
Problem Conditions of Animal Science Farms in Institutes of Vocation in Agriculture, Northeastern Thailand

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This study aimed to explore general conditions of teachers who were animal science farm care-takers and problem conditions of animal science farms in 10 Institutes of Vocation in Agriculture, northeastern Thailand (College of Agriculture and Technology). A set of questionnaires was used for data collection administered with 42 teachers (out of 86 teachers) obtained by purposive samplings. Percentage, mean, standard deviation, f-test, and Scheffe test were used for the statistical treatment. Results of the study were as follows:

1. Most of the respondents were males, aged more than 50 years. More than one-half of the respondents were senior professional level teachers with an average salary of 34,893.09 baht together with supplementary incomes of 7,066.600 baht together with supplementary incomes of 7,066.66 baht per month on average. Most of the respondents were bachelor's degree graduates. Their normal teaching load was 19.50 hours per week and their extra teaching load was 9.90 hours per week on average.

2. As a whole, problem conditions of the animal science farms in terms of 9 aspects was found at a moderate level. Based on its details, the following were found: 1) farm tools and equipment; 2) farm structures or buildings; 3) capital and budgets; 4) marketing/yield selling; 5) land/area; 6) animal breeds/plant varieties/feed/supplies; 7) staff and; and 8) water source and irrigation system, respectively.

3. Regarding the comparison of problem conditions of the animal science farms and general conditions of the respondents, the following were found: 1) There was no statistically significant difference between a level of opinions about problem conditions of animal science farms and age/teaching load of the respondents; and 2) There was a statistically significant difference between Agriculture subject teaching experience (years of service) of the respondents and a level of opinions about problem conditions of the animal science farms. Based on Scheffe test, it was found that the respondents having teaching experience less than 11 years had different opinions about teaching experience conditions from those having

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teaching experience for 11-20 years in terms of problems in farm structure, capital, and budgets (statistically significant difference at 0.05)

Keywords: problem conditions of animal science farms, teachers who were animal science farm care-takers, College of Agriculture and Technology, Institutes of Vocation in Agriculture.

Introduction

The facilitation of education in agriculture is important as a basis for country development. In fact, agriculture is the main occupation of people in Thailand (60%) (The National Center of Workforce Data, Ministry of Labour, 2015). Both public and private sectors facilitate education in agriculture in various levels of education. This is particularly on vocation in agriculture level. There are 10 Institutes of Vocation in Agriculture in northeastern Thailand which offer vocational certificate and higher vocational certificate. It aims to produce skillful workforce that meets needs of workforce market and is consistent with social and economic conditions of the country. Thus, teaching/learning activities focus on actual practice (Learning by doing). Farm work is essential as an important tool for teaching/learning facilitation. This systematic learning process is valuable in education. It can be said that farm work in the school is the center of direct experience in agricultural occupations of learners. Besides, it is a source of incomes earned from agricultural yield selling, product processing, academic services, and it maintain good relationships between the organization and the community. In addition, Institute of Vocation in Agriculture is an agricultural learning source and it offers trainings on appropriate technology related to plant and animal domestication. The institute has correct data and operational systems which can be responsive to mission of the institute. This conforms to a study of Siriwan (1985) revealed that the school farm project is very important to the teaching/learning facilitation in the vocation in agriculture level. Farm work is aimed to make students to have an opportunity to practice in the actual situations or apply what they have learned in the classroom to their practice. An actual experience of students is like a tool assisting them to learn and it is a teaching tool. Various problems encountered in student practice are essential that students must know. This is particularly farm work on demonstration farm and commercial farm. These farms need close attention with much resource use and many problems when compare with other farm types. According to a report of Animal Science Teachers Club (2013), livestock farm work in Institutes of Vocation in Agriculture of Thailand is still not developed as it should be and there is a tendency in a decreased efficiency in production. To develop school animal science farm work as a learning source, it needs to explore and assess farm work condition as well as problems encountered. This can be a guideline for

2038

developing standard farm work to cope with changes in technology and for sustainable development.

Objectives of the Study

Specifically, this study aimed to:

1. explore problem conditions of animal science farm in accordance with opinions of teachers who were farm care-takers, Institutes of Vocation in Agriculture, northeastern Thailand, and
2. compare problem conditions of animal science farms of the institute.

Scope and delimitation of the Study

1. Populations were 42 teachers who were school animal science farm care-takers under the supervision of the Institute of Vocation in Agriculture, northeastern Thailand. They were from the following Colleague of Agriculture and Technology: Khonkaen, Chaiyaphoom, Nakhon Ratchsrima, Buriram, Mahasarakham, Roi-Et, Srisaket, Yasothorn, Udonthani, and Ubon Ratchathani.

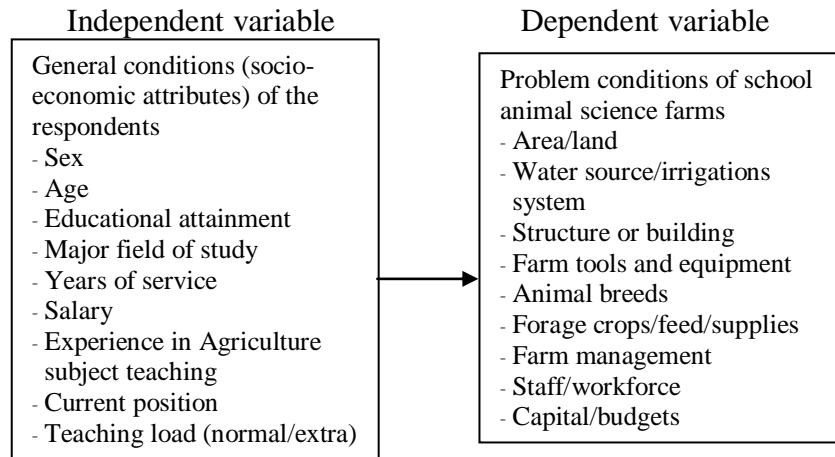
2. Variables in this study were:

- Independent variable This included socio-economic attributes of the respondents: sex, age, educational attainment, major field of study, years of service, experience in Agriculture subject teaching, current position, salary, and teaching load.

- Dependent variable Investigation of problem conditions of animal science farms in Institutes of Vocation in Agriculture, northeastern Thailand. This was in terms of the following: area/land, water source/irrigation system, structure or building, farm tools and equipment, animal breeds, forage crops/feed/supplies, farm management, marketing/yield selling, and capital/budgets.

3. Time span for data collection September-October, 2015.

Conceptual Framework



Methodology

1. This study employed a survey research. Data were collected from 42 teachers who were school animal science farm care-takers, academic year 2015.
2. The research instrument in this study was a set of questionnaires with 3 rating scales (Leekitwattana, 2012) as shown below:

Score Range	Description
2.34 – 3.00	High level of problem condition
1.67 – 2.33	Moderate level of problem condition
1.00 – 1.66	Low level of problem condition

3. Data analysis was in the form of content analysis. Percentage, mean, standard deviation, f-test, and Scheffe test were used for the statistical treatment.

Results

1. General condition (socio-economic attributes) of the respondents, Results of the study revealed that most of the respondents (69.05%) were males, aged more than 50 years (42.86%). More than one-half of the respondents (54.76%) were senior professional level teachers with an average salary of 34,893.09 baht together with supplementary incomes of 7,066.600 baht together with supplementary incomes of 7.066.66 baht per month on average. Most of the

respondents (71.43%) were bachelor's degree graduates. Their normal teaching load was 19.50 hours per week and their extra teaching load was 9.90 hours per week on average.

2. Types of animal science farm to be responsible and problem conditions of the animal science farms in Colleges of Agriculture and Technology, northeastern Thailand were follows table 1 and table 2.

Table 1. Types of animal science farm to be responsible

Items	n	%
Designated farm task		
Meat-type chicken farm	13	30.95
Dairy cattle farm	8	19.05
Beef cattle farm	8	19.05
Pastoral area	8	19.5
Egg-laying type chicken farm	7	16.67
Sheep/goat farm	3	7.14
Pig farm	2	4.76
Mixed farming and new agricultural theory	2	4.76
Other	9	21.43

Table 2. Problems of the animal science farms

Items	Problem		
	\bar{X}	S.D.	Description
1. area/land			
1.1 Fertility/suitable for current farming	1.85	0.68	Moderate
1.2 Adequateness/appropriateness	1.95	0.76	Moderate
1.3 Clear boundary with fence	2.09	0.79	Moderate
1.4 Safe and appropriate area	2.14	0.75	Moderate
Total	2.01	0.61	Moderate
2. Water source/irrigation system			
2.1 Adequate and appropriate	1.95	0.79	Moderate
2.2 Quality of water	1.73	0.66	Moderate
Total	1.84	0.61	Moderate
3. Structure or building			
3.1 Enough	1.97	0.78	Moderate
3.2 Good quality with appropriateness	2.42	0.76	Moderate
3.3 Hygiene	2.23	0.72	Moderate
3.4 Enough light	1.97	0.78	Moderate
Total	2.15	0.57	Moderate
4. Farm tools and equipment			
4.1 Enough	2.23	0.69	Moderate
4.2 Good quality and appropriateness	2.40	0.66	Moderate
4.3 Systematic keeping	2.16	0.69	Moderate
4.4 New and modern	2.30	0.81	Moderate
4.5 Convenient using	2.23	0.79	Moderate
Total	2.27	0.60	Moderate
5. Animal breeds/plant varieties/feed/and supplies			
5.1 All are adequate	2.11	0.77	Moderate

Items	Problem		
	\bar{X}	S.D.	Description
5.2 Appropriate and good quality of animal breeds	2.14	0.78	Moderate
5.3 Appropriateness and good quality of forage crops	1.88	0.59	Moderate
5.4 Adequate supplies and chemicals	1.95	0.66	Moderate
5.5 Appropriateness and good quality of supplies/chemical	1.95	0.66	Moderate
Total	2.00	0.56	Moderate
6. Staff/workforce			
6.1 Adequate teachers for farm care-taking	1.92	0.83	Moderate
6.2 Adequate staff/workforce	2.14	0.78	Moderate
6.3 Staff and workforce are knowledgeable and appropriate with farm tasks.	1.90	0.69	Moderate
6.4 Staff and workforce can transfer knowledge and experience to students.	2.04	0.73	Moderate
6.5 Staff and Workforce are friendly.	1.54	0.70	Low
6.6 Support and assistance of concerned college personnel	1.97	0.74	Moderate
6.7 Support and assistance of students	1.71	0.74	Moderate
6.8 Support and assistance of external people	1.90	0.72	Moderate
Total	1.90	0.53	Moderate
7. Capital and budgets			
7.1 Appropriate and adequate capital/budgets	2.26	0.76	Moderate
7.2 Support from external agencies	2.11	0.88	Moderate
7.3 Convenience in disbursement	2.11	0.67	Moderate
7.4 Allocation of budgets for agricultural purposes and academic services	2.09	0.61	Moderate
7.5 Commercial farm budget allocation	2.14	0.68	Moderate
Total	2.14	0.57	Moderate
8. Farm management			
8.1 You have freedom in farm management	1.88	0.67	Moderate
8.2 College administrators join farm activities	2.09	0.69	Moderate
8.3 Division administrator join farm activities	1.73	0.66	Moderate
8.4 Farm management is in accordance with academic principles	1.78	0.71	Moderate
8.5 Farm management has a low level of problems	2.14	0.64	Moderate
8.6 Profitability of farm operation is satisfied	2.07	0.63	Moderate
8.7 There is good management of incomes and expenses	1.90	0.69	Moderate
8.8 Students are interested in the farm and farm activities	1.59	0.66	Low
8.9 As a whole, there is a good system of farm management	2.00	0.69	Moderate
8.10 There is a system of data filling	2.00	0.62	Moderate
8.11 The community is interested in farm activities	1.76	0.61	Moderate
Total	1.92	0.44	Moderate
9. Marketing/Yield selling			
9.1 There is a college market for selling farm products.	1.80	0.70	Moderate
9.2 There is a town market to purchase farm products.	1.85	0.68	Moderate
9.3 There is a town market to purchase farm products.	2.02	0.78	Moderate
9.4 You are ready to sell farm products.	1.97	0.68	Moderate
9.5 There is a committee on farm product selling	2.04	0.73	Moderate
Total	2.03	0.85	Moderate
Grand total	2.05	0.45	Moderate

Table 3. Comparison of problem conditions and years of service

Problems	Age			F	Sig	Scheffe
	Less than 11 Years	11-20 Years	More than 20 Years			
1. Area/land	1.85	2.33	1.95	1.74	0.18	-
2. Water source/irrigation system	1.50	1.94	1.95	2.15	0.13	-
3. Structure or building	1.82	2.50	2.16	3.72	0.03*	Less than 11 Years
4. Farm tools and equipment	1.94	2.31	2.40	2.19	0.12	-
5. Animal breeds/forage crops/supplies	1.82	2.28	1.98	1.72	0.19	-
6. Staff and workforce	1.67	2.18	1.89	2.22	0.12	-
7. Capital and budgets	1.72	2.51	2.19	5.66	0.00*	Less than 11 Years
8. Farm management	1.87	1.96	1.93	0.11	0.88	-
9. Marketing/yield selling	1.80	2.13	2.10	0.50	0.61	-
Total	1.77	2.24	2.09	2.91	0.06	

* a statistical significance level at .05

Table 4. Comparison of problem conditions and Experience in Agriculture Subject Teaching

Problems	Age			F	Sig	Scheffe
	Less than 11 Years	11-20 Years	More than 20 Years			
1. Area/land	1.81	2.00	2.27	1.43	0.25	-
2. Water source/irrigation system	1.45	2.00	1.97	3.29	0.04*	No difference was found
3. Structure or building	1.81	2.50	2.18	4.08	0.02*	Less than 11 Years
4. Farm tools and equipment	1.90	2.46	2.37	3.07	0.05	-
5. Animal breeds/forage crops/supplies	1.78	2.35	1.98	2.79	0.07	Less than 11 Years
6. Staff and workforce	1.65	2.15	1.92	2.25	0.11	-
7. Capital and budgets	1.74	2.48	2.20	5.30	0.00*	Less than 11 Years
8. Farm management	1.85	2.03	1.92	0.39	0.67	-
9. Marketing/yield selling	1.78	2.28	2.06	0.88	0.42	-
Total	1.75	2.28	2.10	4.10	0.02*	Less than 11 Years

* a statistical significance level at .05

Discussions

According to the study on problem conditions of the animal science farms of the Institute of Vocation in Agriculture, the discussions were as follows:

Most of the respondents (69.05%) were male and held senior professional level teachers (54.76%). It can be said that almost one-half of the respondents who are possible for the school animal science farm are more than 50 years old (42.86%). More than one-half of the respondents (54.76%) have more than 20 years of teaching experience and their educational attainment is bachelor's degree (54.14%). The respondents have teaching load (official and extra hours) for 29.40 hours per week on average. This is considered as a hard work for them. The respondents who are responsible for the school animal science farm are willing to work for the college forever (95.24%).

School animal science farm work assigned by the college were: meat-type chicken farm, aquaculture farm, ostrich farm, dairy cattle farm, beef cattle farm, egg laying chicken-type farm, sheep/goat farm, swine farm, integrated farm, and new theory farm. All of the farms have specialized teachers responsible for it. Some teachers are responsible for only one farm whereas some teachers are responsible for more than one farm. However, they intend to teach at the college until they will be retired. Because they love teacher profession in animal science and they are near to their family. This conforms to a study of Siriwan *et.al.* (2003) which found that teachers taking care of college farm are satisfied with their college and they intend to work there until they will be returned.

As a whole, the respondents who are school farm care-takers had a moderate level of their opinions about problem conditions of school animal science farm in terms of 9 aspects: farm tools equipment, farm structures, capital and budgets, marketing/yield selling, animal breeds, forage crops, feed and supplies, area/land, staff and workforce, and water source/irrigation system (\bar{x} = 2.27, 2.15, 2.14, 2.03, 2.01, 2.0, 1.92, 1.90, and 1.84, respectively). This conforms to the Animal Science Teacher Profession Club (2013) that reported that school animal science farm work throughout the country have rater big problems. For examples: buildings are dilapidated and inadequate; inadequate animal breeds; lack of support in budgets; farm management is not flexible; and the market system is uncertain. Besides, Panyakhom *et.al.* (2014) reported that there is a low level of appropriate and good structures on the farms. This might be because it has been using for a long time and it is not improved. This also conforms to a study of Panyakom *et.al.* (2013) which found that higher vocational students at Ubon Ratchathani College of Agriculture and Technology have a moderate level of satisfaction with farm tooos and

equipment based on number, quality and convenience. They suggested that the college should support or improve it to have adequate and modern farm tools/equipment.

Regarding the comparison of opinions about problem conditions of animal science farm in the colleges and Agriculture subject teaching of the respondents responsible for the farms, there is a statistically significant difference at 0.05 with problem conditions of the school animal science farms. For the comparison with agriculture subject teaching experience (Scheffe test) it is found that the respondents responsible for the school animal science farm (teaching experience is less than 11 years) have different opinions than those having teaching experience for 11-20 years in terms of farm structure, capital, and budgets. This might be because the former use the school animal science farm as a teaching tool so they are very intensive in farm development.

Regarding the comparison of opinions about problem conditions of animal science farm in the college and teaching load (office hours/extra hours) of the respondents responsible for the farms, as a whole, there is no statistically significant difference. Based on an average mean score, it is found that those having office hour teaching load for 21-25 hours per week have opinions about the problems condition at the level of 1.98. This might be because those having less extra hour teaching load have less time and an opportunity to experience farm problems. Meanwhile, the respondent responsible for the farm and have more extra teaching hours must deal with farm work for a long time.

Suggestions

According to results of the study, the following are suggestions:

1. Animal science farm work of Colleges of Agriculture and Technology in northeastern Thailand has a high level of problems. Thus, it should be supported and promoted so that it can truly enrich skills and experience of students.
2. It should have clear policy on school animal science farm work in terms of educational and commercial aspects. This can truly be a source of sustainable income generating and learning.
3. The farm management must be clear and systematic in accordance with the structure of farm management. Also, all concerned parties must coordinate.
4. Budgets should be allocated adequately and continually for effective farm operation.
5. Other task aside from teaching should be reduced so that teachers can fully manage the school farm.
6. Farm care-takers should be prepared in advance to replace teachers who are going to be retired.

7. It should have continual seminar/training, educational trip, and operative education to develop knowledge, skills, and attitudes of personnel on animal husbandry.

8. Workforce should be provided adequately and it must be appropriate with farm size. Besides, incentives should be offered to them.

9. Farm structures, tools, equipment, and appropriate technology should be improved for effective farm work.

10. Water supply system should be provided adequately for livestock farm and forage crop plots.

11. Animal breeding must be diverse and with good quality to meet needs of the market. This can be done with the coordination with the Department of Livestocks.

12. It should have continual provision of market. It can be done by forming a committee promoting yield selling and production promotion and with good public relations.

13. It should have the construction of morale support which may be in the form of incentives.

14. Farm lay out must be designed to meet standard in terms of fence, safety, disease control, etc.

15. Farm waste disposal must be managed for utilization and environmental conservation. This can be done through the construction of bio-gas system, water treatment, etc.

16. Farm work should be coordinated with the community so as to be a good model for livestock domestication. Also, the farm must be a source of learning and training for the community.

17. Each farm must be developed sequencing based on importance and necessity.

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