Deliverable title: Intermediate dissemination report I

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<th>Task</th>
<th>WP8 - Dissemination and exploitation</th>
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<tr>
<td>Task Leader</td>
<td>SONY</td>
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<td>Planned Date</td>
<td>31/10/2018</td>
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<td>J.Minchin (IAAC)</td>
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1 Executive Summary

1.1 Summary of deliverable content and initial objectives

WP8 covers the communication, dissemination and exploitation activities of the ROMI project. This deliverable reports in particular at the dissemination and communication activities and is related to task T8.1. As communication will also influence T8.2 this has been referenced also.

- **T8.1** All partners will be involved in the dissemination efforts.
- **T8.2** IaaC will organise workshops through its Fab Lab network and assist in the creation of the spin-off company.
- **T8.2** Sony will take the lead on the creation of the spin-off company / FEI will study the target market
- **T8.2** Chatelain will assist in the creation of the spin-off company.

1.2 Partners involved

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<th>Leader</th>
<th>IaaC</th>
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<td>Participants</td>
<td>SONY participated in the design in T8</td>
</tr>
<tr>
<td></td>
<td>All partners contributed to the communication and dissemination activities.</td>
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<td>FEI conducted various studies to have a better insight of the market that we targeted in the original proposal</td>
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1.3 Relation with other work packages and tasks

The dissemination and communication concerns the output of WPs 2 to 7. The creation of an project identity and branding strategies that support the creation of community development and a spin-off company.

1.4 Links to videos, flyers, ...

- Link : Website > [www.romi-project.eu](http://www.romi-project.eu)
- Link : Twitter > [www.twitter.com/ROMI_EU_Project](http://www.twitter.com/ROMI_EU_Project)
- Link : Forum > [www.forum.romi-project.eu/](http://www.forum.romi-project.eu/)
- Link : Facebook > [https://www.facebook.com/ROMIEUProject](https://www.facebook.com/ROMIEUProject)
- Link : [Brand Book + Design Assets](#)
- Link : [Brand Guidelines (pdf)](#)
- Link : Flyer 1 - Rover // Flyer 2 - Drone
- Link : [Strategic Presentation](#)
- Link : [Public Presentation](#)
- Link : European Study on european microfarms
- Link : European Competitors
- Link : Technology Watch
- Link : European legislation for drones and robots
- Link : National Regulations Drones
- Video : [Topic Report 1 - Christophe Godin > Advanced Plant Modeling](#)
- Video : [Topic Report 2 - Jonathan Legrand > Segmentation and Image Analysis](#)
2 Introduction

Objective of this deliverable is to introduce all dissemination actions which have been realised during the first project year:

- Communication activities performed by the coordinator and each partner so as to make the project and its first results known.
- Preparation of exploitation of project results according to the planning defined in the technical annex.

Summary of aspects relating to WP8 Milestones:

- Content upload (images, documents, video ... related to the project and uploaded by the consortium) - 1st year
- Target study (who are farmers and their expectations)
- Logo - Branding - Final Version
- Press release
- Project website : final version
- Facebook / Twitter / Youtube channels
- Statistics study on Vegetable microfarms in Europe
- Interactive map with indications on Vegetable microfarms in europe
- Study on the open hardware model / IPR policy within the consortium (see also the D1.1)
- Follow-up of main competitors
- EU regulations

3 Dissemination towards external actors realised during the 1st year

3.1 Project communication plan and dissemination action of IAAC

This section details the project communication plan and dissemination action of IAAC, as coordinator, during the 1st year. IAAC launched different communication actions, both facilitating internal and external channels.

> Communications Plan: structure and planning, Cycles of known Alpha testers / Beta testers

- **Project Year 1** > Setup identity and communications tools, channels and protocols, build footage resources and produce material for publication.
- **Project Year 2** > Network and build upon identity within trusted channels, build a beta testing community and and begin to release information through the forum / git and Website updates. Release Topic reports for general public engagement and increase participation on social media networks.
- **Project Year 3** > Scaling on all channels to build an active community of participating development groups. Introduce technologies into the agricultural community.
- **Project Year 4** > Scaling up again to maintain a collaborative network of end users, build a trusted market for later dissemination and exploitation.
> **Project Identity** : Brand Book + Design Assets containing Icons, wordmarks, colour schemes, typesets were made. Also an explanatory Branding guide and language texts were produced to frame the project story from the outset that encouraged and referenced the integration of Work Packages and community themes.

> **Internal Communication** : Personal and operational Email accounts have been setup for all ROMI WP members, Google Drive structure for each Work Package and for file sharing are in place, a Slack with Work Package channels are in active use. There is also a GitHub account for ROMI that will also be managed for internal communications yet also acts as a public interface and resource.
Website creation: The web structure has followed the communications plan of creating an identity for ROMI by delivering explaining and integrating themes and research undertaken by each work package with community and social media. The website has and will undergo constant upgrades following the generation of media content, however the main website creation plan has been split into two Phases.

- The website is available at: [www.romi-project.eu](http://www.romi-project.eu)
- The domain name [www.romi.farm](http://www.romi.farm) has been bought with the intent of transferring to a community web site that would relate to the creation of a spin off company later. (T8.2)
- The domain name [www.roboticsformicrofarms.org](http://www.roboticsformicrofarms.org) has also been purchased.

Phase 1: At this first stage a landing page has been setup to explain the 4 main themes: Robotic Solutions / Phenotyping and Data Research / Field Studies and Community. The market study research map has also been integrated.

Phase 2: When sufficient media and technical material is ready to publish, each section of the website will branch into subpages that contains more detailed information and open source tools contained in GitHub. The Robotics Solutions will contain a library of code / drawings / softwares / studies. Each of these will be accompanied by a filmed ‘Topic Report’ video (see Filming) The Community section will contain a discourse forum that allows beta testers and farming communities to interact and answer frequently answered questions as they occur.
> **Filming** : More than 10 hours of footage has been recorded since the kickoff meeting in November 2017. We feel that the project has great potential for being included as part of wider documentary films about future agriculture and are exploring collaborations for documentaries with other groups such as NASA / Farmbot and Open Source Ecology.

**Explainer Video** : It is being used to explain the project, its research, activities and vision. This will be delivered as an vision explainer video as part of a wider press releases.

**Topic Reports** : Eight ‘Topic reports’ have been recorded and are currently being edited, will accompany downloads and technical annexes as part of the website tools section.

*Topic Report 1 - Christophe Godin > Advanced Plant Modeling*
*Topic Report 2 - Jonathan Legrand > Segmentation and Image Analysis*

> **Social Media** : We are actively using Facebook and Twitter accounts for social media communications. However operating on a low frequency until further releases and tools become publishable.

  - Facebook : [www.facebook.com/ROMIEUProject](http://www.facebook.com/ROMIEUProject)
  - Twitter : [www.twitter.com/ROMI_EU_Project](http://www.twitter.com/ROMI_EU_Project)
  - Youtube : A ROMI youtube channel will be created at phase 2, for 8 topic reports.
  - Github : [www.github.com/romi](http://www.github.com/romi) (pages will be used publically, therefore social media)
  - Fablabs.io : [www.fablabs.io](http://www.fablabs.io) ( publishing within the Fab Lab network.)

> **Press Release** : Contact has been made with Financial times for both film and written articles. A dialogue is ongoing for these releases to help align with the ROMI communication plan. IAAC also has contacts with the Guardian newspaper and varied european TV and media stations.

A wide ranging media promotion campaign and public release will occur at a later stage. It follows that the Open Source hardware community especially will require design files and coding libraries that are still under development. A widing reaching press release will come at a point when these resources are sufficiently developed for community engagement through online forums and Beta testers through the GitHub pages.
**Publicity Material**: Some flyers and posters types have been produced which are delivered during workshops, conferences, exhibitions and public events.

![Image 12: Images of publicity illustrations](image12.png)

**Networking**: Community Contact Lists [Link](https://www.personalised.mea) are being generated through mails and social media channels. Yet a focused effort is being made to associate ROMI at academic and scientific forums rather than for a public audience. Ties with local community agents and institutional farming bodies have been the driving focus in 2018. All records of contacts are being compiled into a contact database for future releases.

![Image 10: Images of Community contacts](image10.png)
Forum Creation: As part of outreach and network activities a discourse forum is being tested to be able to deal with frequently asked questions and generate community interaction. At this stage it has not been published yet is being tested on focus groups and is also serving as a means of Networking.

Educational Programs: Several educational programs run by IAAC are involved in research for ROMI. These serve as ways to beta test, make proof of concepts and increase the field of study also.

Global Summer School 2018 (GSS) Was a program run in Paris France, July 2 - 14, 2018 that examined data capture and its uses by the robots. Primarily involving Work Package 3.
Master of Advance Ecological Building, (MAEB) Runs and ecological line that brings students into field testing scenarios on a weekly basis. Primarily involving Work Package 7
Master in Design of Emergent Futures, (MDEF) Runs a theoretical study group through possible use case scenarios for future farming and urban agriculture. Work Packages 3 and 7.
Kaos Pilot Forum study, A visiting school named Kaos Pilot undertook a 2 month networking study: This is primarily involving Work Package 8.
ITmakES Fab Linkage Conference was held at Barcelona between May 28-29, 2018. organised by the Italian embassy in Barcelona.

Community Outreach: Weekly efforts have been made to involve ROMI as part of a volunteer program called Social Agriculture, that sees members of the public interact with the gardens, forests and use of new technologies at Valldaura, Involving Work Package 7. Presentations and discussions have been ongoing with the ‘Collserola Park Technical Information office’ and ‘Arrans de Tierra’ who work with ecological studies and farming within the park surrounding Valldaura Labs. IAAC also participated in ‘Lo rural es vida’ debate with the governing body of Priorat region, Spain; Ayutament de Falset

Conference and stage events organisation: IAAC has been active in promoting and delivering ROMI within academic and research circles, particularly with reference to the Open Source and Digital Fabrication community relating to Fab Labs. IAAC organised of the July series of Fab City conferences in Paris where ROMI was demonstrated:

Fab City Summit > Paris, France > July 11 - 13, 2018 > Fab City Summit
Fab Distributed Conference > Paris, France > July 11 - 13, 2018 > Fab City Conference
Fab 14 Conference > Toulouse, France > July 16 - 20, 2018 > Fab 14
Fab City Campus > Paris, France > > Fab City Campus

Exhibitions:

Maker Faire Barcelona > Spain > June 16 - 17 2018 > Makerfaire Bcn Spain
> Participation in a Conférences :

IED City Talks Conference > Madrid > March 21, 2018 > IEDMadrid.com
kunsthochschule > Berlin > April 12 2018 > Green Fab 7.0 Symposium
And& Leuven > Belgium > May 3, 2018 > https://www.andleuven.com/
Innofrugal Helsinki > Finland > May 7, 2018 > https://innofrugal.com/
United Nations Circular Tourism Ljubljana > May 8, 2018 > Unido Circular Economy
Copenhagen Hardware Alliance MeetUp > Denmark > May 29, 2018 > Dansk Design Centre
Torino Maker Faire > USA > June 9, 2018 > Mass Distribution of Almost Anything
Ellen MacArthur Foundation Summit > London, UK > June 21, 2018 > Think Dif Summit
Make City Berlin > Berlin, Germany > June 28, 2018 > Make City Berlin
Lo rural es vida > Priorat, Spain > June 30, 2018 > Ayutament de Falset
Startup Festival Namibia > Windhoek, Namibia > June 29, 2018 > Startup Fest Nam
Digital Naturalism Conference > Thailand > > Digital Naturalism
Barcelona StartUp City > Barcelona, Spain > July 4, 2018 > Barcelona Startup Seminar
El Pais Retina > Madrid, Spain > July 4, 2018 > El Pais Retina

> Participation in a Workshop : Many of the conferences listed above also involve elements of workshops. Listed below are more specialised.

Distributed Design Conference @ Barcelona Design Week > June 9, 2018 > DistributedDesign.eu
Living Materials Conference > USA, TUFTS university > July 8, 2018 > Private

> Participation in activities organized jointly with other H2020 projects : WP7 is integrating data analysis from IAAC also participates in the Grow Observatory H2020 Research and Innovation No 690199, by making using of the Parrot Sensors for Soil analysis and by cross referencing that data together with that of the ROMI program.

3.2 Dissemination action of other partners

3.2.1 SONY

- Organisation of a Workshop

Workshop “Fab City / Food City”, FabCity Summit, Parc de la Villette, Paris, July 1”, 2018.
https://fabcitysummit2018.sched.com/event/FKTW

- Exhibition


- Social Media
https://www.facebook.com/p2pfoodlab/

- Website

P2P Food Lab, https://p2pfoodlab.net


- Communication Campaign (e.g. Radio, TV)


- Participation to a Conference

David Colliaux, "The ROMI project", European Robotics Forum, Tampere, Finland, 13 March 2018


- Participation to a Workshop


- Participation to an Event other than a Conference or a Workshop

Peter Hanappe, "Robotics for Microfarms", WoMa Meetup, Paris, January 2018

- Video/Film


- Trade Fair


- Participation in activities organized jointly with other H2020 projects

• Other

Presentation of the project at HackerFarm, Japan, Oct. 25, 2018.  https://hackerfarm.jp/

Presentations of LettuceThink, part of the FabCity Campus, Parc de la Villette, Paris, July 14-22, 2018.  
https://summit.fabcity.paris/campus/

3.2.2 INRIA

• Video/Film

Interviews given for the ROMI project web page (Romain Azais, Christophe Godin)

3.2.3 CNRS

• Press release

Daily generalist French newspaper "Le Monde", 2018/02/7. "Comment les plantes excellent en maths".

• Participation to a Conference

8 June, 2018: 2ND International conference on meristem biology, Hefei, China

• Participation to a Workshop

15 June, 2018: Symposium in honor of Philip Benfey, Duke University, Durham, USA

• Participation to an Event other than a Conference or a Workshop

June 12, 2018: Seminar, Department of Plant Biology, University California, Davis, USA

3.2.4 UBER

• Scientific communication / IPR

Publications (with DOI number):


• Organisation of a Conference

Verena V. Hafner participated in the Advisory Board of the Open Self Conference, Technical University Berlin, September 2018

https://openself2018.com
Organisation of a Workshop
Verena V. Hafner co-organised the “Learning Body Models: Humans, Brains, and Robots” Workshop at Lorentz Center, Netherlands October 2018

Training
DeepLearning 2018 Summer school (Genova, Italy). attended by G. Schillaci and A.Pico

Website
http://adapt.informatik.hu-berlin.de

Communication Campaign (e.g. Radio, TV)
Invited talk on AI in Cognitive Robotics at the DAAD Postdoctoral Researchers Networking Tour 2018 (Postdoc-NeT 2018), Berlin (Guido Schillaci)
EU-ROMI has been introduced to the audience.
Invited talk on AI in Cognitive Robotics at the Falling Walls Lab Tour 2018, Berlin (Verena V. Hafner)
https://www.falling-walls.com/lab
EU-ROMI has been introduced to the audience.
Invited talk on Developmental Robotics at the Interdisciplinary College IK Günne, Germany (Verena V. Hafner). (March 13-15, 2018)
http://www.interdisciplinary-college.de/index.php?controller=collections&action=index EU-ROMI has been introduced to the audience.
Invited talk at the GIF Workshop on Legal Rules for the Digital Economy on New Challenges in AI (Verena V. Hafner), (March 20, 2018). EU-ROMI has been introduced to the audience.
Invited talk at the Developmental Robotics WS at Sorbonne Universités (Verena V. Hafner) (April 19, 2018)

Participation to a Conference
IEEE ICDL-Epirob conference, Japan, September 2018. V.V.Hafner and C. Lang attended the conference
http://icdl-epirob2018.ogata-lab.jp/
Verena V. Hafner gave a keynote speech at the Open Self Conference, Technical University Berlin, September 2018
https://openself2018.com

Participation to a Workshop
3.2.5 Chatelain

- **Organisation of a Conference**

Chatelain co-organized ROMI Year-one meeting in Paris with Sony CSL on Oct. 2nd 2018. Chatelain invited several external actors, such as Pinchon (French robotized harvesting machine), Belhomme (weeding machines for tree nurseries), French Agriculture Chamber representatives and NAIO robot users. The objective was to open the discussion to other specialists and get their opinion on the solution we are developing.

- **Organisation of a Workshop**

Chatelain, Sony and IAAC did organize a 2-days workshop with IAAC/Aldo’s students on March 12th and 13th 2018, partly at Chatelain farm in le Thillay. Chatelain explained the issues small-scale organic market farming was facing and how ROMI experiment could help.

- **Press release**

Chatelain did provide information for a press article in the French magazine Lien Horticole, dedicated to professional horticulture in December 2018. To be published in January 2019.

- **Non-scientific and non-peer-reviewed publication (popularised publication)**

Chatelain will present the robot experiment to Archipel 95 local consumers association, on their demand, on Dec. 12th 2018. It will be a short presentation, explaining weeding constraints and benefits of robotization for small-scale and organic farmers.

- **Website**

Chatelain did publish in October on their website and Facebook page pictures and a short recap of the ROMI day organized on Chatelain farm.

- **Participation to a Conference**

Shizu OKADA participated to Global Summer School on July 3rd 2018, to present to students issues small-scale organic market farming was facing and how ROMI experiment could help.

Shizu helped Sony CSL on field work involving the students, to show them concrete and simple seeding/planting.
4 Preparation of the exploitation plan

Although the first report on the exploitation plan is due on month 30 (deliverable 8.4) the consortium and in, particular partner FEI, has started analysing the market and the main competitors. These studies, combined with the the IPR Strategic Plan discussed in D1.1, lay the groundwork for ROMI’s exploitation plan.

The project management team built a work programme allowing identifying our commercial targets and potential competitors, understanding their profiles so as to design the business plan of the company we plan to create at the end of the project. This work programme is complying with the tasks and planning detailed in WP8.

- **Project Year 1:**
  => European study on micro-farms based on Eurostat statistics to evaluate our commercial potential and the most relevant geographical areas for our solutions deployment,
  => Identification of a few typical competitors to follow all along the project,
  => set up of Networking actions (developers - farmers)
  => Identification of regulatory constraints for our solutions deployment,

- **Project Year 2:**
  => Market study finalisation with a specific study on most promising European countries including stakeholders identification,
  => Initial contacts with stakeholders,
  => Regulatory, technological and competition watch.

- **Project Year 3:**
  => Continued contacts initiation with stakeholders,
  => Preparation of the exploitation structure implementation,
  => Regulatory, technological and competition watch,
  => Preparation of the exploitation plan first version (D8.4 - M30).

- **Project Year 4:**
  => Finalisation of an exploitation plan (D8.6 - M48),
  => Implementation of the steps necessary for the commercial exploitation of project results (negotiation within the project Exploitation Board to create a start-up),
  => Search for funding to create this start-up.

The below sections introduce work performed during the first year, in conformity with the above planning.

4.1 European market study on microfarms

ROMI targets are small farms producing mainly field vegetables and which are defined through:
- Their size: less than 5 ha or equal,
- Their output: field vegetables for human consumption.

Objective of the first study we (France Europe Innovation - FEI with the review of IAAC and SONY) realised was to introduce the specific ROMI market at a European scale so as to be able to define a business plan for ROMI results. To prepare it, we used European databases: In the first semester of 2018, European statistical database, Eurostat, provided complete data about European farms for the year 2013[1]. Eurostat categorized the farms according to its own typology (Farm Type, called “FT”). There is however no special category for farms producing field vegetables. As a consequence, several FT could be considered:

- **FT_16 General field cropping**: gathered the farms specialized in root crops, cereals, oilseeds, protein crops and root crops combined, field vegetables, tobacco, cotton and various field crops combined.
- **FT_22 Specialist horticulture outdoor**: gathered the farms specialized in vegetables outdoor, flowers and ornamentals outdoor, mixed horticulture outdoor.
- **FT_61 Mixed cropping**: gathered the farms specialized in horticulture and permanent crops combined, horticulture and field crops combined, field crops and vineyard combined, field crops and permanent crops combined, mixed cropping, mainly field combined and other mixed cropping.

**List of FT categories**

- FT15_SO Specialist cereals, oilseed and protein crops
- **FT16_SO General field cropping**
- FT21_SO Specialist horticulture indoor
- **FT22_SO Specialist horticulture outdoor**
- FT23_SO Other horticulture
- FT35_SO Specialist vineyards
- FT36_SO Specialist fruit and citrus fruit
- FT37_SO Specialist olives
- FT38_SO Various permanent crops combined
- FT45_SO Specialist dairying
- FT46_SO Specialist cattle-rearing and fattening
- FT47_SO Cattle-dairying, rearing and fattening combined
- FT48_SO Sheep, goats and other grazing livestock
- · FT51_SO Specialist pigs
- FT52_SO Specialist poultry
- FT53_SO Various granivores combined
- **FT61_SO Mixed cropping**
- FT73_SO Mixed livestock, mainly grazing livestock
- FT74_SO Mixed livestock, mainly granivores
- FT83_SO Field crops-grazing livestock combined
- FT84_SO Various crops and livestock combined
- FT90_SO Non-classified farms
We have decided to use data extracted from the **FT_16 category** (for making statistics, the system enables to choose only one FT category) which corresponds to the category the nearest of ROMI targets: the general field cropping.

Indeed, the size criteria eliminates all the cereals, oilseeds, tobacco, cotton and other specialization of TF_16 which require a large field superior to 5ha and keep field vegetables which can be produced on small farms. Whereas the FT_22 and FT_61 category includes vegetables but also several specializations not relevant for ROMI (for instance flowers and ornamentals outdoor vineyard …), even after applying the 5ha of UAA criteria.

Results of the study are available here: [https://media.romi-project.eu/documents/D8.2/ROMI-Market_study-21122018.pdf](https://media.romi-project.eu/documents/D8.2/ROMI-Market_study-21122018.pdf)


### 4.2 European mapping

Regarding the specific case of European general field cropping microfarms which are our target (classification FT_16, <5ha), we (FEI) built a map of their location according to the Eurostat data. The map is available at: [http://umap.openstreetmap.fr/fr/map/anonymous-edit/224167:OkH8E34j56jagBJ8rwub7-OWWLC](http://umap.openstreetmap.fr/fr/map/anonymous-edit/224167:OkH8E34j56jagBJ8rwub7-OWWLC)

and sums up the following data for each country:

- The number of farms, microfarms and general field cropping microfarms and their respective share,
- The size of the national market in standard output (€),
- The legal form of the general field cropping microfarms,
- The share of women in the heads of general field cropping microfarms.
Member States are spread in 4 geographical areas:

- Green: Northern Europe
- Yellow: Northern Europe
- Orange: Southern Europe
- Red: Eastern Europe

**Northern Europe**: Denmark, Estonia, Finland, Ireland, Latvia, Lithuania, UK, Sweden; **Southern Europe**: Cyprus, Croatia, Spain, Greece, Italy, Malta, Portugal, Slovenia; **Eastern Europe**: Bulgaria, Hungary, Poland, Czech R., Romania, Slovakia; **Western Europe**: Germany, Austria, Belgium, France, Luxembourg, Netherlands, according to the classification adopted by the UN, available at: [https://unstats.un.org/unsd/methodology/m49/](https://unstats.un.org/unsd/methodology/m49/)

As an example, please find the information we can find the map for a country:

**4.3 Ireland**

- **Number of farms**: 139,600
- **Number of microfarms**: 9,800 (7% of farms)
- **Number of vegetable microfarms**: 1,990 (20% of microfarms)
Number of vegetable microfarms < 2ha of UAA
580

Vegetable microfarms trend 2010 -2013 : -8% (-170 vegetable microfarms)

Market size in standard output :
Total of vegetable microfarms value production (€) : 1 190 790 € (26th market of the EU)
Trend of vegetable microfarms value of production 2010- 2013 +5%

Number of vegetable microfarms with a standard output of :
- Less than 2000€ : 1 960 (98%)
- 2 000€ - 3 999€ : 10 (1%)
- 4 000€ - 7 999€ : 0 (0%)
- 8 000€ - 14 999€ : 0 (0%)
- 15 000€ - 24 999€ : 10 (0,5%)
- 25 000€ - 49 999€ : 10 (0,5%)

(Standard Output : the average monetary value of the agricultural output at farm-gate price, in euro per hectare or per head of livestock)

Legal Form
Personnal exploitation 1 980 (99%)

Gender
Share of women head of a vegetable microfarms (%) 35%

4.4 European competitors

Objective of this task is to follow all along the project the development of a few competitors so as to observe their progress, their difficulties, their innovations, their project results. We (the project management team) thus decided to follow:

- **Ecorobotix**: Start-up created in 2011 in Switzerland, that is developing a robot that chemically weed the cereal crop fields

| Chemical weeding robot, work with solar panels. Specialised in large-scale vegetable farms | ![Image](image1.png) |
- **Farmbot**: Company created by Rory Aronson in 2015 after two years of R&D made inside the Farmbot project (open source community). The company sales a gardener robot for unprofessional gardeners to install in their backyard.

- **Naïo technologies**: Start-up created in 2011 by two robotic engineers that develop new technologies for the agricultural world. Goal of this company: participate in the building of a sustainable agriculture by developing robotic solutions to reduce the pain of the farmers.*

- **Terrateck**: The meeting of Pierre Soudan and Romain Wittrish during a entrepreneurship master resulted in the creation of this company. Company that create (from the design to the construction and the commercialisation) tools for market gardening farms and unprofessional gardening. Those tools are particularly adapted for organic farming.

- **Sabi agri**: Company created a year ago by Alexandre Prevault, farmer and mechanical engineer that sell an electrical tractor for market gardening farms

FEI built a specific Excel template to follow each of these companies. Results of follow-up performed by FEI and SONY for this first year is given here: https://media.romi-project.eu/documents/D8.2/ROMI-Technological_watch_21122018.pdf.

4.5 Networking (developers - farmers)

Sony participated and organised multiple events where they presented ROMI towards institutions, developer and farmer communities.

1. The team organised, as part of the FabCity 2018, the **CapCommun** workshop: a day of exchanges and discussions with various actors of the agricultural world (ministry of agriculture, farmers networks, food brands, robotics companies, researchers, etc.) on the use of new technologies in agriculture.

2. They help organising the **FabCity Campus 2018**, where they were responsible of the Urban Agriculture topic. During the 10 days event, they organised presentations and discussions with different actors of the urban agriculture field: companies, associations. The event was
hosted in the La Villette park, in the North of Paris. They could reach a wide public composed of curious citizens, walkers and children.

3. Sony met with robotics companies throughout the year:
   - Ponchon that develops a straddler cobot that covers the farming tasks from planting to harvesting,
   - Instar Robotics and their autonomous robot that carries plant pots in farms and plant nurseries
   - Cool.co: connected monitoring and controlling platform that measures and regulates parameters such as soil humidity, temperature, etc.

4. As Sony was looking for an experiment field close to the Sony CSL premises, the team applied for the call for proposals of the City of Paris Les Pariculteurs 2. The municipality support the urban agriculture development by putting in contact urban farmers and parisians property owners. In the proposal, Sony was joined by other research groups, universities and companies in order to have project focussed on research.

5. Sony conducted interviews with a dozen of market gardening farmers during the summer. The two main topics were: weeding and techniques and farmers thoughts on new technologies and robotics in agriculture. Most of the farmers were interested on the subject: robotics is, to them, a new way of being more efficient and productive, as long as the tools are robust enough for the field conditions. They were curious to see the development of the project.

6. Sony was a partner to the FIRA (International Forum of Agricultural Robotics) 2017 event. They invited the professor Simon Blackmore from the Harper Adams University that presented his vision and work on agricultural robotics.

7. The team participated in various networking events:
   - Challenges AllEnvi day, organised by BPIFrance (French Public Bank of Investment) on innovations for a sustainable urban agriculture,
   - meeting organised by WOMA (Parisian fablab) where they presented the ROMI project,
   - and&Festival in Leuven, where they participated to discussions on food innovation and commons economy, etc.

4.6 Legal aspects (robotics and drone)

As part of the market study and due to the fact that ROMI is building hardware design dedicated to a future commercialisation, legislation about robots, machines and drones is studied early in the creation process.

The cablebot, the robotic platform for farm and the drones use, as all machines, can generate situations where the consumer may be facing dangerous situation. The European commission has created a legal framework\(^1\) in order to prevent any harmful situations when using machines. This directive presents all the requirements that the LettuceThink robot will have to meet in order to ensure that the machinery is safe.

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The use of drones with professionals purposes is allowed in every European countries but under very stricts conditions. An European level regulation on drones does not exists yet, thus drone flights are regulated at the national level. The COSME program of the European Union co-funded a website portal “Dronerules”\(^2\) that inform civils basic requirement and applicable drone-related laws and regulations across EU. In 2018, The European Union legislation on drone use and a new set of rules will be applicable in 2019.

In annex, all the legal processes and authorisation needed in order to fly over the French territory, and more specifically over the Chatelain experimental fields is presented as a case study.

The ROMI machines all use cameras and record data. All recording and processing of (personal) data during the use of the ROMI platform has to follow the regulation of the General Data Protection Regulation 2016/679\(^3\).


5 Annexes

- Visual identity and other communication documents
  By IAAC
  - Link: Website > www.romi-project.eu
  - Link: Twitter > www.twitter.com/ROMI_EU_Project
  - Link: Forum > www.forum.romi-project.eu/
  - Link: Facebook > https://www.facebook.com/ROMIEUProject
  - Link: Brand Book + Design Assets
  - Link: Brand Guidelines (pdf)
  - Link: Flyer 1 - Rover // Flyer 2 - Drone
  - Link: Strategic Presentation
  - Link: Public Presentation
  - Video: Topic Report 1 - Christophe Godin > Advanced Plant Modeling
  - Video: Topic Report 2 - Jonathan Legrand > Segmentation and Image Analysis

- European Study on european microfarms
  By FEI

- European competitors
  By FEI

- Technology watch
  By Sony

- European legislation for drones and robots
  By FEI & SONY
  https://media.romi-project.eu/documents/D8.2/Legislation_robots_and_drones.docx
  https://media.romi-project.eu/documents/D8.2/ROMI-National_regulations_drones.xlsx