

COURSE EXPERIENCES AND PERCEPTIONS OF FARMERS IN ESFAHAN AS A BASIS FOR A COMPETENCY PROFILE OF EXTENSION INSTRUCTORS

Mostafa Karbasioun, Ph.D.
Martin Mulder, Professor and Chair
Harm Biemans, Associate Professor
Wageningen University

Abstract

The purpose of this study was to analyze farmers' experiences with and perceptions of agricultural extension courses and their instructors in Esfahan, Iran. This study is part of a larger project on the development of a competency profile of extension instructors. Many attempts have been made to develop competency profiles for professionals (Shim, 2006). A perennial problem is the extent to which differentiation is needed as a consequence of the characteristics of the target group (Mulder, Wesselink, & Bruijstens, 2005). This study, conducted in 17 different townships in the province of Esfahan, Iran, involved interviews with 27 farmers and a survey of 102 farmers who participated in course. Data were collected on the following factors: motives for course attendance, course appreciation, topics for future courses, and the competence of the agricultural extension instructors (AEIs). The relationships between farmers' personal and farm characteristics and the factors were also examined. Based on the results of this study, a general competency profile is possible, but that variation is needed as to the age, gender, educational level, and learning motives of farmers. Target group stratification and internal differentiation in courses should be included in the competency profile.

Introduction

An important part of the agricultural extension service in Iran is the provision of courses to farmers. Agricultural extension instructors (AEIs)¹ do not receive any specific training before they are asked to teach the courses. Nor are there special arrangements for professional development. Course instructors, who deliver essential information and skills to farmers during short-term courses, develop their teaching skills in practice. If they receive less than positive evaluations, they are replaced by other candidates, just like in commercial training settings. Through this selection process, the final quality of the AEIs is relatively high, but there is a considerable trade-off with the selection of these professionals. The general idea is that through appropriate preparation of extension workers for the role of instructors, the selection process and overall organization of the courses would be more cost-effective.

Because there are no specific training programs for AEIs, a need exists for developing a training program. A first step in that process is to conduct a needs assessment, and to design a job competency model for extension instructors. The instruction can be viewed as a human resource development (HRD) role, and thus, the methodology to develop competency profiles for HRD professionals can be employed. This has been done recently in the purchasing profession (Mulder et al., 2005) and for the extension profession in Korea (Shim, 2006). While these studies concentrated on analyses of expert opinions, interviews with job holders and broad roles of extension, the present study on the development of a competency profile for extension instructors included an analysis of the experiences and perceptions of the target group of the extension instructors, i.e., the farmers. This is particularly relevant for evaluating the question whether the competency profile should be differentiated according to the heterogeneity in the needs

of the target group, or whether it could be sufficient to use one comprehensive competency profile.

The competency profile in turn could be used as a basis for the design of a curriculum for training extension professionals. In addition, other educational resources that are already available, principles and methods of extension (Van den Ban, 1996; Van den Ban & Hawkins, 1996), and adult education theories and principles. These theories and methods can be used to achieve effective farmer participation in extension education programs and to provide powerful learning experiences. Theories suggest that adult learners tend to seek information that matches their societal roles that they go to the places where they feel comfortable, places that are non-intimidating, user-friendly, and in which others speak their language. Therefore, the tendency is that adult learners appreciate being in an informal and familiar atmosphere, free from the pressures of the formal learning environment (Cerf & Hemidy, 1999; Heimlich, 1996; Kilpatrick & Rosenblatt, 1998; Knowles, 1978; Seaman & Fellenz 1989). The study of Karbasioun, Mirzaei & Mulder (2005) also found the power of informal learning over formal courses. So, courses for professional development of AEIs should be based on these characteristics. Various extension programs have been carried out by the agricultural extension organization (AEO) in Iran using techniques such as farm visits, key farmers, constructional army, Basij (construction) groups, and rural councils (Heidari, 2000, 2003). Along with these programs, various extension courses have been provided for farmers in which AEIs are involved by the Ministry of Agricultural-Jihad (MAJ), in co-operation with some other organizations (Karbasioun et al., 2005). Many studies showed that extension courses had added value for farmers, nevertheless, a number of obstacles in the implementation process of these courses have decreased their effectiveness (Arabzadeh, 1997; Chizari, Karbasioun, & Lindner, 1998; Karbasioun & Chizari, 2004, 2005; Karbasioun et al., 2005; Karbasioun & Mulder, 2005; Karbasioun, Mulder, & Biemans, 2006a;

Keshavarz, 1994; Zamani & Talebianpour, 2001).

Barriers identified in the studies mentioned above are partly of physical and partly of psychological nature. For instance, Arabzadeh (1997) found that although extension training programs (courses) have had positive effects, they are confronted with some difficulties that hinder their success. He listed major negative factors such as the inappropriateness of the classroom environment (such as light, seating, and ventilation), shortage of instructional technology tools, incompetent instructors, and the lack of scientific visits to successful farms and local manufacturers. Chizari et al. (1998) in their study investigated the most crucial obstacles in extension courses. They discovered 10 main constraints for the implementation of extension courses such as lack of facilities for practical teaching, incompatibility of participants' combination in terms of age, gender and career, and the lack of linkage between instructors of the courses with research centers. Moreover, they found that AEIs lack various technical and general competencies². Karbasioun et al., (2005) in their recent research underlined the positive effects of extension courses on farmers' job status. However, they reported that these courses suffer from low level farmer motivation, lack of follow-up and continuity of training programs for farmers, shortage of funds allocated to the courses, and inadequate attention paid to personal characteristics of farmers in designing extension courses.

Purpose and Research Questions

Little information exists about perceptions of farmers of extension courses and instructors. As indicated earlier, this study is a part of a bigger project that aims at designing a competency profile for AEIs. In the larger project, various groups of respondents, including farmers, experts, managers, and AEIs, were involved in data collection. The findings of this study were used to formulate conclusions for the development of a competency profile for extension instructors. An important outcome

could be to consider the specificity needed in differentiated competency profiles. For this, the role of farmers' courses provided by AEIs were evaluated. The extent to which farmers are satisfied with these courses and also their opinion on actual and desired competencies of AEIs were reviewed. Furthermore, farmers' course needs were also examined. Therefore, the purpose of this study was to explore farmers' views about agricultural extension courses, motives for attendance, and competencies of agricultural extension instructors to find essential ingredients for the competency profile for AEIs.

The specific research questions of this study were:

1. What are the motives for farmers to attend agricultural extension courses?
2. To what extent do farmers appreciate the most recent course they attended?
3. What topics do farmers suggest for future courses?
4. To what extent do farmers evaluate the agricultural extension instructors (AEIs) as being competent?
5. What competencies do farmers think that an AEI should possess?
6. What relationships exist between farmers' personal characteristics (age, gender, education, farmers' land size etc.), course attendance motives, course satisfaction, and the perceived competencies possessed and needed by AEIs?

Methods and Data Sources

In this study, interviews and a survey questionnaire were used for data collection. A pilot study was conducted which consisted of explorative, semi-structured interviews with 27 farmers in two townships of the province of Esfahan³. Based on the results of the pilot study, a questionnaire was developed for a larger survey. The questionnaire included open and closed questions. In designing the closed questions, a 5-point Likert-type scale was used.

The structure and content of the questionnaire were as follows (number of

items for each topic is in parenthesis): demographic characteristics of respondents (8); products produced in the farm (7); reasons for participating in courses presented in the village by the agricultural extension services (AES)⁴ (11); extent to which extension courses were relevant for real problems and difficulties on the farm (1); benefits gained from participation in the most recent course (3); characteristics of the last extension course taken (11); topics for future courses (1); actual competencies of AEIs involved (16); desired competencies of AEIs (1 open question).

The survey was conducted with 102 farmers who were selected based on their participation in extension courses offered by the AEO in the province of Esfahan in 2004. The number of farmers selected from each township varied based on the size, and the farming population. The reason for selecting farmers who had participated in extension courses was to focus on the view of farmers who have already received some training via the courses, and therefore would be able to express their views about the characteristics and qualifications of those courses and the AEIs. Additionally, because the results of this research are supposed to provide support information for the main project (designing a competency profile for AEIs), participating farmers could also provide information about what was going on in the courses they enrolled. Obviously, the results of this study cannot be generalized to the population of farmers in the province of Esfahan, due to the characteristics of the target group.

Given the diversity of fields of the training programs, a proportionate sampling method was used by which all different areas were covered. The sample was distributed over 17 townships.

Validity of the questionnaire was established using 13 experts in the Ministry of Agricultural-Jihad using e-mail and personal contact. The reliability of the questionnaire was assessed using a pilot-test with a group of 22 farmers who had similar characteristics as the target population. Finally, based on the expert appraisal and pilot-test, the questionnaire was modified.

Because the education level of the majority of the farmers was low,

experienced persons who were familiar with the context of the farmers and who were neither AEIs nor employees of AEO were selected to interview farmers. The interviewers were specifically trained to conduct the interviews.

Data were collected using the personal interview method by visiting respondents' homes or farms. Since farmers were busy at the time of the interviews, care was taken to interview farmers during their leisure time and with assistance from rural council members in the villages. Each interview lasted from one to one-and-a-half hours. Simplification and explanations were given by interviewers in order to prevent any misunderstanding. The data collection process lasted two months from March until April 2005.

The data were analyzed using descriptive statistics and correlation techniques, including factor analysis.

Results

The results of this study were presented as per the research questions stated earlier. Background information of farmers were presented first, followed by the motives of farmers for course attendance, alignment of the courses based on the needs of farmers, topics for future courses, farmers' evaluations of AEIs, the competencies farmers find important for AEIs and finally, the relationships between farmers' personal characteristics, course attendance motives, course satisfaction and the competencies possessed and needed by AEIs.

Background information

Analysis of the personal characteristics of the farmers shows that 4% of them were uneducated. Of all the respondents, 40% had completed primary school level, 22% secondary school and about 30% high school. Of the group, 83% were male, 86% were married and nearly 60% were over 40 years of age. Also, a considerable number of respondents (44%) owned between one to five hectares of land under cultivation and 21% owned more than 10 hectares. Additionally, around 80% had personal land (irrigated or dry-land), but 80% had no dry-land under cultivation.

In addition, the inter-relationship of farmers' personal traits was measured using Kendall's tau (τ) test (N = number of farmers interviewed or respondents). Results showed that older farmers predominantly completed a low level of education ($\tau = -.436^{**}$, $p = .000$, $N = 100$); also, married farmers (men or women) were generally older ($\tau = .454^{**}$, $p = .000$, $N = 100$) and less educated ($\tau = -.384^{**}$, $p = .000$, $N = 100$) compared to single farmers.

The majority of farmers (87%) were involved in crop production and in decreasing percentage they produced mainly animal products (57%), fruits (48%), and vegetables (21%). The flower-growing sector was non-existent and the fishing (6%) and local handcrafts (3%) were negligible.

These personal characteristics of the target group were very similar to the characteristics of the target populations in previous studies (Karbasioun & Mulder, 2004; Karbasioun et al., 2005).

Motives

Motivation to attend agricultural extension courses was measured on a five-point Likert scale (0 = nothing; 1 = a little; 2 = moderately; 3 = very; 4 = very much) were: acquiring new knowledge ($M = 3.5$; $SD = .74$), acquiring skills and experience ($M = 3.4$; $SD = .82$), personal interest ($M = 3.1$; $SD = .85$), and becoming more familiar with other farmers and extension employees ($M = 2.9$; $SD = .78$). On the contrary, the least important reasons were (ranks = 9, 10 and 11) getting a certificate at the end of the course ($M = 1.0$; $SD = 1.26$), spending free time, and being amused ($M = 0.6$; $SD = 1.10$), and the insistence of friends ($M = 0.4$; $SD = .98$).

In other words, results show that the main motives for farmer participation are knowledge and skill acquisition, personal interest and socializing, whereas other incentives, such as receiving a certificate or spending free time were not crucial.

Alignment of courses and evaluation of the most recent course characteristics

Regarding alignment of courses, farmers were asked, on a 5-point scale (0 = not at all; 1 = a little; 2 = moderately; 3 = very; 4 =

very much) to indicate the extent to which they addressed real problems, whether delivering extension courses was helpful at all. The average perceived alignment of the courses (235 courses up to the time of the interviews) to the real problems was 3.15 ($SD = .82$), suggesting they were very satisfied with this alignment.

Furthermore, more than 95% of the farmers perceived the courses to be 'good' to 'excellent' in terms of course delivery. The average on a 4-point scale (1 = weak; 2 = moderate; 3 = good; 4 = excellent) was 3.6 ($SD = 6.27$). These findings are similar to what has been found in previous studies (Arabzadeh, 1997; Dashti, 1994; Karbasioun & Chizari, 2004, 2005; Karbasioun & Mulder, 2005; Karbasioun et al., 2005; Keshavarz, 1994; Zamani & Talebianpour, 2001). For this course evaluation, 11 items were considered and the items were rated on a 5-point Likert-scale (0 = nothing; 1 = a little; 2 = moderately; 3 = very; 4 = very much). The results showed that in general farmers had a positive opinion about the courses; they rated most of the items 'moderate' to 'good' ($3.2 \geq M \geq 1.7$; $1.48 \geq SD \geq .58$). The farmers were satisfied with the timing of the courses ($M = 3.2$; $SD = .70$), applicability and feasibility of the content of the courses ($M = 3.2$; $SD = .61$), contact with staff members of the courses ($M = 3.1$; $SD = .63$), location of the courses ($M = 3.0$; $SD = .64$), and quality of catering and hospitality during the courses ($M = 3.0$; $SD = .58$). Aspects of the courses that could be improved were: examination methods ($M = 1.7$; $SD = 1.48$), and instructional technology and use of audio-visual instruments during the course ($M = 2.0$; $SD = 1.15$). Farmers also indicated that the courses were helpful but needed to be re-designed in some aspects such as the examination methods and the use of instructional technology (Karbasioun, Mulder, & Biemans, 2006a, 2006b). There is, however, room for improvement as to strategies for registering participants (Item 8: $M = 2.6$; $SD = .74$) and the length of the courses (Item 9: $M = 2.6$; $SD = .94$).

Topics for future courses

Farmers were asked to indicate preferences of topics for future course

offerings. This question was designed to uncover the specialization of AEIs that are needed in extension courses. For this, an open-ended question was included in the questionnaire. Responses to the open-ended questionnaire were coded and categorized into different groups.

Results indicated that majority of the farmers preferred topics such as crop products (56%), using different inputs on the farm (43%), orchards (34%), vegetables (34%), and animal production (29%). Similarly, the least preferred topics were: irrigation methods (7%), healthy production of milk (3%) and packing of agricultural and animal products (1%). All topics identified were already presented by MAJ but not on a regular basis. The preferences mentioned by the farmers have implications for the disciplinary background of the trainers required and the AEI competence profile.

Competencies of AEIs as experienced

The competencies of AEIs as experienced by the farmers who took part in the courses was also assessed. According to the results, most of the competencies were rated as 'good' to 'moderately good' ($2.3 \geq M \geq 3.3$; 0 = very weak; 4 = very good). It can be concluded that the AEIs possessed adequate level of practical and technical knowledge and skills to teach the courses. The AEIs were capable of communicating the ideas in a comprehensive manner and listening to queries presented by the trainees. They seemed sufficiently experienced in the subjects they taught, class management, and communication skills (Ranks 1 to 3: $3.3 \geq M \geq 3.1$; $.79 \geq SD \geq .57$). However, the farmers expressed least satisfaction with evaluation skills (Rank = 7: $M = 2.6$; $SD = .86$), post-course follow-up (Rank 8: $M = 2.4$; $SD = 1.01$), and the use of appropriate instructional methods during course offerings (Rank 9: $M = 2.3$; $SD = 1.19$). Therefore, based on the responses of farmers, the AEIs were adequate, but there is room for competence development in a number of areas such as ways to encourage and stimulate farmers, examination methods, post-course follow-up, and instructional technology skills.

Competencies of AEIs that farmers want

Farmers were also asked to formulate the competencies of an AEI via an open-ended question. The responses were coded and categorized. The intention of using an open question was to give farmers the opportunity to formulate their opinions freely. The results indicated that 42% of the farmers thought that competent AEIs should have current knowledge and up-to-date information, 42% believed AEIs should have enough experience regarding the subject matter. A smaller percentage indicated that AEIs should use principles of supporting adult learners (27%), be competent in applying teaching methods (23%), be familiar with farmers' culture and language (20%), and finally, be aware of farmers' actual problems (23%). The items are indicators of the farmers' impressions about competencies of the AEIs in general; therefore, the categories are not comparable with those used in Table 3 and were more specific.

A generic competency model for AEIs

The final research question examined relationships between farmers' personal characteristics, course attendance motives, course satisfaction, and the competencies possessed and needed by AEIs. This question is important for creating one general competency profile of AEIs. First, the relationships between personal characteristics and course attendance motives were studied. To further explore the correlations between course attendance motives, an exploratory factor analysis was conducted. The factor analysis used a

principal components analysis with factor extraction and VARIMAX rotation. This was done to examine the uni-dimensionality/convergence and discriminatory validity. The four commonly used decision rules were applied to identify the factors (Hair, Black, Babin, Anderson, & Tatham, 2005): 1. minimum eigen value of 1; 2. minimum factor loading of 0.5 for each indicator item; 3. simplicity of factor structure; and 4. exclusion of single item factors. Reliability was evaluated by assessing the internal consistency of the indicator items of each construct by using Cronbach's alpha. Table 1 shows results of the factor analysis.

As shown in Table 2, the motives for course attendance were categorized into three main components: *Personal Development*, *Performance Improvement*, and *Extrinsic Motives*. Personal development and performance improvement together can be seen as intrinsic motives for course attendance. As mentioned earlier, the items that had a correlation values higher than 0.5 were loaded into one component. Personal development motives could be defined as farmers' personal interest for taking part in the courses. Performance improvement motives are identified as information and skill-seeking behaviour of farmers. And finally, extrinsic motives can be described as motives that are not directly related to the course content and objectives, but to influences from outside, such as encouragements to participate in the courses by friends (Table 1).

Table 1
Rotated Component Matrix for the Motives of Course Attendance^a

Motives	Component		
	Personal development	Performance improvement	Extrinsic motives
1. Acquiring new information		.88	
2. Acquiring new skills and experiences		.87	
3. Personal interest	.59		
4. Becoming more socialise with other farmers and extension employees		.70	
4. As a matter of curiosity	.62		
5. Extension agent' request			.64
7. Due to a good feeling of readiness and youthfulness via attendance at these courses	.84		
8. To get access to more facilities and services provided by extension centre after the course			.85
9. For getting a certificate at the end of course	.78		
10. For filling the free times and being amused			.71
11. Friends' insisting			.68

Note: Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

^aRotation converged in 5 iterations.

The relationships between personal characteristics of farmers and the three motivation categories were measured using Pearson correlation test (r) for interval variables (age), Kendall's tau test (τ) for

ordinal variables (education level and categorized irrigated land size) and Mann-Whitney U Test for nominal variables (Gender and marital status). Results of the tests are presented in Table 2.

Table 2
Relationships Between Personal and Farm Characteristics of Farmers and Course Attendance Motive Categories

Personal characteristics	Motive Category	r^1 (n)	τ^2 (n)	U^3 (n, z)
Age	Personal development	-.483** (96)		
	Performance improvement	-.212* (97)		
	Extrinsic motives	-.260* (97)		
Education level	Personal development		-.156* (96)	
Size of irrigated land	Extrinsic motives		-.183* (91)	
Gender	Personal development			309.00** (95, -3.23)
	Performance improvement			400.50** (97, -2.72)
	Extrinsic motives			327.00** (96, -3.11)
Marital status	Personal development			251.00** (96, -3.10)
	Extrinsic motives			236.50** (97, -3.32)

Note: r^1 = Pearson correlation test; τ^2 = Kendall's tau Correlation test; U^3 = Mann-Whitney U Test

* $p < 0.05$; ** $p < 0.01$

The data show that there was a significant negative correlation between age, personal development, performance improvement, and extrinsic motives. Older farmers were less motivated for courses. But this particularly holds for personal development motives ($r = -.483$, $N = 96$). Education level has a negative relation with personal development related motives ($\tau = -.156$, $N = 96$), which means that highly

educated farmers had less personal development motives for taking part in courses.

Differences between motives for the characteristics gender and marital status were tested with Mann-Whitney-U test. The differences were significant for the following relationships: gender and personal development ($U = 309.0$; $Z = -3.23$; $p = .001$), performance improvement ($U =$

400.5; $Z = -2.72$; $p = .007$), and extrinsic motives ($U = 327.0$; $Z = -3.11$; $p = .002$), as well as marital status and personal development ($U = 251.0$; $Z = -3.10$; $p = .002$) and extrinsic motives ($U = 236.5$; $Z = -3.32$; $p = .001$).

Furthermore, there was a significant negative relationship between the size of the irrigated land ownership and extrinsic motives ($\tau = -.183^*$; $p = .010$; $N = 91$).

No significant relationship was found between the type of land ownership (personal, rental, or mixed) and any of the three motive categories.

Also there was a significant positive correlation between extrinsic and personal development motives ($\tau = .238^{**}$; $p = .000$; $N = 96$).

Next, the relationships between personal and field characteristics of farmers and course/AEIs characteristics were examined. Farmers' general satisfaction with the courses/AEIs was divided into two main levels, low and high, and a t-test was computed for age, and a Mann Whitney test for ordinal variables such as education level and land size. The results of the t-test showed that there was no significant difference between age and satisfaction with AEIs, but there was a significant difference between age and satisfaction with courses ($t = 2.892$; $df = 12$; $p = .003$). The Mann Whitney test (U) showed no significant difference between farmers' education level, type of land ownership, irrigated land and dry-land size on the one hand, and their satisfaction with both courses and AEIs on the other hand. Finally, a significant relationship was found between farmers' satisfaction with the courses and their satisfaction with AEIs ($\tau = .211^{**}$; $p = .004$; $N = 102$).

Conclusions and Discussions

As mentioned earlier, many attempts have been made to construct competency profiles of agricultural extension employees. The most recent attempt was that of Shim (2006). These competency profiles are broad in the sense that they apply to various roles of extension experts. The general project of which this study is a part is aimed at

defining a competency profile of agricultural instructors.

Based on the findings and conclusions of the study, a general competency profile is possible, but variation is needed as to the gender, marital status, learning motives, age, and education level of farmers. These results support other related studies (Karbasioun et al., 2006a, 2006b). Target group stratification and internal differentiation in courses should be included in the competency profile because various relationships and differences were found in this study regarding course characteristics and competencies of instructors. For example, instruction (or more generally with learner support) can be differentiated by motives for course attendance such as leisure activity, acquiring new knowledge and skills, and actual performance improvement. Also, these motive categories might be used during the selection process of farmer-trainees, since these motives differ significantly.

Satisfaction with courses is rather high in general, but there is room for improvement. AEIs should be aware of this and should be included in the competency profile. The competency would then read like: the AEI is sensible to areas of course improvement, is able to identify those areas, and is able to realize those improvements.

Various topics for future courses were identified by the farmers and their preferences were very clear. This has important consequences for the selection or professional development of extension instructors. If disciplines vary too much (like crop science and animal science), it might seem hard to include these in the competency profile. But a general element in the competency profile should be aimed to match the field of the course and the discipline of the instructor. There are, of course, overlapping areas, and interdisciplinary topics (like using inputs), and should be addressed in the competency profile.

The instructors (AEIs) were evaluated quite positively by the farmers, although about one-half of their competencies were rated below average, so there is room for professional development on these competencies. However, if we take into

account which of the personal evaluations may be contaminated by social desirability, and we deduct one point of the scores, all competencies would be rated as moderate or lower. Of course, this is not fully justified, because the level of social desirability is not known, but the general idea gives a certain perspective on the data.

Although this study is completed, it is unfortunate that AEIs evaluations were not used for the identification of the relevance of these competencies for the competency profile. The competencies used for evaluating the AEIs could be inserted in the competency profile as they are, but this is too easy, because they should be weighted from different perspectives, and not from the farmers' perspectives alone. However, it can be concluded that the most relevant competencies identified by farmers match the actual competencies of the AEIs. Again, if the perceived competencies of AEIs would be corrected for social desirability, there would be a lot of professional development needs.

Looking back on the study we would suggest including a strong performance focus next time. Farmers' perceptions and preferences are important, but what is also interesting is to what extent courses have actual impact on factors such as the farm, farming, product quality, market share, poverty reduction, and sustainable development. Needless to say, that this requires another study.

The farmers in this study found that AEIs were adequately qualified, but they needed development in some aspects such as motivational skills, implementing examination methods, following up lessons, and using instructional technology. These findings are in line with previous studies (Chizari & Karbasioun & Lindner, 1998; Karbasioun & Mulder, 2004). Farmers expect AEIs to be more sensitive towards the real problems they face and to tailor the course content accordingly. Simple participation in these short-term courses is not enough to enable them apply the knowledge gained. As such, they expect AEIs to provide a more practical teaching approach that includes a proper follow-up and evaluation.

As to the competencies of AEIs, respondents believe that a competent AEI should be well-informed (having up-to-date knowledge), be experienced, be able to apply the most relevant and up-to-date teaching methods, be familiar with the farming culture and language and, finally, be aware of the problems farmers actually face. The competencies found in this study, and those found in the other studies of this project, should be taken together, and compared with the more general competency profiles of extension experts, such as the one developed and evaluated by Shim (2006). The researchers hope to be able to report on this in their next contribution.

References

- Arabzadeh, M. (1997). *Assessing the effectiveness of informal vocational and technical courses for carpet knitters (level two) in Mazandaran province*. Full report with commentary, Agricultural-Jihad organization of the province of Mazandaran, Iran.
- Cerf, M. & Hemidy, L. (1999). Designing support to enhance co-operation between farmers and advisors in solving farm management problems. *Journal of Agricultural Education and Extension*, 6(3), 156-169.
- Dashti, H. (1994). *Evaluation of animal husbandry extension courses*. Full report with commentary, The Ministry of Agricultural-Jihad, Tehran, Iran.
- Chizari, M., Karbasioun, M., & Lindner, J. R. (1998). Obstacles facing extension agents in the development and delivery of extension educational program for adult farmers in the Province of Esfahan. Iran. *Journal of Agricultural Education*, 39(1), 48-54.
- Hair, J. F., Black, B., Babin, B., Anderson, R. E., & Tatham, R. L., (2005). *Multivariate data analysis* (6th ed.). Florida, Jacksonville: Prentice Hall.

Heidari, A. (2000). *Extension and people's participation in Iran*. Full report with commentary, Ministry of Agricultural-Jihad, Tehran, Iran.

Heidari, H. (2003). Farmer field schools slash pesticide use and exposure in Islamic republic of Iran. *Agro-Chemicals Report*, 3(1), 23-26.

Heimlich, J. E. (1996). *Adult learning in non-formal institutions*. ERIC Digest, 173, 1-4.

Karbasioun, M., & Chizari, M. (2004, May). Rural instructors' educational exposure to, use of, and attitude toward the program of activities. *Association for International Agricultural Extension Education (AIAEE), Proceedings of the 20th Annual Conference, Dublin, Ireland*.

Karbasioun, M., & Chizari, M. (2005, May). The attitude of agricultural extension instructors regarding their own competencies in the teaching process during short-term courses for farmers, Esfahan, Iran. *Association for International Agricultural Extension Education (AIAEE), Proceedings of the 21st Annual Conference, San Antonio, Texas*.

Karbasioun, M., Mirzaei, S., & Mulder, M. (2005). Informal technical and vocational training programs and farming in the province of Esfahan, Iran. *Journal of International Agricultural Education and Extension*, 12(2), 33-43.

Karbasioun, M., & Mulder, M. (2004, September). Increasing the competency of farmers and land users a critical future force for agricultural development and natural resources. *Proceedings of the 4th International Iran & Russia Conference, Shahrekord, Iran*, 854-860.

Karbasioun, M., & Mulder, M. (2005, September). *Changes in farming, coping strategies of farmers, and the role of training of farmers in Esfahan, Iran*. Paper presented in the 17th European seminar on Extension Education, Izmir, Turkey.

Karbasioun, M., Mulder, M., & Biemans, H. (2006a, May). The supporting role of the agricultural extension organization (AEO) as perceived by farmers in Esfahan, Iran. *Association for International Agricultural Extension Education (AIAEE), Proceedings of the 22nd Annual Conference, Clearwater, Florida*, 310-320.

Karbasioun, M., Mulder, M., & Biemans, H. (2006b, May). Towards a job competency profile for agricultural extension instructors – a survey of views of experts. *Proceedings of the 7th International Conference on HRD Research and Practice across Europe, Tilburg, the Netherlands*.

Keshavarz, Sh. F. (1994) *Assessing the effectiveness of informal vocational and technical courses for carpet knitters in Mazandaran province*. Full research report with commentary. Agricultural-Jihad organization of Mazandaran, Iran.

Kilpatrick, S., & Rosenblatt, T. (1998). Information vs training: Issues in farmer learning. *Journal of Agricultural Extension and Education*, 5(1), 39-51.

Knowles, M. S. (1978). *The adult learner: A neglected species* (2nd Ed.) Houston, TX: Gulf.

Mirzaei, S. (2004). *Investigation of the impact of informal technical and vocational training courses on farmers' career in Esfahan*, unpublished Master dissertation, Tehran: Tehran Open University, Science and research section, Tehran, Iran.

Mulder, M. (2001). 'Competence Development – Some Background Thoughts', *Journal of Agricultural Education and Extension*, 7, 4, 147-159.

Mulder, M., Wesselink, R., & Bruijstens, H. Chr.J. (2005). Job profile research for the purchasing profession. *International Journal of Training and Development*. 9(3), 185-204.

Seaman, D. F., & Fellenz, R. A. (1989). *Effective strategies for teaching adults*. Columbus, Ohio: Merrill.

Shim, M. (2006). *The development of a competency model for Korean extension professionals*. Unpublished doctoral dissertation, Seoul National University, Korea.

Van den Ban, A. W. (1996). Agricultural development: Opportunities and threats for farmers and implications for extension organizations. *Journal of*

Agricultural Education and Extension, 6(3), 145-146.

Van den Ban, A. W., & H. S. Hawkins (1996). *Agricultural extension*. Oxford, UK : Blackwell Science.

Zamani, M., & A. Talebianpour (2001). *Study of the effects of informal technical and vocational training programs on the economic situation of villagers in Kohkilouye and Boirahmad county*. Unpublished Master's thesis, Shiraz University, Iran.

MOSTAFA KARBASIOUN is PhD in the Education and Competence Studies Group at Wageningen University and is also on the teaching staff of Shahrekord University in Iran, P.O. Box 8130, 6700 EW Wageningen, The Netherlands. E-mail: mostafa.karbasioun@wur.nl.

MARTIN MULDER is professor and also the chairman of the Education and Competence Studies Group at Wageningen University, P.O. Box 8130, 6700 EW Wageningen, The Netherlands. E-mail: martin.mulder@wur.nl.

HARM BIEMANS is associate professor in the Education and Competence Studies Group at Wageningen University, P.O. Box 8130, 6700 EW Wageningen, The Netherlands. E-mail: harm.biemans@wur.nl.

¹AEIs are working for the Ministry of agriculture as part-time employees. These AEIs are distributed across 29 different provinces in Iran. On average, approximately 100 persons are working in each province. These AEIs teach farmers in extension courses that last between two and five days in most cases. The organisation of the courses and the selection of AEIs are regulated by law, and course directors at the local level need to comply with the regulations.

²Competencies are capabilities, capacities or potentials and can be understood as characteristics of persons, teams, work units or organizations which enable them to attain desired achievements. In other words, competencies comprise of integrated meaningful clusters of knowledge, skills and attitudes (Mulder, 2001).

³The Province of Esfahan is one of the biggest and most strategic provinces of Iran after Tehran. It contains 19 townships, 43 counties, 83 cities, and 121 big villages, consisting of plains as well as mountainous area. The total population of this province is 4, 316, 767 Persons and the city of Isfahan, itself has more than three million inhabitants. Rural population has been decreased during the years dramatically. There are totally about 535000 km. sq cultivable lands in Esfahan. Due to enough water resources, agriculture and animal husbandry are of high importance in Esfahan. Totally, %89 of the lands in the province is irrigated and %10.8 is non-irrigated or dry farming (Mirzaei, 2004).

⁴In Iran, AES officially started more than 50 years ago, following the basic philosophy for the existence of extension services, and from that time significant efforts have been made to make farmers more productive, healthy and prosperous through applying appropriate extension programs.

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