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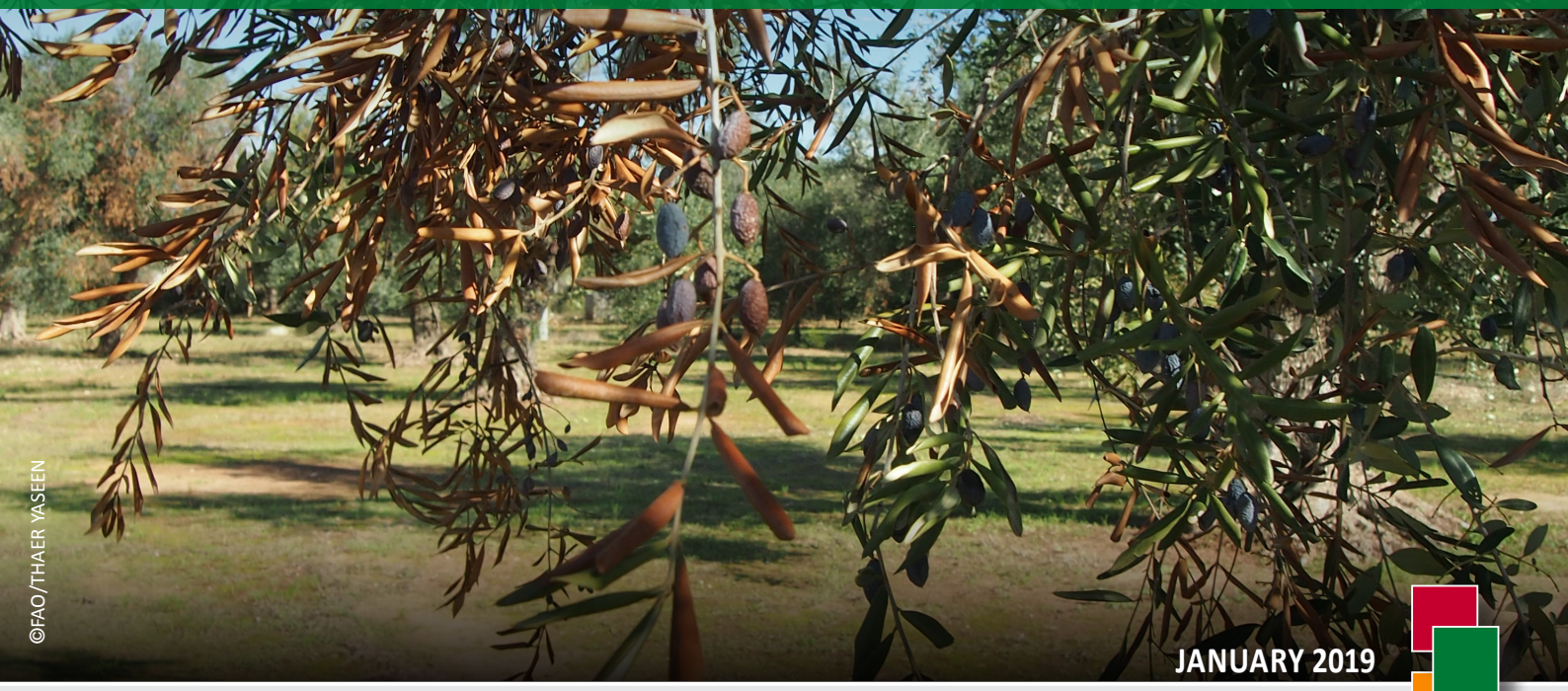

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DEVELOPING CAPACITY IN THE NEAR EAST AND NORTH AFRICA REGION TO PREVENT THE INTRODUCTION AND SPREAD OF *XYLELLA FASTIDIOSA*

The occurrence of Olive Quick Decline Syndrome (OQDS) in the region of Apulia (southern Italy) poses a serious threat to olive production in the Mediterranean countries, where favourable climatic conditions and the abundant presence of the pathogen's insect vectors would foster the epidemic spread of the disease.

Infected olive plants may develop symptoms only after a long incubation period of 7 to 12 months or more. Once infected, the olive trees gradually die.

Based on pest risk assessments, plants for planting are considered the most likely means of long-distance spread. Thus, the risk for Near East and North Africa (NENA) countries arises in relation to the exchange of plants for planting material. As such, it is necessary to strengthen the phytosanitary measures enforced in the region and to adopt harmonized surveillance programmes.

All NENA countries are characterized by climatic and epidemiological conditions (presence of susceptible hosts, xylem feeders potentially acting as vectors) favourable to the spread and establishment of the pathogen. Against this backdrop, it must be recalled that the olive production and olive oil sector is one of the most important sources of income and food security for thousands of farmers in the region.

To face this challenge, FAO launched a Regional Technical Cooperation Project to support NENA countries in their efforts to enforce preventive measures against the introduction and spread of *Xylella fastidiosa* and OQDS in their territories.

THE RESPONSE

FAO provided technical assistance to Algeria, Egypt, the Gaza Strip, Lebanon, Libya, Morocco, Tunisia and the West Bank to prevent the spread of the disease and save the livelihoods and income of growers of olive trees and other potential host plants, as well as national economies.

FAO assisted the NENA countries in establishing harmonized surveillance systems regionally, enforcing and coordinating risk communication efforts among countries, strengthening their preparedness, improving their capacities in disease diagnosis and enhancing their management practices.

KEY FACTS

XYLELLA FASTIDIOSA

OLIVE QUICK DECLINE SYNDROME (OQDS) IS ONE OF THE MOST SERIOUS DISEASES OF OLIVE TREES. THE DISEASE IS CAUSED BY THE BACTERIUM *XYLELLA FASTIDIOSA*, ONE OF THE MOST DESTRUCTIVE PLANT PATHOGENS, HAVING MORE THAN 500 HOST PLANTS

THE OUTBREAK OF *XYLELLA FASTIDIOSA* ASSOCIATED WITH THE OQDS AFFECTING OLIVE TREES IN SOUTHERN ITALY POSES A SERIOUS THREAT TO THE OLIVE INDUSTRY OF THE ENTIRE MEDITERRANEAN BASIN

APPROXIMATELY 95 PERCENT OF OLIVE TREES IN THE WORLD ARE CULTIVATED IN THE MEDITERRANEAN REGION, WHERE THE NEAR EAST AND NORTH AFRICA (NENA) COUNTRIES RANK SECOND IN TERMS OF THE GLOBAL PRODUCTION OF OLIVES, AFTER SOUTHERN EUROPEAN COUNTRIES (SPAIN, ITALY AND GREECE)

***XYLELLA FASTIDIOSA* HAS THE POTENTIAL TO DESTROY 40 MILLION HECTARES OF OLIVE TREES IN THE MEDITERRANEAN BASIN AND CAUSE SERIOUS DAMAGE TO THE LIVELIHOODS OF THOUSANDS OF FARMERS, MAINLY SMALL FARMERS WHO DEPEND ON THIS CROP**

FAO SUPPORTS THE STRENGTHENING OF NATIONAL CAPACITIES TO PREVENT THE INTRODUCTION AND SPREAD OF *XYLELLA FASTIDIOSA* IN THE NENA COUNTRIES

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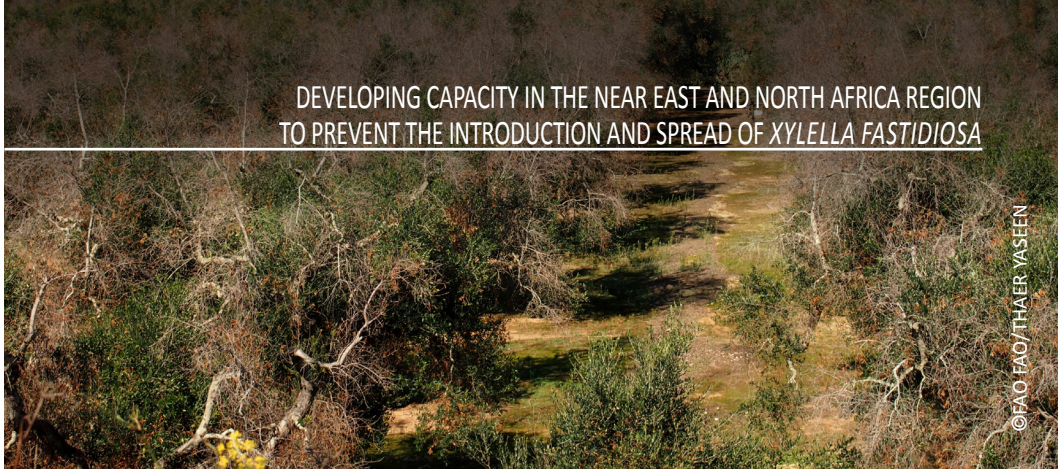

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All countries developed appropriate contingency and action plans for surveillance, to address any threat that may arise due to quarantine pests. The countries also built the institutional capacities and capabilities of technical staff and farmers in early detection, diagnosis, surveillance and phytosanitary measures.

FAO organized a series of training sessions for stakeholders on the surveillance, diagnosis and management practices relating to *Xylella fastidiosa*.

Six Trainings of Trainers (ToTs) were carried out in Algeria, Egypt, Jordan, Lebanon, Morocco and Tunisia in 2016 and 2017. More than 136 participants, including 50 women, were trained during the ToT workshops. These workshops assisted each country in organizing national and regional awareness days, as well as training sessions for the surveillance, monitoring and diagnosis of *Xylella fastidiosa*. More than 3 858 participants, including 942 women, benefitted from these awareness and technical knowledge days.

INNOVATIVE TOOLS TO DETECT *XYLELLA FASTIDIOSA*

The project introduced innovative technologies for the surveillance and monitoring of *Xylella fastidiosa*. The XylAPP Android application was designed for the collection, storing and transmission of field data to laboratories, for analysis, and to a central web server, XylWeb.

The bacterium is successfully detected in insects using molecular assays conducted through the real-time Loop Mediated Isothermal Amplification (LAMP) procedure, an innovative, fast and accurate detection method. Moreover, use of the field device allows for immediate on-site interception and detection of the bacterium in insects and plant material.

Portable tools (tablets and real-time LAMP devices) make it possible to run the assay in remote areas, without the need for laboratories. In Libya and in remote areas of Egypt, assays have been successfully carried out directly in the field, without collecting and transporting samples to the Laboratory.

FAO delivered eight LAMP devices to the region (one each to Egypt, Morocco, Palestine and Tunisia; two to Libya; and two to Lebanon), as well as seven tablets containing dedicated software including the country map.

REGIONAL AWARENESS-RAISING DAYS AND CAMPAIGNS

More than 35 regional awareness-raising days were organized in the NENA countries for the benefit of technicians, farmers, nurseries, students and customs inspectors. Of great interest was the use of toll-free telephone hotlines, e-mail, WhatsApp and Facebook, to address questions from growers and other affected professionals relating to the management of the disease.

Awareness-raising campaigns on *Xylella fastidiosa* were conducted through media campaigns, press conferences, the involvement of journalists in field trips, and other events. The social media, radio and TV communications were particularly effective in raising awareness in Egypt, Libya and Palestine.

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