1. PUBLISHABLE SUMMARY

Summary of the context and overall objectives of the project (For the final period, include the conclusions of the action)

The project aims to develop and implement a shared vision of best practice within the EU and China that will enhance food safety, deter food fraud, restore consumer trust, deliver mutual recognition of data and standards and support the flow of agri-food trade between the two trading blocks to promote economic growth.
The specific objectives of EU-China-Safe include:
a) To define a shared framework for harmonisation and visualisation of data that will enable convergence of standards and practices.
b) To improve transparency in management of the food chain through the development of a digitised DNA system and innovative traceability tools.
c) To develop, in collaboration, new/improved food authenticity surveillance systems.
d) To develop, in collaboration, improved food safety systems and practices.
e) To build confidence in EU-China trade by improved understanding of consumer practices and regulatory frameworks, the latter by developing and demonstrating mutual recognition of laboratory standards and results.
f) To enhance EU-China co-operation and knowledge exchange through a series of joint initiatives on training and dissemination, in the area of assuring the integrity of exported and imported food.
The focus of these objectives is to bring about improvements in consumer confidence and safety and facilitate sustainable growth in trade between the EU and China.

Work performed from the beginning of the project to the end of the period covered by the report and main results achieved so far (For the final period please include an overview of the results and their exploitation and dissemination)

During the first reporting period, WP1 dedicated to collect, harmonise, share and archive of data collected and generated by the project delivered the Data management plan. WP2 aimed at the exploration of various traceability techniques and technologies of several different products moving between Europe and China has started through two approaches: (a) DNA-based traceability and blockchain technology to provide provable provenance of the pork products and combined it with DNA sampling technology which will verify the parentage of the final product. (b) Detection of inconsistencies in recorded claims by undertaking value chain mapping and analysis towards establishing the veracity of the claims for traceability systems. The work looks specifically at exports of wine from the Bordeaux-region of France to the Chinese market. WP3 deals with knowledge transfer and implementation of innovative methods to combat food fraud. The fraud detection methods were transferred from the EU to China and vice versa. It concerned particularly detection methods for wine, dairy products, processed meats, organic fruits and vegetables and spices. State-of-the-art methods developed in either the EU or China, are transferred to the other partner organisations and performance is compared. WP4 aims at licensing, regulations and innovative testing methods that might impact international trade. (a) A method for the analysis of chlorate residues in milk and milk powders was established in EU and transferred to and extended in China to other ionic contaminants. (b) Methodology was established in EU for the analysis of the bound residues of eight banned nitrofurans, which includes four new compounds. The methodology for has been ISO17025

accredited for the six of them. The establishment of methodology for 12 parent nitrofuran drugs using more sensitive LC-MS/MS instrumentation is ongoing. (c) An analytical test method has been developed for the analysis of antiviral drug residues in poultry muscle. (d) The development of a multianalyte enzyme inhibition screening method for pesticides residues is underway focusing on 13 active substances. WP5 aims at identifying communication needs, expectations, perceived barriers and facilitators to building trust and confidence, and on consumer views. Work on the analysis of food trade impediments between the EU and China has identified two commodities of interest (peanuts and infant formula milk) and plans are underway to engage with key industry and government stakeholders. Methods for file transfer and storage for the establishment of the virtual lab RL2020 are being established. Work on case studies to examine the economic impact of food incidents is underway, and planning for scenarios to use for future exercises is being finalised. Dissemination and communication activities (development of a bilingual project website, e-Newsletters, flyers, scientific publications, presentations at events, organisation of focused workshops and demonstration events, Open or Info Days and international conferences) were implemented to inform a large audience. A communication and dissemination plan has been also prepared (WP6). Finally, the efficient running of the project so far has been guaranteed by the integrated effort of the management team (WP7), in accordance with the ethical requirements that the project must comply with (WP8).

Progress beyond the state of the art, expected results until the end of the project and potential impacts (including the socio-economic impact and the wider societal implications of the project so far)

The project will lay the cornerstone of an EU-China food safety control system integrating food control management, food legislation, food inspection, food control laboratories, and food safety and quality information, education and communication. By innovating in each of these five domains, the project will develop a unique EU-China Joint Laboratory Network and will implement feasibility studies allowing EU-China mutual recognition to be achieved. These studies will determine how best, method harmonisation and data transfer can take place to lay the foundations for future large-scale integration. EU-China-Safe will deliver the environment for high level regulatory and scientific contacts and the means of developing trust between all stakeholders in food supply systems. EU-China-Safe is built on a multi-actor partnership, composed of stakeholders involved at every level of the food supply chain. EU-China-Safe brings together major research actors, reference laboratories, regulators, small technology enterprises and large food companies and assured significant consumer participation. Policy makers and food business operators will also be consulted through the use of a Stakeholder Advisory Board and an Industry Implementation Group. The focus of the project is not on developing short term solutions but to build a powerful network of food chain actors that will help build on the project outcomes to ensure a lasting and sustainable impact. As stated, the consortium will bring together, in a partnership, key actors in Europe and China involved in food safety. The co-design of the project, extensive bilateral communication, regular meetings and dialogue will help to build trust and understanding and to develop a common EU-China vision in this area. Twinning activities will enable substantial transfer of knowledge that will be further exploited by other organisations and stakeholder platforms and through the Industry Implementation Group formed during the project.

Address (URL) of the project's public website

http://www.euchinasafe.eu/

KEY NUMBERS

- **33 Partners**: 15 in the EU, 18 in China.
- **8 Languages**
- **48 Months** (Sept. 2017 – Aug. 2021)
- **5 Commodities**: meat, dairy products, wine, fruits and vegetables, spices
- **10 Reference Laboratories**: 1 European, 5 national in the EU, 4 national in China

FACILITATORS

- Stakeholder Advisory Board
- Industry Implementation Group

Data management structure and procedures

Scientific methods

Traceability

- DNA-based traceability
- Value chain mapping an analysis

Authenticity

- Targeted and non-targeted analytical methods for food fraud

Safety

- Chemical and microbiological analytical methods for food safety

Twinning activities

Socio-economic sciences

EU-China Laboratory Network

- Food safety communication
- Analysis of trade barrier
- Development of RL2020

Knowledge transfer and training

- Training & exchange programmes
- Communication & dissemination

OUTPUTS

- Cost & time-effective reuse of data for other projects
- Enhanced end-consumer faith in the provenance of food products
- Recommendations on data important to identify inconsistencies (fraud, substitution, counterfeiting)
- Standardisation of approaches to exchange of information
- Convergence of food fraud management measures
- Improvement of food safety
- Enhanced trade between the EU and China
- Show-case and demonstration of best-practices and state-of-the-art in high-quality food analysis

AUDIENCE

- Research actors
- Reference Laboratories
- Regulators
- Technology enterprises
- Food companies
- Consumers