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Assessment of training needs of VAS & SMS on integrated farming systems

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Abstract
The research was conducted to assess the training needs of Veterinary Assistant Surgeons (VAS) & Subject Matter Specialists (SMS) on Integrated Farming Systems (IFS) in all the four districts of North Western Zone of Tamil Nadu. Ex-post facto research design and random sampling technique was adopted for this study. 10 VAS were randomly selected from each selected district and 10 SMS were randomly selected from the study area forms the sample size. A well structured interview schedule and training need index was constructed for gathering data and assessing training need. The findings of the study revealed that majority of the respondents felt that training is most needed in all the areas of integrated farming systems.

Keywords: Integrated faming system, north western zone, Tamil Nadu, training need

Introduction
Animal husbandry, especially Integrated Farming System (IFS) is crucial and essential for the rural livelihood, particularly for small and marginal farmers. Livestock contribute to earn and also provide best assurance against natural disasters (Arya *et al*., 2021) [2] in livestock based integrated farming systems. Integrated farming systems provide supplementary as well as complementary income for the farming community. In these aspects, veterinary profession plays a vital role in delivering quality and timely information and services for the farming community (Bashir *et al*., 2022) [3]. Hence, they need to be equipped with scientific know how to deliver the right information at the right time. The veterinary professionals need to be trained continuously as well as systematically with current, scientific and relevant information for their better job performance at the field level (Sandika *et al*., 2007; Aiswarya *et al*., 2019) [8, 1]. Further, a successful training need analysis will identify those who need training and what kind of training is needed. Moreover, training need analysis will be useful to get the gap between what levels of performance is required and the actual level (Deka *et al*., 2022) [4]. Considering the importance of training need assessment the present study was undertaken to analyse the training needs of VAS and SMS on integrated farming systems in North Western Zone of Tamil Nadu.

Materials and Methods
North Western Zone (NWZ) was selected purposively for the study since the zone has good concentration of extension and infrastructure facilities like Krishi Vigyan Kendra (KVK), Veterinary University Training and Research Centres (VUTRCs) and other line departments namely Dairy unions, private agencies like milk unions, feed manufactures etc. All the four districts of the zone *viz*., Salem, Namakkal, Dharmapuri and Krishnagiri were selected as the study area. Ex-post-facto research design was followed in the present study for assessing the training need of VAS and SMS on IFS. 10 Veterinary Assistant Surgeons (VAS) from each one of the selected district were included to form the sample size of 40 VAS and 10 Subject Matter Specialists (SMS) from KVK/ VUTRC were randomly selected for the study. A well structured interview schedule was prepared to collect the data from the respondents and the data was put for statistical analysis for obtaining the results and interpretation.

Construction of items for training need assessment
Agriculture+Animal Husbandry+Vermicomposting were identified as a most popular, sustainable and dominant IFS model as per the expert opinion, key informant technique and focus group interview method in the study area. A total of 41 items were prepared on the areas

of general aspects of IFS, animal husbandry practices, agriculture and vermicomposting by reviewing various literatures. The selected items were put for 25 experts by using 2 point continuum (suitable/not suitable) scale to assess its suitability to include in the schedule of training need assessment. 23 items were having score of more than 75 was selected and included to construct the final schedule consisting the statements on General aspects of IFS (5 items), animal husbandry (8 items), agriculture (3 items) and vermicomposting (7 items).

Extent of training need

The extent of training need was analysed by using four point continuum *i.e.* Most needed, Needed, Least needed and Not needed with their respective scores of 3, 2, 1 and 0 by using the training need assessment items. The summations of scores achieved by the respondents constituted the level of training needs on general aspects of IFS, animal husbandry, agriculture and vermicomposting. Extent of training need was calculated by using training need index and the training needs of the respondents were categorized as low (0-33%), medium (34-66%) and high (67-100%).

$$\text{Training need index} = \frac{\text{Total obtained score}}{\text{Maximum obtainable score}} \text{ X100}$$

Results and Discussion

The results of the study are interpreted in three different dimensions namely, the personal and training need attributes of VAS & SMS and area wise training needs of the respondents.

Personal attributes of VAS and SMS

Age

Majority of VAS (45%) were in old age group followed by 37.5 percent of them who were in middle age group and the remaining 17.5 percent of them were in young age group (Table 1). Most of the VAS has joined in their service long back and few of them were newly recruited and this might be the probable reason for getting more old age respondents. In respect of SMS, majority of them (50%) were old aged followed by young age group (30%) and the rest of them were in middle age group (20%). The old age of the respondents indicate that the subject matter specialists are working in that position for longer period with good level of experience.

Education

The results revealed that 80 percent of the VAS who had been working with B.V.Sc (Bachelor of Veterinary Science) degree and 17.5 percent of them were possessing Masters (M.V.Sc) and only a meagre 2.5 percent of them were working with PhD degree. With regard to the SMS 30 percent of them were possessing M.V.Sc degree, 40 percent of them with PhD degree and 30 percent of them belonging to other degrees *i.e.* from Fisheries, Horticulture and Agriculture (Table 1).

Gender

Table 1 depicts the gender of the respondents and more than half of the VAS (65%) was male and only 35 percent of them were females. These findings of the study indicate that more male had chosen veterinary profession than females. With respect to SMS, majority of the respondents belongs to male category while 40 percent of them were females.

Professional experience

Table 1 revealed that each 45 percent of the VAS had middle and high level of professional experience and a meagre 10 percent of them were having low level of professional experience. These findings are directly proportional to their age *i.e.* more number of old and middle age group were working for long duration and this might be the reason for their high level of experience. With respect to SMS, more than half of them *i.e.* 60 percent were having high level of experience and each 20 percent of them had medium and low level of experience. This indicates that they served for more years in the field. This might be the reason for having more number of respondents from high to medium level of professional experience.

Familiarity in computer use

The findings from the table 1 revealed that 30 percent, 60 percent and 5 percent of the VAS well familiar, familiar and not familiar in computer usage respectively. The reason might be due to less accessibility of the computer in the working institute, lack of sufficient time or lack of interest in adopting computer facilities. With regard to SMS more than three fourth *i.e.* 80 percent of them were well familiar in computer use and only 20 percent of them were familiar in use of computer. This reflects the availability of the systems in the working institute and their interest toward its usage.

Possession of computer at Veterinary Dispensary/Working institute

From the table 1, it can be clearly noticed that majority of the VAS (82.5%) were not possessing computer in their Veterinary Dispensary and only 17.5 percent of them were having computers. Whereas cent percent of the SMS posses computer and were performing their daily routine work by using the system. These findings indicate the poor development of Veterinary Dispensaries in terms of infra structure facilities in the present study area.

Attributes related to training needs of VAS and SMS

Previous training exposure on IFS

Table 2 shows that nearly three fourth (70%) of VAS were not exposed to any sorts of training on IFS and only 30 percent of them have been previously exposed to it. Whereas majority (70%) of the SMS had attended training on IFS and the rest 30 percent of them had not participated in any type of training on IFS. These results indicate that VAS were unexposed to training on IFS and the reason might be due to few numbers of training institutions in the present study area. So the training agencies and institutes, State Department of Animal Husbandry (SDAH) need to focus more on training VAS about IFS to disseminate the timely information to the needy farmers.

Preferred mode of training

From the table 2 it can be clearly observed that majority of VAS (57.5%) showed their willingness to attend the training in other institutions and the remaining 42.5 percent of them preferred to participate in training at their own places. This shows the eagerness and interest of the respondents to update their knowledge level on IFS. According to the opinion of SMS, 80 percent of them wish to attend the training in their own institutions and the rest 20 percent of them wants to participate in other institutions. The reason might be of the fulfilment of existing facilities in their parent institution.

Table 1: Distribution of VAS and SMS according to various personal attributes

Attributes	VAS (n=40)	SMS (n=10)
1. Age		
Young VAS (≤ 28 years) SMS (≤ 35 years)	7 (17.5)	3 (30.0)
Middle VAS (29 -33 years) SMS (36 to 41 years)	15 (37.5)	2 (20.0)
Old VAS (> 34 years) SMS (> 41 years)	18 (45.0)	5 (50.0)
Mean ± SD	**33.4 ± 5.6286**	**40.6 ±5.52**
2. Education		
B.V.Sc.,	32 (80.0)	0 (0.0)
M.V.Sc.,	7 (17.5)	3 (30)
Ph.D.,	1 (2.50)	4 (40)
Others	0 (0.0)	3 (30)
3. Gender		
Male	26 (65)	6 (60)
Female	14 (35)	4 (40)
4. Professional experience		
Low VAS (≤ 1 year) SMS (≤ 7 years)	4 (10)	2 (20)
Medium VAS (2 - 5 years) SMS (8 - 12 years)	18 (45)	2 (20)
High VAS (> 5 years) SMS (> 12 years)	18 (45)	6 (60)
Mean ± SD	**5.7 ± 4.16**	**11.8 ±4.34**
5. Familiarity in computer use		
Well familiar	12 (30)	8 (80)
Familiar	26 (65)	2 (20)
Not familiar	2 (5.0)	-
6. Possession of computer at V.D/ working institute		
Possessing	7 (17.5)	10 (100)
Not possessing	33 (82.5)	-

Figures in the parenthesis indicates percentage

Desired training methods

The findings from the table 2 indicate that 90 percent of VAS and cent percent of SMS prefers multimedia compact disc as the desired method of training. Further, only 10 percent of VAS liked audio visual methods to acquire training. This might be due to the storage capacity of CDs, its future use in needy time, easy maintenance and to disseminate to train others at any time. Moreover, nature of combining visuals with audio in storage form like CDs convey more ideas interactively which are sometimes not expressed verbally and this might be the reason for their preference of multimedia compact discs. These findings are in line with Sasikala *et al*., 2012 [12], and Sasikala *et al*., 2013 [11] stated that the importance and use of Multimedia compact discs in transfer of knowledge to the farmers.

Duration of training

Table 2 indicates that majority of the respondents prefer shorter duration of training period *i.e.* only for one day. With respect to VAS more than three fourth (80%) of them preferred to get the training for a day and 17.5 percent and a few (2.5%) of them wanted it for 2-3 days and for about one week respectively. This might be due to their work load and lack of time to spend in getting trained. In contrast to these findings, 60 percent of SMS wanted to get it for 2 -3 days and 30 percent of them for about a day. Only 10 percent of the SMS wanted to get training for about one week. These results show the respondents eagerness to get the training completely for transferring technologies to other farmers.

Table 2: Attributes related to training needs of VAS and SMS

SI. No	Attributes	VAS (n=40)	SMS (n=10)
1.	**Previous training exposure on IFS**		
	Yes	12 (30)	7 (70)
	No	28 (70)	3 (30)
2.	**Preferred mode of training**		
	Own place	17 (42.5)	8 (80)
	Other training institutions	23 (57.5)	2 (20)
3.	**Desired training methods**		
	Audio visual	4 (10)	0
	Multimedia compact disc	36 (90)	10 (100)
	Field tour & Group discussion	0	0
4.	**Duration of training**		
	1 day	32 (80)	3 (30)
	2-3 days	7 (17.5)	6 (60)
	1 week	1 (2.5)	1 (10)
	2 weeks	0	0

Figures in the parenthesis indicates percentage

Perceived training needs of VAS and SMS on IFS

The perceived training needs of VAS and SMS were assessed and presented under the following sub-heads.

1. Area wise training need of VAS and SMS in IFS
2. Extent of training need

Area wise training needs of VAS on IFS

The training needs perceived by VAS and SMS on IFS were ascertained in four main areas related to IFS *viz.,* General aspects about IFS, animal husbandry, agriculture and vermicomposting.

It is clearly seen from the table 3, most of the VAS needed training in the aspects of IFS, animal husbandry, agriculture and vermicomposting. It is observed that majority (37.5%) of the respondents most needed the training in IFS, followed by 30 percent of them felt that it is needed and 15 percent and 17.5 percent of them felt that it is least and not needed respectively. In the context of animal husbandry majority (45%) of them just needed training and 25 percent of them most needed. Very less *i.e.*10 percent and 20 percent of them felt that it is least and not needed respectively. With regard to agriculture, nearly equal percent of them felt that it is most needed (35%) and just needed (30%). Whereas 25 percent of the VAS thought it is least needed and a meagre 10 percent of them not needed training on agriculture. In the area of vermicomposting nearly three fourth of the respondents felt that it is most needed (45%) and needed (35%). The remaining 15 and 5 percent of them noticed that it is least and no need to get the training (Table 3). This finding clearly explains about their eagerness to get training and refresh their knowledge in various areas like IFS, animal husbandry, agriculture and vermicomposting. The reason for their eagerness might be of their need of, educating the farmers in various aspects with regard to agriculture and animal husbandry and their client's queries.

Moreover, before educating or training others, as a Veterianry professional, they need to be updated with the subject matter and this might be another reason for their eagerness towards getting training. These results are similar to the reports of Rao *et al.* (2008) [7] and Dixit *et al*., (2014) [5] who reported that the veterinary faculty and veterinary graduates need to be

supported with the technical knowledge to improve their quality, updation and sharpening their skills to support the farmers to improve the livestock production. Likewise, Raghunandan (2004) [6] reported that majority (58%) of the respondents expressed the need for more technical information and guidance by the concerned authority for improving their expertise.

Table 3: Area wise training needs of the VAS

(n=40)

Area	MN (3)	N (2)	LN(1)	NN(0)	Mean Score	Rank
IFS	15 (37.5)	12 (30)	6 (15)	7 (17.5)	1.87	III
Animal Husbandry	10 (25.0)	18 (45.0)	4 (10.0)	8 (20.0)	1.75	IV
Agriculture	14 (35)	12 (30)	10 (25)	4 (10.0)	1.90	II
Vermicomposting	18 (45.0)	14 (35.0)	6 (15.0)	2 (5.0)	2.20	I

According to VAS, getting training on vermicomposting is foremost importance (mean score: 2.20) since they might have not been practically exposed to it hence it was ranked first. Training need on agriculture was ranked second with mean score of 1.90 by VAS and the reason may be the lack of agriculture subject in their study. Moreover, newly joined VAS may not be practically exposed to the agriculture field; this might be another reason for their eagerness to get training on agriculture. Training need on IFS was ranked third (mean score: 1.87) and animal husbandry was ranked fourth (mean score: 1.75) (Table 3). The reason for the last rank to the training need on animal husbandry is so transparent *i.e.* VAS have studied B.V.Sc. and therefore have all the necessary information about it. Only few of them wanted to have training on this aspect since they need to refresh and update themselves.

Area wise training need of SMS on IFS

With respect to SMS, the level of training need is in more diverse manner from most needed to not needed. This explains about their previous exposure to get training on various aspects. Further it can be seen from the table 4 that each 20 percent of them most needed and least needed training in the area of IFS and the rest (each 30%) of the respondents felt that it is just needed and not needed. In the perspective of animal husbandry each 40 percent of them just needed and not needed any training. But the remaining respondents (each 10%) felt that it as most and least needed. In the background of agriculture more than half (60%) of the respondents not needed any training and the remaining respondents perceived the need of training from most needed to least needed. Each 30 percent of them opined that it is needed and least needed. Whereas each 20 percent of them felt that it is most needed and not needed. Usually SMS are being exposed to training on various aspects before giving training to the farmers and this might be the reason for the diverse nature of their perception towards getting training. But still some of them might be newly joined in the service and not yet exposed on the way to get training. This might be the reason of their perceived need to get training. These observations are in concordance with the reports of Singh *et al*. (1998) [9] who stated that there is a need of orientation and training on IFS for the agricultural professionals. Further, Singh (2002) [10] reported, the training and updation of knowledge on farming system agricultural professionals as the key factor for the adoption of IFS by the farmers.

Table 4: Area wise training needs of the SMS

(n=10)

Area	MN (3)	N (2)	LN(1)	NN(0)	Mean Score	Rank
IFS	2 (20.0)	3 (30.0)	2 (20.0)	3 (30.0)	1.40	II
Animal Husbandry	1 (10.0)	4 (40.0)	1 (10.0)	4 (40.0)	1.20	III
Agriculture	1 (10.0)	2 (20.0)	1 (10.0)	6 (60.0)	0.80	IV
Vermicomposting	2 (20.0)	3 (30.0)	3 (30.0)	2 (20.0)	1.50	I

MN– Most needed; N– Needed; LN– Least needed; NN– Not needed

Figures in the parenthesis indicates the percentage to the corresponding frequency

With respect to SMS, training need on vermicomposting was ranked first (mean score: 1.50) followed by IFS (1.40). Whereas training need on animal husbandry was ranked third (mean score: 1.20) and agriculture as fourth (mean score: 0.80) (Table 3). Farmers need more training on vermicomposting and it reflects on the training needs of the SMS since they need to train them. This might be the reason for the first rank and likewise IFS as second rank. Animal husbandry and agriculture was ranked third and fourth since the SMS are from the veterinary and agriculture profession.

In fact all the respondents might not have any training from anywhere about the areas of IFS, animal husbandry, agriculture and vermicomposting. Hence, their expression towards needed side was high. The need of training on IFS by both VAS and SMS indicates that the farmers might be asking queries on IFS. Accordingly, VAS and SMS need to disseminate the practices of IFS to the farmers for improving their economic status and hence they need to be trained. Moreover, VAS and SMS need to educate and train many farmers at various times and hence they need a training material in CD form. So that often they can use it many times to train many farmers in future.

Extent of training need

Extent of training need was calculated by using the training need index which was developed by dividing the obtained score by the maximum obtainable score. The overall training need of the respondents (VAS and SMS) is presented in the table 5. With respect to VAS, more than half of them (52.5%) had medium level of training need and 42.5 percent of them were in high training need, whereas only 5 percent of them had low training need. In contrast to VAS, more than half of the SMS (60%) had low level of training need followed by medium and high level of training need (each 20%). Whereas

the mean score index was high for VAS (64.4) and 40.83 for SMS which explain about their urge to get training on various aspects of IFS to improve their professional efficiency. Further, VAS and SMS are the bottom level workers since, they are directly interacting with the farming community and need to clarify their doubts with regard to farming.

Table 5: Extent of training needs in IFS

SI. No.	Extent	VAS (n=40)	SMS (n=10)	Mean score index
		f (%)	f (%)	
1.	Low (0-33%)	2 (5)	6 (60)	64.4 (VAS) 40.83 (SMS)
2.	Medium (34-66%)	21 (52.5)	2 (20)	
3.	High (67-100%)	17 (42.5)	2 (20)	

Conclusion

The study concluded that the training is an important component to enhance the professional competency of VAS and SMS. Hence, more number of training programmes should be organized regularly in the needy areas to improve the core competency of veterinary professionals. Frequent refresher programmes should be organized to update the latest farming technologies to disseminate for the farmers.

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