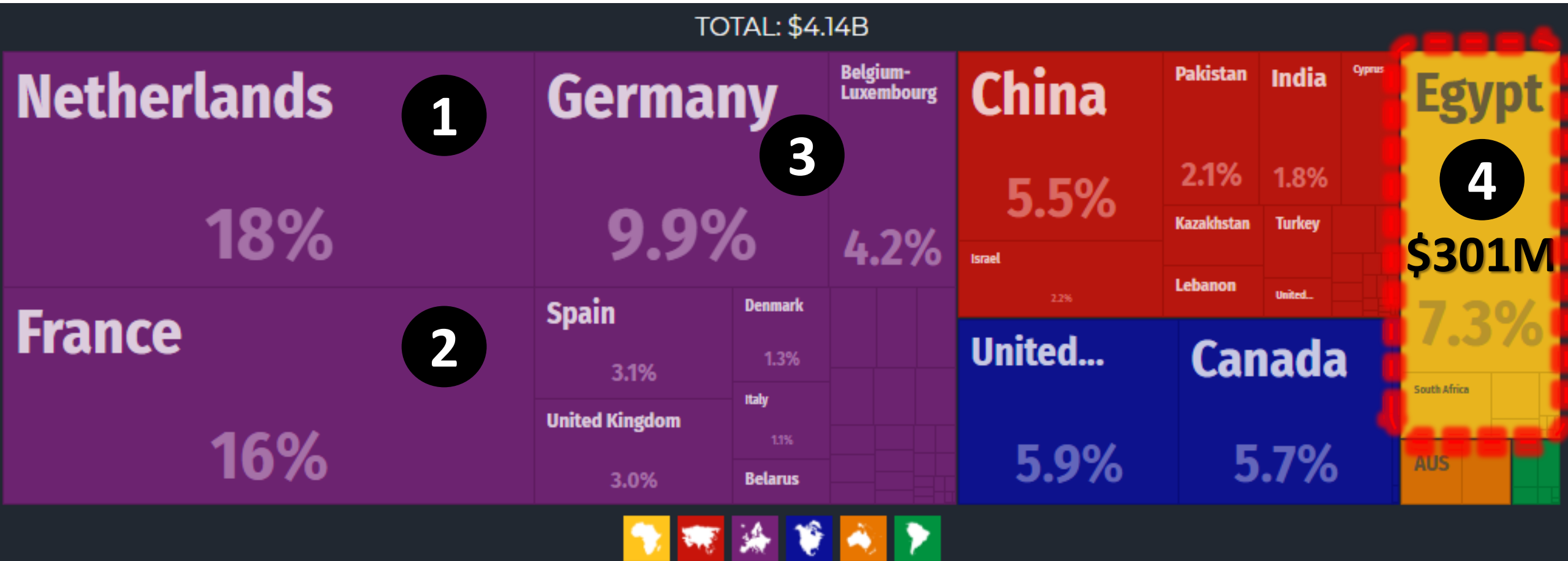




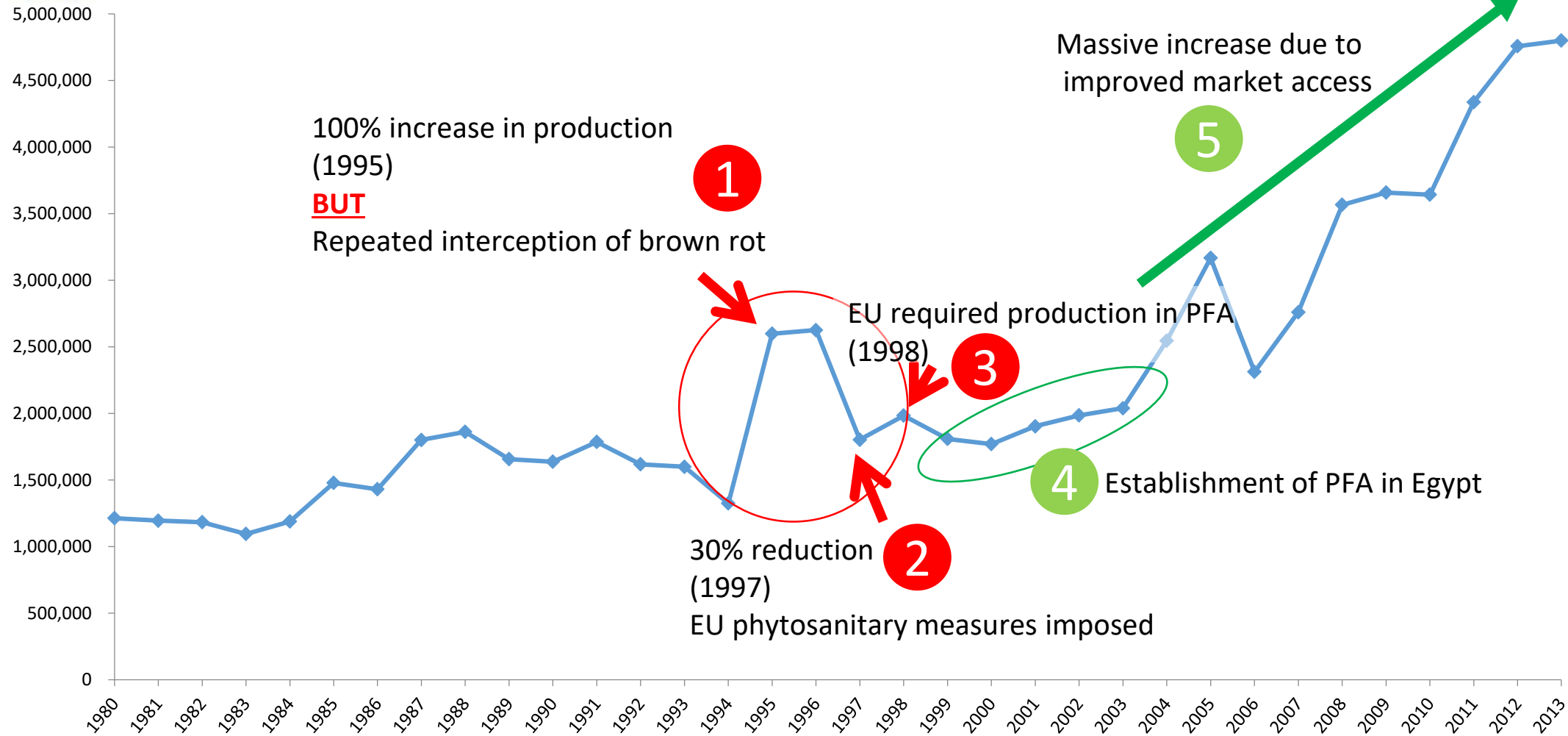
Top world exporters of potato (2017)



Source: The observatory of Economic Complexity (2019) <https://oec.world/en/>



Potato production in Egypt 1980-2013





Technical and Financial support from trade partners (EU)
“Potato Brown Rot Project PBRP, Phase I&II” from 1997 to 2006 with total investments of 2.5M USD



More than 50
interception cases

Interceptions
continued

Interceptions
continued

Interceptions
decreased

Interceptions
significantly decreased

1996

1997

1998

1999

2000

EU commission decision
96/301/EC

- Qualified areas “where pest not known to occur”
- Recognition
- Field inspection
- Laboratory testing
- Traceability system
- Limitation to entry points
- Prior notification

EU commission decision
98/503/EC
PFA according to ISPM#4
Areas “where pest known
not to occur” confirmed by
official survey and
monitoring procedures



Interceptions
significantly decreased

No or rare interceptions

2001

2005

2006

2011

PFA establishment and maintenance system
is improving

PFA system
matured

Ease of the
additional
requirements



Potato Brown Rot Project PBRP, Phase I&II

1997 to 2006



Department
for Environment
Food & Rural Affairs



Netherlands Food and Consumer
Product Safety Authority
Ministry of Agriculture,
Nature and Food Quality



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MINISTÈRE
DE L'AGRICULTURE
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ET DE LA FORÊT



federal public service
**HEALTH, FOOD CHAIN SAFETY
AND ENVIRONMENT**





Establish of PFA for potato brown rot

INITIATION

Studies on

Pest identify

- What is the pest race/biovar/biotype?
- Is it different from European and other strains?
- What is the genetic diversity of the pest in Egypt?

3 Master thesis

1 PhD thesis

3 scientific articles



Pest biology, epidemiology and diagnosis

- What is the survival ability of the pest and possible eradication or control techniques
- Host range?
- Alternative hosts?
- Role of infected seed tuber and irrigation water in disease cycle?

1 PhD

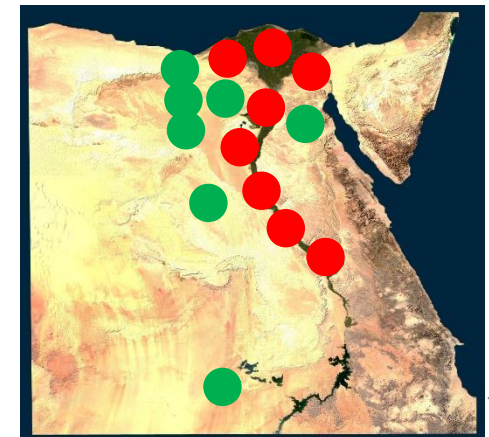
2 Master degrees

2 scientific articles



Pest distribution in Egypt

- Specific surveys including sampling from all potato growing areas, water courses and possible alternative hosts





Establish of PFA for potato brown rot

FEASIBILITY

Is it **cost effective** to eradicate the disease from the main production areas in Delta and Valley of Nile?

- Soil fumigation
- Soil solarization
- Steam sterilization
- Water decontamination

High cost

Low effectiveness

Escape the disease

Establish the PFA in new areas where no potato or any other hosts were cultivated



Feasible



Establish of PFA for potato brown rot

PROGRAMME PLANNING

Establishment of new dedicated facilities for implementation of the activities

Upgrading laboratories and introduction of high-throughput technologies
Immunofluorescent staining and PCR

Hiring new staff

Triple number of technical staff

Training

(in-country and abroad) of 8 inspectors and 6 laboratory staff



In addition to

Meeting g with stakeholder (growers, exporters, researchers, ...) to discuss and convince them to support the programme



Establish of PFA for potato brown rot

PROGRAMME PLANNING

Legislative and regulatory framework

12 Ministerial decrees were issued

Giving authorities to inspectors

Prohibit cultivation of any host plant – other than potato - in PFA

Establish quarantine system for PFA

Establish sustainable financial support for the programme





Establish of PFA for potato brown rot

PROGRAMME PLANNING



Financial resources

Collection of fees from growers on surface area of registered as PFA

Collection of fees from exporters on amount of potato tested and exported

The fees are revised and may be raised after consultation with stakeholder





Establish of PFA for potato brown rot

ESTABLISHMENT

Application from grower

Requirements!!!

- **Never cultivated before by any known host of the pathogen**
- **Irrigated from ground water, or canal that was proved to be free from the pathogen (only one canal "ElNoubaria")**

Declaration from the grower to follow the quarantine requirements

- No soil in transported to the PFA from outside the PFA
- No cultivation of any hosts other than potato
- Seed potato is tested and found free from the pathogen
- No organic fertilizers (compost) is used before tested in the laboratory
- Machinery is dedicated and not used in non-PFA or shall undergo decontamination under the supervision of the NPPO





Establish of PFA for potato brown rot

ESTABLISHMENT



Samples from new PFA soil, irrigation water, weeds are tested in laboratory

The area is identified by GPS coordinates, and coded for traceability (the PFA unit shall not be less than 20 ha)

Amount of certified pathogen-free seeds are registered

Planting of seeds are only done under the supervision of NPPO

NPPO inspectors are allowed to inspect the area any time of the year

Harvesting can only be done under the supervision of NPPO

Field inspection is performed during the growing season, and random samples are taken for laboratory testing





Establish of PFA for potato brown rot **ESTABLISHMENT**

Harvested potato are transported under the supervision of NPPQ to registered packing-houses (only to handle potato from PFA)

Harvested potato are labelled by unique code (for traceability) and divided into lots (20-25 tones)

From each lot, 200 tubers are sampled and sent for laboratory diagnosis against latent “symptomless” infections



Declaration of PFA



Establish of PFA for potato brown rot

ESTABLISHMENT

Declaration of PFA is only done after the first production cycle has passed through the previous procedures

For the PFA that has passed the whole procedures in the previous production cycles, they are declared as PFA as soon as they pass the maintenance requirements every year



Establish of PFA for potato brown rot

ESTABLISHMENT

List of declared PFA is communicated with trade partners (importing countries) through the NPPO contact points



PFA are recognized by trade partners





Establish of PFA for potato brown rot

MAINTENANCE

Annual sampling from soil, irrigation water and weeds (including left over or volunteer potato tubers) during off-season period

All procedures including field inspection, supervising planting and harvesting, laboratory testing against latent infection are performed for all production cycles in the PFA





Establish of PFA for potato brown rot

MAINTENANCE

Contingency plan



If during the production cycles, the growers performed any action against the quarantine measures imposed on PFA, the PFA is suspended from 1 to 3 years depending on investigations

If during the checks and laboratory testing is was provide that any PFA was contaminated by the pathogen, the area is delisted and not allowed for re-register for 3 to 5 years, and upon more intensive sampling plan



Establish of PFA for potato brown rot

MAINTENANCE

Auditing and system review



Every year, specialized committee hold a meeting to review the system

The committee has members from NPPO and other governmental organization, in addition to research centers

In some cases, auditing visits can be performed by NPPO of the importing countries, and submit their report for the Egyptian NPPO, which use the output to improve the system



Establish of PFA for potato brown rot

Challenges and opportunities for improvement

the current system has targeted medium- and large-scale producers, while small-scale potato farmers have no access to international markets

the current funding system does not include periodical review of the fees



Thank You

Ahmed Hussien

Central Administration of Plant Quarantine

Ministry of Agriculture and Land

Reclamation

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