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## Factors affecting compost adoption by farmers in small tropical islands in the Caribbean

Jacky Paul, Jorge J. Sierra, François Causeret, Loic Guinde, Jean-Marc Blazy

### ► To cite this version:

Jacky Paul, Jorge J. Sierra, François Causeret, Loic Guinde, Jean-Marc Blazy. Factors affecting compost adoption by farmers in small tropical islands in the Caribbean. 52. Annual Meeting of the Caribbean Food Crops Society (CFCS), 2016, Le Gosier, Guadeloupe, France. Caribbean Food Crops Society, Caribbean Food Crops Society Proceedings, 52, 2016, Proceedings of the 52nd Annual Meeting "Engineering ecological modernization of agriculture; Exploring the potential of tropical biological resources for innovation; Towards a bio-economic development of Caribbean countries". hal-02740127

**HAL Id: hal-02740127**

**<https://hal.inrae.fr/hal-02740127v1>**

Submitted on 2 Jun 2020

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INRA Research Unit  
« Tropical agrosystems »  
Guadeloupe, FWI



# “Factors affecting compost adoption by farmers in small tropical islands in the Caribbean”

Jacky Paul, Jorge Sierra, François Causeret, Loïc Guindé, Jean-Marc Blazy



52<sup>nd</sup> CFCS congress – July 10-16, 2016, Gosier, Guadeloupe



# *A need of more sustainable practice for recycling organic wastes*

- Massive production of industrial, municipal and agricultural wastes
- Treatment and disposal of organic wastes is a key environmental and social issue
- Composting as a sustainable practice for recycling organic wastes

→ **A sustainable solution to the double problem of management of waste and poor soil fertility**



# *Use of compost in Caribbean agriculture: a sustainable alternative*

- Soils requirements → adapt agriculture to Climate Change
- Crops requirements → reduce the use of import chemical fertilizers
- Societal need → translate management of "waste" in terms of valuation of "fertilizers"

→ What are the factors affecting compost adoption by farmers in small Caribbean tropical islands?



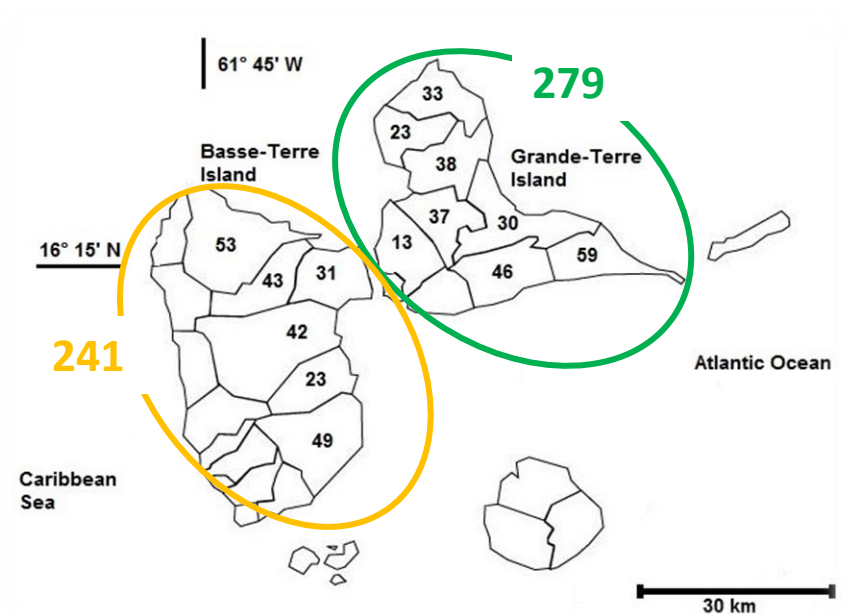
# ***Study aim: assessing biophysical and socio-economic determinants of compost adoption***

- *What are the reasons for using (or not using) composts?*
- *What are the barriers to compost adoption?*
- *What could be the potential incentives for facilitating adoption?*
- **Survey of 520 farmers:**
  - **14 biophysical and socio-economic variables: compost adoption literature and consulting local experts**
  - **Logit regression model**



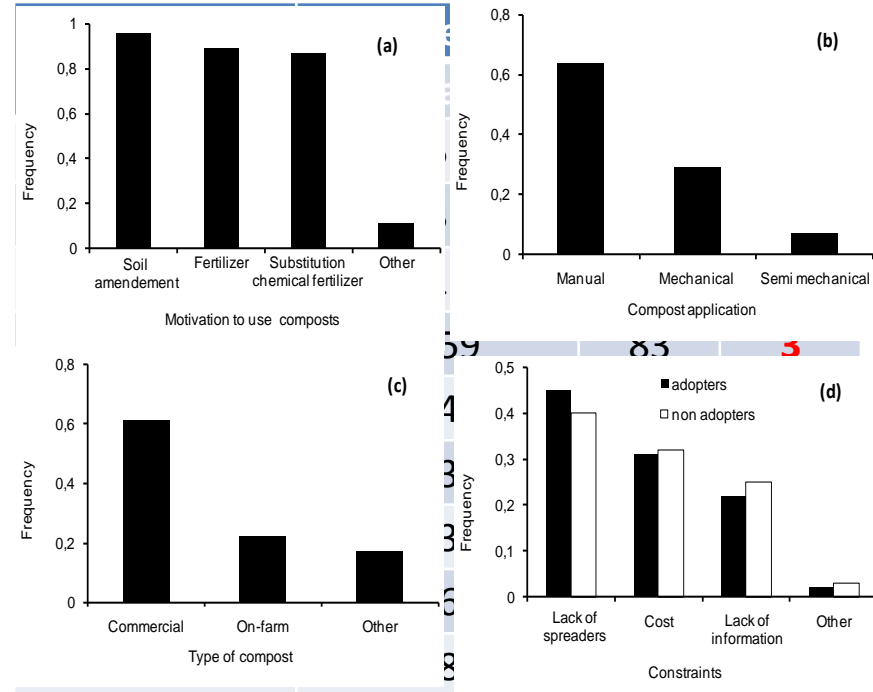
# Survey of farmers

- Sample: 520 farmers
  - 7% of the total population of farmers and 17% of the agricultural area
  - Strategy: random sampling from a database covering all the territory
- Interview in two parts:
  - Characterization the actual use and perception of compost of farmers
  - Description farmer's socio-economic profile and the nature of the farming system in terms of crops and livestock



# Farmer characteristics and perception of compost

- Low adoption rate of compost: 18%
- A strong use of composts in banana systems, vegetable and tuber crops
- Low use of compost by sugarcane planters
- Using composts as organic amendment
- Manual application could be a significant barrier
- 22% of farmers produce their composts on farm
- Same perception about the constraints involved in compost utilization



Variable	Significant effect
Region (Basse -Terre)	Positive
Banana area	Positive
Vegetable crops area	Positive
Tuber crops area	Positive
Sugarcane area	Negative
Herbivores	Negative
Age	Negative
Farmer experience	Positive
Family labour	Positive
Research	Positive
Farmer's organization	Positive
Education	Positive
Part time farmer	NS
Farm size	NS

# Determinants of compost adoption

- Agro-ecological conditions
- Nature of cropping system at the farm level
- Farmer's socio-economic profile and human capital

## Model performance:

- $R^2$  (McFadden): 0.29
- Accuracy: 87%
- Number of observation: 520



# Conclusions

## Relatively small rate of compost adoption

- Low use of compost in the dominant sugarcane systems
- Socio-economic factors: high cost of the practice, weak level of farmer education and the lack of professional organisations

## What do we need to do?

- Produce specific compost for sugarcane planters
- Adapt current Agri-Environmental Schemes to the specific requirements of small and large farms
- Promote on-farm composting for smallholder farmers
- Propose proper raw material blends and composting procedures

***Thank you for  
your attention!***

