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Evaluation of Satisfaction and Performance of Agriculture Students: An Input on Graduate Students' Quality Assurance

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Abstract

Background: Graduate tracer studies help higher education institutions assess whether their programs prepare alumni for employment, promotion, and professional growth. In the Philippine context, tracer evidence is particularly important for curriculum review, quality assurance, and alignment with workforce needs. This study traced the graduates of the Master of Science in Agriculture (MSA) and Doctor of Philosophy in Agriculture (PhD) programs of Laguna State Polytechnic University (LSPU)–Siniloan Campus.

Method: The study used a descriptive-correlational graduate tracer design. Total enumeration was adopted for all identified graduates from batches 1996 to 2025, and 51 of 73 reachable graduates participated. Data were gathered through an adapted CHED Graduate Tracer Study questionnaire covering demographic characteristics, educational background, employment outcomes, skills utilization, promotion challenges, strategies, professional growth, and recommendations. Frequency, percentage, weighted mean, and one-way analysis of variance were used.

Results: Most respondents were female (58.8%), married (62.7%), and in the 36–40 age group (21.6%). MSA graduates comprised 86.3% of respondents. Almost all respondents were employed (94.1%), all in government institutions, and 86.3% reported promotion after completing graduate studies. Skills and competencies from the program were utilized to a very high extent (overall mean = 4.56), while the contribution of graduate education to personal and professional growth was also very high (overall mean = 4.46). Promotion-related challenges were generally low (overall mean = 2.48). Significant differences in skills utilization were found when respondents were grouped according to agency, present job, and position.

Conclusion: The agriculture graduate programs of LSPU–Siniloan were associated with strong employment outcomes, upward career mobility, and substantial personal and professional development, supporting their continued relevance and strengthening the need for ongoing curriculum enhancement.

Keywords: Graduate Tracer Study, Agriculture Graduates, Employability, Skills Utilization, Professional Growth

Introduction

Graduate education performs a strategic role in strengthening national development because it develops advanced knowledge, research competence, leadership capacity, and professional specialization. In higher education, postgraduate programs are expected not only to deepen disciplinary understanding but also to prepare graduates for more demanding work roles, broader responsibilities, and higher levels of contribution in their professions. In agriculture, these expectations are particularly significant because the field connects education with food systems, environmental sustainability, community development, extension work, and public service.

For this reason, graduate tracer studies have become important tools in higher education quality assurance. Tracer studies examine the transition of graduates into employment, their career progression, their use of acquired competencies, and their assessment of how well their education prepared them for life and work after graduation. Such studies also provide evidence for curriculum review, policy planning, and institutional improvement. Rather than relying only on internal academic indicators, tracer studies foreground the lived outcomes of education as experienced by graduates themselves.

Within the Philippine context, the Commission on Higher Education has encouraged higher education institutions to use tracer studies as part of outcomes-based education and quality monitoring efforts. These studies are especially useful for state universities and colleges because they show whether graduate programs are responsive to labor-market needs, supportive of

promotion and career advancement, and relevant to the social and professional realities faced by alumni. In professional and academic disciplines, tracer studies also reveal how institutions contribute to long-term development, not merely first-job placement.

Agriculture graduate education is a relevant site for such inquiry. The agriculture sector remains vital to the country's economy and to local rural development, yet it faces persistent demands for technical innovation, scientific leadership, extension capability, resource management, and interdisciplinary problem solving. Graduate programs in agriculture therefore have to produce alumni who can work effectively not only as technical practitioners, but also as researchers, educators, supervisors, policy contributors, and institutional leaders.

Laguna State Polytechnic University (LSPU), particularly through its College of Agriculture and Graduate School and Applied Research, offers graduate programs that aim to enhance advanced competencies in the discipline. The Master of Science in Agriculture (MSA) and Doctor of Philosophy in Agriculture (PhD) programs are expected to prepare graduates for higher-level functions in teaching, extension, research, technical service, and leadership. However, the continuing relevance of these programs depends in part on whether graduates are actually able to translate their education into employment, promotion, skills application, and professional growth.

The present study addressed this need by tracing the graduates of the MSA and PhD in Agriculture programs of LSPU–Siniloan Campus. It sought to determine who the graduates are, what their employment outcomes look like, how they use the skills and competencies gained from their programs, what challenges they encounter in professional advancement, what strategies they employ to respond to those challenges, and how they assess the contribution of graduate education to their personal and professional growth. It also examined whether utilization of skills and competencies differed when respondents were grouped according to selected employment variables and whether selected background variables were associated with perceived growth.

This article argues that the MSA and PhD agriculture programs of LSPU–Siniloan have generated broadly favorable graduate outcomes in terms of employability, promotion, competency utilization, and professional development. At the same time, the study provides evidence that can guide curriculum improvement, strengthen student preparation, and support long-term academic planning. By transforming the thesis into a journal-style IMRAD manuscript, the paper highlights the broader institutional significance of tracer evidence for graduate education in agriculture.

Methods

Research Design

The study employed a descriptive-correlational graduate tracer research design. The descriptive component was used to present the demographic profile, educational background, employment data, skills utilization, promotion challenges, strategies used by graduates, and the contribution of graduate education to their personal and professional growth. The correlational and comparative components were used to determine whether selected employment variables

were associated with differences in the utilization of skills and competencies and whether selected graduate characteristics related to measures of growth.

Participants and Sampling

The target population included all identified graduates of the Master of Science in Agriculture and Doctor of Philosophy in Agriculture programs of LSPU–Siniloan Campus from batch 1996 to batch 2025. University records showed a total of 73 graduates, consisting of 58 MSA and 15 PhD graduates, although no recorded graduates appeared from 1996 to 2001. The study used total enumeration, meaning all identified graduates were invited to participate. Fifty-one graduates who were reachable and willing to respond during the data-gathering period served as the actual respondents, yielding a response rate of 70%.

Instrumentation

The data-gathering tool was adapted from the Commission on Higher Education Graduate Tracer Study questionnaire and modified to fit the objectives of the research. The instrument covered several domains: demographic profile; educational background; employment status and employment history before, during, and after graduate studies; utilization of skills and competencies gained from the program; challenges encountered in promotion; strategies employed to overcome those challenges; contribution of the program of study to personal and professional growth; and respondents' suggestions for curriculum and program improvement.

Data Collection Procedure

Permission to conduct the study was first secured from the relevant university office. After approval, the researcher obtained the official roster of graduates from the Office of the Registrar. This list became the basis for identifying the tracer-study population. The adapted questionnaire was then prepared and administered to the target respondents. Responses were retrieved, checked, encoded, and prepared for analysis. The process followed an orderly research procedure intended to preserve reliability of the gathered data.

Data Analysis

Frequency counts and percentages were used to describe demographic characteristics, educational background, and employment outcomes. Weighted means were used to determine the extent of utilization of skills and competencies, the extent of challenges and difficulties in promotion, and the perceived contribution of the graduate programs to personal and professional growth. One-way analysis of variance (ANOVA) was used to test the study hypotheses regarding differences and relationships involving selected variables. The analysis therefore combined descriptive graduate tracer reporting with basic inferential testing.

Ethical Considerations

Participation in the study was voluntary. Only graduates who were willing and reachable at the time of data collection were included in the final response set. The study reported findings in aggregate form and used the data strictly for scholarly and program-improvement purposes.

Results

Graduate Profile and Educational Background

Table 1: Graduate Population and Respondent Participation

Program	Identified graduates	Respondents
MSA	58	44
PhD in Agriculture	15	7
Total	73	51

Table 2: Selected Demographic Characteristics of Respondents

Variable	Category	%
Home address	Siniloan, Laguna	35.3
Age	36–40 years	21.6
Sex	Female	58.8
Civil status	Married	62.7

Table 3: Selected Educational Background Indicators

Indicator	Category	%
Program completed	MSA	86.3
Foremost reason for study	Professional development	49.0
Foremost reason for study	Promotion	33.3
First board examination	Licensure Examination for Agriculturists	47.1
First board examination	Licensure Examination for Teachers	45.1

The data show that the respondents were predominantly locally or regionally based alumni. The largest proportion came from Siniloan, Laguna (35.3%), with the rest distributed across neighboring municipalities and provinces. This indicates that the graduate programs continue to serve a strong regional constituency.

In terms of age, the largest group of respondents fell within the 36–40 age bracket (21.6%), followed by those aged 41–45 and 46–50 (17.6% each). The profile therefore reflects mid-career professionals rather than newly entering graduates. Female respondents comprised 58.8% of the sample, while 62.7% were married. These characteristics suggest that many alumni pursued postgraduate education while already managing work and family responsibilities.

The educational background results show that 44 respondents (86.3%) completed the Master of Science in Agriculture, while 7 respondents (13.7%) completed the Doctor of Philosophy in Agriculture. Participation by graduation year ranged from 2002 to 2025, with the highest number graduating in 2020 (21.57%), followed by 2023 (11.76%). This wide span allowed the study to capture both recent graduate outcomes and longer-term career patterns. The foremost reasons for taking the graduate program were professional development (49.0%) and promotion (33.3%). Smaller proportions cited influence of colleagues, passion for the profession, role models, or immediate employment reasons. These responses indicate that the primary motivation for postgraduate study among respondents was career enhancement rather than initial labor-market entry.

Most respondents had passed professional licensure examinations aligned with agriculture and education. The Licensure Examination for Agriculturists accounted for 47.1% of first board examinations, while the Licensure Examination for Teachers accounted for 45.1%. A few respondents also reported the Civil Service Examination, Agricultural and Biosystems Engineer Licensure Examination, and the Philippine Midwifery Board Examination. Only a small share (15.7%) had taken a

second board examination, suggesting that one professional license was generally sufficient for career entry or progress.

Employment Outcomes Before, During, and After Graduate Studies

Table 4: Current Employment Outcomes of Respondents

Variable	Category	%
Employment status	Employed	94.1
Nature of work	Public government employee	100.0
Top employing agency	Department of Agriculture	29.4
Top employing agency	Department of Education	27.5
Top employing agency	LSPU	21.6
Employment type	Regular	90.2

Employment outcomes were highly favorable. Of the 51 respondents, 48 (94.1%) were employed and only 3 (5.9%) were retired; none was unemployed at the time of the study. All respondents were employed in government institutions, indicating that public-sector service is the dominant employment pathway of the graduates.

The major agencies employing respondents were the Department of Agriculture (29.4%), Department of Education (27.5%), and Laguna State Polytechnic University (21.6%). Smaller shares worked in DA-RFO 4A, Agricultural Training Institute CALABARZON, local government agriculture offices, and a few state colleges and universities. Position-wise, the largest groups were teachers (25.5%), agricultural extension workers (15.7%), instructors (13.7%), and professors (11.8%), followed by supervisors and other technical or managerial roles.

The majority of respondents were regular employees (90.2%), with only 3.9% in contractual roles and 5.9% retired. This already strong employment stability was also visible in the longitudinal comparison before, during, and after graduate studies. Most respondents had already been in permanent positions before entering graduate school (74.5%) and during their studies (78.4%), and this rose further after graduation (94.1%). By contrast, contractual and probationary positions declined over time.

Work agency patterns before, during, and after graduate studies were also relatively stable. Many respondents remained in the same agencies while upgrading their qualifications, especially in the Department of Agriculture, Department of Education, and LSPU itself. This indicates that graduate education was often pursued in-service and used to support career advancement within existing employment.

Promotion and Salary Progression

Table 5: Career Advancement Indicators

Indicator	Category	%
Promoted after graduate studies	Yes	86.3
Time before promotion	2 to 3 years	33.3
Salary after graduate studies	Php 31,000–40,000	39.2
Salary after graduate studies	Php 41,000–50,000	23.5

Promotion outcomes further reinforce the positive employment picture. A large majority of respondents (86.3%) reported being promoted after completing graduate studies, while only 13.7% reported no promotion. Most promotions occurred within one to three years, with the largest share reporting promotion after two to three years

(33.3%). This suggests that promotion was not always immediate but was strongly associated with accumulated work experience plus advanced academic qualifications. Salary progression also reflected graduate advantage. Before graduate studies, the largest group earned Php 21,000–30,000 (54.9%), and 35.3% earned Php 20,000 and below. During graduate studies, the Php 21,000–30,000 bracket remained dominant (62.7%), but after graduate studies, more respondents had moved into higher salary categories, especially Php 31,000–40,000 (39.2%) and Php 41,000–50,000 (23.5%). The pattern therefore suggests that graduate education contributed to improved earning capacity. Job level positions also showed upward movement. Before graduate studies, many respondents occupied entry-level roles such as Teacher I and Agricultural Technologist. During graduate studies, movement into mid-level positions became more visible, such as Teacher II and Agriculturist I. After graduation, more respondents occupied higher-level and specialized roles such as Teacher III, Agriculturist II, Dean, Municipal Agriculturist, and other leadership or advanced professional positions.

Utilization of Skills and Competencies Gained From Graduate Studies

Table 6: Selected Skills and Competencies Utilized by Graduates

Competency	Mean	SD	Interpretation
Problem solving	4.65	.483	Very high
Critical thinking	4.61	.532	Very high
Network collaboration	4.61	.493	Very high
Technical and scientific agricultural skills	4.57	.500	Very high
Entrepreneurial skills	4.10	.608	High
Overall mean	4.56		Very high

The extent of utilization of skills and competencies gained from the graduate programs was rated **very high**, with an overall mean of 4.56. Among the highest rated competencies were problem solving ($M = 4.65$), critical thinking ($M = 4.61$), network collaboration ($M = 4.61$), collaborative work attitude ($M = 4.61$), resource management ($M = 4.59$), and monitoring and evaluation ($M = 4.59$). Technical and scientific agricultural skills also received a very high rating ($M = 4.57$).

Other competencies—such as research management, strategic agricultural planning, natural resource conservation, leadership skills, adaptability, information analysis, communication, and agricultural law advocacy—were likewise rated at very high levels. Only entrepreneurial skills ($M = 4.10$) fell slightly below the “very high”

threshold, though still within the high range.

The results indicate that respondents regarded the graduate programs as strongly relevant to their current work. The competencies developed in the programs were not merely academic; they were perceived as transferable, applicable, and professionally useful across work settings.

Challenges Encountered in Promotion and Strategies Used to Address Them

Table 7: Challenges in Promotion and Coping Strategies

Item	Value	Type	Interpretation
Few job vacancies	2.98	Challenge mean	Moderate
Jobs requiring special skills	2.80	Challenge mean	Moderate
No job opportunity	2.76	Challenge mean	Moderate
Overall challenge level	2.48	Overall mean	Low
Personal development	17.6%	Strategy frequency share	Most common
Attend training/seminars	16.7%	Strategy frequency share	Most common
Develop skills	16.3%	Strategy frequency share	Most common

Although the graduates generally experienced positive career outcomes, some challenges remained. The overall extent of challenges and difficulties encountered in promotion was **low**, with an overall mean of 2.48. The items with relatively higher means were few job vacancies ($M = 2.98$), jobs requiring special skills ($M = 2.80$), no job opportunity ($M = 2.76$), and not meeting some requirements ($M = 2.63$). These were interpreted at the moderate level, suggesting that barriers to advancement were more often structural or labor-market related than personal.

Other factors such as educational skill mismatch ($M = 2.29$), inadequate job experience ($M = 2.39$), limited technical skills ($M = 2.37$), limited mentorship access ($M = 2.37$), and lack of confidence ($M = 2.18$) were rated low. This means that respondents generally did not view themselves as lacking the personal competencies needed for advancement. To overcome challenges in promotion, respondents most frequently identified personal development (17.6%), attending training and seminars (16.7%), developing skills (16.3%), employing a positive attitude (15.4%), and building strong networks and relationships (13.6%). Seeking advice from experienced colleagues (8.6%) and expanding one’s skill set (11.8%) were also reported. These strategies indicate that graduates relied heavily on lifelong learning, character development, and professional networking to support advancement.

Personal and Professional Growth

Table 8: Personal/Professional Growth and Significant Differences in Skills Utilization

Indicator	Value	Statistic	Interpretation
Overall contribution to personal/professional growth	4.46	Overall mean	Very high
Professional needs alignment	4.63	Mean	Very high
Values formation	4.57	Mean	Very high
Academic profession	4.49	Mean	Very high
Agency	p = .004	ANOVA	Very significant difference
Present job	p = .045	ANOVA	Significant difference
Position	p = .025	ANOVA	Significant difference
Type of employment	p = .566	ANOVA	Not significant

Respondents rated the contribution of the graduate program to their personal and professional growth as **very high**, with an overall mean of 4.46. The highest rated areas were professional needs alignment ($M = 4.63$), values formation ($M = 4.57$), personality development ($M = 4.51$), academic profession ($M = 4.49$), learning efficiency ($M = 4.49$), people skills ($M = 4.49$), critical thinking skills ($M = 4.47$), and communication skills ($M = 4.47$). Research capability ($M = 4.41$) and problem-solving skills ($M = 4.39$) were also strongly rated.

Information and communication technology skills ($M = 4.24$) and international field exposure ($M = 4.27$) were still rated very high, while opportunities abroad ($M = 4.00$) received a high rating but remained the lowest among the growth dimensions. Overall, the findings suggest that the graduate programs were perceived not only as academically relevant but also as enriching in broader human and professional terms.

Differences in Skills Utilization Across Employment Variables

The study also examined whether the utilization of skills and competencies differed when respondents were grouped according to current employment variables. Significant differences were found for **agency** ($p = .004$), **present job** ($p = .045$), and **position** ($p = .025$). These results suggest that the workplace context and occupational role influence how graduates apply the competencies gained from their programs.

By contrast, **type of employment** ($p = .566$) did not show a significant difference. In other words, whether respondents were permanent, contractual, or otherwise employed did not significantly affect their reported utilization of skills and competencies.

These findings imply that skills application is shaped more by institutional setting and role expectations than by employment status alone.

Discussion

The results portray a generally strong outcome profile for the MSA and PhD in Agriculture programs of LSPU–Siniloan. The graduates were not only employed at very high rates; they also reported promotion, salary progression, strong use of acquired competencies, and very high levels of personal and professional growth. In graduate tracer terms,

this suggests that the programs have remained relevant to the occupational realities of their alumni and have contributed meaningfully to upward career movement.

One of the most important findings is the concentration of respondents in public-sector employment. Every respondent in the sample worked in a government institution, and the most common agencies were the Department of Agriculture, Department of Education, and LSPU itself. This concentration likely reflects the practical alignment between the curriculum and public-sector work in agriculture, extension, teaching, research, and technical service. It also suggests that the programs are serving a professional population whose work is embedded in public mandates and community-oriented functions.

The promotion data deepen this interpretation. Most respondents reported promotion after completing their graduate studies, and many also shifted into higher salary brackets and more advanced job-level positions. This pattern supports the argument that graduate education functions as a form of professional capital that strengthens competitiveness for advancement. The time-to-promotion results show that advancement was not always immediate; rather, graduate education appears to have worked in combination with accumulated work experience. In this sense, the findings fit a developmental model of career progression rather than a simple credentialing effect.

The very high extent of skills and competency utilization is particularly significant. Respondents consistently reported strong use of problem solving, critical thinking, collaboration, technical agricultural knowledge, resource management, monitoring and evaluation, and strategic planning. These are precisely the kinds of competencies that postgraduate education is expected to deepen. Their strong application in actual work settings indicates that the programs were not merely theoretically rigorous but functionally relevant.

The slight dip in entrepreneurial skills, while still within the high range, is also worth noting. It may suggest that the programs are particularly strong in preparing graduates for professional, technical, educational, and organizational roles, but somewhat less focused on entrepreneurship-oriented outcomes. Given changing expectations in agriculture and innovation, this could be a useful area for future curricular attention.

The low overall level of challenges encountered in promotion further suggests that alumni generally did not perceive themselves as underprepared. The challenges that did emerge tended to be external or structural—few job vacancies, limited job opportunities, and special-skill requirements—rather than deeply personal deficits. This finding carries an important implication: when alumni face obstacles, those obstacles may lie less in the inadequacy of the graduate program and more in labor-market structure, competition, and organizational opportunity.

The strategies used by respondents reinforce this reading. Graduates relied heavily on personal development, training, skills improvement, positive attitude, and professional networking. These responses suggest that alumni understand career progression as an active process rather than a passive outcome of credential acquisition. Graduate education appears to have equipped them not only with competencies, but also with orientations toward lifelong learning and professional self-improvement.

Another major contribution of the study lies in its evidence

on personal and professional growth. The high ratings for values formation, personality development, professional needs alignment, people skills, critical thinking, and communication suggest that the influence of graduate education extended beyond narrow technical preparation. The programs seem to have had a broad developmental effect, shaping graduates as professionals and as persons. This is particularly important in fields such as agriculture and education, where technical capacity must often be accompanied by leadership, social awareness, ethical judgment, and the ability to work with communities and institutions.

The significant differences in skills utilization across agency, present job, and position are also analytically meaningful. They suggest that the workplace matters: the context in which a graduate works affects how fully acquired competencies can be applied. An alumnus working in extension, teaching, research, administration, or local agriculture governance may draw on different dimensions of the same graduate preparation. This supports the view that competency application is dynamic and role-dependent. The absence of a significant difference by type of employment, meanwhile, indicates that contractual versus permanent status is less important than actual institutional context and job function.

Taken together, the results support a strong case for the continued relevance of the graduate programs. At the same time, they also point to areas where improvement could be pursued. The program could further strengthen entrepreneurial preparation, expand practical and laboratory exposure, and continue updating its curriculum to fit evolving professional demands. The recommendation emerging from the tracer evidence is therefore not one of radical redesign, but of evidence-based enhancement.

Overall, the study affirms the value of graduate tracer research as a feedback mechanism for agriculture graduate education. By documenting what alumni achieve, what challenges they face, and how they assess the contribution of their studies, institutions gain concrete guidance for program improvement. The evidence from LSPU–Siniloan suggests that the agriculture graduate programs are functioning well, but that their long-term excellence depends on sustained responsiveness to the professional realities of graduates.

Conclusion

The tracer study demonstrates that the Master of Science in Agriculture and Doctor of Philosophy in Agriculture programs of LSPU–Siniloan are associated with highly favorable graduate outcomes. The respondents were overwhelmingly employed, primarily in public-sector institutions closely aligned with agriculture and education. Most had experienced promotion after completing graduate studies, moved into more secure employment, and advanced into higher-level positions and salary brackets.

The study also shows that the competencies developed in the programs were utilized to a very high extent, particularly in problem solving, critical thinking, technical agricultural skills, collaboration, and research-related functions. Alumni likewise perceived the graduate programs as contributing very strongly to their personal and professional growth, especially in professional alignment, values formation, academic development, people skills, and critical thinking. Although some challenges to promotion remained, these

were generally low in intensity and appeared to stem more from labor-market constraints than from weaknesses in graduate preparation. Where significant differences in competency utilization existed, these were linked to agency, present job, and position rather than to type of employment. Overall, the evidence suggests that the LSPU–Siniloan agriculture graduate programs remain relevant, developmentally significant, and professionally useful. They not only support employability and advancement, but also foster the broad competencies and growth required of contemporary agriculture professionals.

Recommendations

1. Continue evidence-based curriculum enhancement:

The graduate programs should maintain regular review and updating of the curriculum using tracer evidence, especially regarding workplace relevance, skills demand, and emerging professional functions in agriculture.

2. Strengthen practical and laboratory experiences:

Graduates pointed to the value of application-based learning. Increasing laboratory work, field-based tasks, and other hands-on experiences may further strengthen competency development.

3. Expand alumni engagement and tracer follow-up:

Future tracer studies should include larger and more diverse response sets, comparative analysis across disciplines, and follow-up studies that examine long-term leadership trajectories and wider social impact.

4. Promote CA-GSAR as a strong graduate-study provider:

The positive outcomes suggest that the university can position these programs more actively as viable pathways for employability, promotion, competency enhancement, and holistic professional growth.

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