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[Construction Progress and Problems of the Darien Gap Highway].  
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Report to Secretary, Department of Agriculture; by Henry  
Eschwege, Director, Community and Economic Development Div.

Issue Area: Federal Procurement of Goods and Services: Notifying  
the Congress of Status of Important Procurement Programs  
(1905).

Contact: Procurement and Systems Acquisition Div.

Budget Function: Agriculture: Agricultural Research and Services  
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(404); Health: Prevention and Control of Health Problems  
(553).

Organization Concerned: Department of State; Department of  
Transportation.

Congressional Relevance: House Committee on Agriculture; Senate  
Committee on Agriculture, Nutrition, and Forestry.

Completion of the Darien Gap Highway, the final link of  
the Pan American Highway system located in Panama and Colombia,  
is currently dependent upon establishing successful control of  
foot-and-mouth disease in Colombia. After 3 years of cooperation  
between the United States and Colombia, mostly at U.S. expense,  
little has been achieved. Findings/Conclusions: Safeguards  
outlined in a 1973 cooperative agreement have not been  
implemented, and there were more outbreaks of the disease  
reported in 1976 than in either 1974 or 1975. There is no  
assurance that the Colombians are fully committed to the  
foot-and-mouth disease eradication program. Recommendations:  
The Secretary of Agriculture, in cooperation with the Secretary  
of State, should develop an overall plan that sets forth  
realistic target dates for eradicating and controlling  
foot-and-mouth disease within the existing program area of  
Colombia to the extent that the disease would no longer pose a  
threat for transmission northward via the Pan American Highway  
system. The plan should also provide for the commitment by  
Colombia of sufficient resources that will assure its  
willingness to participate in a control program following the  
eradication and control of the disease from the program areas in  
Colombia. Because control of the disease is also important to  
the Central American countries and Mexico, consideration should  
be given to involving them in the planning and financing of  
control and eradication programs in Colombia. (SC)

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UNITED STATES GENERAL ACCOUNTING OFFICE  
WASHINGTON, D.C. 20548

03241  
COMMUNITY AND ECONOMIC  
DEVELOPMENT DIVISION

AUG 15 1977

B-118653

The Honorable  
The Secretary of Agriculture

Dear Mr. Secretary:

During our review of the construction progress and problems of the Darien Gap Highway, the final link of the Pan American Highway system, located in Panama and Colombia, we noted that the joint United States-Colombian foot-and-mouth disease (FMD) control and eradication program has not been effective. If the highway were under construction or completed in that country, the possibility of FMD spreading northward would pose a serious threat to the multibillion dollar cattle industry of Central and North America. Although Colombia has made some progress toward controlling FMD, since entering into a cooperative agreement with the United States in 1973, it has not implemented the safeguards as agreed to. These safeguards include such matters as adequate inspections and controls over livestock movements and effective vaccination.

We understand that your representatives will shortly hold substantive discussions with Colombian officials concerning the status and future of the joint United States-Colombian FMD control and eradication program. Our observations and conclusions based on the review could be timely and appropriate for your consideration at this time. Also, we are planning to issue a report to the Congress on the construction status of the Darien Gap Highway which will include our conclusions and recommendations on this joint United States-Colombian FMD program.

BACKGROUND

Because of construction of the Darien Gap Highway, the United States, in December 1973, agreed with Colombia on a 5-year program to control and eradicate foot-and-mouth disease in certain northwest portions of Colombia, adjacent to the Panama border. The agreement authorizes a U.S. commitment of up to \$7.8 million, including the first year costs of U.S. Department of Agriculture (USDA) personnel. Thereafter,

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(951323)

USDA personnel support costs have been provided as an additional U.S. contribution. The Colombian Ministry of Agriculture agreed to contribute a portion of construction, equipment, personnel, and operational costs of the program and to set aside certain designated areas for control and eradication purposes.

From inception of the program in Colombia through December 31, 1976, approximately \$5.8 million has been expended. USDA has contributed about \$5.7 million; and the Government of Colombia has provided \$148,000, or 2.5 percent of project expenditures--the agreement does not require a minimum contribution by Colombia.

#### WEAKNESSES OF FMD CONTROL AND ERADICATION PROGRAM

The cooperative agreement with Colombia provided for the establishment of two regulated control areas in that country (see enclosed map). Area I is designated as the "FMD Eradication Zone" with the objective of ridding the area of FMD and maintaining it free of the disease. The area is to contain 3 cattle free subzones adjacent to the Colombian-Panama border: (1) the "Los Rios" National Park, (2) a Projected Forest Zone, and (3) a Forest Reserve Zone. Area II is designated as the FMD control zone. This area is established to control and eradicate FMD within 5 years and to reinforce and complement the program of the FMD-free Area I.

During our review we noted that little progress has been made toward achieving program objectives, primarily because Colombia has not implemented certain protective measures outlined in the cooperative agreement which would help insure an effective program. These shortcomings include the need for more frequent livestock inspections, the need to control their movements, and the need for effective vaccines. The details of our observations are discussed more fully below.

#### AREA I (FMD ERADICATION ZONE)

##### Need for more frequent livestock inspections

Since May 1974 no signs of foot-and-mouth disease have been detected in Area I, adjacent to the Panama border. USDA,

however, does not consider the area to be free of the disease because the requirements of the agreement have not been met-- for example, the continuous inspection and identification of livestock and their movements. There are approximately 24,400 cattle in this area.

We noted that livestock in the area were being inspected every 30 days instead of every 15 days, as required. A USDA official stated that continuous and timely inspections of livestock is important in achieving the detection, control, and eradication of FMD in cattle because the disease can spread rapidly if undetected. Program officials told us that a shortage of personnel and unfavorable weather conditions prevented inspections at the required 15-day intervals. They claimed that since January 1977, required inspections have been made in most of Area I and said that an additional inspector will be hired shortly.

#### Need to relocate livestock

The agreement requires that all people and animals, with the exception of Indians, be relocated outside of the Los Katios National Park of Area I. Only yarded swine for local consumption may be kept by the Indians living there. The park is to serve as a buffer zone to prevent the spread of FMD from Colombia into Panama and is a minimum requirement established by USDA for construction of the Darien Gap Highway which will pass through the park.

We noted that about 90 cattle have not been removed from the park. We were advised by program officials that this situation will soon be resolved to prevent the possibility of spreading FMD into Panama.

#### Establishment of Protected Forest Zone required

The 1973 agreement with Colombia requires the establishment of a Protected Forest Zone in Area I for the study of flora and fauna and to control animal movements to keep the area free of FMD and to minimize the chances for reinfection. Only yarded swine maintained by the Indians are to be kept in this zone and economic activity in it is not permitted.

We noted that the zone has not been legally nor physically secured because of legal and potential social and

financial problems. USDA officials stated that the zone must be legally established before they will concur in the completion of the Darien Gap Highway. This requires that title to the land be transferred to the Colombian National Forest and Parks Agency. Yet the Colombian agrarian reform agency, which controls most of the land designated for the zone, has refused to do so until a socio-economic study is done to determine (1) the number of ranches, people, and livestock in the area and (2) whether they constitute a danger in spreading the disease.

We were informed that until the Protected Forest Zone is established there is no legal authority to enforce the provisions of the agreement, and additional settlers have set up ranches in the area--resulting in further delays to control and eradicate the disease.

Need for adequate  
patrol staff authority

In accordance with the agreement, a Forest Reserve Zone in Area I was established where lumbering activities are permitted, but under strict control to prevent new livestock activities. Two existing towns within the zone are allowed to continue with the essential farming activities of raising crops. The zone has one cattle ranch with about 600 cattle, which can maintain this same level, free of FMD.

We noted that the Colombian National Forest and Parks agency staff assigned to patrol this zone were only responsible for lumber activities, wildlife, etc. They did not have adequate authority to prevent the establishment of additional farms and prevent the illegal movement of animals or animal products into or through this zone, or in the Protected Forest Zone previously discussed.

AREA II (FMD CONTROL ZONE)

Need for effective control  
of livestock movements

Although USDA requires the establishment and maintenance of control posts operating around-the-clock to control the movement of livestock between and within areas, we noted that such movements have not been strictly controlled, as agreed, to prevent the spread of FMD. The program employs approximately 56 inspectors at 14 control posts in Areas I and II

to control livestock movements. Since the program's inception, there have been 51 FMD outbreaks in Area II, infecting 1,553 animals. According to program officials, approximately 80 to 90 percent of these outbreaks were caused by illegal livestock movements. We noted that most livestock movements occur during the night when control posts are closed, and police and military support are not available to cooperate with program personnel. USDA officials confirmed our observations and told us that one reason for the program's ineffectiveness was that cattle were freely moving from nonprogram areas into Area II--thus increasing the chances of reinfecting Area II.

### Effective vaccine required

The vaccine used to control FMD has not been sufficiently potent or of the proper strain to immunize livestock. It has been and is currently produced by a Colombian laboratory. In November 1975 USDA tested the vaccine's potency and strain on 16 steers and found that it did not produce an immunity sufficient enough to protect the steers from becoming infected. In 1976 the laboratory tested the potency of a second batch of vaccine that was no longer in use and found that it was 65-percent effective. One program official said that an adequate vaccine should be at least 90-percent effective. Also we were told that there are many variations of the FMD virus which requires certain strains of vaccine to be produced and used for preventive purposes.

We noted that vaccinations were not reducing FMD outbreaks. During 1976, 683 livestock in Area II became infected with the disease. This represented a 43-percent increase over 1974 and a 73-percent increase over 1975.

In October 1976, to improve the quality of the vaccine and reduce the incidence of outbreaks, USDA planned to vaccinate some livestock on an experimental basis in Area II with an oil base vaccine, prepared and potency tested in U.S. facilities. Field tests have shown that the oil vaccine produced a more effective immunity and only needed to be administered twice a year, while the present vaccine needs to be administered three times a year. Colombian officials approved the proposal in December 1976; however, USDA officials do not expect the oil vaccine to be ready for use before late 1977.

Livestock other than cattle  
need vaccinations

All livestock in Area II have not been vaccinated against FMD as needed to meet the goals of controlling and eradicating the disease. Area II has about 3,900 sheep and goats and over 25,000 pigs, none of which had been vaccinated against FMD. Program officials stated that the vaccine has a low efficiency on sheep and goats--meaning that the immunity does not last a complete vaccination cycle--and only has limited effectiveness on pigs.

The agreement requires the vaccination of the cattle population only. However, we were informed that FMD can never be effectively controlled and eradicated in Area II until all livestock are vaccinated, including pigs, sheep, and goats since they also spread the disease. To this end, program officials are considering asking the Colombian laboratories to produce a vaccine that is effective on these other animals.

Need for adequate supervision and  
control over vaccinations

Supervision and control of vaccinations in Area II has not been adequate. Vaccinations are administered by individual farm owners, representatives of the cattlemen's association, and program staff representatives. We were told that the vaccine must be properly applied to be effective and that the personnel who administer the inoculations are inadequately trained.

As of December 1976, there were about 344,000 susceptible livestock in Area II, including about 315,000 cattle, that had to be vaccinated three times a year. During the first vaccination cycle of 1976, program staff representatives--about 34 inspectors--supervised about 26 percent of the vaccinations. Program staff only supervised about 22 percent of the vaccinations during the second cycle of 1976.

There is inadequate data to determine whether the livestock were actually vaccinated. Program data showing the number of cattle vaccinated represents sales of vaccine and the number of vaccinations reported. We were advised that program staff have not monitored or made onsite inspections to determine whether livestock have actually been given the vaccine.

Program officials attribute the inadequate supervision and control over vaccinations to a shortage of staff, and because the vaccinations have been primarily the responsibility of the cattlemen. We were told that the only way to make sure that the vaccine is being administered is for program personnel to administer or supervise the vaccinations which should be obligatory and perhaps free of cost to the cattlemen. However, we were told this would take twice the number of inspectors currently working in Area II and cost considerably more.

### FUTURE PROGRAM PLANS

Representatives of the Colombian Government presented a plan to USDA for expanding the FMD control program along the entire north coast of Colombia from Panama to Venezuela. The plan is an 8-year program to eradicate FMD from this area at an estimated cost of \$172 million. Colombia might provide as much as \$700,000 annually for this expanded program. In response, we were told that U.S. officials are considering alternative proposals.

USDA representatives told the Colombians that before the United States can consider an expanded program or a continuation of the current one the shortcomings must be corrected. Because of the program weaknesses, we noted that a realistic time frame to control and eradicate FMD was not developed by USDA officials or coordinated with Federal Highway Administration officials so that the highway construction could be rescheduled and completed. In fiscal year 1978 budget hearings, a USDA official in reference to the Colombian program, stated "We have done all we can and if definite improvement is not made this year, we will have to reconsider our involvement."

### CONCLUSIONS

Completion of the Darien Gap Highway is currently dependent upon establishing successful control of FMD in Colombia. After over 3 years of cooperation between the United States and Colombia, mostly at U.S. expense, little has been achieved. Safeguards outlined in the cooperative agreement have not been implemented and there were more FMD outbreaks reported in 1976 than in either 1975 or 1974. We believe that any continuing effort to control the disease in Colombia is dependent upon Colombia's ability and willingness to participate in an

eradication and control program. This willingness has not been sufficiently demonstrated during the current program. Consequently, there is no assurance that the Colombians are fully committed to this program.

USDA officials agreed with our findings and stated that they do not consider accomplishments under the FMD control and eradication program effective enough to permit construction to proceed on the Darien Gap Highway in Colombia. If the disease in Colombia cannot be eradicated and controlled in terms of the program objectives, the prospects for completing the highway as initially envisioned are doubtful.

### RECOMMENDATIONS

We recommend that the Secretary of Agriculture, in cooperation with the Secretary of State, develop an overall plan that sets forth realistic target dates for eradicating and controlling FMD within the existing program area of Colombia to the extent that the disease would no longer pose a threat for transmission northward via the Pan American Highway system. The plan should also provide for the commitment by Colombia of sufficient resources that will assure its willingness to participate in a control program following the eradication and control of the disease from the program areas in Colombia.

Because control of the disease is also important to the Central American countries and Mexico, consideration should be given to involving them in the planning and financing of control and eradication programs in Colombia.

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We are sending copies of this letter report to the House and Senate Committees on Appropriations; the House Committee on Agriculture; the Senate Committee on Agriculture, Nutrition and Forestry; the House Committee on Government Operations; the Senate Committee on Governmental Affairs; the House Committee on International Relations; the Senate Committee on Foreign Relations; the House Committee on Public Works and Transportation; the Senate Committee on Commerce, Science and Transportation; the Secretaries of State and

Transportation; and the Director, Office of Management and Budget.

As you know section 236 of the Legislative Reorganization Act of 1970 requires the head of a Federal agency to submit a written statement on actions taken on our recommendations to the House Committee on Government Operations and the Senate Committee on Governmental Affairs not later than 60 days after the date of the report and to the House and Senate Committees on Appropriations with the agency's first request for appropriations made more than 60 days after the date of the report.

We would appreciate receiving comments on any actions taken or planned on these matters. We shall be happy to discuss our review with you or with members of your staff at your convenience.

We appreciate the cooperation and assistance furnished to us during this review.

Sincerely yours,



Henry Eschwege  
Director

Enclosure

