not have a particular farmer that they buy from, they mentioned that it would be better if they could check the reviews and the quality of the products before. If they were notified that a particular farmer with special products is going to sell close to their location, would be of a great help.

3. AGGREGATED SOURCE OF INFORMATION

All the information about the happenings of the markets are spread through word of mouth. Some existing services that do this function is not known by the potential users. Hence it would be better if these markets or services were marketed better.

*Design **4** Proposal*

The concept

An open B2B networking platform for agricultural communities that enables them to be informed about their sector and collaborate with other member stakeholders to improve their businesses, leveraging on the digital reputation that they earn in this platform.



Aim

To give an equal and accessible platform to each type of farmer, especially the marginalized ones that will give them equal opportunities to grow in their careers.

Mission

Enable small and young organic farmers with access to information about services and stakeholders that are useful to run their farming & business activity.

Vision

To empower the small and young organic farmers in the agricultural sector, that will give them the deserved recognition for their knowledge and passion towards preserving the ecosystem, societal health and culture. This power will give them a higher status in the sector, politically and economically as that of medium and large sized farmers.

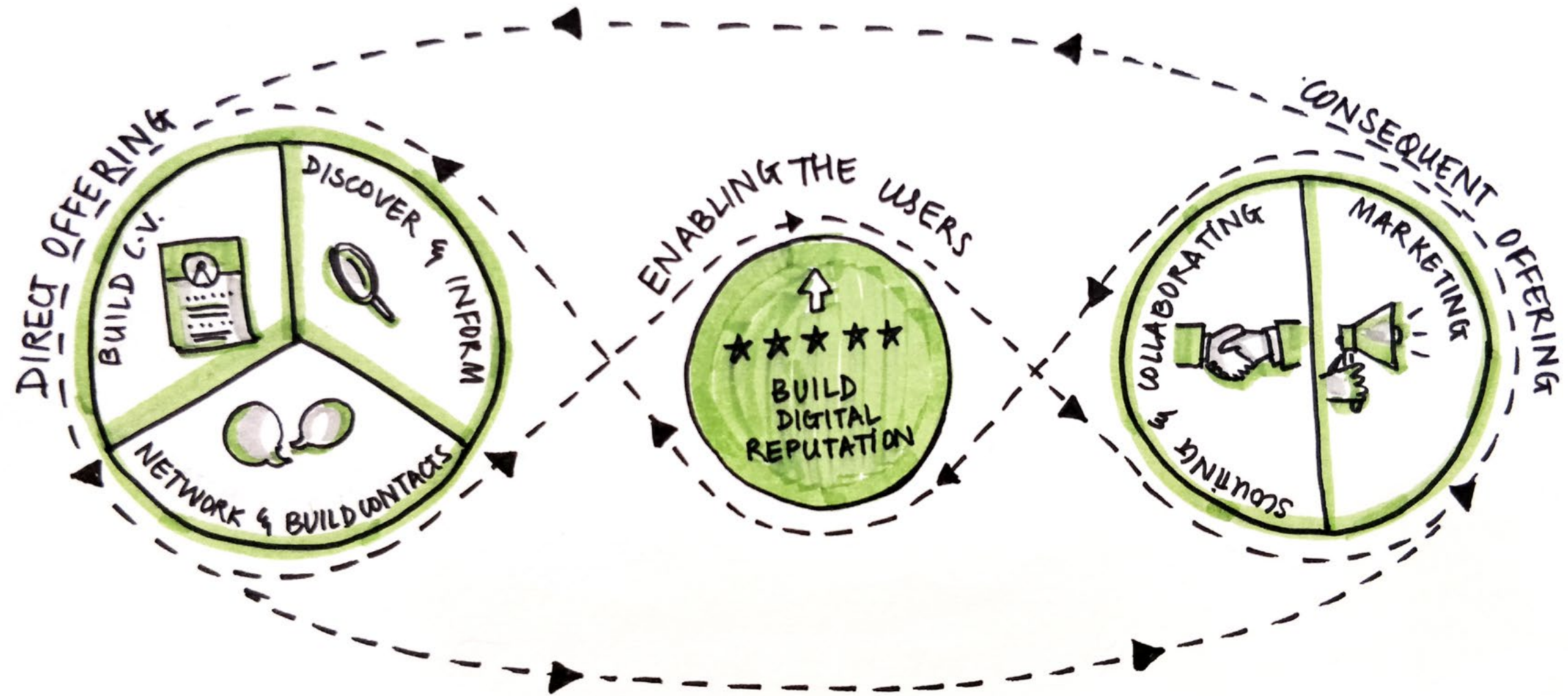
Values

- TRANSPARENT
- COMMUNICATIVE
- ENABLING
- FAIR
- ACCESSIBLE
- SUPPORTIVE
- COLLABORATIVE

Service offerings

Direct offerings	DIGITAL CV	The users of the service can create their profile cum curricular vitae in this platform with the help of pre-designed template that will help them describe their connections, experiences, specialties and values in the best way possible.
	NETWORKING	The integrated platform of this service will help the users to learn about each other and cross-connect for their own business activities.
	DISCOVER & INFORM	Since this platform will be a common place for all the stakeholders of the organic agricultural sector, this place would act like an aggregated source of all the information of also different stakeholders, services, events and news regarding the sector to inform the users.
Enable	BUILD REPUTATION	Reputation is the fuel for collaborative platforms. Hence the actors will be able to rate and review each other through their collaborative experiences and credibility. This reputation will be utilized publicly by every internal and external stakeholder to build trust with new stakeholders they have no connections with, but trust them purely for their skills and credibility.
	SCOUT & COLLABORATE	With the help of the digital reputation, big data and input preferences, the users of this platform would be informed and suggested about various opportunities around them that will help them scout for other stakeholders & collaborate in the future to fulfill each others requirements.
Consequent offerings	MARKET	This digital reputation and aggregated information of all the selling activities, farmers and events, provides a huge and open database also for consumers to be informed about potential sellers and markets around them. These consumers would be notified on subscription to improve the sales of these activities & promote sales for the organic farmers.

Offering Map



04 / Design Proposal

Stakeholders

The stakeholders in this system are divided into 3 groups.

1. THE INNER PROFESSIONAL CIRCLE

The inner professional circle consists of the primary actors also the beneficiaries of this service:

- Organic farmers
- Distributors
- Retailers
- Solidarity purchase groups
- Farmers markets
- Other groups who deal with the selling of organic food.

2. THE VERIFIERS

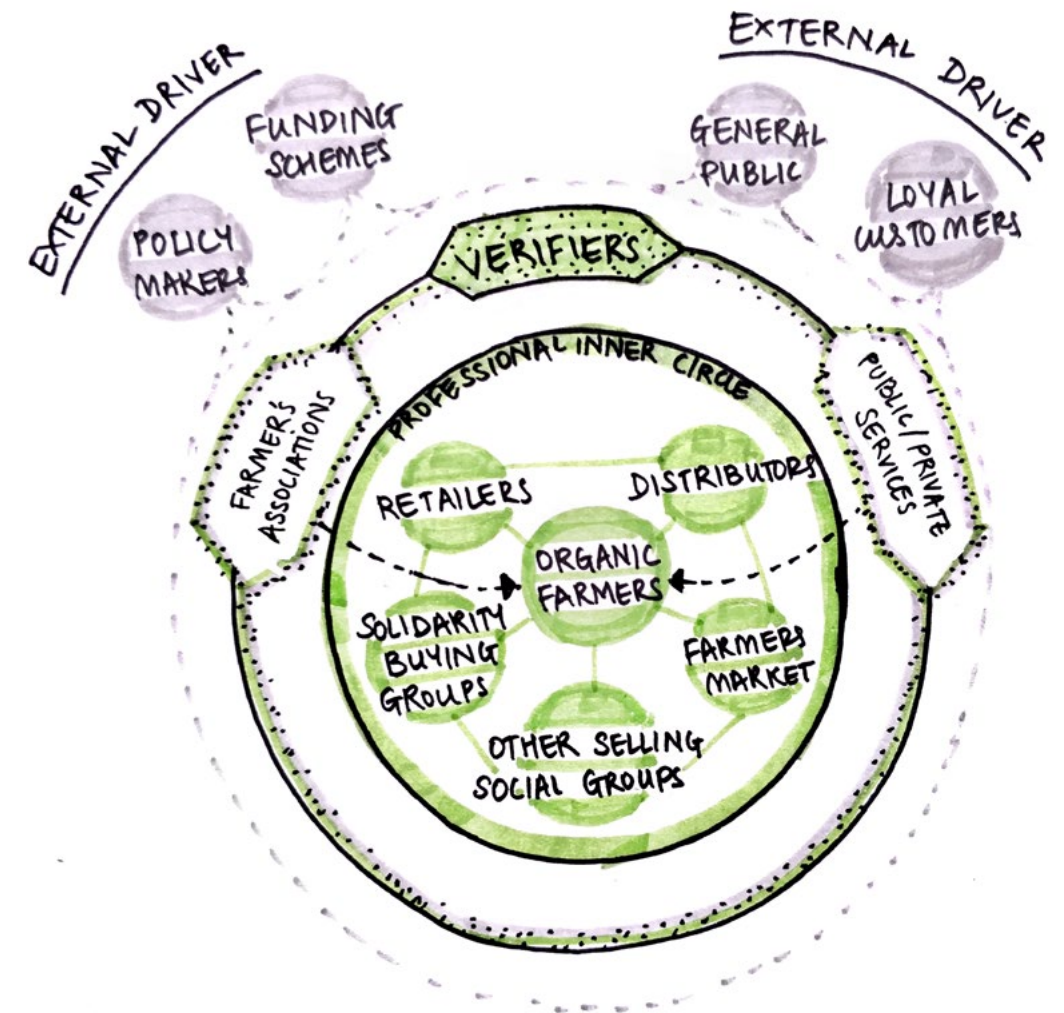
The verifiers are the groups that are also the beneficiary of the system as they too receive reputation from the members of the inner circle. This reputation will help them in gaining more visibility in the system and gain more members. However the core function of them is to do on-boarding of the farmers from their own community within the system and verify them for their trueness of their CV. The verifiers consist of:

- Private and public agricultural services
- Farmers associations
- Farmers cooperations

3. THE EXTERNAL DRIVERS

The external driver are not a direct member of this service. They infact can refer to the digital reputation of the inner professional circle and the verifiers to collaborate with them in their own ways.

- Policy makers and funding schemes can refer to the reputation of the associations, organizations who are promoting young and small farmers in this system to give them incentives that abide to their schemes. Farmer's reputation can also be used by them to check their credibility when they apply for funding calls.
- The consumers of the food act as another driver. They can refer to the reputation of the farmers and the markets and distributors to gain trust and buy organic produce from them.





“ I’m full of passion! Permaculture is on my finger tips! Still people don’t understand my potential just because of my age and because I don’t have a family farm. ”

Striving Alessandra
26 y.o.

A young & small farmer
Varese

BIO:

Alessandra finished her bachelors in Agricultural Science from University of Milan. Coming a family of non farmers, she was very determined to start this career for her love for planting, science and environmental sustainability. She finished 1 year of this new career working under a family friend’s land.

GAINS:

- High knowledge
- Passion
- Stamina
- Dedicated & patient
- Her little client circle loves her

PAINS:

- Need to gain trust
- Need a expert adviser / support
- Lacks contacts
- Difficult to find place to sell
- Customers don’t even try to buy from her

PREFERRED COMMUNICATION

- CELL PHONE ●●○○○○○ Calls / whatsapp
- DESKTOP ●●●○○○ Research / youtube
- PHYSICAL MEETING ●●●●● Association / market

PEER-TO-PEER SERVICES USED

- For renting her grandparent’s house to tourist.
- Provided babysitting service for pocket money.



“ I am just following my family footsteps but I want to try the new techniques and services available in the market. I want to break the traditional methods! ”

Experimental Beppe
54 y.o.

Medium sized farmer
Bolzano

BIO:

Beppe continued his family farm along with the help of his brothers and father. He understands that he can have better yields if he stops using the traditional techniques and adopt new ones. However, he doesn’t know where can find the right service as he doesn’t have time to do research.

GAINS:

- Has good reputation in the local market
- Can easily hire helping hand
- Has plenty of experience in traditional farming.
- Business is just sufficient

PAINS:

- Difficult to search & trust new services.
- Wants to change the production & distribution techniques soon.
- Wants to grow but difficult to get contacts of big distributors.

PREFERRED COMMUNICATION

- CELL PHONE ●●●○○○ Calls / whatsapp
- DESKTOP ●●●○○○ E-mail / News
- PHYSICAL MEETING ●●●●○○ Association / market

PEER-TO-PEER SERVICES USED

- Bought 2nd hand tools for farming.

“ I have walked miles and miles in the fields to scout for biological farmers in my early days. Now I rely on some associations to get in touch with the farmers but it limits me. ”

Explorer Lisa
32 y.o.

Farm market manager
Milano

BIO:

Lisa has been working with the local commune in organizing the farmers market for the citizens as a part time. She was always a fan of biological products and passionately supports local farmers. She and her team has to go out to search for farmers, taste their produce and give them a chance to sell in their market.

GAINS:

- Quality expert
- Volunteering
- Trust her present contacts
- Able to help the farmers sell to the citizens.

PAINS:

- Difficult to find new farmers
- Limited contacts from associations.
- Not enough time to search for unknown farmers.
- Trusting new farmers is not easy & setting appointments with them.

PREFERRED COMMUNICATION


CELL PHONE ●●●●●○ Calls / whatsapp / Facebook

DESKTOP ●○○○○○ E-mail

PHYSICAL MEETING ●●●●○○ Association / farmers

PEER-TO-PEER SERVICES USED

 As a guest during summer vacation.

 Sold extra food from the market to avoid food waste.



“ We believe in community services and supporting the small local farmers. We don't want to support commercial supermarket and make the rich richer. ”

Protester Anna
29 y.o.

Solidarity group local head
Milano

BIO:

A vegetarian to vegan, Anna found the Local solidarity group that collects and distributes organic food fresh from the local farmers. She took part when she was 24 and since then she got really dedicated towards it. She later became the local head, where she organizes the markets in Milan.

GAINS:

- Personal satisfaction
- Able to help the needy
- Learn new facts and new local farmers.
- Contributing to the environment.

PAINS:

- Limited contacts
- Wants to spread the awareness of her group to local consumers.
- Wants to educate people.
- Lack of amenities from the government and lack of fundings.


PREFERRED COMMUNICATION

CELL PHONE ●●●●●○ Calls / whatsapp / Facebook

DESKTOP ●●●○○○ E-mail

PHYSICAL MEETING ●●●●●○ Association / farmers

PEER-TO-PEER SERVICES USED

 Sold extra food from the market to avoid food waste.

 Hosted organic food dinner with vegan enthusiasts in Milan.

04 / Design Proposal

The system

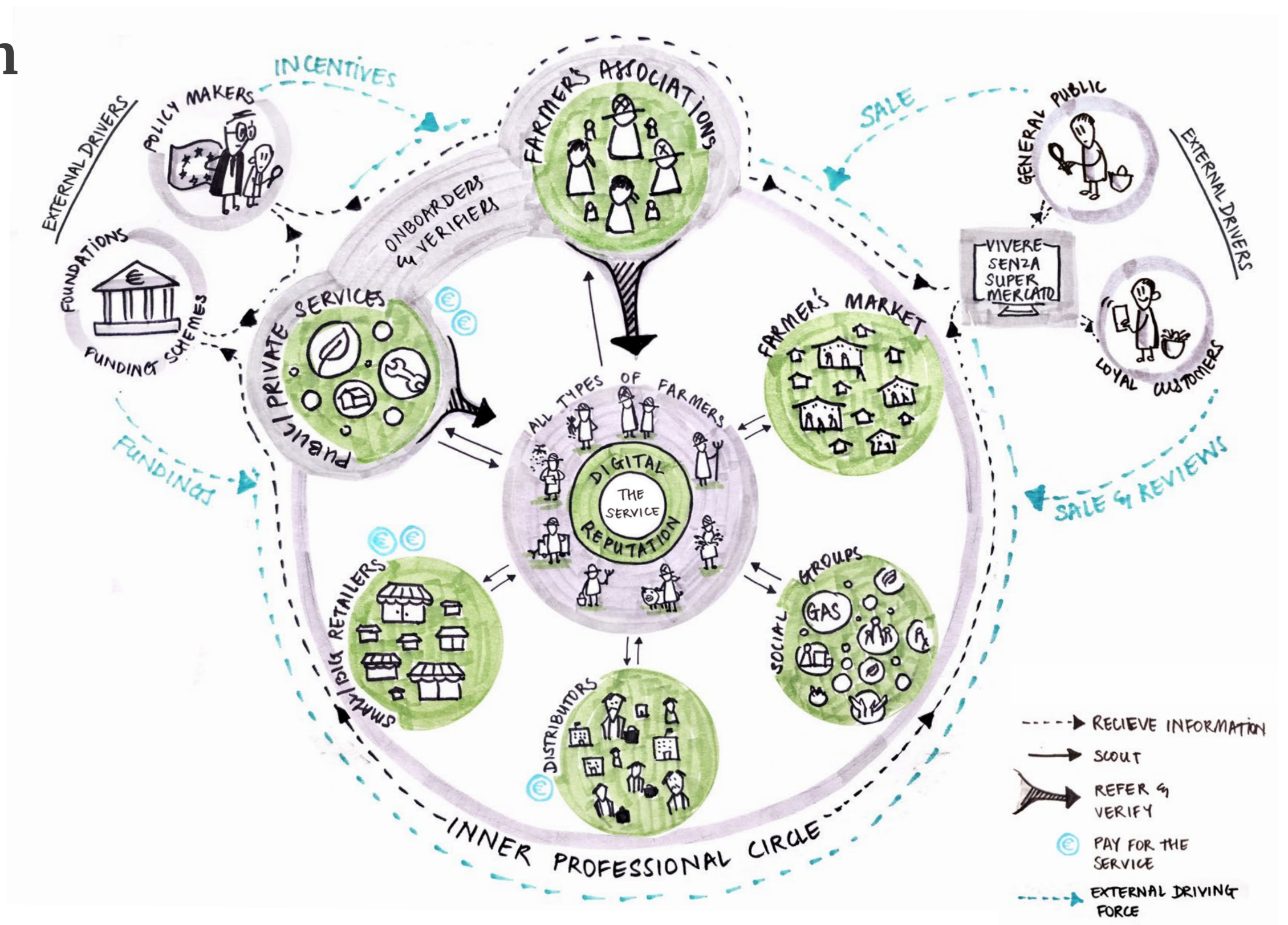
System map

Digital reputation being the core offering of the service, it is represented as the axle of the entire system.

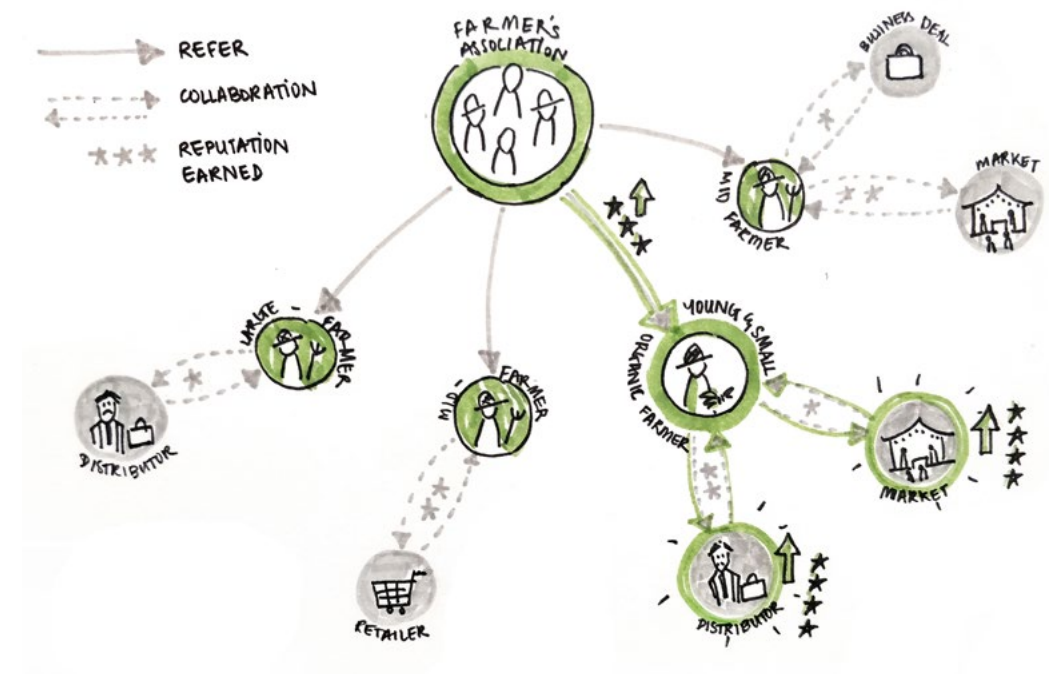
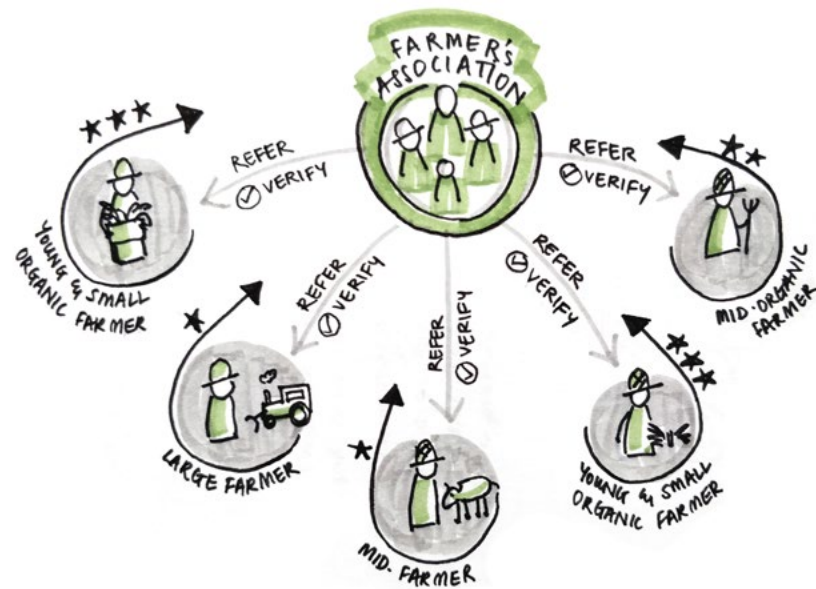
The inner professional circle, which consists of the direct users/beneficiaries, are seen to interact with each other though scouting and building partnership for their business activities.

The verifiers : public and private services and the farmer's associations and cooperations are seen to not only benefit from scouting but also refer and verify the farmers into the system.

The information flow is seen to be used by the external drivers. The source of money is displayed through the euro symbol, which is only paid by the private organizations that are scouting and not the farmers or the social groups



Key principle functions



ON-BOARDING PROCESS

Every small and big farmers are affiliated to one or more farmer's associations, services or organizations. The spreading of this service amongst the potential users can be spread through these associations.

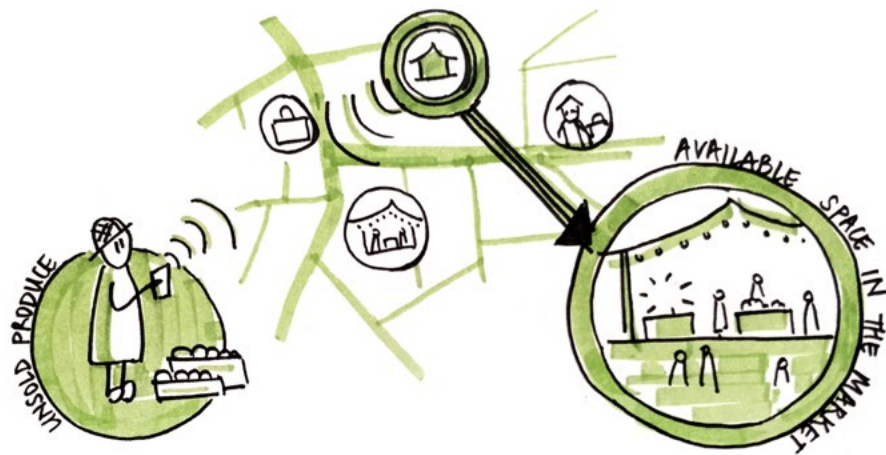
These associations will send the referral code to the farmers to join the platform. After the farmer inputs all the data about their methods and farm details, this information will be verified by the host organizations for its trueness.

The previous hypothesis of farmers sending referrals to other farmers was scrapped as the data could not be under control and there needed to be some kind of authority to give this responsibility.

BENEFITS FOR YOUNG & SMALL FARMERS

Since this platform would work based on digital reputation, it would be argued how this will benefit young and small farmers. To solve this issue, the associations, retailers, distributors, all other actors other than farmers will also be getting digital reputation from the farmers as a return of their experience. However **they will receive extra incentives/ reputation points for collaborating or referring this service to small and young organic farmers. The more the collaboration, the more the status.**

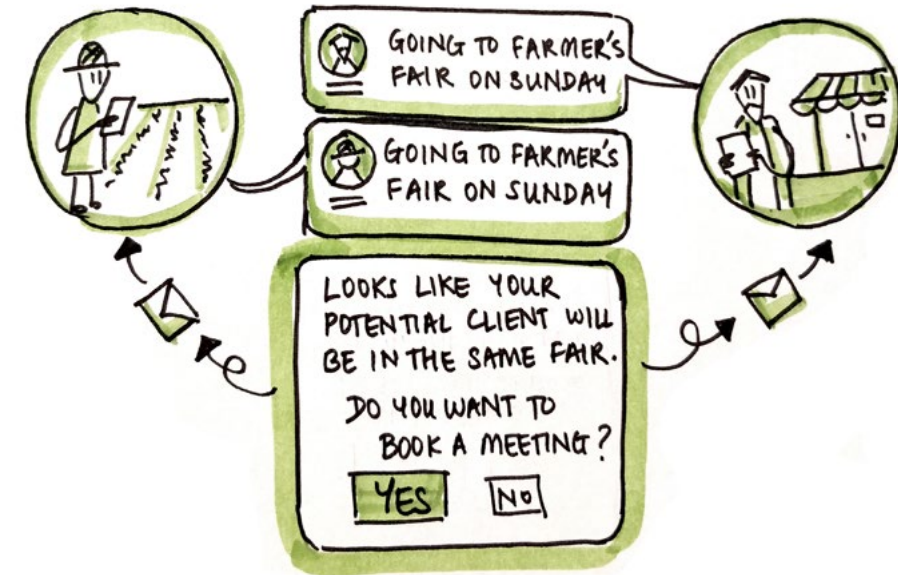
These incentives would be backed by partnerships with policy makers, foundations and funding schemes as they already have schemes to support small and young organic farmers. Hence, partnership with these external drivers makes sense in the system as it will be easier for them to scout for organizations dedicated towards these causes.



TWO WAY SCOUTING PROCESS

This platform gives equal access and opportunities to both farmers and distributors, market places and all the actors in the inner professional circle to scout for each other. This scouting will send notifications with reference to location, product categories and even values.

Because of these filters, the actors can easily find the right potential partner and stakeholder to fulfill their business activities.



PROMOTE NETWORKING

The actors of the inner circle can create their own circle of peers who they think are interesting for future partnerships or even to be inspired by what activities are they indulging themselves in. This service will help in pushing the farmers and the other actors to meet and share about their farming activities face to face.

This platform can detect if peers or potential connections are going to the same event or are in close proximity, they will be notified & suggested to book a small casual appointment to meet each other. In this way small and young farmers will also get opportunities to build contacts.



PASSIVE PRESENCE

Understanding the needs of the farmers that they are not always available online because of their busy work schedule, the platform's UI is designed in a way that allows them to be passively present in the platform.

Through predefined settings, and updating future requirements for collaborations according to the crop cycle, timely notifications will be sent to the potential stakeholders. This will save time and effort from the busy farmers and they can receive and check their mails whenever they are free from the field work.



BIG DATA

This service could collaborate with Vivere Senza Supermercato which is volunteeringly aggregating a map of Italy full of small retailers, collectors and distributors, Non government organizations, farmers markets and hives that sell agricultural produce directly from farmers.

In this way, the other drivers, who are the consumers will be not just able to search for markets around them, but also look at their reputation and build new trusts with new farmers and sellers.

With this output, the consumers would also be notified through preferred subscription means to be informed about these markets and events around them.

Story board & service blueprint

KNOWING

ON-BOARDING

TESTING



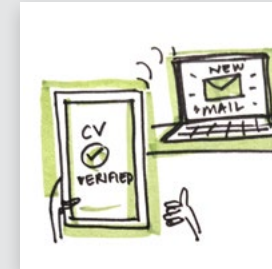
The farmer receives a mail & a talk from the association about the service.



Farmers logging in into the platform and gives reviews to his association.



Taking pictures of the farms the next day and spends 20 minutes to make the CV.



Receives verification from the association in a day & an email of the CV poster to use in selling activities.



The farmer prints the poster in the size he prefers



Asks his regular clients to look at the poster and give reviews.

FARMERS ACTIONS

PEER ACTIONS

TOUCH POINTS

BACK STAGE ACTIONS

SUPPORT PROCESS

Associations educating their members about the platform and it's benefits.

Association receiving reviews from the farmer.

X

Association verifies the data of the farmer.

Later receives points for referring to small & young farmers.

X

Consumers being introduced to this platform.

Service communication kit : pamphlets, posters, e-mailers.

Digital website & application

Digital mobile application

mobile notification.

Digital poster (ready to print) by mail.

Physical CV poster, website link

Training and educating the benefits to the heads of the organizations.

digital platform development

Converting the data of the CV into a poster and mailing the recipient in printable formats.

X

Open access on the official websites for external people to see and give reviews.

Government data base of all the associations, cooperations, public and private services.

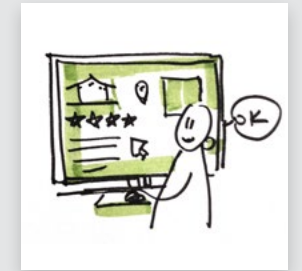
big data & IT software

IT software

Access to printers

Big data & IT software

EXPERIENCING



FARMERS
ACTIONS

Farmer generates OTP code from his application to give to his customer

Worries how and where to sell the next harvest.

Takes a picture of the new harvest, uploads information and collection details. Sends request.

Waits

Meets the distributor who wants to taste his products. Presents all the variety of produce and explains him the production methods.

Mean while, a curious consumer finds out about the farmer's market close to her house. She checks the reviews and gets convinced. She enrolls SMS subscription too.

PEER
ACTIONS

Inputs the OTP to open the page to give reviews.

X

X

A farm market organizer who had a empty table for next week, receives the farmer's notification.

Examines the produce and verifies if the digital CV matches with the real product.

X

Approves the farmer & makes a deal.

TOUCH
POINTS

Mobile application, mobile website, OTP code

X

Mobile application

X

Service website

BACK STAGE
ACTIONS

IT software to generate OTP code & validate the review.

X

Sends the notification to all the preferred distributors around the location of the farmer.

Looks for distributors and peers with matching interests & location.

X

Updates the information of the farmer's market and the farmers who would take part in it. Adds the consumer's contact info in subscription list.

SUPPORT
PROCESS

big data & IT software

X







Geo-location and IT software.

Analytics, Geo-location, big data & IT software

X

Geo-location, big data & IT software. Collaboration with viveresenzasupermercato.

IMPROVISING

FARMERS ACTIONS							
	X	X	<p>The farmer receives his fair share and trusts the platform even more. At the end he gives and receives reviews with the distributor.</p>	<p>The farmer after a year wanted to scale up his yields.</p>	<p>He searches on the application and checks out for a suitable service.</p>	<p>Books an appointment with the service provider.</p>	
PEER ACTIONS	<p>The consumer receives a reminder on the day of the market with timing and address.</p>	<p>The distributor sells the produce of the farmer and earns money.</p>	X	X	X	<p>The service provider provides the farmer a good consultation and receives extra reputation points.</p>	
TOUCH POINTS	SMS - mobile phone	Farmer's market	Mobile application			X	
BACK STAGE ACTIONS	Sends bulk SMS to subscribers.	X	Updating reputation points	Sends reminder about new suggestions of services around the farmer	Reaching out to all the public and private sectors to log into the platform.	Updates reputation points in the system.	
SUPPORT PROCESS	IT software & Messaging service from telecom company.	X	IT software & big data			IT software & big data & subscription of all the private and public services.	X

REGULARIZING



The farmer updates his calendar to send out harvest notification many months before.



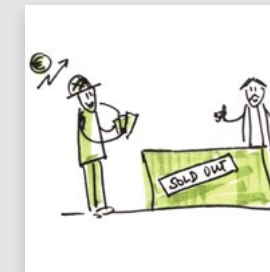
The farmer gets back to farming business and does not stress about searching for distributors.



The farmer is very busy working in the farm.



While taking rest, the farmer is surprised to receive many requests. He skims through their CVs and selects a distributor.



Finishes the deal of selling and receives fair amount. Gives positive reviews to the distributor.

FARMERS ACTIONS

PEER ACTIONS

TOUCH POINTS

BACK STAGE ACTIONS

SUPPORT PROCESS

X

X

Potential distributors receive notifications about the farmer & inspects his past experiences.

The distributor receives notification for collaboration.

Manages a huge sale and happily provides reviews to the farmer for his produce quality.

Mobile application

X

Mobile / website application

Updating the data

X

Sends timely notifications to close-by stakeholders.

X

Updating the reputations on the platform.

Big data & IT software

X

Big data & IT software, Geo-location

Business model canvas

KEY PARTNERS

ASSOCIATIONS & COOPERATIONS (self help groups of farmers)

They market & verify ↔ receive advertisement in the platform + reputation.

FOUNDATIONS

Refer data/ reputation (for evaluating participants for their social calls.) ↔ Provides funds to the users of the service.

EU POLICY MAKERS

Refer data/ reputation (for evaluating participants for their fundings, projects and to improve policy implementations) ↔ Funds & support to the users of the service.

VIVERE SENZA SUPERMERCATO

Collaborate with their map of markets and local distributors along with the our service.

KEY ACTIVITIES

- Peer to peer networking & scouting.
- Discovering agro services and events.
- Publicizing the selling activities to the consumers.

KEY RESOURCES

- MOBILE APPLICATION
- WEB APPLICATION

VALUE PROPOSITION

An inclusive platform for organic farming sector that enables the users, especially small and young organic farmers to scout for useful stakeholders and be informed about all the useful events and services to help their business activities keep running.

CUSTOMER RELATIONSHIPS

- INCLUSIVE
- PROTAGONIST
- TRUST
- COLLABORATIVE
- INFORMED
- RESPONSIBLE
- RELIABLE
- SUSTAINABLE

CHANNEL

- FARMERS ASSOCIATIONS & COOPERATIONS.
- MOBILE & WEBSITE PLATFORM
- SMS & EMAIL SUBSCRIPTIONS

USER SEGMENTS

SMALL & YOUNG ORGANIC FARMERS

MID & LARGE SCALE ORGANIC FARMERS

Free subscription ↔ Gain reputation, contacts & access to information & the market.

DISTRIBUTORS, RETAILER, MARKETS, SOCIAL GROUPS, ETC

Freemium subscription ↔ Gain reputation, contacts & scout for farmers.

PUBLIC & PRIVATE AGRO SERVICES

Paid subscription ↔ Earn advertisement in the platform + reputation.

CONSUMERS

Receive information about markets ↔ Buy and improve sales of the organic farm sectors.

COST STRUCTURE

- IT software development & maintenance
- Server
- Internal operating and management team

REVENUE STREAM

- Annual subscriptions from public and private services.
- Premium costs my private distributors and markets to boost their visibility in the system.
- Fundings from incubators and foundations for being a social project.

Growth plan

● PHASE 1 : PILOT

The pilot phase will be tested within Milan, with a bunch of social groups and organizations that hold weekly markets in the city and contacting the farmer's associations in the city.

In this phase we will learn the problems that would arise and work in an agile method.

(Apply for accelerators and crowd-funding to fuel the project)

LOCATION : Milan

DURATION : 8 months

ACTORS : Farmer's associations in Milan, GAS, Alveare & farmers from Milan.

▨ PHASE 2 : BUILD FOUNDATION

After fool-proofing the service-system, associations and cooperations of farmers present in the whole of north Italy will be contacted and told to promote the service amongst their members. In this stage the SMS & email subscription will be open to the general public to accelerate the process.

LOCATION : Northern Italy

DURATION : 2 years

PARTNERS : All farmers organizations in northern Italy, distributors and retailers & general public.



▨ PHASE 3 : EXPAND

Slowly the platform will automatically be spread amongst the neighboring associations and farmers. The progress of the northern farmers can be marketed to the south. Minor changes will have to be done in the interaction flow according to Southern habits & farm culture.

LOCATION : Whole of Italy

DURATION : 3 years

PARTNERS : All farmers organizations in whole of Italy, distributors and retailers of Italy & South of Europe, general public & EU policy makers, FAO, foundations, incubators and accelerators of Italy.

▨ PHASE 4 : REPLICATE

If the service becomes a success as per assumptions, it would be easy to replicate the solution to other countries. Starting from European Union to later in other continents. The application will have to be designed in different languages. The head unions and organizations of agriculture in each country will be made the headquarter to manage the service in the respective counties/ regions.

LOCATION : Whole of Italy

DURATION : Infinity

PARTNERS : EU policy makers, FAO, UN, national farmer's organizations, large & small scale private agri services.

Touch point design

Branding



AGRI SQUARE

'A handy source to endless possibilities.'

NOMENCLATURE

Agri Square is named after the European city architecture where city square / Piazzas/ Agora / Plateia / Forum were used as a public meeting space for marketing, political meetings, social integration and so on. As the service also acts like a small forum where different agricultural stakeholders can come, talk about themselves, scout for other users & services and promote farmers markets, it is named Agri Square.

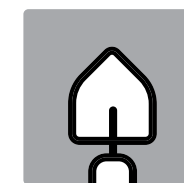
ALSO THE SQUARE FORM SIGNIFIES THAT:

As this service acts like a handy tool for the stakeholders which can be as compact or even pocket size, square form best defines its properties.

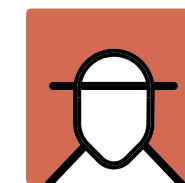
WHAT DOES 4 SIDES OF THE DESIGN SIGNIFY:



AGRICULTURE



TOOLS & SERVICES



PEOPLE



PARTNERSHIP

LOGO VARIATIONS



COLOR PALETTE

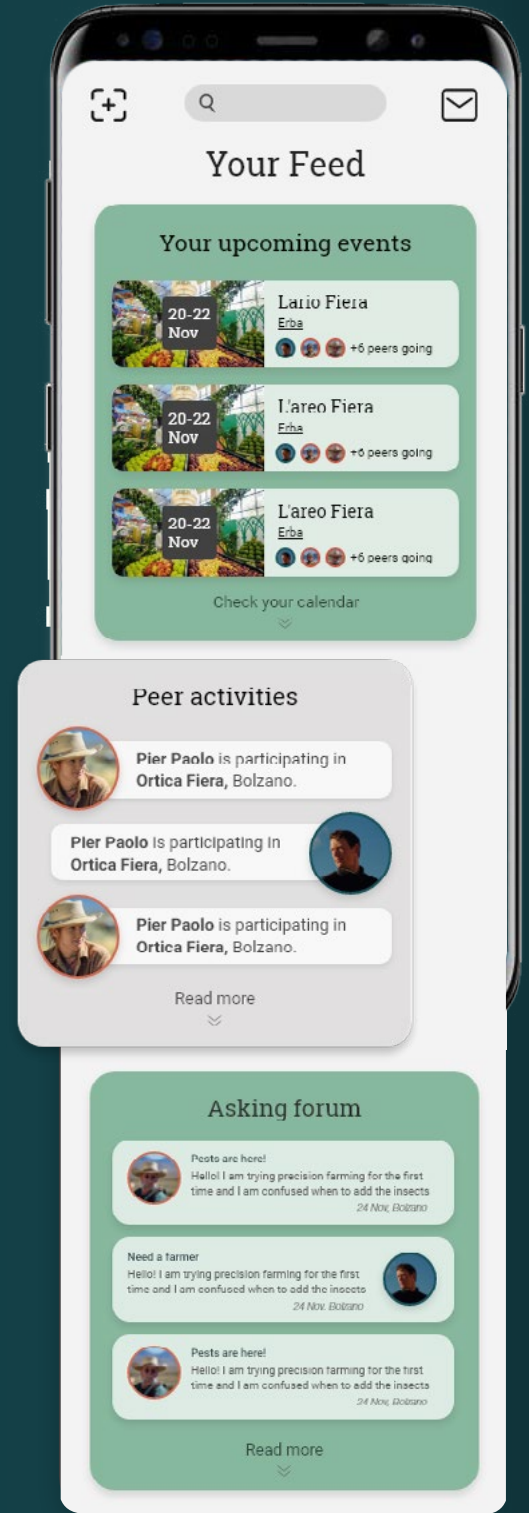
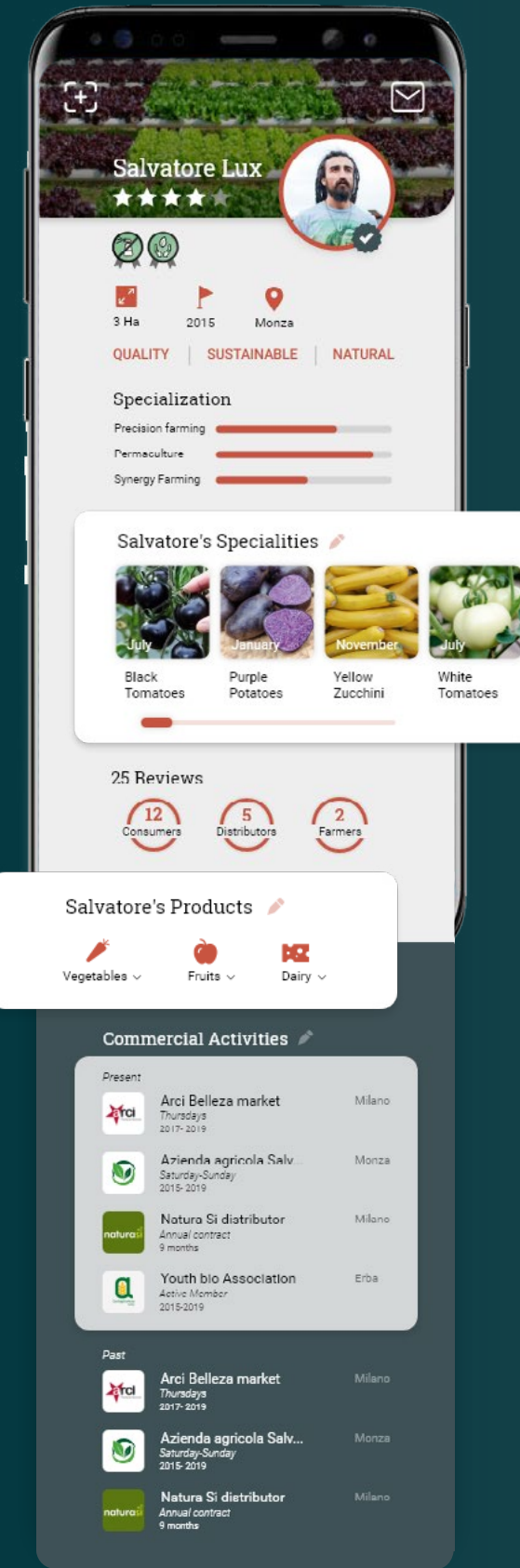
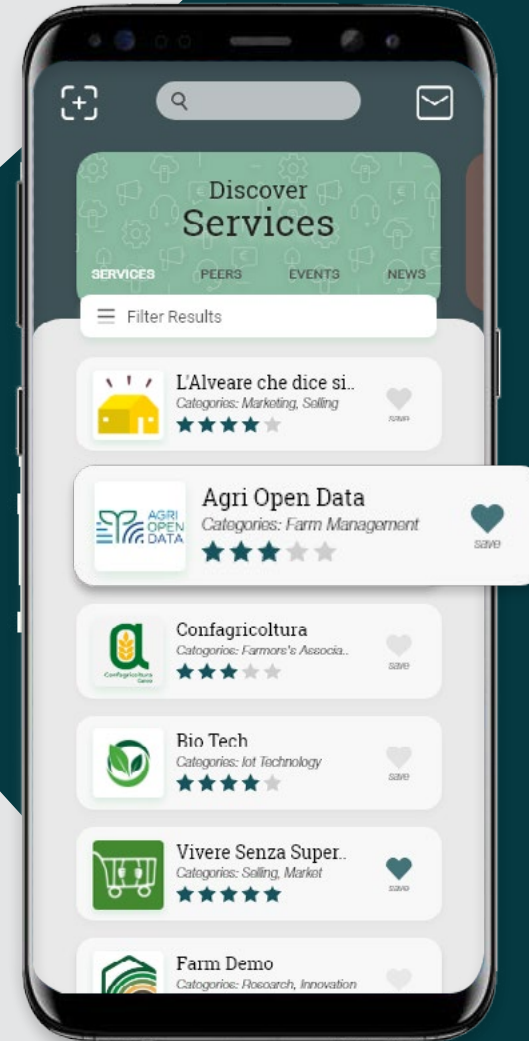


LOGO PLACEMENT ON PICTURES

The logos would be placed on pictures in an overlapping manner to depict that this service always acts in the background, enabling the stakeholders.



Mobile application



The mobile application is available for the users from the inner circle only. Following are few screens for the farmers section. It is very simple and has 3 key pages : (l-r)
DISCOVER : to search services, peers, events & news.
PROFILE : to check reviews & make CV,
FEED : to check all the recent news and activities of what the farmer has subscribed.

C.V. Poster

Azienda Agricola di Lux
 ★★★★★ Verified
 QUALITY | SUSTAINABLE | NATURAL
 2015 Monza

Salvatore Lux

Salvatore's Specialities

- Black Tomatoes
- Purple Potatoes
- Yellow Zucchini
- White Tomatoes
- Pecorino Cheese

Method of production

- Precision farming
- Permaculture
- Synergy Farming

Affiliations

- arici
- natura
- AGRI SQUARE

What Customers say:

- "One of my favourite farmers. I buy my salad every week only from him."
- "Salvatore's exotic vegetables has taken my culinary skills to another level. He is the best!"
- The best cheese producer!

Check out Salvatore's profile & give him reviews: www.Agrisquare/SalvatoreLux

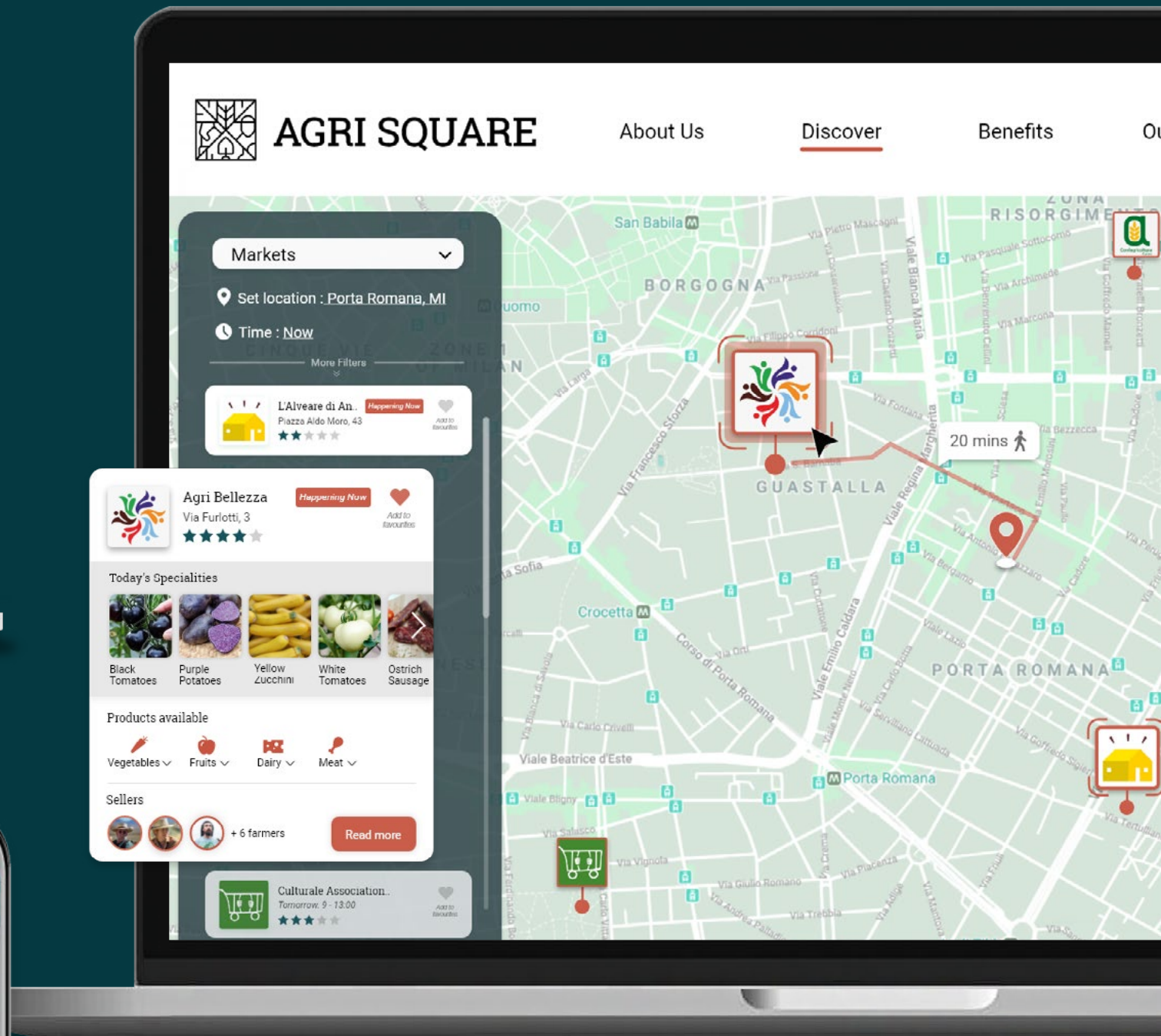
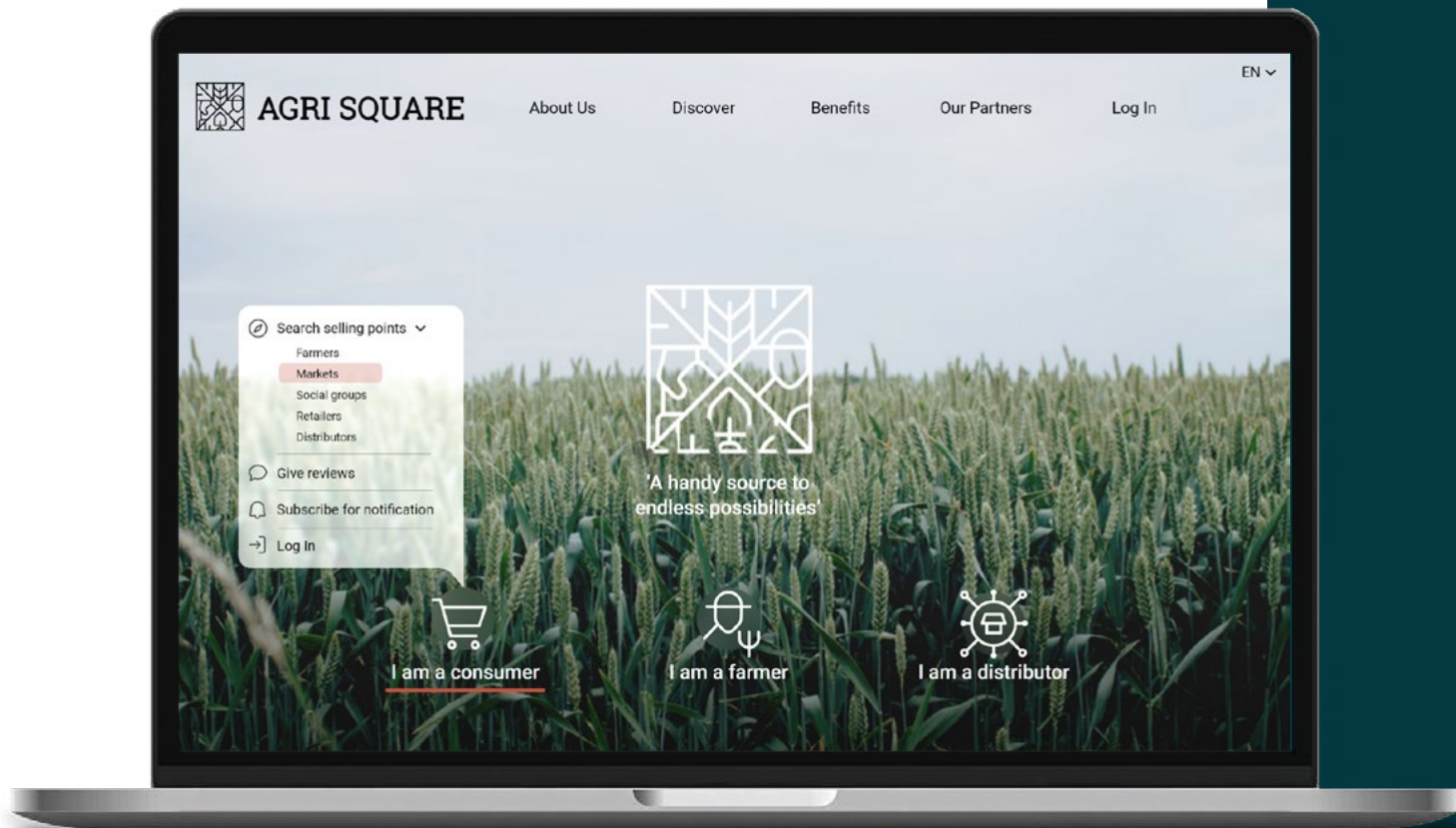
Powered by **AGRI SQUARE**



After the farmer signs up to the services and finishes making the digital C.V., they get an option to print their C.V. in various formats to use it in their selling activities and gain reputation.

Above is the example of a large format printing.

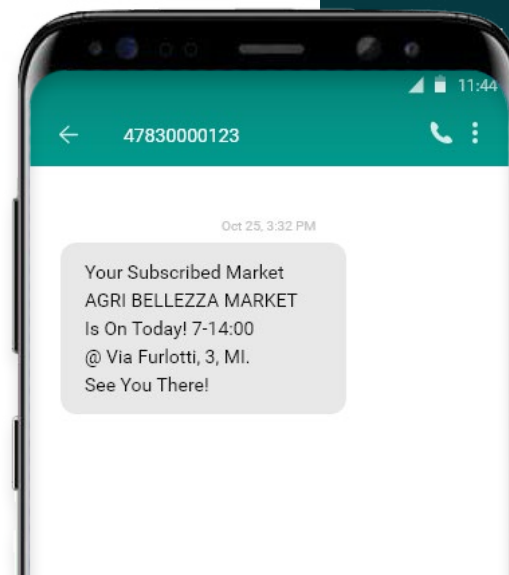
Website



The desktop application is available for inner circle and the consumers. In the following screens, the key function of the consumer is shown:

1. The SMS subscription for notification of the nearest market.

2. Open Map on the website to check the timetable and reputation of markets, selling activities and also the farmers.



04 / Design Proposal Benefits

Beneficiary Map

The beneficiaries of this system is mentioned below in the order of importance.

1. SMALL & YOUNG ORGANIC FARMERS

Small and young organic farmers would benefit the most out of this system as they can build their reputation digitally and create useful networks and contacts with useful stakeholders which they would have not know other than having word of mouth publicity or have physically met.

This reputation built can be referred by many other actors like customers, banks, land owners & even bureaucracy to check for their credibility and provide them services.



2. MID & LARGE FARMERS

As this service is not just bounded to small farmers, even mid and large scale of farmers can be a part of it and build reputation in the platform. For them the functions of searching for suitable services, scouting for retailers and also scouting for other small farmers to collaborate with can help them a lot in scaling up their business activities.



3. PRIVATE/ PUBLIC & SOCIAL DISTRIBUTORS / RETAILERS/ MARKETS / GROUPS

The actors who deal in selling, distributing or providing a space for farmers to sell their produce come under this category of peers. These stakeholders would benefit by being able to scout for a preferred farmers where ever they want. They would also benefit from building their digital reputation to attract new and potential farmers for being business partners.



4. FARMERS ASSOCIATIONS / COOPERATIONS & PRIVATE SERVICES

Social & private farmer's organizations and services would benefit from various incentives from the EU policies for supporting and enabling the small and young farmers by referring and verifying them in system. On the other hand, they would also receive reputation points from the farmer members and gain better visibility in the pool of organizations, to attract newer farmers/customers and scale their activities.



5. EXTERNAL DRIVERS

External drivers like policy makers, funding programs, foundations and also actors like consumers of organic products can access the aggregated data of this service to check the reputation of the farmers, distributors, markets, etc. This will make the selection process easier as they can see the quality and the credibility of these actors. Consumers can also benefit from this service as they would be informed regularly about the markets and selling activities happening in and around their vicinity.



Contribution towards Global Sustainability Goals 2030 ^[25]



2.3
By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment.

2.4
By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality.

2.5
By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed.

2A
Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries.



9.3
Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets

9C
Significantly increase access to information and communications technology



15A
Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems

15.5
Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species



17.4
Enhance policy coherence for sustainable development

17.16
Enhance the global partnership for sustainable development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the sustainable development goals in all countries, in particular developing countries

5 *Conclusion*

To conclude the thesis, it was learnt that not just Italy, but the emergency to save marginalized organic farming communities are prevalent all around the world. It is commendable to see the efforts coming from these small number of farmers from the younger generations, who are giving a lot of their time, effort, research and their whole lives to do activities that would satisfy themselves and favour the environment. However it is utmost important for us, the society and the government to create a favourable environment for them to practice in this system. We just have round about 10-15 years to sort the age gap problems to ensure future food security and reverse the climate change.

TIME

With this very short time in our hands, it is very important for new solutions in the market to be implemented in a faster rate, before the young and small farmers already fall out of the system. Hence Agri Square, though being new concept in the context of the agricultural field, it would actually have a faster deployment rate as it works on the resources that are already present around us and the stakeholders. Services similar to it have had unintended benefits and has out performed in their respective fields. Hence why not to give it a thought in accepting the tools of the present time and start breaking the physical and traditional boundaries, which was the intention of the proposed solution.

FROM SERVICE PROVIDER TO ENABLER

It was discovered that there are plenty of services available in the market that solved the countless problems of the farmers. However, there were still some discrepancies that did not suffice the small and young farmer's needs. These services spoon fed the farmers with ready made solutions. They are of no use if the service provider stops, if the service itself were inaccessible or were not informed to them in the first place itself. **Hence**

reach, access & enable were the 3 main values that were kept in topmost priority while designing the solution. These types of solutions, would not just help them but they have a long lasting effect and act like a handy tool that improves their working conditions.

DESIGN PROCESS - THE DISCOVERY PROCESS

In the whole process, I as a designer got a chance to play with the design tools. New tools were designer and used even for the interview, co-design and prototyping sessions. They were all tested before going to the site because the audience that had to be researched, were not very easy to find. Secondly, them being very busy juggling and working in their farms, there was always a tight time bound to get useful insights. Hence, these visual and thinking tools helped a lot in opening them up in a faster time frame. Not just that, since interviewing with Italian farmers needed an Italian translator, who not necessarily is a designer, these tools helped in many ways to guide the interpreter to take down the answers of the interviewees and not digress from the main goals.

DESIGNER'S BIAS

This thesis consists of varied hypothesis. That is because it was learnt during that process how working towards our own biases actually gives a negative result in the prototyping and testing phase. Thanks to that realization, and to the new and interesting insights that came out of the 1st co-design session, it helped me a lot in coming up with a solution more suitable than the first one. It was also learnt that with good communication tools and good relatable solutions, the ideas were learnt by the users very fast and they themselves completed the narration of the use cases of the solution before we designers could finish explaining them.

Hence to conclude the thesis, the new proposed approach is indeed an unconventional method in the field of agriculture. However, the whole intention is to try to push the limits with the tools of the present time. Until unless there is no effort, the system will always be stuck in its present state. This proposed solution is on a very big scale. The amount of testing and prototyping is very limited compared to its scale and impact. Hence it can only be understood well once it reaches the deserved amount of resources, partnership and support to see its real effects.

Bibliography

CITATIONS

- [1] Lupien, J. R. (2000). The Codex Alimentarius Commission: international science-based standards, guidelines and recommendations. Retrived from https://www.researchgate.net/publication/265455674_The_Codex_Alimentarius_Commission_International_Science-Based_Standards_Guidelines_and_Recommendations
- [2] Italy: Organic sector shows impressive growth. (n.d.). Retrieved November 17, 2019, from Organic-market.info website: [//organic-market.info/news-in-brief-and-reports-article/italy-Organic-sector-shows-impressive-growth.html](http://organic-market.info/news-in-brief-and-reports-article/italy-Organic-sector-shows-impressive-growth.html)
- [3] Lengyel, D. P. (n.d.). Small Farms in Europe: Time for a Re-Definition. Retrieved from https://www.accesstoland.eu/IMG/pdf/comparative_analysis_of_small_farms_in_europe.pdf
- [4] European Commission (2016) Cap in your country. [PDF] Retrieved from https://ec.europa.eu/info/sites/info/files/food-farming-fisheries/by_country/documents/cap-in-your-country-it_en.pdf
- [5] Eurostat (2018) Agricultural celcus of Italy [PDF] Retrieved from <https://ec.europa.eu/eurostat/statistics-explained/pdfscache/20078.pdf>
- [6] Eurostat, Key farm variables [ef_kvage], 2010. In 2010, 24% of farm holders were in the 55-64 age group, while 37% were over the age of 65.
- [7] Zondag, M.J., Koppert, S., de Lauwere, C., Sloot, P., & Pauer, A. (2015). Needs of young farmers. Luxembourg: Publications Office of the European Union. retrieved from https://ec.europa.eu/agriculture/sites/agriculture/files/external-studies/2015/young-farmers/final-report-1_en.pdf
- [8] Mazurek, B., (2015 Jan 13). How Will We Grow New Farmers? [blog post]. Retrieved from <https://cuesa.org/article/how-will-we-grow-new-farmers>
- [9] FAO, (2019). Organic agriculture [web article]. Retrieved from <http://www.fao.org/organicag/oa-faq/oa-faq6/en/>
- [10] Fair world project (2015, april 6). Small Scale Farmers Cool the Planet [Video file]. Retrieved from https://www.youtube.com/watch?time_continue=1025&v=GjD8URaGe88
- [11] FAO, (2019). Organic agriculture [web article]. Retrieved from <http://www.fao.org/organicag/oa-faq/oa-faq7/en/>
- [12] FAO, (2019). What is happening to agrobiodiversity [web article]. Retrieved from <http://www.fao.org/3/y5609e/y5609e02.html>
- [13] Organicmarket.info.(2018) Italy: Organic sector shos impressive growth.[web article] Retrieved from: <https://organic-market.info/news-in-brief-and-reports-article/italy-Organic-sector-shows-impressive-growth.html>
- [14] IFOAM Organics International (n.d.) Facts on organic agriculture [Web article] Retrieved from: <https://www.ifoam.org>

bio/en/faq-organic-agriculture

- [15] France 24.(2016 Nov) Italy faces shortage of young farmers. [Video documentary] Retrieved from: <https://www.france24.com/en/20161105-talking-europe-cap-budget-italy-agriculture-young-farmers-production>
- [16] European Commission (n.d) The common agricultural policy at a glance [website] Retrieved from https://ec.europa.eu/info/food-farming-fisheries/key-policies/common-agricultural-policy/cap-glance_en
- [17] European Commission (2019) BUILDING STRONGER AGRICULTURAL KNOWLEDGE AND INNOVATION SYSTEMS (AKIS) to foster advice, knowledge and innovation in agriculture and rural areas [PDF] Retrieved from https://ec.europa.eu/info/sites/info/files/food-farming-fisheries/key_policies/documents/building-stronger-akis_en.pdf
- [18] European Commission (n.d) Future of common agriculture policy [website] Retrieved from https://ec.europa.eu/info/food-farming-fisheries/key-policies/common-agricultural-policy/future-cap_en
- [19] CGIAR(2014) Helping farmers catch their dreams, even as the climate changes [Conference report] Retrieved from <https://ccafs.cgiar.org/blog/helping-farmers-catch-their-dreams-even-climate-changes#.XdG5BFdKhPa>
- [20] Wired (2012) Welcome to the new reputation economy [Web article] Retrieved from: <https://www.wired.co.uk/article/welcome-to-the-new-reputation-economy>
- [21] The Times (2019)Peer-to-peer lenders given final warning

by Financial Conduct Authority [News Article] Retrieved from: <https://www.thetimes.co.uk/article/peer-to-peer-lenders-given-last-warning-32tc32h2r>

- [22] NY Times (2012) Car-Pooling Makes a Surge on Apps and Social Media [News Article] Retrieved from: <https://www.nytimes.com/2012/07/05/technology/technology-makes-car-pooling-safer-and-easier.html>
- [23] Klingemann. S., (n.d.)What is the Reputation Economy? [Web article] Retrieved from: <https://insights.reputationinstitute.com/blog-ri/what-is-the-reputation-economy>
- [24] Schawbel. D., (2011) The Reputation Economy is Coming - Are You Prepared? [Web article] Retrieved from: <https://www.forbes.com/sites/danschawbel/2011/02/28/the-reputation-economy/#2f632b45ae58>
- [25] United Nations (2015) Sustainable Development Goals [web article] Retrieved from: <https://sustainabledevelopment.un.org/?menu=1300>
- [26] European Commission(n.d.)Greening scheme [web article] Retrieved from: https://ec.europa.eu/info/food-farming-fisheries/key-policies/common-agricultural-policy/income-support/greening_en

REFERENCE STUDIES

Lapujade, J., Lafitte, C., (2018) Urban and Peri-Urban Agriculture BEST PRACTICE CATALOGUE [PDF] Retrieved from: http://www.animaweb.org/sites/default/files/madre_catalogue_web_light.pdf

Rodrigues, P. D., Ribeiro, C., & Veiga, L. (2010, April). Incentive mechanisms in peer-to-peer networks. In 2010 IEEE International Symposium on Parallel & Distributed Processing, Workshops and Phd Forum (IPDPSW) (pp. 1-8). IEEE.

Bay-iletersen, J. (1985). Agricultural research to help the small-scale farmer in developing countries. for Small Farms, 8.

Guiomar, N., Godinho, S., Pinto-Correia, T., Almeida, M., Bartolini, F., Bezák, P., ... Wästfelt, A. (2018). Typology and distribution of small farms in Europe: Towards a better picture. *Land Use Policy*, 75, 784–798. <https://doi.org/10.1016/j.landusepol.2018.04.012>

Why we need small farms. (2018, October 12). Retrieved November 18, 2019, from Environment website: <https://www.nationalgeographic.com/environment/future-of-food/photos-farms-agriculture-national-farmers-day/>

Building an Interoperable, Data-Driven, Innovative and Sustainable European Agri-Food Sector | DEMETER Project | H2020. (n.d.). Retrieved November 18, 2019, from CORDIS | European Commission website: <https://cordis.europa.eu/project/rcn/223981/factsheet/en>

Trendov, N., Varas, S., Zeng, M., (2019) Digital technologies in agriculture and rural areas—Briefing paper Retrieved from <http://www.fao.org/3/ca4887en/ca4887en.pdf>

Our philosophy—About us. (n.d.). Retrieved November 19, 2019, from Slow Food International website: <https://www.slowfood.com/about-us/our-philosophy/>

Sylvester, G., (2019) E-agriculture in action: Blockchain in agriculture, Retrieved from <http://www.fao.org/3/CA2906EN/ca2906en.pdf>

Maddox, T., (2018) Agriculture 4.0: How digital farming is revolutionizing the future of food [Web article] Retrieved from: <https://www.techrepublic.com/article/agriculture-4-0-how-digital-farming-is-revolutionizing-the-future-of-food/>

Cognetti, F., & Conti, S. (2014). Town's land. Social experimentations of urban agriculture in Milan. *Scienze del Territorio*, 2, 179-194.

Liu, P., Gilchrist, P., Taylor, B., & Ravenscroft, N. (2017). The spaces and times of community farming. *Agriculture and Human Values*, 34(2), 363-375.

Ruggeri, G., Mazzocchi, C., & Corsi, S. (2016). Urban gardeners' motivations in a metropolitan city: The case of Milan. *Sustainability*, 8(11), 1099.

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www.unsplash.com

www.sustainabledevelopment.un.org

www.unfccc.int