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

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*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"

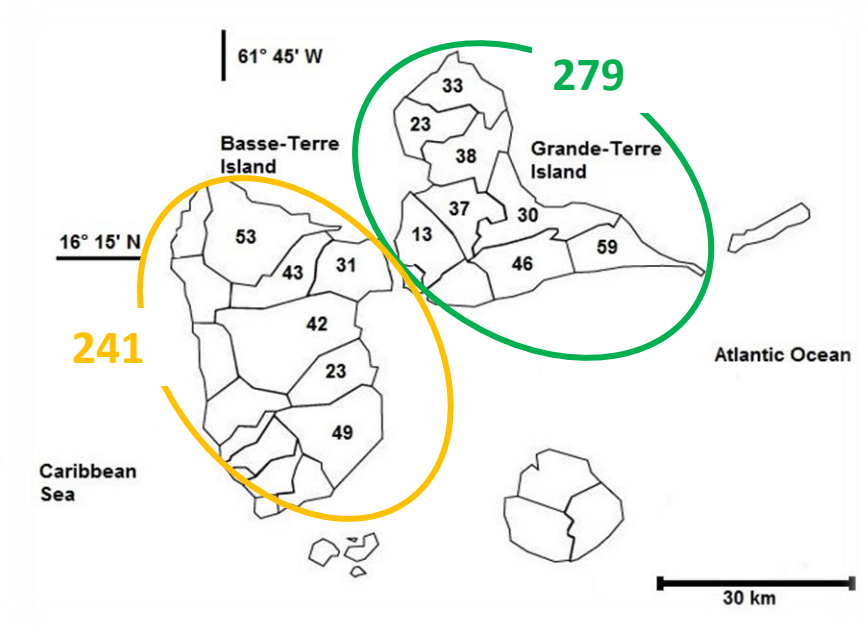
**→ What are the factors affecting compost adoption by farmers in small Caribbean tropical islands?**

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

- *What are the reasons for using (or no-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**

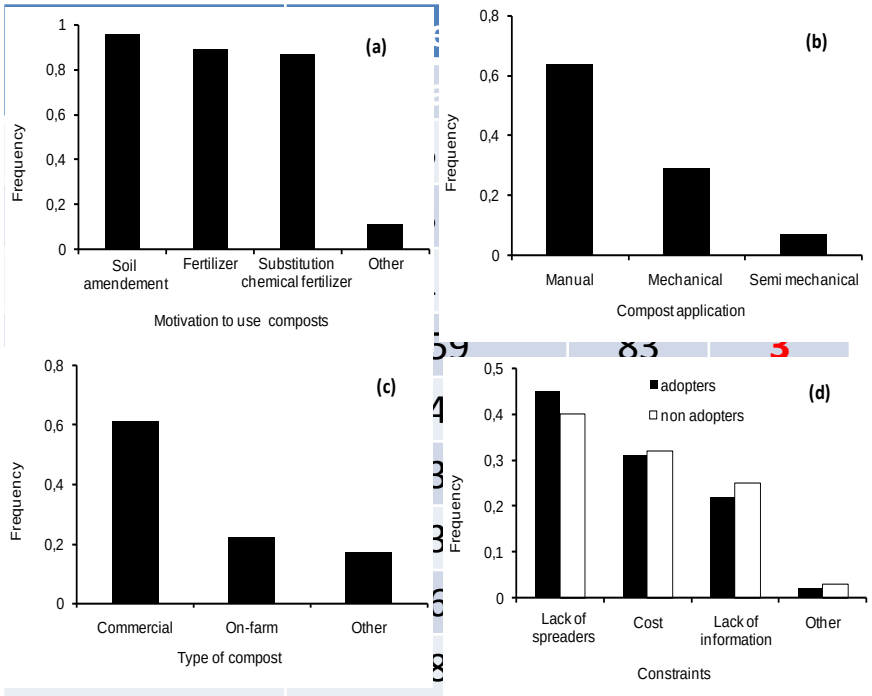
# *Survey of farmers*

- 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!*