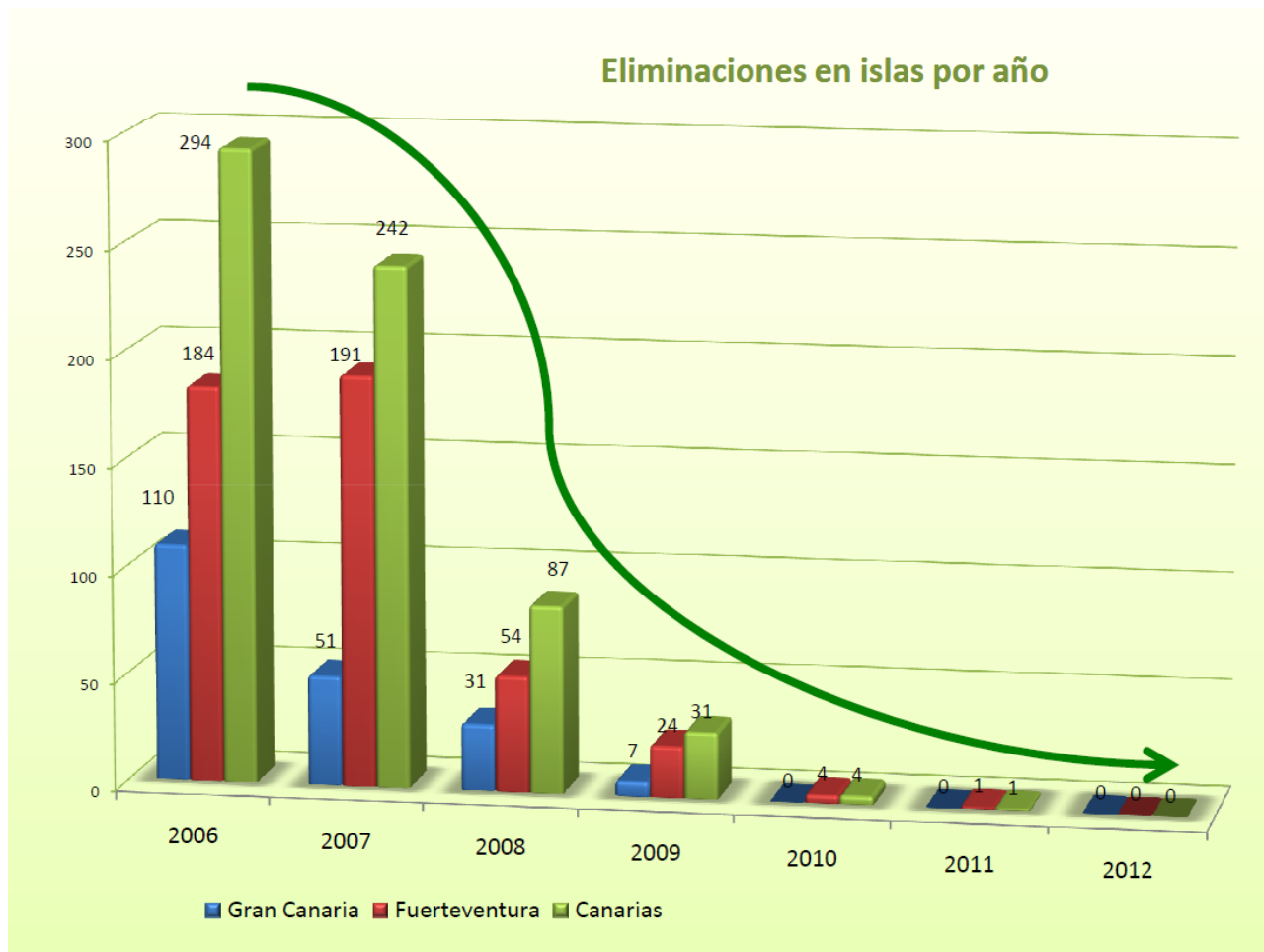


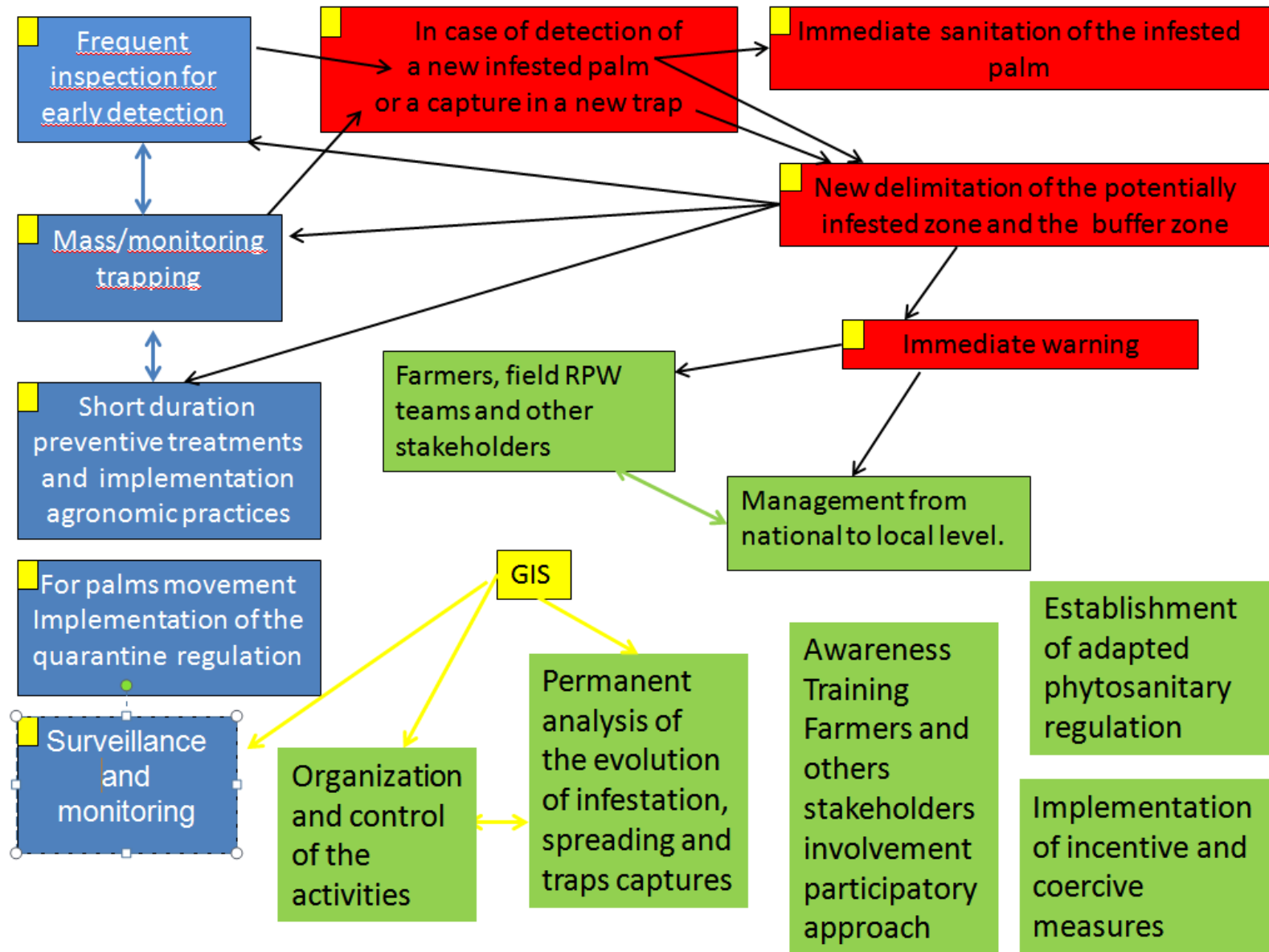
# National component of the strategy

## 1) Action Plan for Improved National RPW-IPM Strategy

Objective: rapid and strong decline of the RPW in view of its containment and eradication



# General scheme of the Integrated strategy

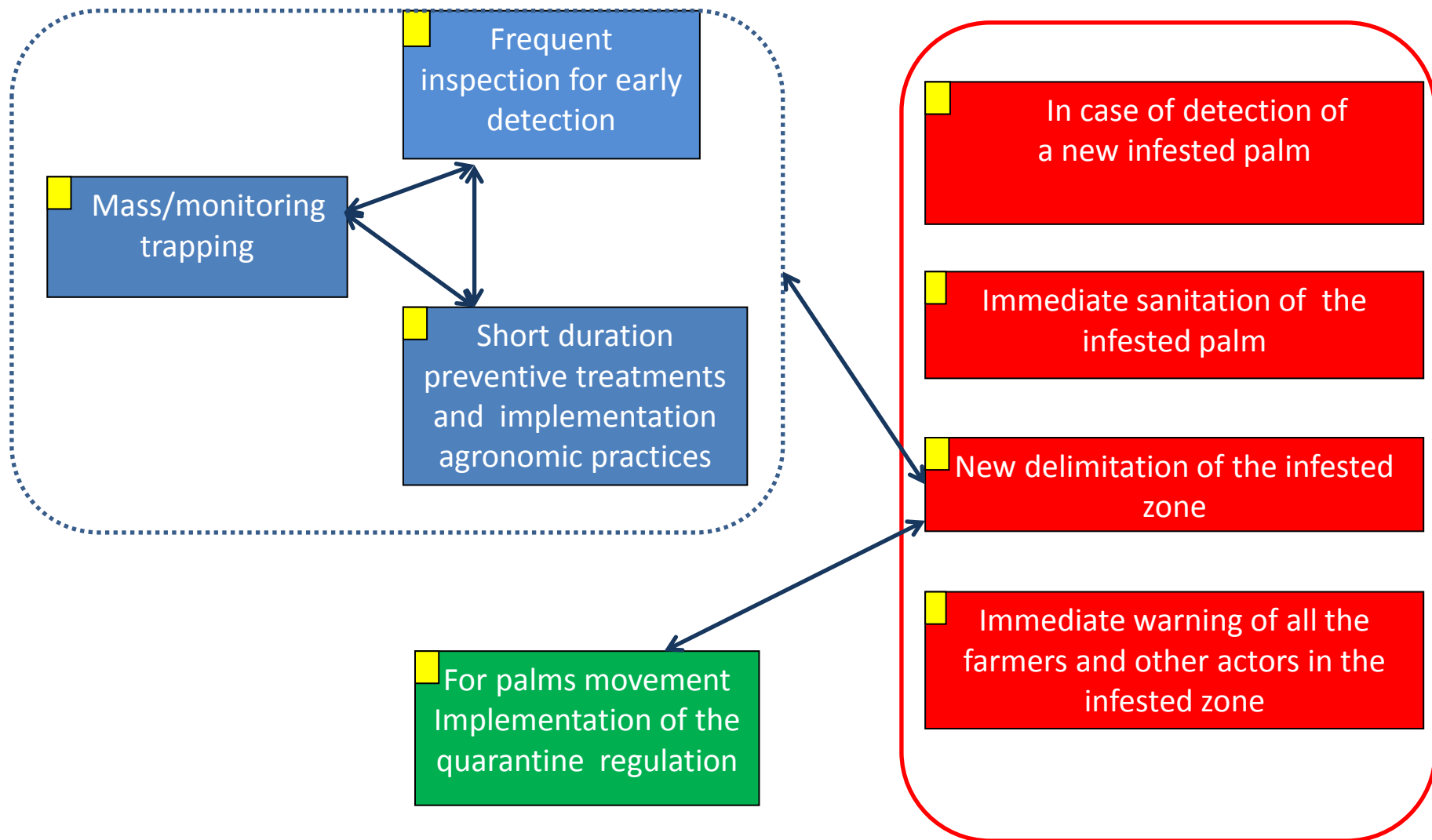


# Multidisciplinary approach



- Only plant protection experts or entomologists have been involved in the RPW management. The socio-economic component of the problem has not been or poorly taken into consideration although it is essential.
- To elaborate and implement measures for the involvement of the farmers, a multidisciplinary approach, with the participation of agro-economists, sociologists, extension experts are necessary.

# Interconnected technical components of the strategy



- All the activities are registered in a GIS conceived and used as a tool for daily management at the local, regional and national level

The importance to delimitate the potentially infested zone, to locate all the palms and traps in the infested areas and to have the address of the owners .



# Quarantine phytosanitary measures

Imports and movements of infested palms inside the country are the dominant pathway of introduction and spread of RPW



Improvement of phytosanitary regulation to prevent the introduction and the spread of infested palms is necessary



Assistance of the International Plant Protection Convention (IPPC) and Near East Plant Protection Organization (NEPPO)



# Phytosanitary import regulations

The cryptic biology of the pest makes practically impossible to assure that a palm is RPW free

Risk analysis leads to recommend the total ban of import of palms of more than 6 cm diameter (Now adopted by many countries)



Larvae live exclusively inside the palm tissues



Adults hide deeply at the basis of the palms

If ban is not adopted, import should be only from free-pest zones if limits of these zones can be rigorously established: 50 km from the infested zone; for the last 3 years, absence of palms introduction, no infested palms and no captures in traps.

- palms are treated before transfer and maintained one year in RPW-proof certified nurseries
- traceability assured

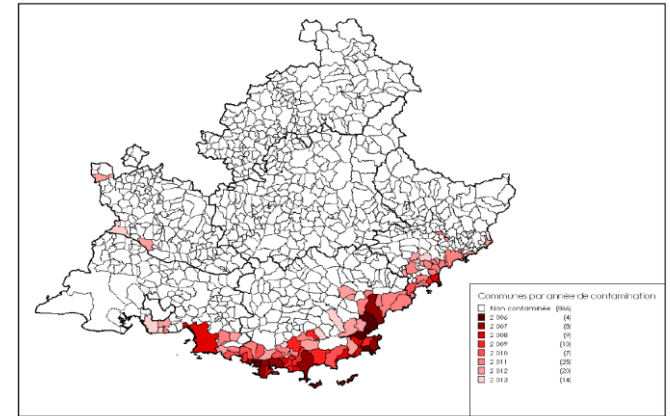
# Phytosanitary regulations for the movement of palms inside an infested country

Regulations to assure RPW containment inside an efficient eradication programme

First option: total ban of date palm offshoots or ornamental palms movement, except palms of less than 6 cm base diameter.

Second option: movement authorized from free-pest areas only if:

- limits of these areas can be rigorously established
- palms are treated before transfer
- palms are maintained one year in RPW-proof certified nurseries
- traceability assured





## Frequent inspection for early detection

- Visual inspection is presently the only effective technique for early detection
- It is very efficient if inspections are frequent
- To improve farmer/owners involvement and training is indispensable
- Offshoots pruning for facilitating visual inspection must be compulsory.
- The use of sniffer dogs can be interesting in certain cases
- We encourage the development of a quick, reliable, cost effective, and easy to handle early detection device for RPW and devices



In date palm, symptoms appear at the base.



In great Canary palms, symptoms appear at the crown level.

## Short duration targeted preventive treatments and implementation agronomic practices

### Offshoots management:

- pruning indispensable for early detection
- offshoots elimination or removal for transplantation

- Palms pruning

- All these operations create wounds that will attract the weevils

- Traps installation
- All the weevils will not fall in the traps



## Short period targeted preventive treatments

- The preventive treatment of the wounded attractive palms and of the palms around the traps will allow to prevent new infestation but also to reduce the weevils population.



For date palms, soaking the offshoots and the base of the trunk

- The preventive treatment are not classical spray but consist to soak the sites where RPW hide and females lay their eggs.



For great Canary palms, soaking the bases of the fronds

# Immediate sanitation of the new infested palm

It is necessary to rectify false ideas on RPW and on risks during sanitation. RPW eradication does not mean obligatory infested palm eradication.

- Various options:
- Mechanical sanitation: the simplest and accessible to farmers technique
  - Chemical sanitation by injection
  - Infested palm eradication: does not need huge equipment and logistic

- It is strongly recommended that all sanitation operations take place in situ
- Farmers should be involved and trained in sanitation



No reason to shred trunk

## Mass/monitoring trapping

Traps if well serviced contribute efficiently to reduce infestations and constitute an indispensable tool to assess the effectiveness of the control measures

- A trap can be a simple plastic bucket in which are made 4 lateral holes through which RPW will enter in the trap.
- One PW aggregation pheromone dispenser and one ethyl acetate dispenser are hung below the lid of the bucket.
- The attraction of these two components will be considerably amplified with fermenting food bait, placed in a smaller container inside the trap. Food bait can be: dates, date sirup, sugar cane, etc.
- The bottom of the bucket is filled with water to maintain high humidity level and to drown the weevils.
- The traps are placed at the shadow and buried in the soil till the holes level to facilitate the RPW entrance.



- The main constraint of the trap is the frequent replacement of water and food bait
- To overcoming this constraint, the best option is to give the maintenance to selected and trained farmers or volunteers.
- The adoption of this solution allows to adopt a high trap density (at least 4 traps per ha)

## 2) Result Matrix of the Action Plan

	Indicators	Targets	Time frame	Regional Platform/ FAO-CIHEAM expected contribution
<b>Output 1</b>	<b>Phytosanitary (quarantine) measures effectively enforced</b>			
	<i>Six activities: Review of the national phytosanitary system; Review/update/development of precise regulation for imports and movement of palms; development of protocols and guidelines of inspection and treatments of date palm offshoots and palms for strengthening quarantine inspection; development of guidelines and regulation for the establishment of certified palms nurseries; Support the development of tissue culture palms production; Development of mechanism of coordination and engagement between all concerned actors to enforce the phytosanitary regulation</i>			
<b>Output 2</b>	<b>Early detection, surveillance and monitoring capabilities improved</b>			
	<i>Four activities: development of harmonized technical protocols, improvement of farmers and others stakeholders involvement and capabilities, assess new technologies, development of a program for surveillance and monitoring bases on ISPP 6, Development of a mobile application for field data collection and a GIS for the management of the surveillance and monitoring program</i>			
<b>Output 3</b>	<b>Preventive and control measures improved</b>			
	<i>Seven activities: development of protocols and preparation of guidelines for agronomic practices, preventive treatments, sanitation treatments, trapping; registration of pesticides for RPW control; analysis of pesticide residues in date and other palms parts; assessing new trapping technologies</i>			
<b>Output 4</b>	<b>RPW-IPM program institutional capacity, planning and implementation enhanced</b>			
	<i>Six activities: Development of a participatory approach for enhancing farmers and other stakeholders in the national RPW eradication programs; development of pilot projects for RPW eradication based on farmers participatory approach and farmer field school approach; development of capacity building program on RPW eradication for all the concerned actors; development of awareness and training material; establishment of a coordination, communication and networking mechanism between all the concerned organizations; development of a result base management system to improve the RPW eradication programme</i>			