

Dealing with moving spatialities in disaster governance: the case of locust swarms

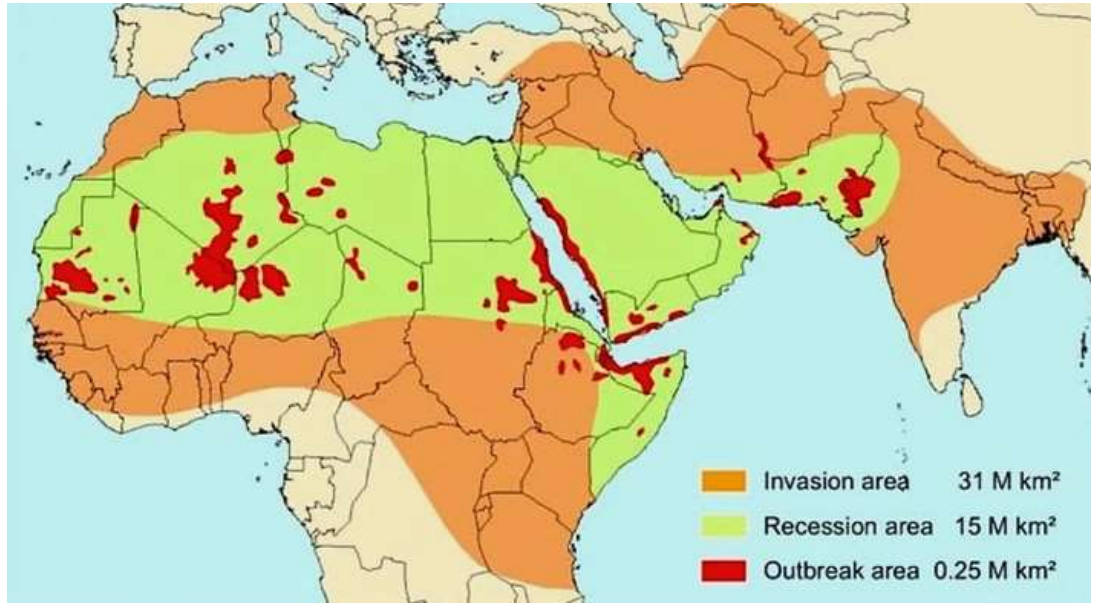
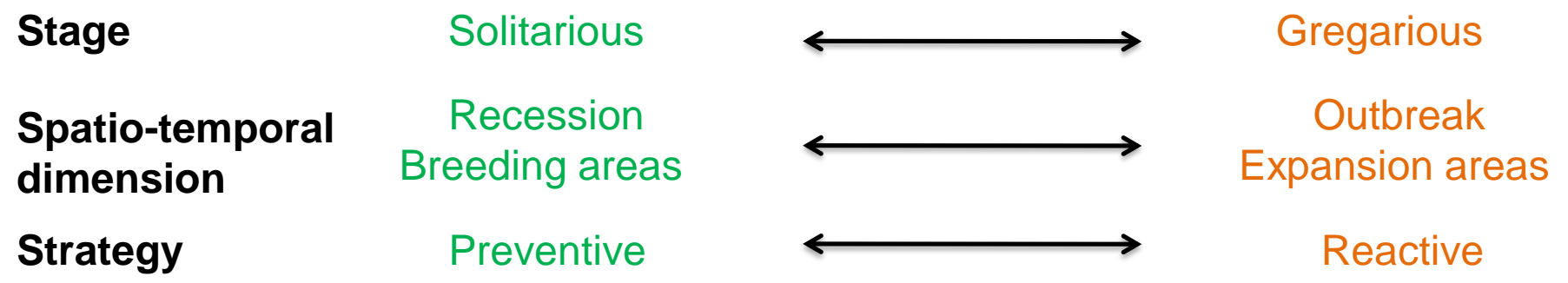
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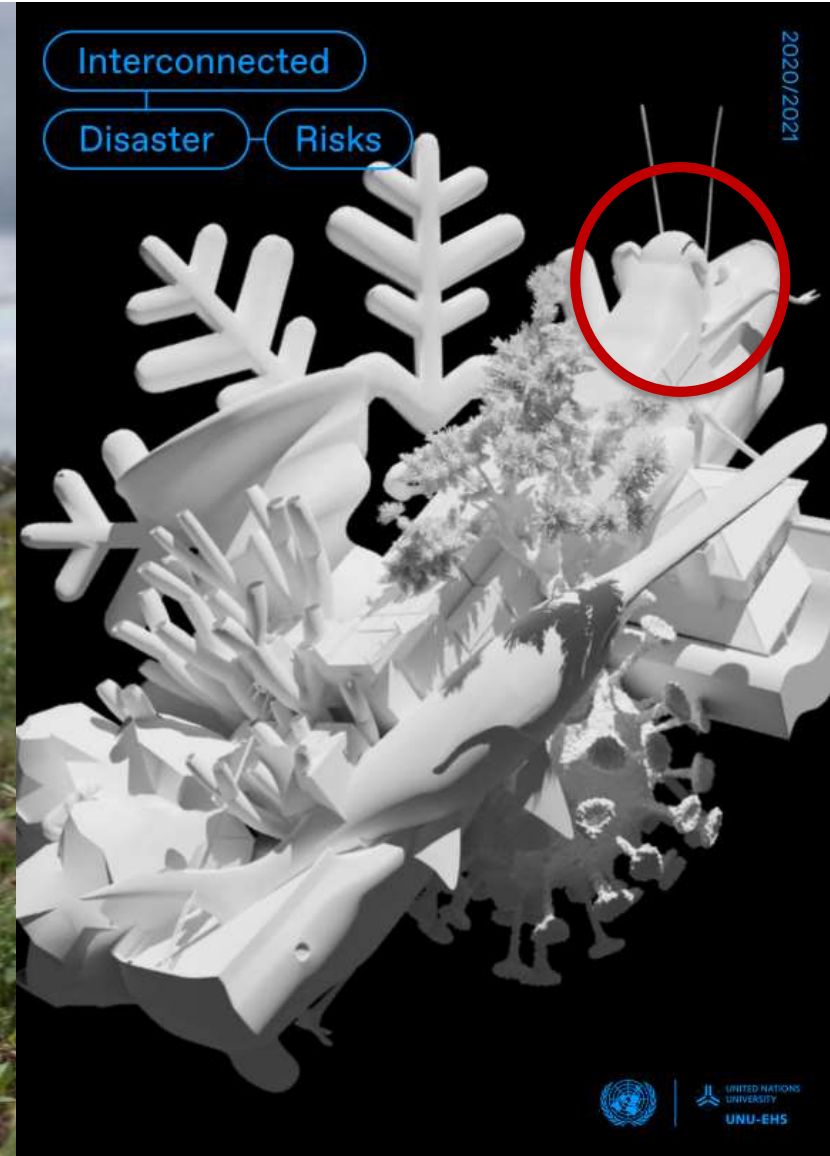
What are locusts?



Locusts as a disaster

FAO: a transboundary pest

United Nations: a biological hazard
(*UNDRR, 2020*)

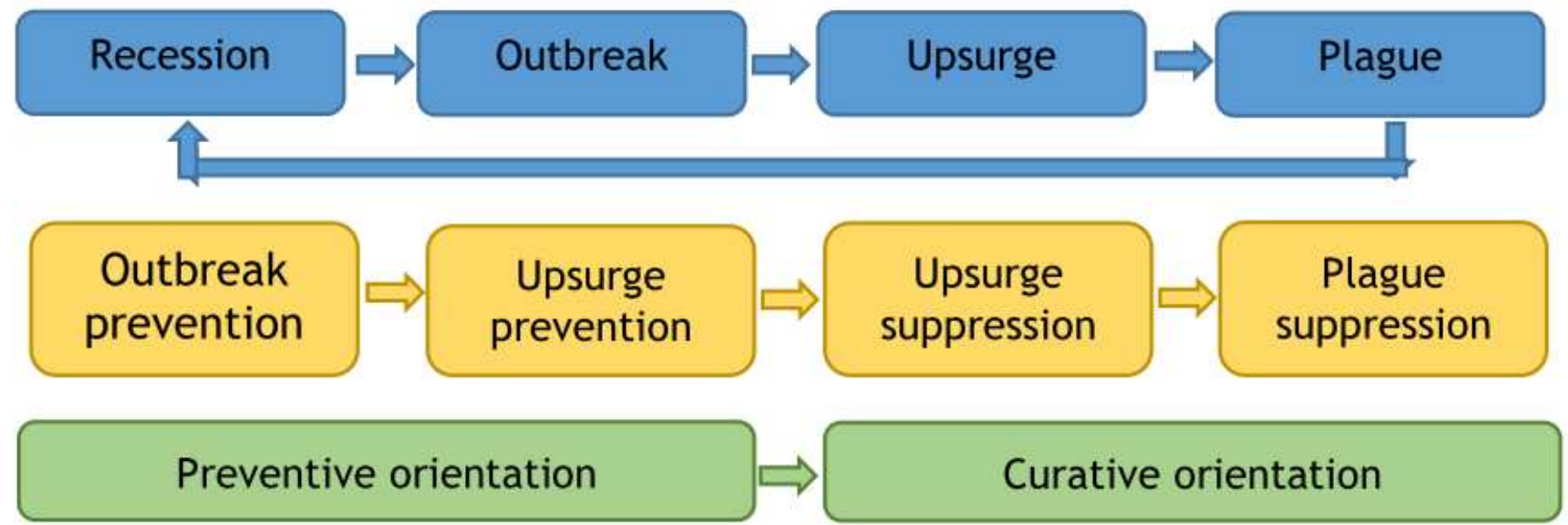


A manageable risk that can 'spit out of control'



A manageable risk that can 'spit out of control'

Since the 1950s: preventive strategy

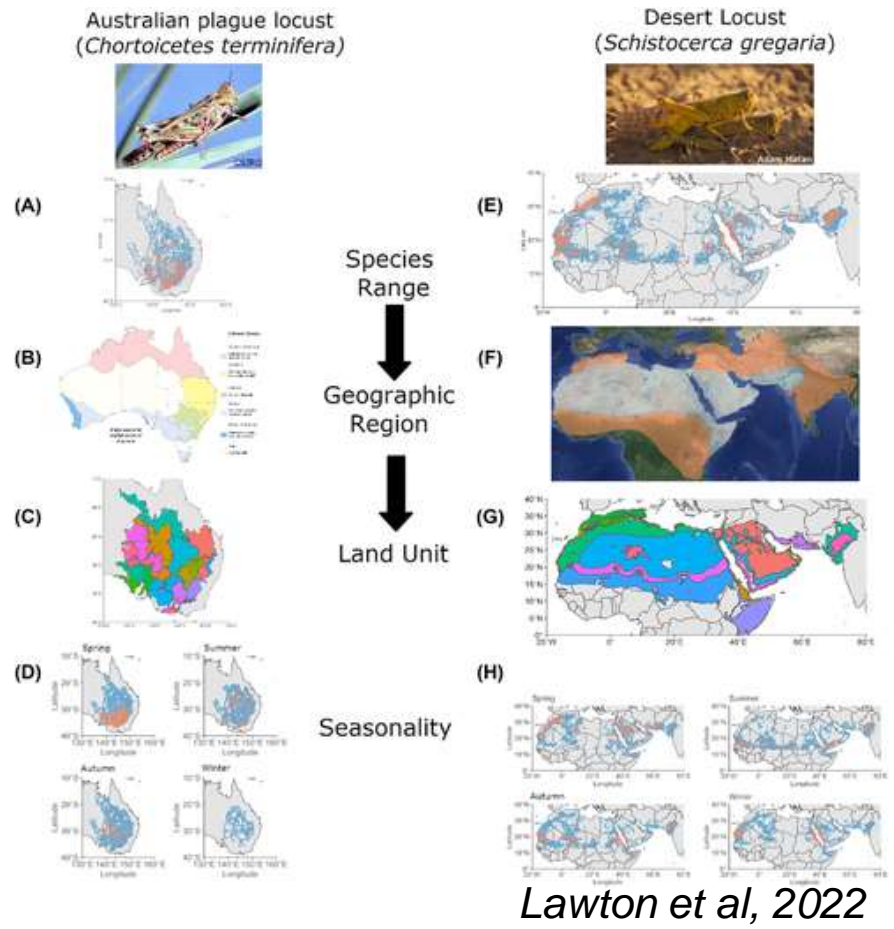


Peloquin, 2014

A manageable risk that can 'spit out of control'

Since the 1950s: preventive strategy

A techno-scientific approach: natural sciences, modelling, drones...



Matthews, 2021

A manageable risk that can 'spit out of control'

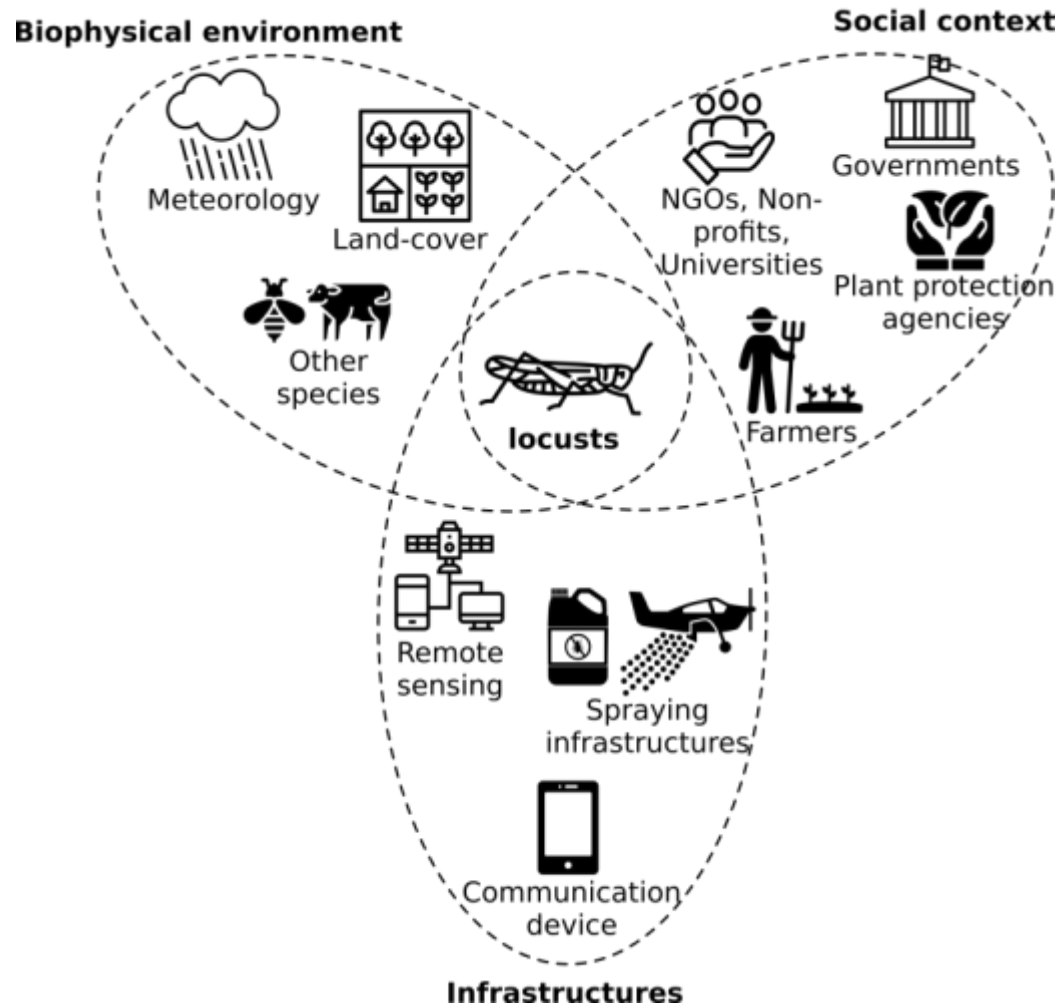
Since the 1950s: preventive strategy

A techno-scientific approach: natural sciences, modelling, drones...

But upsurges still occur

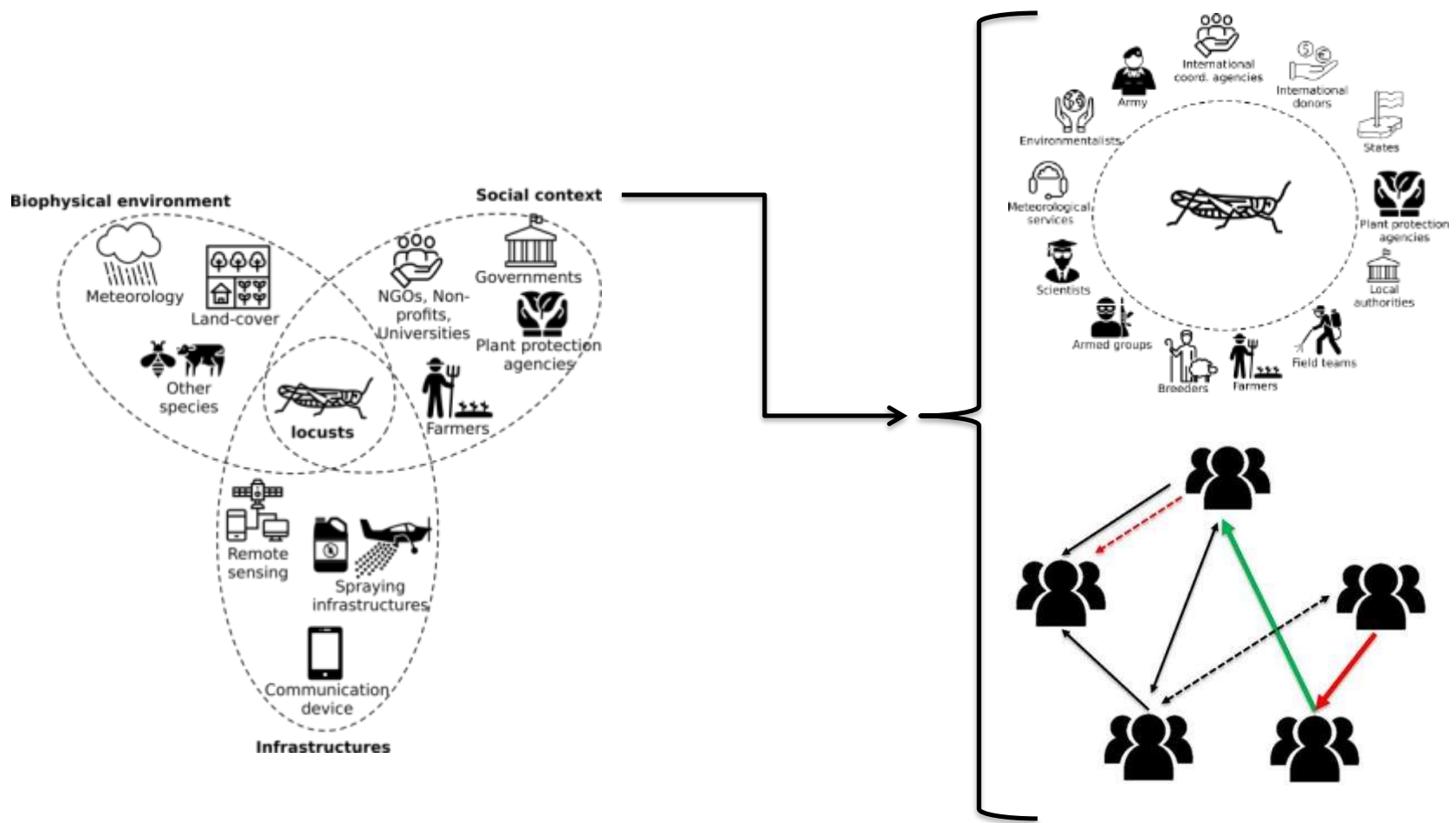
A manageable risk that can 'spit out of control'

Considering locusts as part of complex social-ecological systems



A manageable risk that can 'spit out of control'

Considering locusts as part of complex social-ecological systems – with a focus on governance



Challenges for locust governance

- Erratic - low frequency events

SECTIONS

The New York Times

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AMERICAS

Argentina Scrambles to Fight Biggest Plague of Locusts in 60 Years

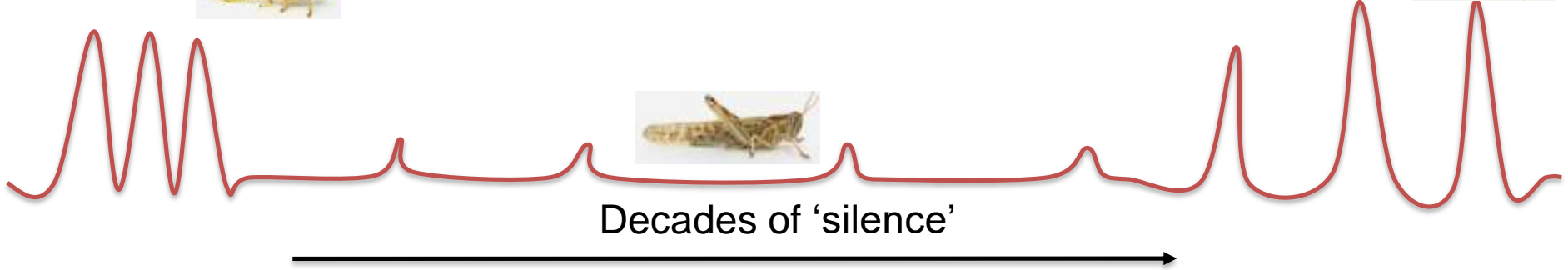
By JONATHAN GILBERT JAN. 25, 2016



A swarm of locusts in September in the Lavalle area of Santiago del Estero Province, Argentina. Farmers last year reported seeing swarms that were four miles wide and two miles high. SENASA

Kenya suffers worst locust infestation in 70 years as millions of insects swarm farmland

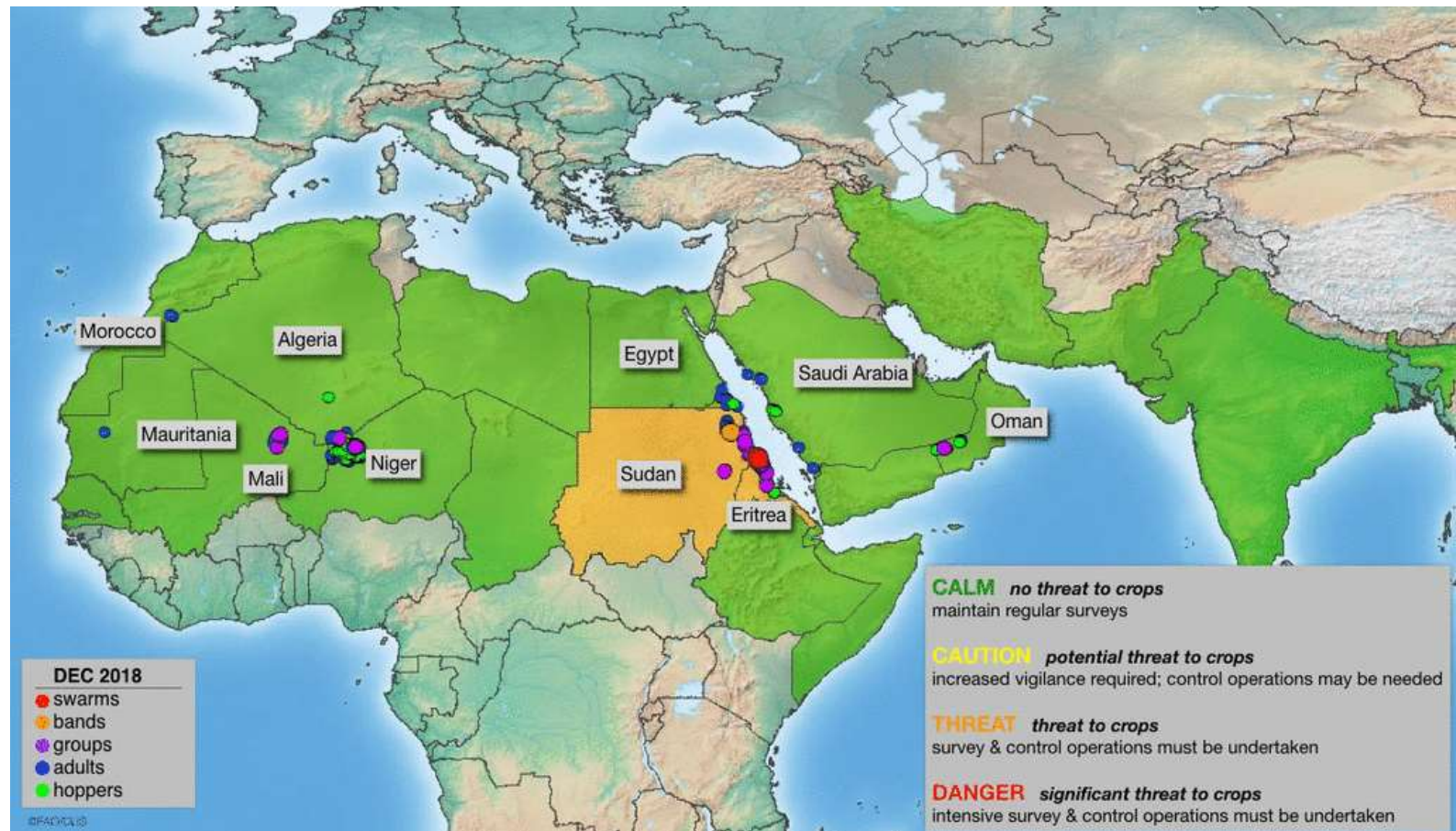
UN urges immediate action as east African nations already experiencing devastating hunger see large areas of crops destroyed



Decades of 'silence'

Challenges for locust governance

- Erratic - low frequency events
- Moving spatiality



Last desert locust upsurge (2019-2020) Source of data: FAO

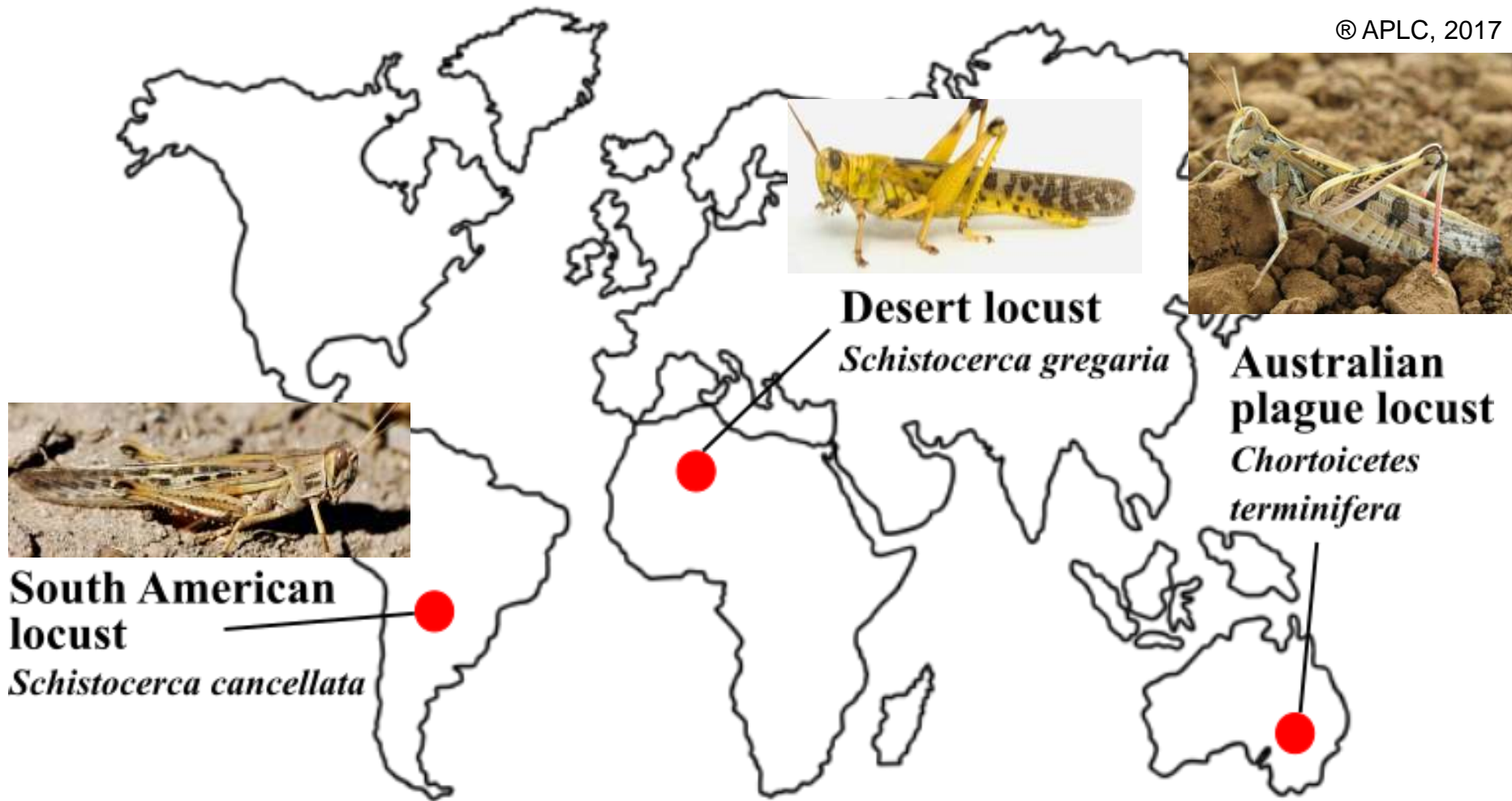


How to govern low frequency and large-scale events with moving spatialities?

- Locust as a ‘common bad’ > polycentricity *Ostrom, 1990, 2010*
- An issue of spatial mismatch → archetypal scale problem *Cash et al. 2006, Melé 2009*

A comparative approach

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South American locust
Schistocerca cancellata



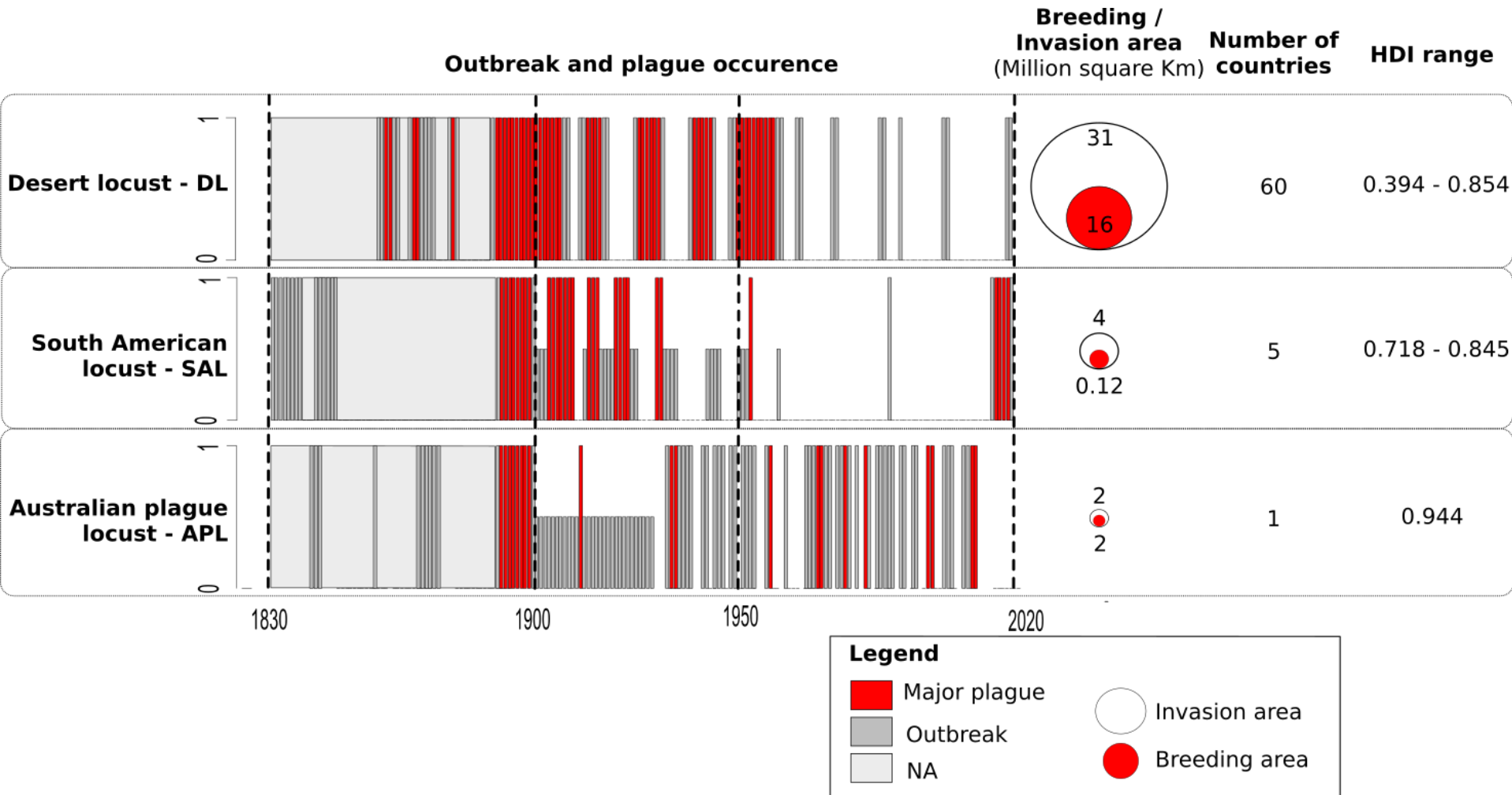
Desert locust
Schistocerca gregaria



Australian plague locust
Chortoicetes terminifera

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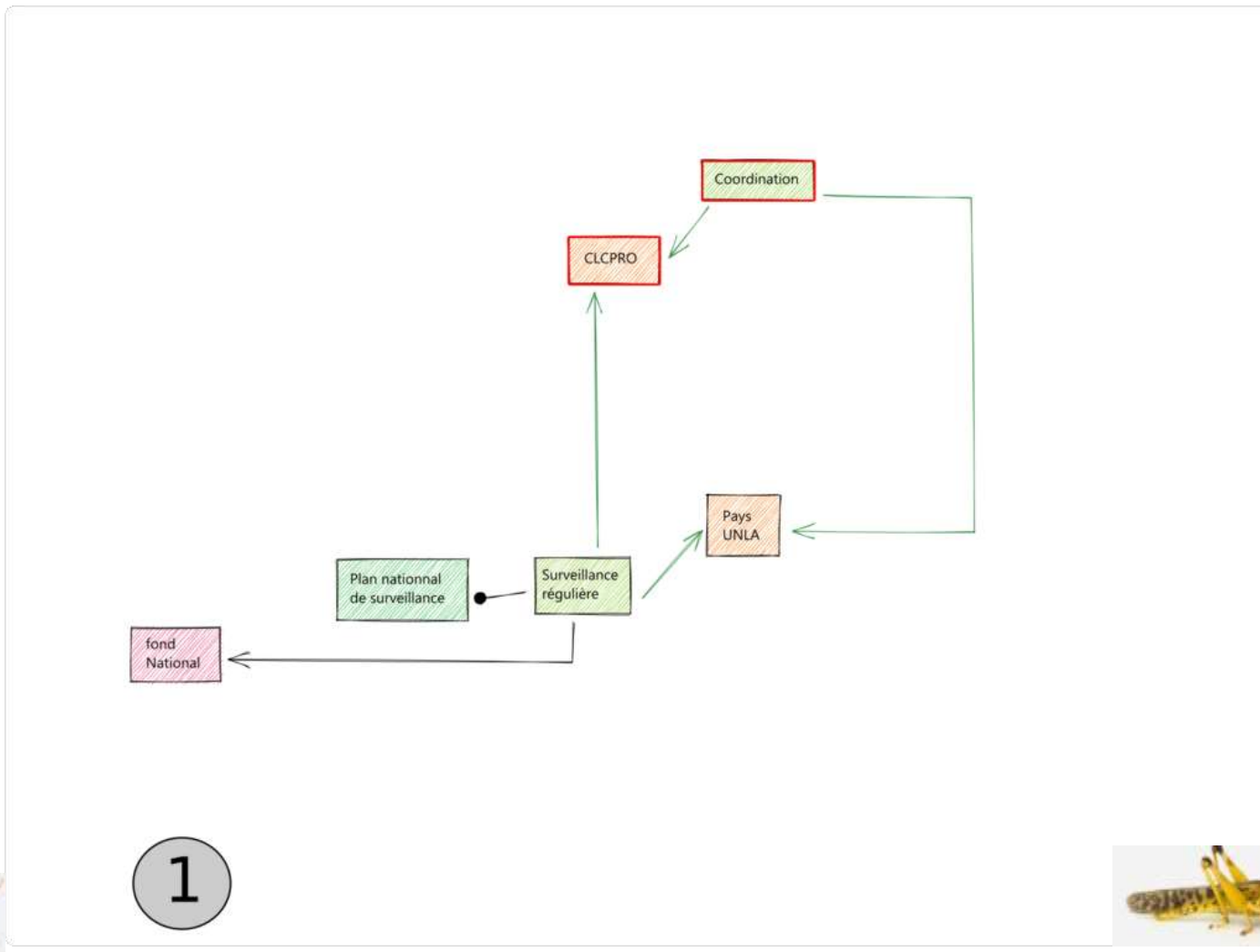
A comparative approach



- *Spatial* → *social variability + transboundary dimension*
- *Political stability and available means*
- *Legacies (colonialism, inter-State relationships...)*

Multi-levelled and embedded management systems

- Desert locust: shifting governance structures



Recession

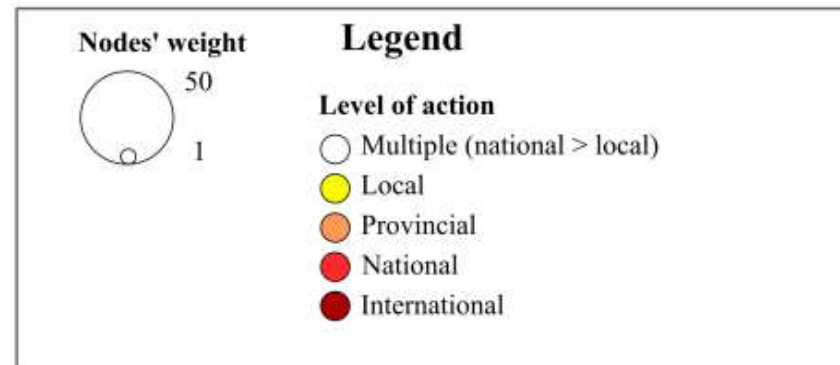
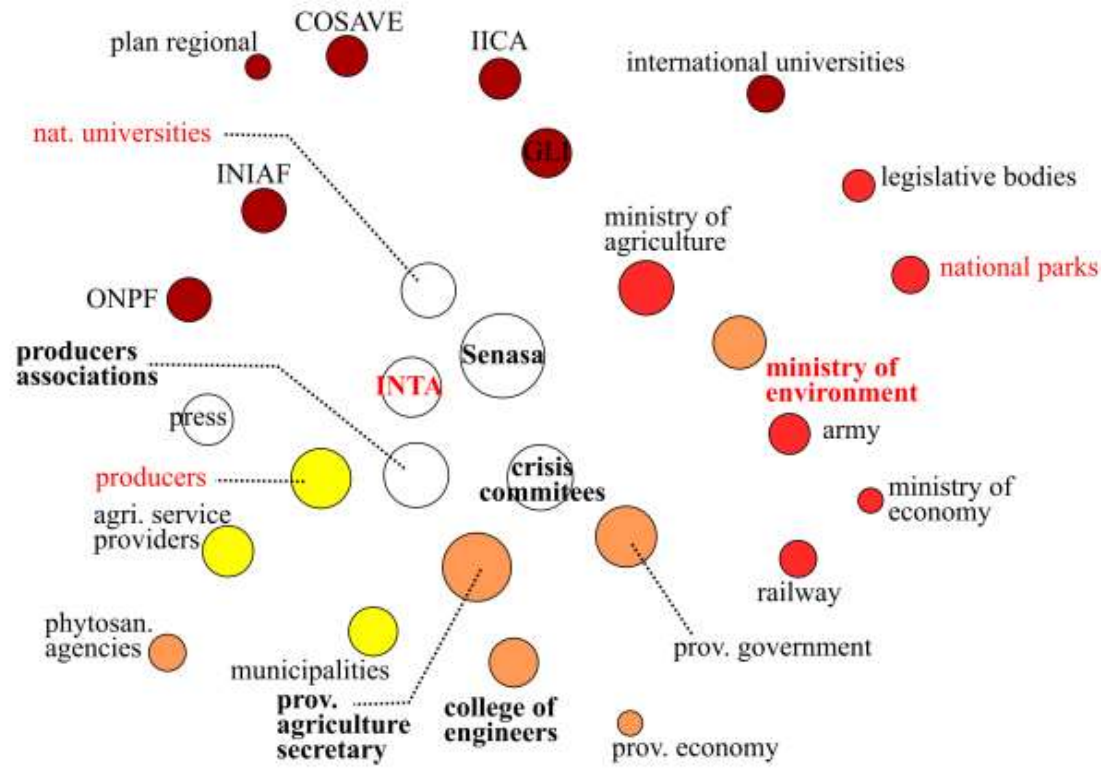
Major upsurge

Local / national level

International level

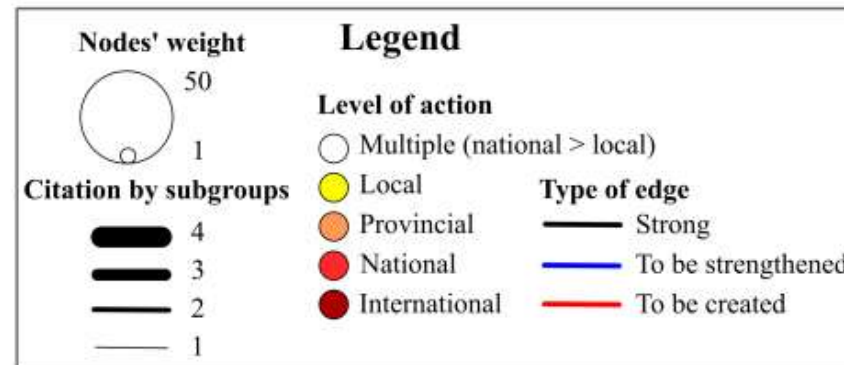
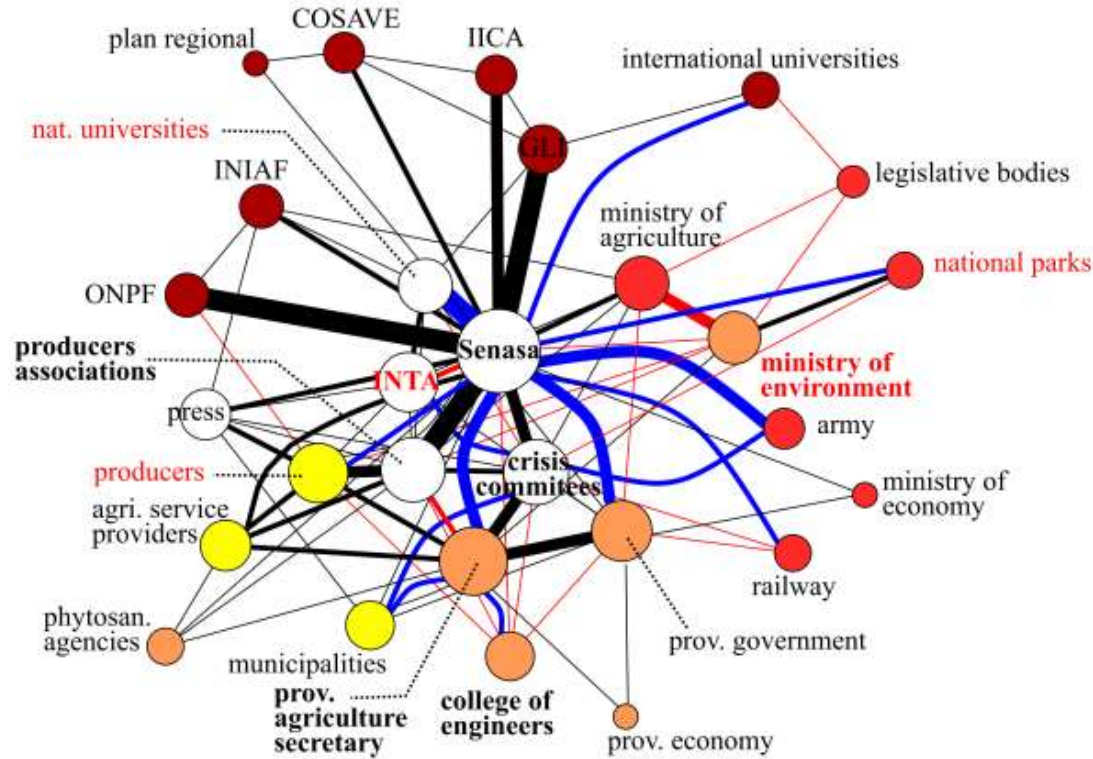
Multi-levelled and embedded management systems

- South American Locust: governing in the crisis



Multi-levelled and embedded management systems

- South American Locust: governing in the crisis

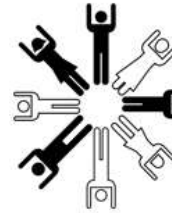


Spatial disjunction between breeding and invasion areas

APL: 'When we get those huge influxes in from New South Wales as overnight migrations, that's a big problem for us. So if New South Wales are curbing the population, then we don't get that problem. The upshot of that is in Victoria we don't have a regular survey team that goes out and looks for locusts'

Time since the last crisis - state of the governance system

SAL: 'Slow going of regional coordination'
SAL: 'For Bolivia, it was completely unprecedented, for Paraguay also, to have this problem and so. Argentina was kind of joking that they had a problem and in admitting it (...) And then, within the year, they were working with Argentina...'



Embracing social diversity

Values

SAL: '[it was a] challenge to control in a touristic area [where] an environmental group did not understand the issue (...) It took us 10 days to get the green lights to conduct the control'.

Interests

SAL: 'some producers are very involved and informed, but others really lack a lot of information. And those producers are the ones who go against our work, at the time of working, at the time of fighting pests. (...) Some farmers sometimes say locusts are not affecting their land, so they don't care'

APL: 'most [landholders] will not undertake control measures for locusts unless there is a direct impact on their own agricultural activities'

Action capacities

DL: 'In reality, without external assistance, most frontline countries remain incapable of tackling problems of this magnitude on their own' Belayneh 2005

Institutional context

SAL: 'In Córdoba Province, the chemical control of these nymph bands was very difficult because of the combination of no authorized insecticides being available for horticultural crops and strict regulations that restricted the use of insecticides there' '

Adaptive governance in the face of moving spatialities

Embedded levels of management - shifting responsibilities depending on the risk

APL: *'We require [the landholders and managers of land] to control locusts on their own property. Agriculture Victoria will not do that for them unless it's an emergency. And we did it in the 2010 plague because it was getting to be too much. But in general, we hold the line that all landholders, owners, managers are responsible for managing the locusts on their property'*

Informal compensation for a lack of action capacity

DL: *'The role of FAO in locust control, given to it by its member countries, is to coordinate the control and to strengthen the information system at the international level. FAO became involved in project execution because of the lack of alternative mechanisms'*

Adaptive governance in the face of moving spatialities

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SAL: 'what is clear is that each of us has a role to play. Until we don't have a clear role, a governance structure that shows us who has to do what, it will be complicated'

APL: ' Landholders [expect] that if they report locusts, someone else will arrive to implement control'

DL: 'A weakness is the lack of clarity concerning the different roles of different actors, and how these relate to each other. This may result in duplication of efforts and waste of time and resources' Brader et al. 2006

Adaptive governance is necessary, but carries fragilities: confusion, unclear responsibility distribution, free-riding...

Beyond prevention

- Prevention is essential!
- But emphasis on prevention /stability has its drawbacks

Lack of signal, slow changes, learning



Beyond prevention

- Prevention is essential!
- But prevention has its drawbacks

Lack of signal, slow changes, learning

- Outbreaks can happen, even with a robust preventive system
- Interconnected risks, increasing vulnerabilities

Floods, locusts and COVID-19; Somalia's triple threat



UN Development Programme Nov 19, 2020 · 5 min read



Beyond prevention

- Prevention is essential!
- But prevention has its drawbacks

Lack of signal, slow changes, learning

- Outbreaks can happen, even with a robust preventive system
- Interconnected risks, increasing vulnerabilities
- Looking at the whole spectrum of possible responses within a systemic approach

Anticipate > Prevent > Prepare > React > Recover > Transform

- Think long-term

Crisis as opportunities for learning?



UNIVERSITEIT VAN AMSTERDAM



Hannah Korinth

Multi-level Governance of Transboundary Pests in Times of Crisis: Crisis as an Opportunity for Learning? The case of the 2019-2022 desert locust outbreak.

Hannah Inga Korinth ¹, Clara Therville ², Arianne Cease ³, John M. Anderies ^{3,4}

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Introduction and Case Study

Desert locusts (*Schistocerca gregaria*, Forskål) are considered by the United Nations to be one of the most destructive transboundary pests that, during a plague, can put people from up to 60 countries at risk of food insecurity. Desert locust governance is a complex problem due to long recession periods between outbreaks, and its multi-continent scale that spans high variability in environmental and socio-political conditions. The 2019-2022 desert locust outbreak reached 23 countries in Eastern Africa, the Middle East and Western Africa leaving people at risk of food insecurity. The management of the locusts included stakeholders from the local levels such as farmers, to the national level with governments, NGOs, the private sector, to the international level with the UN and donors.

Results

The 2019-2022 desert locust outbreak showed that the governance structure adapted to the needs of the crisis, with the governance process being optimised to tackle the locusts. The outbreak attracted many new actors - from the local to the international level - resulting in tensions and unclear responsibility distributions, creating an initial barrier to an efficient governance responses. The crisis showed an opportunity for learning and innovation due to the increased funding and interest. This resulted in 20+ new innovations and long term investments in key desert locust structures. The crisis also provided an opportunity for critical reflection regarding the current governance structure and discussions about its future.

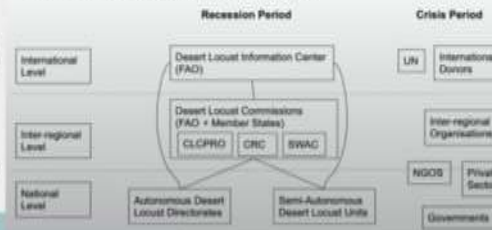
Methods

Qualitative research design included 17 semi-structured interviews conducted virtually. Data coded using NVivo.

References

- Therville, C., Anderies, J.M., Lecoq, M., Cease, A. (2021). Locusts and People: Integrating the Social Sciences in Sustainable Locust Management. *Agronomy* 11, 951.
Lecoq, M. (2005). Desert locust management: from ecology to anthropology. *Journal of Orthoptera Research*, 179-186.
Ostrom, E. (2010). Beyond markets and states: polycentric governance of complex economic systems. *American economic review*, 100(3), 641-72.

The Current Management System



Conclusion

The case of the desert locust demonstrates a governance paradox between the governance needs of the desert locust which require polycentric, collective decision making between all stakeholders and the governance needs in a time of crisis which are quick, top down and hierarchical. It is important to recognise this paradox and consider it in future management of transboundary pests during crisis.



Thank you for your attention

<https://sustainability.asu.edu/global-locust-initiative/about/>; clara.therville@ird.fr

Thank you for your attention



4. Action collective et criquets: des défis communs

- Variabilité spatio-temporelle des idées, des intérêts, des cadres institutionnels, des collectifs...
- Variabilité spatio-temporelle des capacités d'action
- Flou dans le partage des responsabilités
- Free-riding
- ...



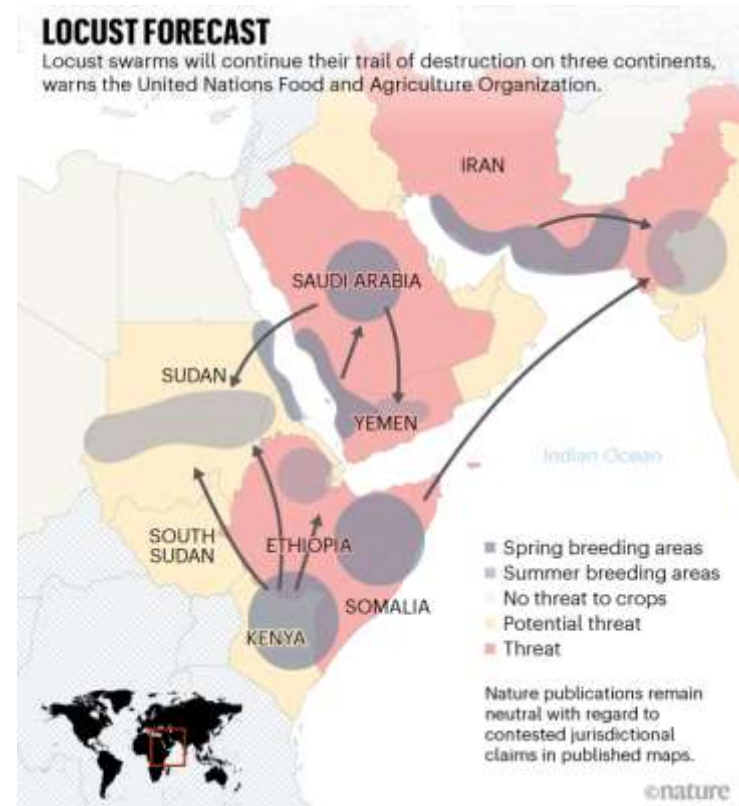
Challenges for locust governance

- **Spatial mismatch** → **archetypal scale problem**
Territoire fonctionnel / territoire institutionnel

Cash et al. 2006, Melé 2009

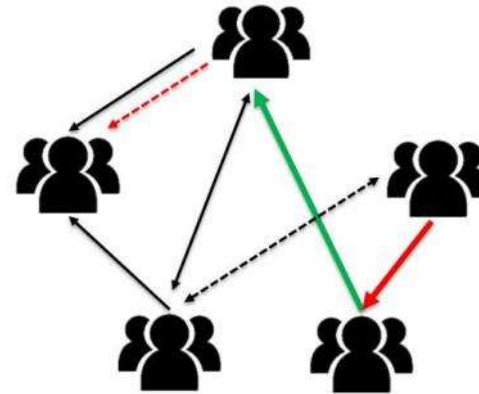
- **Erratic - unpredictable extreme events**

- **Moving spatiality**



Locust outbreaks as a collective action / governance issue?

Governance = all the processes of governing = interactions and decision-making among actors involved in a collective problem



An inter- transdisciplinary consortium



2. Comparative approach: some key elements

- A long history of prevention: multi-leveled & embedded management systems
- Processes of more or less formal compensation of lack of action capacities
 - >> *necessary but can lead to confusion, unclear responsibility distribution, free-riding*
- Prevention is essential but has its drawbacks (lack of long-term signal, slow changes, learning...)
- Both natural and socio-political variables are involved, but their influence differ depending on the context
- Outbreaks can happen, even with a robust preventive system
 - >> *look at the whole spectrum of responses, from preventive to reactive and recovery*
- Crisis as opportunities for learning but also for confusion and tensions
- There is no silver bullet: locust is a complex problem
- The threat of infrastructure degradation during recession: loss of means / memory / trust / experience / involvement
 - >> *Avoid a crisis-centered or a techno-scientific framing*
 - >> *The necessity to think long term*
 - >> *A challenge: let space to innovate while including historical systems and actors.*