

Capabilities and Employers' Assessment of the Current Human Resources in Agriculture, Forestry and Natural Resources in Region 1

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Abstract

The study provides a comprehensive picture of the current human resource capabilities of graduates in agriculture, forestry and natural resources (AFNR) programs of the Mariano Marcos State University (MMSU), Pangasinan State University (PSU), Ilocos Sur Polytechnic State College (ISPSC), and Don Mariano Marcos Memorial State University (DMMMSU). Using the descriptive research survey design, data from mailed responses of 597 proportionately-sampled AFNR graduates; and those from mailed questionnaires of and interviews with 166 employers of AFNR graduates selected through snowball sampling were gathered and analyzed.

Majority of the AFNR current human resources in Region 1 consisted of females, singles, rural area residents, and public secondary school graduates. They pursued an AFNR course because of the immediate employment prospects, affordability, and job opportunities. The graduate-respondents rated themselves to be good in terms of the specialized knowledge and skills in AFNR. They claimed that their AFNR curriculum was very relevant from which they gained their competencies. Most of the AFNR graduates were employed in private local firms/organizations in the rural areas as contractual workers.

Moreover, the employers of the AFNR graduates were very satisfied with their employees' understanding of their major and outside fields of study. They were also very satisfied on the general qualities, general skills, and specialized skills of their workers vis-a-vis their job requirements. On the whole, employers were very satisfied with the overall preparation of their employees. Nevertheless, the employers suggested that speaking and communication skills, using new communication and information technologies, and maximizing team work be given emphasis in the AFNR curricular offerings. Additionally, they express their intention to hire AFNR graduates from state universities and colleges.

Keywords: *AFNR, current human resources, general qualities, general skills, specialized skills*

Introduction

The academe plays a major role in developing the agricultural sector. Of the five state universities and colleges (SUCs) in Region 1, four are offering Agriculture, Forestry and Natural Resources (AFNR) programs. Although the Philippines has an agriculture-based economy, the Commission on Higher Education (CHED) is still alarmed over Filipino student's diminishing interest in agriculture, forestry, natural resources (AFNR), and related fields. This is manifested by the sharp decline of enrollees from School Year (SY) 2002 to 2005 at the national level (www.ched.gov.ph/data/statistics/index.html).

The CHED's enrolment data in 40 institutions offering agriculture-related programs all over the country showed that from 84,609 students in SY 2002-2003, the

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enrolment figure plummeted to 78,201 in SY 2003-2004 and further went down to 70,680 for SY 2004-2005. In comparison, enrollment in the medical and allied courses, particularly, nursing, physical therapy, care giving and reflexology rose to 445,105 from 319,774 for SY 2003-2004 (www.ched.gov.ph/statistical/index.html).

In Region 1, AFNR enrolment has been declining yearly at the rate of 10-15 percent in almost all the SUCs. Given that scenario, the country lags behind its Asian neighbors on the number of scientific personnel per capita. This phenomenon leads to a dearth of professional manpower in AFNR, both in the public and private sectors.

Dyer and Bueja (2003) identified several reasons behind the decrease in AFNR programs enrolment and subsequent graduation. These include the negative image of agriculture among high school students due to the stereotyping among peers, competition with other academic programs, and low employment opportunities for agriculture graduates.

As such, there is a need to investigate on what is happening to the AFNR manpower resources in the region through this study.

Specifically, this inquiry a) identified the issues and trends impacting on human resources in the AFNR sectors; b) described the current supply of graduates in AFNR courses; and c) determined the conditions of the employers of AFNR graduates and their satisfaction on the preparedness of their employees.

The study is guided by the assumption that there are macro and regional forces that affect the supply of AFNR human resources. Moreover, the quality of their performance depends on several personal and academic factors. In the long run, these could affect their employment, which in turn would affect the supply of AFNR workers.

The personal factors or characteristics of the AFNR graduates include their demographic and educational background, choice of educational institution, and financial resources while in school. Meanwhile, those academic-related factors are the graduate-respondents' knowledge and skills, which they acquired while pursuing their degree programs, effectiveness of their study programs, and self-readiness.

Additionally, it was assumed that the employer's satisfaction with their workers' knowledge in their major and related fields is based on the general and specific qualities and skills of the latter. A very satisfactory performance of the employees in these areas was further assumed to have influenced the employers' decision to hire AFNR graduates from the SUCs.

Methodology

Locale of the study. The study was conducted at the: a) College of Agriculture, Food and Sustainable Development (CAFSD), formerly College of Agriculture and Forestry (CAF), College of Arts and Sciences (CAS), College of Aquatic Sciences and Applied Technology (CASAT) of the Mariano Marcos State University (MMSU), Ilocos Norte; b) College of Agriculture in Sta. Maria, San Carlos, Infanta, and College of Fisheries of the Pangasinan State University (PSU), Pangasinan; 3) College of

Agriculture of the Ilocos Sur Polytechnic State College (ISPSC), Ilocos Sur; and; 4) Institute of Veterinary Medicine and College of Agriculture and Forestry of the Don Mariano Marcos Memorial State University (DMMMSU), La Union.

Research design. The study used the descriptive survey design. Descriptive statistics such as frequency counts, percentages, and means quantitatively analyzed the issues and trends impacting on human resources, the AFNR graduate-respondents' demographics and the employer-respondents' assessment on the AFNR graduate-employees.

Respondents of the study. The respondents are graduates in AFNR courses/programs in the four state universities and colleges in Region 1 from SY 2003-2004 to SY 2007-2008 and their employers in various firms/organizations or business establishments.

Sampling procedure. The respondents were selected through proportional random sampling at 30% per course per year for the graduate survey (Table 1); and snowball technique for the employer-respondents (Table 2).

Data gathering instruments and procedure. Primary data were gathered through mailed questionnaires. The questionnaires for the primary and first alternate respondents were simultaneously mailed. If both were retrieved, the primary respondent was considered, otherwise, the first alternate was taken. When both were not retrieved, the second alternate was sent. If all three were not retrieved, a follow up was done by directly going to the primary respondent. Data from employers were gathered either via mail or interview.

Secondary data included records/documents from the offices of the Registrar, directories of graduates from the offices of alumni affairs, invitation programs of commencement exercises, year book of graduates, and annual reports of the SUCs in the region.

Results and Discussion

The discussion is presented in three parts. The first one highlights the trends of AFNR courses in Region 1; the second part deals with the existing AFNR human resources; and the third focuses on the AFNR employers.

Trends in AFNR Human Resources in Region 1

Enrolment in AFNR vs. non-AFNR courses. There was a total of 33,287 enrolled in the various program offerings of the four SUCs during the second semester of SY 2008-2009. Of that number, 2,013 (6%) were enrolled in AFNR programs and 31,274 (94%) in non-AFNR programs (Figure 1). In the four SUCs, a general pattern was observed, which is the minimal proportion of AFNR program enrollees. It can be deduced that on the whole, secondary school graduates more highly preferred non-AFNR courses than those of AFNR programs.

Table 1. Distribution of graduate-respondents in Region 1, SY 2004-2008

DEGREE PROGRAM	TOTAL NO. OF GRADUATES	YEAR					TOTAL NO. OF RESPONDENTS
		2004	2005	2006	2007	2008	
<i>Undergraduate</i>							
BSA	1391	59	74	43	64	81	321
BSABM	42	3	3	3	1	2	12
BSAgEd	340	14	1	15	28	13	71
BSAgEng	189	16	17	6	15	28	13
BAGTech	72	4	1	1	3	0	9
BSAgroF	12	2	2	0	0	1	5
BSDevcom	49	3	2	7	6	0	18
BSEnvSci	160	5	2	5	2	2	16
BSF	76	3	9	1	1	4	18
BSFi	93	5	5	5	6	4	25
BSFIED	79	7	5	6	4	1	23
BSMBio	32	1	0	3	0	2	6
DVM	49	3	2	0	0	0	5
<i>Graduate</i>							
MSAg	8	1	1	2	0	1	6
MSRD	8	1	0	1	1	1	3
Total	2600	127	124	98	131	116	597

AFNR enrollees per year level (2008-2009). There were only two SUCs that offered AFNR courses at the undergraduate and graduate levels (Figure 2). Almost all (98%) of the enrollees were in the undergraduate level, while the rest pursued advanced or graduate programs.

Table 2. Distribution of employer-respondents in Region 1.

SUC	NO. OF GRADUATES EMPLOYED	NO. OF RESPONDENTS
DMMMSU	37	24
ISPSC	41	20
MMSU	111	58
PSU	214	64
Total	403	166

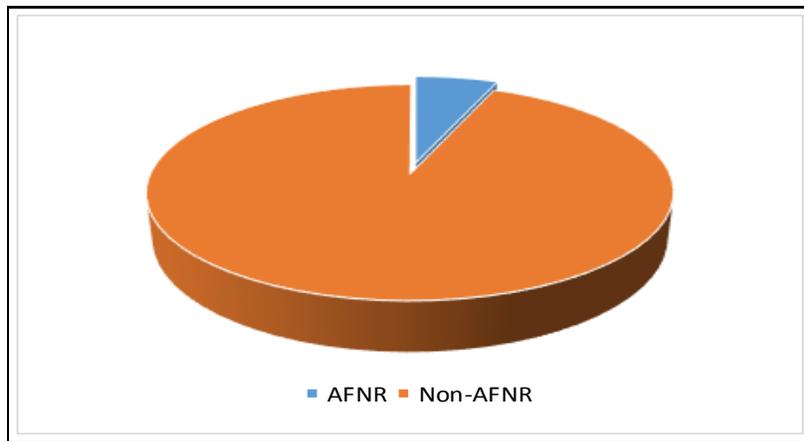


Fig. 1. Proportion of AFNR and non-AFNR enrolment, Region 1, 2nd semester, SY 2008-2009.

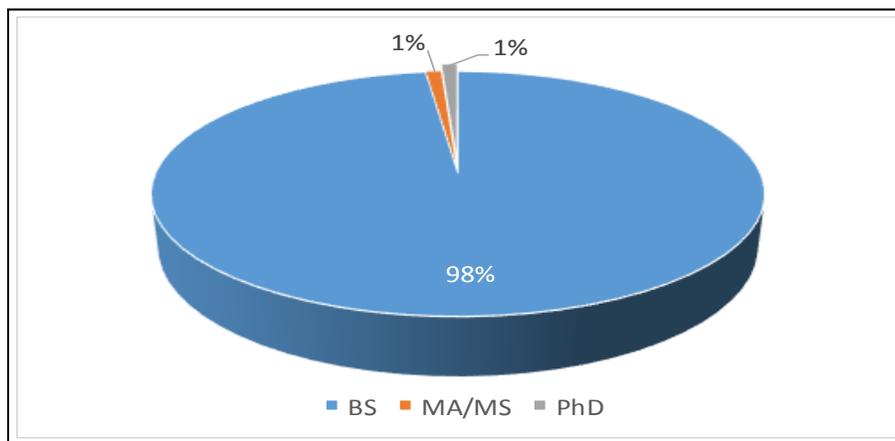


Fig. 2. Distribution of AFNR in-school students enrolled, by level of study, in Region 1, 2nd semester, SY 2008-2009.

Enrolment trend. Figure 3 shows that at the baccalaureate level, the top five AFNR programs in terms of total number of enrollees during the ten-year period were: BS Agriculture (16,354), BS Agricultural Education (4,364); BS Agricultural Engineering (3,236); BS Agricultural Technology (1,211), and BS Forestry (1,099).

Graduation trends. Similarly, BSA had the highest number of graduates followed by those in BS Agricultural Education and BS Agricultural Engineering programs during the same period (Figure 4). Parallel with the enrollment trend, there was also a decline in the number of graduates across all the AFNR programs in the region.

Findings from the four SUCs show that the courses on health sciences, education, and information and industrial technologies had the highest number of enrollees and similarly produced the most number of graduates among non-AFNR courses (Figure 5).

Several factors can explain the decreasing trend in the enrolment and graduation in AFNR programs/courses in Region 1. The first one is the offering of more programs in the same academic institution. This was observed in MMSU, PSU, and DMMMSU where there were at least 50 programs to choose from, as against that in ISPSC, where there were only two non-AFNR program offerings. The second factor is the offering of various allied courses in AFNR or non-AFNR within one university. Some examples are the BS Forestry and BS Agro-Forestry programs at DMMMSU, BS Agriculture and BS Agricultural Education at PSU, and BS DevCom and AB English Studies (non-AFNR) at MMSU. The third one is the presence and accessibility of competing HEIs within the province or municipality without admission requirements. The cases in point are: DMMMSU- Bacnotan campus with 11 HEIs in San Fernando City, MMSU-Batac campus with eight HEIs in Laoag City, and PSU-Sta. Maria campus with seven HEIs in Urdaneta. The fourth factor includes course offerings in health sciences, education, and information and industrial technologies, which attracted the most number of enrollees. Aside from the four SUCs, these courses were also offered by other HEIs in the province.

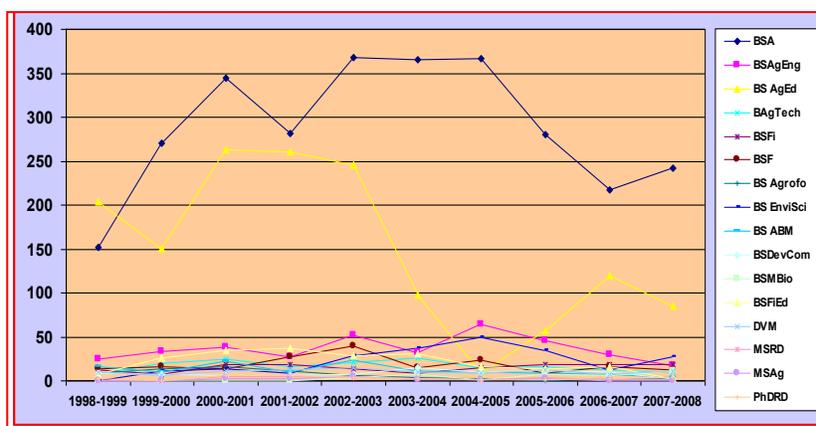


Fig. 3. Enrolment trend in the AFNR degree programs, Region 1, SY 1998-2008

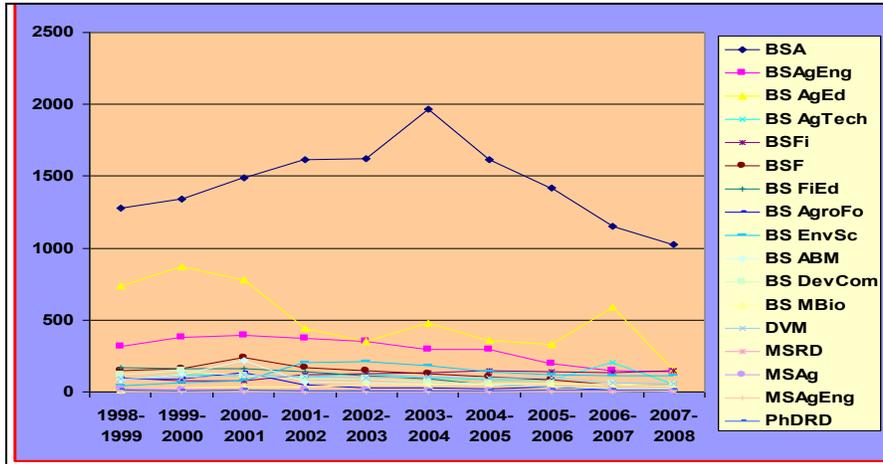


Fig. 4. Graduation trend in AFNR degree programs, Region 1, SY 1998-2008.



Fig. 5. Graduation trend in AFNR vs. non-AFNR courses, Region 1, SY1998-2008.

Dyer and Bueja (2003) found competition from other programs in a school where capital-based or non-agriculture programs are being prioritized as one of the reasons why enrolment and subsequent graduation of AFNR students have declined.

AFNR Current Human Resources

Demographic background. Generally, there were more female (54%) than male graduates (46%) in the various AFNR courses (Figure 6). As shown in Figures 6 and 7, a big majority (79%) of them were single and rural area residents (86%). Thus, females dominated the males when it comes to AFNR human resources in the region. That finding negates the traditional thinking or stereotype that generally, agriculture is “man’s world.” On the other hand, relating area of origin to decisions that affect the choice of a career, Stark (1987) claimed that the social and physical environment limits the options available and influences the people’s choices. Thus, a student who lives in the rural area is most likely to choose program like agriculture, which is most promising in terms of his/her agricultural environment.

Highest educational attainment, area of specialization and reason for pursuing AFNR. Almost all (98%) of the graduate-respondents considered their baccalaureate degree programs as their highest educational attainment (Figure 9). Table 3 shows that majority specialized in agriculture (53%); that was followed by agricultural education (12%), agricultural engineering (10%), fisheries (4%), and fisheries education (3.8%).

The reasons why graduate-respondents pursued AFNR degree programs are presented in Table 4. These are categorized into economic/financial, personal, relational/social (influence of significant others), and academic. The economic reasons are: prospect for immediate employment (62%), affordability of the academic requirements (61%), and availability of job opportunities for AFNR graduates (57%). Meanwhile, the relational/social reasons include the influence of parents and relatives (52%), as well as that of friends and peers (24%). Additionally, the personal reasons are their expectations to land on a prestigious job (51%), strong passion for the profession (35%); and community prestige (23%).

These findings are supported a the CHED tracer study among AFNR graduates (2009), which revealed that the primary reasons of the graduates for pursuing their respective degree programs are: affordability of the academic requirements (51%), prospect for immediate employment (42%), availability of course offering in the chosen institution (33%), and influence of parents and relatives (26%).

The findings imply that the graduate-respondents' choice of their AFNR-related courses rests on the opportunities available for them upon graduation or the marketability of their academic-programs. According to Stark (1987), given some options, individuals choose to do what they expect is most rewarding, whether the rewards are affection, fame, or money. Moreover, the students consider the affordability of the course to the family. Likewise, parents still play an important role on their children's choice of a degree to pursue in college. According to Weblo and Sherman (1989), parents tend to be the most influential people in the students' career decision-making processes.

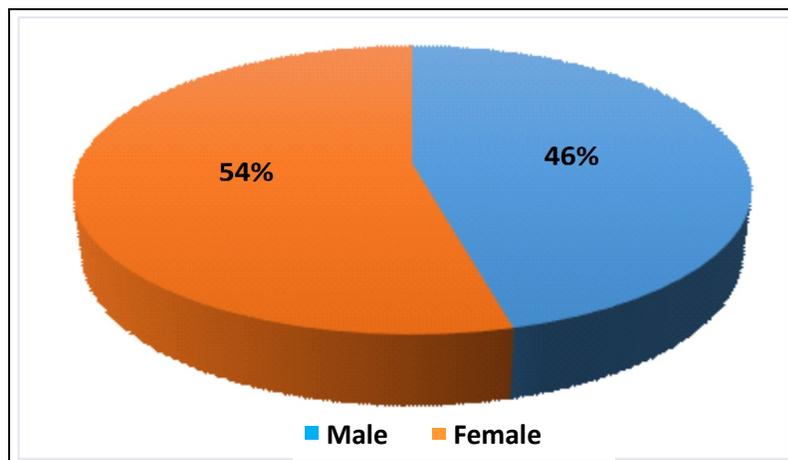


Fig. 6. Distribution of AFNR graduate-respondents in terms of gender.

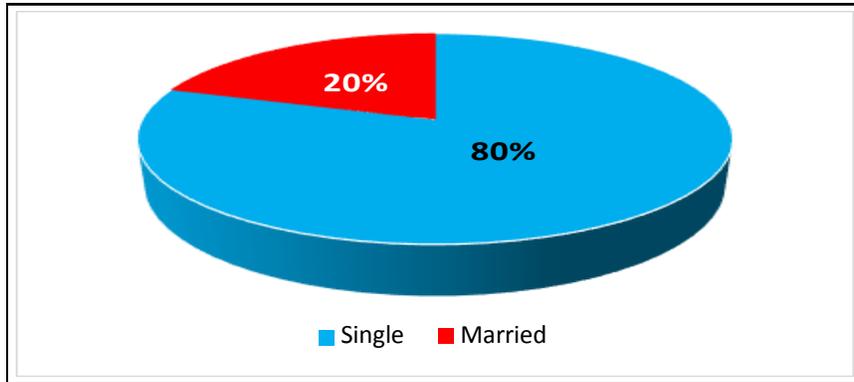


Fig 7. Distribution of AFNR graduate-respondents in terms of marital status.

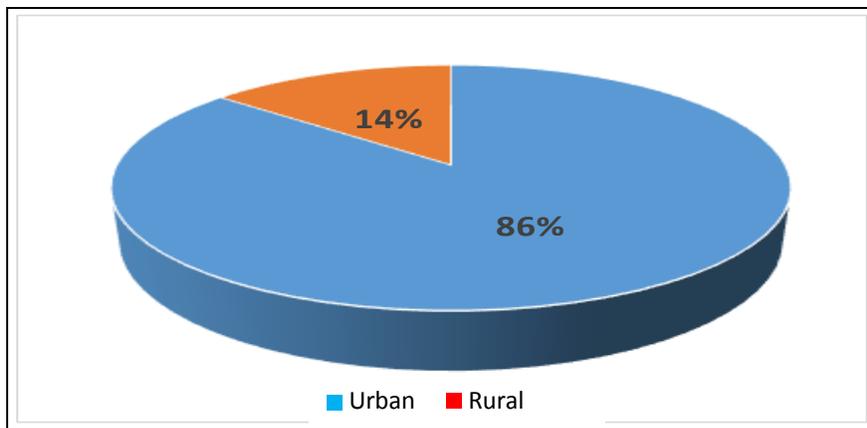


Fig. 8. Distribution of AFNR graduate-respondents in terms of location.

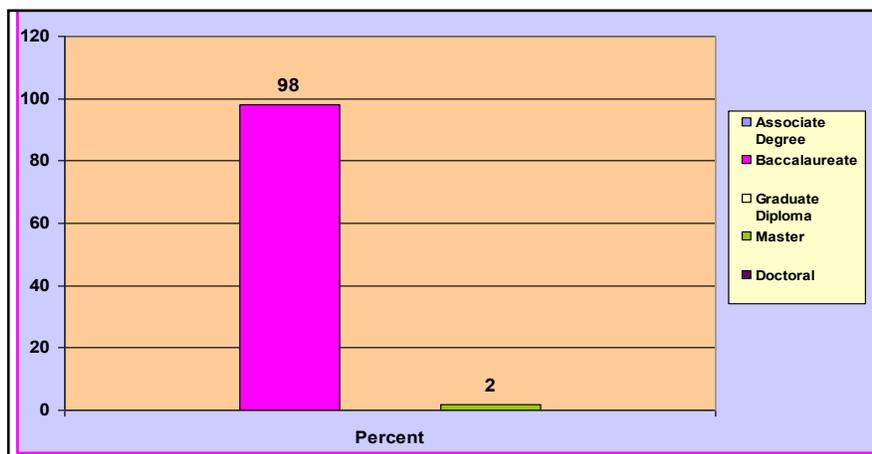


Fig. 9. Distribution of AFNR graduate-respondents in terms of highest educational attainment

Table 3. Degree programs taken by AFNR graduates.

LEVEL OF STUDY	FREQUENCY	PERCENT
<i>Baccalaureate</i>		
Agriculture	321	53.7
Agricultural Education	71	12
Agricultural Engineering	59	10
Fisheries	25	4.0
Fisheries Education	23	3.8
Forestry	18	3.0
Development Communication	18	3.0
Agribusiness Management	12	2.0
Environmental Science/ Management	16	2.0
Agricultural Technology	9	1.5
Marine Biology	6	1.0
Agro-forestry	5	0.8
Veterinary Medicine	5	0.8
<i>Graduate</i>		
Agriculture	6	1.0
Rural Development	3	0.5
Total	597	100

Furthermore, parent's occupation or income source can be a factor that influences how a child views the world of labor and employment. This perspective, however, depends on the success and failure that parents have achieved. Contrary to the claim that farmer-parents discourage their children to enrol in agriculture and related courses, Bogue (2002) found that children from families with farming background were encouraged by their parents to pursue agriculture courses, while those from non-farming communities were discouraged by their parents to pursue career in agriculture. This reality could be explained by occupational socialization, which stipulates that parents consciously or unconsciously socialize their children through the work they are engaged in (Hunt and Horton, 1984).

It was clear that the students' economic condition influenced their choice of where to study. Except for Ilocos Sur where there are two SUCs – UNP and ISPSC – the other SUCs are the only public HEI institutions in their respective provinces. SUCs are subsidized by the government. Thus, school fees are generally more affordable than those in private institutions. In terms of licensure performance, the SUCs are at par with the private institutions. This is so, because the SUCs are subject to

accreditation by authorized institutions, which is an important requirement in justifying their budget or annual government appropriation. Except for ISPSC, most of the AFNR programs of the three SUCs in the region have undergone Level II or III accreditation status. Moreover, the reputation of the institution is vouched by the Centers of Excellence or Development awarded by CHED and other awards and recognitions received from various agencies.

Financial sources. Table 6 shows that most (82%) of the AFNR graduates were financially-supported by their parents. There were also those who were supported by their relatives (9%) and siblings (3%). It was also evident that others (5%) had scholarships, while few (1%) worked while studying. Families who live below the poverty line do not necessarily prioritize their children's education. In this case, scholarships are imperative to financially-challenged but deserving students. However, to cater to those who do not perform well academically, student assistance programs are usually offered by a university, where interested students can work while studying. In these programs, the grade requirement is more flexible as compared to those scholarship programs required by group offering.

Table 4. Reasons for pursuing AFNR degree programs (n=597)*.

REASONS FOR PURSUING AFNR*	FREQUENCY	PERCENT
Economic/Financial		
• Prospect for immediate employment	369	62
• Affordability for the family	367	61
• Opportunities for local employment	342	57
• Opportunities for employment abroad	215	36
Personal		
• Prestige from available jobs	304	51
• Strong passion for the profession	207	35
• Prestige in community	143	23
Influence of Significant Others		
• Influence of parents and relatives	311	52
• Influence of friends and peers	147	24
Academic		
• Availability of course offering in the chosen institution	179	30
• Availability of scholarship	128	21
• Academic performance while pursuing degree program	104	17
• Academic performance in high school	77	12

*Multiple responses

Knowledge/Skills acquired and effectiveness of degree/course. The graduate-respondents rated the skills they acquired from their programs as very satisfactory (Table 7). Four of the most frequently-mentioned skills are proficiency in written Filipino, proficiency in spoken Filipino, specialized knowledge in AFNR, and team building. On the whole, findings indicate that when it comes to the overall mean, all the graduates of the various AFNR programs assessed their satisfaction with the skills and knowledge gained from their degree as very satisfactory.

Reasons for choosing the college or university offering AFNR programs. The graduates claimed that the university where they completed their degree program was their first choice. Table 5 summarizes the reasons behind their choice. Among which are its reputation as an excellent academic institution (36%); affordable tuition fees (25%); and track record in a field of study (13%).

In a tracer study among 500 MMSU graduates, from SY 2001 to 2004, where at least 10% finished AFNR programs, the respondents' primary reason for taking a degree program is for its "prospect for immediate employment" (Domingo, *et al*, 2007).

Table 5. Reasons behind choosing the SUC among AFNR graduates.

REASON	FREQUENCY	PERCENT
• Reputation as an excellent academic institution	179	30
• Reputation for affordable tuition fees	148	25
• Track record in a field of study	75	13
• Reputation as a renowned research institution	69	12
• High graduates' employability	64	10
• Presence of parents/siblings/relatives who are school alumni	46	7
• Enrolment of peers friends in the same college or university	10	1.6
• No response	6	1.3
Total	597	99.9

Table 6. Sources of budget for the education of the graduate-respondents

SOURCE OF FINANCE	FREQUENCY	PERCENT
Parents	490	82
Relatives	47	9
Scholarship	33	5
Siblings	19	3
Personal earnings	8	1
Total	597	100

In order to measure the effectiveness of the programs and their self-readiness, the graduate-respondents likewise presented the extent of their respective academic institution's influence on their lives under the same areas used in determining their satisfaction on learned knowledge and skills. Table 7 shows that the following had their strongest influence: team work or working with others; exposure to general knowledge and current issues; specialized knowledge in AFNR; interpersonal communication skills creative and thinking skills; and problem-solving skills.

Table 7. Knowledge and skills acquired and their effectiveness as assessed by the AFNR graduate-respondent

KNOWLEDGE/SKILL	ACQUIRED		EFFECTIVENESS	
	MEAN	INTERPRETATION	MEAN	INTERPRETATION
•Specialized knowledge in agriculture, fisheries, and natural resources	4.7	Very satisfactory	4.7	Very effective
•ICT skills	4.1	Very satisfactory	4.1	Very effective
•Proficiency in written English	4.4	Very satisfactory	4.5	Very effective
•Proficiency in spoken English	4.5	Very satisfactory	4.4	Very effective
•Proficiency in written Filipino	4.8	Very satisfactory	4.6	Very effective
•Proficiency in spoken Filipino	4.7	Very satisfactory	4.6	Very effective
•Interpersonal communication skills	4.5	Very satisfactory	4.7	Very effective
•Creative and thinking skills	4.5	Very satisfactory	4.7	Very effective
•Analytical skills	4.5	Very satisfactory	4.6	Very effective
•Problem solving skills	4.5	Very satisfactory	4.7	Very effective
•Team building	4.7	Very satisfactory	4.9	Very effective
•Exposure to general knowledge and current issues	4.5	Very satisfactory	4.8	Very effective
Overall Assessment	4.5	Very satisfactory	4.6	Very effective

Description: 5.01-6.0 - Extremely satisfactory - Extremely effective
4.01-5.0 - Very satisfactory - Very effective
3.01-4.0 - satisfactory - Effective
2.01-3.0 - Somewhat satisfactory - Somewhat effective
1.01- 2.0 - Not at all satisfactory - Not at all effective
0- 1.0 - Not applicable - Not applicable

Current employment status. Among the graduate-respondents, a big majority (68%) were employed while the others (31%) were not (Figure 10). Among the reasons for non-employment include the lack of work experience, family responsibility, and unsuitability of available jobs.

The employed graduates were working in various sectors (Figure 11). Among which are the following: private local (37%); local government (16%); private multi-national (11%); and national government (10%) sectors.

Figure 12 presents the workplaces of the AFNR graduates, which include entrepreneurial (19%); professional (18%) technical or associate professional (14%); and administrative and academic (11%) work. These work categories are consistent with those found by a CHED tracer study in 2007.

That tracer study revealed that out of the 66.6% who were employed, 19% were technicians and associate professionals, 14% were service workers, market and shop sales workers, and clerks, and 8% were professionals. Others were farmers, fishermen and forest workers, and laborers.

Current job performance. Additionally, the graduates rated their job performance as **excellent**, particularly on workplace adaptability, confidence to perform tasks, team work, and communication skills. Further, they rated themselves **good** in problem solving and decision-making, as well as using and applying ICT-related tasks and AFNR-technical skills (Table 8).

Relevance of curriculum and competencies learned. On the whole, the curricula followed by the different AFNR programs were assessed as helpful by the graduate-respondents (Table 9 and 10). Of the 597 graduates, 36% assessed their curriculum as **very helpful**.

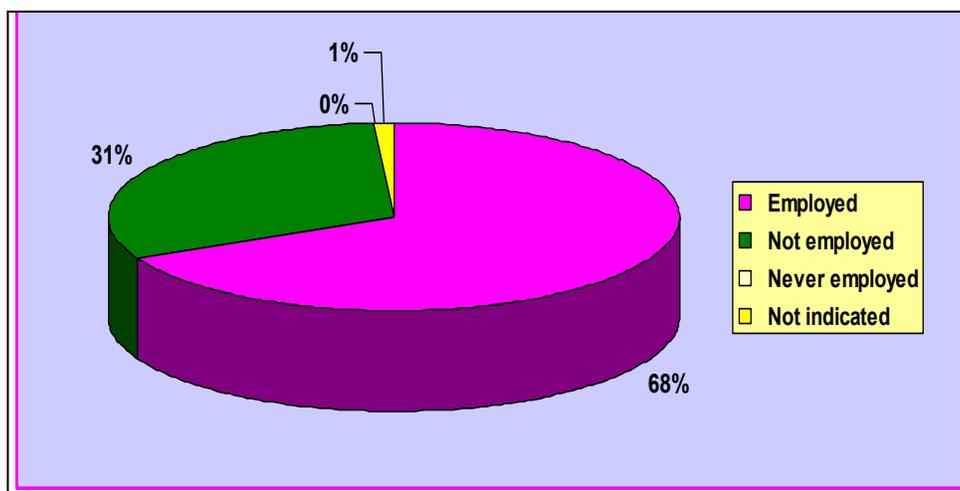


Fig. 10. Distribution of AFNR graduate-respondents in terms of employment status.

In addition, the same group of respondents claimed that the competencies they learned in college were useful in their work. Among which are communication skills (47%); human-relation skills (42%); problem-solving skills (22%); information and communication technology-related competencies (21%); and critical-thinking skills (20%). Only 19% of the graduates claimed that the AFNR-related competencies provided by their schooling were **useful** in their job.

Similarly, in the study conducted by Domingo, *et al* (2007), the findings revealed that the graduates pinpointed communication skills as among the most useful, while entrepreneurial skills are the least useful competencies learned in college.

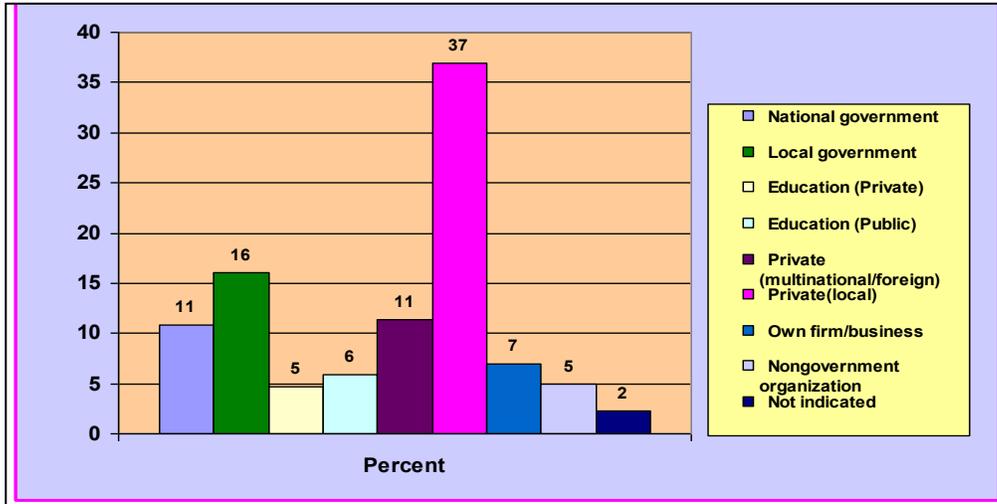


Fig. 11. Distribution of AFNR graduate-respondents by job sector.

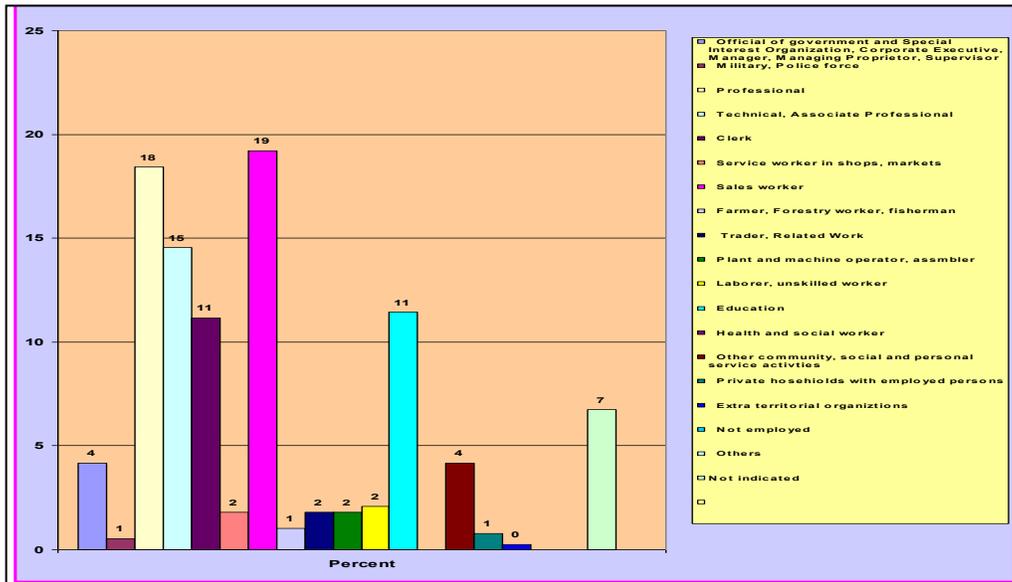


Fig. 12. Distribution of AFNR graduate-respondents by present occupation.

Table 8. Self-rating of AFNR graduates in their ability to perform current job.

ABILITY	MEAN	INTERPRETATION
Workplace adaptability	5.2	Excellent
Team work	5.2	Excellent
Self-confidence	5.1	Excellent
Communication skills	5.1	Excellent
Problem-solving and decision -making skills	4.9	Good
ICT utilization and application	4.7	Good
Other AFNR technical skills	4.6	Good

Table 9. Assessment of the AFNR curriculum provided to the graduate-respondents.

GENERAL ASSESSMENT OF THE CURRICULUM	FREQUENCY	PERCENT
Extremely helpful	115	19
Very helpful	212	36
Somewhat helpful	100	18
Not very helpful	24	4
Not helpful at all	14	2
No response	132	22
TOTAL	597	100

Table 10. Relevance of AFNR curriculum and competencies provided by the SUCs to the graduate-respondents.

COMPETENCIES*	FREQUENCY	PERCENT
Communication skills	282	47
Human skills	248	42
Problem-solving skills	129	22
Information and communication technology skills	124	21
Critical thinking skills	119	20
Entrepreneurial skills	111	19
AFNR Technical skills	116	19

*Multiple responses

Employers' Assessment of the AFNR Graduates

Employers' classification. Almost all the employers of AFNR graduates are local firms (95%). Only four employers are multinational and two are foreign (Figure 13). In the study conducted by Domingo, et. al. (2007), it was found that majority of the graduates of MMSU are employed in the educational sector particularly those operating at the local level.

Distribution of employers as to location. A big majority (75%) of the employers were in the rural areas (Figure 14). Others were based in Regions 1 (78%), 3 (15%), 4 (3%), and the National Capital Region (3%).

Employers' satisfaction with employees' knowledge in major field of study. Figure 15 highlights the employers' assessment on the AFNR graduates'/employees' knowledge and understanding. Majority (59%) of the employers indicated their satisfaction on their constituents' knowledge in their major field. A few of them (12%) were extremely satisfied on the same. These findings strengthen the employers' claim that AFNR knowledge and skills are extremely important for the employees to succeed in their work. As such, they should keep on enriching them.

Employers' satisfaction with employees' knowledge and understanding beyond their field of study. In terms of the employees' knowledge and competencies outside their field of study, majority (55%) of the employers disclosed their high satisfaction (Figure 16). Just like the trend in the preceding figure, a few (11%) of the employer-respondents were extremely satisfied with their employees' competencies in other areas outside their field of specialization.

Employers' satisfaction with employees' general skills in relation to their job requirement. In relation to the employers' satisfaction on their employees' general skills vis-à-vis the job requirements, majority (58) of the former indicated that they were very satisfied. These skills include written and verbal communication, listening, organizing information, critical thinking, building customer relations, computing, reading, basic computer programming, using equipment specific to the job, as well as leading and working in teams.

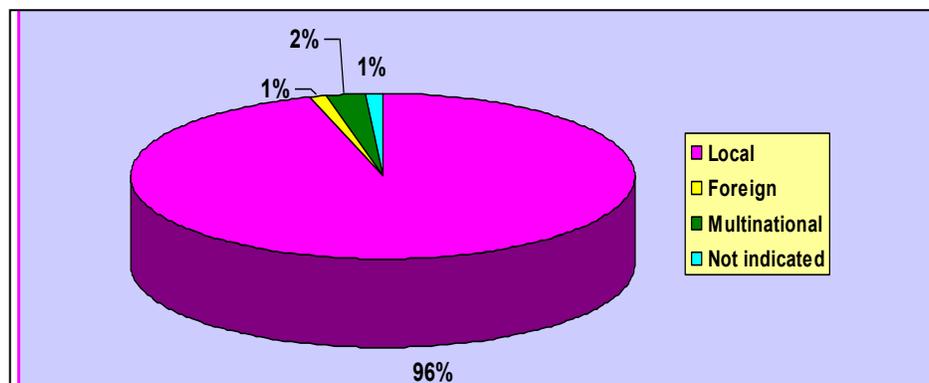


Fig. 13. Distribution of employers in terms of their scope of operations.

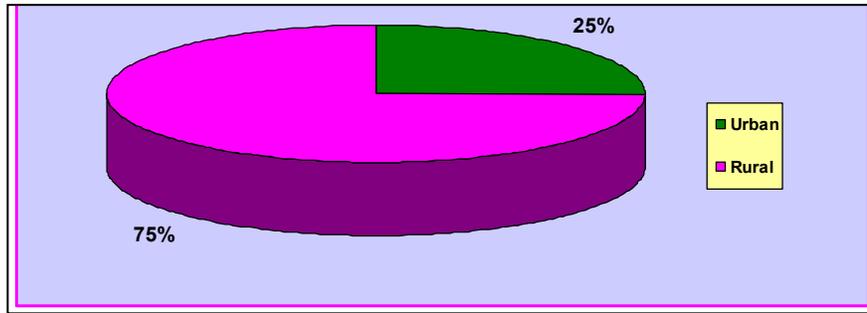


Fig. 14. Distribution of employers in terms of the location of their workplaces.

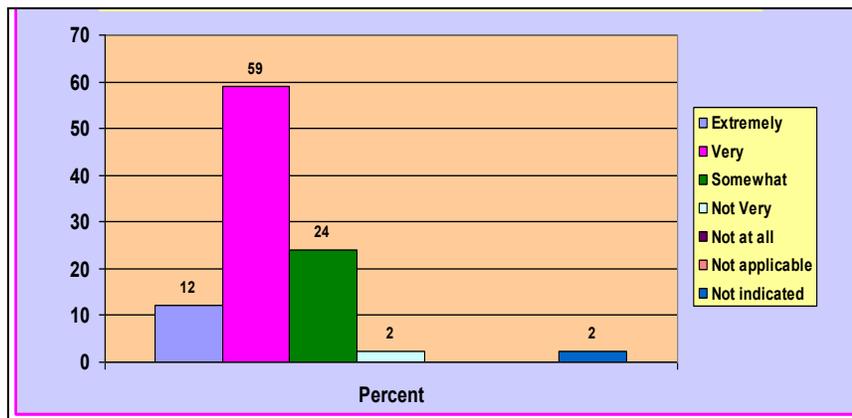


Fig. 15. Distribution of overall satisfaction with employees' knowledge in their major field of study.

Employers' satisfaction with the employees' specialized skills. Moreover, the study looked into the specialized skills shared by the employees, which were not typically expected by most of their employers. Those include managing resources (budget, subordinates), using a language other than English, managing projects, negotiating (contracts, alliances and sales), mentoring or coaching colleges, setting goals and allocating time to achieve them, and translating theory into practice. On the whole, majority (51%) of the employers were very satisfied with their employees' specialized skills.

Employers' satisfaction with employees' overall qualities. In terms of the employer's overall satisfaction with the qualities of their employees such as flexibility, creativity, empathy, reliability, integrity, positive attitude towards work, willingness to learn, understanding and following directions, and acceptability responsibility for the consequences of actions, majority (56%) claimed that they were very satisfied. However, two employers were not yet satisfied with their employees' overall qualities because they have just been newly-hired at the time of the study.

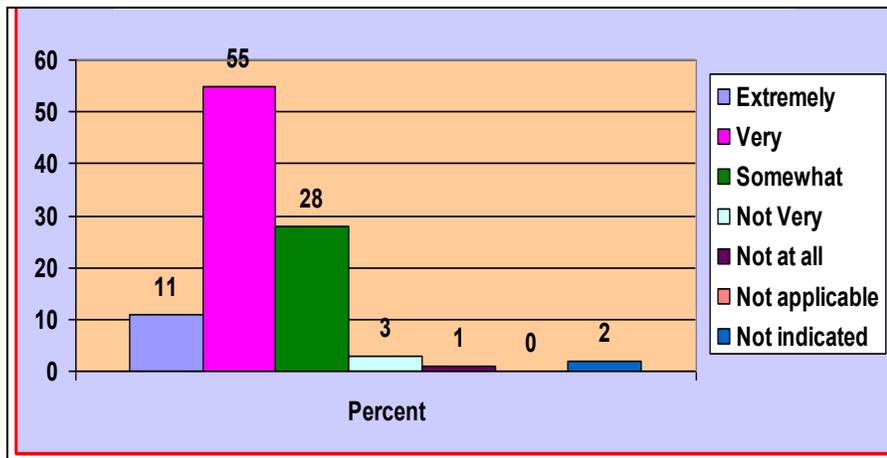


Fig. 16. Employers' satisfaction with employees' knowledge outside their major fields of study.

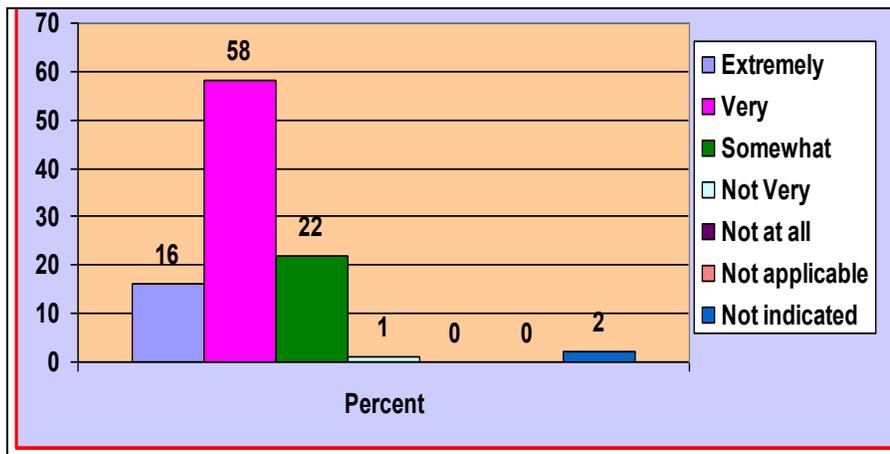


Fig.17. Employers' overall satisfaction with their employees' general qualities.

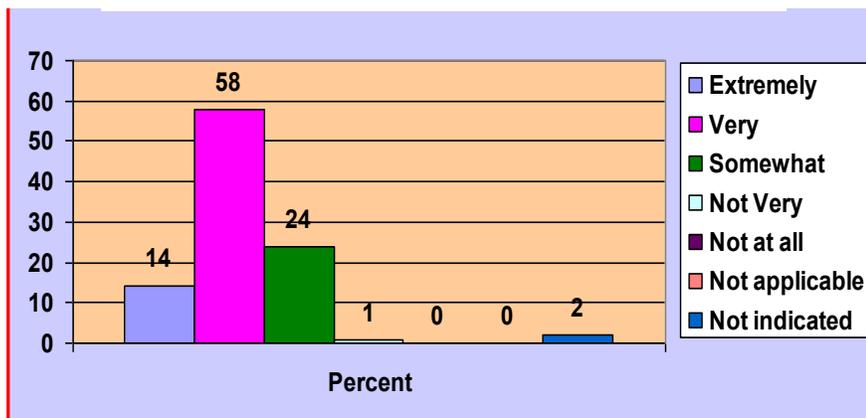


Fig. 18. Employers' satisfaction with employees' general skills.

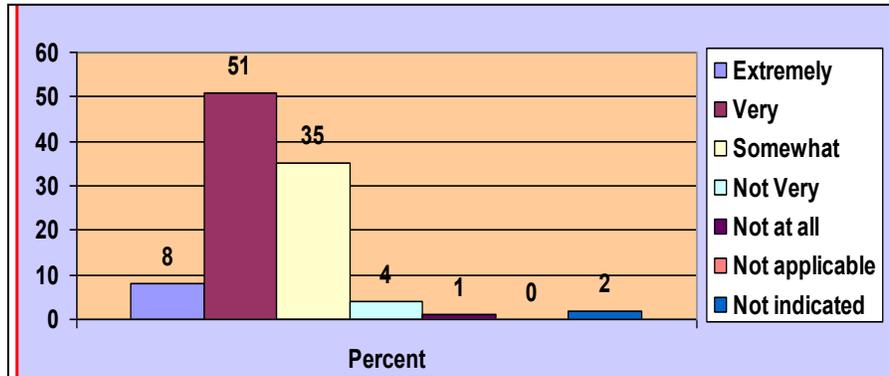


Fig. 19. Employers' satisfaction with employees' specialized skills.

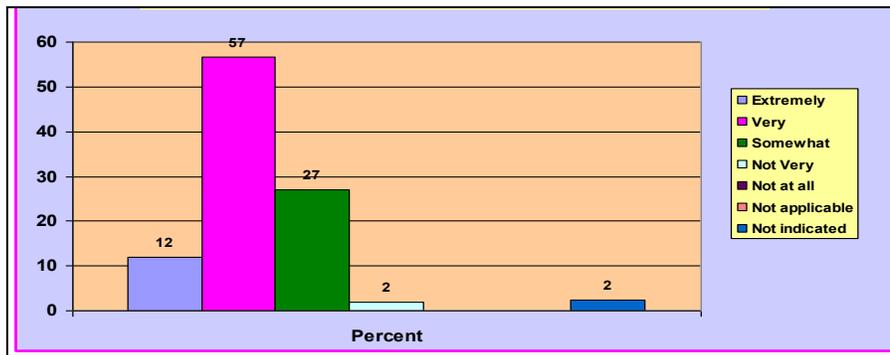


Fig. 20. Distribution of employer-respondents in terms of their overall satisfaction with their employees' college/university preparation.

Employers' satisfaction with their employees' overall college/university preparation. The study likewise covered the employers' evaluation of the overall college/university preparation of their employees (Figure 21). Parallel with the preceding trends in terms of the employer-respondents' satisfaction with their employees, majority of the former (57%) expressed the same in terms of the latter's college/university preparation for the type of work given to them.

Employers' suggestions on other skills to be emphasized in the AFNR curriculum. Most of the employers emphasized that the technical skills to be reinforced in the AFNR programs are communication (encoding) skills, computer literacy, and team building (Table 11).

Employers' projection on the future marketability of AFNR graduates. To have a general picture on the marketability of AFNR graduates, the employers were asked the possibility of hiring graduates from the various SUCs in the region. Table 12 shows that majority (64%) of the employers expressed the high chance of hiring AFNR graduates.

Among the graduates' personal background such as presence of landline or mobile phone, and the region/province of origin were found to affect graduates' employability. With regards to their academic background, honors received, type of professional examination passed, and rating were found to be determining factors in their employability (Domingo, *et al*, 2007).

Table 11. Technical skills needing more emphasis in AFNR programs as suggested by the employer-respondents.

TECHNICAL SKILL *	FREQUENCY	PERCENT
Oral communication	65	39
Written communication	60	36
Knowledge on ICT	17	10
Team building and synergy	18	10
Proficiency in written English	15	9
Proficiency in spoken English	15	9
Proficiency in spoken Filipino	3	1.8
Proficiency in written Filipino	2	1.2
Business relations	2	1.2
Self confidence	1	0.6

*Multiple responses

Table 12. Possibility of hiring SUC graduates as anticipated by the employer-respondents.

CATEGORY	FREQUENCY	PERCENT
Extremely High	26	16
Very High	107	64
Moderately High	26	15
Very Low	2	1.2
No response	5	3
Total	166	99.2

Conclusions and Recommendations

Several factors can be deduced as reasons of the downward trend in the enrolment of AFNR courses. These include the following:

- AFNR courses are less enticing for students. If given the opportunity, students will enroll in non-AFNR courses rather than in AFNR-related courses.
- With more choices of non-AFNR courses in the SUCs, less enrolment in AFNR courses is expected.
- Offering of allied/related courses in ANFR affects the enrolment in AFNR courses, e.g. BS Fisheries and BS Fisheries Education, BS Forestry and Agro-Forestry.

- Presence and accessibility of more HEIs, both private and public, offering non-AFNR courses.

Moreover, the AFNR current human resources are predominantly females, singles, rural area residents, and graduates from public secondary schools. They enrolled in public secondary and tertiary schools with their chosen degree programs as influenced by the employability of the course and the financial capability of their families.

Prepared as they may be in the world of work, employment rate is low for AFNR human resources in Region 1.

Generally, there are no issues on the academic, services, and facilities offered by the SUCs in the region. The AFNR knowledge, competencies, and skills as well as the knowledge learned outside one's major field together with the general and specialized skills learned by AFNR graduates are rated satisfactory by the employers.

In addition, the AFNR graduates are hired as contractual sales workers by local private organizations/businesses involved in marketing of agricultural products and chemicals.

The reasons of the downward trend in the AFNR enrolment can be addressed by educational institutions with the support and assistance of various agencies including the concerned local government units. Since agriculture is still the prime mover of development in the rural areas, and it has given women an opportunity to work, it implies that full support from the educational institutions to employment infrastructures be given to this sector.

Based on the findings of the study the following are recommended:

- The personal reasons that affect the downward trend in enrolment, which is rooted on economic difficulty, can be addressed by providing scholarships or student assistance that will cater to the needs of the economically-disadvantaged students.
- The academic reasons such as non-enticing/unattractive courses can be remedied by curricular enhancement and revisions to consider the suggestions of employers on the knowledge, competencies and skills that have to be integrated to improve the AFNR curricula.
- The proliferation of non-AFNR course offerings and HEIs offering non-AFNR courses within the province could be responded to by a strong political will to craft resolutions or laws in establishing such institutions. However, this should not also jeopardize the responsibility of the government to provide for the right of education and freedom of choice.

To remedy low employability of graduates in AFNR, it is suggested that:

- The government through the Local Government Units should create agricultural jobs in their communities by giving priority to agricultural investments in both government and private sectors.
- The Department of Trade and Industry should intensify the implementation of its program, “One Town One Product” for the development of local industries, which can provide employment in the communities.
- Assist AFNR graduates to establish their own agri-business ventures by linking them to sources of financial assistance with less paper requirements, as well as collateral and interest –free.
- Reorient the perspective of AFNR graduates from becoming employees to entrepreneurs.
- SUCs can increase the rate of AFNR employability by bringing their graduates to their employers through job fairs, and referrals which can be facilitated through provisions of connections/linkages or list of prospective employers/companies to their graduates.

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Literature Cited

- Bogue, P.** (2002). The attitude of secondary level students toward a career in agriculture. Retrieved from [http://www.farmersjournal.ie/image/report%202nd%, 20 September 2009.](http://www.farmersjournal.ie/image/report%202nd%20September2009)
- DMMMSU ANNUAL REPORT (2007-2008).** (2008). Don Mariano Marcos Memorial State University, Bacnotan, La Union.
- Domingo, Doreen, et al.** (2007). MMSU Graduate Tracer Study. Mariano Marcos State University, Batac, Ilocos Norte. Unpublished Report.
- Dyer, J.E. and Breja, L.M.** (2003). Problems in recruiting students into agricultural education programs: A Delphi study of agriculture teacher perception. Retrieved from http://ejse.Southwestern.edu/volumes/v11n2/articles/t01_ikeoji.pdf, 25 September 2009.

<http://neda.net/Regional Update 2008/Labor Market.htm>. Retrieved 15 September 2009.

Horton, P.B. and Hunt C. (1985). *Sociology*. 6th ed. McGraw Hill Book Company, New York.

Milestones 2007. Mariano Marcos State University. Communication and Media Relations Office, MMSU, Batac, Ilocos Norte.

PSU Annual Report, 2007. Pangasinan State University. Mega Stars Printers, Mangaldan, Pangasinan.

PSU Information Bulletin. Director for Admission and Testing. PSU, Lingayen, Pangasinan.

PSU 13th Biennial Celebration Souvenir Program, PSU, Lingayen, Pangasinan.

University Catalogue (1998-2003). Mariano Marcos State University, Batac, Ilocos Norte.

Stark, R. (1987). *Sociology* 2nd ed. Wadsworth Publishing, Co Belmont, California.

Weblo, R.B. and Sherman, R. (1989). *Schooling and Society*, 2nd ed. McMillan Publishing Co, New York.

www.ched.gov.ph/data/statistics index.html, 2008, Retrieved, September, 2009.

www.poea.gov.ph/stats/stals 2007. Distribution of OFWs by Region and Provinces for the Year 2007. Retrieved 12 September 2009.