Deliverable 6.1 Design and Building of SMARTCHAIN Interactive Platform

Work Package 6

ISEKI-Food Association

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Responsible Partner	ISEKI-Food Association
Author (s)	Foteini Chrysanthopoulou, Katherine Flynn, Gunter Greil
Review & Edit	Dimitrios Argyropoulos, Mark Frederiks, Dusan Vudragovic
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Executive Summary

This report outlines the development of a sustainable virtual environment, the SMARTCHAIN Interactive Platform, for knowledge transfer, innovation and cooperation for all the stakeholders of the Short Food Supply Chain (SFSC). The SMARTCHAIN Platform aims to allow:

- Generating, sharing and utilizing information on SFSC innovations;
- Communication among the 9 Innovation Hubs set up during the project;
- Disseminating events related to innovation and cooperation in the SFSC (both project and external events);
- Organising training activities and generating training materials on best practices in SFSC innovation;
- Building an international community of Short Food Supply Chains through a Transition/Game Model.

The SMARTCHAIN Innovation Platform includes features which will assist users in navigating through useful information regarding the Short Food Supply Chain. The Platform is available in multiple languages, has a menu bar with multiple tabs and, if needed, dropdown menus and two principal graphics: Interactive Icons identifying the 5 principal stakeholders and an Interactive Map linking to the Innovation Hubs and Case Studies.

The SMARTCHAIN Innovation Platform is hosted at the server of ISEKI-Food Association and is built using the content management framework Drupal 7. Communication is encrypted and there are many user roles, from administration to anonymous, and many modules which increase site functionality.

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1. Design of the SMARTCHAIN Innovation Platform

The virtual SMARTCHAIN Platform is designed to favour the interaction and cooperation of all the stakeholders of the short food supply chain (SFSC) - farmers, technology providers, SMEs, consultants, researchers, consumers, policy makers, etc. - in co-creation and innovation processes related to the SFSC. Some basic sections of the Platform are already implemented in the first version, on-line as of March 2019: including the Home Page (with social media links and contact), and the following menu bar: News & Events, Innovation Hubs, Innovation Inventory, Training, Game Model, Register/Log In. Some items on the menu bar may be updated in future versions of the Platform. View the current Platform here: https://www.smartchain-platform.eu

The Home Page contains an interactive map to link to the Innovation Hubs and all Hub Managers have translated the basic description of their Hub to their local language. The Home Page also contains stakeholder User Icons. All project partners will help in translating the content of the platform to different languages and in providing content for the platform when required.

An internal area, restricted to project partners for facilitating communication among local hubs and enabling sharing of information (electronic files) among partners for data analysis in WP2-WP5, has been moved to the SMARTCHAIN project website. Instead, the SMARTCHAIN Platform will contain a private area in which Hub Managers can find information about individuals registered on the Platform.

The SMARTCHAIN Platform is installed on the ISEKI-Food Association server where it will be sustained throughout the project lifetime and after the end of the project.

2. Main features of the SMARTCHAIN Innovation Platform

The SMARTCHAIN Innovation Platform includes various features which will assist users in navigating through useful information regarding the Short Food Supply Chain. Parts of the Platform are currently available in multiple languages, and the desired language can be selected from a drop-down menu on the bottom left part of the page (Figure 3). Further translations are ongoing. Moreover, the SMARTCHAIN Project logo with a link to the project website is prominently featured in the upper left corner.

The menu bar has 7 tabs (may increase or change later) and, if needed, tabs have drop-down menus (Figure 1). The current tabs are as follows:

- **Home:** This tab brings users back to the Platform Home Page.
- **News & Events:** A drop-down menu with 3 links; one to a page with articles about the SMARTCHAIN project; one to a page with a list of events related to the project and one for registered users to upload news and events.
- **Innovation Hubs:** A drop-down menu lists the 9 partner countries and the 2 case studies per country.
- **Innovation Inventory:** This inventory of innovations and interactive tools is designed by IPB as a document organisation and retrieval system which supports quick finding and discovery of information related to Short Food Supply Chains.

- **Training:** This section provides access to various outputs of the project and other relevant trainings and training materials.
- **Game Model:** This tab opens the Transition/Game Model, designed by AMP.
- **Register/Log in:** Access to a Registration form where new users may open an account and obtain a username and password.
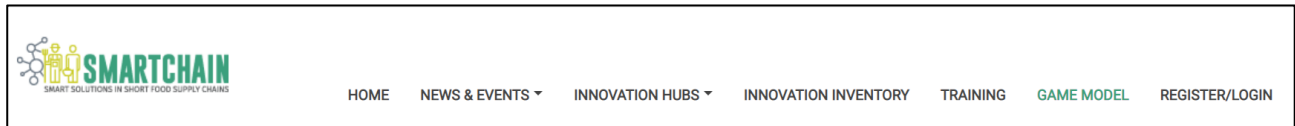

Figure 1: Menu bar screenshot of the SMARTCHAIN Innovation Platform.

2.1. Home Page

The Home Page of the SMARTCHAIN Innovation Platform includes a short summary of the project, explaining the aim and objectives of the Platform.

As shown in Figure 2, the main visuals of the Home Page are the User Icons and the Interactive Map. Any user of the Platform may access information via one of the 5 User Icons (designed by EUFIC) unique for the 5 stakeholder roles (Consumer, Farmer, Industry, Short Food Supply Chain, Technology Provider). Additionally, a user may access the large interactive map and then the 9 Innovation Hubs, visible by location. The 18 Case Studies in the 9 partner countries are accessible through each Innovation Hub.

Once it is completed, a link to the video tutorial "How to Use the SMARTCHAIN Platform" will be clearly visible on the Home Page.

Underneath the main visuals (Figure 3) one finds a link to the Project Website (https://www.smartchain-h2020.eu), a Contact link where users access a form where they may pose questions (this is then sent to ISEKI-Food Association managers of the SMARTCHAIN platform), a link to the Privacy Policy and Copyright information. Additionally, the European emblem (flag) is located at the bottom bar to acknowledge the support received under the Horizon 2020 Research and Innovation programme.

SMARTCHAIN PLATFORM

The central objective of the SMARTCHAIN Project is to foster and accelerate the shift towards **collaborative short food supply chains** (SFSC) and, through specific actions and recommendations, to introduce **new robust business models** and **innovative practical solutions** that enhance the competitiveness and sustainability of the **European agri-food system.**

The SMARTCHAIN Virtual Innovation Platform facilitates knowledge, innovative practical solutions and know-how transfer. Particularly, the platform aims to:

- Generate, share and utilize information on suitable innovations;
- Engage stakeholders in the SFSC sector;
- Disseminate SFSC innovation and cooperation events;
- Organize training activities and generating training materials on best practices in innovation;
- Build an international community through a short food supply chain game.

Enter the platform via your activity
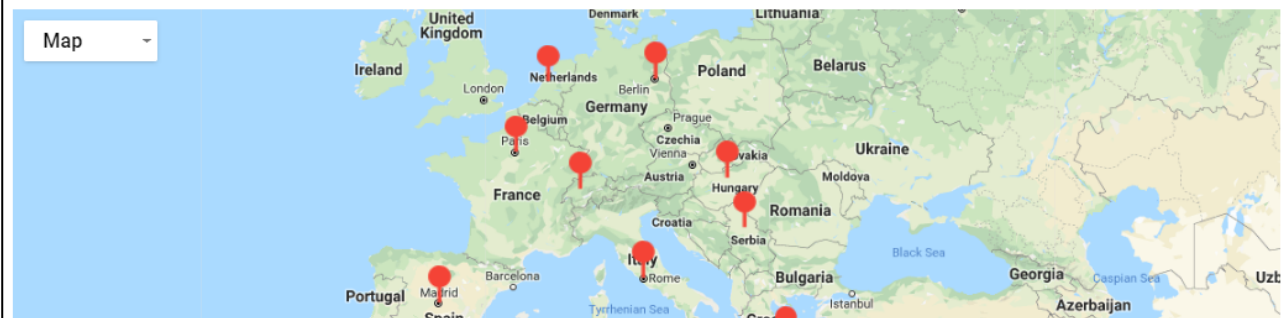
Enter the platform via your location

Figure 2: Home page screenshot of the SMARTCHAIN Innovation Platform.

Smartchain Platform

English ▾

SMARTCHAIN project website
NEWSLETTER
Contact

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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 773785
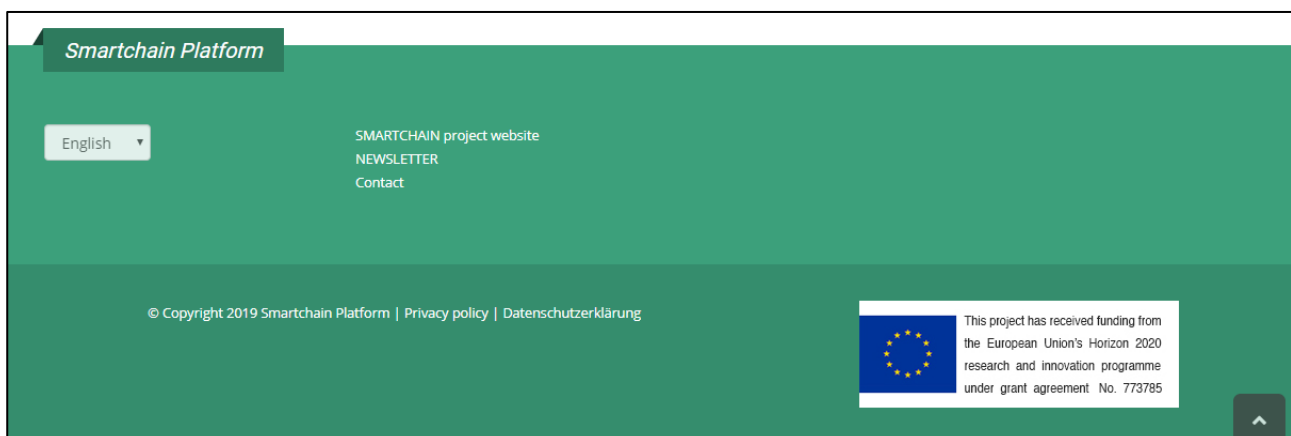
Figure 3: Bottom bar of the SMARTCHAIN Innovation Platform.

2.2. News & Events

Here, there are three choices in the drop-down menu (Figure 4). A "*News*" link to articles submitted by partners about the latest happenings in the project (Figure 5). Each news article should include an appropriate picture or graphic. An "*Events*" link to conferences where SMARTCHAIN will be represented, upcoming SMARTCHAIN partner/WP meetings and Workshops organised by the Innovation Hubs (Figure 6) (see 2.3 below). Registered users will have a 3rd choice, "*Submit Your News/ Events*", which will link to the Message Board of the Innovation Inventory (see 2.4 below). Each of the three links will have a place for users to register for email notification of News & Events updates.

Figure 4: News & Events dropdown menu.
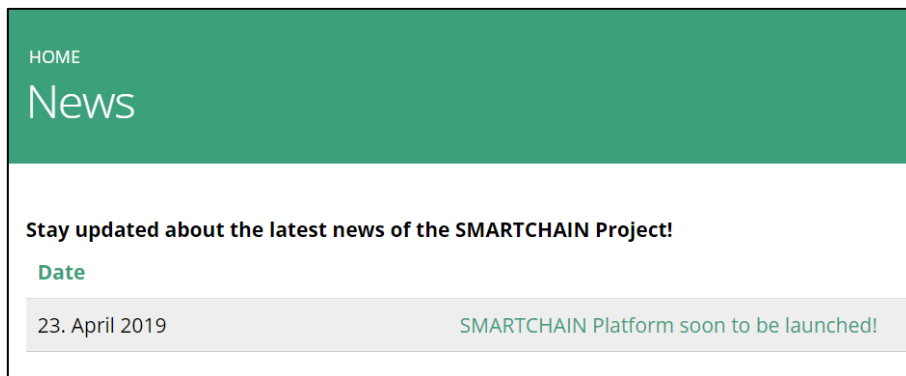
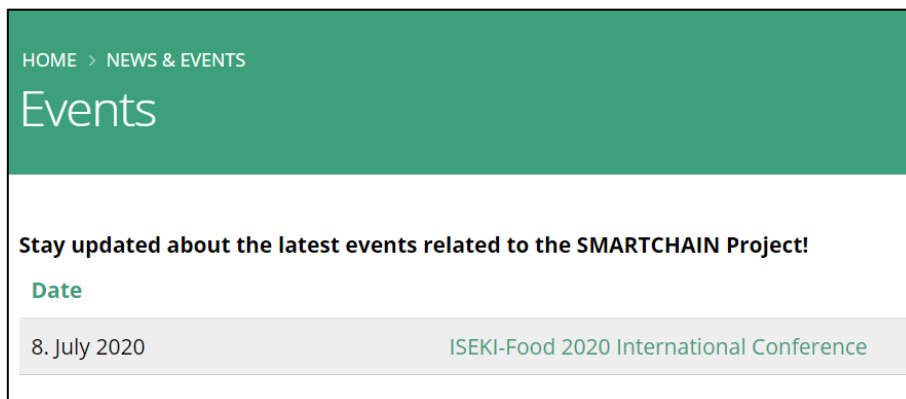*Figure 5: Published news on the SMARTCHAIN Innovation Platform.*

Figure 6: Published events on the SMARTCHAIN Innovation Platform.

2.3. Innovation Hubs

The 9 Innovation Hubs are in France, Germany, Greece, Hungary, Italy, Netherlands, Serbia, Spain and Switzerland. The Hubs aim to facilitate cooperation among different actors/partners and other stakeholders within each country, and links to the hubs will be easily accessible not only via the drop-down menu (Figure 7) but also through the Interactive Map (Figure 8). Hub managers will actively participate in updating the SMARTCHAIN Platform with local information, user questions/answers via the Innovation Inventory Message Board and information on the open, multi-stakeholder workshops organised at the national level in their location. The Platform will also allow interaction and communication among the SMARTCHAIN Hubs, initially through the Message Board and later perhaps in other ways as proposed by the Hub Managers.

Each hub will also link to the two Short Food Supply Chain case studies in that country. Here, users can find information about working Short Food Supply Chains for the most commonly consumed foods in Europe, e.g. fruits and vegetables, meat, dairy and bakery products. Stakeholders in the case studies will also be able to access a Social Innovation Assessment Template (SIAT) organised and implemented by WP3.
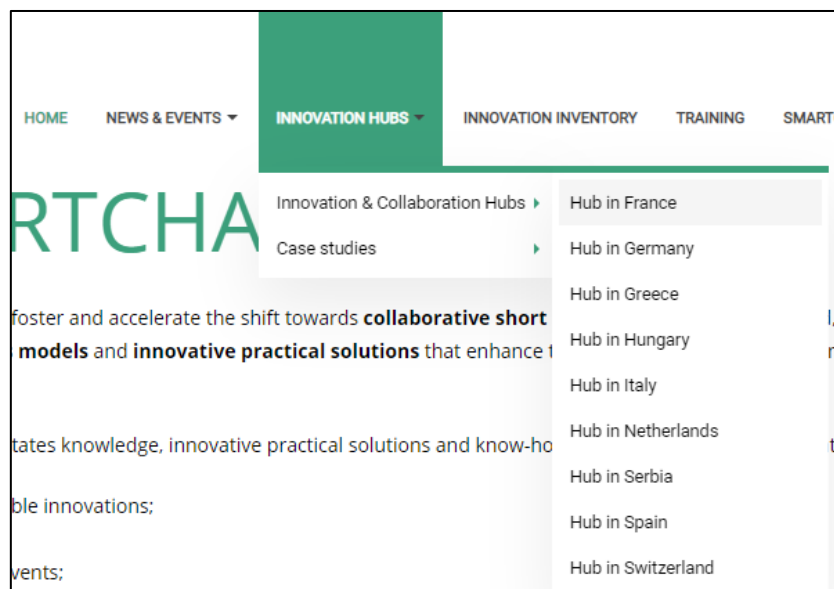

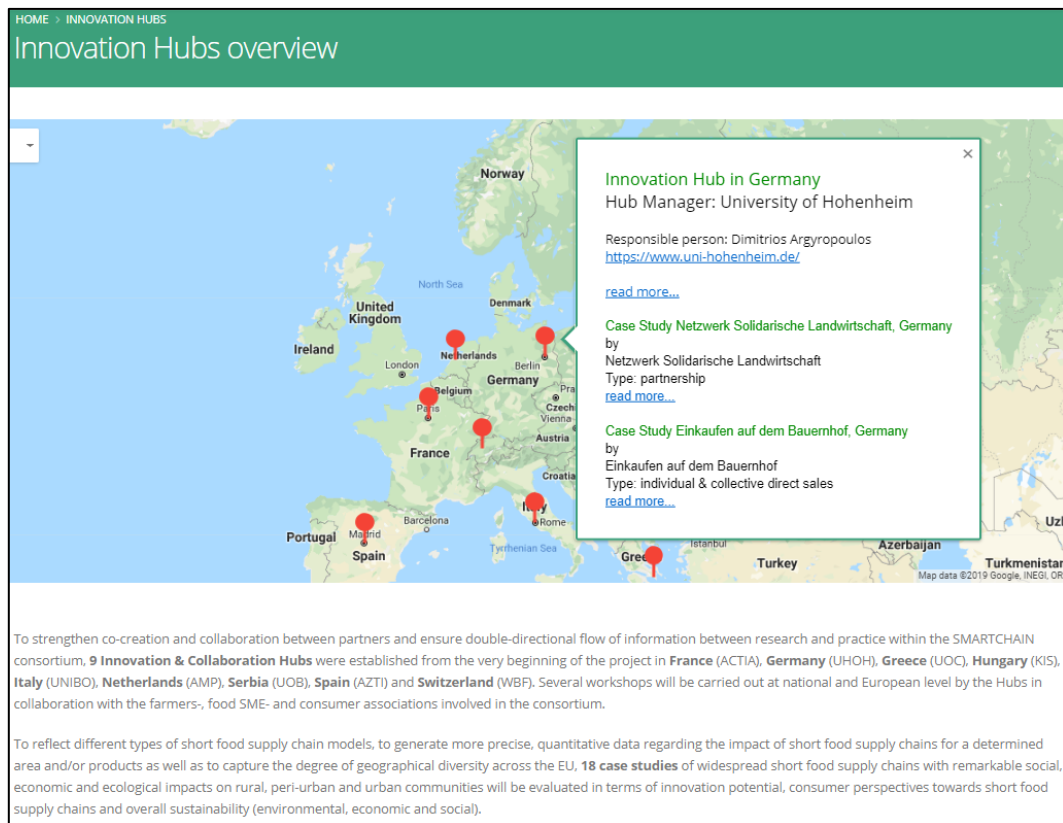*Figure 7: Innovation Hubs and Case Studies drop-down menu.*

Figure 8: Innovation Hubs and Case Studies overview page.

2.4. Innovation Inventory

The Innovation Inventory will be organised and managed by IPB (Task 6.2), but available on the SMARTCHAIN Platform. Here, the results from WP2-5 and WP7 will contribute to an on-line inventory (database) of available innovations, solutions and recommendations for the SFSC (Deliverable 6.2). Searching the inventory will be possible through several fields (not yet defined) and search results will include economic & environmental benefits as well as business & policy recommendations for each innovation. Interactive tools will allow interplay between platform users and cooperation among project stakeholders. The following tools are planned by IPB:

- Quick assessment tool. Innovations/solutions which best fit a specific user based on user preferences.
- Rating tool. Platform users can rate innovations/solutions, and this will power a recommendation engine. The recommendation engine will also be applied to training activities and materials (see below).
- Upload tool. Platform users can upload new innovations/solutions into the inventory.
- Crawler tool. Will automatically collect and upload specific information on innovations/solutions already in the inventory.
- Message board. A blog-like board in which users can ask questions, search for partners, announce news and events in the SFSC. The news and events announced here will be displayed together with news and events submitted via the News & Events menu (Section 2.2).

The design of the Innovation Inventory considered the results of the WP1 questionnaire which determined expectations and needs of actors and stakeholders (Deliverable 1.2 and 1.3). 3 categories of expectations and 7 categories of needs were incorporated into the design of the Innovation Inventory, as follows:

Expectations: Feedback and Sharing of Experiences, Knowledge of Actors and Stakeholders of SFSC, Analysis of Current Situation.

Needs: Diffusion and Awareness, Education of Stakeholders, Feedback, Methods and Data Collection, Networking, Policy Support, SFSC Dynamics.

2.5. Training

This section of the website will include several links where users can choose among various trainings. As of now, the Training links will be as follows (this may increase or change later on):

1. "Use of the SMARTCHAIN Platform" A video tutorial for users that can also be accessed by a link on the Platform Home Page.
2. "Hub Management" The video-recording and supporting material of this virtual workshop will be restricted to project members. If possible, a link to this video-recording may also be available on the Innovation Hubs drop down menu.
3. "Training Materials" Outcomes (from e.g., coaching and peer-to-peer learning) and training activities (e.g., video-recordings, presentations, reports, webinars) from the 18 regional multi-actor innovation workshops, 2 per Innovation Hub, will be available here (collected and curated by IPB). Materials from relevant external sources may also be available. Each link will be preceded by a short paragraph in the form of a news article describing the type of training material available there. Based on user profiles, trainings will be suggested for individual users by the recommendation engine (see Rating Tool in 2.4 above). Additionally, if available, sections on Social Innovation (from WP3) and Media Trainings (from WP8) will be included. These materials may be available on the ISEKI-Food e-learning Platform through the SMARTCHAIN logo (to be inserted next to the other project logos) (Figure 9).
4. "Best practices in Innovation" An e-learning course in English that will be developed and complimented by a Best Practices Guide for hand-on users. This course will be available on the ISEKI-Food e-learning Platform (Figure 9).
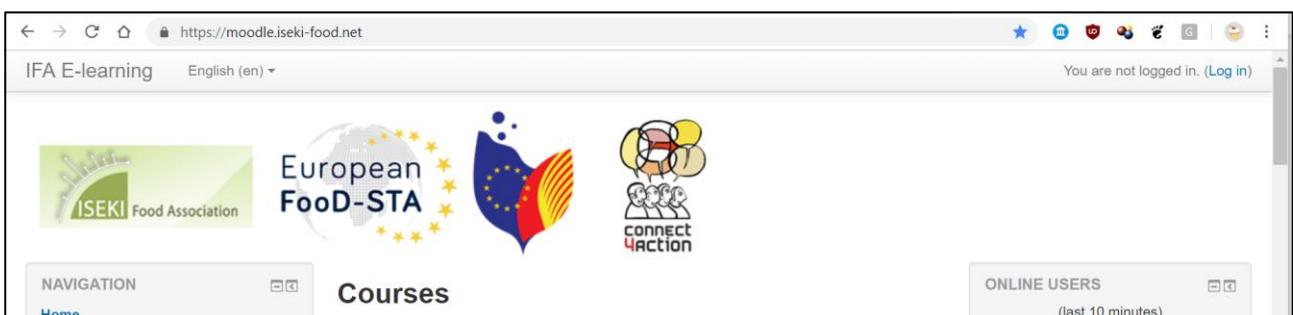

Figure 9: ISEKI-Food e-learning platform homepage.

2.6. Game Model

The Transition/Game model will form the foundation for recruitment and promotion of the SFSC. The Model will incorporate classic game elements (e.g., points, levels, goals, and rewards) into non-game contexts that can increase user engagement. Efficient and effective communication will occur on 4 levels:

- Level 1: will mainly be executed via newsletters, social media and LinkedIn groups. The primary goal is to inform stakeholders and others and seduce them into joining the network.
- Level 2: meetings will be organized by regional alliances to promote the SFSC mission. For this a professional promotional package may be developed.
- Level 3: will take place in Challenge Rooms, an on-line context that is larger than any given geographical region.
- Level 4: is where the entire SMARTCHAIN consortium can be actively involved creating a truly international community.

The game model is planned to not only allow interaction on various levels: local, regional, national and international, but also to be available to any size and stage of stakeholder, from individuals to large multinationals and from beginning workers to experienced executives. The gamification study which will decide the features and build the game model is being organised by partners AMP and UU (Task 6.4).

Marketing of the game model to different stakeholder groups may be a part of the Platform based on a marketing strategy also developed in Task 6.4.

2.7. Register/Log In

Users can register on the SMARTCHAIN Innovation Platform by filling in their data on a Registration Form easily visible on the main menu bar (Figure 10, Figure 11). The Registration Form asks, in the beginning, "Motivation for Registration". This is to encourage registrants to complete this section. This short "Motivation" text will be available in the person's profile, visible to Hub Managers and Managers of the Platform, and may later prove relevant for analysis of registrant desires as it tells what users want from the Platform.

The Registration Form also asks for personal information such as name, affiliation and stakeholder role, and requires Registrants to choose a password and the Innovation Hub that interests them.

Finally, the form asks for several communication methods (email, phone, social media accounts) so that contacts can be made using any or all of them, thus reaching users who may prefer different contact methods.

The Registration Form was designed by gathering input from all Hub Managers.

All submitted Registration Forms will be checked by Platform managers to ensure that only real people register. There will be no rejection of any real person registrant.

Figure 10: Registration form on Innovation Platform (part 1)

Figure 11: Registration form on Innovation Platform (part 2)

3. Technical specifications

The SMARTCHAIN Innovation Platform is hosted at the server of ISEKI-Food Association and is built using the content management framework Drupal 7. A current total of 21 roles have been defined to allow for finely grained access permissions: Two roles per innovation hub country (2x9=18) were created, plus two administrative roles as well as the role for anonymous users.

The communication between website and users is encrypted via the HTTPS protocol, using a "domain verified" certificate issued by the organisation "Let's Encrypt".

The SMARTCHAIN Innovation Platform is running on an open source software stack: The operating system is a Linux distribution called "CentOS 7" on which the "Apache" webserver and the SQL database "MariaDB" are deployed. The programming language used for the content management framework "Drupal 7" is "PHP".

The presentation layer of the website ("Theme") is based on "Bootstrap" which allows for a responsive, mobile devices-friendly look and feel.

The Drupal installation is comprised of a "core" which is then enhanced by "modules" that provide more functionality to the website.

Well over fifty modules are installed on the SMARTCHAIN innovation platform, with one of the most important being the "Views" module which acts as an SQL query builder. "Views" allows the elegant construction of database queries which retrieve and output stored information.

4.   Conclusion

The SMARTCHAIN Platform is functional and will continue to be updated throughout the life of the Project by ISEKI-Food and with input from IPB for the Innovation Inventory and AMP and UU for the Transition/Game Model. Updates and maintenance will continue after the end of the project by the ISEKI-Food Association and the site will remain available to be used by partners and others.

In the short-term, the Platform will have links to the Case Studies for each Innovation Hub and more specific text about the Innovation Hubs following the Hub Management Virtual Workshop (D6.3) planned for 20 May 2019. In the longer-term, the Innovation Inventory will become active, the Training tab will contain appropriate materials, and the Transition/Game Model will become available.