



Towards a Job Competency Profile for Agricultural Extension Instructors – a Survey of Views of Experts

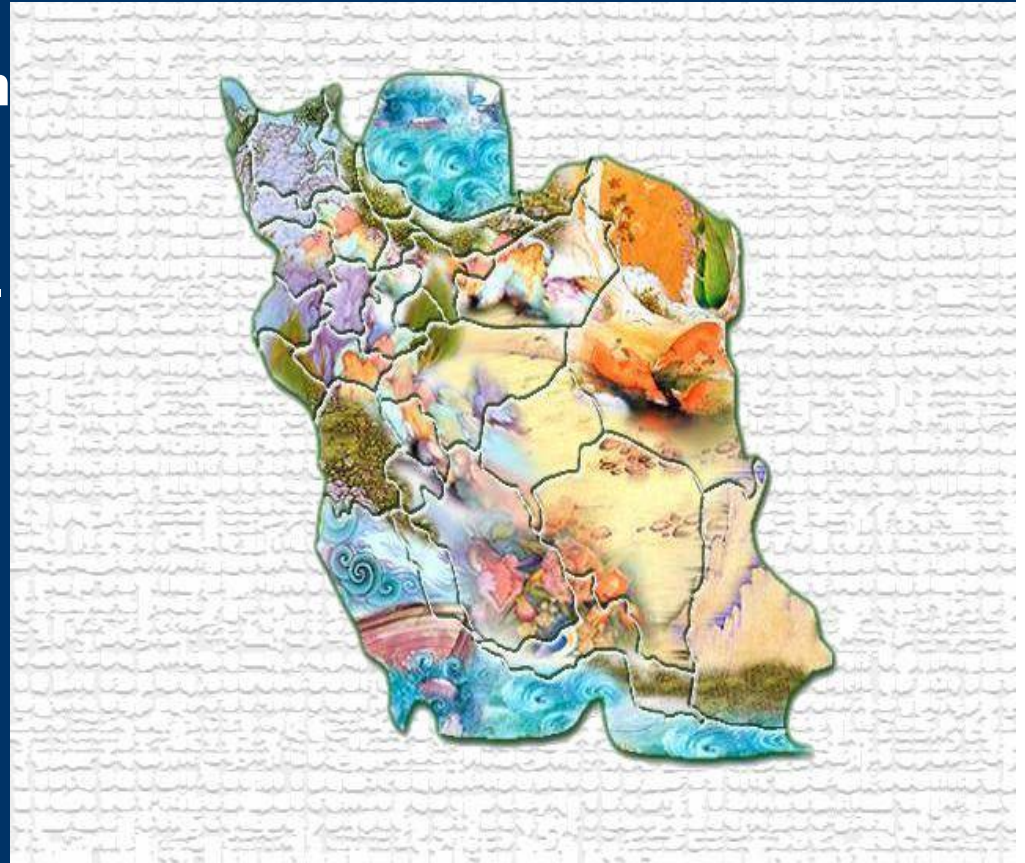
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Geographical unique situation of Iran

Roughly 51 million ha of Iran are considered as being potentially arable, of which only 36 percent is cultivated. Iran has a great diversity of climatic conditions, ranging from arid (central plain and southern coast) to semi-arid and Mediterranean (western and northern provinces) and very humid (Caspian Sea).





The province of Esfahan



This province is situated in a wide area in Iran plateau, which is 104,650 sq, Kms. and has a population of about 4316767 million persons. Zayandeh Rud, which is the greatest and the most famous river in the center of Iran, irrigates most of the agricultural lands, From west to east of this province, from Zardkuh to Batlaq-e-Gavkhuhi (Marsh).

The size of workforce in Esfahan is 1.1 million workers, of which 14.5% is working in agriculture. Most of these workers live in rural areas, and have primary education only.



Why this study ?

several studies have been conducted and they have all indicated that no sufficient efforts have been made towards HRM (human resource management) and HRD in the agri-food sector in Iran so far (cf. Karami, 2001; Najafi, 1991; Pezeshki-Raad, Yoder and Diamond, 1994; Chizari, Karbasioun and Linder, 1998; Zarafshani, 2002; Pezeshki-Raad and Aghaei, 2002; Karbasioun and Mulder, 2004; 2005).



Who are AEIS?

They 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.



Why AElS were selected as the target group?

The reasons is on the one hand their decisive role in the development of workers in the agri-food sector, and on the other hand their problems in fields like communication, teaching, motivation, being up-to date and having experience, and adequacy of their extension knowledge. Furthermore, large quantities of time and financial resources have been spent on extension courses during the last decades, but the effectiveness of those courses is not yet adequately perceived by many authorities. **Chizari and Mirkhoozani, 1995; Chizari, Karbasioun, Linder, 1998; Karbasioun and Chizari, 2004; 2005; Karbasioun and Mulder, 2004; 2005).**



General objective

Developing a **competency profile** for agricultural extension instructors (AEI) in Esfahan.



Research questions

What are:

- the competencies that are essential for AElS during the next 3-5 years?
- the principal outputs for various roles of AElS?
- the quality requirements (standards) that are essential for producing and delivering outputs?
- the future forces that influence the work of AElS during the next 3-5 years?
- the ethical issues that are relevant for the job performance of AElS during the next 3-5 years?



Methodology and data Collection

- the approach of the roles studies performed by **McLagan** are being used in this study.
- The questionnaire was used for data collection. After assuring the validity and reliability of the questionnaire, In total, **257** experts from 16 of the total of 19 townships in Esfahan were selected for this study, **100** managerial experts, and **157** expert AEs.
- The questionnaires were distributed by post to the addresses of the experts in the relevant townships. The data collection phase lasted from **April until June 2005**. Eventually, **184** questionnaires were returned and a number of 12 uncompleted questionnaires were eliminated. So, a total of **172** complete questionnaires were collected (= **67%** response), which were analysed.



Results

Descriptive analysis



Respondents' demographic profile

Variables	Frequency	Percent	Cumulative percent
Level of education			
Graduated from high school	3	1.8	1.8
Associate	20	12.1	13.9
Bachelor	110	66.7	80.6
Master of science	27	16.4	97.0
Doctorate	5	3.0	100
Total respondents	165	98.2	
Gender			
Male	152	92.1	92.1
Female	13	7.9	100
Total respondents	165	98.2	
Age (years)			
25-30	11	6.7	6.7
31-40	95	58.3	65.0
41-50	51	31.3	96.3
51-55	6	3.7	100.0
Total respondents	163	97.0	



Variables	Frequency	Percent	Cumulative percent
Working experience (Years)			
Less than 5	9	5.6	5.6
5-10	47	29.2	34.8
11-15	45	28.0	62.7
16-20	21	13.0	75.8
21-25	28	17.4	93.2
26-30	11	6.8	100.0
	161	95.8	
Teaching experience			
Yes	151	91.5	91.5
No	14	8.5	100.0
	165	98.2	
Current organizational position			
Technical expert	108	64.3	69.7
Middle manager	35	20.8	92.3
High manager	12	7.1	100.0
Total	155	92.3	
Highest organizational position			
Technical expert	76	45.2	49.0
Middle manager	59	35.1	87.1
High manager	20	11.9	100.0
Total	155	92.3	

Importance and required level of expertise of competencies of AELs

Competency	Importance		Level of expertise	
	M ¹	SD ²	M ³	SD ²
1. Subject Matter Understanding: Knowing the content, importance and feasibility of a given function or discipline being addressed	2.8	.45	5.5	.96
2. Presentation skill: Presenting agricultural information orally and in a suitable way to farmers so that the intended purpose is achieved	2.7	.47	5.2	.91
3. Business Understanding : Familiarity and understanding various aspects of farming, characteristics, difficulties, sensitivities and challenges in agriculture	2.7	.45	4.7	.96
4. Learning Understanding: Knowing how adult farmers acquire and use knowledge, skills, attitudes; understanding individual differences in learning	2.7	.48	4.9	.90
5. Feedback Skill: Communicating information, opinions, observations, and conclusions so that they are understood and can be acted upon by farmers	2.7	.52	4.9	1.03
6. Intellectual Versatility: Recognizing, exploring, and using a broad range of ideas and practices; thinking logically and creativity without undue influence from personal biases	2.7	.49	4.9	.88
7. Relationship building skill: Establishing relationships and networks across a broad range of farmers	2.6	.50	4.9	.95
8. Self-knowledge: Knowing one's personal values, needs, interests, style, and competencies and their effects on others	2.6	.54	4.9	.96
9. Adult training and Development: Understanding theories and techniques used in training and development for farmers	2.6	.57	5.2	1.13
10. Objectives Preparation skills: Preparing clear statements which describe desired outputs for farmers	2.5	.55	4.7	.97

1 M=Mean for importance: 0=Not important; 1=Little important; 2= moderately important; 3= very important

2 SD=Standard deviation

3 M=Mean for level of expertise: 1= nothing; 2= very little; 3= little; 4= average; 5= much; 6= very much



Assessment of future forces by experts

Future force	F ¹	R ²	M ³	SE ⁴	SD ⁵
1. Increased emphasis on the need to improve the capability and productivity of farmers	165	1	5.3	.06	.82
2. Increased need for active interaction with farmers that necessitate changing traditional styles of instruction to new interactive and practical approaches	166	2	5.2	.07	.97
3. Increased sophistication and variety in instructional technology (using instructional tools, methods and media)	168	2	5.2	.07	.88
4. Developing and supporting industries related to agriculture such as food processing and mechanization technology	168	3	5.0	.08	1.05
5. Increased use of computers and internet for consulting, supervising, managing and educating farmers by extension organizations	167	4	4.9	.08	1.11
6. Increased use of computers and internet by farmers in their activities	166	5	4.8	.08	1.06
7. Joining to world trade organization (WTO) and commitment to compliance with its principles and conditions	166	5	4.8	.08	1.09
8. Emphasis on new competencies of farmers like creativity, risk taking, adaptation to change, teamwork and sensitivity for their environment	166	5	4.8	.07	.96
9. Globalization of agricultural activities and tasks, like increased and expanded international co-operation and communication, joint ventures, overseas ownership, and international competition	166	6	4.7	.08	1.11
10. General expectation of quality improvement of agricultural instruction	167	6	4.7	.07	.91

M= Mean 1=not important; 2=very little important; 3=little important; 4=moderately important; 5=very important; 6=essential



The extent to which AEs will be confronted which ethical issues according to experts

Ethical issue	F ¹	R ²	M ³	SE ⁴	SD ⁵
1. Ensuring truth in claims, data, and recommendations	167	1	2.8	.03	.37
2. having commitment for delivering an effective course for farmers and help them as much as possible to be aware of new changes in their environment and farm	166	1	2.8	.03	.36
3. Showing respect to farmers in all circumstances	167	2	2.7	.04	.49
4. Feeling responsibility for collecting the newest and practical information and giving to farmers in extension courses	168	2	2.7	.03	.46
5. Being available for farmers and solving their difficulties after finishing the course so that the farmers can use taught appropriately	168	2	2.7	.04	.52
6. Avoiding conflicts of farmers' customs, expectations and needs	167	2	2.7	.04	.49
7. Balancing organisational and individual needs and interests	167	3	2.6	.04	.57
8. Showing respect for, interest in, and presentation of individual and population differences	167	3	2.6	.04	.51
9. Being sensitive to direct and indirect effects of intervention and acting to address negative consequences	166	4	2.5	.04	.56
10. Ensuring farmer involvement, participation, and ownership	167	4	2.5	.04	.58

Mean 1=not relevant; 2=moderately relevant; 3=considerably relevant



Importance of outputs of AElS

	Output	M ¹	Sd ²
1	Presentation of instructional Material	2.9	.35
2	Feedback to learners	2.8	.35
3	Equipping farmers with new knowledge, skills, attitudes after the course	2.8	.62
4	Using teaching methods and delivery of instructional materials	2.8	.39
5	Encouraging and managing individual action plans for learning transfer	2.8	.45
6	Facilitation of media-based learning events (such as videotapes, films and audio-tapes)	2.7	.43
7	Facilitation of farmers' group discussion sessions	2.7	.46
8	Supporting learning environments	2.7	.50
9	Test delivery and feedback	2.5	.53
10	Facilitating group members' awareness of their own group process during the group discussion sessions	2.5	.55
11	Facilitation of structured learning events for farmers (such as case studies, role-plays, games, simulations, and tests)	2.5	.57
	<i>Average</i>	2.7	

1 M=Mean for importance: 0=Not important; 1=Little important; 2= moderately important; 3= very important

Importance of standards of outputs of the role of AElS

Output	Standard	M ¹	SD ²	C α ³	NS ⁴
1. Presentation of Instructional Material (m=2.9, SD= .34)	1.The extension facilitator makes adaptations in using instructional materials according to the unique issues of the farmers' group (level of education, age, culture, interests, etc);	.8	.39	.79	8
	2. Instructional material used for teaching is updated and according to new scientific achievements	.8	.39		
	3. The learning point are clear, accurate, and organized;	.8	.41		
2. Feedback to learners (m=2.8, SD= .35)	1. Feedback is supported by specific, practical and understandable examples	.8	.37	.83	9
	2. It is given in a respectful manner to the farmers, according to adult education principles	.8	.40		
	3. It can be used to make on-the-job behavior changes	.7	.43		
3. Equipping individuals (farmers) with new knowledge, skills, attitudes after the course (m=2.8, SD= .62)	1. After finishing the course individuals are able to apply new learning	.8	.34	.75	6
	2. Individuals are able to perform learnt issues in the farm practically	.8	.37		
	3. Farmers are able to produce more products (quantitatively and qualitatively)	.8	.41		
4. Using teaching methods and delivery of instructional material (m=2.8, SD= .39)	1. Farmers' participation in teaching procedure is assured	.8	.41	.72	9
	2. The instructor has necessary information and skills for teaching	.8	.41		
	3. The instructor clearly and understandably answered farmers' questions about the subject	.8	.42		
5. Encouraging and managing Individual action plan for learning transfer (m=2.8, SD= .45)	1. It is linked to on-the-job needs of participants	.8	.40	.73	6

Mean (Min: 0 & Max: 1) 0: not important; 1: important

Output	Standard	M ¹	SD ²	C α ³	NS ⁴
6. Facilitation of media-based learning events (such as videotapes, films, audio-tapes, etc) (m=2.7, SD= .43)	1. Appropriate and reasonable connections are made between the instructional event and on- the-job farming issues and real situation of the participants	.8	.38	.83	9
	2. The purposes of using instructional media are in line with farmers' real problems	.7	.44		
	3. Transitions between media segments and other portions of the instructional program are smooth	.7	.44		
7. Facilitation of farmers' group discussion sessions (m=2.7, SD= .46)	1. Farmers' Participation is encouraged and appreciated	.8	.39	.88	11
	2. Each group member feels valued and listened to; self-esteem is maintained or enhanced	.8	.39		
	3. Adequate time is provided for discussion, debriefing, and application	.8	.42		
8. Supporting Learning Environment (m=2.7, SD= .50)	1. Learning environment is supported by making a noticeable linkage with reality of farmers' life and problematic issues in the farm	.8	.38	.77	8
	2. The environment supports the learning process (comfortable temperature, seating, noise level, etc)	.8	.41		
	3. Farmer's self-esteem is maintained or enhanced	.8	.42		
9. Test delivery and feedback (m=2.5, SD= .53)	1. A follow up evaluation is planned to make sure whether the farmers apply their learnt contents or not	.8	.38	.73	6
	2. Competencies being tested are relevant to on-the-job farmers' needs and problems and clearly defined	.8	.39		
	3. Instructions are clear and easily understood	.8	.42		
10. Facilitating Group members' awareness of their own group process during the group discussion sessions (m=2.5, SD= .55)	1. Farmers' group members are clear about the group process and their roles	.8	.42	.70	6
	2. The farmers' group is able to discuss and make decisions on process	.7	.45		
	3. The farmers' group help the individuals who have any problem in understanding of subjects	.7	.47		
11. Facilitation of structured learning events for farmers (such as case studies, role-plays, games, simulations, and tests) (m=2.5, SD= .57)	1. Participants are able to identify what they are doing well in the class or might do differently on the farm	.8	.39	.86	11
	2. Connections are made between each learning event and on-the-job farmer's issues/problems	.7	.43		
	3. The extension facilitator and participants discuss and summarize key points of learning activity	.7	.45		

Mean (Min: 0 & Max: 1) 0: not important; 1: important



Comparisons

- To compare the view of experts with different personal traits about future forces, ethical issues, competencies and outputs mentioned earlier, firstly all items in the relevant tables were **sum up** and for each table one representing variable was calculated. The Cronbach's Alpha for all issues were higher than **.70** confirming the consistency of categorized items.
- Then the respondents' views were compared based on their **age, level of education, gender, organizational position, working experience and teaching experience** to see if there is any differences among their opinions or not. Statistical methods such as Mann-Whitney U, Kruskal Wallis and F (one way ANOVA) tests were used for data analysis.



- **Age:** one significant difference was found between age and respondents' opinion about ethical issues ($F = 1.646$, $df = 27$, $sig. = .034$).
- **Organizational position:** significant differences were recognized between organizational position and experts' view about outputs ($\chi^2 = 7.182$, $df = 2$, $Sig. = .028$) and level of specialty of competencies ($\chi^2 = 5.905$, $df = 2$, $Sig. = .050$) needed for AEIS.
- **Working experience:** one significant difference was measured between working experience and expert's opinion about level of specialty of competencies ($F = 2.178$, $df = 25$, $Sig. = .002$) for AElS.
- **Education level, gender and teaching experience:** **no significant difference** was achieved between above-mentioned traits and experts' view about any of components of AElS' competency profile (future forces, ethical issues, etc.).



Conclusion and recommendations



- The vast majority of the contextual factors, such as various content-related and profession-oriented developments, views on ethical concerns, statements about required outputs and the list of competencies **is regarded as being important**. So, the information of this study can very well be used during the deliberation process that will take place to decide upon the competency profile.
- Important elements of the competency profile of AElS, based on this survey amongst experts, are **content-related competence, and instruction-related competence**. Both need to be addressed in the professional development program that will be designed, especially because the data showed that **most of the AElS are agricultural experts instead of extension experts**.



- Regarding to the needed competencies for AEI, accented by experts, **appropriate training programs** for AEI should be designed and developed. Specifically, attention must be paid to increase subject matter understanding, presentation skills, and farmers' understanding. Thereafter, **appropriate evaluation system** should be carried out to measure AEI's success in achieving addressed competencies.
- Relating to the highlighted outputs and standards of AEI roles, it is recommended that **adequate instructional material** are provided for all extension courses and AEI are carefully educated to use them properly during their presentations.
- Moreover, AEI are lessoned about the ways they can practically support farmers in their **real situations in the farm** and particularly they should learn how to address farmers' questions and difficulties within the courses.



- AEs are expected to seriously consider competitiveness nature of future farming systems and a major need for farmers' creativity and productivity. Hence, more **participatory and interaction-based extension courses** will be required in the future.
- Obviously, as a prerequisite, Ministry of agriculture should support AEI with arranging various financial and psychological incentives.
- With regard to inferential analysis of this study there **was mainly convergence** in expert' opinion about different components of competency profile for AEs. So, it could be concluded that according to respondents designing a **general competency profile** for AEs is possible. Although, other studies, which are conducting under the basic project, will triangulate and assure the validity of this competency profile in the end.



Thanks for your kind attention