EMA-*i*: A MOBILE APP FOR TIMELY ANIMAL DISEASE FIELD REPORTING TO ENHANCE SURVEILLANCE

SURVEILLANCE AND EARLY WARNING of animal disease outbreaks, including zoonotic diseases, with potential public health impact enables national authorities to advise at-risk populations.

However, early detection and timely reporting of animal diseases from the field are a challenge in developing countries, where weak infrastructure, human resources, capacities and lack of adequate incentives have an impact to effectively implement adequate disease surveillance and reporting.

Good-quality disease information and reporting is needed in order to understand the disease situation, support decision-making, prevent potential disease incursion and respond quickly.

Thus, it is crucial to apply a system at national level to enhance veterinary services capacities in disease reporting from the field to decision makers and information-sharing among stakeholders.

For this reason, FAO has developed EMA-*i* (Event Mobile Application) for data collection and to facilitate real-time disease reporting to support veterinary services capacities in disease surveillance implemented in the field.

The rationale for the app is that in some developing countries access to the Internet can be difficult, especially away from urban centres, while telephone networks have good signal coverage over wider areas with rapid connection form the field.

EMA-*i* features

FACILITATING THE EXCHANGE OF INFORMATION ON ANIMAL DISEASE REPORTING BETWEEN ALL ACTORS, FROM FARMERS TO CHIEF VETERINARY OFFICERS

COLLECTING DATA AND REAL-TIME REPORTING FROM THE FIELD

HOW EMA-*i* WORKS

Using Smartphones, animal disease information is collected with EMA-*i* app from the field. These data, which are geo-referenced, are entered into the app. The app generates a report that is sent in real-time to the Global Animal Disease Information System (EMPRES-*i*) database where the information is safely stored. The data are verified and validated, and the submitter of the information can be contacted if necessary.

All reports are also accessible through a mapping component of EMA-*i* which permits to visualize the location and epidemiological details of a disease event from the field ("near me"). In addition, EMPRES-*i* platform developed by FAO can serve as a tool for data analysis through charts, tables and maps. An early warning e-mail notification system is also in place for informing decision makers on a disease event.

Crucially, the application allows for confidentiality of sensitive information. Only registered participants have access to their national data.

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› EMA-*i* features

DELIVERING DISEASE INFORMATION DIRECTLY TO THE EMPRES-*i* DATABASE

ALLOWING DIRECT ACCESS TO THE DATABASE THROUGH A "NEAR ME" MAPPING FUNCTION, WHICH PROVIDES A MAP ON OUTBREAKS REPORTED IN THE NEARBY

EMPRES-*i* ACTING AS A DATA REPOSITORY FOR SPECIFIC ANALYSIS WHERE ALL SENSITIVE INFORMATION AND DATA REPORTED IS SAFELY STORED

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Another important advantage of this approach is that EMPRES-*i* can provide a stable and reliable platform for data storage, analysis and management, which is often not available for less developed countries with scarce financial and infrastructure resources.

EMA-*i* IN THE FIELD

EMA-*i* was first tested in Uganda in 2013 under a One Health Project supported by the Government of Ireland. A pilot activity included the testing and use of EMA-*i* in 10 out of 112 districts in Uganda. For this purpose, EMA-*i* was customized for the use of the national authorities and FAO delivered internet-enabled smartphones to the Chief Veterinary Officer, epidemiologists of the National Animal Disease Diagnostics and Epidemiology Center (NADDEC) and District Veterinary Officers. Computers and power back-up were also distributed to the NADDEC offices.

A workflow of report communication was also established according to the existing reporting procedure from the field to the decision makers.

The use of EMA-*i* app in Uganda has demonstrated major improvements in disease reporting and communication between districts and central level (i.e. from monthly to real-time) and increased the number of animal disease reports received from targeted districts. For instance from July to December 2013, 126 livestock disease reports were submitted in real-time to NADDEC. This compares to 45 and 56 monthly reports NADDEC received through the regular reporting system in 2012 and 2011, respectively. In addition, a wider range of diseases is reported using EMA-*i*.

Interaction and communication between the field and decision-makers was also significantly improved. For this reason, the Ministry of Agriculture, Animal Industry and Fisheries has expressed a strong interest in expanding EMA-*i* to all districts.

In early 2015, a new project was launched in Mali. Working in collaboration with FAO Mali and the Emergency Centre for Transboundary Animal Diseases (ECTAD) in Bamako, FAO implemented the first phase of the project by interviewing the veterinary services in Mali to carry out an assessment of needs and gaps in disease information and reporting and with purchasing some of the equipment.

Furthermore, a "*training of trainers*" session was held at FAO headquarters in Rome, Italy, in December 2014 for FAO officers, one officer from FAO Mali and another from FAO Bamako. The training session was an opportunity to learn about the EMA-*i* app and EMPRES-*i*, and to become actively involved in the implementation of the application in Mali.

Two pilots program are also planned in Latin America for 2016.

Through EMA-*i* app, a rapid, real time, efficient and highly confidential communication channel is guaranteed, allowing for an effective and more immediate action during the occurrence of a disease outbreak from detection, reporting and response. This is why FAO is planning to extend the use of this tool to other regions and countries to enhance global capacities in disease reporting, surveillance and early warning.

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