



HAL
open science

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-02740127>

Submitted on 2 Jun 2020

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



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



52nd 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?



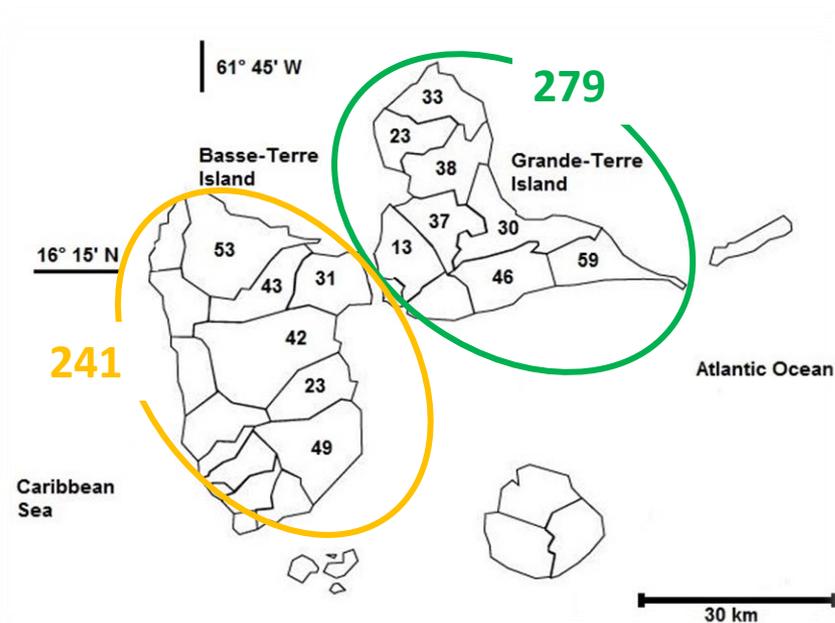
Study aim: assessing biophysical and socio-economic determinants of compost adoption

- *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**



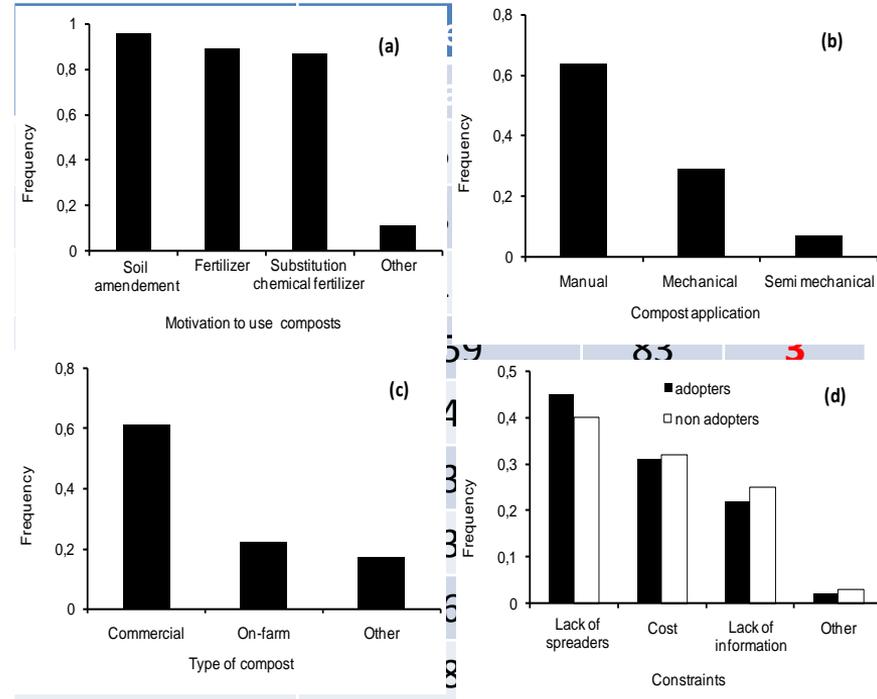
Survey of farmers

- 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!***

