

## OIE Cooperation Project

# Capacity development for implementing a Geographic Information System (GIS) applied to surveillance, control and zoning of avian influenza and other emerging avian diseases in China

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Parent Reference Laboratory

Collaborating Centre for Epidemiology, Training and Control of Emerging Avian Diseases at Istituto Zooprofilattico Sperimentale delle Venezie (IZSve)

**Legnaro (PD) - Italy**

Candidate Laboratory

Chinese Academy of Inspection and Quarantine (CAIQ)

**Beijing - China**

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**Annual report**

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## Introduction

The OIE Cooperation Project between the OIE Collaborating Centre for Epidemiology and Training on Emerging Avian Diseases (IZSVe), Parent Collaborating Centre, and the Chinese Academy for Inspection and Quarantine (CAIQ), Candidate Collaborating Centre, entitled “Capacity development for implementing a Geographic Information System (GIS) applied to surveillance, control and zoning of avian influenza and other emerging avian diseases in China” officially started on 27th October 2014.

The main objective of the project is to allow CAIQ to acquire expertise to implement GIS applications for surveillance, disease control and zoning. In order to achieve this objective training activities on GIS management techniques, spatial statistical analyses and spatial models integrated with GIS applications will be implemented.

GIS can be beneficial to veterinary organisations by providing a means to map their own data and use them for internal analysis but also to inform other organisations about their activities. In order to organise a successful GIS platform, it is necessary to integrate a well-designed GIS framework into the organisational veterinary data management system workflow. The IZSve and the CAIQ believe that a system that integrates GIS data with epidemiology and surveillance information, can reduce the complexity of their analysis (i.e. the biosecurity evaluation for a new candidate quarantine farm), minimise mistakes and enhance transparency through inter-application operability, communication and cooperation.

## Background information

Geospatial technology can benefit veterinary services by providing them the ability to map and spatially analyse their own data. While the use of maps to share information has the potential to become a useful tool to support surveillance and emergency activities, veterinary services, that simply do not have the know-how and the required resources to dedicate appropriately trained staff and time to capacity building, can result unconnected from this growing geospatial community.

There is a range of online guidelines and short courses available to individuals and/or organisations wishing to use GIS and spatial analysis for their projects (such as the series of courses in ArcGIS). Beyond these standard means, there are also numerous studies and scientific papers available to help users from veterinary organisations to design and implement their intended mapping activities. However, according to the experience on GIS, spatial analysis courses, and consultancies acquired by the IZSve in the last 15 years, it has been found that standard GIS training offers pay little attention to how veterinary services have to act in practice in building their GIS and spatial analysis capacity.

This Cooperation Program, designed for technical and managerial staff working at the CAIQ in China, has the main goal to build the capacity needed to acquire expertise in order to introduce, design and implement GIS applications for surveillance, disease control and zoning. In particular, the cooperation program has been modulated to train the Candidate Institute scientists on (i) practical principles on identification, traceability of live animals, and surveillance (ii) GIS management techniques, and (iii) spatial statistical analyses and spatial models integrated with GIS applications. All applications and examples refer to avian influenza and other emerging avian diseases occurring in China.

Soon after the project started in October 2014, a kick-off meeting was held in Beijing (China) with AQSIQ and CAIQ scientists and top managers (Zhao Zengliang - AQSIQ Deputy Director General, Fang Zhiqiang - CAIQ Vice President, Dou Shulong - AQSIQ Deputy Director, Jiang Hongqi - Chongqing CIQ Deputy Director). This meeting highlighted that even if the participants understand the importance of using GIS to perform their activities, there was little awareness of what a GIS could do and how a GIS office should be organised. Therefore it was mutually agreed to organise a series of activities to improve both i) the CAIQ management awareness for developing an effective GIS program to support CAIQ activities, ii) the assessment of the GIS capabilities of CAIQ.

The first year of activities were entirely dedicated to the two above-mentioned objectives.

## Phase 0: Inception Phase

The activities performed during the inception phase have been already described in the Interim Report (Annex 1). One of the elements that emerged during this phase was the difficulty for the CAIQ to acquire spatial (i.e. farm location in terms of coordinates) and non-spatial (e.g. farm name, species reared) information about the farm distribution in China and some ancillary background spatial data (e.g. satellite images, land use).

## Phase I: Preparatory activities

Phase 1 was dedicated to:

- the assessment of the CAIQ GIS capabilities;
- the improvement of the GIS awareness among the CAIQ scientists.

In the Interim Report (Annex 1) the results of Activity 1.1 – Collation and search of relevant updated information and Activity 1.2 – Baseline assessment of CAIQ GIS organisation and capacity - has already been illustrated.

In the present document it is just highlighted that:

- a) In its routinely GIS activities CAIQ performs a risk analysis of the farms under its jurisdiction for the purpose of disease control and international trade. Spatial considerations (together with good management and biosecurity plans) play important roles in this analysis. IZSve and CAIQ scientists agreed on the fact that these activities are not an application of the Zoning procedure defined under the provisions of chapter 4.3 of the OIE Terrestrial Code.

- b) The availability of spatial data in China is very scarce. The attempt made to get in touch with the Chinese spatial agency (National Administration of Surveying, Mapping and Geoinformation of China - <http://en.nasg.gov.cn/article/Programs/MainProjects/201404/20140400009562.shtml>) was of no avail. The availability of spatial data appears to be one of the major constraints in the development of the project.

### Activity 1.3 Introductory Workshop

Workshop agenda, list of participants, and workshop minutes are presented in the report of the introductory workshop (Annex 2). All presentations are available on the website (<http://gis.izsvenezie.it/OIE/IZSve-CAIQ/>)

The workshop agenda was drafted according to the approved rationale and the ideas developed during the kick-off meeting. The aim of the workshop was to present the activities related to the application of GIS methods in the veterinary field and the tools to be used for zoning and to facilitate an open discussion among the participants on these topics.

The participants, especially Mr Dou Shulong, AQSIQ Deputy Director, showed great interest in the GIS technological aspects and particularly on WebGIS. Mr Dou Shulong suggested to refine the cooperation program activities toward the recently emerged CAIQ needs. After a long discussion the following elements were proposed:

1. to implement a start-up WebGIS application in order to improve the spatial data accuracy and capture;
2. to implement a draft procedure to perform a risk analysis of farms under CAIQ jurisdiction, based on spatial consideration;
3. to refine the capacity building approach on spatial analysis including topics that have a short term application on CAIQ activities.

Both IZSve and CAIQ scientists agreed to propose to the OIE the discussed changes of the program, in order to get the needed approval. An official authorisation to introduce WebGIS application training activities and to refine the other approved training actions was requested by IZSve to OIE in November 2015.

### Activity 1.4 Assessment of the availability and legal usability of spatial data

Since the very beginning of the project, the spatial data availability was one of the issues investigated by the CAIQ scientists. The researches revealed that in China the availability of spatial data is very poor. The CAIQ GIS office was able to purchase a set of data on:

- Administrative divisions
- Names of administrative divisions
- Natural geographic names
- Railroads
- Street lines
- Waterlines

For assessment purposes the above listed data were metadated and added in a IZSve metadata catalogue specifically developed for this project (<http://gis.izsvenezie.it/OIE/IZSve-CAIQ/>).

## **Phase II: Capacity building**

The first part of the Capacity Building phase, was dedicated to the implementation of a training course for two CAIQ scientists at IZSve. Due to some problems related to the Visa release from the Italian Embassy in Beijing, the training shifted almost three months later than the scheduled time (from July 2015 to October 2015).

### Activity 2.1 Training of two CAIQ scientists on GIS planning at the IZSve

Training agenda, list of participants and minutes are reported in Annex 3

The training program was drafted according to the approved Activity 2.1, in order to better explore the feasibility to implement a start-up WebGIS application and a draft risk analysis procedure.

The training course allowed a general increase of GIS awareness and know-how for the two trained CAIQ scientists. The CAIQ scientists gained a clear idea of what GIS planning is, and in particular of the required steps and documentations needed for a GIS project, and of the technologies required for developing a WebGIS start-up. As a material training output, a series of documents for internal GIS planning were delivered to the participants. The Business Case described in Annex 4 is an example of the documents produced.

The documentation produced have been used by the CAIQ scientists to support the development a WebGIS Application. The proposal is under evaluation by the CAIQ managers.

## **Project changes**

During the training period, the feasibility to include the proposed changes in the cooperation project was analysed and the impact evaluated. Both the IZSve and CAIQ scientists consider the changes feasible and they agreed to review the budget in order to include an IZSVE expert in the Business planning to support the development of the WebGIS start-up.

From a practical point of view the following activities have been reformulated:

- 2.5 Training of two candidate institute scientists on GIS management at the parent institute;
- 2.6 Training of two candidate institute scientists on GIS analysis at the parent institute;
- 2.7 Training of four candidate institute scientists on Zoning at the parent institute;
- 2.8 Editing a conceptual model for developing Zoning areas in China

as follows (amendments are underlined):

- 2.5 Training of two candidate institute scientists on GIS management and WebGIS techniques at the parent institute;
- 2.6 Training of one candidate institute scientist on GIS analysis at the parent institute;
- 2.7 Training of three candidate institute scientists on development of a GIS system to support the Zoning activities at the parent institute;
- Editing a conceptual model for developing Zoning areas in China and coaching in developing a WebGIS application.

The documents “Changes between the approved and the new version of the cooperation project.” (Annex 5) report the proposed changes.

## **Follow-up**

By end of January 2016 the “Introductory workshop proceedings” (Output 1.3) were completed, revised and published on the cooperation project web pages.

In January 2016 the CAIQ staff will start the installation, testing and configuration of the “server side” of the WebGIS application. This coaching phase will end in March 2016 when the IZSve experts will visit the CAIQ GIS office.

In March 2016 a meeting in China (presumably in Beijing) will be organised. During the meeting the following activities will be performed:

1. the “client side” of the WebGIS application will be developed by a jointly team formed by the IZSve experts and the CAIQ IT staff;
2. the first-cut Zoning related risk analysis framework will be discussed and outlined and a filed test of the framework will be performed.

In summer (presumably in July 2016) three CAIQ scientists will be trained at IZSve on the following topics:

- a) GIS project study, design and implementation;
- b) exploratory spatial data analysis to support the Zoning related risk analysis of farms under CAIQ jurisdiction;
- c) refinement and tuning of the WebGIS application;
- d) planning of the training program for local CIQ personnel on GIS and the WebGIS application.

In Autumn (presumably in October 2016) the exploratory spatial data analysis to support the zoning related risk analysis of farms under CAIQ jurisdiction will be finalised, documented and linked to the WebGIS application. After the framework release the test and validation procedure of the framework will be organised.

## List of Annexes

- 1 - First Interim Report (Annexes omitted)
- 2 - Introductory Workshop report
- 3 - Report of the training of two CAIQ scientists on GIS planning at the IZSve
- 4 - Business Case
- 5 - Changes between the approved and the new version of the cooperation project
- 6 - Pictures
- 7 - Financial report
- 8 - Revised budget plan

## OIE Cooperation Project

# Capacity development for implementing a Geographic Information System (GIS) applied to surveillance, control and zoning of avian influenza and other emerging avian diseases in China

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Parent Reference Laboratory	Collaborating Centre for Epidemiology, Training and Control of Emerging Avian Diseases at Istituto Zooprofilattico Sperimentale delle Venezie (IZSVe) <b>Legnaro (PD) - Italy</b>
Candidate Laboratory	Chinese Academy of Inspection and Quarantine (CAIQ) <b>Beijing - China</b>

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**Interim report**

*29<sup>th</sup> April 2015*

## Document information

Title:	Interim Report of the OIE cooperation project IZSve-CAIQ
Creator:	Matteo Morini, Paolo Mulatti, Nicola Ferrè
Date:	13/01/2014
Subject:	Interim report
Publisher:	Istituto Zooprofilattico Sperimentale delle Venezie - IZSve (Italy)
Description:	Interim Report of the OIE cooperation project IZSve-CAIQ. It describes the activities performed during the first 6 months of the project.
Relation:	OIE cooperation project IZSve-CAIQ
Identifier:	IR_2015.docx

## Revisions

Date	Author	type
20/01/2015	Ferrè	Set the doc as deliverable
20/04/2015	Matteo Morini	1 <sup>st</sup> review
25/04/2015	Nadia Micoli	2 <sup>nd</sup> review
28/04/2015	Ferrè	Editing

## Introduction

The OIE Cooperation Project between the OIE Collaborating Centre for Epidemiology and Training on Emerging Avian Diseases at Istituto Zooprofilattico Sperimentale delle Venezie (IZSve) and the Chinese Academy for Inspection and Quarantine (CAIQ), entitled “Capacity development for implementing a Geographic Information System (GIS) applied to surveillance, control and zoning of avian influenza and other emerging avian diseases in China” officially started on 27<sup>th</sup> October 2014.

The main objective of the project is to allow CAIQ to acquire expertise to introduce and design GIS applications for surveillance, disease control, and zoning. To achieve these objectives training activities on GIS management techniques, spatial statistical analyses and spatial models integrated with GIS applications have to be implemented.

GIS can be beneficial to veterinary organisations by providing a means to map their own data and use them not only for internal analysis but also to inform other organisations about their activities. In order to organise a successful GIS platform, it is necessary to integrate well-designed GIS framework into the organisational veterinary data management system workflow. IZSve and CAIQ believe that a system integrating GIS data, with epidemiology and surveillance data, can hide complexity from users, minimise mistakes and enhance the transparency through inter-application operability, communication and cooperation.

## Inception phase and preparatory activities

The project inception (activities put into practice before the 27<sup>th</sup> of November 2014) was dedicated: (i) To create and define, by means of remote connection tools, the project environment that will be used to exchange documents and information, (ii) to plan the first mission, (iii) to start the collection of relevant updated information on Zoning (Activity 1.1).

## Project environment implementation

Two elements were tentatively defined for document exchange:

1. A Dropbox folder (Dropbox.com), named “OIE Cooperation project IZSve – CAIQ”, was created. All the scientists involved in the project were invited to join this folder. The aim of the folder is to exchange the final version of public documents.
2. A FTP folder hosted by IZSve. The IP address of the folder is: [ftp://90.147.123.12/OIE\\_Coop\\_IZSve\\_CAIQ](ftp://90.147.123.12/OIE_Coop_IZSve_CAIQ). The access to this folder can be only by means of user name and password provided by IZSve to the project scientists. The aim of this folder is to contain reserved documents and draft versions.

## Annex 1 - First Interim Report of the OIE cooperation project IZSve-CAIQ

A web site was also published. The DNS of the web site is:

<http://gis.IZSVenezie.it/tests/OIE/IZSve-CAIQ/index.php>

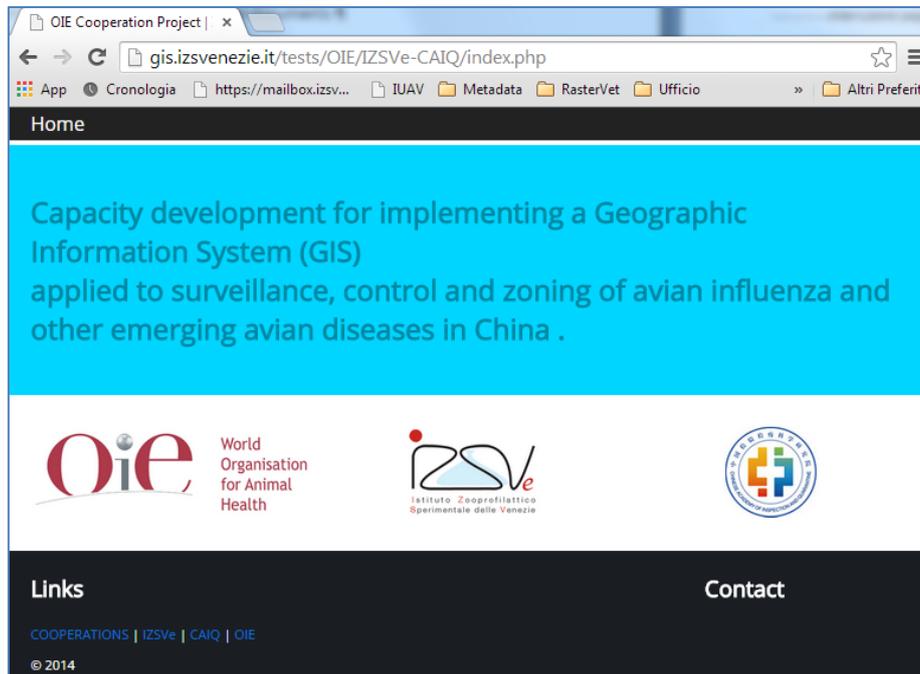


Figure 1: home page of the cooperation project

At present, the web site consists of only an html page. It will be expanded with documents and information that OIE, IZSve and CAIQ will agree to publish.

### Activity 1.1 Collation and search of relevant updated information

A bibliographical review was carried out by a search of relevant keywords in well-known literature repositories, including PubMed, Web of Knowledge, and the OIE websites. The results were further skimmed by adding definite filters to obtain a core of published papers both to better contextualise the concept of Zoning in veterinary activities and to clarify the glossary already present in the OIE Terrestrial Animal Health Code (OIE Code).

A detailed description of the result of activity 1.1 can be founded in annex 1 (Annex 1 – Biblio search)

### Activity 1.2 Baseline assessment of CAIQ GIS organisation and capacity

From 22<sup>nd</sup> to 27<sup>th</sup> November 2014 the first mission of IZSve experts to China was carried out to perform a baseline assessment of CAIQ as far as regard GIS issues are concerned (Activity 1.2). A detailed description of the activities implemented during the mission can be found in annex 2 (Annex 2 – BTOR meeting November 2014).

The selection of a workable dataset on surveillance, identification and traceability by CAIQ is still in progress.

### Activity 1.3

The introductory workshop will be jointly organised by IZSve and CAIQ in May 2015.

Annex 1 - First Interim Report of the OIE cooperation project IZSVe-CAIQ

#### **Activity 1.4**

In progress: assessment of the availability and legal usability of spatial data.

#### **Enclosed documents**

Annex 1 (Bibliographical search)

Annex 2 (BTOR meeting November 2014)

Annex 3 (Financial Report)

**OIE Cooperation Project**  
**Capacity development for implementing a Geographic Information System (GIS) applied to surveillance, control and zoning of avian influenza and other emerging avian diseases in China**

**Introductory Workshop**  
**GIS applications to support entry-exit inspection and quarantine activities**

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# LIST OF PARTICIPANTS

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<b>Name</b>	<b>Department</b>
Mr Qiu Songyin,	CAIQ
Mr Chen Ke	CAIQ
Mrs Liu Xiaofei	CAIQ
Mr Nicola Ferrè	IZSve
Mr Paolo Mulatti	IZSve
Mr Andrea Ponzoni	IZSve
Mr Matteo Mazzucato	IZSve
Mr Jiang Hongqi	Chongqing CIQ
Mr Liao Jinwan	Guangdong CIQ
Mr Xi Xin	Zhuhai CIQ
Mr Ji Fan	Shenzhen CIQ
Mr Chen Yonghong	Guangdong CIQ
Mr Dou Shulong	AQSIQ (deputy director)
Ms Li Yijuan	AQSIQ (deputy director general)
Mr Fang Zhiqiang	CAIQ (vice president)

# WORKSHOP AGENDA

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## DAY 1 – 14/05/2015

09:00 – 09:45	Welcome and Introductions Workshop Goals/Objectives	Qiu Songyin
09:45 – 10:45	GIS Management Strategies for entry-exit inspection and quarantine sector	Nicola Ferrè
10:45 – 11:15	break	
11:15 – 13:00	GIS Software and applications for an Import/Export Organization	Matteo Mazzucato
13:00 – 14:30	lunch	
14:30 – 15:30	GIS analysis for an Import/Export Organization	Paolo Mulatti
15:30 – 16:30	The role of the IT infrastructure for GIS applications	Andrea Ponzoni
16:30 – 17:30	End of day 1. Discussion on: “What GIS for entry-exit inspection and quarantine sector”	Moderator: Qiu Songyin

## DAY 2 – 15/05/2015

09:00 – 09:45	Day 1 Wrap-Up	Qiu Songyin
09:45 – 10:30	Q&I System for Animals Exported from China Mainland to Hong Kong and Macao	Xi Xin
10:30 – 11:00	break	
11:00 – 11:30	Requirements Analysis of Export Livestock Information Management System	Ji Fan
11:30 – 12:30	End of day 2. Discussion on: “What GIS for entry-exit inspection and quarantine sector [continue]”	Moderator: Qiu Songyin

# MISSION REPORT

12th-15thMay 2015

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## Day 1 Tuesday 12th May 2015 – preliminary meeting

### Topics:

- introductory meeting
- revision and approval of 1st meeting documents

### Participants:

<b>Italy</b>		<b>China</b>	
Nicola Ferrè,	Head of GIS office	Liu Xiaofei,	CAIQ
Paolo Mulatti,	Epidemiological Surveillance, Veterinary Legislation and Animal Welfare Unit	Qiu Songyin,	CAIQ
Andrea Ponzoni,	IT manager head of IZSVe IT office		
Matteo Mazzucato,	GIS technician		

### Minutes

Mr Ferrè informed Chinese colleagues that the Interim report of the project (doc name: Interim report.pdf – date: 29/04/2015) was submitted to OIE and a positive feedback was provided by Gounalan Pavade (eMail date: 30/04/2015).

### Discussion

#### Web site

The participants agreed on the importance of a well structured Cooperation Project website. The group agreed also to increase the quantity of documents published. It was also proposed to improve the home page with the following menu voices: Home, Project, Participants, Reports, Events, Multimedia.

All the information and documents published in the web site of the project must be approved by both partners.

The participants hope for an improvement of the web site contents before the beginning of Autumn 2015.

Mr Songyin suggested creating a parallel web site in Chinese language hosted in one of their server linked from main web site.

#### Financial matters

Mr Ferrè underlined the importance of keeping the expenditure in line with the approved cooperation project budget. It is clear that each expenditure must be always attested with an invoice or a receipt. The eligible expenditure are those included in the approved budget.

#### Data

Mr Ferrè underlined the importance to collect base maps. He asked Mr Songyin to get in touch with the National Administration of Surveying mapping and Geo-information (NASG) agency to verify the possibility to acquire some spatial info.

*About the spatial analysis*

Mr Mulatti renovated the request of selecting a specific researcher to be trained on spatial data analysis. The selection of the researcher must be done as soon as possible in order to tailor the training materials for the training period at IZSVE. Moreover, Mr Mulatti has proposed that the type of spatial analysis that will be offered during the training period at IZSVE will be based on the ESDA techniques and possibly, after a discussion with the researcher, an upgrade toward more sophisticated techniques will be planned.

*About Information Technology*

According to Mr Ponzoni it is very important to have an interchange with CAIQ IT experts in order to identify the current situation and the future trend of CAIQ IT components that will be possible to exploit for GIS tools and procedures.

*About workshop*

Mrs Liu Xiaofei suggested to reorganize the workshop agenda of “Day 3” in order to include the presentation of Mr Xi Xin on the quarantine and inspection procedures for the exported animals from China mainland to Hong Kong and Macao, and that of Mr Ji Fan on a requirement analysis for the identification of the core elements for an information system dedicated to the management of the livestock export. The proposed change was approved by all the participants.

## Day 2 Wednesday 13<sup>th</sup> May 2015

### Topics:

- Visit to a pig farm and a poultry farm in the Guangdong area.

### Participants:

Italy	China <sup>1</sup>
Nicola Ferrè, Head of GIS office	Liu Xiaofei, CAIQ
Paolo Mulatti, Epidemiological Surveillance, Veterinary Legislation and Animal Welfare unit	Qiu Songyin, CAIQ
Andrea Ponzoni, IT manager head of IZSve IT office	Mr Chen Ke, CAIQ
Matteo Mazzucato, GIS technician	Mr Jiang Hongqi, Chongqing CIQ
	Mr Liao Jinwan, Guangdong CIQ
	Mr Xi Xin, Zhuhai CIQ
	Mr Ji Fan, Shenzhen CIQ
	Mr Chen Yonghong, Guangdong CIQ

### Minutes

The day was entirely dedicated to the visit of two farms that are under AQSIQ supervision in order to show the farm characteristics (e.g.: dimensions, facilities, etc.), the surrounding environment (e.g.: land use, land coverage, etc.) and the organisation of the local CIQ offices to the Italian researchers.

The first farm was a pig farm located in the municipality of Baiyun district.

After a presentation of the participants and the preliminary introductory speeches, the farm manager presented the farm characteristics and briefly described the production cycle in place.

Mr Ferrè briefly explained the role of GIS to support the surveillance and monitoring activities. He presented a possible usage of the GIS analysis that combine environment characteristics, wildlife presence and surrounding farms distribution as a tool to describe the area where the farms under AQSIQ supervision are located. A brief discussion about the disease early warning system managed by Ministry of Agriculture and the availability of maps useful to support GIS activities took also place.

Furthermore, during the visit some issues about the traceability of pigs were discussed.

Another topic discussed was the inspection activities made by the CAIQ personnel.

In the afternoon the visit continued to a poultry farm located in the municipality of Panyu district.

After a presentation of the participants and the preliminary introductory speeches, the farm manager presented the farm characteristics and briefly described the farm activities. He also informed the participants that an IT system was in place in order to manage information related to the restocking program, vaccination, etc.

Mr Ferrè briefly described the OIE zoning and compartmentalisation process and also how the GIS can be used to support those processes.

<sup>1</sup> In this table only the people directly involved in the OIE cooperation project mission are listed. The CAIQ personnel that accompanied the team, as well as the farms personnel, are not mentioned.

## Day 3 Thursday 14<sup>th</sup> May 2015

### Topics:

- Workshop first part – topic presentation
  - o Title: CAIQ and IZSve OIE cooperation project - introductory workshop.
  - o Goal: to present activities related to GIS methods and the tools to be used for surveillance, control and zoning of Avian Influenza and other emerging avian diseases in China in order to improve GIS awareness.

### Participants

<u>Italy</u>	<u>China</u>
Nicola Ferrè, Head of GIS office	Dou Shulong
Paolo Mulatti, Epidemiological Surveillance, Veterinary Legislation and Animal Welfare unit	Liu Xiaofei, CAIQ
Andrea Ponzoni, IT manager head of IZSve IT office	Qiu Songyin, CAIQ
Matteo Mazzucato, GIS technician	Mr Chen Ke, CAIQ
	Mr Jiang Hongqi, Chongqing CIQ
	Mr Liao Jinwan, Guangdong CIQ
	Mr Xi Xin, Zhuhai CIQ
	Mr Ji Fan, Shenzhen CIQ
	Mr Chen Yonghong, Guangdong CIQ

### Minutes

The workshop has been organised in the framework of Phase 1 (Preparatory activities) of the CAIQ-IZSve OIE cooperation project..

### Morning

In the morning session the following presentations were delivered:

- Mr Ferrè - GIS Management Strategies for entry-exit inspection and quarantine sector
- Mr Mazzucato - GIS Software and applications for an Import/Export Organization

### Discussion - morning

Mr Dou emphasized the importance of a GIS strategic plan for defining strategic goals and initiatives to enhance geospatial functionality, services and strategy for a large organisation like CAIQ. Mr Dou also emphasised the importance of efficiently managing data to improve their reuse.

Mr Ferrè highlighted the concept of the IT infrastructure as a way to organise spatial and non spatial information. The dimension of the infrastructure depends on the type and amount of investments (both in terms of human and technical resources) programmed.

### Afternoon

In the afternoon session the following presentations were made:

- Mr Ponzoni The role of the IT infrastructure for GIS applications
- Mr Mulatti GIS analysis for an Import/Export Organization
- Mr Xi Xin Quarantine & Inspection system for animals exported from China mainland to Hong Kong and Macao
- Mr Ji Fan Requirements analysis of export livestock – information management system.

Discussion - afternoon.

Mr Dou emphasized the importance of GIS as a very useful tool for supporting (i) surveillance activities, (ii) food safety programmes (iii) and risk communication. Especially the last feature could play an important role for the CAIQ activities.

Mr Ferrè reminded the fact that GIS needs data. GIS has the ability to combine spatial and non-spatial data and create a data warehouse useful not only for map producing but also for generating “classical” information like tables, graphs etc..

The discussion continued with speculation about the data quality and data harmonisation and the challenges that an organisation like CAIQ could face to gain a well organised data warehouse.

## Day 4 Friday 15<sup>th</sup> May 2015

### Topics:

- Workshop second part – discussion
  - o Title: CAIQ and IZSVe OIE cooperation project - introductory workshop.
  - o Goal: to present activities related to GIS methods and the tools to be used for surveillance, control and zoning of Avian Influenza and other emerging avian diseases in China in order to improve GIS awareness.

### Participants

<u>Italy</u>	<u>China</u>
Nicola Ferrè, Head of GIS office	Ms Li Yijuan, AQSIQ
Paolo Mulatti, Epidemiological Surveillance, Veterinary Legislation and Animal Welfare unit	Mr Dou Shulong, AQSIQ
Andrea Ponzoni, IT manager head of IZSve IT office	Mr Fang Zhiqiang, CAIQ
Matteo Mazzucato, GIS technician	Liu Xiaofei, CAIQ
	Qiu Songyin, CAIQ
	Mr Chen Ke, CAIQ
	Mr Jiang Hongqi, Chongqing CIQ
	Mr Liao Jinwan, Guangdong CIQ
	Mr Xi Xin, Zhuhai CIQ
	Mr Ji Fan, Shenzhen CIQ
	Mr Chen Yonghong, Guangdong CIQ

### Minutes

The second day of the workshop started with the self introduction of the participants, followed by a presentation that resumed the main points presented the day before made by Qiu Songyin.

### Discussion

Mr Ferrè recalled the ideas of the OIE project and the importance of the capacity building for developing an effective GIS for an organisation like the CAIQ. Mr Ferrè described the progress made during the cooperation activities and the importance of the previous mission where the assessment exercise was carried out.

Mr Dou elucidated the importance of developing an effective GIS to manage information useful for supporting the CAIQ activities. Mr. Dou recognised that the CAIQ needs some capacity building actions to improve the functionalities developed by their GIS office.

The discussion continued with some speculation on the importance of organising a well structured strategy to design and to implement GIS applications. In particular the IZSve researchers pointed out that an approach based on project management techniques should be taken into account by the CAIQ colleagues.

Mr Dou observed that CAIQ has some IT applications already in place that must be, in some way, integrated with the GIS to facilitate the decision making processes. He suggested to consider the exchange of knowledge that will take place during the Cooperation Project as an opportunity to understand the IZSve GIS organizational model and try to grasp from them the most useful solutions for CAIQ. In particular Mr Dou appreciated the leanings adopted by the IZSve technicians based on Open Source tools as a way to limit costs for implementing GIS solutions.

About the idea of integrating GIS technology into the CAIQ frameworks, Mr Ferrè highlighted the importance of a well defined change in the management strategy and these changes should be supported by the CAIQ decision makers. Moreover, the CAIQ management should consider that some of their resources should be prepared to face the challenge that GIS technologies present.

Mr Dou agreed with the concept explained by Mr Ferrè and remarked the importance of achieving some results from GIS technologies in the near future. Therefore, he asked the IZSve team to start with some practical activities in order to implement some GIS functionality and to integrate them into CAIQ frameworks.

Following the request of Mr Dou, the discussion speculated on the possible scenarios that could be implemented in the next future by CAIQ, in particular two different scenarios were depicted:

1. A stand-alone system based on desktop applications where a GIS software combines different spatial and non-spatial information in order to provide maps and analysis useful to support the required activities.
2. A webGIS application dedicated to collect and publish spatial and non-spatial information. Desktop applications should be designed to derive maps and analysis useful to support the required activities. The webGIS can also be used to publish the derived maps that could be used to inform foreign countries about the production sites.

Mr Ferrè highlighted that both solutions require background maps. He suggested to CAIQ to get in touch with the National Administration of Surveying mapping and Geo-information (NASG).

About the idea to develop the webGIS scenario, Mr Ferrè informed the CAIQ colleagues that the development of this technology was not included in the Cooperation Project and therefore it should be asked to OIE if it is possible to introduce it and, eventually, how it should be done.

Mr Fang considered the discussion developed during the workshop very useful for the CAIQ scientists and gave him the opportunity to see the high expertise on GIS matters of the Italian partners. After this workshop he considered that a good level of reciprocal understanding was reached. Moreover, he considered that GIS is a very important tool to support the decision making process and he hopes that CAIQ will be able to promote its usage GIS in all China and in the neighbouring countries.

Mrs Li thanked all the participants for the effort put in the workshop. She expressed the opinion that the passion and the competence put by both the Italian and Chinese scientists were impressive. She hoped that the workshop would allow the CAIQ to better understand the required elements to develop successful GIS application. She considered GIS technologies really important for supporting the CAIQ and AQSIIQ activities regarding the export and import programs.

**OIE Cooperation Project**  
**Capacity development for implementing a Geographic Information System (GIS) applied to surveillance, control and zoning of avian influenza and other emerging avian diseases in China**

**Training of two CAIQ scientists on GIS planning at the IZSVe – October 2015**

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## INFORMATION TO PARTICIPANTS AND TRAINING AGENDA

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**Capacity development for implementing  
a Geographic Information System (GIS)  
applied to surveillance, control and zoning of  
avian influenza and other emerging  
avian diseases in China**

Legnaro (IT) 19/10/2015 -30/10/2015

**Information to  
participants**

## Content

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5.	Draft programme	page 5

## Contacts



**Nicola Ferré**

Istituto Zooprofilattico Sperimentale delle Venezie (IZSve)

Geographic Information System Unit

nferre@izsvenezie.it

Ph: + 39 049 8084 253

## 1. Travel information

### 1.1 Arrival

The participants will arrive at Venice – Marco Polo Airport, on 18<sup>th</sup> October 2015.  
They will be welcomed by professional staff from a transport company (Air Service, see below).

#### *Airport – Hotel Transfers*

A shuttle service from and to airport will be provided by a referenced private transport company.

Air Service:

[www.airservicepadova.it](http://www.airservicepadova.it)

email: [airservice@taxipadova.it](mailto:airservice@taxipadova.it)

phone. +39 049 870 4425

Please, wait for the authorised driver, who will have a board with the participants' name, and do not go directly towards taxis.

### 1.2 Accommodation

The participants will benefit from B&B accommodation all along the training (13 nights).



#### **B&B "Al Ponte"**

Via Stradella Antonio Zacco, 28/a  
35127 Padova PD - Italy

e-mail: [bortolandre@libero.it](mailto:bortolandre@libero.it)  
Ph: 349.3745194 - 049.752059  
Web: [www.bbalponte.it](http://www.bbalponte.it)

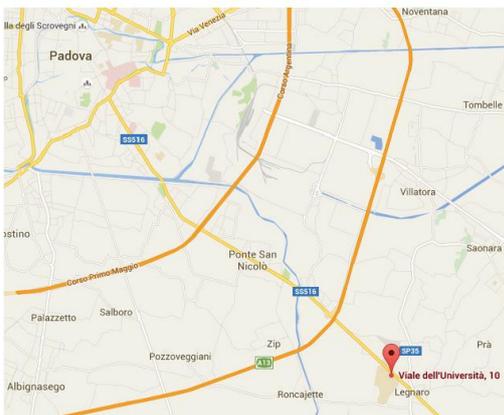
## 2. Training Sites

### Istituto Zooprofilattico Sperimentale delle Venezie (IZSve)

Viale dell'Università 10  
 35020 Legnaro (PD) – Italy  
 Ph: +39 049 8084 249  
 www.izsvenezie.it

#### Contacts

Dr. Nicola Ferré - GIS Unit  
 nferre@izsvenezie.it  
 Ph: + 39 049.8084253



Transport from hotel to IZSve (25 minutes by bus).

SITA buses (destination "AGRIPOLIS") travel every 30 mins from/ to city centre. Tickets (2,40 eur/ticket) can be bought at tobacconist's, bars nearby bus stops, stationery shops, newspaper shops.

From hotel to IZSve:

Padova Voltabarozzo	7.16	8.01	8.16	8.26	8.31	8.36	8.46	9.01	9.16	9.31	9.46	10.01	10.31	10.46
Roncaglia	7.21	8.06	8.21	8.31	8.36	8.41	8.51	9.06	9.21	9.36	9.51	10.06	10.36	10.51
Ponte S. Nicolò	7.26	8.11	8.26	8.36	8.41	8.46	8.56	9.11	9.26	9.41	9.56	10.11	10.41	10.56
Agripolis Univ.	7.29	8.14	8.29	8.39	8.44	8.49	8.59	9.14	9.29	9.44	9.59	10.14	10.44	10.59

From IZSve to hotel:

Agripolis Univ.	16.14	16.29	16.45	17.09	17.19	17.44	17.59	18.15	18.46	19.29	20.09
Ponte S. Nicolò	16.17	16.32	16.48	17.12	17.22	17.47	18.02	18.18	18.49	19.32	20.12
Roncaglia	16.22	16.37	16.53	17.17	17.27	17.52	18.07	18.23	18.54	19.37	20.17
Padova Voltabarozzo	16.27	16.42	16.58	17.22	17.32	17.57	18.12	18.28	18.59	19.42	20.22

Information: [http://www.fsbusitaliaveneto.it/images/pdf/inverno2015/extraburbanipadova/S003\\_3.pdf](http://www.fsbusitaliaveneto.it/images/pdf/inverno2015/extraburbanipadova/S003_3.pdf)



# Agenda

**19<sup>th</sup> - 30<sup>th</sup> October 2015**

Capacity development for implementing a Geographic Information System (GIS) applied to surveillance, control and zoning of avian influenza and other emerging avian diseases in China

## **Participants**

IZSve (IT): Nicola Ferrè, Paolo Mulatti, Matteo Morini, Matteo Mazzucato, Andrea Ponzoni, Matteo Trolese, Monica Lorenzetto, Annie Ishebabi, Laura Bortolotti, Grazia Manca, Lehana Bonfanti

CAIQ (PRC): Qiu Songyin, Ji Fan

## Monday, 19<sup>th</sup> October 2015

Morning                      Welcome address and round-table presentation  
Discussion on the project status  
*Room: Sala Consiglio*

.....  
*Lunch break*

.....  
Afternoon                    IZSVE visit  
.....  
Training material review  
.....

## Tuesday, 20<sup>th</sup> October 2015

Morning                      GIS Management – Theoretical approach  
*GIS Unit*

.....  
GIS Software Overview  
*GIS Unit*

.....  
Database: Theoretical Overview  
*GIS Unit*

.....  
WebGIS: Step 1  
*GIS Unit*

.....  
*Lunch break*

.....  
Afternoon                    Practical exercise  
    • QGIS online courses  
    • GIS management training material  
*GIS Unit*  
.....

## Wednesday, 21<sup>st</sup> October 2015

Morning	ESDA: Step 1 <i>GIS Unit</i>
	WebGIS: Step 2 <i>GIS Unit</i>
<i>Lunch break</i>	
Afternoon	Practical exercise <ul style="list-style-type: none"><li>• QGIS online courses</li><li>• GIS management training material</li><li>• WebGIS programming</li></ul> <i>GIS Unit</i>
	<ul style="list-style-type: none"><li>• ESDA practical</li><li>• Database practical</li></ul>

## Thursday, 22<sup>nd</sup> October 2015

Morning	GIS Management: Step 1 <i>GIS Unit</i>
	WebGIS: Step 3 <i>GIS Unit</i>
<i>Lunch break</i>	
Afternoon	Practical exercise <ul style="list-style-type: none"><li>• QGIS online courses</li><li>• GIS management training material</li><li>• WebGIS programming</li></ul> <i>GIS Unit</i>
	<ul style="list-style-type: none"><li>• ESDA practical</li><li>• Database practical</li></ul>

## Friday, 23<sup>rd</sup> October 2015

Morning	GIS Management: Step 2 <i>GIS Unit</i>
	WebGIS: Step 4 <i>GIS Unit</i>
<i>Lunch break</i>	
Afternoon	Practical exercise <ul style="list-style-type: none"><li>• QGIS online courses</li><li>• GIS management training material</li><li>• WebGIS programming</li></ul> <i>GIS Unit</i>
	<ul style="list-style-type: none"><li>• ESDA practical</li><li>• Database practical</li></ul>

## Monday, 26<sup>th</sup> October 2015

Morning PRINCE 2: Theory of Project management  
*IT Service*

IT architecture: IZSVe Implementation  
*IT Service*

Lunch break

Afternoon Practical exercise on Project management  
*IT Service*

## Tuesday, 27<sup>th</sup> October 2015

Morning Database: Theoretical Overview  
*GIS Unit*

Lunch break

Afternoon Project web site: Discussion on the website content  
*GIS Unit*

## Wednesday, 28<sup>th</sup> October 2015

Morning Animal traceability: Creation and management of a well-articulated and ever growing identification system  
*Data Bank Management and Animals' Register*

The use of Information System to organize, implement and verify Veterinary Service activities  
*Information System and Information Technology Laboratory*

Lunch break

Afternoon Further development on Cooperation project activities  
*GIS Unit*

## Thursday, 29<sup>th</sup> October 2015

Morning                      Epidemiological situation and Surveillance of AI in Italy  
*Epidemiological surveillance, veterinary legislation and animal welfare Unit*

*Lunch break*

Afternoon                    Open discussion: Project follow up activities  
*GIS Unit*

## Friday, 30<sup>th</sup> October 2015

Morning                      Planning and discussion of the preliminary report on the visit outcomes.  
*GIS Unit*

# MINUTES

## Training of two CAIQ scientists on GIS planning at the IZSVe – October 2015

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### Meeting venue

Location: IZSVe headquarter, Legnaro (PD), Italy

### Flight schedule and transfer CAIQ experts

Departure: Beijing airport – 17/10/2015

Arrival: Venice airport – 18/10/2015

Departure: Venice airport – 31/10/2015

Arrival: Beijing airport – 01/11/2015

### Participants

CAIQ	IZSVe
QIU SONGYIN - VETERINARIAN	NICOLA FERRÈ – GIS MANAGER
JI FAN - VETERINARIAN	PAOLO MULATTI - VETERINARIAN
	ANDREA PONZONI – IT MANAGER
	MATTEO MAZZUCATO – GIS TECHNICIAN
	MATTEO TROLESE – DBA
	MONICA LORENZETTO – GIS ANALYST
	GRAZIA MANCA – VETERINARIAN
	LAURA BORTOLOTTI - VETERINARIAN

### Introduction

With the training of two CAIQ scientists on GIS planning at the IZSVe the cooperation program enters phase 2, the capacity building phase. This is the most important phase of the program as the CAIQ scientists will be trained in GIS planning essential elements in order to allow them to develop a GIS project in a coherent and structured way in their home country.

During the workshop held in May 2015 in Guangdong (CHN), emerged the need from CAIQ scientists to refine the cooperation program. In particular, it was proposed to consider, as a Use Case<sup>1</sup> to implement a GIS plan, the development of a WebGIS application to support the Zoning activities. Following this request, Activity 2.1 “Training of two CAIQ scientists on GIS planning at the Parent Institute”, was designed to transpose the theoretical aspects of GIS management and spatial analysis into the idea of developing a

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<sup>1</sup> A Use Case expresses a contract between the stakeholders of a system about its behaviour. It describes the system’s behaviour and interactions under various conditions

system that includes a WebGIS application and some tentative framework for the data capture and spatial analysis. In particular, for the planned activity of 2.1.2 more emphasis was put on the practical example of “Setting up a GIS laboratory” activity (45% of the total amount of time) with respect to the theoretical aspects presented during the “advanced GIS and ESDA” and “Introductory GIS components” activities (respectively 25% and 30% of the total amount of time).

, the training included the presentation and discussion of theoretical aspects of a given issue in the morning (i.e. WebGIS configuration, ESDA, etc.), while the related practical activities were performed by the two CAIQ scientists supported by IZSVe experts in the afternoon. The results of the afternoon jointly practical activities are a series of documents useful to the design, develop and implement a system for the management of the spatial information of farms dedicated to the import/export of live animals in China.

The training was designed according to the project management aspects defined by the PRINCE 2 methods (<https://www.axelos.com/best-practice-solutions/prince2>).

## Day 1 - Monday 19th October 2015 – Preliminary meeting

### Topics:

- introductory meeting
- revision and approval of the workshop minutes
- further activities of cooperation program

### Participants:

CAIQ	IZSVe
QIU SONGYIN - VETERINARIAN	NICOLA FERRÈ – GIS MANAGER
JI FAN - VETERINARIAN	PAOLO MULATTI - VETERINARIAN
	ANDREA PONZONI – IT MANAGER
	MATTEO MAZZUCATO – GIS TECHNICIAN

### Minutes

Mr Ferrè presented the training program describing the last adjustments on the agenda. The program was approved by the participants.

Mr Ferrè introduced the concept of the project web site. He asked to the participants to propose some actions to develop the web pages.

Mr Mazzucato proposed to publish the documents already sent to OIE both in a PDF form and in a HTML format (for some of them) in order to navigate on them.

The idea was approved and, moreover, it was asked to Mr Mazzucato to prepare a program about the implementation of HTML pages.

About the spatial data availability in China Mr Songyin informed IZSVe staff, he got in touch with the Chinese spatial agency, but unfortunately no spatial data was available. The participants agreed on keep monitored the GIS community channels in order to grasp any potential news on spatial data availability in China.

## Annex 3 - Report of the training of two CAIQ scientists on GIS planning at the IZSve

According to the outcomes of the workshop held in May 2015, Mr Songyin asked to refine the cooperation program activities in order to introduce the development of a WebGIS application as a practical application of the GIS management theories.

Mr Ferrè informed Mr Songyin that the training program of the next two weeks was tailored to follow the request emerged during the workshop but the modification of the cooperation program according to the Chinese requests should be approved by OIE.

Mr Ferrè informed the participants that he will get in touch with the OIE referent to present the request of introducing the WebGIS practical and theoretical aspects into the cooperation program.

Mr Ferrè suggested to speculate on the possible impact that the introduction of the WebGIS development study will have on the cooperation program activities. After the discussion a list of possible impacts was identified. This analysis will be reviewed by Mr Ferrè, Mr Mulatti and Mr Mazzucato after the two-week training.

### From day 2 to day 10 (20<sup>th</sup> – 30<sup>th</sup> of October 2015)

#### Topics:

Training of the two CAIQ scientists on:

- GIS management and project planning
- WebGIS development
- Explorative Spatial Data Analysis (ESDA) for Zoning
- Enterprise database design and development
- Data bank management system
- Information system to support veterinary activities

#### Participants:

CAIQ	IZSve
QIU SONGYIN - VETERINARIAN	NICOLA FERRÈ – GIS MANAGER
JI FAN - VETERINARIAN	PAOLO MULATTI – VETERINARIAN
	ANDREA PONZONI – IT MANAGER
	MATTEO MAZZUCATO – GIS TECHNICIAN
	MATTEO TROLESE – DBA
	MONICA LORENZETTO – GIS ANALYST
	GRAZIA MANCA – VETERINARIAN
	LAURA BORTOLOTTI - VETERINARIAN

#### Minutes

The training activities were organised in the following way:

- Morning session: theoretical aspects on a specific training subject.
- Afternoon session: the CAIQ scientists developed the assigned activities supported by the IZSve experts.

### Annex 3 - Report of the training of two CAIQ scientists on GIS planning at the IZSve

The first part of the training focused on project planning using a revised version of the PRINCE2 (Projects IN Controlled Environments) business case method. The outcome of this phase was a Business case document (written both in English and Chinese) dedicated to the development of a system to support the management of GIS activities related to (i) the supervision of farms that export animals to Hong Kong and Macao, and (ii) the certification of quarantine farm (Annex 4\_Business Case).

The next phases were dedicated to the As-Is analysis, functional requirement analysis and gap analysis. By using the Use Case technique, the As-Is analysis was developed in order to describe the system in place at the AQSIQ – CAIQ for the management of the spatial information of the quarantine farm. An As-Is analysis document was developed. The next step was the development of a first-cut functional analysis of the envisaged system. The result of this analysis was a functional requirement analysis document and a gap analysis document.

The final part of the training was dedicated to the discussion on the possible spatial analysis for supporting the CIQ Zoning tasks.

<p style="text-align: center;"><b>MOE WebGIS</b> (WebGIS for Management of export farms) <b>project proposal for the development of a system for the management of the CAIQ GIS activities</b></p>	<p style="text-align: center;">出口活动物 WebGIS 地理信息技术管理系统项目建议</p>
<p><b>Description</b></p> <p>This is a project proposal for the development of a system to support the management of GIS activities related to (i) the supervision of farms that export animals to Hong Kong and Macao, and (ii) the certification of quarantine farms.</p> <p>The envisaged system is based on a WebGIS tools dedicated to the data collection and validation integrated with a series of framework. These tools are related to the implementation of the risk analyses associated with the evaluation of the candidate farm to become a quarantine or export farm (a single system to manage different processes).</p> <p>The main outcome of the project is to create a system that allows the local CIQ to collect the spatial information of a candidate farm and other related information (i.e. name, address, specie, etc.) by using a computing system that stores the information in an enterprise database and controls the flow of data entry process.</p> <p>The system includes also a series of framework dedicated to the risk analysis of the candidate farm based on GIS tools available in any GIS software and some functionality useful for the traceability of exported animal.</p>	<p><b>项目描述：</b></p> <p>此项目建议书为开发基于地理信息技术的出口农场监管及进口隔离场审核计算机管理系统提供支持。</p> <p>该系统设想基于 WebGIS 工具来收集和验证一系列来自出口农场及进口隔离场的用于实施风险分析的数据。</p> <p>该项目的主要产出是创建一个可以让 CIQ 收集相关农场注册信息及空间信息的计算机系统，并将这些信息储存于数据库、管理数据流。</p> <p>该系统包含一系列基于 GIS 工具进行风险分析的框架以及部分可应用于出口动物追溯的功能。</p>

## Annex 4 – Business case

<p><b>Executive summary</b></p> <p>This document presents the business case for the development of a computing system to support the management of GIS activities related to the supervision of export farms and the certification of quarantine. The system is composed of the following elements:</p> <ul style="list-style-type: none"><li>• WebGIS application (data entry and information display)</li><li>• Framework for risk analysis (employing spatial analysis tools)</li><li>• Framework for the survey of the POI (Point Of Interest) that surround the candidate farm.</li><li>• Framework for a computing interface for the collection of data related to the POI.</li><li>• Framework for the import/upload/edit of animal movement data.</li></ul> <p>It is planned that the system will be in place by July 2017.</p>	<p><b>概述</b></p> <p>为开发基于地理信息技术的出口农场监管及进口隔离场审核计算机管理系统提供支持的建设方案。该系统包含以下要素：</p> <ul style="list-style-type: none"><li>• WebGIS 应用 (数据输入和信息展示)</li><li>• 风险分析框架(使用空间分析工作)</li><li>• 相关农场周围的兴趣点监测框架</li><li>• 兴趣点数据收集的框架</li><li>• 动物移动数据的输入、更新、编辑框架</li></ul> <p>计划于 2017 年 7 月上线</p>
<p><b>Reasons</b></p> <p>Considering that (i) the demand of animal export to HK and Macau is stable, (ii) the status of export farms is stable too, (iii) the epidemic trends are always changing, (iv) and the heterogeneity in the management structure of export farms, an efficient system to supervise the entry-exit inspection and quarantine activities is necessary.</p> <p>The idea of distributing the load of data collection, validation and use among the local CIQ employee can help in improving the efficiency of this process.</p> <p>Moreover, the implementation of an enterprise web computing system can allow a better control of information flow, quality and management.</p>	<p><b>建设原因</b></p> <p>鉴于 (i) 出口动物的需求稳定, (ii) 出口农场状态相对稳定, (ii) 动物疫病流行情况多变, (iv) 出口农场管理水平不一致, 需要建设一个针对出口活动物管理的高效系统。</p> <p>对于基层 CIQ, 用于数据收集、验证和应用的计算机系统有助于提升监管效率。</p> <p>同时, 计算机系统可以更好的控制信息的流向、质量和管理。</p>

<p><b>Expected benefits</b></p> <ul style="list-style-type: none"> <li>• Improve the management and supervision of the animal export in the farms.</li> <li>• Improve the quality of data used in the process.</li> <li>• The flow of animals and the related information are made synchronous</li> <li>• Make supervision work more transparent and efficient.</li> <li>• Preliminary implementation of zoning approach for the exporting farms.</li> <li>• Develop a group of GIS users also at local level.</li> </ul>	<p><b>预期收益</b></p> <ul style="list-style-type: none"> <li>• 提升出口动物的分级分类管理水平</li> <li>• 提升数据质量</li> <li>• 实现货物流与信息流的同步传导</li> <li>• 使监管工作更加透明高效</li> <li>• 初步实现出口农场动物疫病区域化管理</li> <li>• 培养一批 GIS 应用专家</li> </ul>
<p><b>Expected pitfalls</b></p> <ul style="list-style-type: none"> <li>• Need a certain period of time to change the traditional management and supervision mode.</li> <li>• Need to build up an extra user service to run the application smoothly and solve problems in using the new system.</li> <li>• Some IT resources are necessary to implement and maintain the system.</li> </ul>	<p><b>负面提醒</b></p> <ul style="list-style-type: none"> <li>• 改变传统管理方式需要一定适应期</li> <li>• 需要建立客服支持系统顺利运行，解决系统使用的各类问题</li> <li>• 需要 IT 团队运行和维护系统</li> </ul>
<p><b>Business options</b></p> <p>The proposed system has been studied to replace the currently framework in place. This solution is based on (i) a set of operations governed by a GIS technician, (ii) made at central level, (iii) that use a series desk top software. Up to now, this framework is able to guarantee the process load but it presents some pitfalls such as (i) the difficulties to keep the POI update, (ii) the GIS technician became more and more overcommitted, and (iii) the usage of personal database that do not allow an efficacy data management.</p> <p>In this proposal the adoption of Open source/Open license software allows the</p>	<p><b>备选方案</b></p> <p>研究了另一种替代现行方案的系统，替代解决方案基于在中央层级开发的由 GIS 专家支配的一整套操作，并使用一系列桌面软件。目前，这种框架可以确保流程的质量，但是存在缺点，例如保持 POI 的更新相对困难，GIS 专家工作量大，个人数据库的使用无法实现高效的数据管理。</p> <p>同时，在技术解决方案上，现行方案使用开源软件，可以减少项目预算</p>

Annex 4 – Business case

exclusion of the software cost in the project budget (only the cost for the system implementation and application development remains and this is the same amount for any kind of software solution adopted [i.e. ESRI ArcGIS Server]).			(只有系统开发成本, 此类开发成本与任何一种软件解决方案的开发成本一致)		
<b>Timescale (See Business Case Timescale”)</b> The proposed project has a time length of 18 months (starting from the 1 <sup>st</sup> of January 2016). For a detailed task Gantt diagram, please refer to the document for the system scale.xlsx			<b>进度表 (见“Business Case Timescale”)</b> 该项目预计持续 18 个月 (自 2016 年 1 月 1 日开始)。详见“详见 6 计持续 imescale Case Timescale”		
<b>Cost</b>	<b>CNY</b>	<b>Man-month</b>	<b>成本</b>	<b>经费</b>	<b>人力-月</b>
<b>Personal</b> The basic idea is to employ AQSIIQ personnel for the implementation of the system supported by the IZSve experts (OIE cooperation program). These activities regard: <ul style="list-style-type: none"> <li>• Definition of the framework for the system operability</li> <li>• Testing the system</li> <li>• Input of the required data</li> <li>• Development of a start-up WebGIS application</li> </ul>	0	8	<b>人员</b> 在 IZSVE 支持下, 质检总局派员完成系统建设 (OIE 合作项目)。包括 : <ul style="list-style-type: none"> <li>• 系统框架确认</li> <li>• 系统测试</li> <li>• 需求数据输入、</li> <li>• 开发 WebGIS 应用</li> </ul>	0	8
<b>Maintenance</b> The system maintenance <ol style="list-style-type: none"> <li>1. internet IP address (cost per year)</li> <li>2. data backup (cost per year)</li> </ol>	30,000 30,000		<b>维护费用</b> 两类维护费用 : <ol style="list-style-type: none"> <li>1. 租用 IP (每年费用)</li> <li>2. 数据备份 (每年费用)</li> </ol>	30,000 30,000	

Annex 4 – Business case

3. IT personnel (i.e. data backup, infrastructure monitoring, support the users, etc.) ( <u>cost per year</u> )		2	3. IT 员工（如数据备份、基础建设、运行、用户支持等）		2
<b>Hardware</b> It is planned to exploit the hardware already in use at AQSIQ (i.e. server, pc, GPS, etc.), in any case some cost should be considered in the next years (i.e. 3 years) for the replacement of obsolete components.	0	0	<b>硬件</b> 计划利用现有硬件（如服务器、电脑、GPS等），未来（3年）可能有部分设备更新成本。	0	0
<b>Software</b> The software identified for the system implementation is Open source/open license software, therefore no cost for its acquisition is computed.	0	0	<b>软件</b> 使用开源软件，无采购成本	0	0
<b>Programming – application development</b> The development of the system requires that a company is in charge to develop the application according to the specification defined by the AQSIQ personnel supported by the IZSve experts (OIE cooperation program). The cost shall include:  1. Development, installation and testing 2. Ordinary maintenance ( <u>cost per year</u> ) 3. Extraordinary maintenance ( <u>cost per year</u> )	150,000 30,000 60,000	(per year)       1	<b>应用开发</b> 开发系统需要公司来开发应用，开发过程由质检总局进行指导并从 IZSve 获取支持（OIE 合作项目）。成本包括  1. 开发、安装、测试 2. 常规维护（每年经费） 3. 特别维护（每年经费）	150,000 30,000 60,000	(per year)       1

Annex 4 – Business case

<b>Training course</b>			<b>培训</b>		
Cost for training on WebGIS usage and frameworks implementation	50,000	1	WebGIS 工具应用及系统使用培训	50,000	1
Total cost for the first year	410,000		第一年成本总计	410, 000	
Total cost for the following years	150,000		后续成本	150,000	
<b>Investment appraisal</b>			<b>投资评价</b>		
<ul style="list-style-type: none"> <li>• Reduce administrative costs</li> <li>• Reduce enterprise operating costs</li> </ul>			<ul style="list-style-type: none"> <li>• 节约行政成本</li> <li>• 减少企业日常管理成本</li> </ul>		
<b>Major risks</b>			<b>主要风险</b>		
<ul style="list-style-type: none"> <li>• Changes of personnel in the future (technicians and manage experts of GIS)</li> <li>• No stationary and special funds for GIS project.</li> </ul>			<ul style="list-style-type: none"> <li>• 未来可能发生的人员（技术及管理专家）变动</li> <li>• 没有固定的专项资金投入 GIS 软硬件开发建设</li> </ul>		
<b>Activities</b>			<b>任务</b>		
The list of activities and the related time sequence are presented in the Gantt diagram. It is worth to mention that some activities are scheduled according to the OIE cooperation project and the IZSVe experts agenda. A full description of the below listed steps is presented in the requirement analysis document (Requirement Analysis.docx)			任务列表及时间安排参见进度表。部分任务依据 OIE 合作项目及 IZSVe 议程进行安排。下表中的完整描述可参见需求分析报告（Requirement Analysis.docx）		

## Annex 4 – Business case

<ol style="list-style-type: none"><li>1. Project approval</li><li>2. Build up the system conceptual model. The conceptual model, derived from the requirement analysis, defines the IT components and the IT interface for the subsequent IT executive project development step.</li><li>3. WebGIS application executive project. With this document all the WebGIS specifications are defined in order to allow the application developer to develop a program according to the requirement analysis.</li><li>4. Database development. A database and the related schemas are developed, tested and populated with the core data.</li><li>5. WebGIS application development.</li><li>6. GIS frameworks development, testing and implementation.</li><li>7. Define a pilot project for the zoning framework. The above mentioned frameworks allow the AQSIQ personnel to implement a zone analysis around quarantine or exporting farm. The main goal of the pilot project is to evaluate, in an full operational environment, the capacity of the entire system (WebGIS + GIS frameworks).</li><li>8. Training local CIQ personnel for the implementation of developed system.</li></ol>	<ol style="list-style-type: none"><li>1. 项目批准</li><li>2. 建模。模型源自需求分析，为之后执行项目开发定义 IT 组件和界面。</li><li>3. WebGIS 应用执行项目。确认 WebGIS 细节，确保应用开发者根据需求分析进行项目开发。</li><li>4. 数据库开发。开发数据库及相关概要，用核心数据测试并填充</li><li>5. 开发 WebGIS 应用。</li><li>6. 开发 GIS 框架，测试并投入使用。</li><li>7. 确认区域化管理试点项目。上述框架的建设是 AQSIQ 员工可以对出口农场及隔离场进行区域分析。试点项目主要目的是评估在一个完整的可操作的环境中整个系统的能力。（WebGIS+GIS 框架）</li><li>8. 培训 CIQ 员工使用开发完成的系统。</li></ol>
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## Annex 4 – Business case

<p><b>Roles and responsibilities</b></p> <p>Executive : Lin Xiangmei</p> <p>Superuser : Dou Shulong</p> <p>Senior supplier : TBD</p> <p>Project Manager : Qiu Songyin</p> <p>Team Leader</p> <p>    WebGis team : Qiu Songyin</p> <p>    Framework Team : Ji Fan</p> <p>    Policy team : Ji Fan</p> <p>    IT team : Chen Ke</p>	<p><b>责任分工</b></p> <p>项目执行：林祥梅</p> <p>超级用户：窦树龙</p> <p>高级支持：待定</p> <p>项目管理：仇松寅</p> <hr/> <p>团队负责人</p> <p>    WebGIS 组：仇松寅</p> <p>    框架组：纪帆</p> <p>    政策组：纪帆</p> <p>    IT 组：陈克</p>
<p><b>Stakeholders</b></p> <ul style="list-style-type: none"> <li>• AQSIQ : General Administration of Quality Supervision, Inspection and Quarantine.</li> <li>• CIQ : CAIQ official authorities that are present at different provinces who are in charge to collect the information on export farms and supervise them.</li> <li>• Vendors and managers of export farms : People who own the export farms and manage the process of raising the export animals</li> <li>• Ministry of Agriculture of PRC : Official authority that is responsible for national farm management.</li> <li>• Food and Environmental Hygiene Department of HK : The official authority in charge of the import animals products in HK.</li> <li>• Agriculture, Fisheries and Conservation Department of HK : The official authority in charge of the import animals in HK.</li> </ul>	<p><b>潜在用户</b></p> <ul style="list-style-type: none"> <li>• 国家质检总局：对出口活动物进行宏观管理的官方机构</li> <li>• 检验检疫局：分布于不同省份负责收集农场信息并进行监管的官方机构</li> <li>• 出口农场所有者及管理者：拥有农场的人，管理饲养全程的人</li> <li>• 农业部：管理全国范围内农场的官方机构</li> <li>• 食环署：负责香港进口动物且关注原农场监管</li> </ul>

#### Annex 4 – Business case

<ul style="list-style-type: none"><li>• The Official Provisional Municipal Council of Macau : The official authority in charge of the import animals in Macau who focus on the management of animals on the original farms in mainland.</li></ul>	<ul style="list-style-type: none"><li>• 香港渔护署：负责香港进口动物且关注原农场监管</li><li>• 澳门民政总署：负责澳门进口动物且关注原农场监管</li></ul>
<p><b>Credits</b></p> <p>This document has been produced under the OIE Cooperation Project Capacity development for implementing a Geographic Information System (GIS) applied to surveillance, control and zoning of avian influenza and other emerging avian diseases in China</p>	
<p><b>Authors</b></p> <p><i>Qiu Songyin</i> - Chinese Academy of Inspection and Quarantine</p> <p><i>Ji Fan</i> - Shenzhen Entry-Exit Inspection and Quarantine Bureau</p> <p><i>Nicola Ferrè</i> - Istituto Zooprofilattico Sperimentale delle Venezie</p>	

# Changes between the approved and the new version of the cooperation project

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## Activity 2.3. Training of all the relevant CAIQ staff – Basic GIS course

This activity has been postponed after Activity 2.8. and modified as "Training of all the relevant CAIQ staff – GIS and webGIS course"

## Activity 2.5 Training of two Candidate Institute scientists on GIS management at the IZSve Parent Institute

In this activity the webGIS task is introduced. This new task has been expressively requested by the Candidate Institute in order to support in a more professional way their process for Zoning analysis. In particular, in this activity a new bullet point has been added (Training on webGIS study, design and implementation), and the expert that will be hired to support the metadata analysis will be also involved in the webGIS development.

## Comparison

Approved version	New version
<p><b>Activity 2.5 Training of two Candidate Institute scientists on GIS management at the IZSve Parent Institute</b></p> <p>A training on GIS management will be implemented in order to train two Candidate Institute scientists as GIS manager. The training will last one week and will follow a tight agenda of theoretical lessons and discussions on the steps and the technical components necessary for implementing a GIS system. In particular, the training will provide notions on building laboratory capacity on procedures and methods for planning the GIS, evaluating potential data sources, testing available hardware and software and planning for its acquisition, building the GIS data base, developing GIS applications, and planning for long term maintenance of the GIS system and data base.</p> <p><u>Training content</u></p> <p>The training course will be based on the following themes:</p> <ul style="list-style-type: none"> <li>• Setting project goals and objectives.</li> <li>• Developing GIS policies and procedures.</li> <li>• Coordinating GIS planning and analysis.</li> <li>• Designing and implementation of organization GIS standards or structured frameworks.</li> <li>• Planning, setting and tracking GIS-related budgets.</li> <li>• Monitoring performance against plans and establishing resolution actions for any variances from plans.</li> <li>• Supervising, monitoring and evaluating the work of</li> </ul>	<p><b>Activity 2.5 Training of two Candidate Institute scientists on GIS management at the IZSve Parent Institute</b></p> <p>A training on GIS management will be implemented in order to train two Candidate Institute scientists as GIS manager. The training will last one week and will follow a tight agenda of theoretical lessons and discussions on the steps and the technical components necessary for implementing a GIS system. In particular, the training will provide notions on building laboratory capacity on procedures and methods for planning the GIS, evaluating potential data sources, testing available hardware and software and planning for its acquisition, building the GIS data base, developing GIS applications, and planning for long term maintenance of the GIS system and data base.</p> <p><u>Training content</u></p> <p>The training course will be based on the following themes:</p> <ul style="list-style-type: none"> <li>• Setting project goals and objectives.</li> <li>• Developing GIS policies and procedures.</li> <li>• Coordinating GIS planning and analysis.</li> <li>• Designing and implementation of organization GIS standards or structured frameworks.</li> <li>• Planning, setting and tracking GIS-related budgets.</li> <li>• Monitoring performance against plans and establishing resolution actions for any variances from plans.</li> <li>• Supervising, monitoring and evaluating the work of</li> </ul>

Annex 5 - Changes between the approved and the new version of the cooperation project

<p>GIS staff.</p> <ul style="list-style-type: none"> <li>• Recommending and, where appropriate, developing GIS and related training programmes.</li> <li>• Coordinating and leading GIS initiatives with external organizations.</li> <li>• Evaluating technological advances and promoting the usage of appropriate technology and application.</li> <li>• Training on metadata and catalogue service, software installation and tuning on the available server.</li> </ul> <p>More specifically and with reference on the last bullet point, metadata is a detailed description of the contents and quality of a data set and an important building block in every GIS infrastructure. Metadata allows the user to discover whether an information resource exists, who owns and distributes it, where it is located, what are the conditions for its use and whether it is fit for the intended purpose by the user. A Metadata Catalogue is the web service that allows the publication of the metadata record-set.</p> <p>The technology on Metadata Catalogue is constantly upgraded. Experts on this field are able to provide insight on new functionalities, future trends, and complete exploitation of the Metadata Catalogue functionalities. We reckon that for the Parent Institute GIS managers it is important to provide the more accurate and updated available information on how to organise and manage a Metadata Catalogue. For these educational goals it is foreseen a period of metadata training delivered by an external highly skilled expert currently not available at the Parent institute.</p>	<p>GIS staff.</p> <ul style="list-style-type: none"> <li>• Recommending and, where appropriate, developing GIS and related training programmes.</li> <li>• Coordinating and leading GIS initiatives with external organizations.</li> <li>• Evaluating technological advances and promoting the usage of appropriate technology and application.</li> <li>• Training on metadata and catalogue service, software installation and tuning on the available server.</li> <li>• Training on webGIS study, design and implementation</li> </ul> <p><a href="#">More specifically and with reference on the last two bullet points: metadata and webGIS.</a> Metadata is a detailed description of the contents and quality of a data set and an important building block in every GIS infrastructure. Metadata allows the user to discover whether an information resource exists, who owns and distributes it, where it is located, what are the conditions for its use and whether it is fit for the intended purpose by the user. A Metadata Catalogue is the web service that allows the publication of the metadata record-set.</p> <p><a href="#">WebGIS (or geobrowsing) application are methods for seeking and accessing information on the Internet via a method that is reverse of the traditional Web navigational path. Rather than navigating through a series of linear or non-linear hyperlinks, users browse maps similar to the way they think, and then navigate down to the textual information.</a></p> <p>The technology on Metadata Catalogue and webGIS is constantly upgraded. Experts on these fields are able to provide insight on new functionalities, future trends, and complete exploitation of the Metadata Catalogue and webGIS functionalities. We reckon that for the Parent Institute GIS managers it is important to provide the more accurate and updated available information on how to organise and manage such a tools. For these educational goals it is foreseen a period of training delivered by an external highly skilled expert currently not available at the Parent institute.</p>
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**Activity 2.6 Training of two CAIQ scientists on GIS analysis at the IZSVe Parent Institute**

This activity has been modified by considering only one CAIQ scientist instead of two. The related activities have been tailored accordingly.

**Comparison**

Approved version	New version
Activity 2.6 Training of two CAIQ scientists on GIS	Activity 2.6 Training of one CAIQ scientists on GIS

<p><b>analysis at the IZSve Parent Institute</b></p> <p>A training will be implemented in order to training two Candidate Institute scientists as GIS analyst. This training will last one week and will treat GIS and spatial statistic tools with lectures and practical exercises. Preparatory materials will be submitted to the candidate trainees in order to provide basic knowledge of the tools and software to be used. The output is building laboratory capacity on GIS analysis and spatial modelling.</p> <p><u>Training content</u></p> <p>The training course will focus on basic spatial analysis and will treat specifically: point pattern analysis, spatial autocorrelation, interpolation and geostatistical analyses and spatial regression. Practical applications will be performed using the specific software used at the Partner institute. It will focus on the development of tools and scripts for the above mentioned analyses.</p>	<p><b>analysis at the IZSve Parent Institute</b></p> <p>A training will be implemented in order to training one Candidate Institute scientists as GIS analyst. This training will last one week and will treat GIS and spatial statistic tools with lectures and practical exercises. Preparatory materials will be submitted to the candidate trainees in order to provide basic knowledge of the tools and software to be used. <b>The output is building laboratory capacity on ESDA (Exploratory Spatial Data Analysis) dedicated to support Zoning analysis.</b></p> <p><u>Training content</u></p> <p><b>The training course will focus on relevant ESDA techniques to support the required Zoning analysis.</b> Practical applications will be performed using the specific software used at the Partner institute. It will focus on the development of tools and processes for the above mentioned analyses.</p>
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**Activity 2.7 Training of four (two plus two) Candidate Institute scientists on Zoning at the IZSve Parent Institute**

This activity has been modified into **“Activity 2.7 Training of three (two plus one) Candidate Institute scientists on Zoning at the IZSve Parent Institute.”**

The training planned for this activity keeps the same list of topics but clearly the presentations related to the ESDA strategies, framework and tools developed by the Parent Institute for supporting Zoning activities will be reduced in quantity, in comparison to the planned one, because of the presence of only one scientist involved in the ESDA instead of the planned two.

**Activity 2.8 Editing a conceptual model for developing Zoning areas in China**

This activity has been modified into **“Activity 2.8 Editing a conceptual model for developing Zoning areas in China and coaching in developing a webGIS application.”**

**Comparison**

<b>Approved version</b>	<b>New version</b>
<p><b>Activity 2.8 Editing a conceptual model for developing Zoning areas in China</b></p> <p>GIS program implementation requires careful consideration of the strategic components definition. To ensure that Candidate Institute has the appropriate know-how for developing and implement effective zoning projects, a conceptual model should be defined. Parent Institute scientists will visit Candidate Institute in order to produce a joint document that will highlight the main features of the conceptual framework for zoning in China.</p>	<p><b>Activity 2.8 Editing a conceptual model for developing Zoning areas in China and coaching in developing a webGIS application</b></p> <ul style="list-style-type: none"> <li>• GIS program implementation requires careful consideration of the strategic components definition. To ensure that Candidate Institute has the appropriate know-how for developing and implement effective zoning projects, a conceptual model should be defined. Parent Institute scientists will visit Candidate Institute in order to produce a joint document that will highlight the main features of the conceptual framework for zoning in China.</li> <li>• <b>A field test of the process to collect the required information for the Zoning analysis will be implemented.</b></li> </ul>

	<ul style="list-style-type: none"> <li>To support the zoning project a webGIS application will be developed by the Candidate Institute with the support of the Parent Institute scientists.</li> </ul>
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**Activity 2.3.Training of all the relevant CAIQ staff – GIS and webGIS application**

This is a new activity that combines activity 2.3 (Training of all the relevant CAIQ staff – Basic GIS course) and the [training to the webGIS application developed by the Candidate Institute to support the zoning process](#).

**Comparison**

Approved version	New version
<p><b>Activity 2.3.Training of all the relevant CAIQ staff – Basic GIS course</b></p> <p>A “GIS course for veterinary applications” will be devised and developed by the Candidate Institute scientist in Chinese language with the support of Parent Institute scientists. The course will be aimed to training the Candidate Institute staff on using the GIS technologies.</p> <p><u>Training content</u></p> <p><i>GIS I: Organizing principles and data display</i> The skills and key concepts included in this domain are basic software skills such as navigating a GIS software user interface, opening and saving a project, connecting to folders, adding data, viewing metadata, and exporting output. This domain also includes fundamentals on geographic data, organization strategies, logic for locational data, recognition of common formats and structures, basic processing (e.g., table joins and projections), and creating map layouts.</p> <p><i>GIS II: Data management</i> The key skills included in this domain relate to data management and organization. These skills support fundamental GIS concepts that permit novice users to evaluate and organize spatial data. Users will be able to perform basic operations on both tabular and spatial data sets. This domain also emphasizes the special privacy and confidentiality concerns created by working with spatial data and offers strategies for compliance.</p> <p><i>GIS III: Data analysis</i> Key concepts and skills included in this domain relate to the exploratory analysis of spatial data. Trainees are taught to perform proximity-based analyses (e.g., calculating service areas) and to overlay analyses that use spatial joins. More advanced data processing concepts related to masking techniques for point data are also covered.</p>	<p><b>Activity 2.3.Training of all the relevant CAIQ staff – GIS and webGIS application</b></p> <p>A “GIS course for relevant CAIQ staff will be devised and developed by the Candidate Institute scientist in Chinese language with the support of Parent Institute scientists. The course will be aimed to training the Candidate Institute staff on using the GIS technologies and <a href="#">the webGIS application developed by the Candidate Institute technicians to support the zoning process</a>.</p> <p><u>Training content</u></p> <p>GIS I: Organizing principles and data display The skills and key concepts included in this domain are basic software skills such as navigating a GIS software user interface, opening and saving a project, connecting to folders, adding data, viewing metadata, and exporting output. This domain also includes fundamentals on geographic data, organization strategies, logic for locational data, recognition of common formats and structures, basic processing (e.g., table joins and projections), and creating map layouts.</p> <p>GIS II: Data management The key skills included in this domain relate to data management and organization. These skills support fundamental GIS concepts that permit novice users to evaluate and organize spatial data. Users will be able to perform basic operations on both tabular and spatial data sets. This domain also emphasizes the special privacy and confidentiality concerns created by working with spatial data and offers strategies for compliance.</p> <p><a href="#">GIS III: webGIS application</a> <a href="#">A training on the webGIS functionalities, process and utilities will provided to the trainees. Practical example on data capture, quality evaluation and management will be used.</a></p>

Annex 5 - Changes between the approved and the new version of the cooperation project

Revised work plan (in blue)

	Activity	Travel		Location	1	2	3	4	5	6	7	8	9	10	11	12
		IZSve	CAIQ													
<b>Phase 0</b>	<b>Inception phase</b>			CAIQ, IZSve												
<b>Phase 1</b>	<b>Preparatory activities</b>															
A1.1	Collation and search of relevant updated information			CAIQ, IZSve	X											
A1.2	Baseline assessment of CAIQ GIS organisation and capacity	X		CAIQ		X										
A1.3	Introductory Workshop	X		CAIQ		X										
A1.4	Assessment of availability and legal usability of spatial data			CAIQ		X	X									
<b>Phase 2</b>	<b>Capacity building</b>															
A2.1	Training of two CAIQ scientists on GIS planning at the IZSve Parent Institute		X	IZSve				X								
A2.2	Preparation of the first annual report			IZSve					X							
<a href="#">A2.3</a>	<a href="#">Training of all the relevant CAIQ staff – Basic GIS course</a>			<a href="#">CAIQ</a>					<a href="#">X</a>							
A2.4	Coaching of the Candidate Institute GIS laboratory organisation	X		CAIQ						X	X	X	X	X	X	X
A2.5	Training of two CAIQ scientist on GIS management at the IZSve Parent Institute		X	IZSve							X					
A2.6	Training of <a href="#">one</a> CAIQ scientist on GIS analysis at the IZSve Parent Institute		X	IZSve							X					
A2.7	Training of <a href="#">three</a> CAIQ scientists on zoning at the IZSve Parent Institute		X	IZSve							X					
A2.8	Editing a conceptual model <a href="#">and coaching in developing a webGIS application</a>	X		CAIQ							X	X	X			
<a href="#">A2.3</a>	<a href="#">Training of all the relevant CAIQ staff – GIS and webGIS application</a>												<a href="#">X</a>			
A2.9	Preparation of the second annual report			IZSve									X			
<b>Phase 3</b>	<b>Establishment of GIS and zoning capacity and advocating their adoption for improving the veterinary governance</b>															
A3.1	Strengthening of the Candidate Institute GIS laboratory			CAIQ								X	X	X		
A3.2	Audit - Simulation exercise	X		CAIQ										X		
A3.3	Final assessment CAIQ GIS laboratory organisation	X		CAIQ										X		
A3.4	Report on the control measures adopted in China for controlling ADs			CAIQ												X
A3.5	Action Plan for introducing the GIS based OIE compliant zoning strategy in China			CAIQ, IZSve											X	
A3.6	Final Workshop and press conference	X		CAIQ												X
A3.7	Final report			CAIQ, IZSve												X

## Annex 5 - Changes between the approved and the new version of the cooperation project

About the timetables and measurable outputs, the following changes have been considered:

Output 2.3: Training on basic GIS. Training report delivered on trimester 6 (activity 2.3)

Become:

Output 2.3: Training on basic GIS – webGIS course. Training report delivered on trimester 9 (activity 2.3).

# Pictures

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## Field visit

Introductory workshop - GuangZhou (CHN)



Annex 6 – Pictures

Meeting at CIQ

Introductory workshop - GuangZhou (CHN)



Work team

Introductory workshop - GuangZhou (CHN)



## Annex 7 – Financial report

FINANCIAL REPORT			
Financial report for (month/year) to (month/year)	27/10/2014-27/11/2015		
Parent Reference Laboratory Collaborating Centre:	Collaborating Centre for Epidemiology, Training and Control of Emerging Avian Diseases at Istituto Zooprofilattico Sperimentale delle Venezie		
Candidate Laboratory Centre:	Chinese Academy of Inspection and Quarantine (CAIQ)		
Animal disease(s) or topic covered:	GIS, Avian influenza and other emerging avian diseases, epidemiology		
Project dates (day/month/year) - (day/month/year):	27/10/2014-27/10/2017		
Final budget approved:	€ 132.380,00		
Currency:	euro		
Revised budget			
Currency:			
EXPENDITURE	Amount budgeted	Amount spent to date	Comments/Description
<b>Travel - Laboratory visits (from Parent to Candidate lab and from Candidate to Parent Lab)</b>			
Total travel costs - Laboratory visits: Expert 1 (Matteo Morini)	€ 3.900,00	€ 948,80	Matteo Morini Beijing 22-28/11/2014 (M1 111807/2014)
Total per diem - Laboratory visits: Expert 1 (Matteo Morini)	€ 3.177,11	€ 767,06	Matteo Morini Beijing 22-28/11/2014 - 6 nights Beijing and Dubai (M1 111807/2014)
<b>Sub-total</b>	<b>€ 7.077,11</b>	<b>€ 1.715,86</b>	
Total travel costs - Laboratory visits: Expert 2 (Nicola Ferrè)	€ 9.100,00	€ 948,80	Nicola Ferre' Beijing 22-28/11/2014 (M1 111789/2014)
Total per diem - Laboratory visits: Expert 2 (Nicola Ferrè)	€ 8.260,49	€ 576,12	Nicola Ferre' Canton 10-18/05/2015 (M1 115438/2015)
<b>Sub-total</b>	<b>€ 17.360,49</b>	<b>€ 3.337,84</b>	
Total travel costs - Laboratory visits: Expert 3 (Matteo Mazzucato)	€ 7.800,00	€ 577,71	Matteo Mazzucato Guangzhou (Cina) 10-15/05/2015 (M1 115261/2015)
Total per diem - Laboratory visits: Expert 3 (Matteo Mazzucato)	€ 6.513,08	€ 962,62	Matteo Mazzucato Guangzhou (Cina) 10-15/05/2015 - 6 nights (M1 115261/2015)
<b>Sub-total</b>	<b>€ 14.313,08</b>	<b>€ 1.540,33</b>	
Total travel costs - Laboratory visits: Expert 4 (Paolo Mulatti)	€ 9.100,00	€ 948,80	Paolo Mulatti Beijing 22-28/11/2014 (M1 111817/2014)
Total per diem - Laboratory visits: Expert 4 (Paolo Mulatti)	€ 8.260,49	€ 694,66	Paolo Mulatti Beijing 22-28/11/2014 - 6 nights Beijing and Dubai (M1 111817/2014)
<b>Sub-total</b>	<b>€ 17.360,49</b>	<b>€ 3.150,84</b>	
Total travel costs - Laboratory visits: Expert 5 (Stefano Marangon)	€ 2.600,00		
Total per diem - Laboratory visits: Expert 5 (Stefano Marangon)	€ 1.588,56		
<b>Sub-total</b>	<b>€ 4.188,56</b>		
Total travel costs - Laboratory visits: Expert 6 (Andrea Ponzoni)	€ 6.500,00		
Total per diem - Laboratory visits: Expert 6 (Andrea Ponzoni)	€ 5.718,80		
<b>Sub-total</b>	<b>€ 12.218,80</b>		
Total travel costs - Laboratory visits: Expert (Trainees)	€ 10.400,00	€ 895,89	Ord. 4380/2015 Qiu Songyn flight tickets for training at IZS VE Legnaro (PD) from 18/10/15 to 31/10/15
Total travel costs (within China)- Laboratory visits: Expert (Trainees)	€ 750,00	€ 895,89	Ord. 4380/2015 Ji Fan flight tickets for training at IZS VE Legnaro (PD) from 18/10/15 to 31/10/15
Total per diem - Laboratory visits: Expert (Trainees)	€ 16.679,84	€ 460,00	Qiu Songyn per diem from 18/10/15 to 31/10/15 at IZS VE Legnaro (PD) Ord. 4825/2015, Payment order 1019/15 dated 14/10/15
		€ 1.085,14	Ji Fan per diem from 18/10/15 to 31/10/15 at IZS VE Legnaro (PD) Ord. 4826/2015, Payment order 1019/15 dated 14/10/15
		€ 460,00	Qiu Songyn overnight stay at Bed & Breakfast Al Ponte from 18/10/15 to 30/10/15, Ord. 4904/2015 Receipt nr. 265 dated 14/11/15
		€ 460,00	Ji Fan overnight stay at Bed & Breakfast Al Ponte from 18/10/15 to 30/10/15, Ord. 4904/2015 Receipt nr. 265 dated 14/11/15
		€ 116,00	Qiu Songyn and Ji Fan transfer Ord. 4857/15 Air service Padova Invoice nr. 00073 del 31/10/15, Payment order 20/16 dated 13/01/16
		€ 180,00	Ord. 5286/2015 Dinner at Zairo Filibeni Srl, Invoice nr. 5 dated 30/10/15, Payment order 1238/2015 dated 09/12/15
<b>Sub-total</b>	<b>€ 27.829,84</b>	<b>€ 5.178,07</b>	
Honorary - Expert External Consultant Massimo Rumor	€ 3.600,00		
<b>Sub-total</b>	<b>€ 3.600,00</b>		
<b>Meeting/Workshop/Training 1</b>			
Organisation cost (venue, printed material, etc.)			
Translation Workshop in Guangzhou 14-15/05/15	€ 2.870,00	€ 3.003,69	Ord. 5203/2015 Translation expenses Beijing Ciyundacheng Information & Technology Co. Ltd - Invoice nr. 20150610 dated 15/06/15
Total travel cost (flights, visas, etc.) Workshop in Guangzhou 14-15/05/15		€ 434,82	Ord. 5203/2015 Chen Ke flight tickets
		€ 346,14	Ord. 5203/2015 Qiu Songyin flight tickets
		€ 346,14	Ord. 5203/2015 Liu Xiaofei flight tickets
Total per diem Workshop in Guangzhou 14-15/05/15	€ 2.382,83	€ 145,89	Ord. 5203/2015 Chen Ke hotel expenses
			Ord. 5203/2015 Qiu Songyin hotel expenses
		€ 486,31	Ord. 5203/2015 Liu Xiaofei hotel expenses
<b>Sub-total</b>	<b>€ 5.252,83</b>	<b>€ 4.762,99</b>	

## Annex 7 – Financial report

<b>Meeting/Workshop/Training 2</b>			
Organisation cost (venue, printed material, etc.)	€ 6.760,00		
Total travel cost (international travel)	€ 8.200,00		
Total travel cost (within China)	€ 2.500,00		
Total per diem	€ 5.718,80		
<b>Sub-total</b>	<b>€ 23.178,80</b>		
<b>TOTAL</b>	<b>€ 132.380,00</b>	<b>€ 19.685,93</b>	
Remaining funds to date	€ 112.694,07		
<b>INCOME (Payments from OIE)</b>	<b>Amount</b>	<b>Date received</b>	
First payment	€ 66.000,00	13/08/14	
Intermediary payment			
Final payment			
Total income to date	€ 66.000,00		
<b>BALANCE</b>	<b>Amount</b>		
Total income	€ 66.000,00		
Total expenditure	€ 19.685,93		
Balance	€ 46.314,07		

Annex 8 – Revised budget plan

Annex 8							
OIE Laboratory (or Collaborating Centre) Twinning between							
Istituto Zooprofilattico Sperimentale delle Venezie (IZSVe)				Italy			
and							
Chinese Academy of Inspection and Quarantine (CAIQ)				China			
				Revised budget plan			
				NEW BUDGET			
		Unit Amount	No.	Sub-total	Unit Amount	No.	Sub-total
				<b>Farina Luca</b>			
Travel	€	2.050,00	2	€ 4.100,00	€	0	€ -
Daily allowance	€	230,00	14	€ 3.220,00	€	0	€ -
sub-total				€			€ -
				<b>Ferrè Nicola</b>			
Travel	€	2.050,00	5	€ 10.250,00	€	7	€ 9.100,00
Daily allowance	€	230,00	42	€ 9.660,00	€	52	€ 8.260,49
sub-total				€			€ 17.360,49
				<b>Mazzucato Matteo</b>			
Travel	€	2.050,00	2	€ 4.100,00	€	6	€ 7.800,00
Daily allowance	€	230,00	19	€ 4.370,00	€	41	€ 6.513,08
sub-total				€			€ 14.313,08
				<b>Mulatti Paolo</b>			
Travel	€	2.050,00	5	€ 10.250,00	€	7	€ 9.100,00
Daily allowance	€	230,00	42	€ 9.660,00	€	52	€ 8.260,49
sub-total				€			€ 17.360,49
				<b>TRAINEES</b>			
Travel	€	2.050,00	6	€ 12.300,00	€	8	€ 10.400,00
Daily allowance	€	230,00	122	€ 28.060,00	€	105	€ 16.679,84
Travel (within China)	€	250,00	3	€ 750,00			€ 750,00
sub-total				€			€ 27.829,84
				<b>External Expert</b>			
Travel	€	-	0	€ -	€	0	€ -
Daily allowance	€	450,00	8	€ 3.600,00	€	8	€ 3.600,00
sub-total				€			€ 3.600,00
				<b>Morini Matteo</b>			
	€	1.300,00	3	€ 3.900,00			
	€	158,86	20	€ 3.177,11			
sub-total							€ 7.077,11
				<b>Ponzone Andrea</b>			
	€	1.300,00	5	€ 6.500,00			
	€	158,86	36	€ 5.718,80			
sub-total							€ 12.218,80
				<b>Marangon Stefano</b>			
	€	1.300,00	2	€ 2.600,00			
	€	158,86	10	€ 1.588,56			
sub-total							€ 4.188,56

