

Chapter 6

Discussions and conclusions

6.1 Classification of scales of pig production

In comparison to the un-official classification of pig production in Thailand, as presented in Chapter 1, the research results found that none of the study's backyard producers exactly followed the description for "traditional producers" who used only indigenous low-cost low-nutrition feed mixed with household waste. In fact, all the backyard producers in the study combined rice bran and broken rice with some amount of high-quality commercial feed, while vegetables were added by some farmers. It seems that the thorough integration of the Mae Taeng study area into a cash economy and its receipt of much information and "modernized" production practices in the district and province have influenced all aspects of village farming, so that the use of cash inputs is already the status quo.

Nevertheless, the majority of backyard producers who operated at the lowest scale of production were found to share a low profit-orientation; this resulted in a style of relatively low-input, low-labor management. For ease of discussion, this group was referred to as the "low-profit"

group, although the term refers to the motivation of the producers rather than to any imposed limit on their profits.

A second group of backyard producers emerged, which provided better quality feed than the "low-profit" group. In many ways they resembled what was described as "semi-commercial" producers. However their cash inputs were often high because of their preferred use of complete feed rather than crop by-products. This group was noted for its different management practices which separated it from the first group, and placed it further along a continuum of commercialization. This group can also be identified by the feed components used (complete feed only, or "Diet 5" in the study) which matches the feeding practices of typical semi-commercial producers.

6.2 Discussion of farmers' objectives

This study highlighted the objectives and attitudes of the farmers towards backyard pig-production. Since the classification of farmers by farm size had been effective in identifying general economic and social background and trends, farmers were again grouped into the three categories for analyses of farmers' aims, knowledge, and management

practices in pig production. The important result appeared that in many cases farmers from the small and medium-sized farms shared very similar pig management practices and beliefs, while the farmers from larger-sized farms were more likely to express different ideas and actions.

For example, small and medium-scale farmers' primary objective in raising pigs was as a source of occasional and supportive income, whereas most larger-scale farmers cited main and continual income. This suggests that larger-scale farmers also produced pigs at a larger scale. Likewise, the majority of small and medium-scale farmers cited feed cost as their main constraint in using commercial feed, while most larger-scale farmers found the time and distance required to travel to buy the feed to be their major inconvenience, rather than the cost. Finally, while all farmers indicated market price to be the main criterion for selling their pigs, it was notable that none of the larger-scale farmers mentioned cash needs as a primary reason, while a noticeable minority of both small and medium-scale farmers ranked cash needs over any other criterion for sale.

These formal survey results suggest that regarding farmer objectives and concerns two groups emerge: the small and medium-scale farmers together are cash-limited and see

pig production as a low-scale activity, which helps them save their cash from needless expenditure on other goods, while the second group of larger-scale farmers have enough economic resources to buy feed, but are perhaps more time-limited because of their agricultural activities. Their pig-raising reflects their higher economic standing because they often raise larger pig herds per farm, which require more cash inputs and was later seen to be more profitable.

The attitude analysis which quantified and measured farmers' attitude towards pig-raising provided the most concrete evidence that the farmers of this study actually represent two distinct groups in terms of management aims and practices. The clear-cut bimodal distribution of farmers' responses indicated a majority with low attitude scores, representing a low level of profit-motivation in their pig-raising ("low-profit oriented group"), and a minority with significantly higher attitude scores, meaning that their motives for pig production were primarily for achieving profit ("semi-commercial group"). The first group's relatively low concern for profits was explained by their other motives: saving cash in a form which could readily be "liquidated" according to household need, reducing unnecessary expenses by tying up petty cash in pig production, and making good use of spare time.

Attitude is widely understood to shape belief and be followed by action. The highly significant correlation of attitude with actual cash expenses and cash income from pig production underscored the point that the low-scale pig producers were not aiming at high profits as is often incorrectly assumed, but were fulfilling other social and small economic needs of their households. This explains their apparent satisfaction and continued pig-production despite unremarkable profits, if any. Regarding the two distinct groups, then, the first group was identified as operating with a "low-profit" orientation, while the second group represented a "near semi-commercial" orientation.

6.3 Discussion of production components in pig-raising

The production analyses provided important information on the respective performances of the "low-profit" group and the "semi-commercial" group. The significant result was that the feed conversion ratio (FCR) for the semi-commercial group (3.50), that is, for those pigs fed only complete feed, was much lower and therefore better than for the low-profit group (which used various combinations of vegetables and commercial feeds). Comparing the FCRs for backyard pigs it was found that the

pigs fed vegetables with complete feed were the most efficient at converting feed to weight gain (4.63), and when averaged, vegetable diets had a lower FCR than non-vegetable diets (5.12 versus 5.61 respectively). The effect of diet on FCR was found significant through statistical analyses.

However, feed costs per unit weight gain were also higher in semi-commercial production (20 Baht) than in low-profit production (16.1 Baht). So although pigs raised by semi-commercial feed standards are biologically more efficient, the producers must have enough cash resources to continue. This standard of production may not be realistic for most backyard producers, who are only trying to save their limited cash in a small-scale animal investment.

An important piece of news for backyard producers is that the vegetable-complete feed diet, which had relatively high biological feed conversion efficiency, also required the lowest feed cost per unit weight gain. The vegetable diets, on average, also showed lower feed costs than the non-vegetable diets, which should encourage farmers to make use of low-cost and nutritious vegetable supplements. So if farmers cannot afford the pure complete feed diet, they might economize on feed costs and achieve a reasonable feed efficiency by combining complete feed with vegetables.

Apparently, combining concentrate feed with vegetables, although also a low-cost diet, resulted in very poor feed conversion efficiency in this study. This may have been because farmers tried to reduce the proportion of expensive concentrate to the point that little nutritive value was present. Further studies which analyzed the FCR and feed costs for different proportions of concentrate (or complete feed) would be helpful, especially since most farmers do not follow the proportions recommended by the feed manufacturers.

6.4 Discussion of economic components in pig-raising

The information on growth performance and feed costs for backyard farmers is given another dimension by economic analyses. Cost and return analysis provided several indicators of economic efficiency. While net cash benefits were greater for semi-commercial farmers (256 Baht versus 179 Baht for low-profit farmers), overall cash costs were also much higher, again showing that the larger scale of production may not be possible for cash-limited backyard producers. However, in terms of return value per baht invested, even the low-profit groups are succeeding.

The benefit-cost ratio (BCR) averaged for low-profit producers was 1.05; of this group, those who used vegetable diets had a BCR of 1.08. The latter is not much different from the semi-commercial BCR of 1.10 for complete-feed pigs. When labor "costs" were excluded from the analyses, the adjusted BCR for the vegetable diets was 1.20, actually higher than for the complete-feed diet (1.16). Finally, although the returns to capital (RTC) for the four "low-profit" diets and the semi-commercial (complete feed) diets were equal, at 1.15, the producers using vegetables again were in the lead with a RTC of 1.18. Therefore, despite lower overall profits for low-profit oriented producers, which is because of the lower scale of their enterprise, the conclusion must be that the economic efficiency of their system as measured by BCR and RTC is still acceptable and competitive with the more semi-commercial producers. Particularly low-profit producers who add vegetables to their diets are making efficient use of their capital.

The gross margin analyses provided more complete details for comparing the profitability of different management practices. Of course, the gross margin for semi-commercial producers, represented by the complete feed diet, was higher than for any of the other backyard diets. But again, the vegetable with complete diet had higher profits

than the other low-profit diets, and would be a good option for cash-limited farmers in terms of profitability. It would require some more labor hours to prepare the vegetables, but for households with elders or members able to take on the job, the improved production efficiency (FCR), economic efficiency (BCR, RTC) and profitability (GM) over other diets make it a recommendable option. On the other hand, the study relied on the reported results from the farmers themselves, and was not a controlled experimental study. Thus other unknown differences in management practices may also have affected the results, and a final recommendation would be more accurate after further controlled studies.

In terms of using own feed products, such as rice by-products from agriculture or rice mills, the greater the proportion of such products included in the pigs' diets, the greater the gross margin achieved. Naturally this is gained by reducing feed costs, and is an important strategy for farmers with large paddies or with access to others' by-products. Farmers have reported making use of neighbors' rice by-products, when their neighbors do not want or need them, so it is also possible for small-scale farmers to benefit from others' available by-products, even if their own farms are small. A diet of only by-products would of

course be low in nutrition; the gross margin analysis indicated that even when 80 to 100 percent homefeed is used, those diets including vegetables are still more profitable than those without vegetables. A combination of low-cost and improved nutrition from vegetables would be the likely explanation, in addition to possible other unstated management practices.

For low-profit producers, the gross margin analysis of herd size indicated an optimal herd size of 6 to 10 pigs per farm. Semi-commercial producers in the study only raised smaller herds of 3 to 5 pigs, so a comparison of profitability was not possible. But the data suggested that at least for the low-profit producers, raising larger numbers of pigs (more than ten) was not necessarily as profitable on a per pig basis, and in most cases not economically feasible for low-scale producers.

6.5 Conclusions

These economic and production indices give a detailed picture of economic efficiency and profitability of various management practices and of two different scales and orientations of producers; they must, however, always be

evaluated in the light of interaction with the social factors as discussed above. Thus, the near semi-commercial producers achieve good production efficiency and profitability, in keeping with their stronger attitudes towards profit-making. The producers with low-profit motivation have widely variable production and economic efficiency, but certain groups (such as those using vegetable diets) achieve adequate production efficiency, minimize feed costs, have competitive gross margins of profitability, and respectable measures of economic efficiency (BCRs and RTCs). The allocation of resources such as income and labor reflects their attitudinal priorities: those who view pig-raising as a source of minor supportive income devote little time and little cash investment to the enterprise. Whenever possible, farm resources such as crop by-products are used.

Admittedly, for some backyard producers in the study, the biological efficiency of their pigs and their margin of profits were rather low; sometimes no net profit was gained, and occasionally net losses were sustained. First, it must be remembered that their primary goal is usually to save cash by investing in a low-input activity. For the most part, they achieve this goal, and when unable to, they abandon their pig production until market prices rise again.

Secondly, their production and economic efficiency might be improved even staying within a low level of cash input, by varying quantity and quality of feed ingredients. Thirdly, although the question of breed has not been addressed in this study, it is certain to have some influence on the biological efficiency of pigs fed different diets.

The production and economic gains are the result of management practices which reflect the interaction of attitude and motives towards pig-raising with available economic resources and technical knowledge. This study indicates that pigs perform an important role in the small farm economy. Thus, although actual profits are small, the contribution to household budgeting is important, especially for the "low-profit" group which aims for savings. The social role can be understood as the fulfillment of farmers' goal of saving cash, as well as their satisfaction at making good use of extra "free" time before and after crop activities. The sense of added security from investing petty cash into pig-raising would also indicate risk avoidance, since unexpected cash needs can be met by selling the pig. However, this security is limited by unstable market prices and by collaboration between pork dealers and retailers who influence pork prices. High profits are not the only goal for most farmers; but if profits sink too low

or the pig enterprise does not break even, the flexible nature of pig-raising at the backyard scale allows farmers to simply stop for a while.

Further studies can help identify optimal proportions of home and bought feed, in the context of limited cash resources, and include the effects of raising different breeds. The results of such studies should always be balanced with the objectives and attitudes of farmers, such as those presented here, which will enable farmers to reach management decisions on the basis of their social concerns, production ability, and the economic efficiency of their system.



ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่
Copyright© by Chiang Mai University
All rights reserved