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Agenda item 11. Improving preventive control – what is the role of innovation?

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Overview and background

For the past 100 years, new technologies and innovations have played an increasingly important role in improving Desert Locust survey, control and early warning. Four-wheeled vehicles have replaced camels for surveys, GPS replaced map reading, eLocust3 replaced paper forms for data collection, fax and then email replaced reporting by post and telex, GIS replaced paper maps and coloured pencils, track guidance systems replaced spraying by eye, and navigation systems reduced driving around in the desert at random.

It can be argued that the single most revolutionary innovation that improved preventive control was the introduction of eLocust2 in 2006. Suddenly countries and FAO woke up one morning and were receiving survey and control results in real time via satellite transmission from some of the remotest areas on this planet. National Locust Directors could see exactly where and for how long field teams were surveying and treating locusts on a map in real time. The days of teams disappearing into the desert for weeks on end were over. The overnight improvements to data quality, accountability and planning dramatically affected the timeliness and accuracy of early warning and has led to major improvements in effective preventive control. This is one of the primary reasons why there has been a decline in the frequency, duration and intensity of Desert Locust upsurges and plagues. Combined with innovative remotely sensed products such as dynamic greenness maps that show the three-month history of vegetation in a 250m area every ten days and using the RAMSES GIS that allows Desert Locust Information Officers (DLIOs) to analyze eLocust3 data and satellite imagery, more Desert Locust outbreaks are now detected and controlled successfully. More recently, DLIOs migrated from PCs and Windows to Mac laptops and MacOS to improve usability, stability, support.

While locust-affected countries and FAO have benefited from these innovations, it is important not to stop innovating. New ideas of using the latest technology to develop innovative tools for further improving early warning and preventive control must continue to be explored. With this in mind, DLIS and the three regional locust commissions have been actively pursuing the use of fixed-wing drones for long-distance surveys up to 100 km to detect green vegetation, rotary drones to determine the extent of green vegetation and identify potential targets in specific locations, and control drones to treat infestations safely and more effectively. During 2020–2021, further innovative developments could be harnessed, for example, to improve the SWARMS GIS used by DLIS for analysis and forecasting, to upgrade RAMSES, and to extend the eLocust3 system to smartphones.

Points for discussion and decisions

- What are some of the weakness in the current early warning and preventive control strategy that could be addressed by innovations
- How can DLCC encourage, guide and contribute innovations in Desert Locust preventive control