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**80 percent reduction in reported FMD outbreaks in Karachi dairy colonies in Pakistan**

**More than USD 40 million mobilized for FMD control in Pakistan**

### Project highlight:

## Successful national control program for FMD developed, piloted and scaled up in Pakistan (TCP/PAK/3503)

Pakistan has a large livestock population, including 76.8 million cattle and buffaloes and 97.8 million sheep and goats, representing an important source of income for producers (8.5 million families) throughout the year.

An endemic problem in Pakistan, FMD threatens livestock producer families as FMD is the most prevalent infectious livestock disease in the country and alone constitutes 70 percent of losses of all diseased livestock. Estimated losses exceed USD 300 per infected animal, resulting in USD 692 million in annual economic losses. The disease also restricts the export of livestock and livestock products, thus greatly reducing revenues.

Despite the efforts of the government to control FMD through the use of locally produced vaccines, it was not effective. However, imported vaccines were expensive and not fully protective against viruses circulating in the country.

In order to successfully address the limitation of local vaccines, the Government of Pakistan approved a risk-based control strategy for FMD, developed under the FAO project (GCP/PAK/123/USA). The TCP project leveraged the results of the previous project through a pilot intervention in the hot spots for FMD, which reflected the strategy for a national control programme for FMD outbreaks.

The project was implemented in close collaboration with the Ministry of National Food Security and Research and regional and provincial livestock and dairy development departments.

The beneficiaries of the project were not only the livestock farming families who gained access to good-quality FMD vaccines and benefited from outbreak control, but also the governments receiving well-formulated projects and action plans for FMD control. Haji Sikandar Nagori, President of the Dairy Farmers Association, Landhi Cattle Colony, Karachi, says "This is the first time in over 50 years that FMD in the Karachi dairy colonies has been effectively controlled."

The pilot surveillance plan comprised six components: awareness-raising of dairy farmers; training of veterinary field staff; provision of sample collection kits to trained field staff; coverage of expenditures to collect and submit tissue samples to the diagnostic labs; undertaking of outbreak control activities, including ring vaccination; and the reporting of lab results to veterinary field staff.

Nine veterinary diagnostic labs in the country (at least one in each administrative unit) were strengthened by making FMD serotyping facilities functional, including a federal reference laboratory. Two people from each diagnostic lab were trained and labs were provided with diagnostic enzyme linked immunosorbent assay kits and expendables.

The project conducted trainings — on FMD outbreak control and sample collection — in Balochistan, FATA (the Federally Administered Tribal Areas), Gilgit-Baltistan, Khyber, Pakhtunkhwa, Punjab and Sindh, as well as six conferences in veterinary faculties and colleges in the country. The training reached 533 government veterinarians, 477 government veterinary assistants, 55 senior government veterinary officials, 486 veterinary students or faculty members and 57 staff of private dairy companies.

In order to identify country-specific vaccine strains, labs collected samples from 2 669 outbreaks from October 2015 to March 2017. After identifying the specific serotypes and genotypes, the project promoted and piloted the use of good-quality FMD vaccine.

All reported outbreaks were controlled by restricting mobility of animals, treating sick animals, and using ring vaccination for 111 475 animals. The commercial dairy farmers in Sindh and Punjab Provinces used most of the vaccine doses, and doses of vaccine were provided to dairy farmers on a cost-sharing basis at USD 0.40 per dose.

No clinical cases of FMD were reported in the vaccinated animals after the booster dose application.

A mass vaccination campaign (using 578 104 of vaccine) resulted in the control of FMD in Karachi dairy colonies, which were the most serious FMD hotspot. Vaccination equipment and vaccines were provided free of cost, and farmers paid USD 0.07 to the vaccinator for each vaccination. Vaccinations started in October 2016 in Landhi Cattle Colony and Nagori Dairy Farmers Cooperative Society, later followed by other dairy colonies and newly arrived animals until the end of March 2017. After mass vaccination, clear cases of FMD were reported only in animals that had been newly brought into the dairy colony or on farms where no vaccinations had been carried out.

The FMD surveillance model proved to be successful in Pakistan. According to the information collected and analysed by the studies carried out within the pilot, the number of reported FMD outbreaks decreased by 80 percent compared to the same period of treatment one year before. Controlled trials also showed a reduction of exposure to FMD.

The next steps for the Government of Pakistan are to achieve Progressive Control Pathway Stage 3 and to have its FMD control programme endorsed by the World Organisation for Animal Health, in order to open up additional export markets (e.g. Indonesia) for meat.

#### **Project title**

Development of national control programme for foot and mouth disease

#### **Programme country**

Pakistan

#### **Key Results**

9 veterinary diagnostic labs in the country (at least one in each administrative unit) strengthened.

1 608 government and private sector staff, veterinarians and students trained.

466 920 doses of the FMD vaccine provided under the pilot and 578 104 doses provided under a mass vaccination campaign.

The Planning Commission of Pakistan approved the funding for National FMD Control Program under Public Sector Development Program.

There was an 80 percent reduction in reported FMD outbreaks in Karachi dairy colonies.

Fewer than 18 outbreaks were reported per month after vaccination, and only in non-vaccinated animals. Milk production and other losses caused by FMD outbreaks were significantly reduced.

#### **Catalytic effects**

New market players entered the FMD vaccine field, as the Drug Regulatory Authority of Pakistan has registered three more FMD vaccines from two manufacturers.

The Government of Punjab invested USD 25.42 million with FAO for the control of FMD in the province. For better technical support and monitoring, the Livestock and Dairy Development Department of Punjab signed a new project agreement for work on the control of transboundary animal diseases with FAO in 2017. Since then, the department has been extending this project on an annual basis and, for 2019, it is planning to invest USD 14.06 million in FMD control.

The Government of Pakistan approved a six-year project for USD 5.15 million for risk-based control of FMD in the country. At the request of the Government, the Government of Japan provided USD 2.6 million to FAO for the execution of the project "Enhancement of FMD control in Pakistan".