GRANT APPLICATION FORM

1. Project title	Compartmentalization for avian influenza and Newcastle disease in the commercial poultry sector in Brazil.
2. Theme 1, 2 and/or 3	**1.** SPS capacity evaluation and planning tools, including the need for and implications of international standards and their application. **2.** Capacity building for public and private organizations, notably with respect to market access.
3. Starting date	November 2008
4. Completion date	November 2010
5. Requesting organization	Brazilian Ministry of Agriculture, Livestock and Food Supply. Secretariat of Animal and Plant Health and Inspection. Animal Health Department. Esplanada dos Ministérios, Bloco D, Anexo A, 3º Andar. Contact person: Dr. Jamil Gomes de Souza – Animal Health Department Director Tel.: +55 61 3218-2701 Fax.: +55 61 3226-3446 E-mail: jamil.souza@agricultura.gov.br
6. Proposed consultant(s)	MAPA will identify international consultants, based on the Term of Reference descript in **Appendix 6**.
7. PPG background and rationale	**Appendix 1.**
8. Resultant project objectives	To evaluate the parameters that will define the accreditation of compartmentalisation applied to Brazilian poultry production system, with emphasis on avian influenza and Newcastle disease, in order to supply safe animal protein to consumers and ensure the maintenance of Brazilian poultry products trade.
9. PPG outputs	To present a model that will define the basis of the approval of compartmentalization applied to Brazilian poultry production system, with the involvement of Brazilian Official Veterinary Service and Private Sector.
10. PPG activities	**Activity 1.** Assessment of poultry industries biosecurity measures and Brazilian Government surveillance to diseases in the proposed compartments. **Activity 2.** Completion of Risk analysis to identify and assess factors that will assure the Compartment safety. **Activity 3.** Evaluation of the project, announcement of the results and implementation of the Compartmentalisation concept applied to Brazilian Poultry Industries. The work plan is detailed in **Appendix 2.** Activities are related to evaluation of the biosecurity measures implemented by private sector in accordance to official supervision in order to identify the points of the production process that should be controlled to issue a compartment sanitary certification.
11. Timetable	**(Appendix 3)**

12. Private/public sector co-operation	The project will be conducted with cooperation of the Brazilian Poultry Producers Association, Brazilian Poultry Exporters Association and the biggest Brazilian poultry production companies.
13. Budget	**(Appendix 4)**
14. Non STDF contributions	MAPA and Brazilian Poultry Industries will provide technical support and human resources and the local support that will allow the project coordination and conduction.

Appendix 1: Description of PPG background and rationale

The concept of compartmentalisation began to be discussed in 2000, having its importance amplified after the emergence of highly pathogenic avian influenza in Southeast Asia, in 2005 and due to the impact such health crisis provoked on certain countries' economy. Compartmentalisation is a tool which encompasses an ensemble of procedures used for defining and managing animal subpopulations with a differentiated health status within the same territory for the purpose of reducing health risks, consequently maintaining commerce based on the principles of the WTO Agreement on the Application of Sanitary and Phytosanitary Measures.

According to Chapter 1.3.5 of the Terrestrial Animal Health Code of the OIE, while zoning is applied to an animal subpopulation, defined under geographic criteria, compartmentalisation is applied to animal subpopulations maintained under the same conditions of management and biosecurity. The implementation of the concept of compartment certification depends on the epidemiology of the disease, on environmental factors, on the biosecurity measures which are applicable, on the sanitary situation of animals in the adjacent areas, on disease surveillance and on partnership between the private and public sectors.

The concept of compartmentalisation is a certification model which is still under development. In order for it to be accepted by importing countries and international organizations, there is a need of maintaining rigid systems as well as a need for establishing partnerships between Official Veterinarian Services and the private sector so that a permanent and dynamic health control system in the certified poultry population is established.

The current project contemplates a compartmentalisation model proposal for the Brazilian avian production system by means of the description of biosecurity procedures and based on *The Checklist on the Practical Application of*

Compartmentalisation of Avian Influenza and Newcastle Disease available at the OIE website: http://www.oie.int/eng/info_ev/en_AI_response.htm

General Objective

The objective of this project is to define the parameters that will be used in the poultry compartment model in Brazil, with an emphasis on the Newcastle Disease and on Avian Influenza.

The results of this project aim at identifying a system which supports the supply of safe animal protein, of poultry origin, to the consumer market as well as assuring the maintenance of commercialization flow of Brazilian poultry products, by offering guarantees of biosecurity, which minimize the risk of disease dissemination.

Justifications

Brazil is the second largest producer and largest world exporter of poultry products. In the view of this, it is necessary to establish complementary measures which enable the maintenance of the certification of the national poultry product free of disease and suitable for international trade.

Table 1. Evolution of Brazilian production of poultry products (One Thousand Tones).

Year	Internal Consumption	Exportations	Total
2005	6.535	2.845	9.297
2006	6.623	2.713	9.336
2007	6.959	3.287	10.246
2008*	7.300	3.580	10.880

***Forecast** **Source: UBA/ABEF**

Due to epidemiological characteristics, the certification process of countries and regions free of poultry disease have limited benefits in countries with territorial dimensions such as Brazil, which possesses approximately 8,5 million Km^2. The occurrence of an isolated sanitary hazard could compromise the production and the commerce flux of isolated regions or of the whole country.

Amongst the challenges established by the WTO for the promotion of food security standards and animal health, are included the compliance to rules of the WTO Agreement on Sanitary and Phytosanitary measures (SPS). The agreement

acknowledges the right of the countries to establish sanitary barriers with the objective of protecting human and animal health, even though these measures need to be scientifically proven and non-discriminatory.

Within this concept, the compartmentalisation mechanism aims to allow safe international trade by offering additional guarantees to other existing certification processes, including zoning. The system is based on the establishment of barriers between subpopulations of poultry for production from domestic and wild birds through the implementation of biosecurity measures and the execution of a continuous surveillance program. In case of an outbreak, the compartments offer epidemiological advantages in relation to other certification models. Due to the production operations' characteristics, these operations will present additional mechanisms of the guarantee of effectiveness of disease-control measures.

Considering the development and the diversity of poultry exploitation in the country, it is important for Brazil to present a project proposal of compartmentalisation for Avian Influenza and Newcastle Disease taking into consideration the related discussions promoted by the OIE Technical and Scientific Committee and that, nevertheless, are not officially defined in the OIE Terrestrial Animal Health Code.

The current proposal of compartmentalisation is based on an integrated poultry system and on the definitions of sanitary standards for Avian Influenza and Newcastle Disease, found in the chapters 1.3.3; 1.3.4; 1.3.5; 2.7.12; 3.5.1; 3.8.1; 3.8.9 of the OIE Terrestrial Animal Health Code.

Since the Brazilian poultry system is vertically integrated, the poultry companies have control on the production chain, which includes the rearing of birds for breeding and slaughter, other than on the incubators, slaughterhouses and feed mills, enabling equivalent biosecurity control of all phases of the process.

Industrial Poultry Production System in Brazil

Industrial poultry production in Brazil is mainly based on a partnership system, which is a legal cooperation and exclusivity agreement between a company and avian producers. Each integrating company is responsible for producing genetic material and for providing veterinarian technical support, birds, feed, medication, vaccines and other materials, other than providing transportation

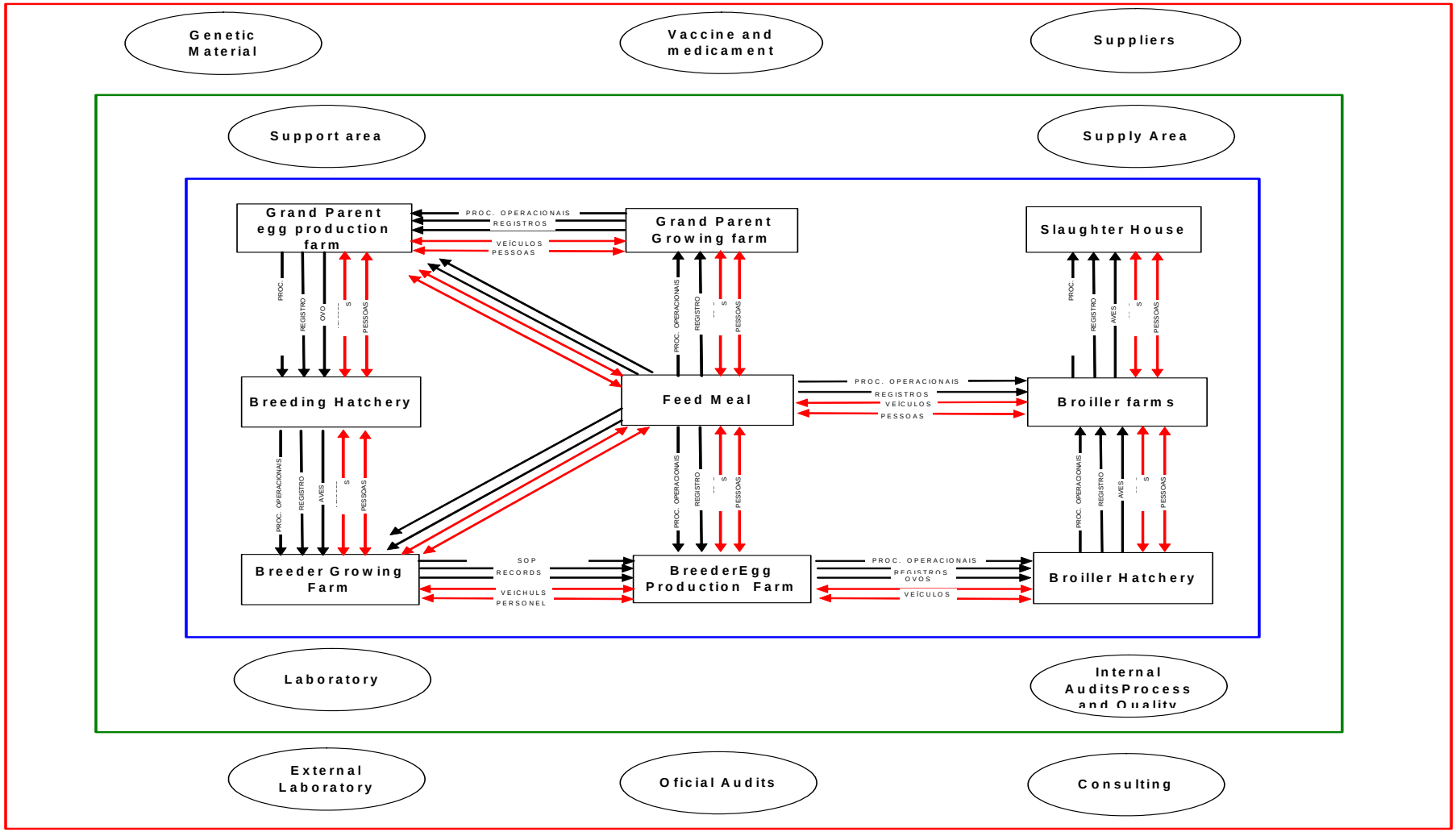
within all phases of production. Producers provide the installations, the equipment and the labor. In this system, animal and raw material movement is forbidden without the approval of the enterprise and supervision of the official veterinarian service.

In Brazil, the official veterinarian service and the companies possess complementary systems to assess the implementation of operational biosecurity and traceability procedures.

The system is called vertical because all the production operations possess a sole centralized administrative coordination. The integrating enterprise is responsible for supplying poultry for production and genetic material, incubation, poultry for slaughter other than manufacturing and supplying feed, transportation in all phases of the process, as well as slaughtering and commercialization, according to the diagram described in figure 1.

This production system favors the maintenance and improvement of biosecurity, traceability and quality standards in all levels of the production system.

Figure 1. Brazilian companies integrated and vertical poultry production flow diagram.



Appendix 2: Work Plan

The MAPA (Brazilian Ministry of Agriculture, Livestock and Food Supply), in collaboration with the Brazilian Poultry Producers Association and the Brazilian Poultry Exporters Association, identified four integrated poultry production systems in Brazil, located in different regions (Figure 2) and maintained under the organization of different companies as described in table 2.

The conditions of production, biosecurity, as well as the sanitary control measures put into place, executed by the official service and by the companies are intended to be evaluated in order to identify risks associated with infectious agents and the capacity of preventing the introduction and dissemination of the disease agents within these production systems.

All the selected companies participating in the project will have their production and biosecurity systems individually evaluated. The result analysis will serve as a base for the definition of a certification model which can be verified by the Official Brazilian Veterinary Service and which can be adapted to the distinct poultry production conditions in Brazil.

The geographic regions where the participating poultry operations are located are shown in figure 2.

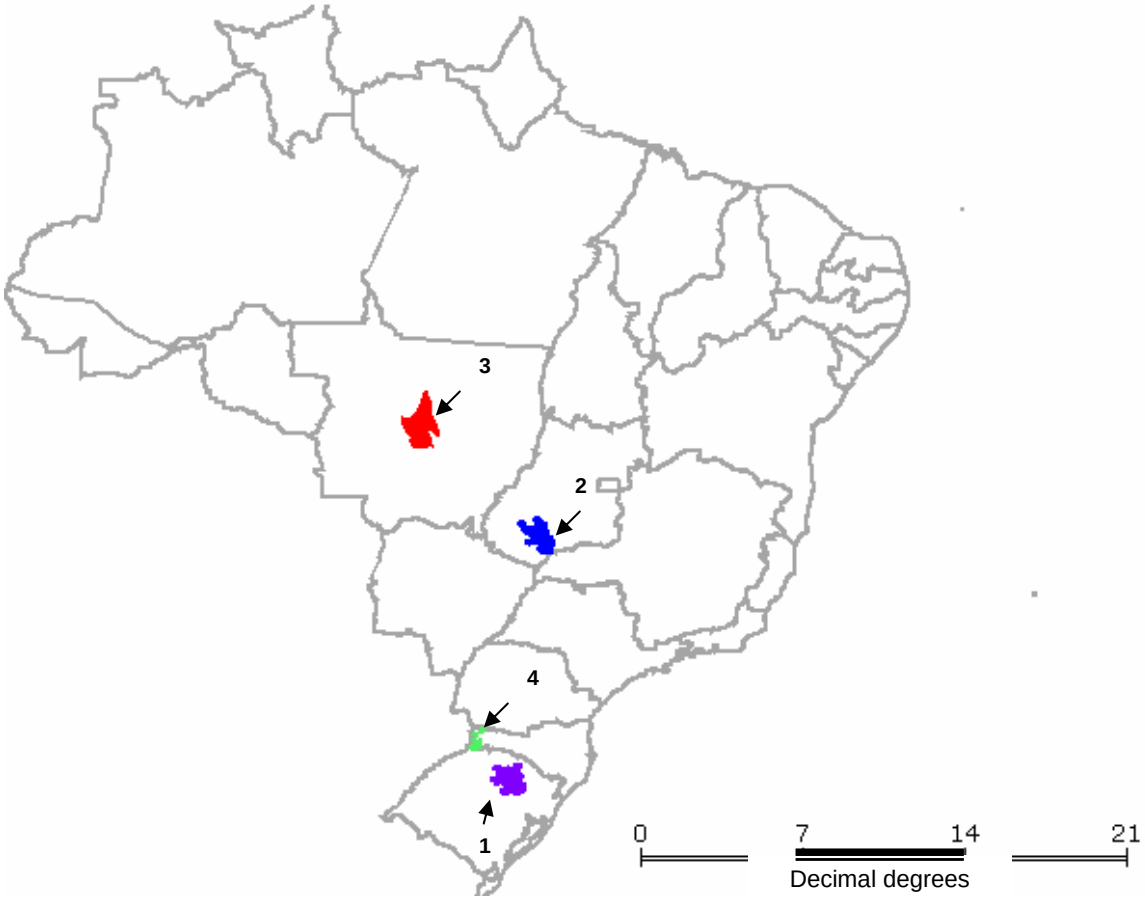
Table 2. Characteristics of the integrated poultry production systems selected for the evaluation project.

System	Location	Production Capacity
1	Rio Grande do Sul.	Commercial storage barns - 1050 Commercial sites - 850 Breed barns -146 Breed sites- 64 Feed mills - 1 Incubators - 02 Daily slaughter capacity – 370 000
2	Goiás.	Commercial storage barns - 848 Commercial sites - 212 Breed barns -121 Breed sites - 43 Feed mills - 1 Incubators – 01 Daily slaughter capacity – 420 000
3	Mato Grosso.	Commercial storage barns - 772 Commercial sites - 193 Breed barns -105 Breed sites - 21 Feed mills - 1 Incubators – 01 *Daily slaughter capacity – 500 000*
4	Santa Catarina.	Commercial storage barns - 622 Commercial sites - 385 Breed barns -69 Breed sites – 18 Feed mills - 1 Incubators – 01 Daily slaughter capacity – 189 000

*Projection for 2009

[1] Site – Block of barns belonging to the same farm, submitted to equal biosecurity measures and all in - all out production system. The site is classified as one epidemiological unit inside each compartment.

Figure 2. Production systems which will compose the studies of the compartment model definition of the Brazilian commercial poultry system localization.



The poultry production locations were identified for being situated in regions which possess a known sanitary situation for Avian Influenza and Newcastle Disease in the country. The production establishments belonging to this project all complies official biosecurity measures covered by the National Program of Poultry Health of the MAPA.

Aspects under evaluation

In order to identify the operational capacity of sanitary certification in the Brazilian integrated poultry production model, common risk factors were identified in the four poultry production systems participating in the project, according to the description on table 3.

Additionally, official control procedures and generic biosecurity measures applied by the companies were described, with the objective of assuring the sanitary situation of the existing poultry population in each production model under analysis.

The risk factors and the official control of companies will serve as a base for a study which will evaluate the capacity of disease introduction as well as the awareness of the surveillance system in detecting precociously the presence of the disease agents within each production system.

The studies will be based on the individualized model of the production flow diagram of each company.

As a means of foreseeing a situation in which the presence of the disease agent is identified in the compartment, a study will be conducted to determine the spreading patterns of infectious agents within each production operation, in order to identify the mechanisms which will assure the non-dissemination of the disease to other epidemiological units of the compartment.

Table 3. Risk factors identified in the integrated poultry production process object to analysis of their influence on the guarantee of compartment sanitary certification.

Risk Factors	Risk Factor characterization	Importance of the Risk Factor	Risk Factor management
Water supply	The Avian Influenza virus and the Newcastle disease maintain themselves stable in water after being eliminated in secretions and excretions of infected birds.	The water used in the poultry production system can become a pathway of the agent transmission.	Water treatment. Sealed waterway source. Closed water tanks. Periodical laboratory analyses.
Wild Birds	A productive system as well as the associated environmental factors can attract wild birds. Wild birds can be of AI and ND carriers.	The contact between infected wild birds and industrially reared birds facilitates the introduction of the agent.	Application of biosecurity measures and maintenance of constant surveillance system of risk population.
Domestic Birds	Domestic birds are susceptible to disease agents and are not submitted to biosecurity management systems.	The contact between infected domestic birds and industrially reared birds facilitates the introduction of the agent.	Identification of back yard units and non commercial rearing units near the industrial facilities. Maintenance of a constant surveillance system of risk population.

Risk Factors	Risk Factor characterization	Importance of the Risk Factor	Risk Factor management
People	People keep close and direct contact with bird during the production process	People can become agent carriers with contaminated clothing or can disseminate the agent in the system	Maintenance of human movement control Establishment of quarantine measures Adoption of biosecurity measures.
Vehicles	Constant contact with birds and their litter and movement between different farms.	Movement and vehicle flux can serve as a mechanical vector of introduction and dissemination of agents inside the productive system.	Maintenance of vehicle flux control. Establishment of quarantine, cleaning and disinfection measures.
Equipment	The AI and ND are able to survive and contaminate equipment introduced in the compartments	They may act as pathways of agent introduction and dissemination inside the productive system.	Establishment of equipment quarantine, cleaning and disinfection measures after use.
Feed	Feed is given to birds throughout their productive lives and may be contaminated by disease agents during the productive process phases such as handling, storage and distribution.	The raw materials used for feed production might have had contact with infected wild birds.	Adoption of biosecurity measures in feed manufacturing methods. Use of physical and chemical treatment schemes.
Bird Litter and Nesting Materials	The material used for bird litter and nest covering has different origins.	Used materials such as wood shavings, straw and rice husks can be a source of infection.	Selection of suppliers for identification of material origin. Material treatment. Careful storage.
Bird Bed Littering Management	Since they are in direct contact with the birds, bird beds contain large quantities of organic matter which facilitate the survival of infectious agents.	When bird beds are disposed, they can be used as agricultural compost. The material delivery and removal, when originated from infected bird houses might act as a pathway for agent transmission.	Treatment of material (cleaning and disinfecting) before removing it from bird houses. Control over material transportation flux.
Dead Birds	During the productive process, the dead birds are removed from the compartments and taken to a specific place for the carcass elimination process.	Carcass elimination in the environment may attract different animals acting as a transmission path pathway.	Compliance to adequate biosecurity measures in the process of bird carcass elimination.
Vaccines and Medication	The use of vaccines and other medication is a constant procedure in the industrial poultry system.	The vaccines possess characteristics capable of preserving the viability of eventual AI and ND agents, found in an infected product.	Performance of vaccine and medication quality control measures. Use of MAPA registered products. Vaccine and medication application measures.

Risk Factors	Risk Factor characterization	Importance of the Risk Factor	Risk Factor management
Genetic Material	The compartments are not autonomous in all elements of the poultry production chain, having the need for introduction of genetic material of external origin.	The precedence of genetic material of external origin may serve as a source of infection if coming from an infected location.	Certification of the genetic establishment of origin. Animal movement control. Transportation in bio-safe vehicles.
Proximity to pig farms.	Traditionally, in the livestock system, bird flocks and pig herds share spatial proximity.	Pigs are susceptible to the Avian Influenza virus and possess the ability to amplify an infection and act as mutation boosters (shift), participating as an AI virus mutation place.	Identification of nearby granges. Adoption of biosecurity measures. Surveillance of regional pig population.
Proximity to other livestock production systems	The same property can include different livestock activities.	The flow of different production processes in a same farm may favor the entry of infectious agents.	Adoption of biosecurity measures. Risk assessment of all the existing livestock production systems near the compartments.
Fertile eggs ands residues	The organic matter produced by infected birds is present on egg shells or in egg cartons may act as introduction and dissemination pathways for the agents in the production system.	The presence of infected organic matter on egg shells and egg cartons may serve as a source of introduction and dissemination of agents in the production chain.	Adoption of cleaning and disinfecting measures of eggs and egg cartons which pass through the compartment.
Plagues	The bird houses attract plagues such as rodents and arthropods.	Plagues may be infected by these agents or may serve as transmission agents.	Adoption of plague prevention and control measures and continuous program efficiency assessment.
Proximity to poultry production establishments belonging to other integrating companies.	The compartmentalization system foresees the possibility of having other poultry properties belonging to other integrating companies in a same geographic region.	Birds of lower health status and their organic matter, equipment and vehicles can serve respectively as carriers or as pathways of transmission when within geographic proximity.	Adoption of standardized and equivalent biosecurity measures in companies located within geographic proximity of compartment. Surveillance maintenance of commercial bird population from companies which are not part of the compartment. Application of additional biosecurity measures for segregation of subpopulations from different companies.
Shared responsibility surveillance in the execution of the Official Veterinary Service	The Official Veterinary Service assures that the surveillance program and the procedures for suspicious case investigation will be applied in the compartment. The Official Veterinary Service performs monitory actions on a national level, in order to define the epidemiological situation of diseases and to assure that the monitory performed within the compartment, with the poultry subpopulation as a target, is being performed according to official parameters.	A lack of awareness regarding the national and local sanitary situation may interfere in the identification of risk points which are necessary for institution of control points in the certification process of establishments which follow the compartment model.	Official definition of generic biosecurity standards. Supervision of bird transit control. Definition of disease surveillance systems. Performance of audits by the central organ in local organs of animal sanitary defense and in the compartment system. Verification of standardization conditions of norm application.

Bird identification, traceability and movement control systems.

In order to favor the maintenance of the animal movement control, birds can only be removed from a compartment or placed in it with the emission of a GTA (Animal Transit Authorization) – an official control document – individually issued for each vehicle, bird or genetic material batch, with a sole origin, destination and species.

The GTA emission control system is coordinated by the official veterinary service with the establishment of control points in stages of the productive chain, from the place where the genetic material was produced and issued until the place where the birds are received in the slaughterhouses. The document is emitted by certified private veterinarians who are qualified and supervised by the official service. In the occurrence of a sanitary hazard which imposes any type of restriction to animal circulation, the GTA emission can only be issued by an official veterinarian.

Other than the information regarding bird and genetic material origin and destination, the GTA also provides lot traceability, bird health status and transport route information.

The movement record of breeding poultry of a given day contains information on the origin and health status of the genetic material, the incubation establishment, the date of birth, the number of birds, the vaccines and medication given in the incubator and on the transport vehicle. When placed in the rearing bird barns and sites, all lots of breeders receive identification. During this period, records are kept on mortality, daily elimination, water and feed consumption, medication and vaccines received visitors as well as data regarding the origin of every batch of feed received.

Before laying their eggs, the breeders are transferred to the breeding bird barns. The information referent to the origins of breeding flocks, transfer date, number of birds transferred and vehicles used in this activity as well as daily egg production are collected, other than information previously described.

The fertile eggs, when taken to incubators, are attached with information referent to load volume, production flock identification, date of collection, and the transport vehicle used. During the incubation process, the poultry's barns and sites origin information is related to the data referent to the incubation days, hatching days, vaccines and medication administered to the chick lots and destination of the load to production poultry establishments.

The day-old birds for slaughter are sent to production barns with information which enables identification of sites and farms of the breeding birds of origin, other than the incubator, the date of birth, the number of birds moved, the vaccines and medication administered in the incubator and information about the transportation vehicle.

All flocks of birds for slaughter receive identification. During the the production period, records are kept on mortality, daily carcass elimination, water and feed consumption, on medication and vaccines received, on visitors as well as data regarding the origin of every batch of feed received transportation vehicles of birds for slaughter.

Birds and genetic material only enter the production system when they possess known, inspected and certified origin by the official veterinary service.

Inspection system in the slaughterhouses

MAPA maintains a team of federal livestock inspectors in the bird slaughterhouses, responsible for the management of Federal Inspection Service.

The poultry is slaughtered in slaughterhouses which adopt procedures based on Self-Control Programs, such as the Good Fabrication Practices, Animal Wellbeing, HACCP, and others. Through the bird documentation, traceability and biosecurity measures are verified at this point of the production chain.

The companies prepare a slaughter plan, which includes people and vehicle control logistics. The flocks arrive at the slaughterhouse and are unloaded at the reception platform, where *ante-mortem* inspections are carried out by the SIF. The vehicles and the containers are washed and disinfected before being reloaded. The traceability process, begun in the production chain, is maintained during the

slaughter process, allowing the identification of flocks and the farms, sites and barns of origin at any time.

The SIF also performs documental mortality verification in the flocks and during transportation and, depending on the case, collects material for analysis and activates the animal health defense system.

Avian Influenza and Newcastle Disease Surveillance.

As a means of assuring bird health control in compartments, a monitoring system based on the maintenance of a surveillance system and on the routine performance of diagnostic tests, directed towards commercial and breeding birds, but also in back yard birds and eventual wild populations.

- BREEDING ESTABLISHMENTS WITHIN THE COMPARTMENT

As a means to assure the sanitary situation of the compartment birds stay Avian Influenza Free, the production farms will collect 30 individual samples of bird serum per production sites. The sampling will begin at 20 weeks of age and repeated at 35 weeks and 50 week, like shown on table 4.

The samples will be submitted to the ELISA test and the eventual results will be confirmed by IDGA test. The monitoring tests will be performed in MAPA authorized and monitored laboratories.

In case of the IDGA test is positive, the suspicious site will be inspected and the official veterinary service will collect biological samples immediately, in order to perform virological and molecular tests. The official veterinary service will follow the sanitary situation since the positive serological diagnosis in IDGA test. The surveillance tests will be performed exclusively in the MAPA official laboratory network.

The occurrence of clinical signals which characterize AI or ND associated with high mortality rates in sites or with the emergence of positive serology will be followed by sample collection and the performance of virological and molecular tests.

All birds at breeding poultry farms are systemically vaccinated for ND according to a program which guarantees a certain level of protective immunity during the lot life cycle.

- SLAUGHTERING ESTABLISHMENTS WITHIN THE COMPARTMENT

As a means to guarantee the sanitary situation of the breeding birds of a compartment as being free of Avian Influenza, 30 individual samples of bird serum will be collected per production site. According to table 4, the sampling will be done in birds with more than 21 days. The results should be available in a maximum period of 48 hours before the birds are sent to the slaughterhouse. The samples will be submitted to the ELISA test and the eventual positive results will be confirmed by IDGA test. The monitoring tests will be performed in MAPA authorized and monitored laboratories.

In case the IDGA test is positive, the suspicious site will be inspected and the official veterinary service will collect biological samples immediately, in order to perform virological and molecular tests. The official veterinary service will follow the sanitary situation starting with the positive serological diagnosis in IDGA test. The surveillance tests will be performed exclusively in the MAPA official laboratory network.

The occurrence of clinical signals which characterize AI or ND associated with high mortality rates in lots or with the emergence of positive serology will be followed by sample collection and the performance of virological and molecular tests.

The production sites of birds for slaughter will not perform vaccination against ND.

Establishments will have to comply with the passive surveillance regulations for AI and ND, with the obligation of informing to the official service about the occurrence of mortality rates according to PNSA directives.

- Back yard rearing areas and concentration of wild birds in adjacent areas to the compartment:

Back yard birds rearing premises close to the industrial poultry production centers will be identified. A surveillance system based on the identification and supervision of suspicious occurrences of health events in the population, executed by the official service, will identify the precocious presence of sanitary risks to the commercial poultry production system.

Sanitary education programs will be conducted as a means of alerting the human population which works with domestic bird rearing, about the need of risk communication to official veterinary service.

Table 4. Avian influenza sampling in each surveillance cycle per compartment.

Routine sampling *			Sampling in case of sanitary emergency in the same state	
Number of poultry production sites per category.	Number of breeding sites sampled in each surveillance period.	Number of commercial birds sites sampled in each surveillance period.	Number of breeding sites sampled in each surveillance period.	Commercial birds sites sampled in each surveillance period.
Up to 34	All	All	All	All
35-50	35	35		
51-80	42	42		
81-250	53	53		
>250	60	60		

Expected prevalence from 15% in 95% of reliability.

COMPANIES BIOSECURITY MEASURES PERFORMED DURING THE PRODUCTIVE PROCESS.

All existing establishments belonging to this project comply with national legislation in effect and are registered and certified by the official veterinary service in the existing control programs.

Production Installations

Barns and sites facilities are built in order to prevent the access of any type of bird or domestic animal.

The production centers are isolated by a fence with only access and a structure for vehicle cleaning and disinfecting. In barns with more than a site there is an isolation fence and a vehicle cleaning and disinfecting structure at the entrance.

For people access, procedures are followed according to the biosecurity manual of each phase of the process. In order to have access to sites and barns, hand and shoe higienization is compulsory. Visitor access is only allowed after complying with the quarantine measures.

People and vehicle access to production installations can only occur with previous authorization and a register will be made for each visit. The visitors obey the originating initial sequence, from newer flocks to older ones or according to sanitary status.

The interior surfaces of the barns are built to allow cleaning and disinfecting, performed according to established procedures which include pest management, litter removal, washing and disinfection of facilities and equipments.

The material used in barns beds and nest covering possess controlled origin. The litter, after use, undergoes treatment and is used as organic compost. During the productive process, the dead birds are removed from the barns and are taken to a specific place for the carcass elimination process.

All materials and equipments are cleaned and disinfected before entering sites or barns. The materials and equipments used in more than one site respect a quarantine period.

Pest management is permanently performed in all the barns, reducing the quantity of insects, rodents and bird in the interiors of installations.

The birds accommodated in barns comply with the official monitoring program for the compliance with the National Poultry Sanity Plan legislation in place. All birds and genetic material which don’t belong to the compartment come from establishments which are registered inspected and certified by MAPA. The birds within the same site are accommodated in the “all in all out” system.

Medication, vaccines and other raw materials comply with the MAPA criteria. The usage of these products is registered by MAPA.

The feed consumed by birds is produced in MAPA-inspected and approved feed mills and by quality certifying organizations.

The water supplied to the pen comes from a protected source or from public network. The water tank system and waterways are isolated and clean. Water is

chlorine treated (1-4 ppm) and the microbiological and physical-chemical quality standards are constantly assessed.

The site perimeter areas and barns are protected by a permanent forest border.

The employees do not have contact with other birds or other epidemiologically relevant animals outside the compartment. All employees receive training on biosecurity and good working habits.

The transportation vehicles are exclusive for each phase of the production process and are cleaned and disinfected according to the manual of biosecurity procedures. Vehicles coming from outside the compartment must be previously cleaned, and disinfected before having access to the bordering zone of the compartment.

The cleaning and disinfecting of the barns and other structures is performed at the end of each production cycle and accomplished according to biosecurity procedures. The barns are kept 10 days without new birds.

The litter and nest covering materials are disposed in closed containers, sealed to avoid the entrance of birds or other animals.

The data concerning mortality rates, poultry elimination, production, other than water and feed consumption are registered daily. Variations in these factors without known reason are immediately reported to the enterprise and to the official veterinary service.

Incubation establishments

Bird incubator facilities are built in such a way to prevent the access of any type of bird or domestic animal.

The incubator area is isolated through an only access, with a vehicle cleaning and disinfecting system.

For people access, procedures such as baths and change of clothing and shoes are followed according to the biosecurity manual of each phase of the process. Only authorized people and vehicles can access the incubator area and must sign the register logbook.

Visitor access is only allowed after complying with the quarantine measures.

People and vehicle access to production installations can only occur with previous authorization and all visiting people and vehicles will be registered. The people, material, and equipment flow, obey a unidirectional sense.

The interior surfaces of the barns are built to allow cleaning and disinfecting, performed according to established procedures which include pest management, washing and disinfection of installations and equipments.

All equipment and fertile eggs are disinfected before the entry to the incubator areas.

Plague management is permanently performed in all the incubator areas, reducing the quantity of insects, rodents and bird in the interiors of installations.

All the fertile eggs bound for the incubator come from farms which follow the official monitoring program, to comply with the National Poultry Health Plan of the legislation in place.

Medication, vaccines and other raw materials comply with the quality criteria established by the official veterinary service. The usage of these products is registered at MAPA.

The barn water supplies come from a protected source or from a public network. All the water tank system and waterways are isolated and safe. Water is chlorine treated (1-4 ppm) and the microbiological and physical-chemical quality standards are constantly assessed.

The perimeter areas of the incubator are protected by an forest border.

The incubator employees do not have contact with any other type of bird. All employees must receive training on biosecurity and good working habits.

Employees do not have contact with other birds or other epidemiologically relevant animals outside the compartment. All employees receive training on biosecurity and good working habits.

The vehicles in charge of transporting fertile eggs and the vehicles used for day-old bird distribution possess exclusive use, according to activity, and must be cleaned and disinfected before receiving containers. The day-old bird transportation containers are also cleaned and disinfected after use or are disposable.

The cleaning and disinfection of installations and incubator equipment are performed according to the biosecurity procedures concern each production cycle.

The production residues are stored and transported in closed recipients to areas where processing is performed in order to minimize the risk of such material.

Feed mills

Feed mill facilities are built in a manner for preventing the access of any type of bird or domestic animal. The mill area is isolated by a fence with a sole access, with a vehicle cleaning and disinfecting system.

For people access, procedures such as baths and change of clothing and shoes are followed according to the biosecurity manual of each phase of the process. Only authorized people and vehicles can access the incubator area and must sign the register logbook.

People and vehicle access to production installations can only occur with previous authorization keeping a visitor logbook. The flux of people, materials and equipment obey a unidirectional sense. The factories are built to ensure that the operation flux can be performed in hygienic conditions, from the arrival of ingredients and raw materials, during the production process, to the final product delivery. The factories possess a cleaning and disinfecting system for trucks which enter the factory grounds. The vehicles used for feed transportation attend exclusively to establishments with the same productive objective.

The factory's interior surfaces allow cleaning and disinfecting, which includes pest management, and disinfection of installations and equipments.

Plague control is permanently performed in all factory grounds, reducing the quantity of insects, rodents and bird in the interiors of installations.

The supplements and medication incorporated in feed manufacturing comply with the quality criteria established by the official veterinary service. The usage of these products is registered at MAPA.

The water supplied to the factories comes from a protected source or from a public network. The water tank system and waterways are isolated and clean. Water is chlorine treated (1-4 ppm) and the microbiological and physical-chemical quality standards are constantly assessed.

All employees receive training on biosecurity and the factories comply with the norms of good manufacturing practices, according to the determination of the official veterinary service.

The factories have an adequate ventilation system at hand in such a way to avoid excessive heat, vapor condensation and dust accumulation. The ventilation air inlets and outlets are protected to minimize likelihood of contaminating agents. Windows and other openings are screened and built in a way to avoid dirt accumulation.

Animal entrance is forbidden in areas where ingredients, raw material, manufactured products and packaging are kept or in any of the fabrication and manufacturing stages.

All feed produced is submitted to a physical or chemical treatment which makes it possible to minimize the risk of disease dissemination.

Self-control, inspection and audit procedures.

The assessment of each of the production models will serve for identifying which points of the production chain might be liable of control by the official services within the unique system of each enterprise. Inspection will be essential to maintenance of the compartment certification process, in periods of sanitary normality and in situations in which infectious agent circulation is occurring inner national boundaries.

The guarantee of maintenance of the certification system will be reached by means of audits performed by the official veterinary service and by the enterprise.

Appendix 4: Timetable

Activities	Period in Quadrimesters							
	1st	2nd	3rd	4th	5th	6th	7th	8th
	06/08	10/08	2/09	06/09	10/09	02/10	06/10	10/10
Project proposal elaboration and discussion with involved parties								
Submission of proposal to the STDF								
Consultant collaboration and assessment								
Presentation of pilot projects and beginning of data collection for the study.								
Collection data analysis.								
First project assessment visit by international consultant								
Second project assessment visit by international consultant								
First workshop for result presentation.								
Publication of project results.								
Compartment system definition by MAPA and beginning of the certification process of the first establishments.								

Appendix 5: Budget

Requested counterpart budget			
Activities	**Periodicity**	**Amount***	**Total amount***
Consultants	15 weeks	@ 4,500	67,500
Workshop preparation and implementation	2 workshops	@ 7,500	15,000
Office edit and translation of documents			5,000
		Sub-total	87,500
Administrative expenses of executing agency (13%)			11,375
		Total requested	98,875
Brazilian counterpart budget			
MAPA	#	**Amount***	**Total amount***
Government inspection (*Per diem*)	2,000	@75	150,000
Diagnostic tests			
serological	58,000	@3	174,000
Virological / molecular	5,800**	@20	116,000**
Brazilian Poultry Industries			
Risk analysis consultancy	4	@50,000	200,000
		Total Brazilian counterpart	640,000
		Total	738,875

*(USD)

** Projection

Appendix 6: Term of reference

DUTIES

To provide technical advisory support to MAPA on policies formulation and implementation for the development of the compartmentalization model applied to Brazilian Poultry Industry;

To analyze the epidemiological data and to help the conduction of the risk analysis of the compartments in way to identify a model addressed to Brazilian Poultry Industry;

To provide assistance in way to assure that project development is adequately integrated into the work plan of the Brazilian Poultry Compartmentalization Project;

To help the production of the draft and final document that will describe the work.

MINIMUM REQUIREMENTS

Veterinary science degree with experience with veterinary epidemiology;

Relevant experience in risk analysis assessments;

Work development in cooperation with official veterinary services and experience in management of poultry diseases is an asset.