FREDON's contribution to the monitoring and the control of IAS in Martinique

Rémi Picard – march 22, 2016

1st CARIBAEA INITIATIVE Research & Conservation workshop

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A feedback of Plant Protection to IAS

from a field actor of Martinique

Regulation (EU) 1143/2014

Prevention and Management of the introduction and spread of IAS

Effective in France and Martinique since 1 January 2015

Article 6 : Provisions for the outermosts regions

By 2 january 2017, adoption of a list of IAS of concern for each of these regions

Article 2 : This regulation does not apply to harmful organisms listed into Directive 2000/29/EC

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IAS & Regulated Pests

Biological invasion	Plant protection
Convention on Biological Diversity (CBD)	**International Plant Protection Convention (IPPC)**
1992	1951
Regulation (EU) 1143/2014	Council directive 2000/29/EC
Invasive Alien Species IAS	Harmful Organism / Sanitary Hazard
IAS of concern	Regulated HO / SH cat 1 & 2

What is FREDON ?

Fédération REgionale de Défense contre les Organismes Nuisibles

Regional federation for protection against pests

A professional technical organization in the plant field

A partner of the administration and local authorities

An adaptative and operational field actor

A center of expertise on local biodiversity

FREDON latest developments

1952 International Plant Protection Convention

1958 Creation of the martinican pests protection group

2003 FDGDEC became FREDON

2008 Plant health laboratory became plant clinic

2010 French general assembly of sanitary

2014 became sanitary-oriented organization in the plant field

2015 became delegate of plant health inspection

FREDON involvement on monitoring

Prevention

- Support to customs control of the tourist way
- Awareness campaign

Monitoring

- Plant clinic,
- Assigned prospecting,
- Tecnical support for farmers

FREDON involvement on monitoring

Expertise and networks

- A large range of skills on local biodiversity
- Connections with plant health & natural heritage nationals networks

Rapid eradiction

- Crisis committes involvement,
- Implementation of control plan,

FREDON involvement on monitoring

Management of widely spread IAS

- Rodents management
- Giant african snails

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Surveillance mediator

Prete, G., 2008. Surveillance by eradication: The importance of "surveillance mediators" and informal networks in monitoring health and environmental risks. *Sociologie du travail 50, 489–504.*

- Multiplication of normative discourses on the management of health and environmental problems that focus on the need to strengthen surveillance activities .
- The monitoring systems have become a major public modes of action relating the health and environmental risks.

TYLCV crisis of 2003-2006 in continental France after detecting many greenhouses contaminated

Surveillance mediator

Is the virus present durably in the production area?

If not, is it an accidental introduction or the exceptional weather conditions that fostered the development of the virus vector ?

- Implementation of an exceptional monitoring but mandatory control measures are an obstacle to its effectiveness
- Their operations are often based on cooperation between actors with conflicting interests.
- Coercion and incentives are not always enough to ensure their operations.

Surveillance mediator

3 main categories of stakeholders :

_ administrations,
_ professionals (farmers, producer groups, technicians)
_ research

Emergence of 2 actors playing the role of surveillance mediator :

• A local officer detached from the administration of Plant Protection

• An experimental station of public research based in the focus area

Surveillance mediators

They overcomes blockages created by the formal framework of monitoring.

They relay information on the disease situation between the administrative world and the agricultural productive world.

They convince the various monitoring actors for the need to take into account the views of the others stakeholders.

They are able to relate to different social world thanks to :

- their durable local roots and
- their technical qualifications.

First detections of IAS ?

This is a non exhaustive list because no systematic information centralization exists.

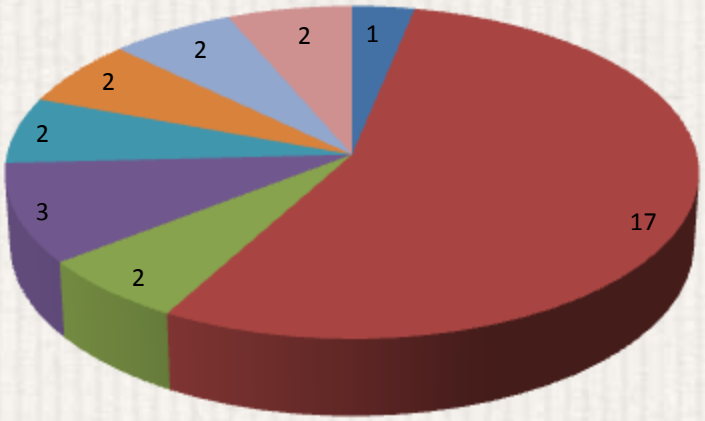
Less usefull organisms for crops (earthworms, parasitoids, ladybugs…)

31 first detections of alien species in Martinique put in evidence as part of the FREDON activities since 2005.

IAS detections retrospective

date	comon name	*latin name*	detection	response	publication
May 2005	Lace bug	*Pseudacysta perseae*	report of a particular	no	Etienne & Streito 2008
Aug. 2005	Scale	*Icerya seychellarum*	report of a particular	no	Matile-Ferrero & Etienne 2006
Nov. 2005	Scale	*Aulacaspis yasumatsui*	report of a farmer	Request for natural ennemy introduction	Germain 2007
Mar. 2006	Virus	*Banana Bract Mosaic Potyvirus*	focused survey	successful eradication	
May 2007	Thrips	*Holopothrips tabebuia*	report of a particular	no	Michel et al. 2008
Sep. 2009	Scale	*Crypticerya genistae*	focused survey	no	
Jan. 2010	Slug	*Sarasinula linguaeformis*	report of a farmer	no	
Aug. 2010	Fungus	*Mycosphaerella fijiensis*	focused survey	attempt to eradicate	Ioos et al. 2011
Nov. 2010	Plant	*Desmodium heterophyllum*	report of a professional	no	
May 2011	Bird	*Psittacula krameri*	report of a particular	no	
Aug. 2011	White fly	*Aleurocanthus woglumi*	other survey	no	
Apr. 2012	Psyllid	*Diaphorina citri*	focused survey	attempt to eradicate	Cellier et al. 2014
May. 2012	Gall wasp	*Quadrastichus erythrinae*	other survey	no	Etienne & Dumbardon-Martial 2013
Jun. 2012	Moth	*Cadra cautella*	focused survey	no	
Jun. 2012	Moth	*Corcyra cephalonica*	focused survey	no	
Jun. 2012	Gall midge	*Clinodiplosis capsici*	other survey	no	
Sep. 2012	Fungus	*Lasiodiplodia pseudotheobromae*	other survey	no	
Oct. 2012	Bark beetle	*Hypothenemus hampei*	report of a farmer	attempt to eradicate	Dufour 2013
Jan. 2013	Plant	*Erigeron belloides*	report of a professional	risk assessment	Fried & Dumbardon-Martial 2015
Mar. 2013	Bacterium	*Candidatus Liberibacter asiaticus*	focused survey	current eradication plan	Cellier et al. 2014
Jun. 2013	Earwig	*Euborellia stali*	report of a farmer	no	
Jun. 2013	Slug	*Pallifera sp.*	report of a farmer	no	Delannoye et al. 2015
Jun. 2014	Bacterium	*Xanthomonas citri pv. Citri*	report of a farmer	current eradication plan	Richard et al. 2016
Apr. 2015	Land planarian	*Bipalium vagum*	other survey	no	
Apr. 2015	Aphid	*Neotoxoptera formosana*	report of a particular	no	
Jul. 2015	Scale	*Prococcus acutissimus*	other survey	vigilance request	
Jul. 2015	Aphid	*Aphis sedi*	other survey	no	
Oct. 2015	Virus	*Virus papayer indéterminé*	report of a farmer	no	
Feb. 2016	Land planarian	*Bipalium kewense*	report of a particular	no	
Feb. 2016	Land planarian	*Dolichoplana striata*	report of a particular	molecular analisis	
Mar. 2016	Fly	*Zaprionus indianus*	focused survey	specific monitoring	

First detections by Phyla



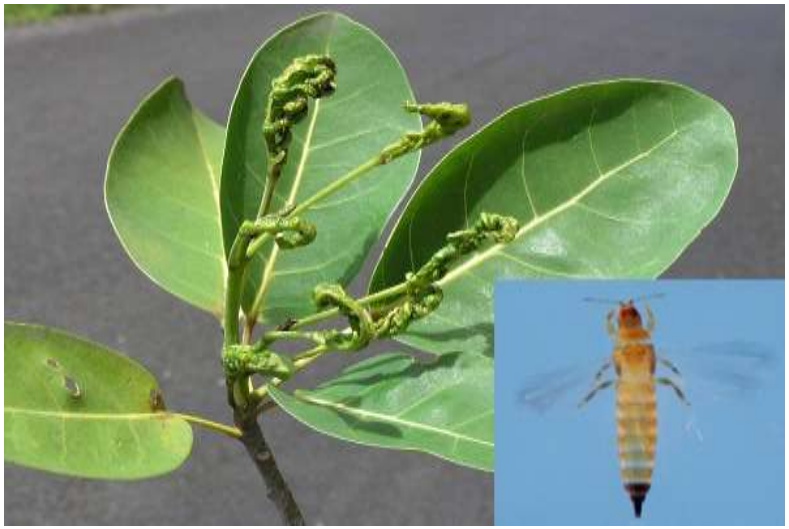
- Vertebrate (Bird)
- Arthropods (Insects)
- Molluscs (slugs)
- Platyhelminthes (Land planarians)
- Plants
- Fungi
- Bacteria
- Virus

Rose-ringed Parakeet (2011)
Psittacula krameri

IAS detections retrospective

Erythrina gall wasp (2012)

Quadrastichus erythrinae

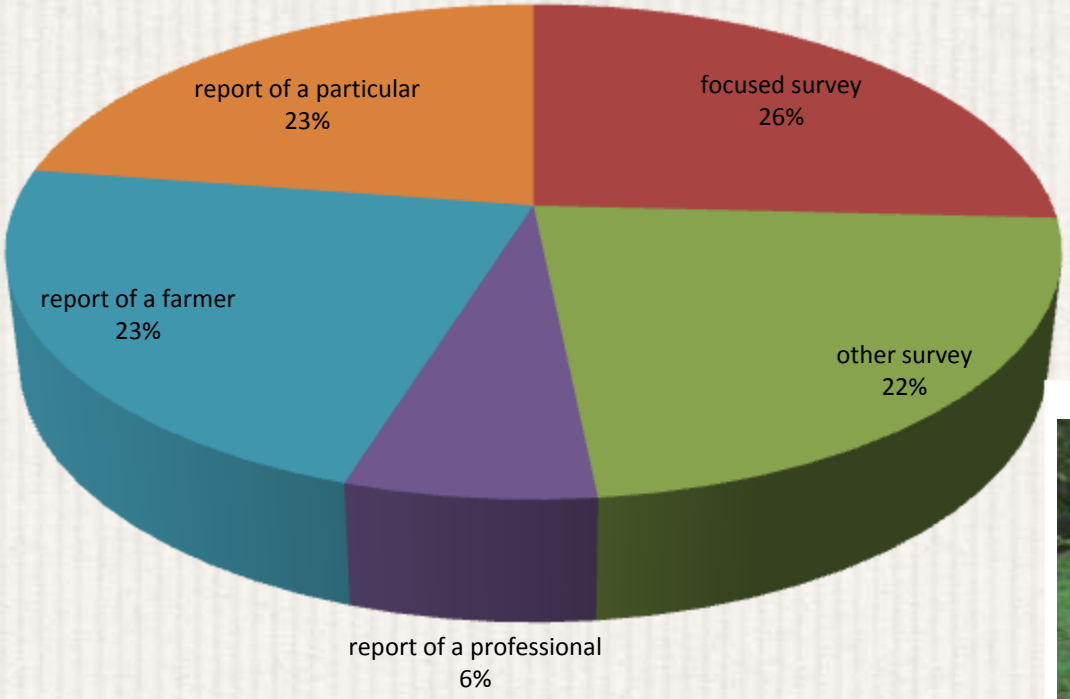


Tabebuia thrips (2006)

Holopothrips tabebuia

IAS detections retrospective

Detection modes



Active surveillance : 48.4 %

Voluntary surveillance : 51.6 %

Erigeron belloides DC
(Asteraceae)

2013

IAS detections retrospective

	Total	Active surveillance	Voluntary surveillance
Regulated harmful organisms	7 (22.5 %)	6 (85.7 % of RHO)	1 (14. 3 % of RHO)
Other species	24 (77.4 %)	9 (37.5 % of OS)	15 (62.5 % of OS)

Citrus canker

Xanthomonas citri pv *Citri*

2014

IAS detections retrospective

	Total	Regulated harmful organisms	Other species
Response after detection	11 (35.5 %)	6 (85.7 % of RHO)	5 (20.8 % of OS)
No reaction	20 (64.5 %)	1 (14.3 % of RHO)	19 (79.2 % of OS)

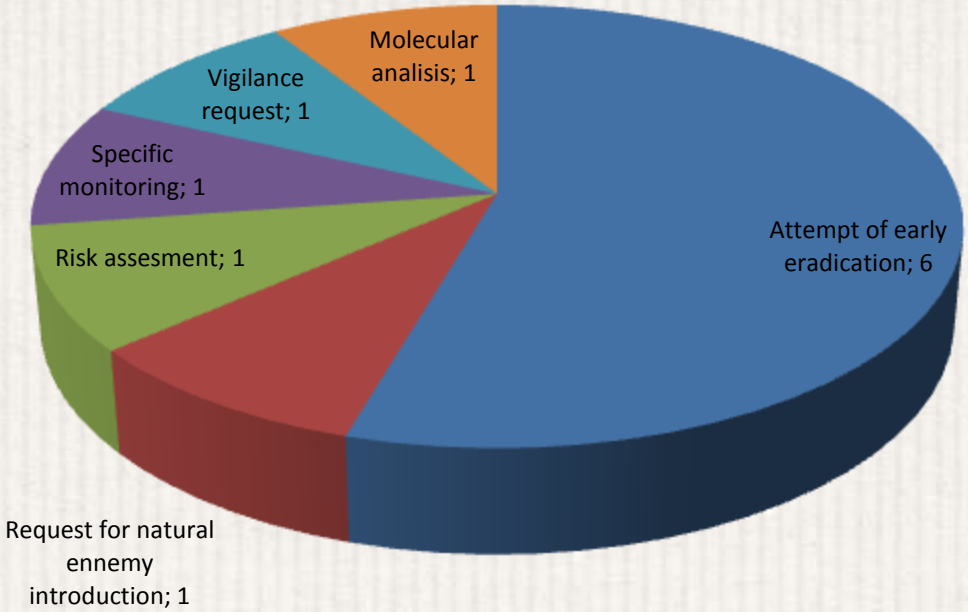
Citrus blackfly

Aleurocanthus woglumi

2011

IAS detections retrospective

Kinds of response



Banana Bract Mosaic Potyvirus

2006

The invasive land planarians

2013 first reporting of invasive species in the hexagon

Participatory science studies of Jean-Lou Justine

Call for evidence on internet

7 species identified in Martinique

5 potentials IAS

Dolichoplana striata 2016

Conclusion

Build on what is still existing to decline the new IAS framework

Skills and datas fragmented between actor who are not accustomed to having direct contact

The importance of voluntary surveillance

Outdated ideological positions to achieve an operational and concerted IAS prevention system

Need of relation between different social worlds.

Lack of coordination and centralization

The IAS data reporting is not standardized

Coexistence of OMB ,INPN & other databases

Articulation between caribbean and european networks

Early detection notifications

No local instance addressing the issue with a transversal view

Like the ASR & CROPSAV for sanitary hazards

Setting up an early warning & rapid response system

Progressive updating of the IAS of concern list

What about the future martiniquan biodiversity agency ?

Deficient outreach on the threat of biological invasions

Landusers and travelers

Politics

The various and segmented administrations

Profesionnals of various economic sectors

Customs

Definition of operational structures for official controls

Operational tools for IAS surveillance measures

Pathways of IAS analisis (art. 13)

Action plan

Development of Information support system (art. 25)

Risk assessment (art. 5)

Adoption of a list of IAS of concern (art. 6)

Cost-benefit analysis

Surveillance system (art. 14)

Early detections notifications (art. 16)

Rapid eradication at an early stage of invasion (art. 17)

Questions