



Adoption and continued participation in a public Good Agricultural Practices program: The case of rice farmers in the Central Plains of Thailand

Saengabha Srisopaporn^a, Damien Jourdain^{a,b,*}, Sylvain R. Perret^{a,b}, Ganesh Shivakoti^a

^a Asian Institute of Technology, SERD, P.O. Box 4, Klong Luang, Pathumthani, 12120, Thailand

^b Centre de Coopération Internationale en Recherche Agronomique pour le Développement, UMR G-EAU, 73, rue J.-F. Breton, Montpellier 34398, France

ARTICLE INFO

Article history:

Received 2 March 2014

Received in revised form 18 February 2015

Accepted 23 March 2015

Available online 7 April 2015

Keywords:

Certification

Public standard

Rice

Adoption

Good agricultural practices

Food safety

ASEAN

ABSTRACT

To address increasing concerns for improved food safety, quality, and appropriate environmental practices of on-farm operations, governments and private sector are increasingly promoting standards for good agricultural practices. In Thailand, voluntary and free of charge Good Agricultural Practices (GAP) certification program was implemented by the government. It aims at mobilising farmers to improve on-farm operations to produce safe products and preserve the environment while reducing the costs of production. This study is a three-stage investigation into the factors and patterns of GAP adoption and continued adoption by rice farmers using successively probit for first adoption patterns, probit with selection models for continued participation, and comparison of practices among non-adopters, one-time only adopters, and continued adopters. The analyses are based on a survey of 250 farmers from Ayutthaya Province in the Central Plains of Thailand. Results demonstrate that adoption and dis-adoption are highly related to household labour constraints, land ownership, and initial high expectations regarding the market opportunities of the GAP produced rice. We found several encouraging differences between non-adopters and first-time adopters, indicating better pest and nutrient management. Although we observed an important rate of dis-adoption, we also determined that farmers are maintaining those better practices even after abandoning the program.

© 2015 Elsevier Inc. All rights reserved.

1. Introduction

Agricultural innovation covers very diverse areas and has to respond to an increasing number policy objectives. Traditionally, agricultural technologies that help farmers using their production factors more efficiently (seeds, chemical inputs, labour, etc.) have long been promoted because of their impact on the agricultural sector competitiveness and poverty reduction. More recently, growing environmental and health concerns associated with modern agriculture have resulted in international and national initiatives to improve farmers' management practices for greater sustainability and to ensure

that food products are safe for consumers. These new and sustainable practices pose new challenges since they require more complex technologies and knowledge, involve trade-offs between farms' productivity and sustainability, and have contrasted impacts depending on the location where they are applied (Guerin, 2000; Läpple and Van Rensburg, 2011; Knowler and Bradshaw, 2007). Moreover, agricultural policies are influencing farmers' selection of activities and technologies and are sometimes sending mixed messages to farmers. As a result, traditional programs using extension services to promote sustainable cropping techniques are facing additional challenges at a time where most governments face budgetary constraints. For high-value crops, the private actors of the value-chains, e.g. the supermarkets, are taking over traditional governmental roles and use their power as buyers to impose production standards on farmers. Because certain of these standards are highly strict and detailed, there is a scientific

* Corresponding author at: Asian Institute of Technology, SERD, P.O. Box 4, Klong Luang, Pathumthani 12120, Thailand. Tel.: +66 8 02 65 70 14.

E-mail addresses: saengabha@gmail.com (S. Srisopaporn), damiensjourdain@cirad.fr (D. Jourdain), sylvain.perret@cirad.fr (S.R. Perret), ganesh@ait.ac.th (G. Shivakoti).

debate concerning the effects these developments have on small-scale farmers in developing countries (Handsouch et al., 2013; Reardon et al., 2009).

In contrast with those private sector initiatives, several south-east Asian countries have recently introduced public standards of good agricultural practices (GAP) aimed at increasing the supply of safe and high-quality food by promoting more sustainable crop production (Premier and Ledger, 2006). GAP, also promoted by such organisations as the United Nation's Food and Agriculture Organization (FAO), is a positive promotion of farmers' practice improvements aimed at improving agricultural produce quality, farmers' income, environment, and farmers' health altogether.

In Thailand, the Q-GAP is fully managed by the government, from setting standards to training, auditing, and the issuing of certificates (Sarsud, 2007). The Q-GAP for rice was initiated in 2004 and is a governmental initiative to promote sustainable practices and improve the quality of rice produce. It is also important to note that the coming into force of the Association of Southeast Asian Nations' (ASEAN) Economic Community in 2015 will require all agricultural produce in the member countries to meet the same standards. Therefore, Q-GAP is part of a larger set of national policies that are implemented by the Rice Department to standardise rice quality and improve competitiveness. According to the Q-GAP program, farmers who choose to follow the program and its recommendations will be able to reduce cost of production while ensuring that their produce is free from chemical residues and off-type rice. This program's aim is to certify that Q-GAP labelled rice is produced according to the best known practices for (a) farm-level hygienic conditions, (b) management of agricultural equipment and tools, (c) management of input factors (d) production control and practices, and (e) book-keeping and document control.

To participate in the Rice Q-GAP program, farmers must have their rice plots registered; then, on these plots, they have to follow a set of practices listed in the detailed Q-GAP guidelines (Table 1). A rice farmer or a group of rice farmers can submit an application form of interest for Q-GAP certification to a local rice research centre, rice seed centre, or agricultural extension office for a review of the basic requirements. Registered farmers receive training on the criteria for Q-GAP rice to prepare the farmer for inspection as well as key recommendations on appropriate rice production that covers a range of topics from seed selection, soil preparation and maintenance, water management, application of fertilisers, and application of pesticides to help farmers reduce costs of production. Afterward, the agriculture extension services at the provincial office or a local Rice Department office will send an officer for auditing (such service is outsourced). The results of the audit are submitted to the committee under the Rice Department or Rice Research Centre for evaluation and the farmer is given a certificate for Q-GAP. As the Q-GAP for rice certificate is issued every three years for each plot registered, participants are required to record their practices (e.g., application date, dose and input used) and are subjected to an annual audit, evaluation, and review by the Rice Department.

As of 2012, the Q-GAP for rice had already been promoted in 71 of the 76 provinces of Thailand, and approximately 40,000 farmers had registered (Ms. Ladda Viriyangkura, Rice Department, personal communication, 2012). Although the Rice Q-GAP

Table 1

Criteria points for GAP rice Thailand.

Criteria points*	Method of verification
A: Water is not from sources at risk from hazardous substances	Inspect or submit water test if area is at risk
B: Plot location is not at risk to hazardous substances	Inspect or submit soil test if area is at risk
C: Nationally banned chemicals may not be used; for exports of rice, importing countries' banned chemicals may not be used	Inspect chemical storage facility Record information on chemical substances used Randomly test rice produce in case of doubts
D: Pre-harvest off-type rice management	Review bookkeeping for seed and test off-type rice Inspect plot
F: Pre-harvest pest and weed management	Inspect rice produce affected by pests Review bookkeeping for pest observations and prevention method; inspect plot
G: Harvest time and rice quality according to national standards	Review bookkeeping for production management
H: Tool used in harvesting, container and approach to harvesting to prevent off-type rice and cleanliness of threshing machine or combine harvester	Inspect equipment, packaging, and harvesting techniques; review bookkeeping records Inspect post-harvest rice
I: Humidity of rice and its reduction management	Review bookkeeping; inspect facility; interview
J: Cleanliness and well-maintained transportation, storage facility, and product collection, as well as off-type rice management	Inspect facility, equipment, packaging, procedures, and methods of transportation
K: Availability of bookkeeping and information records	Review bookkeeping

* Based on Department of Rice GAP-06 Manual for Auditors for GAP Rice (Rice Department, 2006).

program has been very successful in enrolling rice producing farmers since its inception, some legitimate questions have recently been raised about the durability of farmers' participation in the program (Kasem and Thapa, 2012). The durability of Q-GAP can be analysed with regards to three complementary questions: (a) what are the household and farm characteristics that are related to first adoption and what are the main barriers to first adoption; (b) what are main determinants of continued participation over time; and (c) do participating farmers have different farming practices than the non-participants?

To address these questions, an empirical study was conducted in the Central Region of Thailand to identify the key environmental, social, and economic factors that play a role in rice farmers' decisions to adopt or abandon rice Q-GAP certification. Our contribution is in using an empirical approach that looks at the continuation of participation in a public GAP standard using a bivariate probit with selection seldom found in the adoption of standards literature.

The relevance of our study stems from the fact that, although many countries in Southeast Asia have recently introduced public GAP standards, there are only a few published studies on their effectiveness, factors and impact. Past literature has investigated changes in the practices in terms of input use and farm management of fruit and vegetables producers who adopted GAP (Schreinemachers et al., 2012). Other studies on rice Q-GAP concentrated on the Northeast Region of Thailand for descriptive and statistical analyses to investigate the opinions and attitudes of Hom Mali rice farmers regarding the

Download English Version:

<https://daneshyari.com/en/article/896453>

Download Persian Version:

<https://daneshyari.com/article/896453>

[Daneshyari.com](https://daneshyari.com)