SOIL AND ENVIRONMENTAL MANAGEMENT AWARENESS AS PROFESSIONAL COMPETENCY OF THE AGRICULTURAL EXTENSION OFFICERS FOR THEIR PLANS IMPLEMENTATION

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ABSTRACT

Agricultural Extension Officer (AEOs) play the role of hub in agricultural activities, covers the rural population for boosting agricultural production. AEOs' competency level in soil and environmental management awareness is important for interacting with farming communities of different types of soil. Questionnaire was developed for all AEOs for data collection to know the present position and needed position of competency on Likert scale from 01-05 by assigning very low (01) and very high (05). Wide gap was found in competency of suitability of various soil types for horticultural and agronomic crops and reclamation of saline soil. We observed that suitability ranking of various soil types for horticultural crops (Diff. = 1.21), agronomic crops (Diff. = 1.20) and soil borne diseases (Diff. = 1.19) were the top three important competencies where training or improvement is needed. To better fill this gap we recommend that professional qualification of AEOs should be enhanced and training opportunities should be provided to them particularly to deal with soil and environmental management awareness. Thus training opportunities may increase their competency and will add highly skilled manpower to the system for sustainable development to protect environment. It is therefore, recommended that AEOs may be provided pre and in service trainings of soil environmental management in order to equip them with a capacity to work with farming community effectively to boost the living standard of farming community and alleviate poverty for environmental protection.

Keywords: *Professional competency, Agricultural Extension Officers, Soil and Environmental Management Awareness and plans implementation.*

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1. Introduction

Without soil crops cannot be grown necessary for race of human survival as without soil food availability will be a big question. Without soil, plants will die, as plants need the soil to grow and flourish. Soil is the need of plants growth and serves as a source of nourishment of micro-organisms along with other animals which influences local landscapes as well as preserve archaeological remains. Our plants can grow and stay alive

along with other organism as soil provide environment. Flow of water and other material is controlled by soil. Humans and plant-eating animals would go hungry.
The important layer of soil, drainage and aeration characteristic, their relationship to each other with the mineral component to a particular location can be isolated by the technical analysis of structure which is the indicator of efficiency and comparative rates for recycle organic material. The structural knowledge of soil is useful to know the soil behavior of various seasonal conditions. The average pH reading with major particle constituent is the classification of soil type as sand, clay, and silt based having limited value because of significant variation across regions even of same type and this knowledge of soil classification will give clear understanding. Soil provides an attachment for plant roots, shelter against air temperature limits and a medium for minerals and necessary nutrients for plant life acting as a sponge for moisture, capturing water, holding it and then distributing it to plant roots. Soil also protects roots and microorganisms in the soil that plants take only from direct sunlight, which can harm or kill them. Insects such as earthworms digest soil, improving it for the plants that grow there if trained staff as identified by Ogunbameru (2005) in Nigerian extension were poorly trained personnel at local level were the main problem. Building capacity of farmers is the main task of AEOs as supported by Sinkaiye (2005) link help in extension to empower farmers to ensure holistic development In order to study the importance of Soil and Environmental Management awareness by AEOs, this study was carried out to know the present position in professional expertise of officers.

2. Material & methods

The present research was carried in Khyber Pakhtunkhwa Province where all AEOs constituted the sample of research. Questionnaire was used for primary data by arranging meeting with Provincial Director General Extension Office. Questions regarding Soil and Environmental Management were prepared keeping in view the job of AEOs. This method is already followed by many research scholars previously (Easter, 1985; Ali, 1991: Nanjingo et al, 1991; Rndavary and Vaughn, 1991). Desired or needed and present level of expertise was measured from very low (01) to very high (05) in Soil and Environmental Management using Likert scale by assigning values (Qadeer, 1993).

3. Result & Discussions

Present and Needed/ Desired level of Expertise in Soil and Environmental Management:

The Officers in Agriculture Extension (AEOs) rated the importance of Soil and Environmental Management Awareness for their duty and job performance in the field. The opinion and perceptions of them are reflected in table No. 1.

Table 1: Self Explained Competencies in Soil and Environmental Management Awareness with SD & Rank Order

Competency	Desired or Needed Level			Present Level		
The ability to:	MEAN	Standard Deviation	RANK	MEAN	Standard Deviation	RANK
1. Describe suitability of various soil	04.53	0.6852	01	3.32	1.0015	01

types for horticultural crops						
2. Describe suitability of various soil types for agronomic crops	04.51	0.7492	02	3.31	0.9981	03
3. Reclamation of saline soils	04.47	0.7606	03	3.29	1.1069	04
4. Reclamation of water logged soils	04.44	0.8167	04	3.32	1.0786	02
5. Soil borne diseases	04.39	0.7283	05	3.20	1.1022	05
Average	04.47			3.31	1.057	

AEOs marked by themselves on the given scale all 05 competencies and marked as high desired/ needed for them (means scores = 04.39–04.53) necessary for effective performance in the field (TABLE. NO. 01). Amongst all competencies, the top most two capabilities were 1) suitability of various soil types for horticultural crops (MEAN = 04.53, Standard Deviation = 0.685) and 2) suitability of various soil types for agronomic crops (MEAN = 04.51, Standard Deviation = 0.749). The lowest rank capabilities which were needed or desired to AEOs were 1) soil borne diseases (MEAN = 04.39, Standard Deviation = 0.728) and 2) reclamation of water logged soils (MEAN =0 4.44, Standard Deviation = 0.816).

The self rated opinion of Officers in Soil and Environmental Management Awareness knowledge was rated from score (MEAN) of 03.20 to 03.32 on Likert type scale. Present position of Soil and Environmental Management Awareness knowledge of AEOs at maximum level were, 1) describe suitability of various soil types for horticultural crops (mean = 03.32, Standard Deviation = 1.002) and 2) reclamation of water logged soil (MEAN = 03.20, SD = 1.102). The two competencies, which received lowest mean rating on the scale, were 1) soil borne diseases (MEAN = 03.20, Standard Deviation = 01.102) and 2) reclamation of saline soils (MEAN = 03.29, Standard Deviation = 01.107). The average which was overall with MEAN of the Desired/ needed level was 04.467 as against 03.306 in level Present.

Difference of desired and present level of competency in Soil and Environmental Management Awareness in AEOs:

Present level of expertise was measured and the outcome was termed as training need in Soil and Environmental Management Awareness capabilities evident in table 02.

Table 2: Self Explained Professional capability Training Needs in Soil and Environmental Management Awareness with Ranking Order

S.No.	Parameters of Soil and Environmental Management Awareness	DESIRED	PRESENT	TRAINING NEED	
	KNOWLEDGE OF:	MEAN	MEAN	DIF = D-P	RANK
01	Describe suitability of various soil types for horticultural crops	04.53	03.324	01.21	01
02	Describe suitability of various soil types for agronomic crops	04.51	03.306	01.20	02
03	Soil borne diseases	04.39	03.198	01.19	03
04	Reclamation of saline soils	04.47	03.288	01.18	04

05	Reclamation of water logged soils	04.44	03.315	01.13	05
	Average	04.47	03.286	01.18	

The differences in their competencies were regarded as their training needs depicted in (TABLE NO. 2). All know how of the above knowledge in Soil and Environmental Management Awareness the top level capabilities where first one was turned as suitability by various soil types for horticultural crops (Diff. = 01.21) and second one was suitability of various soil types for agronomic crops (Diff. = 01.20). Bottom rank training which were desired by AEOs where No. 1 was reclamation of water logged soils (Diff. = 01.13) and second one was reclamation of saline soils (Diff. =01.18). The rated difference was recorded as bottom value (01.13) to top value (01.21).

Analysis of previous skills versus Competencies of AEOs

Though the differences did not reach the 5% significance level, AEOs with farming background had higher competencies in plant protection, horticultural crops and soil science. Higher competency was recorded from the AEOs having farming family background

Table 3:.Farming & Non Farming background and the Means of knowledge in Soil and Environmental Management Awareness

Family background	N	Mean technical competency
		CTCE
Farming	92	3.3301
Non Farming	19	2.9921
Average	111	3.2723

CTC= Composite technical competency (Soil and Environmental Management)

Factors Associated with Competencies of Soil and Environmental Awareness:

As we have recorded the response of No training as "1" and attendance of Yes of the regular training as "0" which becomes negative correlation.

Family background of AEOs in agriculture and non agriculture (0.197*) having greater contribution for promotion in competency. The officers from agriculture background having greater competency

Table 4: Dynamics connected with Soil and Environmental Management:

Aspects Autonomous	CORRELATION CO-EFFICIENT VALUE	SIGNIFICANT LEVEL
Age of Officers	00.101	00.292
Officers Job Experience	00.095	0.319
Officers Qualifications	00.119	0.215
Agriculture Specialty	-00.059	0.536
Agriculture/ Non Agriculture background	00.197*	0.039
Rural/ Urban	-00.040	0.675

Farming Experience Previously	-00.011	0.906
Training of Officers	-00.141	0.141

4. Conclusion and recommendations

Conclusion

Some differentiations were instigated between the present and desired level of knowledge in Soil and Environmental Management Awareness. Inborn skills have increased the knowledge of AEOs but the age of officers, their job familiarity, agricultural experience, place of origin Professional qualification and trainings have no effect on their skill

It was revealed that due to wide space in present as well as desired competencies of AEOs in Soil and Environmental management where top required competency was the fitness in different types of soil for horticultural crops with maximum competency gap which was found in suitability of a different types of soil for horticultural crops, suitability of various soil for agronomic crops and Soil born diseases along with pH of soil, important layer of soil and the structural knowledge of soil to know the soil behavior of various seasonal conditions

Recommendations

It is therefore, recommended that AEOs may be provided pre service and in service trainings of soil testing and environmental management not yet in use in the province to equip them with a capacity to able to work with farming community effectively. They should also provide a chance to get higher education. Audio visual material should be provided to them and also they may be provided computer training apart from other training opportunity especially those from non agricultural Background. They must be stationed in one station at least for three years. Moreover, the knowledge of pH of soil, important layer of soil and the structural knowledge of soil to know the soil behavior of various seasonal conditions

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