

FACT FINDING
COMMITTEE ON THE
OUTBREAK OF FOOT
AND MOUTH DISEASE

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ACKNOWLEDGEMENT

The Committee appreciates the initiative of the former Prime Minister, Sir Anerood Jugnauth, GCSK, KCMG, QC and his Government to set up the present Fact Finding Committee to look into the outbreak of Foot and Mouth Disease in Mauritius and Rodrigues.

The Committee realizes that there was an urgent need to thoroughly enquire into this matter and to identify the source of the problem with a view to enabling Government to adopt necessary measures to avoid such situations in the future.

The Committee is grateful to the Government of Mauritius for the trust placed in the Chairperson and the members of the Fact Finding Committee. We appreciate the assistance provided by the Ministry of Agro-Industry and Food Security but we cannot help pointing out that the present enquiry would have been more conclusive and complete had this Ministry acceded to our request to extend our investigations to India.

The Committee would like to acknowledge and express its gratitude to His Lordship the Chief Justice of Mauritius for having put at the disposal of this Committee a courtroom and facilities to enable it to hold its sessions at the Supreme Court.

The Commissioner of Police has kindly delegated a Police Officer for the security of the Committee during its sessions both in Rodrigues and Mauritius.

This acknowledgement would not have been complete without a special word of thanks to the Secretary and staff of the Committee who have put in a lot of effort to ensure the smooth running of the Committee's business.

Finally, the Committee would like to express its gratitude to all officials, public officers, policy makers and members of the public who have come forward to explain and clarify important issues and to give their personal experiences and opinions. This has enabled the Committee to have an appropriate insight in the Foot and Mouth Disease in Mauritius and Rodrigues.

PREAMBLE

The Government of Mauritius has set up the present Fact Finding Committee and has appointed us, the undersigned, to enquire into the outbreak of the Foot and Mouth Disease in the Republic of Mauritius.

The mandate of the Committee, according to the Cabinet decision dated 02 September 2016 is to:

- (i) to investigate into and determine how the Foot and Mouth Disease may have entered into Rodrigues;
- (ii) to inquire into and determine whether there has been any failure on the part of the Veterinary Services in Rodrigues and Mauritius in the early detection and investigation of the Foot and Mouth Disease;
- (iii) to inquire into and situate the responsibility for authorising the shipment of the consignments of animals from Rodrigues in the month of July 2016 and their disembarkation in Mauritius; and
- (iv) to make such recommendations that the Committee may deem appropriate for strengthening the surveillance measures to minimize risks of entry of such diseases in Mauritius and Rodrigues.

Upon being set up, the Committee had notices published in the newspapers and announcements made on television and radio to inform the public that the Committee wished to hear members of the public who could shed light on the outbreak of Foot and Mouth Disease.

The Committee has had, on its own accord, to summon some people who did not readily come forward but who the Committee felt could be of help.

The Committee has proceeded to cover each and every aspect of its mandate.

The Committee started its hearing sessions as from 24 October 2016 although the Chairperson and members had preparatory working sessions in September and October. The hearing sessions ended on 28th November 2016 and the Committee has had the opportunity to hear policy makers, officials, breeders, butchers, members of livestock organizations and members of the public who came forward to share their knowledge, opinions and experiences.

The Committee also went to Rodrigues and had the opportunity to hear the Chief Commissioner, politicians, officials and members of the public. Their testimony was very enlightening in respect of the situation in Rodrigues.

The Committee has held numerous working sessions and it must be stressed that this Committee has carried out a completely independent enquiry into the matter, which includes the Government's handling of the epidemic.

After hearing all these persons, the Committee again had extensive working sessions to sort out and categorize all the information gathered so that it could, at the end of the day, submit a comprehensive Report.

This Report contains factual information on the disease, constructive criticisms, and measures which, in the opinion of the Committee, ought to be taken for the future.

INTRODUCTION

Foot and Mouth Disease [Aphthae epizooticae] is an infectious and sometimes fatal viral disease that affects cloven-hoofed animals, including domestic and wild bovid. The virus causes a high fever for approximately two to six days, followed by blisters inside the mouth and on the feet that may rupture and cause lameness in the animals.

Foot and Mouth Disease has severe implications for animal farming since it is highly infectious and can be spread by infected animals through aerosols, through contact with contaminated farming equipment, vehicles, clothing or through domestic or wild predators. Its containment highly depends on vaccination, strict monitoring, trade restrictions, quarantines and sometimes the killing of livestock.

Animals that can be infected by the disease include cattle, buffalo, sheep, goats, pigs and deer. Mice, rats and hens are not believed to contract the disease under natural conditions.

Foot and Mouth Disease was first recorded in Mauritius in September 1916. Initially reported in the eastern part of the island, in the district of Flacq, it rapidly spread to all the central districts causing 56 stations with a total of approximately 3,228 animals to be affected. Vaccines against Foot and Mouth Disease did not exist at that time. Control

measures imposed by the Colonial Government included complete ringing off of affected areas, confinement of animals in their herds and restriction of livestock movement including the movement of bullock carts and the transport of manure.

There was no selective killing but 158 animals were compulsorily slaughtered. There is no report as to whether the meat was offered for sale for human consumption although it was already known at that time that meat containing Foot and Mouth Disease virus presented no danger for human consumption.

A few more outbreaks were recorded in early 1917. A systematic island wide examination of stock was undertaken and by April 1917, no new cases were recorded. This was due to the fact that all the animals had become immune to the disease by then. The following month quarantine and movement restrictions were removed. The exact source of the infection was not conclusively established but it was a firm belief that the virus came with the importation of five bulls and three cows from Hissar, India, in May 1916. This led the newly created "Mauritius Stock Breeders Association" to refuse cattle from India in 1921, at a time when there was also a major outbreak of rinderpest, a major killer disease of cattle in India. It is worth noting, at this point in time, that is in 1916, the livestock population in Mauritius was several times higher than it is now. There were hundreds of

bullock carts carrying sugar cane to the numerous sugar factories and manure to various sugar cane plantations. The ban on the movement of bullock carts and restriction of movement of livestock in general, contributed significantly to the control of the disease. It was already known that Foot and Mouth Disease is generally a self-limiting disease causing very low mortality in livestock. The exact mortality rate is not known but it is believed to have been very low. In addition, the number of animals culled was also insignificant, representing less than 0.2 % of the cattle population.

All the animals (cattle, sheep, goats and pigs) were thus naturally immunized against the disease. No information is available regarding the deer population and Foot and Mouth Disease at that time.

Foot and Mouth Disease disappeared and Mauritius was again considered as being free from Foot and Mouth Disease. This situation was formalized after the submission of necessary documents to the World Organization for Animal Health and Mauritius became recognized worldwide as a country free from Foot and Mouth Disease without vaccination. This highly prestigious status suffered a severe blow when Foot and Mouth Disease was discovered in Rodrigues in 2016.

A. FOOT AND MOUTH DISEASE IN RODRIGUES

Prior to July 2016, Rodrigues was an island known to be free from Foot and Mouth Disease as there had never been any reported cases of Foot and Mouth Disease until then.

I. HISTORY OF THE OUTBREAK

The island of Rodrigues is situated some 350 kilometres north east of Mauritius. It is approximately 18 kms long and 8 kms wide with a population of some 40,000 inhabitants. It has a high livestock density comprising of approximately 6000 cattle, 20,000 sheep and goats and 15000 pigs. There is no deer population on the island.

On **07 July 2016**, a cattle breeder reported to the Veterinary Services in Rodrigues a case of frothing and excessive salivation in a cow on a small farm located in Roseaux, a village in the north of Rodrigues. Dr. J.M. Samoisy, veterinary officer employed by the Commission for Agriculture of the Rodrigues Regional Assembly, examined the animal and made a provisional diagnosis of poisoning. The animal was given treatment accordingly. The following day, two new cases of mouth frothing were reported in cows at Terre Rouge, located some 4 kilometres north east of Roseaux and the same type of treatment was given for the same suspected poisoning. Four days later, one more case of frothing was reported in Mont Fanal, which is some 3 kilometres to the west of Roseaux and Terre Rouge. By **15 July 2016**,

6 new cases were reported, in Roseaux, Terre Rouge and in Vanguard, which is a village next to Roseaux and Terre Rouge. All these cases seemed to respond to the treatment meted out by the Veterinary Services and the diagnosis of poisoning was favoured in the list of differential diagnoses.

However, as the situation was becoming alarming, Dr. J.M. Samoisy officially reported the matter on Friday **15 July 2016**, 8 days after the first reported case, during the weekly meeting at the Commission for Agriculture. He expressed concern on the unusual increase in the number of cattle exhibiting frothing in the region. He reassured the Authorities by telling them that the animals were responding well to treatment up to then. It is worth noting that by that time 9 animals had already been reported sick but no fatal cases had been noted. Dr. J.M. Samoisy also sent a letter on **15 July 2016** expressing his concern again to the Departmental Head, Commission for Agriculture through the officer in charge, Mr. Jerome Félicité. At that point his diagnosis was still poisoning. The Chief Commissioner and the Island Chief Executive were informed of the alarming situation. A Crisis Committee was set up under the chairmanship of the Chief Commissioner who was also the Commissioner for Agriculture. The Committee met almost every day to monitor the situation and to ensure that appropriate actions were taken.

On **19 July 2016**, at a special meeting at the Department of Agriculture in Rodrigues, it was decided that all cattle showing frothing would be dealt with by one veterinary officer and his team and other cases would be dealt with by the other veterinary officer and her team in order to avoid the spreading of the infection through them. It was also decided to organize meetings with breeders to apprise them of the precautionary measures to be taken to contain the spread of the infection. At that point it would seem that the Authorities in Rodrigues started to have doubts about the diagnosis of poisoning.

Moreover, being given the extent of the problem, the acting officer in charge of Agriculture requested Dr. Meenowa, Principal Agricultural Officer and Head of the Veterinary Services of Mauritius, to provide veterinary assistance to Rodrigues for an early diagnosis. It is most unfortunate that Dr. Meenowa did not give due consideration to the request and brushed it aside on flimsy grounds, one of which was that veterinary officers were on leave. Dr. Meenowa found it proper to instruct the veterinary services of Rodrigues to send over blood samples to the Division of Veterinary Services for analysis leaving the impression that he treated the whole matter very lightly.

Dr. J.M. Samoisy sent a letter along with photos of frothing and mouth lesions to Dr. D. Meenowa, informing him that there was a high incidence of mouth lesions and frothing in cattle in the region of Terre Rouge and Roseaux. By that time, similar cases had also been

observed in Mont Fanal and Vangard. In his letter, Dr. J.M Samoisy pointed out that 32 cases in ten different farms had been reported and that there had been two deaths already. He added that 18 additional cases had also been reported in the previous two days. The salient clinical signs reported by Dr. J. M. Samoisy included anorexia (off feed), ulcerations of the mouth, tongue and gums, lymphadenopathy (enlargement of superficial lymph nodes) and fever. His list of differential diagnoses included in order of priority: poisoning, bovine vesicular stomatitis, malignant catarrhal fever and bovine viral diarrhoea/mucosal disease. He mentioned, however, that Foot and Mouth Disease “*remained a possibility*” although lameness and foot lesions were absent. Considering poisoning as the most plausible factor, he assured that an investigation will be carried out to look into the possible contamination of pastures and water sources. It was reported that there had been a previous history of poisoning in the area as during the bean-harvesting season, farmers usually sprayed their fields with insecticides and this may have been the source of the poisoning in the cases at hand. However, a fast spreading infection was not ruled out altogether.

On **20 July 2016**, Dr. Karen Samoisy, a veterinary officer in Rodrigues came to Mauritius with several samples including blood, internal organs and stomach contents obtained from post-mortem examinations of the animals. Tests carried out on those samples ruled out Foot and Mouth Disease amongst others. Biochemical and

bacteriological tests proved non conclusive. It is worth noting that at that point in time no toxicological tests were performed although poisoning was highly suspected. However, despite the inconclusive diagnosis, sensitization of breeders in Rodrigues continued as the prevailing situation was becoming worse.

The results brought relief to all stakeholders but the disease continued to spread in Rodrigues. Dr. K. Samoisy then suspected that the infection was Foot and Mouth Disease and she had serious doubts on the results obtained in Mauritius on **21 July**. She most fortunately took a bold and proactive decision to seek advice from CIRAD in Reunion Island. The e-mail she sent to CIRAD, not only gave a description of the clinical signs, it also contained photos of the lesions accompanied by a request to have samples tested there.

This Committee cannot, not commend, the courageous initiative of Dr. K. Samoisy in the face of the total failure on the part of the Division of Veterinary Services in Mauritius to correctly assess the gravity of the situation in Rodrigues.

The Ministry of Agro Industry and Food Security was clearly ill-advised by Dr. D. Meenowa who was under the wrong impression that the high incidence of frothing in animals would not be contagious for the animal population, without even carrying out an investigation in the matter.

In fact, as at **25 July 2016** the one isolated case reported on the **7 July** had increased to 62 cases. This emergency situation regarding the livestock in Rodrigues could not have escaped the attention of an experienced veterinary in these circumstances; and yet Dr. Meenowa felt there was no need for concern.

It is even more surprising that a second batch of samples comprising 54 tubes of non-clotted blood brought to the Animal Health Laboratory on **27 July 2016** was again found not to positive for Foot and Mouth Disease.

As has been said already, Dr. Meenowa having been apprised of the increasing number of animals affected by the same symptoms should have turn his attention to the consignment of animals that had left Rodrigues on 13 July 2016 for Mauritius. Even if at that point he did not know for sure the exact cause of this existing condition, he should as the Head of the Veterinary Services, have shown the intellectual curiosity of finding out whether this consignment of 13 July would show the same symptoms. The Committee is fully aware that by that time that consignment would have been sent to various farms on the Island but the Committee finds that it was not impossible to know where the animals had been sent.

Dr. J.M. Samoisy also failed in his duty when by 25 July he did not draw the attention the attention of the Division of Veterinary Services

in Mauritius about the consignment of the 13 July. Again, even if he were not at that time sure of the cause of this condition, the rapid increase in number should have at least brought him to warn the Mauritian Authorities being given that these animals were destined for human consumption.

In the meantime, in Rodrigues, new farms and villages were affected in Rodrigues. On **27 July 2016**, Dr. J.M Samoisy contacted Dr. D. Meenowa to inform him of a forthcoming consignment of livestock from Rodrigues to Mauritius. Dr. Meenowa did not there and then find any cause to refuse the said shipment to Mauritius. However, two days later, on **29 July on 2016**, he advised that no livestock should be allowed to leave Rodrigues on M.V. Anna on **30 July 2016**. The breeders in Rodrigues who had already sold the animals and the butchers from Mauritius who had already paid for those animals strongly objected to this decision of the Authorities. In the end, other people including politicians came forward with strong protests and objections against the said decision. In the face of these protests, discussions were held between officials of the Commission for Agriculture of Rodrigues and Dr. Meenowa resulting in the latter agreeing to the consignment of livestock leaving Rodrigues on **30 July 2016** on MV Anna provided that those animals came from non-infected areas and did not show any frothing or mouth lesions at the time of departure. Animals were thus embarked on M.V. Anna on **30 July 2017** as agreed after Dr. J.M. Samoisy had confirmed that they were

then in good health. The Committee notes that by that time the disease had spread all over Rodrigues.

It is to be noted that on **26 July 2016** the decision had been taken in Mauritius to send veterinary assistance to Rodrigues. However, it was only in the evening of **30 July 2016** [12 days after the Division of Veterinary Services was apprised of the situation], that two veterinary officers from the Division of Veterinary Services in Mauritius and one veterinary epidemiologist from the Indian Ocean Commission landed in Rodrigues for further investigation and collection of laboratory samples. On **31 July 2016** this team saw lesions characteristic of Foot and Mouth Disease including excessive salivation, frothing, mouth and tongue ulcerations and inflammation of the coronary band in the feet of animals. The team also observed a typical Foot and Mouth Disease vesicle on the muzzle of a pig. It is strange that Dr. J. M Samoisy never made these observations. Blood samples (whole blood and non-clotted blood) were collected and sent to Animal Health Laboratory for examination. On **01 August 2016** the tests revealed the presence of non-structural proteins for Foot and Mouth Disease virus. It was then that the Division of Veterinary Services realized that a consignment of livestock which, had landed in Mauritius on the **15 July 2016** from Rodrigues, could present a serious risk for Mauritius.

The diagnosis of Foot and Mouth Disease was thus established on 01 August 2016, **24 days** after the index case was reported. In the meantime, 145 cases had been reported in 8 villages in Rodrigues.

If the Division of Veterinary Services had taken more seriously the alarming situation in Rodrigues, the consignment leaving Rodrigues on **13 July 2016** i.e. 6 days after the index case, would not have been allowed into Mauritius on **15 July 2016**. In any case, following the confirmation of the diagnosis of Foot and Mouth Disease on **01 August 2016**, the Ministry of Agro-Industry and Food Security in Mauritius imposed a ban on all livestock and livestock products including chicken and eggs coming from Rodrigues.

The confirmation of the Foot and Mouth Disease, somehow gave rise to a chaotic situation and much confusion among technicians, breeders in Rodrigues and the Authorities. A Crisis Committee chaired by the Chief Commissioner was set up on **03 August 2016** in Rodrigues to consider the various means of controlling the disease; to discuss the socio-economic impact of the disease, and to assess the short and medium term impact of the disease on livestock breeding in Rodrigues. Consequently, the Rodrigues Authorities opted for partial stamping out of the sick and the physically in contact animals as vaccines were not available at the material time. This measure was announced to the people of Rodrigues on **04 August 2017**. As will be seen, this was not the best remedy to the situation.

Although the Indian Ocean Commission expert had made it clear that the best option remained mass vaccination as the whole island might have been infected, yet pending the arrival of GIPM officers from Mauritius, a decision was taken to slaughter animals by slitting the throats of the animals by professional butchers as from **06 August 2016**. The stamping out started in the western region to protect areas with high livestock density such as Eau Vert, Mt. Croupier, Anse Nicolas, Camp Pintade, Corail, Petite Butte and surrounding areas. The method adopted for the culling was considered atrocious and gave rise to much concern regarding animal welfare. Butchers were paid to slaughter the animals and more often than not it took place in the presence of the owners and their families, who were thus traumatized by this experience. This type of culling of animals continued up to **10 August** when the GIPM team arrived in Rodrigues.

Foot and Mouth Disease continued to spread to new farms and villages mainly because of uncontrolled movement of affected animals to new areas including the western part of the island (Pistache and Salines) where approximately 30% of the local cattle herd is raised. In this region, farmers have less control over their herds as animals tend to be more mobile.

It is worth noting that on **9 August 2016** the Division of Veterinary Services recommended that stamping out be stopped. It proposed,

instead, mass vaccination for Rodrigues and exhorted the Rodrigues Regional Assembly to review its decision but in vain.

The Rodrigues Authorities came up with a compensation policy for farmers whose animals died from Foot and Mouth Disease or whose animals would be stamped out as part of the Foot and Mouth Disease control program. This decision to compensate was in itself a good decision although the rate was subject to controversy.

It was finally decided to compensate the Rodrigues breeders in line with the international norm that is 75% of the market value of the animal. Problems arose when Mauritius adopted a higher percentage of compensation for Mauritian breeders. At the end of the day, breeders in Rodrigues requested and obtained the same rate of compensation as in Mauritius. This increased compensation prompted the breeders in Rodrigues to offer their animals for culling, even when it was not necessary. This considerably increased the amount of taxpayers' money wasted in the management of Foot and Mouth Disease in the Republic of Mauritius. In Rodrigues, there were even alleged cases where breeders would intentionally have caused frothing in their animals to obtain compensation. There is an ongoing police enquiry in the matter.

The Veterinary Services in Rodrigues continued to examine herds and any animal reported sick in a newly infected area was stamped out within the next 12 hours.

It was soon realized that Foot and Mouth Disease had spread almost all over the island so much so that on **09 August 2016**, the Division of Veterinary Services advised that stamping out in Rodrigues be stopped as the whole country could be considered as infected. However, by **09 August 2016** the method of traditional throat slitting by butchers had stopped and was replaced by gunshots administered by the GIPM team that had arrived on the island. The team was assisted by two veterinary officers from Mauritius as from 10 August 2016. These officers also performed euthanasia on lambs, kids and piglets by using anesthetic drugs.

The modified stamping out continued in many villages despite the advice of the Division of Veterinary Services and by **10 August 2016**, 2380 cattle, goats, sheep and pigs had been killed. It is to be noted that 19 additional deaths by Foot and Mouth Disease had also been recorded by that time. The killing of animals only ended on **18 August 2016**. As at that date 710 cattle heads, 1472 sheep and goats and 214 pigs had been unnecessarily stamped out, against the advice of the Veterinary Services.

A first set of tests carried out by the Onderstepoort Veterinary Institute in South Africa had indicated the presence of SAT1, SAT2 and SAT3 serotypes of the Foot and Mouth Disease virus. However, results of epithelial testing carried out by the Agence Nationale de Sécurité Sanitaire de l'alimentation [ANSES], a World Organization for Animal

Health Reference Laboratory in France, revealed the presence of the O-serotype. The Authorities of Rodrigues were informed on **14 August 2016** about the finding of ANSES and thus the vaccines containing the SAT serotypes which had already been ordered from Onderstepoort Veterinary Institute were not used.

Collection of samples including serum and epithelial cells in Rodrigues by an expert from Botswana Veterinary Institute on **15 August 2016** also detected the presence of O-serotype. This was further confirmed by Pirbright Institute in the United Kingdom.

A vaccination campaign using a fresh batch of vaccine containing SAT1, SAT2 and O-serotypes from Botswana Vaccine Institute (Aftovax) was started on **22 August 2016**, 47 days after the outbreak. This vaccine was later replaced by Aftopur Doe (Manisa type-O) oil based vaccine and it is still being used in Rodrigues. Four additional veterinarians from Madagascar provided assistance in the vaccination programme and it is reported that two rounds of vaccinations have already been completed and the third round of vaccination is currently in progress. It is worth noting that no new case of Foot and Mouth Disease has officially been reported in Rodrigues since the beginning of the vaccination campaign.

Several breeders and the Press were under the impression that the disease existed in Rodrigues long before the index case was reported

on 07 July 2016. However, an examination of the “Occurrence Book” of the veterinary services in Rodrigues, showed that the number of cases reported of sick animals did not show any drastic increase in number prior to 07 July 2016 as it would have if Foot and Mouth Disease had been present on the island before that date.

While it can be accepted that the first case of frothing was attributed to suspected poisoning, the report of several cases at different locations within a short period of time should have incited the veterinary officers to rule out this diagnosis as everything pointed to an infectious condition. Although Dr. J.M Samoisy reported to his superior an abnormally high occurrence of frothing in animals on 15 July 2016, he reported the situation to the Head of the Veterinary Services of Mauritius only on 19 July 2016. He presented a list of differential diagnoses but maintained poisoning as the main one. He gave a list of other possible infectious conditions but did not place Foot and Mouth Disease on top of the list. More importantly, he did not draw the attention of the Division of Veterinary Services that he had already authorized a consignment of livestock, which had reached Mauritius on **15 July 2016.**

Dr. K. Samoisy, on her part, seemed to have been quite convinced that she was dealing with Foot and Mouth Disease. However, she did not collect the best samples for analysis. She tried to consult other people in Rodrigues and elsewhere but somehow she was not properly

advised as to the samples that should be collected. She brought some samples to Mauritius on **20 July 2016** and on the following day she shared her suspicions with Dr. T. Mohadeb, a Senior Veterinary Officer at the Division of Veterinary Services to the effect that Rodrigues could have been affected by Foot and Mouth Disease. Dr. Mohadeb indeed confirmed that Dr. K. Samoisy did mention Foot and Mouth Disease on that day.

Dr. K. Samoisy maintained before the Committee that she had also discussed the possibility of Foot and Mouth Disease with the Head Veterinary Services, Dr. D. Meenowa, and Senior Veterinary Officer Dr. R. Ramjee in Mauritius. Ironically enough, some animals, which had been imported into Mauritius on **15 July**, were already showing clinical signs of Foot and Mouth Disease at that time but the Division of Veterinary Services was not yet informed.

It is undeniable that there has been considerable delay in reporting the disease as too much emphasis was placed on poisoning or other infectious causes. Admittedly, the failure of the Animal Health Laboratory to detect Foot and Mouth Disease in the first batch of samples brought to it by Dr. K. Samoisy, misled the veterinarians of Rodrigues. Even if the samples were not the best for this type of tests, it was not altogether impossible to detect the disease from these samples.

Furthermore, Dr. K. Samoisy, who was the only one who was quite convinced about the diagnosis of Foot and Mouth Disease, failed in her capacity of professional veterinarian in as much as she relied too much on laboratory results. As a veterinarian, she should have known that laboratory results per se should not be used to establish or eliminate a diagnosis as sometimes there can be false negatives. That was indeed the case with the results initially obtained at the Animal Health Laboratory because the Animal Health Laboratory failed to detect Non Structural Proteins antibodies in the first serum samples brought to it by Dr. K. Samoisy. Non Structural Proteins antibodies are not detected in recently infected the animals. But in the present case, Dr. K. Samoisy confirmed that she had collected the samples from the area of initial infection more than 10 days after clinical signs had been observed. It is, therefore, very surprising that Non Structural Proteins antibodies were not detected in the serum samples. The most probable explanation for this is that the initial tests were not properly carried out by the right persons. It is worth noting that the laboratory technicians at the Animal Health Laboratory do not, as a matter of course, run Non Structural Proteins tests. It is quite possible that this happened because of their lack of experience. In fact, one technician, namely Mrs. Foondun, agreed to this possibility. At this stage, the Committee cannot help pointing out that evidence clearly shows that the technicians receive little support from the veterinary officers posted at the Animal Health Laboratory regarding the carrying out of tests. Dr. M. R. Jaumally confirmed that previously veterinary officers trained in

laboratory analysis used to carry out those tests but this practice has now ceased. It also came out that even the veterinary officers who have had training abroad, for instance Dr. A. Jahangeer, neither carry out the tests themselves nor do they provide any assistance to the younger technicians for the carrying out of these tests. In these circumstances, it should not come as a surprise that the tests did not yield the correct result.

The failure on the part of Dr. K. Samoisy to collect appropriate samples for diagnosis is most unfortunate. Indeed, she ought to have collected epithelial cells from the mouth lesions that were already apparent in some animals. It would seem that she did not consult her colleagues as to the specimens to be collected. Had she, at least, searched on the internet, she would have known that epithelial cells were the most appropriate samples in the circumstances. If epithelial cells had been sent to a Reference Laboratory, confirmation of diagnosis as well as the elucidation of the strains involved would have been obtained in a matter of hours.

Nevertheless, the competence and ability of Dr. K. Samoisy are not being questioned and clearly her mistake in taking inappropriate samples was due more to lack of experience than anything else. As already stated, the samples could still have been helpful, if the tests had been properly carried out.

However, the Committee notes that the senior colleagues of Dr. K. Samoisy in Mauritius are far more experienced and yet they failed to interpret the laboratory results properly. They should have realized that these results were not totally reliable. Dr. J.M Samoisy has also laid unnecessary emphasis on poisoning and devoted all his attention to this wrong diagnosis when he should have ruled it out at a much earlier stage in view of the increase of reported cases.

The laboratory diagnosis of Foot and Mouth Disease was confirmed on 01 August 2016, that is 24 days after the index case. Foot and Mouth Disease being one of the most contagious animal diseases in the world, had ample time to spread all over the island in these 24 days and it even reached Rodrigues. This would not have happened if the disease had been promptly diagnosed.

The Committee is under the sad impression that the stamping out of animals in Rodrigues killed more animals than Foot and Mouth Disease would have. According to expert evidence, Foot and Mouth Disease would have killed less than one percent of the livestock population whilst over 2000 animals were culled in Rodrigues. This hasty decision by the Rodrigues Authorities to cull the animals was not only wrong but it was also costly and very damaging to the good name of the Republic of Mauritius regarding animal welfare. This Committee cannot even attempt to assess the social and psychological impact of this decision on the people of Rodrigues.

II. POSSIBLE SOURCE OF ENTRY OF FOOT AND MOUTH DISEASE VIRUS ON RODRIGUES ISLAND

Rodrigues is an island, which had been free from Foot and Mouth Disease. Nevertheless, it is generally agreed that in 2016 the first clinical manifestation of Foot and Mouth Disease occurred in Rodrigues and that the virus came to Mauritius through animals imported from Rodrigues.

For Foot and Mouth infection to occur, the virus has to be introduced to a healthy animal through an infected animal, animal product or an inanimate object. Past experience on outbreaks of Foot and Mouth Disease in countries free from Foot and Mouth Disease indicates that Foot and Mouth Disease virus is normally introduced via infected animal product namely via illegal entry of contaminated meat coming from infected countries. In the case of Rodrigues, the Committee is of the view that it is very unlikely that the virus came through illegally imported animal products or inanimate objects as all these products come from Mauritius and can only enter Rodrigues legally.

Indeed, livestock entering Rodrigues have to go through Mauritius. Imported animals destined for Rodrigues have to undergo at least a two-week quarantine in Mauritius before entering Rodrigues. It was reported to the Committee that Rodrigues had received an important consignment of animals in September or October 2015. They were kept on Crab Island, off the coast of Rodrigues. They were mostly

sheep and many died of doubtful causes as no accurate cause of death was established. Many people in Rodrigues, including some politicians, were under the belief that Foot and Mouth Disease could have entered Rodrigues via these animals. The Committee has ruled out this possibility because the incubation period of Foot and Mouth Disease rarely exceeds 15 days and thus the disease should have been spotted during the quarantine period in Mauritius before the animals were sent to Rodrigues. However, even if the virus had entered Rodrigues with the animals imported in 2015, it would have appeared and it would have infected other animals much earlier than July 2016. In addition, Foot and Mouth Disease is not such a killer disease as to have killed so many of the sheep on Crab Island in a short time.

Apart from illegal entry of meat products and inanimate objects, one other possibility invoked before the Committee regarding the means of the entry of the virus in Rodrigues is through contaminated animal product such as meat which enters Rodrigues without passing through Mauritius on board of the many yachts that call at the port of Rodrigues every year. It must be pointed out though that every yacht is inspected on arrival in Rodrigues by health inspectors. In principle no food item is allowed on the island but bins of these yachts are emptied ashore. Any live animal including dogs or cats have to stay on board. The veterinarian is called on board when live animals are present.

It was not denied that passengers on those yachts usually carry food items including processed meat or meat products. Depending on their ports of call before reaching Rodrigues, there is a possibility that some of these meat items could have been contaminated with Foot and Mouth Disease virus.

Some of these food items may have been brought on land by passengers to be disposed of in the bins kept on the quay. The contents of these bins are emptied a few times a week and transferred to larger containers kept inland and the contents are later incinerated. It is important to note that these containers are not found in a secured or fenced area and as such they are easily accessible to stray dogs and other animals.

It is undeniable that the control of meat items arriving by yachts is not as effective as it should be. As a result, there are numerous possibilities for contaminated meat to have found its way on the island and pretty much inland from these yachts.

A close scrutiny of the records of National Coast Guard and the Ministry of Health regarding yachts berthing in Rodrigues for the period 2015-2016, has revealed that the last ports of call of these yachts include countries having Foot and Mouth Disease namely Argentina, Malaysia and Thailand. All the strains isolated in various countries of the world are reported to the World Reference Laboratory for Foot and

Mouth Disease and consultations of the various Reports of the World Reference Laboratory do not indicate the presence of Ind-2001d Foot and Mouth Disease virus in Argentina, Malaysia or Thailand. The Ind-2001d strain has been isolated in the Middle East on a few occasions but there was no evidence of any yacht arriving from that region to Rodrigues during the material time. In these circumstances, the possibility that the virus entered Rodrigues from leftover contaminated meat from yachts is very remote, almost impossible.

An important consideration to be borne in mind when considering the probable source of the infection is the strain of the virus involved. Detailed analysis carried out at the Pirbright World Reference Laboratory for Foot and Mouth Disease in the United Kingdom, has indicated, without the shadow of a doubt, that the virus that has caused the Foot and Mouth Disease outbreaks in Rodrigues and Mauritius was the serotype O, topo-type SA-ME, lineage Ind-2001d which has a very high resemblance with the strains recently isolated in Nepal. This virus was first isolated in India in 2001 but later spread to several countries in North Africa and finally to the Middle East in 2003. It is also a fact that regular and sustained movement of cattle and buffalo from India to Nepal has caused most of the Indian Foot and Mouth Disease strains to enter Nepal.

There is also evidence that a group of people from Rodrigues had gone to Gujarat in India (where Foot and Mouth Disease is endemic and

occurs all year round) for some agricultural training. It was the view of some that those people could have brought the virus to Rodrigues. The Committee investigated further along that line and found out that those farmers returned to Rodrigues several days after the Foot and Mouth Disease outbreak in the island. The possibility that the virus entered Rodrigues through those farmers is, hence, ruled out.

The Committee is of the view that the subject virus has most probably originated from the Asian region that comprises India, Pakistan, Bhutan, Sri Lanka, Bangladesh and Nepal. Except for India, Mauritius does not officially import any livestock or meat from any of these countries. However, the extremely high degree of resemblance between the strain recently isolated in Nepal and the Mauritian strain is very significant. It is of public knowledge that there is no quarantine for animals moving between India and Nepal and Indian buffaloes are brought freely into Nepal for slaughter. In these circumstances, all the Foot and Mouth Disease strains circulating in Nepal most probably came from India just like the SA-ME Ind-2001d lineage. As Mauritius does not import any animal product from Nepal, it is more likely that the strain isolated in Mauritius came from India and not Nepal. The means by which it was brought to Mauritius would probably be in frozen buffalo meat that is imported regularly from India in huge quantities.

Meat product that enters Rodrigues from Mauritius is frozen buffalo meat imported from India. There is evidence that cartons of frozen

buffalo meat leave the cold storages in Rodrigues where they are sold in shops and used in major restaurants and hotels. Unused bits or leftovers of the meat carrying the virus could have been given to animals, particularly pigs. The Committee bears in mind that the nature of livestock breeding in Rodrigues involves animals roaming everywhere including in public places. It was, thus, very easy for the virus to spread rapidly to several parts of the island.

It is the considered view of the Committee that the most probable possibility is that the Foot and Mouth Disease virus entered Rodrigues via Indian frozen meat from Mauritius. Then Foot and Mouth Disease entered Mauritius, as a disease, through the importation of infected animals from Rodrigues on 15 July 2016. Indeed, animals from that consignment showed clinical signs of Foot and Mouth Disease and the disease has been confirmed by World Organization for Animal Health Reference Laboratories at ANSES, France and at Pirbright Institute in the United Kingdom.

True it is that Mauritius imports livestock either from countries that are recognized free from Foot and Mouth Disease by World Organization for Animal Health such as Australia, or from zones or regions recognized Foot and Mouth Disease free by the Veterinary Authorities of exporting countries such as South Africa and Kenya and not only from India. While South Africa has a zone recognized by the World Organization for Animal Health as free from Foot and Mouth Disease,

the health certificates issued by this country do not indicate whether the animals do in fact originate from that specific zone. Kenya does not have any World Organization for Animal Health recognized zone free from Foot and Mouth Disease and the Division of Veterinary Services has to rely on the word of the Veterinary Authorities of Kenya that no Foot and Mouth Disease outbreak has occurred within the zone from where animals destined for Mauritius, originate. The risk of Foot and Mouth Disease virus coming from these countries cannot, thus, be totally ruled out were it not for the fact that the strains circulating in those countries do not match the strains found in the Republic of Mauritius.

In addition, Mauritius imports meat from many countries, some of which are infected with Foot and Mouth Disease. Processed or cooked meat such as sausages and canned meat are even imported without permits from the Division of Veterinary Services. These countries include China and Brazil but again the virus present in the Republic of Mauritius did not match the strains circulating in those countries.

The only other country that exports large quantities of meat on a regular basis to Mauritius is India. In India, Foot and Mouth Disease is endemic and so are several strains including SA-ME Ind-2001d. In fact, Foot and Mouth Disease occurs every day and in every region in that country despite a recently World Organization for Animal Health

approved control programme set in place in respect of Foot and Mouth Disease.

The Committee cannot help noting that with regard to importations from India, there are certain disturbing factors:

- Mauritius has been importing frozen buffalo meat from India since 1983 and meat from that country had never been the cause of any specific animal disease in Mauritius because the Government of Mauritius authorized the said importation after strict veterinary inspections in India by senior veterinary officers. The evidence showed that after several veterinary inspections, a shortlist of establishments was approved by Division of Veterinary Services especially the fully integrated plants comprising of abattoirs, deboning plants and cold storages. But, following a Cabinet decision in 2009, all the Plants approved by the Agricultural Production Export Development Authority [APEDA] were automatically authorised to export meat to Mauritius without any inspection by Mauritian veterinary officers. This Cabinet decision concerns some 20 Indian establishments, 17 of which have never been inspected by the Division of Veterinary Services of Mauritius.
- It is very disturbing that the veterinary import conditions imposed by the Head Veterinary Services do not include the import clause

relating to maturation of meat prior to deboning. This clause is enshrined in the World Organization for Animal Health Terrestrial Code for guidance to Chief Veterinary Officers and it ensures that Foot and Mouth Disease virus in meat is killed before being packed and stored pending export.

On the whole, the Committee holds the view that the Foot and Mouth Disease virus most probably, entered Mauritius via imported frozen buffalo meat from India because of the lack of effective control on the part of the Division of Veterinary Services to regularly inspect the meat establishments and to impose appropriate conditions, although in the present outbreak of the disease the virus came back from Rodrigues as will be seen.

The Committee takes good note of the fact that Dr. Meenowa has made several verbal and written requests to the Ministry to be authorized to inspect the plants in India but most unfortunately his requests have not been acceded to. The Deputy Permanent Secretary, Ms. Callychurn, while agreeing that veterinary inspections of the Indian establishments were necessary, explained that Dr. Meenowa did not present a strong enough case and the Ministry could thus not effectively assess the reasons justifying the veterinary inspections. Hon. M.K. Seeruttun, Minister of Agro-Industry and Food Security was of the view that since all the establishments had already been approved by APEDA, there was no need for any additional inspections

as this could have been perceived as a lack of trust in the Indian Authorities by Mauritius.

The evidence before the Committee shows that it is a standard practice, adopted by all countries importing meat from India, to have their own officers inspect the Indian establishments. It is undeniable that in India, there are world-class abattoirs but at the same time, there are those, which do not have the facilities to produce good quality meat for export. Unfortunately, if meat is imported from those abattoirs, there is a high risk that it may be contaminated with viruses, more particularly Foot and Mouth Disease. Although the Mauritian Government would not want to offend the Indian authorities, in any way whatsoever, the Committee is of the view that the Government should imperatively review its decision to blindly accept the certificate of the APEDA and the Government should negotiate a close collaboration between the Indian Veterinary Authorities and the Division of Veterinary Services regarding the export of frozen meat and meat products from India to Mauritius. Such a close collaboration will brush aside any impression of mistrust that the Indian Authorities may, otherwise, have had.

B. DETECTION AND INVESTIGATION OF FOOT AND MOUTH DISEASE IN RODRIGUES AND MAURITIUS BY THE VETERINARY SERVICES

Evidence before the Committee shows that both in Rodrigues and in Mauritius, the detection and investigation of Foot and Mouth Disease came up at a very late stage after the Index case was reported. There has been a failure on both sides to adequately assess the situation at hand and to react accordingly.

I. RODRIGUES

The outbreak of a disease with clinical signs of abundant frothing in cattle was officially reported to the Veterinary Services of Rodrigues on the 7 July 2016 in the northern part of the island, in the village of Roseaux. The first suspected cause of the frothing was poisoning and treatment was accordingly administered by Dr. J. M Samoisy. The following day, 2 new cases were reported from a nearby village, Terre Rouge, and the same type of treatment was given. Five days later, on the 12 July 2016, a new case was reported at Mont Fanal, which is some three kilometres west of Roseaux and Terre Rouge. Again the same type of treatment was given but this time by Dr. Karen Samoisy and the suspected cause remained poisoning. By 15 July 2016, 6 new cases were reported, three from Terre Rouge and three from Roseaux. In the following eight days, the number of cases of reported cases rose to 9. As the situation was by then alarming, the Veterinary Services in

Rodrigues decided to inform the Commission for Agriculture. On 18 July 2016, the number of cases had increased to 24. As such, the Chief Commissioner, who happened to be also the Commissioner for Agriculture, was informed. In the meantime, Dr. Karen Samoisy carried out further investigations and took photos of lesions in the animals.

On 18 July 2016, a new list of differential diagnoses was made but the Veterinary Services in Rodrigues maintained poisoning as the first suspected cause. In that list, five possible animal diseases were mentioned including Foot and Mouth Disease. On 19 July 2016, the Veterinary Services of Rodrigues informed the Division of Veterinary Services in Mauritius in writing of the high incidence of frothing in cattle, and attached photos of the lesions.

By that time two deaths had been recorded among the animals. Although the clinical signs were abundant, Foot and Mouth Disease was still considered as a remote possibility and nothing more. The acting Officer in Charge of Agriculture requested veterinary assistance from Dr. D Meenowa. Most unfortunately, Dr. D. Meenowa did not accede to the request for flimsy reasons. Instead Dr. D. Meenowa instructed the Veterinary Services of Rodrigues to send over blood samples to the Division of Veterinary Services for analysis.

The said samples were collected and they reached Division of Veterinary Services on 20 July. Tests were carried out for Foot and

Mouth Disease and Rift Valley Fever on the next day and the results were negative. Even though these results brought some relief in the population, the disease continued to spread in Rodrigues. Dr. K. Samoisy then took the bold step of seeking advice outside Mauritius. She forwarded the photos of the lesions to CIRAD in Reunion Island and pleaded for assistance. She even suggested that samples could be sent over for further tests.

The record shows that Dr. K. O. Samoisy was not totally convinced by the tests carried out in Réduit on 21 July, and this explains why she finally sought a second opinion outside Mauritius. It is worth noting that she had informed senior members of the Division of Veterinary Services including Dr. D. Meenowa about her suspicions that Rodrigues was facing Foot and Mouth Disease. The fact remains that she wasted precious time before seeking that second opinion.

Unfortunately, it was only on 26 July that the decision to provide veterinary assistance was taken in Mauritius. The veterinarians reached Rodrigues on 30 July and they started field investigations on the next day [12 days since the Division of Veterinary Services had been informed officially of the situation prevailing in Rodrigues].

It is a matter of great concern that the Veterinary Services of Rodrigues never drew attention to the consignment of animals, which had left Rodrigues on the 13 July to reach Port Louis on 15 July 2016. It was

only after the 1st of August, when the tests carried out on samples sent by the visiting veterinary officers proved positive, that the Division of Veterinary Services realized that the previous consignment of the 13th/15th July could also present a serious risk for mainland Mauritius. It is undeniable that the Veterinary Services of Rodrigues took very long to communicate the field situation in Rodrigues to the Division of Veterinary Services in Mauritius. Indeed, they took 12 days to report the alarming situation prevailing in Rodrigues. The Committee cannot help pointing out that had the Veterinary Services in Rodrigues been more proactive, the consignment of 13 July would not have been allowed to land in Mauritius. Even if the Rodrigues Veterinary Services were not absolutely sure that the animals had Foot and Mouth Disease [which they should have in view of the number of cases reported in a very short lapse of time], they should have informed the Division of Veterinary Services that animals in Rodrigues were suffering either from poisoning or from a disease and they should have communicated the symptoms observed to Division of Veterinary Services. The Committee has not been favoured with any plausible explanation as to why the Veterinary Services of Rodrigues chose to keep quiet and allowed animals to be shipped to Mauritius on 13 July and never drew attention to this consignment even after it had become clear that there was a sanitary emergency for animals in Rodrigues. The Committee is left to wonder whether their main motivation was not to export the animals and never the health issues of these animals.

The Committee is not suggesting that the Rodrigues Veterinary Services deliberately kept quiet about the condition prevailing there. The Committee is of the view that lack of experience and lack of proper technical facilities contributed to the Veterinary Services failing to diagnose the disease although all clinical signs and field reality pointed to Foot and Mouth Disease or at least to an infectious disease. Furthermore, the rising number of infected animals and the fast expansion of the area affected in a short lapse of time indicated that these cases were not the result of poisoning.

Moreover, the lack of consideration of the Division of Veterinary Services in Mauritius towards Rodrigues is unacceptable. Veterinary assistance was requested and it was taken too lightly not to say it was brushed aside. The Division of Veterinary Services failed to appreciate the fact that the importance of breeding in Rodrigues is much greater than in Mauritius. A condition affecting livestock in Rodrigues cannot be dismissed as being trivial. This Committee has noted that in Rodrigues, there are people whose entire livelihood depends on livestock and whose activities and life come to a complete halt with the outbreak of a disease like Foot and Mouth Disease, which affect their animals. One of the reasons given by the Head of Veterinary Services for refusing assistance is that Mauritian veterinarians were on leave. The Head of Veterinary Services should be aware of what is known in the public service as “*exigencies of service*”, which entitles the head of

the Service to recall officers on leave when their presence at work becomes absolutely necessary.

The Ministry of Agro-Industry and Food Security was also ill-advised by Dr. D. Meenowa who firmly believed that frothing in animals in Rodrigues was not to be considered contagious without having enquired in the matter. The Minutes of Proceedings of the Management meeting held at the said Ministry on 25 July shows that Dr. Meenowa reported that in Rodrigues, at Terre Rouge and Roseaux, some cattle had been infected with mouth lesions. He did indicate that the first case had been reported on 7 July 2016 and as that date, the number had increased to 62 including two deaths. The evidence of several professionals before the Committee is adamantly to the effect that one need not be an experienced veterinarian to properly assess the high risk of contagion, which was prevailing in Rodrigues at the material time.

The delay of the Veterinary Services of Rodrigues in reporting the matter to the Division of Veterinary Services in Mauritius highly jeopardized the containment of the disease to an extent that it created havoc both in Rodrigues and in Mauritius. In the end, to properly fight the disease and to minimize its social impact, the Government has had to incur enormous costs which would have been avoided had the Division of Veterinary Services not failed to respond promptly to the request for help and to understand the urgency of the situation in

Rodrigues. The Veterinary Services of Rodrigues can surely not invoke hypothetical communication problem between Mauritius and Rodrigues to justify the delay as there exists no communication issues between the two islands nowadays.

The Committee has no doubt that [contrary to what some breeders and a section of the Press believed] the disease did not exist in Rodrigues prior to the index case of 7 July 2016 based on the Occurrence Book of the Veterinary Services of Rodrigues. The speed at which this disease spread could not have escaped the attention of the Authorities in Rodrigues.

If at first the veterinary officers may have thought that the first reported case was one of poisoning, they should have become more suspicious and indeed inquisitive when several cases were reported in different locations within a short time. It was clear that the animals were affected by an infectious disease and not poisoning. Unfortunately, it did not seem so obvious to the Veterinary Officers.

It is a matter of regret that while Dr. J.M. Samoisy considered it was important for him to inform his superior [letter 15 July 2016] of the increasing number of cases of frothing in animals in Rodrigues, he did not consider that this matter had to be brought to the attention of the Head of the Veterinary Services in Mauritius on the same date. In fact, it was only on 19 July 2016 that he did so and he communicated a list

of differential diagnoses, which showed that he still favoured poisoning as the most probable cause; Foot and Mouth Disease was notably not on top of the list. The failure of Dr. J.M. Samoisy to inform the Division of Veterinary Services that he had already authorized a consignment of livestock [which had arrived in Mauritius on 15 July 2016] is the one gravest omission that allowed Foot and Mouth Disease to enter Mauritius and affect livestock in Mauritius. Had he, at that time, informed the Division of Veterinary Services that animals in Rodrigues were suffering from an unidentified ailment, the Division of Veterinary Services could have taken necessary steps to prevent the spreading of the disease in Mauritius. Even if he believed that animals were being poisoned, Dr. J.M. Samoisy should have informed the Division of Veterinary Services so that people would not have been made to eat the meat of poisoned animals. In these circumstances, whatever may have been the diagnosis of Dr. J.M. Samoisy at that time, he is not in any way justified in not informing the Division of Veterinary Services immediately. His superior officer, who was duly informed on 15 July, also did not think it necessary to alert the Division of Veterinary Services immediately.

Dr. K. Samoisy, on her part, was quite convinced she was dealing with Foot and Mouth Disease but however insightful she might have been, she did not collect the right samples to be sent for analysis. When she arrived in Mauritius with some samples on 20 July 2016, she informed Dr. T. Mohadeb, a Senior Veterinary Officer at the Division of

Veterinary Services that she suspected that Rodrigues could have been affected by Foot and Mouth Disease. Dr. K. Samoisy stated before the Committee that she also discussed her suspicion of Foot and Mouth Disease with the Head of Veterinary Services, Dr. D. Meenowa, and Senior Veterinary Officer Dr. R. Ramjee during her visit. According to her, these seniors, at that time, did not seem convinced of this possibility.

Dr. K Samoisy, upon being apprised of the negative results for Foot and Mouth Disease obtained at Animal Health Laboratory ruled out for a while Foot and Mouth Disease as a possible diagnosis. She decided to concentrate her efforts on finding other probable causes. However, in the meantime, the disease spread to many villages in Rodrigues.

Evidence before the Committee shows that, by then, some animals imported into Mauritius on 15 July were already showing clinical signs of Foot and Mouth Disease but the Division of Veterinary Services was totally unaware of this as the Mauritian farmers failed to report the matter to the Division of Veterinary Services.

It is the considered opinion of the Committee that there has been considerable delay in reporting the disease as too much emphasis had been placed on poisoning or other possible diseases. Admittedly, the failure of the Animal Health Laboratory to detect Foot and Mouth Disease in the first batch of samples brought by Dr. K. Samoisy misled

the veterinarians of Rodrigues and thus they wasted precious time in looking into other probable causes.

The Committee wishes to place on record the professionalism of Dr. K. Samoisy, who was the only veterinarian in the Republic of Mauritius who suspected Foot and Mouth Disease at a quite early stage but it is unfortunate that she overlooked one of the basic principles of her profession to the effect that laboratory results, per se, should not be used to establish or eliminate a diagnosis because sometimes there can be false negatives; which is exactly what happened in the present case concerning the laboratory results initially provided by the Animal Health Laboratory.

This Committee will readily explain the mistake of Dr. K. Samoisy by her lack of experience. The Committee, thus, does not understand how her more experienced colleagues in Mauritius, failed to assess the laboratory results in their right perspective bearing in mind the situation prevailing at the material time in Rodrigues.

The laboratory diagnosis of Foot and Mouth Disease was confirmed only on 01 August 2016, 24 days after the index case. This implies that this highly contagious disease was given ample time to leisurely spread among the animals in different parts of Rodrigues and even reach the shores of Mauritius and affect several farms.

In a nutshell, it can be said that several reasons can be attributed to the mishandling and spreading of Foot and Mouth Disease:

- (a) the absurd insistence on the part of Veterinary Services of Rodrigues to maintain poisoning as the main possible cause when it was clear that this should have been ruled out at a very early stage;
- (b) the failure of Dr. K. Samoisy to collect appropriate samples for laboratory examination. It is noted that Dr. K. Samoisy, although she suspected Foot and Mouth Disease, failed to collect the correct sample, namely epithelial cells from the mouth lesions that were already apparent in some animals. This information can easily be obtained on the internet and the Committee has not been apprised of the reason why she did not carry out a search on the internet instead of seeking advice here and there [according to her testimony]. It is undeniable that if epithelial cells had been sent to a Reference Laboratory, confirmation of diagnosis as well as the elucidation of the strains involved would have been done in a matter of hours. Nevertheless, the samples she collected were not totally useless as will be seen;
- (c) the failure on the part of the Animal Health Laboratory to detect Non Structural Proteins antibodies in the first serum samples brought to it by Dr. K. Samoisy. It is true that these samples were not the most appropriate ones. It is also true that Non Structural

Proteins antibodies cannot be detected in recently infected animals. However, in the present case Dr. K. Samoisy stated she had collected from the area of initial infection more than 10 days after clinical signs had been observed. In these circumstances, Non Structural Proteins antibodies could have been detected in the serum samples on 21 July 2016. The Committee can only conclude that the initial tests had not been properly carried out. The Committee has been told that the laboratory technicians at Animal Health Laboratory do not, as a matter of course, run Non Structural Proteins tests and as such they lack experience. The absence of help and support from veterinary officers of the Animal Health Laboratory in the carrying out of the tests certainly does not make the situation any better. It has been established that veterinary officers have received training abroad with regard to the carrying out of these tests [presumably at the expense of Government] and yet they neither help nor carry out the tests themselves as used to be the case previously.

The Committee is under the strong impression that neither the Veterinary Services of Mauritius nor that of Rodrigues had any experience in the detection and control of Foot and Mouth Disease. They were totally unprepared to handle such a situation. The Committee notes that there was absolute confusion amongst the various stakeholders and the Veterinary Services were at a total loss on appropriate measures to be taken.

The Committee bears in mind that the Veterinary Services of Rodrigues work in a totally different environment and face completely different challenges than its counterpart in Mauritius. Indeed, the livestock population in Rodrigues is much bigger than in Mauritius and its management involves considerable work. Also, the close relationship that exists between livestock and the people in Rodrigues cannot be overlooked. A glaring lack of veterinary structure, including a diagnostic laboratory, necessarily has as consequence the heavy dependence of the Veterinary Services of Rodrigues on the Veterinary Services of Mauritius. Finally, with the enactment of the Rodrigues Regional Assembly Act, veterinarians in Rodrigues are no longer accountable to the Head Veterinary Services of Mauritius, whom they consult only when they deem necessary.

There are only two veterinary officers in Rodrigues, namely Dr. Jean Marc Samoisy and his wife Dr. Karen Samoisy. In view of the high livestock population in Rodrigues and the rather uneasy topography, it cannot be reasonably argued that two veterinarians are sufficient to cater for some 50,000 animals on the island. In Mauritius, where there are much fewer animals, the same duties are discharged by at least 15 veterinary officers; hence the need to recruit more veterinarians in Rodrigues.

Nevertheless, the Committee finds that apart from the long time wasted by Dr. J.M. Samoisy in investigating poisoning; apart from the

inappropriate samples collected by Dr. K. Samoisy and the failure of the AHL to detect the disease; and apart from the authorization granted by Dr. J.M. Samoisy for livestock to leave Rodrigues for Mauritius on 13 July 2016 when it was clear that animals were having a problem, it is regrettable that the Veterinary Services and the Commission for Agriculture released the consignment of livestock on 30 July 2016 to Mauritius

There is evidence that Dr. D. Meenowa had initially advised the Veterinary Services of Rodrigues not to send the animals. However, the record also shows that at the material time there was immense pressure on the Department of Agriculture by breeders, butchers and politicians to allow the consignment of 30 July to leave for Mauritius. The evidence shows that Dr. Meenowa finally agreed to allow the consignment to be embarked on MV Anna. That was an unpatriotic and unethical decision. Similarly, the Committee strongly condemns Dr. J.M. Samoisy for having certified that the animals were in good health and thus authorized the shipment, knowing very well that an important infectious and fast spreading condition was prevailing on the island. Dr. J.M. Samoisy's actions are reprehensible and unprofessional. He may have been under pressure but he should not have condoned the decision of Dr. Meenowa and allowed the shipment of these animals to Mauritius on 30 July 2016 even if he was convinced the animals had been poisoned he took the risk of letting humans eat their meat.

Furthermore, the Veterinary Services of Rodrigues were ill-advised to stamp out animals as stamping out can only be effective if there are very few foci of infection and it is meant to enable affected and in contact animals to be quickly eliminated. However, stamping out of animals should be coupled with strict confinement of healthy animals and prevention of movement of both animals and people. In Rodrigues, by the time Foot and Mouth Disease was confirmed, the disease was nearly all over the island. In addition, being given the local context, the Authorities should have known that restriction of animals and people was impossible. It is noted that the Indian Ocean Commission epidemiologist, who had suggested partial stamping out in an attempt to limit the spread, rapidly realized that it was too late to stamp out. This stamping out which resulted in the killing of 2396 animals in Rodrigues was totally unwarranted and unnecessary. It was only a tragic event, which resulted in huge economic losses for the breeders and the Government. It was totally useless as far as fighting the disease was concerned.

II. MAURITIUS

The diagnosis of Foot and Mouth Disease in Rodrigues was, therefore, confirmed only on 01 August 2016, 24 days after the Index case. A search was then undertaken by the Division of Veterinary Services to find out whether animals that came from Rodrigues on 15 July 2016 had carried the infection with them. Indeed, Foot and Mouth Disease lesions were seen in several farms that had received animals from the consignment of 15 July 2016.

A consignment of livestock comprising 82 heads of cattle, 101 sheep and 140 goats was authorized to leave Rodrigues for Mauritius on 13 July 2016, 6 days after the Foot and Mouth Disease index case and after many cattle had been reported to be frothing. Most of these animals had been imported by butchers and were intended for slaughter during the forthcoming Muslim Eid-ul-Adha festival.

On arrival in Mauritius, the animals were not quarantined and were sent in about 18 farms within a few kilometres from the Port mainly in Cité La Cure, Vallée des Prêtres, Terre Rouge and Notre Dame. A second consignment of livestock comprising 91 cattle heads, 70 sheep and 70 goats was authorized to leave Rodrigues on 30 July 2016. On arrival on the 31 July 2016, these animals were sent directly to quarantine at a Government livestock station in Richelieu.

Following confirmation of Foot and Mouth Disease on 01 August 2016, all animals showing frothing, excessive salivation and mouth ulcerations, whether accompanied by lameness or not, were assumed to have Foot and Mouth Disease. Classical Foot and Mouth Disease lesions were seen in Vallée des Prêtres, Cité La Cure, Terre Rouge and Notre Dame as these animals had an epidemiological link with the animals imported on 15 July 2016.

It is very important to note that there is a strong possibility that Foot and Mouth Disease was already present in Mauritius as early as the 20 July 2016 but had gone unreported. Indeed, in the farm of one Ragoobeer in Vallée des Prêtres, there were 35 local bulls and he received 5 bulls and 35 sheep and goats from the consignment of 15 July from Rodrigues. Only 5 days following the introduction of those animals, 3 imported bulls started showing excessive salivation and after 10 days, local animals also showed signs including lameness. Unfortunately, this was not reported to the Division of Veterinary Services, at that time.

The animals imported on 30 July 2016 namely 91 cattle heads, 75 goats and 70 sheep, were kept for several days at the Richelieu quarantine station. Some animals showed signs of Foot and Mouth Disease a few days after their arrival and all the animals were stamped out some 8 days after arrival.

During the first week of August 2016, the infection was seen mainly in the Port-Louis area. The second week, it had spread to new villages including Notre Dame up north and Highlands in the centre of the island. By 26 September 2016, Foot and Mouth Disease had spread to 17 villages including the central, eastern and south eastern districts. It was also suspected to have reached the district of Savanne, in the South.

Vaccination using Aftovax containing SAT1, SAT2 and O serotypes started on 21 August 2016 and went up to 04 September 2016. On 10 September the vaccine was replaced by Aftopur containing 01 Manisa 0-3039 strain. Initially it was decided that vaccination would be restricted to those farms located within 3 km of the foci of infection. But in effect, farms located much further away were also provided with vaccines.

However, evidence shows that SOCOVIA Ltd, a farm in Roche-Brunes, located a few kilometres from Richelieu and where animals showed clinical signs, was not given vaccines. Foot and Mouth Disease broke out in SOCOVIA farm where over 4000 cattle heads were kept. Animals from that farm were sold for the Muslim festival and these animals were sent to different parts of the island for home slaughtering. The Committee was apprised that 145 animals (about 3.5% of the animal population) died within 8 days. However, after that, no death was recorded.

Vaccination of pigs started on 10 September 2016 and pig breeders were provided with vaccines and asked to vaccinate their stock as from 29 September 2016. The second round of vaccinations started in cattle on 11 October 2016 and as from the 07 October 2016 in pigs.

The reason why Foot and Mouth Disease did not show up in Mauritius before this outbreak is that in Mauritius, livestock density is far less than in Rodrigues and farms are situated far apart. In addition, viral transmission needs a susceptible animal to be activated and such opportunities are much less in Mauritius than in Rodrigues. In Mauritius, zero grazing is practiced as feeds are brought to animals kept in confinement as opposed to Rodrigues where animals share common pastures and are therefore more likely to share pathogenic agents.

A Crisis Committee was set up under the chairmanship of Mr. Lutchmeea, the Deputy Director of Agriculture who is an engineer by profession while the other members were nominated by the Permanent Secretary on the recommendations of Dr. D. Meenowa. These members comprised of veterinarians both from the private and public sector. None of those veterinarians had any experience regarding the control of Foot and Mouth Disease. There is evidence from the Principal Veterinary Officer that the veterinarians sitting on that committee solidly backed a stamping out policy because, in his opinion, they were more interested in safeguarding the animal parks

and the deer farms belonging to the private sector. The technical competence of Mr. Lutchmeea on veterinary matters was strongly contested especially by veterinarians and by the Director of Agriculture, who is his technical superior. The Committee could not help noting that Mr. Lutchmeea could not answer questions relating to technical matters and unfortunately limited himself to throwing the blame either on Dr. D. Meenowa or on collective decisions taken by the Permanent Secretary or the Deputy Permanent Secretary, Ms. Callychurn. His technical superior, the Director of Agriculture described him as someone “*who cannot differentiate a virus from a bacterium*”. The Deputy Permanent Secretary, Ms. Callychurn, also conceded that Mr. Lutchmeea may not have been the ideal chairman in the present circumstances.

This Crisis Committee failed to apply the contingency plan on the control of Foot and Mouth Disease proposed by Dr. A. Srivastava, who has experience of contingency planning and simulation exercises with respect to highly pathogenic avian influenza. The reason advanced was that the document submitted by Dr. Srivastava had to be validated by the Committee first. In fact, Mr. Lutchmeea did not make any effort to validate the document and in the meantime the disease was spreading to new regions.

In addition, the Crisis Committee did not consider the importance of setting up road checks or blocks along the main routes leading to farms

or infected areas. Mr. Lutchmeea candidly expressed the view that it was unnecessary to set up a road check on the road leading to SOCOVIA because that farm had not yet been infected. The Police also failed to realize the importance of that measure but confirmed that such a measure would have been implemented if the Crisis Committee had taken such a decision. Unfortunately, the Crisis Committee failed to understand that restrictions of movement of people and inanimate objects constitute the most important tool in avoiding the spread of the disease. It is apposite to note that Foot and Mouth Disease was efficiently controlled in 1916 in Mauritius mainly because of the confinement of affected animals and movement control.

The Division of Veterinary Services enlisted the support of Dr. Harena, a veterinary epidemiologist employed by the Indian Ocean Commission, which provided valuable assistance in meeting certain expenses, like the cost of the mission of veterinarians to Rodrigues, the cost of protective clothing and vaccines. The Veterinary Services seemed to have relied a lot on the advice of Dr. Harena to control the disease although Dr. Harena conceded, before the Committee, that he did not have any specific experience in the control of Foot and Mouth Disease. He insisted on the fact that he never tendered any advice on the matter to the Authorities but only made certain suggestions.

The Committee has been told that modified stamping out was not an appropriate measure in a developing country like Mauritius. Indeed,

there is a fundamental difference between developing and developed countries with regard to the control of Foot and Mouth Disease. In developed industrialized countries, particularly in Western Europe, the method of choice is stamping out of the animals, which are either infected, or are in contact with infected animals physically or that have an epidemiological link with any focus of infection. For these countries, a stamping out is essential, as they cannot export any livestock or livestock products without this measure. This is certainly, not the case for the Republic of Mauritius, which does not export livestock. In our case, it was the general opinion of the professionals in the field that modified stamping out should not have been considered as it is non-economical and mass vaccination should have been favoured to control the disease, instead.

There is evidence to the effect that stamping out can only be beneficial if all infected and in contact animals are stamped out, premises decontaminated and repopulation allowed only when the virus has stopped circulating meaning that farms need to wait for months before being repopulated. In the case of Rodrigues, stamping out, in effect, means wiping out the whole livestock including cattle, sheep, goats and pigs with the serious risk of losing at the same time the genetic material that have taken decades to build. This was the feeling of many professionals before the Committee.

Stamping out was initiated in Rodrigues on 06 August 2016 (a month after index case) based on an interpretation that only few farms had been infected. This interpretation was obviously wrong because by that time, the disease had already occurred in many regions and the infection had already spread to many farms all over the island. It was agreed that in Rodrigues it was quite impossible to control human and animal movement and this was completely ignored by the Authorities. Dr. Harena was the first one to realize this reality and he pointed it out in an email dated 04 August 2016 in which he stated that the disease had already broken out in many places and therefore stamping out would not serve any useful purpose. This view was also taken by Dr. D. Meenowa on 09 August 2016. This recommendation was ignored and the killing of infected and in contact animals continued in Rodrigues until 18 August 2016 resulting in deaths of 710 cattle, 1472 sheep and goats and 214 pigs, totalling 2396.

It was the opinion of many veterinarians, including Dr. B. Neerunjun, the Principal Veterinary Officer, that there should not be any killing of healthy animals and that mass vaccination should be preferred. However, his advice was totally ignored. The delay in establishing the serotype of the virus and the delay in obtaining the appropriate vaccine prompted proponents of stamping out to go ahead with the killing of healthy animals. Regrettably, killing continued even after mass vaccination started.

The decision to opt for mass vaccination with the appropriate vaccines to control Foot and Mouth Disease in Mauritius is not contested and, in fact, should have been the control measure of choice. However, this measure was adopted quite late thus causing further delay in establishing the exact serotype of the virus and find the appropriate vaccine.

Once the right vaccine was received, the Ministry organized mass vaccination campaigns with the assistance of veterinarians from Madagascar. However, the vaccination campaign did not progress satisfactorily because of several factors. There is evidence that there was no defined policy, thus resulting in much confusion amongst the veterinarians. There was no consensus reached regarding animals to be vaccinated; whether those not showing clinical signs would be vaccinated or whether a blanket vaccination for all animals was to be done. Dr. Beeharry, who was entrusted with the responsibility to organise the vaccination campaign, admitted that the Authorities provided no defined guidance. Indeed, Dr. Meenowa was unable to give a plausible explanation as to why unaffected animals were killed on certain farms.

Moreover, the Authorities had decided to give priority to animals located within 3 kilometres of the nearest focus of infection. SOCOVIA, which is located a few kilometres from a site of infection, was refused vaccines. However, surprisingly on the same day, vaccines were given

to a sheep farm and a cattle farm located more than 50 kilometres away. Some breeders like S.K.C Dairy Fresh and Hardas were given vaccines and requested to carry out their own vaccination while others like SOCOVIA were refused vaccines although they had personnel trained to do the job. The lousy explanation for this was that only Government veterinarians could do the job. At the same time, large pig breeders were handed over vaccines and instructed to carry out the vaccinations themselves.

The Committee has noted that neither the Division of Veterinary Services nor the Crisis Committee in Mauritius had considered it necessary to communicate with stakeholders and the public in general regarding measures and attitudes to be adopted, unlike Rodrigues where timely communiqués were issued to sensitize breeders and the public in general.

It is worth noting that the Division of Veterinary Services does not have a Communication Officer of its own as recommended by the World Organization for Animal Health. This recommendation is important particularly for disease control campaigns to ensure that sound and appropriate information is conveyed to the public. However, the surprising fact is that, according to Dr. Meenowa, all communiqués have to emanate from the Ministry in Port-Louis. In fact, the record shows that he had no right to issue any communiqué proprio-motu. The Committee notes that the Minister had given several press

statements about Foot and Mouth Disease outbreak in the country but these were certainly not sufficient to properly sensitize all stakeholders in real time.

This lack of communication has also been criticized by the Mauritius Livestock Breeders Association amongst others. Farmers were not adequately informed by the Division of Veterinary Services, on the disease and its implications for large livestock farms, including the deer industry, which has over 66,000 heads. The general public was not properly made aware that the disease was not transmissible to humans. It was not made known to the public that they could eat meat normally and that people would not get contaminated through the consumption of meat coming from infected animals. This reluctance of the consumers affected the whole sector economically.

The Committee, however, has to commend the initiative taken by the Food and Agriculture Research Institute to publish, in lay terms, a leaflet on Foot and Mouth Disease well before the diagnosis of Foot and Mouth Disease was confirmed in the Republic of Mauritius.

The Committee, further notes, that once modified stamping out was opted for by the Authorities in the Republic of Mauritius, an issue arose regarding the need for compensation. It is an internationally agreed principle for Governments to compensate breeders whose animals die as a result of specific infectious disease or whose animals are

disposed of in the course of a disease control campaign. The aim of such a decision is to alleviate the losses of the breeder and to allow him to continue his activities in the future. This principle of compensation has been applied by the Authorities both in Rodrigues and in Mauritius. As a general rule, International Organizations recommend that breeders be paid about 75% of the market value of the animal disposed of. It is a well-known fact that if breeders are not adequately compensated, they will hide away their animals to avoid killing. On the other hand, if they are over compensated, the scheme will be abused of and many farmers will opt for immediate cash to the detriment of their healthy animals, which they will too readily offer for killing.

Government had fixed the market value of cattle at Rs.129 per kg live weight just before the outbreak of Foot and Mouth Disease. In Rodrigues, it was stated that cattle head ready for slaughter, usually weighed, approximately 275 Kgs making the average value of a cattle head about Rs.35000. The payable compensation would reasonably have been around Rs.26600. However, the Committee was apprised of the fact that farmers in Rodrigues received much more, which is wrong in principle. It was reported that Professor Gavin Thomson, the Foot and Mouth Disease expert, whose services had been retained by the Commission of Agriculture in Rodrigues to assist in Foot and Mouth Disease control, also shared this opinion.

This chaotic situation got worse when the Mauritian butchers, who had imported animals from Rodrigues, were paid higher compensation supposedly because of freight costs. There was an outcry in Rodrigues and the compensation was further increased.

The Committee cannot help pointing out that there is evidence to the effect that the decision to pay such compensation does not favour livestock development. Veterinarians in the Republic of Mauritius have stated that many breeders were doing their utmost to have their animals killed. In Rodrigues, some breeders were suspected of brushing the muzzles of their animals with detergent in order to create symptoms of Foot and Mouth Disease in their animals.

The Committee wishes to place on record that in Rodrigues, there are farmers, whose entire livelihood depends on livestock and whose activities have come to a complete halt with the Foot and Mouth Disease crisis. The situation was further aggravated when the Ministry of Agro-Industry and Food Security decided to stop the import of livestock and livestock products from Rodrigues. The prevailing drought in Rodrigues forced breeders to use expensive imported commercial feeds for their animals, which they are unable to sell afterwards. There is an urgent need for the Government to make such investment for the survival of livestock breeders in Rodrigues and to alleviate their socio-economic problem resulting from Foot and Mouth Disease.

The shortcomings noted by the Committee did not concern the Veterinary Services of Rodrigues only but also the Division of Veterinary Services in Mauritius.

Regarding the Division of Veterinary Services in Mauritius the Committee was told that although the Animal Health Laboratory was not equipped to carry out various confirmatory tests for Foot and Mouth Disease, it did have the necessary equipment and reagents to carry out the Competitive Non Structural Proteins ELISA tests, which, in the circumstances, would have provided a relatively quick diagnosis of Foot and Mouth Disease. The serum samples brought by Dr. K. Samoisy were suitable for the Non Structural Proteins tests but surprisingly the first set of tests carried out gave negative results. The explanation of the Division of Veterinary Services was that the samples had been collected too soon after the emergence of clinical symptoms that is the animals did not have time to develop antibodies. This was contested by Dr. K. Samoisy who maintained that these samples had been taken on 20 July 2016, more than 13 days after the appearance of clinical symptoms and that by then a fair proportion of the animals ought to have developed Non Structural Proteins antibodies. The only possibility, in these circumstances, is that the tests were not properly carried out due to lack of experience and training of the technicians as conceded by one of them whose explanation was that the laboratory technicians do not perform such tests on a regular basis. The technicians cannot be blamed for this state of affairs but it certainly

indicates lack of guidance and supervision on the part of the senior experienced veterinarians posted at the Animal Health Laboratory. The record shows that there is at least one of the veterinarians, namely Dr. A. Jahangeer, who has been trained abroad at the expense of the Veterinary Services in laboratory testing of animal diseases and yet he never participated in any analysis regarding the present outbreak of Foot and Mouth Disease. Dr. R. Jaumally maintained that long ago veterinary officers posted at the Animal Health Laboratory personally carried out such tests. It has also been reported that an Indian veterinarian who was posted at the Animal Health Laboratory in 2011 personally carried out Non Structural Proteins testing for Foot and Mouth Disease at Animal Health Laboratory. This Committee sees no reason why this practice should have stopped.

Delayed diagnosis of a highly contagious disease such Foot and Mouth Disease consequently delays the adoption of control measures resulting in considerable damage to animal health and also heavy economic losses to breeders and to the country as a whole. This is exactly what happened in Rodrigues and Mauritius. On 21 July 2016, Dr. K. Samoisy met with several colleagues at the Division of Veterinary Services to discuss the situation in Rodrigues. She was quite convinced that they were dealing with Foot and Mouth Disease and she discussed that possibility with Drs. T. Mohadeb, D. Meenowa, Head Veterinary Services and R. Ramjee, Senior Veterinary Officer. Dr. Meenowa, for his part, denied having had such a discussion with

her whereas Dr. Mohadeb confirmed that such a discussion did take place. After the initial tests proved negative for Foot and Mouth Disease, Dr. K. Samoisy hastily made the mistake of discarding the diagnosis of Foot and Mouth Disease to concentrate her efforts elsewhere when veterinarians know that because of false negatives, these tests results are not totally reliable.

It can be concluded that Dr. K. Samoisy as well as the veterinary officers at the Division of Veterinary Services, including the Head Veterinary Services, were all wrong in their interpretation of the negative laboratory tests. They should have known that there were several factors that could have explained the negative results and they should not have hurriedly eliminated Foot and Mouth Disease as a possibility. In any case, a diagnosis is never based on laboratory testing alone and any veterinarian should know that laboratory results need to be interpreted in the light of clinical and epidemiological findings and it is not conclusive per se.

It is also very surprising that, even after having taken cognizance of the clinical symptoms and quick spread of the disease in Rodrigues as from 19 July coupled with the suspicion of Dr. K. Samoisy that it could be Foot and Mouth Disease, the Division of Veterinary Services failed to enquire about the animals that came to Mauritius on 15 July from Rodrigues. Similarly, Dr Meenowa did not react in the face of the letter of Dr. J.M. Samoisy to find out about the state of the animals that

arrived on 15 July as one would have expected him to do. This Committee views this fact with great concern.

These animals were sent to several farms in Mauritius and these farms were only examined after the 01 of August 2016, date on which the disease was confirmed. In fact, Dr. A. Jahangeer, who examined animals at a breeder's place in Vallée des Prêtres, reported that the owner had indeed noticed signs of the disease on 20 July 2016, i.e. 5 days after the animals arrived at his farm. It is the considered opinion of the Committee that had the Division of Veterinary Services reacted in time, the disease could have been circumscribed at a very early stage, thus saving the country from the mass killing and from financial losses.

In addition, at the Management meeting of the 25 July 2016, chaired by the Hon. Minister of Agro-Industry and Food Security, Dr. Meenowa reported on a condition characterized by frothing, excessive salivation and foot lesions that was spreading in Rodrigues. He discarded Foot and Mouth Disease as a possibility and stated that the "*disease did not appear to be contagious*". Such a stunning statement on the part Head Veterinary Services shows that Dr. Meenowa conceived his role at the Division of Veterinary Services as merely reporting what is brought to his attention without checking and enquiring about the correctness of what he was reporting. The Head Veterinary Services tried to lay the blame at the door of Dr. J.M. Samoisy for his wrong belief that he was

only dealing with cases of poisoning. The Committee cannot help noting that as a more experienced veterinarian and above all the Head Veterinary Services, Dr. Meenowa should have known or at least suspected that any such fast spreading disease could only be contagious and he should have caused an enquiry to be immediately carried out in the matter.

The manner in which Dr. Meenowa handled that consignment of livestock, which arrived in Mauritius on 31 July 2016, is most disturbing. There is adequate evidence on record to suggest that Dr. Meenowa authorized that shipment after taking cognizance of the violent protests in Rodrigues against the interdiction to import animals from Rodrigues. Although before the Committee, Dr. Meenowa denied having authorized the shipment of 30 July 2016, the evidence shows that he sent an SMS to one of his veterinary officers, Dr. Boobhun, asking the latter to clear the said consignment on its arrival in Mauritius. In fact, he had already made arrangements for the animals to be transported to Richelieu for quarantine. This shows that Dr. Meenowa ultimately authorized the landing of the animals in Mauritius.

Most veterinarians deplored the fact that Dr. Meenowa had authorized the animals to land in Mauritius and to be transferred to Richelieu quarantine station. They all agreed that the Head of Veterinary Services should have opted either for sending the consignment back to Rodrigues or for sending the ship back on the high seas to have the

animals killed and disposed of in the sea. The Committee was apprised that this had been done by the Division of Veterinary Services in 1991 when a consignment of cattle from Swaziland was suspected to have Foot and Mouth Disease.

Once at Richelieu quarantine, Dr. Meenowa did not decide to have the animals killed promptly, although by that time Foot and Mouth Disease was already confirmed. Instead he decided to wait for clinical symptoms to appear and initiated the killing operation several days after and this allowed the virus to spread further. The killing operation took a few more days and finally the animals were eliminated some 8-9 days later. It is noted that the killing operation and the disposal of the carcasses in high seas would have taken just a few hours if the animals had not been allowed to land. The disease would have been more properly controlled and contained if the animals had not landed.

From the time Foot and Mouth Disease occurred in Rodrigues (Index case being on 07 July) to the time the first clinical case was diagnosed in Mauritius on 02 August, some 25 days had elapsed. If it is assumed that the infection entered Mauritius with the consignment of 15 July, it means that 17 days had elapsed following entry of the infection into Mauritius. Indeed, the animals of the consignment of 15 July did show signs of the disease subsequently. The Division of Veterinary Services initiated stamping out much later in August and in the meantime animals from the said consignment had already been distributed to 18

different farms around the Port-Louis and Northern area. The infection had also spread to local animals on those farms. The Division of Veterinary Services did not confine those farms and no restriction of movement was effectively carried out because Police did not receive appropriate instructions from the Crisis Committee. It was thus clear that it was too late to effectively stamp out all the affected animals by the time the decision was taken. Stamping out of the animals should have started when Dr. Meenowa got the report of Dr. J.M. Samoisy dated 19 July describing the clinical signs and the rapid spread of the disease and when Dr. K. Samoisy came to the Division of Veterinary Services on 21 July and shared her suspicions regarding Foot and Mouth Disease in Rodrigues. This would have enabled the quick elimination of all animals, which had arrived in Mauritius on 15 July, whether they were showing clinical signs or not. Instead, the Division of Veterinary Services waited for the disease to spread to distant places like Terre Rouge, Notre Dame and possibly Highlands before starting mass killing. Unfortunately, such killing was no longer justified as the infection was no longer localized. The stamping out of healthy animals has been condemned, before the Committee, by most of the veterinarians including Senior Veterinary Officers and the Principal Veterinary Officer Dr. B. Neerunjun who reported that he had advised the Minister to go for early mass vaccination and to avoid mass killing. It is undeniable that this was the right thing to do in the circumstances. However, at that time, a single polyvalent vaccine containing all the serotypes was not available. The vaccines came on 22 August 2016,

45 days after the Index case was reported and probably some 32 days after clinical signs showed up in Mauritius. At that time, the infection had already spread to many parts of the country. In these circumstances, stamping out served no useful purpose. According to Drs. Mohadeb and Neerunjun many animals that were killed did not show any evidence of Foot and Mouth Disease. This fact was confirmed by Senior Veterinary Officers, Drs. Bhatoo, Dooky and Gya.

The Committee finds that Dr. Meenowa was undoubtedly wrongly inspired to blindly follow the advice of foreign veterinarians, whose concept of Foot and Mouth Disease control is based on the European method [stamping out] and which method, was totally inappropriate for the Republic of Mauritius at the material time.

At the end of the day, some 8% of the livestock population was killed. The general view amongst professionals was that had the disease been allowed to manifest itself naturally, it would not have killed more than 5% of the livestock population of this country. In fact, at SOCOVIA Ltd., where there is a very high concentration of animals and where the disease was noted, the evidence shows that only 3.5% of the animals died. It is apposite to note that when the disease first occurred in Mauritius in 1916, only 186 animals were slaughtered by reason of the illness and that must have represented less than 0.2 % of the total livestock population then.

It is thus the considered opinion of this Committee that there have been serious shortcomings on the part of both Veterinary Services in the early detection of the disease, thus resulting in unnecessary killing of animals and serious socio-economic consequences.

C. SHIPMENT OF THE CONSIGNMENTS OF JULY 2016 FROM RODRIGUES

Some one week after the Index case was reported in Rodrigues, a consignment of animals left Rodrigues for Mauritius and some three weeks after the Index case, another consignment of animals landed in Mauritius from Rodrigues. The Committee has tried to understand the procedure adopted for importing animals in general and the procedure for importation of animals from Rodrigues in order to find out why the said procedure failed to prevent these animals from leaving Rodrigues for Mauritius.

I. PROCEDURE FOR IMPORT OF ANIMALS AND ANIMAL PRODUCTS IN GENERAL

The importation of animals and animal products is governed by the Animal Diseases Act of 1925 and Regulations made under that Act. The authorisation to import livestock and livestock products is granted by an Import Permit Committee chaired by the Deputy Permanent Secretary acting as representative of the Permanent Secretary. The other members of the Import Committee are the Head of the Veterinary Services, the Director of Agriculture and some other officials of the Ministry. The veterinary conditions attached to the permit are generally suggested by the Head Veterinary Services but according to the Deputy Permanent Secretary, these are also considered by the Committee. It is noted that the establishment of the Import Committee

is relatively new. Previously, the issue of veterinary permits rested solely on the Head Veterinary Services acting on behalf of the Permanent Secretary. The issue of import permits by non-veterinarians, has been strongly criticized by local veterinary officers. The Committee has been apprised of the fact that this is also the stand of International Organisations such as the World Organization for Animal Health and the Food and Agriculture Organisation, which is to the effect that animal health should not be left in the hands of persons who lack technical qualifications and that these responsibilities should be best left to the veterinary Services.

Once the permit is approved, a veterinary permit containing conditions including disease prevention measures is issued to the importer. On arrival, the animals or products, which, need to be accompanied by a veterinary health certificate issued by the Veterinary Services of the exporting country, are inspected by veterinary officers in Mauritius prior to release.

The Committee has noted that the certificate that accompanied the last consignment of cattle for SOCOVIA [August 2016] revealed discrepancies between the veterinary conditions imposed by the Division of Veterinary Services and the conditions mentioned in the health certificate issued by the South African Authorities. Dr. A. Jahangeer stated that he did not notice any major inconsistency at that time but he nevertheless agreed that they do exist. In fact, animals did

not originate from a region that was mentioned by the Division of Veterinary Services and the cattle were not immunized against all the diseases mentioned in the import permit. For example, the cattle were not immunized against Rift Valley fever. Dr. Jahangeer stated that he had nevertheless obtained clearance from Dr. Meenowa for the release of this said consignment, a fact that was denied by Dr. Meenowa.

The Committee has further noted that the veterinary import permit granted to importers of frozen buffalo meat from India does not contain a very important condition. Indeed, in line with Foot and Mouth Disease control, a major international condition has been developed which stipulates that the meat should originate from carcasses which, prior to deboning, would have been submitted to maturation at a temperature greater than +2°C for a minimum period of 24 hours following slaughter. In addition, the pH value must be less than 6.0 when tested in the middle of both the longissimus dorsi muscles as this procedure would kill any Food and Mouth Disease virus in the meat. This important condition is not mentioned in the permits issued by Division of Veterinary Services for frozen meat imported from India. It is true that some exporters' certificates do mention this condition but many others do not. This represents a major risk of entry of Foot and Mouth Disease virus into Mauritius through Indian frozen meat.

II. PROCEDURE FOR IMPORT OF LIVESTOCK FROM RODRIGUES TO MAURITIUS

Prior to the outbreak of Foot and Mouth Disease in the Republic of Mauritius, the procedure for the export of livestock from Rodrigues to Mauritius comprised of a health check on animals by a veterinarian in Rodrigues before embarkation and the issue by the latter of a veterinary health Certificate for the consignment. A list of the animals in that consignment was forwarded to the Division of Veterinary Services in Mauritius through the shipping company. Upon landing in Mauritius, the consignment was checked by a team from the Division of the Veterinary services, an agricultural support officer and two stockmen. This check mainly consisted in the verification of the veterinary health Certificate and the carrying out of a visual examination of the animals in the containers. Upon being satisfied that the animals are in good health, the veterinarian issued a Certificate of release and the animals were sent to the farms and not in quarantine as there was no need to do so.

After the outbreak, a further condition was added: the animals to be exported have to be placed in quarantine for at least 72 hours in a designated site and remain under the observation of the Veterinary Officers in Rodrigues. At this stage, the Committee wishes to point out that there were no strict quarantine measures for animals from Rodrigues because Rodrigues forms part of the Republic of Mauritius. However, the fact is that geographically Rodrigues is some 350

kilometres away and for the purpose of animal disease control, it is highly desirable that proper quarantine procedures be set up for animals imported from Rodrigues.

The Committee was apprised of the fact that currently only sheep and goats are being exported to Mauritius and they are sent directly to the Central abattoir after having been examined and cleared by a veterinary officer in Mauritius upon landing.

III RESPONSIBILITY FOR THE CONSIGNMENTS OF JULY 2016

(a) CONSIGNMENT OF 13/15 JULY 2016

A first consignment of animals left Rodrigues for Mauritius on 13 July 2016. When this consignment arrived in Mauritius, the animals were not kept in quarantine and they were distributed among various farms. At that time the disease had already appeared in Rodrigues although Foot and mouth Disease was not suspected. Animals from this consignment did subsequently show symptoms of the disease. Unfortunately, the Division of Veterinary Services was not informed of this fact. It is very disturbing that whilst the Index case was reported on 07 July and by the 13 July there were a few cases of frothing in animals reported, and yet Dr. J.M. Samoisy did not consider that there was a need to inform the Mauritian Authorities to check these animals for the said symptoms. This Committee finds that being given Dr. J.M Samoisy did not know the real cause of the symptoms and he

suspected poisoning should have made him feel great concern that human beings were going to consume the meat of those animals. At that point in time, the possible condition of these animals could have presented a serious health risk for human beings. As such, Dr. J. M. Samoisy cannot seriously contend that, because the cause of the symptoms was not yet established, he did not find any cause for concern.

It is even more disturbing that after it was established that animals from Rodrigues were suffering from the Foot and Mouth Disease, Dr. J. M. Samoisy still did not think it was necessary to draw the attention of the DVS to the consignment of 13 July 2016. Apart from Dr. J.M. Samoisy, Dr. Meenowa bears as much responsibility as he was the veterinary officer who had authorized the landing of the consignment in Mauritius on 15 July. When Dr. K. Samoisy informed him of her suspicions of FMD, Dr. Meenowa should have turned his attention to the consignment, which landed in Mauritius on 15 July. He should have checked whether these animals were presenting the same symptoms. Instead Dr. Meenowa chose to report to the Management Committee of the Ministry that the condition of the animals in Rodrigues was not of a contagious nature, when he had not even bothered to enquire in the matter. He did not even have to go to Rodrigues to check what was being reported; he could have examined the animals already landed in Mauritius. The Committee is left with the

impression that this consignment of 13 July 2016 was quietly brushed under the carpet with the hope that it would go unnoticed.

(b) CONSIGNMENT OF 30 JULY 2016

On 27 July 2016 Dr. J.M Samoisy informed Dr. D. Meenowa, Head Veterinary Services, of a forthcoming consignment of livestock from Rodrigues. On that date the Head Veterinary Services did not make any objection to that consignment coming to Mauritius. However, two days later, Dr. Meenowa instructed that no livestock should leave Rodrigues for Mauritius on MV Anna on 30 July.

There is ample evidence that this decision was hotly contested by the breeders and politicians in Rodrigues. At that time those breeders had already sold the animals to Mauritians and the Mauritian butchers, who had already purchased the animals, protested vehemently against that decision. It was also reported that this caused much tension in Rodrigues.

The evidence also shows that there were negotiations between the officials of the Commission for Agriculture in Rodrigues and the Head Veterinary Services resulting in the Head Veterinary Services agreeing to the shipment of the consignment on 30 July 2016. Details of telephone calls and messages were produced before the Committee and these showed that Dr. D. Meenowa finally authorized the consignment to leave Rodrigues on 30 July provided that those

animals did not come from the infected areas and did not show any frothing or mouth lesions at the time of embarkation. Animals were, therefore, embarked on MV ANNA after Dr. J.M Samoisy had ascertained that the animals did not show any clinical signs.

Dr. J.M Samoisy admitted that the verification done at that time was not at all a thorough one but only a visual and superficial one. As far as the condition stating that the animals should come from non-infected regions is concerned, it is clear that this was a most absurd condition being given that evidence before the Committee from professionals abundantly shows that by that time the whole of Rodrigues could be considered as already infected.

The Committee finds that in a situation where clinical conditions affecting animals are fast spreading, and are not limited to a specific geographical area, any qualified competent veterinarian should normally suspect that a contagious disease is affecting the animals. Dr. J. M. Samoisy has no ground to disculpate himself of any responsibility in the sending of the consignment of animals on 30 July 2016. He ought to have acted more responsibly by imposing sanitary restrictions on the movement of animals until the disease was properly identified and dealt with.

Dr. Meenowa has stated before the Committee that he had verbally advised the Deputy Permanent Secretary, Ms. Callychurn, to send

back the consignment to Rodrigues but this was denied by Ms. Callychurn. In fact, as pointed out by Ms. Callychurn, Dr. Meenowa had already made all arrangements for the animals to proceed to Richelieu station on the same day. An SMS sent to Dr. H. Boobun by Dr. Meenowa also proved that Dr. Meenowa had decided not to send the animals back. Indeed, the Committee believes that Dr. Meenowa did not verbally advise Ms. Callychurn as stated by him in view of all the arrangements he had made for the landing and transport of the animals in Mauritius. It would have been ridiculous for him to lift the interdiction to finally instruct that the animals be sent back.

The Committee is left with the bitter impression that Drs. Meenowa and J.M. Samoisy did not act as professional veterinarians but instead they acted as rubber-stamp licensing Authorities, who could not be bothered by the potential sanitary risks, which the consignment of possibly infected animals could present.

Indeed, as they should have suspected that the animals were suffering from a disease, which had not yet been identified, both doctors took a very high unnecessary risk in allowing the consignment of 30 July to leave Rodrigues and land in Mauritius. It is a recognized fact that over 60% of human disease stem from animals and that in the past two decades over 75% of human diseases have an animal source. It is most fortunate that Foot and Mouth Disease is not known to affect

human beings, otherwise the blunder of these two doctors could have had disastrous consequences.

CONCLUSION

At the time the present Committee was hearing witnesses, no new clinical case had been recorded for over three months be it in Mauritius or in Rodrigues. Before proceeding any further, the Committee has to make it clear that no clear evidence has been adduced regarding the impact of the Foot and Mouth disease on the deer population in Mauritius except for a letter dated 09 November 2016 to which were attached laboratory tests results from Onderstepoort Veterinary Institute regarding animals in Mauritius. It is clear from this communication that the tests carried out did reveal that deer had been found to be positive to the Non Structural Proteins tests. It is a matter of regret that Dr. Meenowa did not make this matter a live issue for a more efficient control of Foot and Mouth Disease among animals.

The Committee has come to the following conclusions regarding:

1. HOW FOOT AND MOUTH DISEASE ENTERED RODRIGUES

- There is ample evidence to the effect that Foot and Mouth Disease could only have entered Rodrigues from Mauritius. Indeed, other possibilities have been considered and have been ruled out as being most improbable. The Committee finds that it is most reasonable to conclude that frozen meat imported to Mauritius from India does not satisfy required health conditions and through this type of frozen meat the virus entered Mauritius

and from Mauritius to Rodrigues as some of this frozen meat is sent to Rodrigues. The reason for this conclusion of this Committee is that the Foot and Mouth Disease virus identified in Rodrigues has a close relationship with the virus of Foot and Mouth Disease circulating in Nepal. It is an established fact that animals move freely between India and Nepal and Mauritius does not import animals or animal products from Nepal.

2.(i) REGARDING THE FAILURE TO DETECT AND INVESTIGATE FOOT AND MOUTH DISEASE AT AN EARLY STAGE IN RODRIGUES

(a) Dr. J.M. Samoisy

- The evidence before the Committee shows that Dr. J.M. Samoisy persistently believed that animals were being poisoned when the first cases of frothing were reported in Rodrigues. This stand of Dr. J.M. Samoisy may have been quite reasonable in the first couple of cases. But it is surprising that, in the face of a fast spreading condition in different regions of the island, he continued to maintain poisoning as the most probable cause. The Committee fails to understand the attitude of Dr. J.M. Samoisy who, although he was convinced that animals were being poisoned, did not either investigate to determine the cause of the poisoning or report the matter to the Police for enquiry as if the poisoning was being caused maliciously, it would have been a criminal offence. But the Committee notes that Dr. J.M. Samoisy did inform the Commission for Agriculture on 15 July

that there was an issue with the animals in Rodrigues. The Committee is left to wonder to what extent this doctor was convinced of his diagnosis of poisoning in these circumstances when he did not even ask for a toxicological examination when Dr. K. Samoisy brought samples to Mauritius on 20 July 2016. It is clear that Dr. J.M. Samoisy failed to keep an open mind and investigate the matter properly as a veterinarian and a scientist. He did not, in fact, bother to do anything even if he believed the cases were cases of poisoning.

- The attitude of Dr. J. M. Samoisy explains why he authorised a consignment of livestock to leave Rodrigues on 13 July 2016 for Mauritius without feeling the need to inform the Division of Veterinary Services in Mauritius that a certain condition had been observed in animals in Rodrigues. He should have warned the Division of Veterinary Services to at least have the animals from Rodrigues checked for frothing because even if the animals were being poisoned they might not have been proper for human consumption. This did not seem to have been the concern of Dr. J.M Samoisy at all when he authorized animals to be shipped to Mauritius on 13 July.
- Finally, the Committee notes that Dr. J.M. Samoisy only casually examined the animals that were being sent to Mauritius on 30 July 2016, when it was already clear that there was a serious health issue among the animals. He even issued a certificate of good health for the said consignment. To his discharge, the

Committee has to point out that the animals being embarked for Mauritius may not have presented any external signs of illness and it would have been difficult for him to say whether the animals were ill or not. Also, the Committee has to point out that on 19 July Dr. J.M. Samoisy did ask the Division of Veterinary Services in Mauritius for assistance and this was refused to him. Nevertheless, the fact remains that the rate at which animals were reported sick clearly indicated that these cases were not poisoning, especially since they were occurring in different regions and as such, the Committee verily believes that Dr. J. M. Samoisy, as a veterinary, should have at least, strongly suspected that there was a contagious virus infecting the animal population in Rodrigues and he should have initiated precautionary measures even if the virus had not yet been identified.

(b) Dr. K. Samoisy

- Dr. K. Samoisy was more insightful than her colleague and husband, Dr. J.M. Samoisy as she was the first and only person in the Republic of Mauritius who suspected, at a very early stage, that the frothing in animals could be due to Foot and Mouth Disease. Unfortunately, she did not take the most appropriate samples for analysis in Mauritius after Division of Veterinary Services had refused to send veterinary assistance to Rodrigues. The Committee bears in mind that Dr. K. Samoisy is

a qualified veterinarian and as such she should know the most appropriate samples to be taken from animals in each case of suspected disease or poisoning. In any case, evidence before the Committee shows that a simple search on the internet would have helped her take the most appropriate samples for analysis. The Committee has to point out, though, that the samples she took were not totally useless and could have revealed indicative information had the Animal Health Laboratory in Mauritius done the job correctly.

- The Committee also finds that Dr. K. Samoisy acted with too much haste in giving up her suspicion of Foot and Mouth Disease to concentrate her energy on other possible causes when the tests results were negative for Foot and Mouth Disease. As a qualified veterinarian, she should have known that laboratory tests results are not per se conclusive and she should probably not have given up her suspicion so quickly. But, in all fairness, the Committee has to point out that, at that point in time she was not facing only the negative results of the tests but also the refusal of the Division of Veterinary Services to offer help in Rodrigues.
- It is very much to the credit of Dr. K. Samoisy that she subsequently sought help outside Mauritius [CIRAD in Reunion Island] when the cause of the problem was not being properly identified. In fact, it is this laudable initiative of hers that got a

proper investigation started in the matter and as a result of which, Foot and Mouth Disease was identified.

(c) Politicians and People of Rodrigues

- The evidence before the Committee shows that when Dr. Meenowa decided not to allow the export of livestock from Rodrigues [consignment of 30 July], there was an outcry both from the politicians and the people of Rodrigues who were more concerned with the fact that the animals had already been sold than with the health risks presented by these animals. At that time, it was not established yet that consumption of meat of these animals would be safe for humans. Although the Committee fully understands the concern of the people of Rodrigues, regarding this interdiction, the Committee would have expected politicians to act more responsibly and to help sensitize the people and to find an appropriate solution whenever there is a crisis.

2.(ii) REGARDING THE FAILURE TO DETECT AND INVESTIGATE FOOT AND MOUTH DISEASE AT AN EARLY STAGE IN MAURITIUS

(a) Dr. Meenowa and The Division of Veterinary Services

- The evidence before the Committee shows that the Division of Veterinary Services did not take seriously the call for help from Rodrigues. Indeed, when Dr. J.M. Samoisy asked for veterinary assistance on 19 July 2016, Dr. Meenowa for flimsy reasons. There is no evidence before the Committee to the effect that the

Rodrigues Veterinary Services would often call for help for about anything. In these circumstances, the Committee finds that when such a request is received, it cannot be casually brushed aside when the economy of Rodrigues very much depends on animal breeding. There has been no explanation as to why this first request for help was not given the required attention except that veterinarians were on leave. The absence of a protocol to be adopted when such a request is made from Rodrigues has probably largely contributed to this refusal for assistance.

- When Dr. K. Samoisy came to Mauritius with samples, she informed Dr. Meenowa that she suspected that the animals were suffering from Foot and Mouth Disease. Even then, her concern and suspicion were not considered serious enough to initiate actions by the Division of Veterinary Services.
- The Committee notes that even after receiving the request for help from Dr. J M. Samoisy and after hearing the concern of Dr. K. Samoisy, the Division of Veterinary Services did not think there was a need to check the consignment of animals which had arrived from Rodrigues on 15 July 2016 as these animals were on identifiable farms.
- The laboratory tests carried out by Animal Health Laboratory in Mauritius on the specimens brought by Dr. K. Samoisy yielded negative results. The evidence before the Committee shows that these tests were carried out by technicians who did not have the necessary expertise. The Committee is not blaming these

technicians as the evidence shows that veterinarians of the Division of Veterinary Services have been fully trained abroad at the expense of the Government in diagnostic technologies and these veterinarians do not carry out these tests in Mauritius, as they would have been expected to. There is evidence to the effect that previously these tests were carried out by the veterinarians. For unknown reasons they do not do these tests anymore; they do not even help the technicians in carrying out the tests.

- The Committee finds that Dr. Meenowa misled the Ministry of Agro-Industry and Food Security at a management meeting held on 25 July 2016 during which he reported that the problem, affecting animals in Rodrigues, was not contagious. It is true that at that time Foot and Mouth Disease had not yet been diagnosed. Nevertheless, Dr. Meenowa was ill-inspired to make such a bold statement about a matter, of which he had no personal knowledge, and about which he had refused to offer help to Rodrigues. He had not enquired into the matter and he had no reason to state that the problem in Rodrigues was not contagious.
- Although it is clear by now, that the Committee was completely appalled that Dr. Meenowa turned down the request for help of Dr. J.M. Samoisy on 19 July 2016, the Committee will again point out that Dr. Meenowa committed a very big mistake in refusing help to an island which is part of the Republic of Mauritius and

which very much depends on animal breeding for the livelihood of its population.

- The Committee is under the impression that Dr. Meenowa gave in to pressure when he allowed a consignment of animals to leave Rodrigues on 30 July 2016 after he had, himself, prohibited the said export. At that time, Dr. Meenowa was well aware that there was a serious problem, affecting animals in Rodrigues, although had not yet been diagnosed. He was also aware that the unknown disease was spreading very fast, which meant that it was to be considered highly contagious. And yet, he decided to lift the interdiction and to allow the animals to land in Mauritius. Dr. Meenowa must have been aware that there was a risk that the imported animals could affect the local livestock and this is why he instructed that the imported animals be kept in quarantine at Richelieu after he had asked Dr. Boobhun to give clearance to the consignment. Dr. Meenowa then decided to wait for symptoms to appear before taking remedial action. This was most unprofessional on his part when at 01 August 2016 he knew that animals in Rodrigues were suffering from Foot and Mouth Disease, which is a highly contagious disease. He should not have waited for the appearance of symptoms and the animals, which arrived on 31 July should have been stamped out immediately. By the time the stamping out was decided, the disease was further spreading in Mauritius.

- The Committee finds that it is ironical that whilst Foot and Mouth Disease reached Rodrigues through Indian frozen meat imported from Mauritius, the animals in Mauritius were not infected from the frozen meat imported from India but from animals imported from Rodrigues. The Committee cannot help noting that frozen meat is still being imported from India and the Mauritian Authorities are not insisting on an essential condition regarding the processing of the meat in India before it is exported to Mauritius and the plants in India, from which meat is exported to Mauritius, have not been inspected by Mauritian veterinarians as used to be the case in the past. The Mauritian should, perhaps not wait for another crisis situation, to take remedial actions. It is a matter of regret that the Committee was not authorized to investigate in India from where the Foot and Mouth Disease virus clearly originated before it reached Rodrigues.
- (b) The Crisis Committee
- A Crisis Committee was set up after the outbreak of Foot and Mouth Disease in Rodrigues and Mauritius to decide on measures to be taken to contain and eventually to eliminate Foot and Mouth Disease on both islands. The evidence before the Committee shows that there is a consensus amongst the professionals about the chairperson of the Crisis Committee being the wrong person in the wrong place. It was generally agreed that he did not have the necessary competence and

qualifications to chair such a Crisis Committee, with the result, according to the witnesses, that the Crisis Committee did not take timely decisions and more importantly, it did not take the appropriate decisions. The present Committee wishes to point out that these alleged inappropriate and untimely decisions were collective decisions of the Crisis Committee and not only of the chairperson. This Committee is of the view that blaming only the chairperson of the Crisis Committee is most unfair and indeed unbecoming of professionals.

- The fact remains that the Crisis Committee did not take appropriate decisions to control the movement of animals and people around areas susceptible of being infected. Such confinement and limitation of movement could have been helpful in containing the virus in certain areas only. Evidence shows that the Police would have helped in the control of movement of animals and people, had they received such instructions. However, the Crisis Committee was inclined on adopting a stamping out policy and other possible measures for fighting the spread of the disease were not even considered.
- Indeed, the Crisis Committee decided that the stamping out of animals was the best solution to fight Foot and Mouth Disease. Although this may be true in European countries for reasons already explained, the stamping out of animals in Mauritius did not serve any useful purpose because in effect, as already explained in this Report, more animals were killed through

stamping out than would have been killed by the disease itself. In Mauritius, 341 animals showed signs of the disease and yet a total of 1695 animals were killed. In Rodrigues, the stamping out of animals was even more absurd as the Foot and Mouth Disease had already spread all over the island. As such, stamping out animals to reduce the risk of contamination did not make any sense. It is most unfortunate that the Crisis Committee did not immediately consider that mass vaccination, as advised by professionals, was the most appropriate action to be taken, instead of mass killing of animals. The subsequent events show that these professionals were right and Foot and Mouth Disease has been properly eradicated [as at date] in the Republic of Mauritius through mass vaccination of animals.

- The Committee would fail in its duty if it did not point out that, even when the decision was taken for mass vaccination, there seemed to be a lot of confusion on how the campaign was to proceed and which animal was to benefit from this campaign. It will again here be a good thing if the Authorities would set up an established Protocol with regard to vaccination or other medical treatment to be given to animals in a crisis situation. In fact, the contingency plan submitted to the Crisis Committee by Dr. A. Srivastava, which had been ignored, can be very helpful in establishing the said Protocol with necessary amendments and adaptation.

(c) Population of Mauritius

- When the Authorities decided to prohibit the importation of animals from Rodrigues, there was an outcry by the importers and buyers of these animals in Mauritius as they had already paid for these animals and they did not want to lose money. The Committee is of the opinion that these people were not fully aware of all the risks involved in importing animals that could be sick. Many of these people are animal breeders, farmers who would not have wished their animals to be infected by the imported animals because this would have involved a loss of money. It may be a good thing in the future, if such measures have to be taken again, that an explanation campaign is carried out for people to understand the decisions of the Authorities.
- In Mauritius, it was noted that the Muslim Eid-UI-Adha festival made the matter more complicated for the Authorities as animals were moved about without control and they were slaughtered in peoples' backyards, thus defeating the bio-security measures put in place.

3. RESPONSIBILITY FOR AUTHORIZING THE SHIPMENT OF THE CONSIGNMENTS OF ANIMALS FROM RODRIGUES IN JULY 2016 AND THEIR DISEMBARKATION

This Committee has already explained in this Report that one consignment of animals left Rodrigues on 13 July 2016 and another one left Rodrigues on 30 July 2016.

3(i) THE CONSIGNMENT OF 13 JULY 2016 FROM RODRIGUES

As has been stated, at the time this consignment was embarked on the ship to Mauritius, a few animals were presenting the symptoms of frothing in Rodrigues. Nevertheless, Dr. J. M Samoisy, who was the officer who authorized the consignment to be sent, did not consider it was necessary to then inform the Mauritian Authorities that there was a condition affecting animals in Rodrigues. The Committee views this silence of Dr. J.M. Samoisy with great concern because, in effect, he took the risk of letting humans consume meat that may not have been proper for human consumption. The fact that he did not know the real cause of the symptoms should have made him even more careful.

Furthermore, even when it was established that the condition the animals were suffering from was Foot and Mouth Disease, Dr. J.M. Samoisy did not think of drawing the attention of the Mauritian Authorities to this consignment. The fact is that animals that came in this consignment did subsequently present symptoms of Foot and Mouth Disease.

As far as Dr. Meenowa is concerned, the Committee finds that even when he was informed of the possibility of Foot and Mouth Disease in Rodrigues by Dr. K. Samoisy, he decided to treat the matter as unimportant and he even reported to the Management Committee of the Ministry that there was no contagious disease among animals in Rodrigues. At that time, he had not even bothered to enquire in the

matter; which he could have being given the animals were already in Mauritius.

3(ii) CONSIGNMENT OF 30 JULY 2016 FROM RODRIGUES

It is true that as at 30 July 2016 it was not yet established that animals from Rodrigues were suffering from Foot and Mouth Disease. But by that time, it must have been clear to any qualified veterinarian that there was a contagious disease that was affecting animals in Rodrigues being given the speed at which this disease had spread in Rodrigues. In addition, the term Foot and Mouth Disease had been coined by Dr. K. Samoisy. Unfortunately, this consignment of 30 July was authorized to leave Rodrigues after a very summary examination by Dr. J.M Samoisy in Rodrigues and they were allowed to land in Mauritius after Dr. Meenowa lifted his interdiction and after he asked his colleague to clear the consignment. The Committee has already explained how both Drs. J.M. Samoisy and Meenowa have lamentably failed in their duties when they allowed this consignment to leave Rodrigues and land in Mauritius. As has been said, they must have been even more careful when it was clear that there was a contagious disease affecting animals and the disease was not yet identified; at that time, they did not know that this disease would not affect human beings. The fact that Dr. Meenowa had to lift his interdiction because of pressure from all sides goes a long way to show how this matter has been handled all through: giving in to pressure.

It is clear that the outbreak of Foot and Mouth Disease in Rodrigues and Mauritius was unexpected and took everybody by surprise. This may explain the mishandling of the whole problem in the beginning. It took sometime before the right decisions could be taken for appropriate measures to be implemented. The present Committee strongly hopes that the Authorities in Mauritius and Rodrigues will have learnt from this unfortunate incident and that Protocols will be established so that all concerned will know what his or her role should be, should another crisis occur in the animal population. At the same time appropriate measures should be taken to, at least, considerably reduce the risk of Foot and Mouth Disease and other diseases entering Mauritius and Rodrigues through the importation of animals and animal products. If this is not done, the animal population will probably soon have to face another serious disease.

D. RECOMMENDATIONS FOR STRENGTHENING THE SURVEILLANCE MEASURES TO MINIMISE RISKS OF ENTRY OF SUCH DISEASES IN MAURITIUS AND RODRIGUES

There is no doubt when this present matter is looked at with hindsight, that Foot and Mouth Disease entered Rodrigues and Mauritius because there was miscommunication, mishandling and undue delay to react. The Committee is of the view that it is urgent and necessary to have a set Protocol to be strictly followed whenever a disease appears in animals. It is true that Foot and Mouth Disease is said not to be injurious to human health, but the absence of a Protocol necessarily means that in case of outbreak of more serious and deadly diseases, there may be the same kind of mishandling which may, in turn, result in animal and human deaths.

For these reasons, this Committee will recommend what it verily believes will help curb any future outbreaks of animal disease. These recommendations obviously are not exhaustive and may not totally eliminate the risk of outbreak of animal diseases. The Committee will leave it to Government and other policy makers to work on the technical details on how these recommendations can be put in practice.

I. RESTRUCTURATION AND UPLIFTING OF THE VETERINARY SERVICES**(a) In Rodrigues**

There is a consensus to the effect that two veterinarians for the livestock population of Rodrigues are not enough. As has already been explained, it is highly desirable that more veterinarians and qualified technicians be posted at the Veterinary Services to help those two veterinarians in the discharge of their duties.

Rodrigues, being an economy that depends mainly on animal breeding, should necessarily have a proper animal Laboratory to enable the carrying out of tests more rapidly and consequently to detect any possible disease in a very short time.

It has been noted that in the present outbreak of Foot and Mouth Disease the Veterinary Services of Rodrigues could not in a first instance rely on the Division of Veterinary Services in Mauritius. It must be clearly set out, whether in an Agreement or otherwise, that the Division of Veterinary Services should extend all necessary assistance to the Veterinary Services of Rodrigues as soon as such a request is received. Necessary funds should be made available for the veterinarians of the Division of Veterinary Services to quickly fly to Rodrigues when the need arises. It is unacceptable that the Division of Veterinary Services should wait

for financial assistance from foreign institutions like the Indian Ocean Commission to be able to go to Rodrigues in a situation of crisis.

Rodrigues is now an autonomous island within the Republic of Mauritius but unfortunately the Veterinary Services of Rodrigues do not seem to have any autonomy at all. In the past case of Foot and Mouth Disease, the Veterinary Services had to wait for the Division of Veterinary Services to do the needful to obtain funds and expert services from the Indian Ocean Commission. Such administrative requirements necessarily imply delay in tackling the problem at hand. Hence, the Veterinary Services of Rodrigues, in addition to having its own state of the art laboratory and trained technicians, should also have the possibility of having direct recourse to international expert services, while at the same time, having to inform the Division of Veterinary Services in Mauritius of the situation which may have given rise to such a request.

Central Government should consider giving appropriate training on a continuous basis to the veterinarians and the technicians in Rodrigues.

(b) In Mauritius

The Division of Veterinary Services is required, in theory, to offer assistance to the Veterinary Services of Rodrigues in case of need. In the present matter, it would seem that the request for assistance from Rodrigues was not treated with the seriousness that the situation called for.

The fact that veterinary officers were on leave was certainly not a reason not to offer immediate assistance. The Division of Veterinary Services should probably be re-organised in such a way that a liaison officer for Rodrigues is appointed and his duty will be to keep informed of the situation of animals in Rodrigues and to transmit and follow up on any request received from the Veterinary Services of Rodrigues. It will be the duty of this officer to see to it that all requests for assistance from Rodrigues are treated diligently without delay. This officer shall be liable for any mishandling of any requests.

It has been stated before the Committee that veterinarians of the Division of Veterinary Services who have been trained in laboratory technologies at the expense of the Government of Mauritius do not participate or help in the carrying out of tests at Animal Health Laboratory. It is recommended that the schedule of duties of veterinarians be reviewed to include at least a duty to offer assistance to laboratory technicians in the carrying out of

these tests. This will ensure more accurate results and quicker detection of diseases.

Their schedule of duties should also include a more prominent role of the veterinarians in the importation of animals and animal products, as will be seen.

Regarding the Division of Veterinary Services, the Committee recommends that the Division of Veterinary Services should be given a better equipped Animal Health Laboratory so that basic tests for Foot and Mouth Disease, Rabies and other such animal diseases may be carried out efficiently without having to resort to foreign expertise. It is obvious that the Mauritian veterinarians and technicians should be given proper training on a regular basis so that they may discharge their duties in a highly professional manner. An appropriate fund should be put at the disposal of the Division of Veterinary Services so that in case of crisis, the Division of Veterinary Services will be able to act quickly without having to go through administrative red tape.

II. IMPORT CONDITIONS

The Committee has noted certain disturbing factors regarding the import of animals and animal products into Mauritius.

(a) Import of animals from countries not free from Foot and Mouth Disease

The evidence before the Committee shows that livestock are imported inter alia from South Africa and Kenya, which are countries not free from Foot and Mouth Disease. The Republic of Mauritius relies on the Certificate of the Veterinary Services of the exporting countries to the effect that the animals come from Foot and Mouth Disease free zones. The Committee finds this procedure of accepting Certificates of foreign services is definitely to be reviewed as Foot and Mouth Disease is not the only animal disease that is to be looked out for and the Mauritian Authorities should have a closer collaboration with the African Authorities so that Mauritian experts may from time to time visit the places from which animals are sent to Mauritius.

Similarly, it has been brought to the attention of the Committee that frozen meat products are imported from India and in fact the strain of the virus that affected the animals in the present case most probably came from India. The Committee fully appreciates that the Mauritian Government may not wish to show any disrespect or mistrust towards any foreign Authority. Nevertheless, the Government of Mauritius has a duty to ensure the well-being of the population and in that respect the Government has a duty to do everything possible for the human population not to be affected by diseases coming from animals

or animal products. Hence, it is recommended that it is not a good practice that frozen meats is imported from slaughter houses that have not been inspected by local veterinarians of the Division of Veterinary Services. It appears that previously Mauritian veterinarians would regularly visit Plants in India and they would issue Certificates to only those Plants, which satisfied all required conditions. Nowadays, it appears that the Mauritian Authorities are relying on the Certificate issued by APEDA to accept frozen meat imported from certain slaughter houses.

The Committee will again recommend a close collaboration with the Indian Authorities in this matter so that Mauritian Veterinarians should be allowed to visit slaughter houses in India together with their Indian counterparts so as to make assurance doubly sure.

(b) Import Permits

As at present it appears that permits to import animals are delivered by an Import Committee chaired by the Permanent Secretary of the Ministry and composed of the Head of the Division of Veterinary Services amongst others. This Committee is of the view that such an Import Committee should be chaired by the Head of the Division of Veterinary Services and should be composed of representative of the Ministry of Commerce and Industry and the Ministry of Agro-Industry and Food Security but

it should also include qualified technicians and such other persons as this can help this Import Committee decide on each and every permit application submitted to it.

Whenever a consignment of animals reaches Mauritius a qualified veterinarian together with necessary assistants, have to inspect the consignment and report to the Import Committee about his finding. The reason for this recommendation is that it has been stated before this Committee that sometimes conditions imposed in the Import Permit are not strictly observed. This Committee views such a matter with great concern because these conditions are not to be flouted in any circumstances. Thus, proper inspection of a consignment on arrival will ensure that conditions imposed are strictly observed and if there are not, the importer will have to face the consequences the Authorities will decide.

It goes without saying that the transport of animals by air and by sea will have to be done in such a way as to allow proper inspection of the animals on arrival. This means that the transportation of animals in containers on ships is not a recommended practice, be it for the welfare of the animals or for the purpose of inspection.

Even though Rodrigues forms part of the Republic of Mauritius, it is hundreds of kilometres away and it would be highly desirable that importers in Mauritius obtain an Import Permit for livestock, which will also contain all necessary sanitary conditions so as to avoid diseases travelling between the two islands.

The Committee has noted that whilst the World Organisation for Animal Health Terrestrial Code considers that it is an essential condition for the import of meat that a clause be inserted in the Import Permit to the effect that there needs to be maturation of the meat prior to deboning, such a condition does not appear in the Import Permit of frozen meat from India.

The Authorities may wish to reconsider the conditions imposed in all Import Permits so that they may be in line with international standards.

The evidence before the Committee has shown that very often there are yachts, which call at the port of Rodrigues. These yachts may carry animal products and very often, waste material from these yachts, are thrown in the harbour area. Should these animal products contain any virus, it may spread very rapidly being given the number of roaming animals in Rodrigues.

This Committee recommends that yachts and indeed ships arriving in Rodrigues shall be requested to dispose of any waste material in a specially designated enclosed area. Roaming animals and rodents should not have access to these waste material and the Rodrigues Authorities will regularly dispose of these materials without taking any risk that the local animal population comes in contact with them.

Even though Rodrigues forms part of the Republic of Mauritius, geographically Rodrigues is more than 300 kilometres away. As such, it is recommended that passengers coming in by plane or ship should not be allowed to disembark with foodstuffs as is the case in Australia and other countries which heavily depend on agriculture and animal breeding.

(c) Quarantine

The evidence before this Committee has shown that animal products move from Mauritius to Rodrigues and animals move from Rodrigues to Mauritius without any requirement for quarantine because precisely Rodrigues is part of the Republic of Mauritius. Again the Committee will recommend that the geographical realities must not be overlooked and for the purpose of movement of animals, quarantine regulations should be strictly observed between Rodrigues and Mauritius. It appears that following the outbreak of Foot and Mouth Disease,

animals are kept in quarantine for 48 hours before embarkation in Rodrigues. This is a good practice and the Committee wishes to add that in these 48 hours the Veterinary Services of Rodrigues should ensure that the animals do not present any symptoms of any disease.

It is highly desirable that on landing in Mauritius, animals from Rodrigues should be subject to quarantine again for the same period as for animals from other countries and the Division of Veterinary Services should ensure that the animals look healthy. It is worth noting that when African Swine Fever broke out in Mauritius in 2007, the Commission for Agriculture banned all pork products from Mauritius.

Similarly, animal products imported from abroad cannot be allowed to enter Mauritian territory without some basic tests for example, Foot and Mouth Disease, Rabies and other such diseases, being carried out. In that respect, the Import Permits should contain a condition that the Division of Veterinary Services will be entitled to take a sample from all animal products imported into Mauritius to carry out the basic tests.

III. PROTOCOL TO BE OBSERVED IN CASE OF OUTBREAK OF ANIMAL DISEASE

It cannot be denied that the outbreak of Foot and Mouth Disease has not been handled in the best possible manner. There has been unnecessary waste of precious time because nobody was quite sure what he had to do or what his duty consisted of in such a crisis situation. This is why this Committee recommends that the Ministry of Agro-Industry and Food Security should set up the procedure to be adopted in Rodrigues and Mauritius whenever animals are suspected of suffering from a disease or even in cases where animals start showing strange unusual signs. The Committee believes that a pre-established Protocol to be observed in cases such as the present one will be highly helpful as each and every person will know exactly what his role should be. Of course the Committee is fully alive to the fact that it is probably not possible to envisage beforehand all the types of crisis situations that may arise. Nevertheless, a pre-established Protocol will most probably need a little fine-tuning to adapt to an unexpected situation.

For these reasons the Committee is recommending that the Ministry of Agro-Industry and Food Security sets up a Monitoring Committee chaired by the Head of Veterinary Services in Mauritius and composed of such members who are well versed in detection and preventive measures regarding animal diseases. It is worth noting, at this point, that 60% of human disease stem from animals. This Committee shall

also consist of the Permanent Secretary of Ministry of Agro-Industry and Food Security who will act as a liaison officer between the Committee and the Minister. It will also consist of officers of such other Ministries, whose help may be needed, for example the Ministry of Health, in case of an outbreak of animal disease that can affect humans. It may be wise to have a veterinarian from Rodrigues to sit on this Committee and his role will be to report on a monthly basis to the Committee whether any unusual observation has been made regarding animals in Rodrigues and to inform the Committee of any issue which the Authorities of Rodrigues would want the Monitoring Committee to consider.

As has been said the Monitoring Committee will meet once a month and at shorter intervals in case of crisis to assess the health status of animals in Rodrigues and Mauritius at any given time. This Monitoring Committee will advise the Minister to activate the established Protocol whenever an emergency arises.

It is clear that the setting up of this Monitoring Committee will not only be beneficial to the animal population but also to humans because in effect livestock, at some point, will become food for the human population. All measures to be taken in cases of a suspected disease will be ordered by the Minister on the advice of the Monitoring Committee. The present recommendation is not to overburden the Hon. Minister but the Committee believes that if orders to follow a pre-

established Protocol come from the Minister himself there should not be any reluctance from any quarters to actually follow this Protocol.

The Protocol, which the Monitoring Committee will set up, will necessarily have to be according to international standards and it will concern all serious animal diseases and not only Foot and Mouth Disease. For instance, the control of animal movements or the culling of suspected infected animals cannot be done in a haphazard manner. Such measures must be pre-established and the Protocol must clearly set out when these measures are to be activated and by whom.

The Monitoring Committee will also advise the Government on all other measures it will deem necessary in the face of an outbreak of a disease among animals. The Committee has noted that, during the present outbreak of Foot and Mouth Disease, whilst the cattle section of the abattoir was closed with a view to controlling the spread of the disease, the pig section was still operational when it is an established fact that pigs shed more virus than cattle. Such mishaps can easily be avoided if clear instructions are given by the Ministry upon the advice of the Monitoring Committee.

The Committee wishes to point out that in Rodrigues it has appeared to the Committee that many people are emotionally attached to their animals. With this reality in mind, the Committee will urge the

Authorities to adopt a more humane way of killing animal when the need arises for the purpose of controlling a disease.

The Monitoring Committee will also advise the Minister of Agro-Industry and Food Security on the type of vaccines that need to be kept in stock, probably in relation to most common diseases. It has been noted that Foot and Mouth Disease was not properly controlled because, in fact, the vaccines that had been ordered, at first, were not the appropriate ones.

Communication between the Division of Veterinary Services and the Veterinary Services of Rodrigues seems to have been very poor during the outbreak of Foot and Mouth Disease. Furthermore, the public, including breeders and butchers, did not seem to be aware of the implications of Foot and Mouth Disease and this explains why there has been pressure on all sides for animals to be released for home slaughtering during the Muslim Eid-ul-Adha festival. The Committee recommends that the Monitoring Committee shall ensure a better communication channel between the Division of Veterinary Services and the Veterinary Services of Rodrigues. It is clear that in the present case of Foot and Mouth Disease, the Division of Veterinary Services let its Rodrigues counterpart down by not responding as it should have. The Authorities of Rodrigues may wish to appoint a liaison officer for this purpose. It is also essential that the Monitoring Committee issues communiqués and launches information campaigns, with the approval

of the Minister of Agro-Industry and Food Security, for the public to understand clearly why certain measures need to be taken by the Government in a situation of crisis and what precautions need to be taken by the public.

Finally, this Committee is of the opinion that pre-established Protocol will close the door to pressure being put on the deciders who will have no choice than to follow that Protocol.

Failure on the part of any officer to observe strictly the established Protocol without justification may entail disciplinary actions against him.

One last word of caution, which this Committee wishes to put on record, is that the Monitoring Committee should not overburden itself with stringent procedures because this Monitoring Committee is meant to act very quickly and it must definitely not get entangled in red tape.

The absence of a pre-established Protocol during the Foot and Mouth Disease crisis has resulted in unnecessary killing of animals, wastage of precious time and payment of huge compensation to breeders. It is therefore absolutely necessary that the Monitoring Committee has as its priority the setting up of such a Protocol.

IV. LEGISLATIONS

The Committee is of the view that simply adopting procedures when there is an outbreak of a disease among animals is incomplete without proper legislations being enacted to make sure that the measures envisaged are properly put into action.

In this context, the Committee recommends that an amendment be brought to existing laws to make any negligence on the part of any professional resulting in infected animals entering the Republic of Mauritius to be made a criminal offence carrying a heavy fine and even imprisonment. Such a law will make any veterinarian think twice before either issuing a Certificate clearing a consignment or simply giving in to pressure.

It has already been stated that passengers coming into Rodrigues and Mauritius should not be allowed to introduce plants and meat products. The Law should provide that it is a serious offence to try to smuggle food items into the Republic of Mauritius as is the case for Australia, for example.

On the whole, Foot and Mouth Disease reached Rodrigues and came to Mauritius because the matter was not properly handled within a reasonable time. The Committee hopes that its recommendations, although not exhaustive, will help to improve the situation regarding the Veterinary Services and animal disease control. The Committee

was mandated to situate responsibilities for the outbreak of Foot and Mouth Disease in Rodrigues and Mauritius and this Committee has acted strictly in accordance with its mandate. The purpose was not to blame but to point out the lacunas in the present system, which led to the whole matter being mishandled. The Committee believes that each and every one has learnt through his or her mistake and, should such a disease appear again in the future, it should hopefully be dealt with in a more professional manner.

**S.B.A HAMUTH-LAULLOO
CHAIRPERSON**

**D. SIBARTIE
MEMBER**

**A. A. ANDRÉ
MEMBER**

This 24th March 2017