

*Project Report*

# **“Effectiveness and Training Transfer of Centre for Advanced Faculty Training Programmes (CAFT) at NARS”**

**(July - October , 2012)**

**Sponsored by**

**Agricultural Education Division  
Indian Council of Agricultural Research  
New Delhi**

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## CONTENTS

<i>Executive Summary</i>	3
Introduction	6
Research methodology	14
Results and discussion	22
A. Response of CAFT participants	22
B. Handholding support by CAFT Centres: Response CAFT Directors	48
C. Impact of CAFT on NARS organizations: A case	49
D. Effectiveness of CAFT programmes: Cases of concurrent evaluation	54
E. Assessment of performance of CAFT participants by peer group and deputing authorities	63
Conclusions and recommendations	65
Bibliography	73
Annexure-I: Questionnaire used for CAFT participants	75
Annexure-II: Questionnaire used for CAFT Directors	86
Annexure_III: Questionnaire used to assess organization-wise impact	89
Annexure-IV: Questionnaire for concurrent evaluation	92
Annexure-V: Questionnaire for assessment of performance of CAFT participants by peer group	95
Annexure-VI: Questionnaire for assessment of performance of CAFT participants by deputing authorities	97
Annexure-VII: Workshop Report	99

## Executive Summary

*Training is the crucial but expensive component of human resource development (HRD). It is a planned effort to improve the performance efficiency and effectiveness of members of organization. The performance improvement may be effected through planned learning and transfer of such learnt knowledge, skills and attitude to work place. Training transfer, though, highly desirable outcome of any training programme, has widely been reported as deficit. The main reason being most training programmes fail to inculcate 'training transfer' intent in trainees. Hence, there is an increasing concern over the effectiveness of training and training transfer at work place and the resultant improved organizational performance.*

*Indian Council of Agricultural Research (ICAR) through its scheme on Centre for Advanced Faculty Training (CAFT) has been supporting the faculty and scientists of National Agricultural Research System (NARS) in the cutting edge areas of agriculture and allied sciences to meet capacity building demands in terms of teaching, research, training and extension. There are 31 such centres established all over the country to build the teaching, research, training and extension competencies of faculty of NARS. During the XI plan period, these centres organized 213 need-based capacity building programmes, each of 21 days duration. About 3600 scientists/ faculty members of NARS participated and benefitted from such capacity building programmes.*

*There was a felt need to improve the design, pattern and content of CAFT capacity building programmes in order to match the emerging demands of contemporary and future agricultural dynamics. Hence, a project was formulated by NAARM to assess the perception of CAFT participants and other stakeholders towards the effectiveness of CAFT programmes, to capture the training transfer by CAFT participants and the resultant transfer outcomes and suggest strategies to improve the design, pattern and content of CAFT programmes. It was sponsored by Agricultural Education Division of IACR, New Delhi. The study was conducted during June-September, 2012 using ex-post-facto research design. The study covered six types of respondents - the participants of completed CAFT programmes, participants of on-going CAFT programmes, CAFT beneficiaries with origin from same agricultural university, CAFT Directors, the peer group and deputing authorities of CAFT participants. The collected data were analyzed using descriptive statistics to arrive at meaningful conclusions and pragmatic implications.*

Majority of the respondents were middle to old aged (65%), male (85%), in Assistant Professor cadre (69%), had doctoral degree (71%), with 6-20 years of service (64%) and up to 80 days of total training (53%). The respondents represented 25 states and all the CAFT centres. Highest proportion of the respondents reported self (22%), peers (21%) and immediate higher-up (20%) as the source of information about CAFT training programmes. Majority (53%) of the respondents revealed that 'updating knowledge and skills' as the motivation to attend CAFT training followed by 23 percent apiece reporting 'training theme relevant to job' and 'training area related to subject' as the motive.

It was observed that most of the CAFT trained participants had favourable opinion towards pedagogy and training environment of CAFT programmes. Majority of the participants shared their CAFT experiences with their colleagues in an informal manner and utilized such experience in strengthening their research and teaching competencies. The participants of the live CAFT programmes appreciated the pedagogy of such programmes. They also suggested strategies for further improvement of CAFT programmes. The peer group as well as the deputing authorities agreed that there was improvement in the teaching competency of the CAFT participants after participation in the CAFT programmes. They also strongly agreed that the research competency of CAFT participants had improved.

The respondents had favourable opinion towards variables of their own attributes, training design and delivery, organizational climate and transfer outcomes, the four components of training transfer system. The correlation studies suggested that the organizational climate is very important for facilitating transfer of knowledge and skill gains acquired by respondents back at their job conditions. The factors of the training transfer system that influenced the transfer outcomes provided hints for improvement for all the participants, training managers and authorizes of the Universities. The results of the study had brought pertinent pointers as implications for refinement of CAFT programmes in terms of pedagogy and training environment/ facilities in order to facilitate effective training transfer of CAFT programmes.

The study results were presented for peer and expert review in a workshop organized specially for the purpose. Based on the deliberations, a number of implementable recommendations were evolved for improving the visibility, planning, management, evaluation, training transfer and overall impact of CAFT training programmes. Specifically, major recommendations pertain to:

- *Aggressive communication of CAFT programmes using multiple channels for attracting most eligible participants*
- *Creation of webpage and linking it to the website of ICAR and host organizations is a must for improving visibility of CAFT centres*
- *Participant selection through well laid out eligibility criteria to ensure effective training transfer*
- *Creative designing of training brochure for attractiveness and information (programme content, resource persons and delivery strategies) authenticity*
- *Well researched resource material in hard and soft versions should be mandatory for all CAFT trainings.*
- *Organization of periodic follow-up workshops by CAFT centres to assess impact, training transfer and for continuous improvement*
- *Regular capacity building of CAFT Directors and Trainers in reputed national and international centers.*
- *NAARM should organize a week-long capacity building programme on 'Effective Training Management' exclusively to CAFT Directors.*
- *Regular up-dating of training needs database by CAFT centres through training needs assessment surveys and stakeholder workshops.*
- *Increased budgetary support to CAFT programmes to cover up for the escalating costs on lodge, board, logistics and other training expenses and provision of need-based contractual staff for meeting training and research related priority commitments*
- *Performance assessment of CAFT centres and a scheme to reward the best CAFT centre through a holistic assessment process*
- *Rationalization of CAFT centres vis-à-vis subject areas to accommodate the emerging areas of agriculture and allied sciences*
- *Authentic documentation of impact of CAFT training through surveys, case studies and dissemination of the same through web-based and conventional communications.*

## INTRODUCTION

### **Centre for Advanced Faculty Training (CAFT)-An overview**

In order to enhance the competency level of agricultural faculty and to develop as well as modernize the infrastructure available for research, teaching and training, Indian Council of Agricultural Research (ICAR) set up several Centres for Advanced Studies (CAS) in selected disciplines at various Agricultural Universities and ICAR Institutes with the support of UNDP from 1971 onwards. These centres were established to encourage the pursuit of excellence through collaboration between scientists of outstanding ability with their counterparts across agricultural institutions and thus accelerate the attainment of international standards in specific fields of agricultural research and education. In that way, CAS centres were able to modernize the infrastructural facilities and impart skills in terms of teaching and research competencies to faculty in specialized areas. These centres also brought about considerable interaction among the scientists within the country by organizing workshops, seminars and conferences. As on 1994-95, there were 35 Centres of Advanced Studies (CAS) functioning in various fields of agricultural sciences. These centres were reviewed by a QRT in 1999 and based on the QRT recommendations, four CAS centres were discontinued in X plan period. Again in 2008, ICAR reviewed the performance of all 31 CAS centres. A status report was submitted with recommendations for further refinement of CAS. During the XI plan, these CAS centres were restructured as CAFT centres with adequate importance towards competency building of faculty of Agricultural Universities for providing quality education to agricultural students.

During XI plan period, a total of 203 CAFT programmes were organized in cutting edge areas of agriculture and allied sciences viz, precision farming, transgenics, genomics, molecular breeding and marker assisted selection, nanotechnology, bio-informatics, climate change mitigation and adaptation, GIS applications for natural resource management, technology forecasting and visioning etc and more than 3400 scientists of NARS institutes were benefitted. During the same period, each CAFT centre organized

about 6 programmes with an average participation of 110 trainees representing Agricultural Universities and ICAR institutes (Table 1).

**Table 1. Details about centre-wise programmes organized during XI plan period**

CAFT Centre	No. of CAFT programmes	No. of participants
Agronomy, Pantnagar	7	153
Agronomy, Coimbatore	8	155
Plant Pathology, New Delhi	8	152
Plant Pathology, Pantnagar	7	139
Agricultural Entomology, Coimbatore	7	115
Entomology, Hisar	7	119
Horticulture (Vegetables), Solan	5	88
Horticulture (Fruits), Ahmednagar	6	105
Genetics and Plant Breeding, Ludhiana	7	126
Genetics and Plant Breeding, Coimbatore	7	114
Agricultural Meteorology, Ahmednagar	7	118
Soil Science, Ludhiana	7	112
Soil Science, Jabalpur	7	136
Agricultural Economics, New Delhi	5	75
Agricultural Extension, New Delhi	6	129
Home Science, Hyderabad	6	58
Fisheries Science, Mumbai	5	71
Veterinary Surgery and Radiology, Ludhiana	6	99
Animal Genetics and Breeding, Karnal	6	105
Dairy Processing, Karnal	4	59
Animal Nutrition, Bareilly	8	120
Veterinary Physiology, Bareilly	7	122
Veterinary Microbiology, Hisar	5	64
Gynecology and Reproduction, Ludhiana	7	74
Clinical Medicine and Therapy, Chennai	7	119
Avian Science, Namakkal	7	110
Agricultural Microbiology, Coimbatore	7	104
Veterinary Parasitology, Bidar	5	75
Crop Physiology, Faizabad	5	108
Biochemistry, New Delhi	6	92
Agricultural Statistics and Computer Application, New Delhi	11	176
<b>Total</b>	<b>203</b>	<b>3402</b>
<b>Average</b>	<b>6.5</b>	<b>110</b>



**Table 2. Year-wise programmes organized during XI plan period**

<b>Year</b>	<b>No. of programmes</b>	<b>No. of participants</b>
2007-08	50	767
2008-09	58	965
2009-10	29	432
2010-11	30	590
2011-12	36	648
<b>Total</b>	<b>203</b>	<b>3402</b>
<b>Average</b>	<b>41</b>	<b>680</b>

**Table 3. Details about centre-wise budget allocation (Lakhs) during XI plan period**

<b>CAFT Centre</b>	<b>Budget Allocation</b>
Agronomy, Pantnagar	41.12
Agronomy, Coimbatore	43.7
Plant Pathology, New Delhi	30.59
Plant Pathology, Pantnagar	43.87
Agricultural Entomology, Coimbatore	35.59
Entomology, Hisar	31.51
Horticulture (Vegetables), Solan	39.11
Horticulture (Fruits), Ahmednagar	29.4
Genetics and Plant Breeding, Ludhiana	29.86
Genetics and Plant Breeding, Coimbatore	29.78
Agricultural Meteorology, Ahmednagar	39.95
Soil Science, Ludhiana	29.33
Soil Science, Jabalpur	35.2
Agricultural Economics, New Delhi	28.31
Agricultural Extension, New Delhi	30.53
Home Science, Hyderabad	51.97
Fisheries Science, Mumbai	47.1
Veterinary Surgery and Radiology, Ludhiana	33.17
Animal Genetics and Breeding, Karnal	28.41
Dairy Processing, Karnal	28.46
Animal Nutrition, Bareilly	35.34
Veterinary Physiology, Bareilly	33.04
Veterinary Microbiology, Hisar	25.49
Gynecology and Reproduction, Ludhiana	36.85
Clinical Medicine and Therapy, Chennai	49.52
Avian Science, Namakkal	44.57
Agricultural Microbiology, Coimbatore	36.06
Veterinary Parasitology, Bidar	33.07
Crop Physiology, Faizabad	27.17
Biochemistry, New Delhi	29.24
Agricultural Statistics and Computer Application, New Delhi	41.93
<b>Total</b>	<b>1099.39</b>
<b>Average</b>	<b>35.46</b>

**Table 4. Year-wise budget allocation during XI plan period**

<b>Year</b>	<b>Budget allocation</b>
2007-08	226.75
2008-09	254.51
2009-10	144.11
2010-11	222.85
2011-12	251.17
<b>Total</b>	<b>1099.39</b>
<b>Average</b>	<b>219.88</b>

On an average 41 CAFT programmes were organized in a year and nearly seven hundred participants were trained (Table 2). This data implies the achievements of CAFT centres all over the country in terms of number of programmes and coverage of NARS scientists as participants of CAFT programmes. A budget of close to ₹ 1,100 lakhs was allocated to CAFT scheme in the XI plan period. About ₹ 35 lakhs was allocated towards each CAFT centre (Table 3). The budget allocation per year towards all CAFT programmes/ centres was about ₹ 220 lakhs (Table 4). This data shows the importance ICAR gives to CAFT scheme in terms of budget allocation. With this magnitude of investment and other resource commitments, it is imperative to justify the same by assessing the impact of the scheme. It, therefore, necessitates undertaking a research study to assess the effectiveness of CAFT programs and the resultant training transfer (in terms of knowledge, skills and attitude) by CAFT participants back at their sponsoring organizations with a view to provide appropriate pointers for refinement of CAFT scheme, its operational methodology, resource utilization, etc. so that such programmes may be implemented with enhanced efficiency to achieve training effectiveness in XII plan period.

### **Significance of capacity building**

Capacity building is the crucial but expensive component of human resource development (HRD), however, the performance improvement can be effected mainly through training. Training is a planned effort that intends to improve the efficiency and effectiveness of performance of the members of organization. The performance improvement may be effected through planned learning and transfer of such knowledge learnt back at work

place. Given such objectives, it has been reported widely that training programmes fail to inculcate 'training transfer' intent in trainees. Hence, there is an increasing concern over the effectiveness of training programmes and training transfer at work place and the resultant improved organizational performance in terms of productivity, efficiency, effectiveness and performance enhancement etc. Training investments continue to yield deficit results, making training transfer a core issue of HRD. Thus, training transfer has attracted the attention of many training researchers and HRD practitioners, particularly in terms of how transfer could be enhanced. There are also increasing expectations for trainers to demonstrate the link between training and organizational outcomes and thereby to justify investment in training. Research on training transfer has been relatively scarce but the available information indicates that the extent of training transfer has been below expectations. Hence, there is a felt need to explore the factors associated with training transfer through empirical means and thereby to formulate pragmatic strategies to enhance training transfer at work place.

### **The concept of 'training transfer'**

Training transfer is the degree to which individuals effectively apply the knowledge, skills and attitude (KSAs) gained from training to job situation and maintains such KSAs over a certain period of time. Transfer of KSAs is more pertinent than the effectiveness of training. Training transfer is the critical point from where the organizational effectiveness is influenced by training effectiveness. Training transfer in HRD's perspectives represents transforming learning into individual performance. However, training transfer does not just occur. It needs carefully formulated and implemented strategies.

### **System's approach to training transfer**

Trainees, managers and supervisors of the trainees and trainers of capacity building programmes are the role players in the process of training transfer. The learning transfer system inventory (LTSI) proposed by Holton *et al* 2000, viewed training transfer as a system of learner characteristics, training design, organizational climate and organizational results. The integrated theory of training motivation (Colquitt *et al* 2000) included trainees' characteristics, situational variables and learning outcome variables as

major domains to explain training transfer and the resultant job performance at work place. The model proposed by Goldstein and Ford, (2002) (quoted by Shoobridge 2002) had domains *viz* training design characteristics, trainees' characteristics, learning outcomes, work characteristics and transfer outcomes. Social context, individual factors, transfer process and outcomes were the four domains referred by Chibaru *et al* (2010) to explain training transfer. The empirical model proposed by Pham *et al* (2010) constituted domains *viz* trainees' motivational perspectives, trainees' transfer strategies and transfer effects. Though, many such empirical models have been proposed and tested by researchers to explain training effectiveness, the model proposed by Holton *et al* (2000), seems to be comprehensive and complete. Multiple variables constitute the domains like training design, trainees' characteristics and transfer environment and affect the transfer outcomes at work place. Hence, the assessment of training transfer cannot be viewed as a factor predicted by individual traits/ domains. All the traits of training design, trainee characteristics and the transfer environment constitute the training transfer system as a whole (Holton *et al* 2000), and hence the training transfer has to be viewed as an impact of training transfer system governed by major domains and in turn the traits of the domains.

### **Centres of Advanced Faculty Training**

Indian Council of Agricultural Research (ICAR) through its scheme on Centres on Advanced Faculty Training (CAFT) has been supporting the faculty of National Agricultural Research System (NARS) in the cutting edge areas of agriculture and allied sciences with respect to research, education and extension capacity demands. There are 31 such centres established all over the country. Such centres have been building the capacity of scientific faculty in terms of up-grading their skills since the inception of this scheme. During the XI plan period, the centres organized 213 need-based capacity building programmes, each of 21 days duration. The capacity building areas pertain to key areas of agriculture and allied sciences *viz*, precision farming, transgenics, genomics, molecular breeding and marker assisted selection, nanotechnology, bio-informatics, climate change mitigation and adaptation, GIS applications for natural resource management, technology forecasting and visioning etc. About 3600 scientists/ faculty members of NARS participated and benefitted from such capacity building programmes. Through such

efforts, about 200 course manuals and resource materials were prepared around emerging areas of agriculture and allied sciences.

### **Assessment of effectiveness and training transfer of CAFT**

There is a felt need to improve the design, pattern and content of CAFT capacity building programmes. Such need has been felt pertinent in order to match the evolving demands pertaining to the perspectives of contemporary agricultural dynamics. Such improvement can be done against a benchmark set through assessment of effectiveness of CAFT capacity building programmes and the resultant training transfer by the participants of such programmes. Any such impact assessment must view the capacity building programmes from several dimensions such as instructional outcomes, training needs, training impact on the job performance of the scientists, benefits derived by the sponsoring research institutions and further improvements required if any (Samantha *et al* 1991). Further, the studies conducted at NAARM (Samanta *et al* 2003 and 2004) imply that there is a need for improving the training design of capacity building programmes to support training transfer back at work place. In this process, organizational climate of NARS institutes ought to support effective training transfer by scientists back at work place after undergoing capacity building programmes. Hence a research study on **“Assessment of effectiveness and training transfer of Centre of Advanced Faculty Training (CAFT) at NARS”** was undertaken with the following specific objectives.

#### **Objectives**

- To assess the perception of CAFT participants and CAFT Directors towards the effectiveness of CAFT programmes
- To capture the training transfer by CAFT participants and the resultant transfer outcomes
- To assess the perception of peer group and deputing authorities towards performance of CAFT participants
- To suggest strategies to improve the design, pattern and content of CAFT programmes

## Limitations of the study

- The project was time bound (June – October, 2012). The CAFT centres and the CAFT participants are spread over across the country. Hence collection of requisite data from all the relevant stakeholders within the short period of time was a constraint.
- Time restrictions limited the methodology to mailed questionnaire survey, follow up focus group discussions and workshop. The conventional impact assessment methods of pre and post assessment, and trained and untrained comparisons could not be used because of wide geographical spread of the respondents.
- The study covered purposively restricted its coverage to CAFT programmes conducted during 2008-09 to 2010-11 with a rationale that a minimum time frame is required for training transfer to workplace by the participants.
- The data on most of the aspects is based on the recall memory of the respondents. Though all care was taken to structure the questionnaire to avoid redundancies and ambiguities, errors due to memory bias and subjectivity of responses cannot be ruled out.

## RESEARCH METHODOLOGY

### Locale, sampling procedure and data collection

The study covered different constituent organizations of National Agricultural Research System (NARS). It was carried out using ex-post facto research design during the year 2012. The study had six of respondents; the participants of completed CAFT programmes, participants of ongoing CAFT programmes, CAFT beneficiaries with origin from same NARS organization, CAFT Directors, peer group and deputing authorities of CAFT participants.

The instrument given in annexure-I was administered among the participants of the CAFT programmes. The participants who underwent capacity building during 2007-08 to 2009-10 were selected as the population for this survey. It was estimated that about 1800 participants were benefitted out of CAFT programmes during this period. The instrument was sent to the CAFT Directors requesting them to forward the same to the participants of CAFT programmes conducted during the specified period. The period of data collection was June-August, 2012. Response from more than 270 participants was received during this period that constituted around 15% of the beneficiaries of CAFT programmes.

The instrument enclosed in annexure-II was administered among the CAFT Directors to get their opinion towards handholding support extended by them in teaching, research and extension activities of the participants of the CAFT programmes on the themes related to CAFT centres. Out of the 31 CAFT Directors, more than two-third (68%) responded promptly to this instrument with relevant data.

The third instrument given in annexure-III was administered among the participants of NARS organizations from which maximum number of beneficiaries participated in CAFT programmes. Out of four such organizations selected, fairly good response was received from the participants of Sher-e-Kashmir University of Agricultural Sciences and Technology (SKUAST), Jammu and such data was utilized for analysis and further interpretation.

To have an observational experience about the CAFT programmes and to assess the effectiveness of CAFT programmes as concurrent evaluation methodology, it was decided to visit a few on-going CAFT programmes during August 2012. In that way, two CAFT programmes conducted by CAFT Centres namely CAFT on Horticulture (Fruits) at MPKV, Rahuri and CAFT on Veterinary Clinical Medicine, Ethics and Jurisprudence at MVC, TNVASU, Chennai were observed by the project team members. The instrument at annexure-IV was administered among the participants (34) of these two programmes to capture their opinion about training effectiveness in terms of pedagogy and training environment.

To assess the performance of CAFT participants by their peer group members and the deputing authorities, two different instruments (Annexure V and VI) were designed and circulated among the peer group and deputing authorities of participants of CAFT programmes who responded for the study from same organizations. The data were collected through mail, e-mail and direct distribution of questionnaire and getting the response back. A total of 130 responses were received in this regard from various NARS organizations like PAU, Ludhiana, GADVASU, Ludhiana, ANGRAU, Hyderabad, IASRI, New Delhi, Dr.YSPUH&F, Solan and CSKHPKV, Palampur. The responses were analyzed and the results are presented in this chapter.

### **Data collection tools**

To assess the effectiveness, training transfer and impact of CAFT programmes, suitable instruments were developed to be administered among various stakeholders of CAFT programmes as follows:

**Instrument to assess the effectiveness and training transfer of CAFT programmes from the participants (Annexure-1).** The instrument had the following components:

- Personal profile
- Motivation behind participation in CAFT programmes
- Training transfer system (Trainees attributes, training design and delivery, organizational support climate and transfer outcomes) (Fig. 1)
- Effectives of training programmes



- Constraints in training transfer
- Suggestion to improve CFAT training programmes
- Preferences towards CAFT training programmes

**Instrument to assess the handholding support extended by CAFT Directors (Annexure-II).** The instrument had the following components:

- Personal profile
- Efforts taken by the CAFT Directors before, during and after training
- Handholding extended by CAFT Directors

**Instrument to assess the organization-wise impact of CAFT programmes (Annexure-III).** The instrument had the following components:

- Personal profile
- Impact of CAFT on research activities
- Impact of educational activities
- Impact of CAFT on extension activities

**Instrument to assess the effectiveness of CAFT programmes-Concurrent evaluation (Annexure-IV).** The instrument had the following components:

- Personal profile
- Expectation from the CAFT training
- Training evaluation towards pedagogy and training environment

**Instruments to assess the performance of CAFT participants by peer group (Annexure V) and deputing authorities (Annexure VI).** The instruments had the following components:

- Personal profile
- Opinion of peer group/ deputing authorities towards performance of CAFT participants
- Suggestions for refining CAFT methodology

### **Conceptual model of the study**

Based on extensive literature review, a conceptual model was developed for planning and carrying out the study. The conceptual model is based on the premise that training effectiveness vis-à-vis training transfer is the combined responsibility of the a) the trainee,

ii) the training organization and iii) the trainee's (sponsoring) organization. The conceptual model envisages four main domains representing trainee attributes, attributes of organizational climate, training design and delivery and transfer outcomes. Depending on the relevance these domains and their attributes were measured before training, during training and after training as perceived by the trained participants.

### **Attributes proposed in the conceptual model and their operationalization**

#### **Domain: I: Trainees' attributes**

##### ***Before training***

- *Self-efficacy* has been referred as the self-judgment made by individuals about their competency to perform a particular task set before them.
- *Organizational commitment* is the interest of the learners who want to gain and use new knowledge at work place for betterment of their job performance and in turn organizational performance.
- *Perceived utility* refers to perceived values the trainees hold towards utility of the training programme. In this study, it refers to the capacity building programmes of CAFT centres organized during 2007-08 to 2009-10

##### ***During training***

- *Cognitive ability* refers to the abilities applied by the trainees to imbibe/ comprehend the training content.
- *Conscientiousness* refers to meticulousness, carefulness and precision, etc. extended by the trainees towards the training content.
- *Goal orientation* refers to mental framework used by the individuals to interpret and behave in learning or achievement-oriented activities.

##### ***After training***

- *Motivation to transfer* is the urge to apply knowledge and skills learned through training back at work place.
- *Personal capacity to transfer* refers to the extent to which individual trainees have the time, energy and mental space in their work to support training transfer to the job.

- *Locus of control* has been defined as the generalized expectancy that organizational outcomes in terms of rewards and reinforcements are controlled by individuals' own actions (internally) or by other forces (externally).

## **Domain: II: Attributes of organizational climate**

### ***Before training***

- *Transfer climate* or *general work environment* refers to the characteristics of work environment that influence or hinder preparation towards training, participation in training interventions and training transfer.
- *Peer support* is the extent to which peer group extend and facilitate their support to individuals for participation in training and on the job transfer of training content after training.
- *Supervisor support* is the extent to which the supervisors or managers support participation of subordinates in training and the use of training acquired on to the job.
- *Strategic link* refers to the match between learning outcomes and the departmental goals.

### ***After training***

- *Accountability* is the degree to which organizational climate and or managers allow the learners to use trained knowledge and skills on the job and hold them responsible for doing so.
- *Positive personal outcomes* refer to the perception of employees about the extent of positive outcomes emerge out of application of gained knowledge and skills at work place.
- *Supervisor sanctions* refer to the extent to which individual members of the organization perceive negative responses from the supervisors or managers while applying skills learnt in training.
- *Task constraints* are the perceived stumbling blocks at work place that hinder training transfer.
- *Performance coaching* is the formal and informal indications/ instructions from an organization (peer group, supervisors and managers) about an individual's job performance after training.

- *Resistance to change* refers to the perceived extent to which prevailing group/organizational norms resist or discourage the use of KSAs acquired in training at work place.
- *Job autonomy* is the degree to which job provides required level of freedom, independence and discretion to the employee in scheduling his or her work and in determining the procedures to be used in carrying out the work.

### **Domain: III: Training design and delivery**

#### *Before training*

- *Training need analysis* is the initial step and the prime attribute of training design, from the training transfer point of view. It is a method to ensure that the proposed training intervention is the most appropriate solution to a problem.
- Making sure that the training content reflects the task of the intervention and task represents the organizational needs' is *content validity/ relevance*. It is one of the significant attributes of training design.

#### *During training*

- *Active learning* is referred to making trainees be involved in capacity building interventions by careful designing of capacity building interventions.
- *Varied practice* is learning new knowledge and skills under a variety of methods and real-field cases during training.
- *Technological tools* refer to the use of modern tools and gadgets in capacity building in a carefully planned manner to improve the training efficiency.

#### *After training*

- *Evaluation of training* is the use of pre-determined specific framework tuned to the organizational expectations, for appraising outcomes of interventions administered during training.

### **Domain: IV: Transfer outcomes**

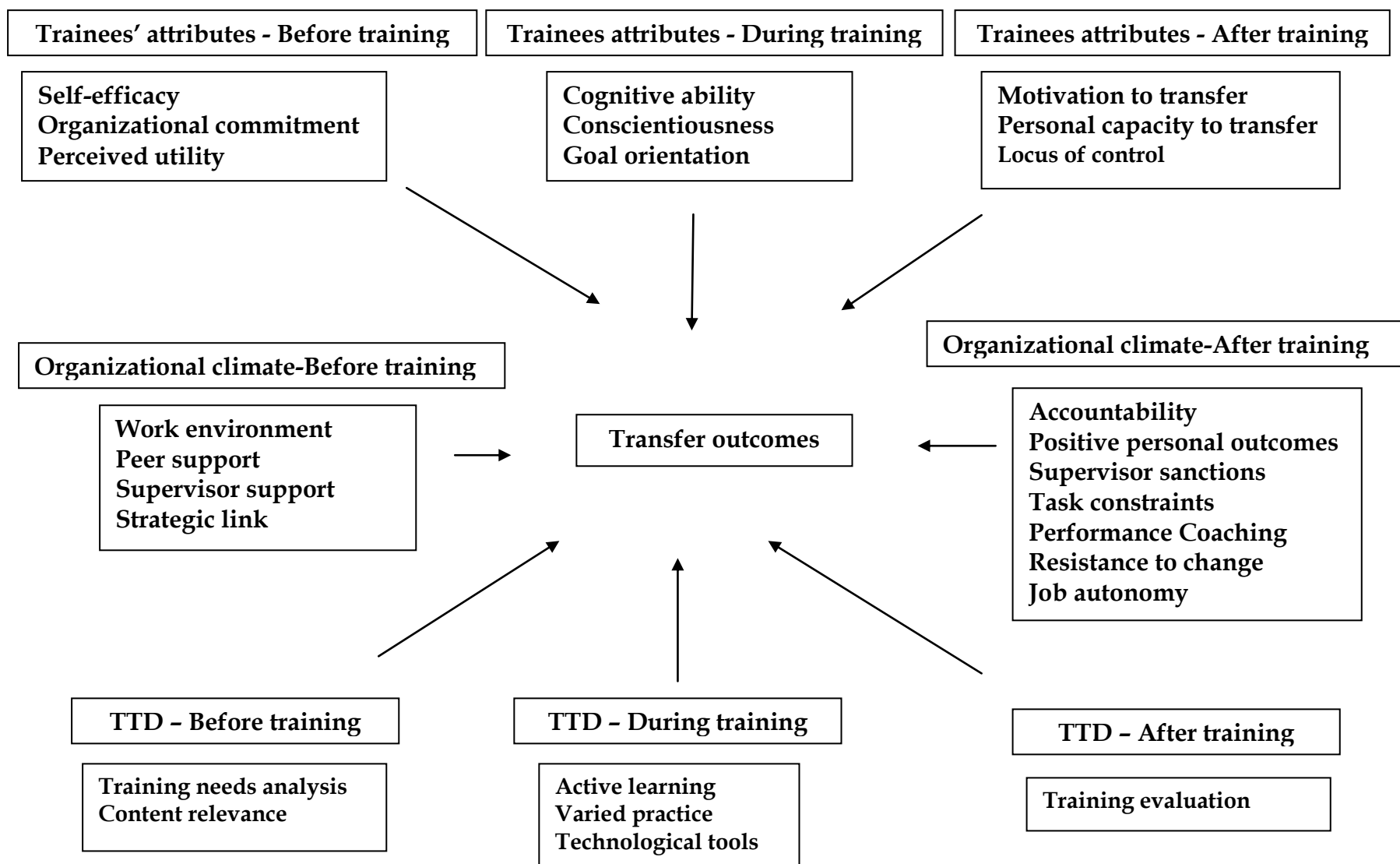
- *Transfer outcomes* refer to improvement in knowledge, skills and attitude about the theme of the capacity building and resultant training-induced improvement in job

performance of the participants, peer group and as a result improvement in the organizational performance

### **Data analysis**

The collected data were tabulated and analyzed using descriptive statistics especially percentage analysis, rank-based quotient (RBQ) analysis, mean and correlation etc. to arrive at meaningful conclusions and recommendable implications.

**Fig.1. Conceptual model proposed for assessing training transfer by CAFT participants**



## RESULTS AND DISCUSSION

### Response of CAFT Participants

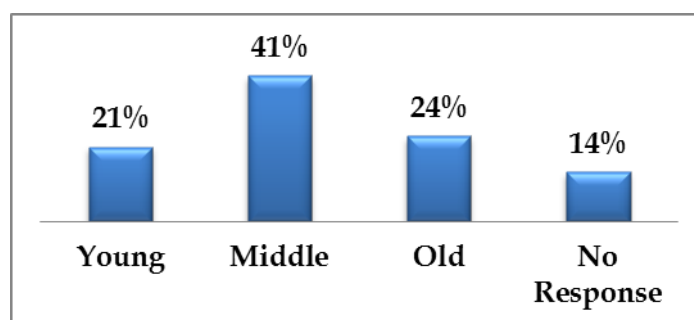
#### I Profile of the CAFT participants

##### Age

It could be inferred from Table 5 and Fig. 2 that majority of the respondents (65%) were middle to old aged and hence it could be interpreted that they could very well understand the concept of CAFT programmes and apply back the knowledge, skills and attitude gained during the programmes. This also implies that the respondents had experience so as to understand the purpose of the instrument and respond in an appropriate manner.

**Table 5. Distribution of respondents-Age**

Age Group	Number of persons	Percentage
Young	57	21 %
Middle	112	41 %
Old	66	24 %
No response	57	14 %
Total	271	100 %



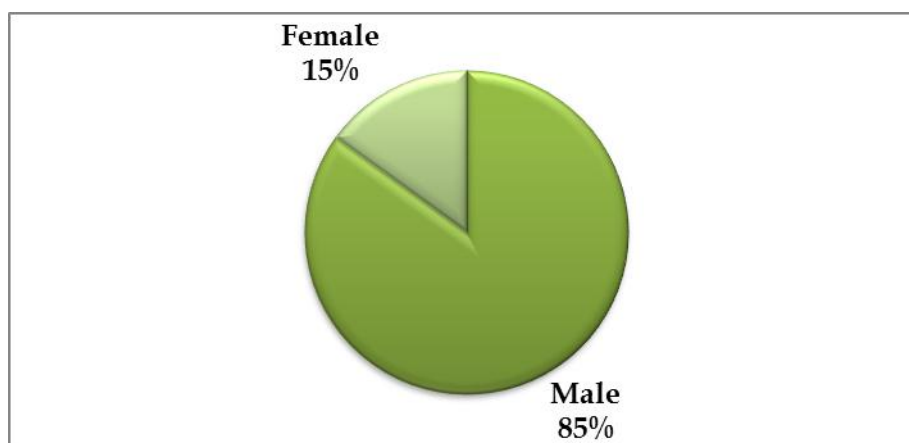
**Fig.2. Distribution of respondents-Age**

## **Gender**

Information pertaining to Table 6 and Fig. 3 infers that majority of the participants of CAFT programmes as well as the respondents of this study were male.

**Table 6. Distribution of respondents-Gender**

Gender	Number of persons	Percentage
Male	231	85 %
Female	40	15 %
Total	271	100 %



**Fig. 3. Distribution of respondents-Gender**

## **Designation**

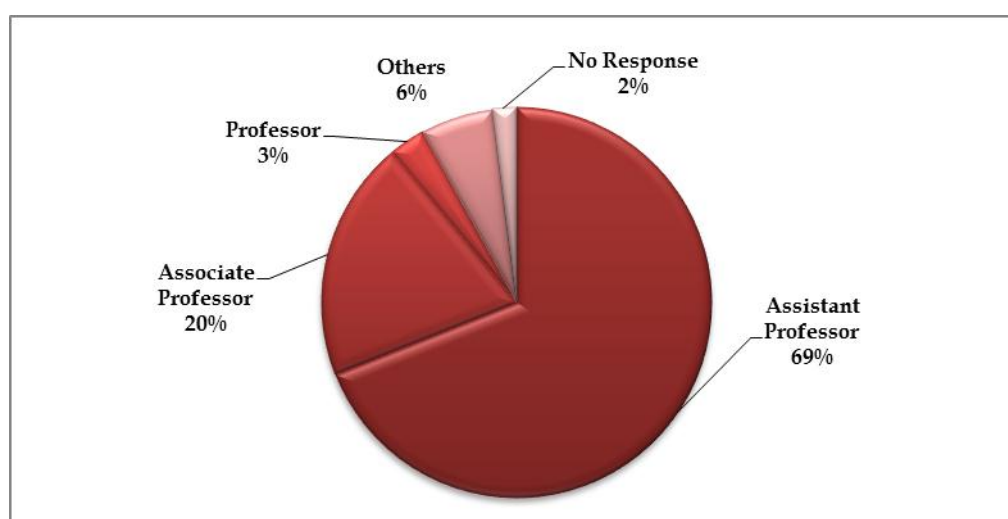
The distribution of respondents as given in Table 7 and Fig. 4 infers that majority of the respondents were belonging to Assistant Professor cadre. This implies that CAFT programmes throw adequate opportunities for the Assistant Professors of the Universities to have advanced training in their relevant disciplines and apply the knowledge and skill gains at their research, educational and extension activities for a strong footing.



**Table 7. Distribution of respondents-Designation**

Designation	No. of Persons	Percentage
Assistant Professor	188	69 %
Associate Professor	52	20 %
Professor	9	3 %
Others	16	6 %
No response	6	2 %
Total	271	100 %

(Note: Others pertain to Assistant Agronomist-1, Assistant Biotechnologist-1, Assistant Director-2, Assistant Soil Chemist-1, Programme Coordinator-1, Subject Matter Specialist-5, Technical Officer-2, Veterinary Assistant Surgeon-1 and Veterinary Officer-2)



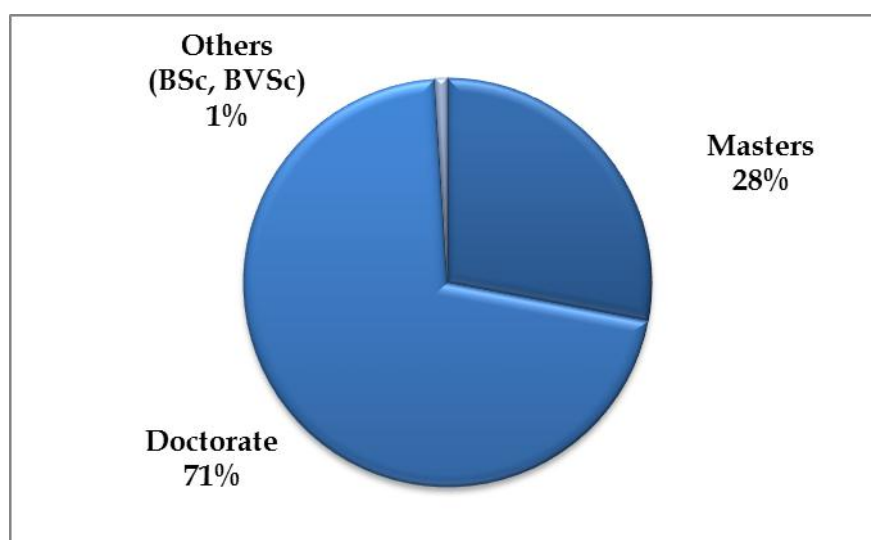
**Fig. 4. Distribution of respondents-Designation**

## Qualification

The information given in Table 8 and Fig. 5 implies that majority of the respondents of the CAFT programmes had doctoral degree and thereby they had enough research experience and in-depth insight in their respective disciplines. Such expertise might have supported them in utilizing the gains from CAFT programmes for their research, educational and extension endeavor at their work place.

**Table 8. Distribution of respondents-Educational Qualification**

Qualification	No. of Persons	Percentage
Masters	76	28 %
Doctorate	193	71 %
Others	2	1 %
Total	271	100 %



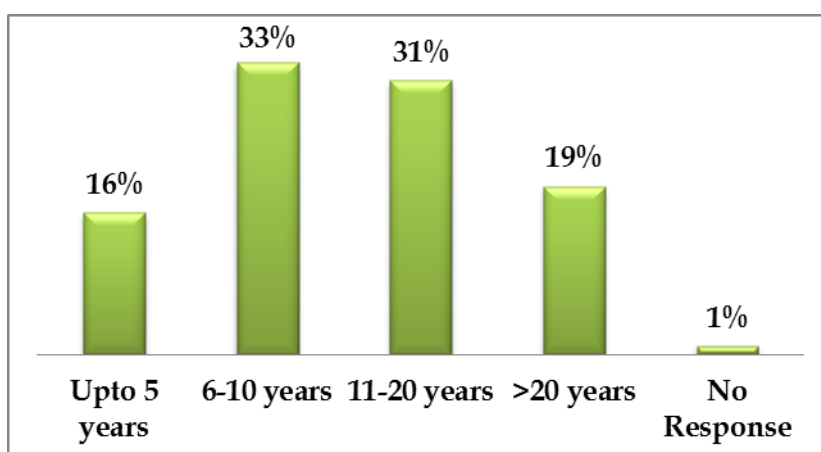
**Fig. 5. Distribution of respondents-Educational qualification**

### Experience in service (years)

It could be understood from table 9 and Fig. 6 that majority of the respondents (64 %) had 6 to 20 years of experience in their service. It could be implied the expertise gained by them through such experience might have helped them in gaining knowledge and skills effectively from CAFT and application of such gains back at their job environment.

**Table 9. Distribution of respondents-Experience**

Years	No. of Persons	Percentage
Up to 5	43	16 %
6-10	90	33 %
11-20	84	31 %
➤ 20	52	19 %
No response	2	1 %
Total	271	100 %



**Fig. 6. Distribution of respondents-Experience**

## Distribution of respondents-States and CAFT Centres

A perusal of Table 10 infers that there was a wide distribution of respondents of the study throughout the country representing 25 states. However about one-sixth each of the participants represented Maharashtra, Uttar Pradesh and Tamil Nadu. Similar perusal at Table 11 also indicates the fair distribution of responses among the CAFT centres providing representation from all the CAFT disciplines.

**Table 10. Distribution of respondents-States**

SNo.	State	No. of Persons	Percentage
1	Andhra Pradesh	16	6 %
2	Arunachal Pradesh	3	1 %
3	Assam	6	2 %
4	Bihar	4	1 %
5	Delhi	9	4 %
6	Gujarat	4	1 %
7	Haryana	8	3 %
8	Himachal Pradesh	13	5 %
9	Jammu & Kashmir	12	4 %
10	Jharkhand	3	1 %
11	Karnataka	20	7 %
12	Kerala	6	2 %
13	Madhya Pradesh	7	3 %
14	Maharashtra	39	15 %
15	Manipur	1	0.5 %
16	Mizoram	5	2 %
17	Orissa	3	1 %
18	Punjab	19	7 %
19	Rajasthan	8	3 %
20	Sikkim	1	0.5 %
21	Tamil Nadu	35	13 %
22	Tripura	1	0.5 %
23	Uttar Pradesh	36	13 %
24	Uttarakhand	10	4 %
25	West Bengal	2	1 %
<b>Total</b>		<b>271</b>	<b>100 %</b>

**Table 11. Distribution of respondents-CAFT centres**

CAFT No. and Discipline	No. of respondents	Percentage
1. Agronomy	3	1 %
2. Agronomy	17	6 %
3. Plant Pathology	7	3 %
4. Plant Pathology	14	5 %
5. Agricultural Entomology	14	5 %
6. Entomology	13	5 %
7. Horticulture (Vegetables)	8	3 %
8. Horticulture (Fruits)	5	2 %
9. Genetics & Plant Breeding	5	2 %
10. Genetics & Plant Breeding	5	2 %
11. Agricultural Meteorology	12	4 %
12. Soil Science	4	1 %
13. Soil Science	7	3 %
14. Agricultural Economics	2	1 %
15. Agricultural Extension	10	4 %
16. Home Science	5	2 %
17. Fisheries Science	7	3 %
18. Veterinary Surgery & Radiology	15	6 %
19. Animal Genetics & Breeding	1	0.25 %
20. Dairy Processing	14	5 %
21. Animal Nutrition	8	3 %
22. Veterinary Physiology	21	7.5 %
23. Veterinary Microbiology	6	2 %
24. Gynecology & Reproduction	18	6 %
25. Clinical Medicine & Therapy	8	3 %
26. Avian Sciences	7	3 %
27. Agricultural Microbiology	10	4 %
28. Veterinary Parasitology	7	3 %
29. Crop Physiology	9	3 %
30. Crop Physiology	1	0.25 %
31. Agricultural Statistics & Computer Applications	8	3 %
Total	271	100 %

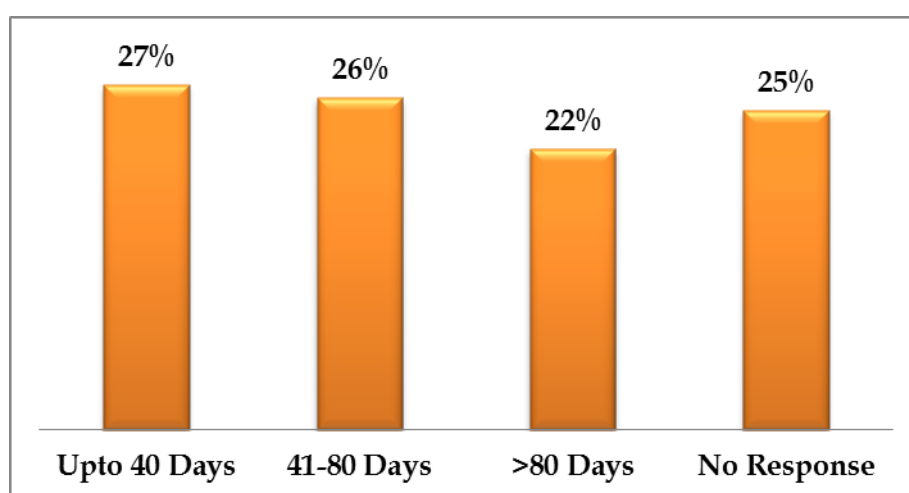
### Trainings undergone

Information pertaining to Table 12 and Fig. 7 facilitates understanding about the training experience of the participants of CAFT programmes. It implies that nearly 50 % of the participants already had 40 to 80 days of training experience in training

programmes of other training organizations. Such experience might helped the participants to prepare, carry and apply training-related attributes in an effective manner in gaining knowledge and skills and application of such gains of the CAFT programmes back at their work places.

**Table 12. Distribution of respondents-No. of days**

Days	No. of Persons	Percentage
Up to 40	73	27 %
41-80	71	26 %
➤ 80	60	22 %
No response	67	25 %
Total	271	100 %



**Fig. 7. Distribution of respondents-Duration of training undergone**

## **II CAFT Programmes: Preparation, participation and application by participants**

The information given in Table 13 about the source of information of CAFT training programmes communicates that majority of the respondents (63 %) came to know

about the CAFT programme by self, through colleagues and the immediate superiors. This implies that the peer groups of the Universities support the colleagues to gain knowledge and skills through CAFT programmes and facilitate application of such gains at their departments or divisions. It indirectly informs about the conducive peer group support prevailing in Universities. Added to that one-tenth of the heads of the organizations also were the sources of information about CAFT programmes, which tells about the conducive supervisor support for the participants.

**Table 13. Source of training information**

Option	No. of Responses	Percentage
a. Self	62	22 %
b. Colleague in the same department/organization	46	20 %
c. Immediate superior	58	21 %
d. Head of the organization	31	11 %
e. Friends in other organization	14	5 %
f. Personally contacted by CAFT Director/Faculty	45	16 %
g. No response	15	5 %
Total	271	100 %

It could be very well understood from the information given in table 14 that majority (57 %) of the respondents participated in CAFT programmes to up-date their knowledge and skills pertaining to their respective disciplines. Hence, it could be implied that CAFT themes attracted participants in building the capacity of faculty in terms of knowledge and skills and thus the main objective of CAFT concept has been fulfilled.

**Table 14. Motivation behind training participation**

Option	No. of Responses	Percentage
a. Training theme was relevant to my job	61	23%
b. Training was related to my subject	63	23%
c. To update my knowledge and skills	154	57%
d. To fulfill CAS/promotion requirement	46	17%
e. Instructed by HoD/Head of Organization	3	1%
f. To seek change from daily routine	3	1%
g. No response	4	1%

(Note: Percentages do not add up to 100 due to multiple responses)

Information given in table 15 and 16 informs that majority of the participants (58 %) made efforts for pre-training preparation about the theme or topic pertaining to CAFT training programmes. Such preparation was done through referring to the relevant literature, browsing through internet and discussing with the peer group. Such information implies the interest and value thrown by the participants towards CAFT training programmes.

**Table 15. Pre-training preparation**

Option	No. of Persons	Percentage
Yes	156	58%
No	87	32 %
No response	28	10 %
Total	271	100 %



**Table 16. Methods of pre-training preparation**

Option	No. of Responses	Percentage
a. By reading literature on training theme	72	27%
b. By internet browsing on training theme	55	20%
c. By visiting website of CAFT organization	16	6%
d. By discussing with colleagues/superior	43	16%
e. No response	98	36%

(Note: Percentages do not add up to 100 due to multiple responses)

Information pertaining to Table 17 and 18 informs that majority of the participants of CAFT programmes (84 %) shared their learning experience and gains of the programme with their colleagues. However, they shared through informal discussion or just by sharing the resource material obtained from CAFT centres. This information suggests that to make CAFT training effective to the peer group, formal transfer of training to the peer group through seminars or presentations must be made compulsory by the CAFT centres. Such initiative also would inculcate seriousness in training transfer of CAFT themes by the participants.

**Table 17. Sharing training experience**

Option	No. of Persons	Percentage
Yes	227	84 %
No	7	3 %
No response	37	13 %
Total	271	100 %

**Table 18. Mechanism of sharing training experience**

Option	No. of Responses	Percentage
a. By giving a seminar	45	17 %
b. By informal discussion with colleagues	151	56 %
c. By sharing training material with others	111	41 %
d. By conducting in-house workshop/training	9	3 %

(Note: Percentages do not add up to 100 due to multiple responses)

Scanning through Table 19 infers that majority of the participants of CAFT programmes (69 %) utilized the knowledge and skill gained through CAFT programmes for fine-tuning their abilities pertaining to research programmes. It is heartening to know that in addition to addressing the teaching ability of the faculty, which is the prime expectation from the faculty of Universities, CAFT addresses the research abilities of the participants also. Thus, the improvement in the research competency provides the CAFT participants' adequate confidence in teaching the UG and PG students as well facilitates guiding the PG research projects in an effective manner.

**Table 19. Utility of CAFT training**

Option	No. of Responses	Percentage
a. To develop new research proposal	69	26%
b. To develop/refine methodology for research and thus enhancing confidence in UG/ PG teaching	114	43%
c. To develop research publications	38	14%
d. To develop training programme	27	10%
e. To develop/revise course material	44	17%
f. To develop material for extension/outreach programmes	49	18%
g. No response	14	5%

(Note: Percentages do not add up to 100 due to multiple responses)

### **Part-III: Opinion of CAFT participants towards components of training transfer**

#### **Trainees' attributes**

A perusal of table 20 and Fig.8 infers that the respondents had very favourable opinion towards different variables of self-attributes pertaining to before, during and after CAFT training, since the score was ranging from 8-9, except for 'personal capacity to transfer'. The comparatively lesser score for 'personal capacity to transfer' indicates the need for provision of adequate resources to the CAFT participants to transfer the knowledge and skills gained through CAFT programmes by their sponsoring organizations.

#### **Training design and delivery**

The information given in table 21 and Fig. 9 clearly shows that the respondents had favourable opinion towards all the variables pertaining to before, during and after components of training design and delivery because the scores were ranging from 8-9. These results imply that the efforts taken by the CAFT Directors in organizing the CAFT programmes before, during and after CAFT programmes were up to the expectations of the participants.

#### **Organizational support climate**

It could be inferred from table 22 and Fig. 10 that the respondents had favourable opinion towards 'general work environment', 'peer support', 'supervisor support' and 'strategic link' of the before training variables of organizational climate and 'accountability' and 'positive personal outcomes' of the after training variables. They also had negative opinion towards 'supervisor sanctions' and 'task constraints', which in turn implies the positive opinion towards their organizational climate.

However, 'performance coaching', 'attitude towards change' and 'job autonomy' as part of the organizational climate need improvement.

**Table 20. Opinion of respondents towards their attributes**

Opinion towards training-related attributes	Average Rating
<b>Before training</b>	
<b>Self-efficacy</b>	
I have competency to complete any job assigned to me to the best satisfaction of my superior	9
I rise to the occasion when new tasks are assigned to me	8
<b>Organizational Commitment</b>	
I like to gain new knowledge and skills to perform effectively the task assigned to me and committed	9
<b>Perceived utility</b>	
I had high perceived utility and value towards topic(s) of the CAFT training programme(s)	8
<b>During training</b>	
<b>Cognitive ability</b>	
I had put-in honest efforts to learn the content covered during CAFT training programme	9
I whole-heartedly tried to learn the knowledge and skills taught to me during CAFT programme	9
<b>Conscientiousness</b>	
I was meticulous and careful enough in learning the content covered in CAFT training programme	9
<b>Goal orientation</b>	
I acquired the training content by relating it to my work conditions	8
I involved in learning, with a way to apply them back at my work place	9
<b>After training</b>	
<b>Motivation to transfer</b>	
I had self-motivation to apply the knowledge and skills acquired during CAFT training programme back at my work place	9
I had honest intention to apply the training content back at my work place	9
<b>Locus of control</b>	
I believed if I apply the training content at my work place, it would improve my job performance	9
My job performance improvement was dependent to the extent of training transfer back at my work place	8
<b>Personal capacity to transfer</b>	
I had adequate time to transfer the training knowledge and skills I acquired at CAFT training programmes	8
I had adequate resources (in terms of human, material and financial) to transfer the training knowledge and skills	6

(Rating ranges from strongly agree-10 to strongly disagree-1)

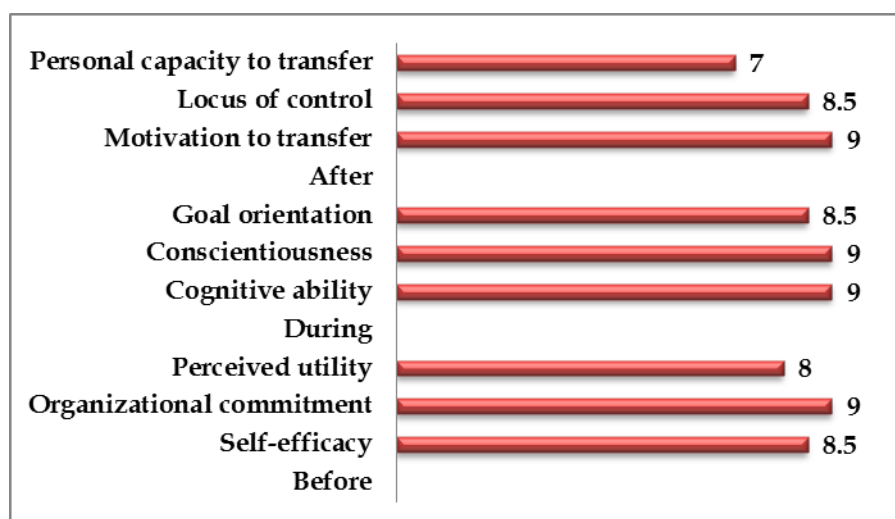
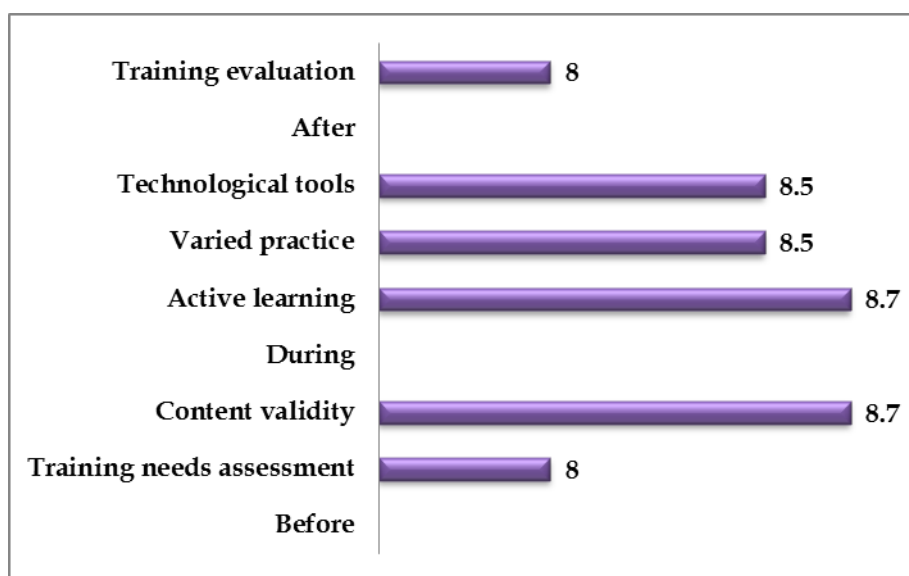


Fig. 8. Opinion of respondents towards their attributes

Table 21. Opinion of respondents towards training design and delivery of CAFT programmes

Opinion towards training design and delivery	Average Rating
<b>Before training</b>	
<b>Training needs assessment</b>	
The CAFT training programme I participated was designed based on felt-needs of the target group	8
The CAFT training was tuned towards the demands of NARS faculty	8
<b>Content validity</b>	
The content of the CAFT training was relevant to the job profile of target group	9
The content of the CAFT training was in line with the NARS priorities	8
The course materials were designed as per the objectives of the training	9
<b>During training</b>	
<b>Active learning</b>	
The training was effectively designed to involve the participants	9
The training activities were arranged in such a way that even dull participants involved themselves in the learning activities	8
<b>Varied practice</b>	
During training, many practical examples were dealt	8
The training content was dealt through varied and relevant methodologies	9
<b>Technological tools</b>	
The tools/ techniques used during the training were adequate	8
The effectiveness of the training was improved by the use of tools/ techniques	9
<b>After training</b>	
<b>Training evaluation</b>	
The evaluation of training at the end revealed the participants about their level of learning during training	8
The results of training evaluation conveyed the participants about the extent of efforts they have to put-forth to transfer the training learnt at CAFT	8

(Rating ranges from strongly agree-10 to strongly disagree-1)



**Fig. 9. Opinion of respondents towards training design and delivery**

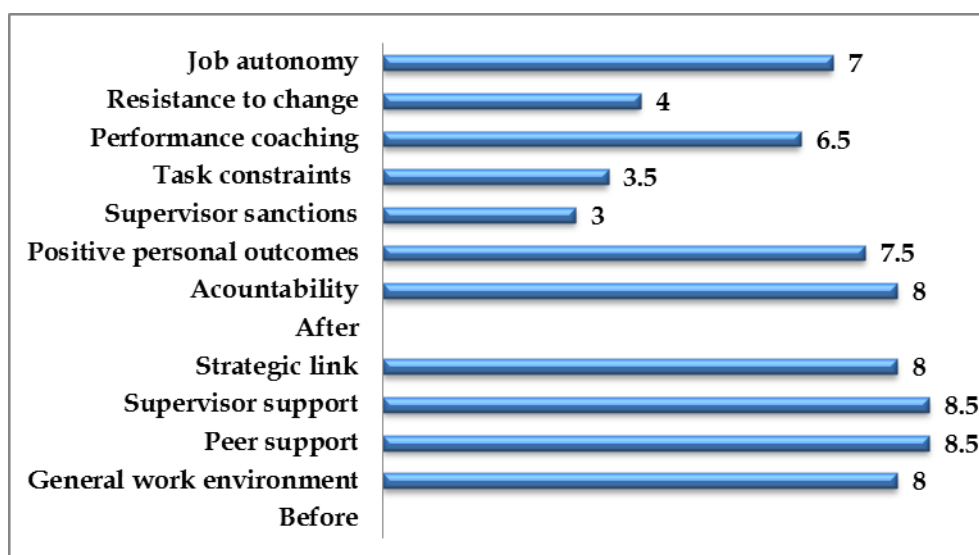
### **Transfer outcomes**

A perusal of table 23 infers that the respondents agreed towards improvement in knowledge, skills, transfer of training information to peer group, improvement in research efficiency, organizational performance, preparation of teaching and training resource materials and guiding research scholars as an impact of CAFT training back at their work place.

It could be understood from Fig. 11 that the average score of trainees' attributes and training design and delivery ranges around 8-9, while organizational climate ranges between 7-8 in a ten-point scale of opinion. This implies that comparatively there is a need for improvement from the organizational climate to support application of knowledge, skills and attitude gained by the participants of CAFT programmes back at job environment. This may be the reason for their comparatively lesser average scores towards their perceived transfer outcomes.

**Table 22. Opinion of respondents towards their organizational climate**

Perception towards organizational (support) climate	Average Rating
<b>Before training</b>	
<b>General work environment</b>	
My institute work environment encouraged me to participate in training programme with a purpose of applying the learnt knowledge and skills back at my job environment	8
<b>Peer support</b>	
My colleagues encouraged me to attend training to gain new knowledge and skills	8
My colleagues took care of my job responsibilities during the tenure of my training participation	9
<b>Supervisor support</b>	
My supervisor encouraged me to participate in training to gain new knowledge and skills	8
My supervisor supported me by arranging my colleagues to take care of my job responsibilities during the tenure of my training participation	9
<b>Strategic link</b>	
My institute management is interested in encouraging scientists to participate in CAFT training to gain new knowledge and skills to achieve the mandate	8
My institute management has been committed to improved organizational performance through training-induced job performance improvement of scientists	8
<b>After training</b>	
<b>Accountability</b>	
My institute management made me responsible for training-induced improved organizational performance by applying the knowledge and skills I acquired during CAFT training	8
<b>Positive personal outcomes</b>	
Use of knowledge and skills acquired during CAFT training, fetched me a good reputation and name from my institute management	7
Effective use of knowledge and skills gained during CAFT training in my job, was appreciated by my supervisors and peer group	8
<b>Supervisor sanctions</b>	
My supervisor did not allow me to transfer the knowledge and skills acquired back at work place	3
My supervisor had insecurity feeling when I tried to apply the acquired training knowledge and skills	3
<b>Task constraints</b>	
I had to overcome many hurdles to apply training acquired at CAFT	4
The hurdles which I had to face in applying training acquired discouraged me	3
<b>Performance coaching</b>	
My peer group gave me constructive criticisms for effective training transfer	6
My supervisor supported me by giving meaningful suggestions time to time throughout the period during which I tried to apply the training acquired	7
<b>Resistance to change</b>	
My peer group and supervisor were skeptical about the impact of training transfer	5
My peer group and supervisor discouraged me about the outcomes of training transfer	3
<b>Job autonomy</b>	
My work environment gave me enough resources to apply the training acquired	7
The post-training tasks assigned to me gave me opportunities for effective training transfer	7



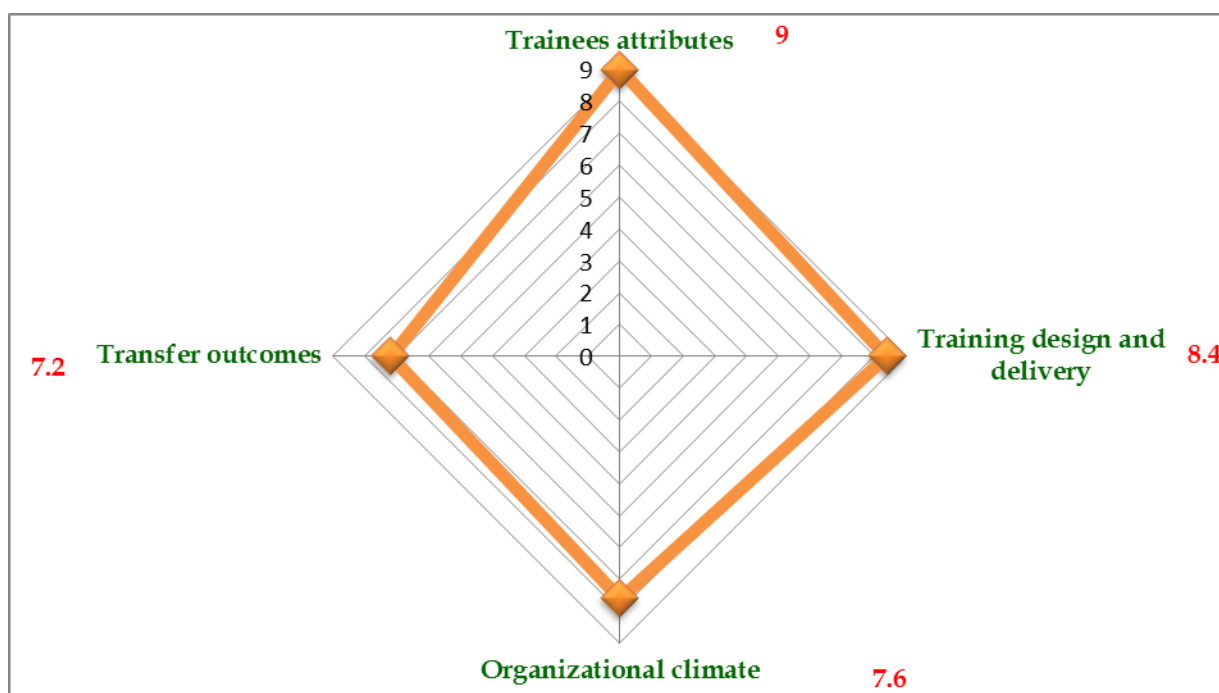
**Fig. 10. Opinion of respondents towards organizational climate**

**Table 23. Opinion of respondents towards outputs and outcomes of CAFT training transfer**

Opinion towards training outcomes	Average Rating
Improvement in knowledge relevant to the theme	9
Improvement in skills relevant to the theme	8
Transfer of the theme to colleagues through informal discussion	8
Transfer of the theme to colleagues through formal meetings/ presentations	7
Proposal of new research projects on the theme	6
Approval of new research projects on the theme	5
Publication of research papers on the theme	6
Publication of technical/ popular papers on the theme	6
Improvement in research efficiency	8
Improvement in performance of the peer group/ section	7
Improvement in organizational performance	8
Preparation of resource material for teaching / training	8
Selection of new research idea/topic for students' research (masters and doctoral)	8

(Rating ranges from strongly agree-10 to strongly disagree-1)





**Fig.11. Opinion towards components of training transfer system**

### **Factors influencing training transfer of CAFT training programmes**

To delineate the factors that influenced the training transfer of knowledge, skills and attitude acquired by the respondents during the CAFT training programmes, the relationship between the variables (26) of first three components of training transfer system namely trainees' attributes, training design and delivery and organizational climate and the transfer outcome was assessed through correlation method. The results shown that 'self-efficacy', 'organizational commitment', 'perceived utility', 'conscientiousness', 'locus of control', 'personal capacity to transfer' pertaining to first component had significant relationship with transfer outcome (Table 24 and Fig. 12). However, the relationship between 'cognitive ability' and transfer outcome was highly significant implying the need for participants to apply their complete ability to acquire knowledge and skills. Overall component also had significant relationship implying the importance of trainees' attributes applied before, during and after towards facilitating training transfer.

Among the variables of component 'training design and delivery', 'training needs assessment', 'content validity', 'active learning' and 'varied practice' had significant

relationship with transfer outcomes of the respondents. Overall component also had significant relationship implying the significance of 'training design and delivery' on facilitating training transfer by the participants of CAFT programmes.

Similarly, among the factors of component 'organizational climate', 'general work environment', 'peer support', 'supervisor support', 'strategic link' and 'task constraints' had significant relationship with transfer outcomes of the respondents implying the need for emphasis on these factors to facilitate impact of CAFT programmes. However, the variables, 'accountability', 'positive personal outcomes' and 'job autonomy' had highly significant relationship with transfer outcomes implying the importance of such factors in organizational climate of the Universities. The overall relationship also was highly significant and implies that conducive organizational support climate is very much important for transfer of knowledge, skills and attitude by the CAFT participants back at their job situations.

#### **Part IV: Effectiveness of CAFT training programme**

It could be understood from table 25 that all the training related aspects of CAFT programmes were rated highly ranging from 8-9. This implies that the participants had highly favourable opinion towards pedagogy, andragogy and training environment of CAFT programmes.

#### **Part V: Perception of respondents towards constraints in training transfer**

The information given in table 26 reiterates the information already given by the respondents towards their organizational climate in transferring the knowledge, skills and attitude gained from CAFT training programmes, since most of the listed constraints were responded by majority of the participants between disagree to strongly disagree. However, still there is a scope for improvement with respect to providing adequate resources, prioritizing responsibilities and need for team work in Universities, as nearly one-fifth to one-sixth of the respondents responded in the 'agree' category towards these aspects.

**Table 24. Relationship between variables of training transfer and transfer outcome**

Component	Variables/ factors	Correlation coefficient (r)
<b>Trainees attributes</b>		
<b>Before training</b>	Self-efficacy	0.3206 *
	Organizational commitment	0.3874 *
	Perceived utility	0.3718 *
<b>During training</b>	<b>Cognitive ability</b>	<b>0.5226 **</b>
	Conscientiousness	0.4161 *
	Goal orientation	0.2894 NS
<b>After training</b>	Motivation to transfer	0.2266 NS
	Locus of control	0.3743 *
	Personal capacity to transfer	0.3370 *
<b>Overall</b>		<b>0.4312 *</b>
<b>Training design and delivery</b>		
<b>Before training</b>	Training needs assessment	0.343 *
	Content validity	0.424 *
<b>During training</b>	Active learning	0.312 *
	Varied practice	0.301 *
	Technological tools	-0.156 NS
<b>After training</b>	Training evaluation	0.109 NS
<b>Overall</b>		<b>0.367 *</b>
<b>Organizational climate</b>		
<b>Before training</b>	General work environment	0.3435 *
	Peer support	0.3525 *
	Supervisor support	0.426 *
	Strategic link	0.425 *
<b>After training</b>	<b>Accountability</b>	<b>0.4737 **</b>
	<b>Positive personal outcomes</b>	<b>0.5761 **</b>
	Supervisor sanctions	-0.002 NS
	Task constraints	-0.045 NS
	Performance coaching	0.359 *
	Resistance to change	0.014 NS
	<b>Job autonomy</b>	<b>0.5935 **</b>
<b>Overall</b>		<b>0.5733 **</b>

(\*\*- Significance at 1 % probability level; \*-Significance at 5 % probability level)

**Table 25. Perception of respondents towards training effectiveness**

<b>Sl . No.</b>	<b>Training aspects</b>	<b>Average Rating</b>
1	Relevance of training theme to NARS faculty	9
2	Importance of training theme to NARS faculty	9
3	Training objectives of CAFT programme	9
4	Content covered during CAFT programme	9
5	Resource material provided	9
6	Training methodology adopted	9
7	Lab facilities	8
8	Use of various tools and techniques	8
9	Adequacy of resource persons	9
10	Boarding and lodging facilities	8
11	Transport facilities	8
12	Exposure visits/ practical exposure/ field orientation	9
13	Involving multi-stakeholders in imparting training	8
14	Providing platform for future networking	8
15	Follow-up/ handholding support	8

(Rating ranges from strongly agree-10 to strongly disagree-1)

**Table 26. Perception of respondents towards constraints in training transfer**

Constraints in training transfer	Response Continuum				
	SA	A	UD	DA	SDA
The training was not effective enough to transfer to work situation	3%	8%	3%	42%	44%
Lack of peer support	1%	9%	9%	49%	32%
Lack of supervisor support	1%	9%	6%	46%	38%
Lack of motivation and encouragement by superiors	1%	8%	7%	45%	39%
Lack of adequate resources	4%	19%	5%	41%	31%
Over burden with other responsibilities	10%	17%	11%	41%	21%
Lack of time	4%	18%	8%	47%	23%
Lack of like-minded team	3%	17%	9%	43%	28%
Discouraging office procedures	6%	14%	8%	45%	27%
Lack of responsibility and authority to transfer	1%	10%	12%	51%	26%
No strategic link between training content and mandate of my organization	1%	4%	8%	47%	40%
Lack of autonomy to transfer training	3%	11%	13%	47%	26%
'Resistance to change' attitude of the peers and supervisor	3%	12%	16%	44%	25%
Lack of personal incentives to transfer training	3%	13%	11%	44%	29%

(SA-Strongly agree; A-Agree; UD-Uncecided; DA-Disagree; SDA-Strongly disagree)

**Table 27. Suggestions of respondents for improving CAFT programmes**

Suggestions	Response Continuum				
	SA	A	UD	DA	SDA
The theme should be relevant to NARS	84%	10%	2%	3%	1%
Coverage of content needs improvement	73%	15%	4%	7%	1%
Resource material provided should be adequate	35%	48%	3%	11%	3%
Lab facilities of CAFT centre should be improved	32%	47%	7%	10%	4%
Use of various tools and techniques needs improvement	21%	53%	7%	14%	5%
Need to use well-known and experienced resource persons	35%	42%	6%	11%	6%
Boarding and lodging facilities need improvement	36%	41%	7%	13%	3%
Transport facilities need improvement	27%	38%	9%	21%	5%
More exposure visits/practical exposure/ field orientation	40%	47%	3%	7%	3%
Multiple stakeholders are to be involved in imparting training	27%	55%	8%	7%	3%
Need to provide platform for future networking	34%	54%	5%	5%	2%
Follow-up support by CAFT for effective training transfer	33%	52%	7%	6%	2%

(SA-Strongly agree; A-Agree; UD-Uncecided; DA-Disagree; SDA-Strongly disagree)

## **Part VI: Suggestions of respondents towards improvement of CAFT training programmes**

In contrary to the response towards effectiveness of CAFT programmes, majority of the respondents had strongly agreed towards selection of relevant themes for CAFT training programmes and improvement in content coverage, whereas majority of them agreed towards improvements in use of tools and techniques in training, involving multiple stakeholders from research organizations, general universities, industry, innovative farmers, NGOs etc in imparting training, need for creating a platform for future research networking among the participants for knowledge and resource sharing and need for strong handholding support by CAFT centres in supporting training transfer by the participants (Table 27).

## **Part VII: Preference towards training pedagogy**

The information pertaining to table 28 infers that interactive lectures, live/ method demonstrations and hands-on practicals were the most-preferred training methodologies for CAFT programmes. These methodologies can be utilized in CAFT programmes to improve training effectiveness and facilitate effective training transfer by participants.

**Table 28. Opinion of respondents towards preferred training methodologies**

Sl. No.	Training Methods	Average Rating
i.	Interactive lectures	9
ii.	Demonstrations	9
iii.	Hands-on practical	9
iv.	Field studies	8
v.	Project work	7
vi.	Group exercises	8
vii.	Institutional exposure visits	8
viii.	Case studies/analysis	7
ix.	Behavioural games/role plays	7

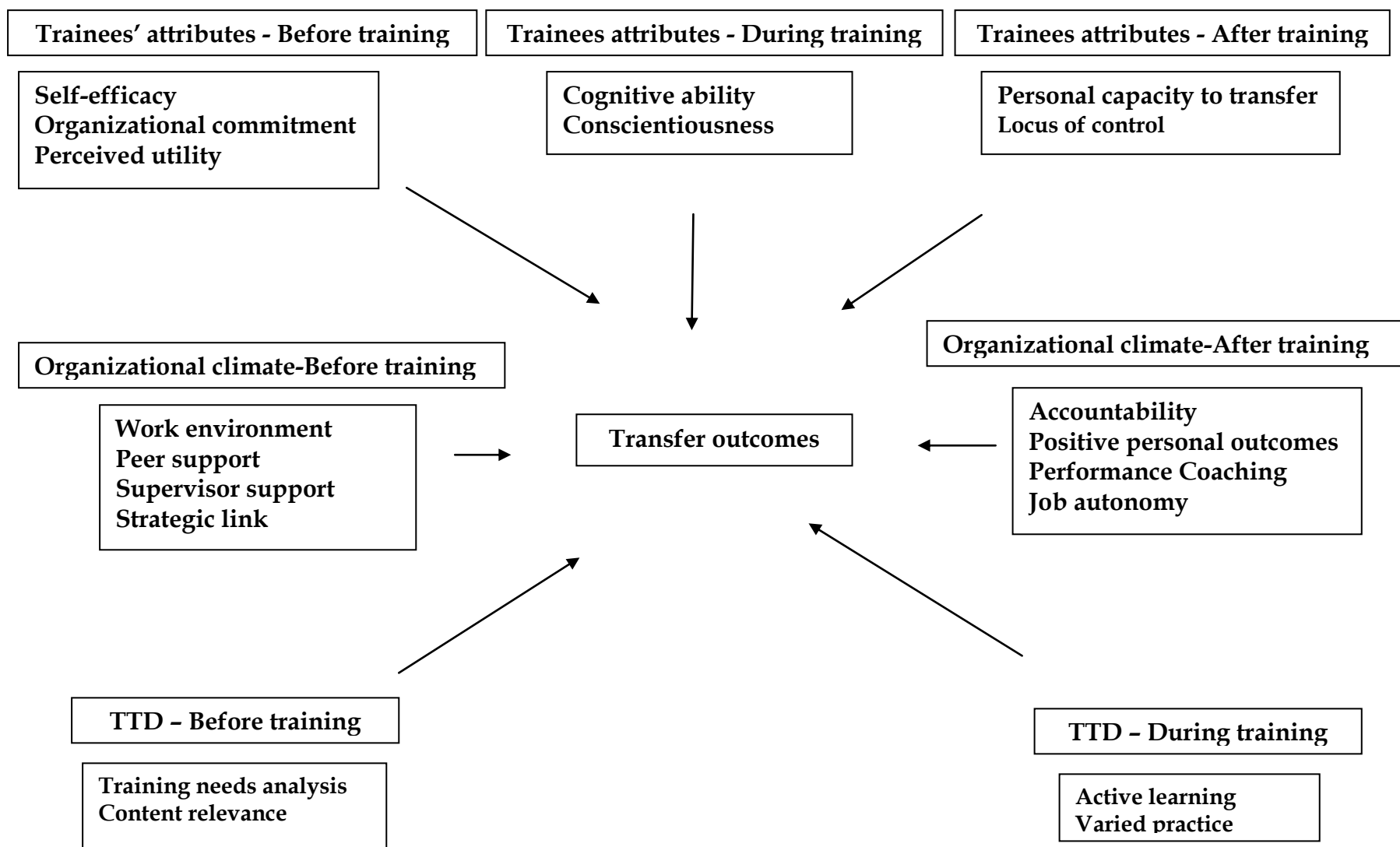
(Ranges from 10-most preferred to 1-least preferred)

Information provided in table 29 suggests that the theory: practical ratio should be either 50:50 or 60:40, duration may be up to 21 days, season is preferably winter and there must be formal training evaluation through proper pre and post-exposure knowledge or skill or both tests to assess the training effectiveness and performance of the participants.

**Table. 29 Opinion of respondents towards preferred training pedagogy**

Training aspect	Details of aspects	No. of respondents	Percentage
<b>Theory: Practical</b>			
	50:50	121	44 %
	60:40	100	35 %
	75:25	40	17 %
	No response	10	4 %
	Total	271	100 %
<b>Duration (Days)</b>			
	Up to 15	84	31 %
	16-21	117	43 %
	>21	57	21 %
	No response	13	5 %
	Total	271	100 %
<b>Season</b>			
	Summer	33	12 %
	Monsoon	11	4 %
	Winter	165	61 %
	No response	62	23 %
	Total	271	100 %
<b>Evaluation</b>			
	Yes	214	79 %
	No	40	15 %
	No response	17	6 %
	Total	271	100 %

**Fig. 12. Empirical model showing factors influencing training transfer by CAFT participants**





## B. Handholding Support by CAFT Centres: Response of CAFT Directors

To assess the perceived impact of CAFT programmes on various activities of participants as perceived by the CAFT Directors based on their experiences in handholding support, an instrument was designed to get the opinion of CAFT Directors. The instrument was circulated among CAFT Directors with a request for quick response. More than two-third (68%) of the CAFT Directors responded for this survey. Based on the response of CAFT Directors, it was understood that an average of 23 programmes were organized by CAFT Centres so far and an average of 400 participants/ CAFT Centre were benefitted. The results of such survey are given below.

**Table 30. Handholding Support-Response of CAFT Directors**

#	Handholding by CAFT Directors	Average impact
1.	Number of projects formulated by you on the theme utilizing the network of participants of CAFT	4
2.	Number of Professional forums (seminars/ workshops/brainstorming sessions etc.) organized by you utilizing the network of participants of CAFT	3
3.	Approximate number of participants contacted you after CAFT for help in formulating research projects pertaining to CAFT theme	9 % (38)
4.	Approximate number of participants contacted you after CAFT for help in updating the course content of UG, PG, PhD programmes	7 % (29)
5.	Approximate number of participants contacted you after CAFT for help in formulating extension programmes like training etc.	7 % (29)
6.	Approximate number of participants contacted you after CAFT for help in offering consultancies	4 % (17)
7.	Approximate number of participants contacted you after CAFT for help in establishing laboratories	3 % (10)
8.	Approximate number of participants contacted you after CAFT for help in international research collaboration	5 % (19)
9.	Approximate number of participants contacted you after CAFT for help in organizing professional forums (seminars/ workshops/brainstorming sessions etc)	2 % (9)

(Figures in the parenthesis indicate the average number of participants)

It could be inferred from the table 30 that the CAFT Directors initiated/ formulated or facilitated an average four research projects utilizing the network of CAFT participants. Similarly, they organized or facilitated at an average of three professional forums with the advantage of network of CAFT participants. CAFT Directors opined that an average of one-tenth of the participants sought the help of CAFT Centres in formulating research projects. About 7% of the participants of CAFT programmes contacted the CAFT Directors for initiating or updating course content of UG, PG and Ph D courses, while same amount of participants contacted for designing extension programmes like training for farmers and extension personnel.

At an average of more than one-twentieth of the participants were helped by the CAFT Directors in offering consultancies for their stakeholders and establishing international research collaboration. Three percent of the participants contacted CAFT Directors for technical support in establishing research facilities or laboratories, while about two percent of them contacted for support in organizing professional forums.

These results throw light on the handholding support extended by the CAFT Centres to their stakeholders in education, research and extension arenas pertaining to the theme of the centres. However, there is further scope for scaling up of this handholding support extended by CAFT centres to the participants.

### **C. Impact of CAFT on NARS Organizations**

To assess the impact of Centre for Advanced Faculty Training (CAFT) with respect to tangible outputs and outcome on individual organizations of NARS, delineation of respondents of the study from same NARS organizations was done. It was found that maximum number of participants (11) responded from a same organization were from Sher-e-Kashmir University of Agricultural Sciences and Technology (SKUAST), R S Pura, Jammu & Kashmir. An instrument was designed for this purpose and mailed to these respondents. After constant interaction, seven out of

with these eleven respondents gave their response. The response was compiled and the impact has been presented as follows:

**Table 31. Details of participation of faculty in CAFT programmes from SKUAST**

<b>Discipline</b>	<b>CAFT Title</b>	<b>CAFT Centre</b>
Veterinary Gynecology and Obstetrics	Rational use of diagnostics for alleviating sub-fertility in domestic animals	CAFT in Veterinary Gynecology & Reproduction, GADUVAS, Firozpur Road, Ludhiana-141004
Plant Pathology	Management of Plant Diseases on Small Farms	CAFT in Plant Pathology, GBPUAT, Udham Singh Nagar, Pantnagar-263145
Animal Reproduction, Gynecology and Obstetrics	Advances in Applications of Diagnostics Techniques in Veterinary Theriogenology	CAFT in Gynecology and Obstetrics, GADUVAS, Firozpur Road, Ludhiana-141004
Veterinary Surgery & Radiology	USG and Ancillary Diagnostic Procedure for Veterinary Patient	CAFT in Veterinary Surgery & Radiology, GADUVAS, Firozpur Road, Ludhiana-141004
Veterinary Gynecology and Obstetrics	Prevention and therapeutic management of peri-parturient complications in domestic animals	CAFT in Veterinary Gynecology & Reproduction, GADUVAS, Firozpur Road, Ludhiana-141004
Entomology	No information given	CAFT in Entomology, CCS HAU, Hisar-125004
Plant Pathology	Monitoring and forecasting of plant disease epidemics under climate change scenario	CAFT in Plant Pathology, ICARI, Pusa, New Delhi-110012
Soil Science	Conservation Agriculture	CAFT in Agronomy, TNAU, Coimbatore-641003
Entomology	Precision Farming and Insect Pest Management	CAFT in Entomology, TNAU, Coimbatore-641003
Horticulture, Fruit Sciences	Training on "Role of growth regulators on micro-propagation, productivity enhancement & value addition in agricultural and horticultural crops"	CAFT in Crop Physiology, NDUAT, Kumarganj, Faizabad-224229
Veterinary Medicine	Emerging trends in nutrition of wild and zoo animals	CAFT in Animal Nutrition, IVRI, Izatnagar, Bareilly-243122

From table 31, it could be inferred that 11 participants from SKUAST were trained in seven disciplines through 9 CAFT centres of the country during the period under

study. The following are the details pertaining to the outputs and outcomes of the CAFT programmes on the organization as a whole.

### **Impact of CAFT on research, teaching and extension activities of SKUAST**

**Table 32. Impact of CAFT programme on research activities**

<b>Research activities</b>	<b>No./ Rs. in lakhs</b>
No. of University-sponsored research projects initiated	4
No. of external funded research projects initiated	5
No. of technologies developed/ recommended	2
No. of patents applied	0
No. of patents obtained	0
No. of research papers published in national journals	11
No. of research papers published in international journals	3
No. of papers presented in scientific fora	7
No. of collaboration with national institutes	4
No. of collaboration with international institutes	0
No. of foreign visits made	0
Extent of external funds brought (Rs. in Lakhs)	86
Cost of lab equipment's purchased (Rs. in Lakhs)	17.5
Cost of laboratories created (Rs. in Lakhs)	0
No. of consultancies offered	175

Table 32 informs that the CAFT programmes resulted in initiation of four institute-sponsored and five external funded research projects at the organization. The budget of external funded projects brought to this organization as an impact of CAFT is worth about 86 lakhs. In the way, the faculty of this organization had national level collaboration pertaining to research projects. Two technologies were developed based on the capacity built through CAFT training. CAFT programmes had impact on publications/ presentation of research papers (20) in national, international and scientific forums. CAFT programmes also had an impact on establishment of new research facilities/ equipments worth of about Rs. 18 lakhs. With such facilities, the organization could deliver a huge number of consultancies to the stakeholders.

The table 33 infers that each 2 new courses were initiated in this organization for undergraduate and postgraduate students apart from new initiatives in teaching collaboration. Eight teaching/ resource materials were prepared for teaching

utilization, while such training supported guiding of post-graduate level research projects also.

**Table 33. Impact of CAFT programme on educational activities**

Teaching activities	No.
Courses initiated for undergraduate students	2
Courses initiated for postgraduate students	2
Teaching/ resource material/ manuals developed	8
M Sc/ M V Sc students guided on the topic	3
Ph D students guided on the topic	0
Teaching collaboration initiated	2

**Table 34. Impact of CAFT programme on extension/ training activities**

Extension activities	No.
No. of trainings organized for extension personnel	18
No. of off-campus trainings organized for farmers	24
No. of on-campus trainings organized for farmers	10
No. of diagnostic/ study visits organized	14
No. of off-campus campaigns/ inter-face meetings organized	13
No. of on-campus farmers days/ ghostis organized	27
No. of method demonstrations organized	3
No. of result demonstrations (FLDs) organized	9
No. of on-farm trials (OFT) organized	2
No. of popular/ technical articles published for farmers	9
No. of leaflets/ folders/ booklets prepared for farmers	21
No. of books/ technical bulletins published for extensionists	12
No. of video films produced	10
No. of newspaper features written	1
No. of radio talks delivered	4
No. of exhibitions organized	4

It could be understood from table 34 that the CAFT programmes had impact on capacity building of farmers and extension personnel through appropriate on and off-campus training programmes. The knowledge gained by the faculty of university through CAFT programmes was utilized for transfer of technology activities in the form of diagnostic study visits, campaigns, and interface meetings with farmers, organizing farmers' days / ghostis, conducting result and method demonstrations and on-farm trials. Such information also led to preparation of literature wealth for farmers and extension personnel in the form of popular or technical articles, leaflets, folders, booklets, books and technical bulletins. The faculty of this organization also organized exhibitions, produced video films, delivered radio talks and written newspaper features with knowledge acquired through CAFT programmes for the benefit of farmers and extension personnel.

## **D. Effectiveness of CAFT programmes: Cases of concurrent evaluation**

### **I. Centre for Advanced Faculty Training in Veterinary Clinical Medicine, Ethics and Jurisprudence, Madras Veterinary College, TNVASU, Chennai**

This CAFT functions under the Department of Veterinary Clinical Medicine, Ethics and Jurisprudence, Madras Veterinary College, Tamil Nadu Veterinary and Animal Sciences University, Chennai. The Centre was established on May 1995. The centre has been the oldest and most advanced and premier centre of excellence in the country in the field of veterinary clinical medicine in terms of education, research and extension, training and skill development and patient care. The centre has been popular world-wise for its leadership in clinical and tertiary care. International Students Clinical Externship at this hospital and Referral Clinics are increasing year by year. International experts are frequent visitors for knowledge exchange and skill development. The centre has excellent facilities to build the capacity of not only the veterinary academicians, faculty, scientists and researchers of SAUS, ICAR and other related organizations but also field veterinary and specialist practitioners

#### **CAFT Objective**

- Providing training and retraining in specialized and need-based subjects primarily for augmenting and teaching-learning capacity of faculty

#### **CAFT Director**

Dr. A. P. Nambi

Professor and Head

Centre for Advanced Faculty Training in Veterinary Clinical Medicine, Ethics and Jurisprudence

Madras Veterinary College

Chennai

### Capacity and Facilities

<b>No. of core faculty</b>	<b>10</b>
Professors	4
Associate Professors	3
Assistant Professors	3
<b>No. of supporting faculty</b>	<b>11</b>
Directors	2
Professors	1
Assistant Professors	8

### Advanced training obtained by Core and Non-Core faculty

The core faculty have been trained either at international organizations at UK, USA, Australia, Sweden or by international faculties at India

### Facility Developed through CAFT Funding

No. of laboratories established	2
No. of training halls established	2
No. of AV units established	2
No. of clinics established	2
Equipments and instruments purchased	40

### CAFT Trainings related details (XI plan period)

Number of CAFT Programmes organized	7
Number of participants covered	119
Number of states covered	13 (Pondicherry, Tamil Nadu, Karnataka, Andhra Pradesh, Kerala, Bihar, Uttar Pradesh, Meghalaya, Jammu and Kashmir, Himachal Pradesh, Maharashtra, Jharkhand, Assam)
No. of resource materials prepared and distributed	7

### Training details other than CAFT

Number of programmes organized	19
Number of participants covered	150
No. of resource materials prepared and distributed	19



### Effectiveness of CAFT programme by the centre- A case

To assess the training effectiveness of CAFT organized by CAFT on “Veterinary Clinical Medicine, Ethics and Jurisprudence” at Madras Veterinary College, Tamil Nadu Veterinary and Animal Sciences University, Chennai, Dr. R. Venkattakumar, Principal Scientist, NAARM made a visit during the programme on “Current Clinical Techniques and Protocols in Farm and Pet Animals Practices” conducted during 1-21, August, 2012. He had discussion with the CAFT Director, faculty, participants and the authorities of the University. The following are the highlights of observations during his visit:

**Table 35. Expectations of the CAFT participants**

Expectations	RBQ	Rank
To know current research trends	48	3
To improve research competencies	49	2
To improve academic competencies	56	1
To improve extension competencies	28	7
Establish and strengthen professional network	43	4
Create new research facilities	40	5
Organize professional events	15	8
To fulfill career advancement demands	38	6

The expectations of the participants in participating in the programme of this CAFT explicitly informed that the CAFT has been serving the purpose for which it has been established (Table 35). Training effectiveness of this programme was assessed by arriving at the knowledge gain, skill gain by conducting pre and post-exposure training tests, getting the opinion of the participants towards their expectations to participate in the programme and their evaluation towards pedagogy and training environment provided by CAFT, documenting the opinion of participants during valedictory programme and that of the authorities of CAFT. It was found that the training was effective enough to result in 35% knowledge gain (Fig. 13) and 20% skill gain (Fig. 14). The perception of the participants towards pedagogy and training

environment was ranging from very good to excellent except for boarding, lodging and transport facilities of the CAFT (Table 36).

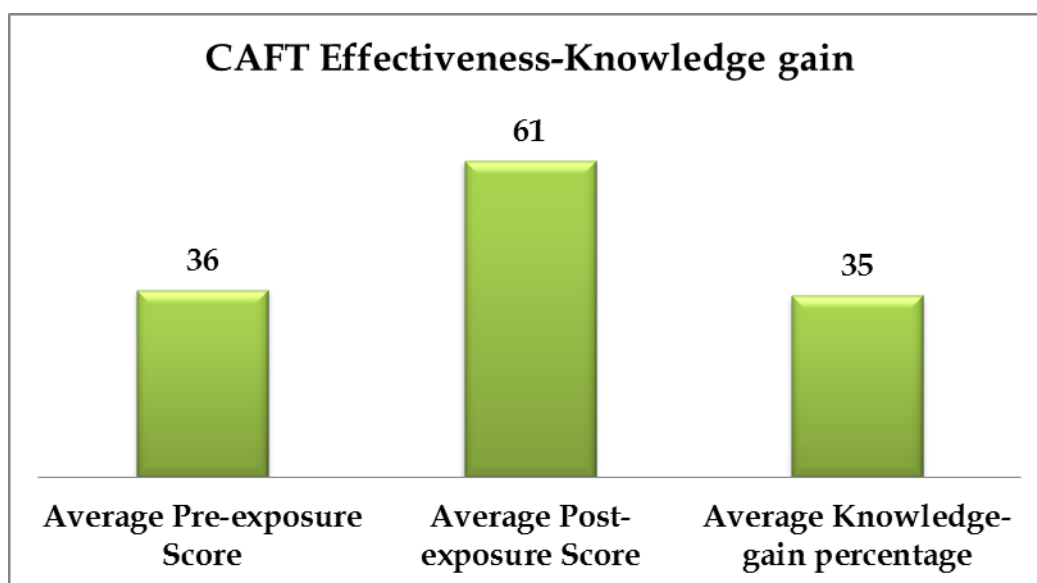


Fig. 13. Knowledge gained by the participants

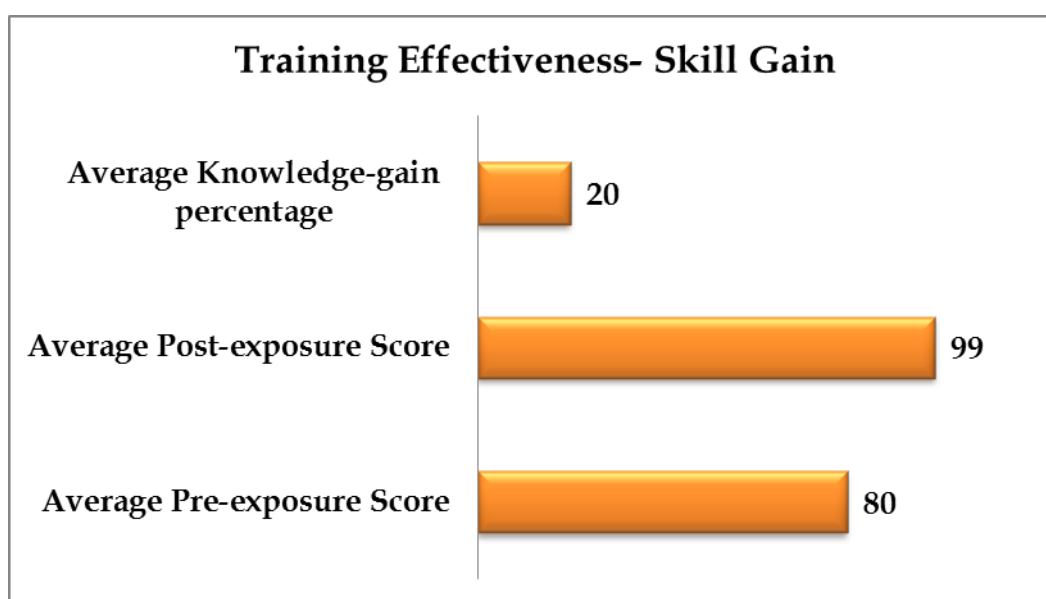


Fig. 14. Skill gained by the participants

**Table 36. Evaluation of training effectiveness by participants**

<b>Evaluation Criteria</b>	<b>Mean Score</b>
Theoretical backup	<b>4.2</b>
Hands-on experience	<b>3.9</b>
Resource material	<b>4.3</b>
Extent of involvement of guest faculty	<b>4.0</b>
Level of training seriousness maintained	<b>4.8</b>
Boarding	<b>3.1</b>
Lodging	<b>2.9</b>
Transport	<b>3.0</b>
Learning environment	<b>4.5</b>
Faculty capacity	<b>4.9</b>
Theoretical backup	<b>4.2</b>

(5-Excellent; 4-Very good; 3-Good; 2-Average; 1-Poor)

**The following are the highlights of the perception of the participants during the valedictory programme on 21.8.2012:**

- ❖ The programme was well planned and meticulously executed
- ❖ CAFT acts as a platform to know about advanced technologies and methodologies
- ❖ Leant about the techniques of handling students as well as farmers
- ❖ Further scope for improvement on par with the standard of abroad especially US
- ❖ Need for improvement in boarding and lodging facilities

#### **Opinion of CAFT Director**

Dr. Nambi opined that the CAFT has experienced faculty with rich expertise to build the capacity of participants. He expressed that the knowledge and skill tests suggested by NAARM are very much useful for recording the performance of CAFT over different periods of time and will use the same in future programmes. He also appreciated the indicators used by NAARM in assessing handholding support of CAFT Directors and he informed that he will use such indicators for tracking the

training transfer and impact of programmes of this CAFT. He also suggested that criteria for assessing the performance of CAFT need to be identified and standardized so that criteria can be used to rate the performance of CAFT centres. Such rating will motivate the CAFT centres towards enhanced performance.

**The following are the opinion of Dr. Prathaban, Director (Clinics), TNVASU, Chennai about the performance of the CAFT:**

- ❖ Though, the CAFT is constantly organizing many programmes, the response has been overwhelming and it is because of its faculty strength and the resultant popularity
- ❖ Many advanced facilities are brought to this centre through CAFT
- ❖ The centre is good in large animal diseases diagnostics too
- ❖ The CAFT staff need international training to update their knowledge and skills in emerging areas and advances
- ❖ Trying to improve the accommodation facilities
- ❖ CAFT may provide non-recurring contingencies in creating or renovating the infrastructural facilities

### **Recommendations for improvement of CAFT Centre**

Based on the discussion with the CAFT Director, participants of the programme, University authorities and observation, the following recommendations are suggested:

- ❖ National level training needs may be assessed specific to this CAFT targeting the programmes of XII plan period
- ❖ Programme-wise pre and post exposure knowledge and skill tests may be conducted regularly, so that such evaluation will help in understanding the level and extent of training effectiveness and constant improvement of such effectiveness
- ❖ The faculty of the CAFT may be trained through national and international programmes in order to further enhance their capacity in catering to the emerging national training needs and demands
- ❖ Training environment in terms of boarding and lodging needs to be strengthened

## II. Centre for Advanced Faculty Training in Horticulture (Fruits)

**Mahatma Phule Krishi Vidyapeeth**

**Rahuri, Ahmednagar, Maharashtra**

### CAFT Objective

- Providing training and retraining in specialized and need-based subjects primarily for augmenting and teaching-learning capacity of faculty

### CAFT Director

Dr. S. A. Ranpise

Director

Centre for Advanced Faculty Training in Horticulture (Fruits)

Mahatma Phule Krishi Vidyapeeth

Rahuri, Ahmednagar, Maharashtra

### Effectiveness of CAFT programme by the centre- A case

To assess the training effectiveness of CAFT organized by CAFT on “Horticulture (Fruits)” at Mahatma Phule Krishi Vidyapeeth, Rahuri, Ahmednagar, Maharashtra, Dr. B. S. Sontakki, Principal Scientist, NAARM made a visit during the programme on “Advances in Production Technology of Fruit Crops” conducted during 8-28, August, 2012. He had discussion with the CAFT Director, faculty and participants. The following are the highlights of observations during the visits:

**Table 37. Expectations of the CAFT participants**

Expectations	Percent	Rank
To know current research trends	100	1
To improve research competencies	100	1
Establish and strengthen professional network	100	1
Create new research facilities	100	1
To improve extension competencies	92	2
To fulfill career advancement demands	92	2
To improve academic competencies	83	3
Organize professional events	67	4

The expectations of the participants in participating in the programme of this CAFT explicitly informed that the CAFT has been serving the purpose for which it has been established (Table 37). The perception of the participants towards pedagogy and training environment was ranging from very good to excellent, except for hands-on experience and resource material (good to very good) implying the need for providing more hands-on experience opportunities (Table 38).

**Table 38. Evaluation of training effectiveness by participants**

<b>Evaluation Criteria</b>	<b>Mean Score</b>
Theoretical backup	<b>4.1</b>
Hands-on experience	<b>3.8</b>
Resource material	<b>3.9</b>
Extent of involvement of guest faculty	<b>4.3</b>
Level of training seriousness maintained	<b>4.3</b>
Boarding	<b>4.3</b>
Lodging	<b>4.3</b>
Transport	<b>4.0</b>
Learning environment	<b>4.3</b>
Faculty capacity	<b>4.3</b>
Theoretical backup	<b>4.1</b>

**(5-Excellent; 4-Very good; 3-Good; 2-Average; 1-Poor)**

The following are the perception of the participants about the programme and suggestions for future:

1. Increase the practical component of the training by including demonstrations, hands-on exercises, exposure visits, etc.
2. Provide more time for lab and field based training than class-room orientation
3. Involve more guest faculty, especially innovative and progressive farmers, industry, etc.
4. Try international faculty through video conferencing.
5. Avoid junior staff (like Assistant Professors / Scientists) for theory lectures
6. Resource material should be provided in hard and soft copies.

7. Avoid lectures that are too elementary.
8. The training should focus more on latest developments and research trends in fruit crops.
9. Due emphasis on emerging issues like climate change and its impact on fruit crops, quality management, post-harvest technology, irrigated and arid horti systems, etc.

The following are the points that emerge as challenges for CAFT Directors:

- How to attract enthusiastic participation in the programme (as number of participants per programme is declining gradually?)
- How to deal with last minute drop-outs?
- Incentives for participation (after the implementation of VI Pay Commission Recommendations, the erstwhile system of mandatory requirement of participation in 2 ICAR sponsored/recognized programmes of minimum 21 days duration).
- Relax the restriction on number of nominations from one university to 4 from the existing 2.
- Provision of 2 research staff (Research Associate or Senior Research Fellow), which used to be there in the erstwhile Centre of Advanced Studies (CAS) scheme.
- Per day expenses towards boarding and lodge of participants needs to be revised from the existing amount of ` 200/- per participant to at least ` 350/-.
- Transport facility (a dedicated vehicle exclusively for CAFT).
- Evaluation of CAFTs based on objectively verifiable quantitative and qualitative criteria (accreditation).

## **E. Assessment of performance of CAFT participants by peer group and deputing authorities**

To assess the performance of CAFT participants by their peer group members and the deputing authorities, two different instruments were designed and circulated among the respective peer group and deputing authorities. A total of 130 responses were received in this regard from various NARS organizations like PAU, Ludhiana, GADVASU, Ludhiana, ANGRAU, Hyderabad, IASRI, New Delhi, Dr.YSPUH&F, Solan and CSKHPKV, Palampur. The responses were collected through mail/ e-mail and personal contact. The responses were analyzed and the results are presented in this chapter.

### **Perception of peer group and deputing authorities towards performance of CAFT participants**

The peer group and the deputing authorities agreed that the CAFT participants utilized the CAFT training exposure in designing new course curriculum based on the CAFT theme (Table 39). They strongly agreed that the CAFT participants very well utilized their training experience in refining the existing course curriculum for teaching students. Similarly, the peer group and the deputing authorities strongly agreed that the style of explaining the facts to students, preparation of resource materials, presentation and the level of scientific interactions had improved as a result of participation in CAFT programmes.

They also agreed that there was an improvement in the research insights by the CAFT participants in terms of selection of research topics for PG/ PhD students, guiding the PG/ PhD Students research, preparing proposal for new research projects, refining the methodology of on-going research projects, applying for external-funded projects, procurement of lab equipment, establishment of new laboratories and offering consultancies and bringing out research publications.

The peer group as well as the deputing authorities also endorsed that there was improvement in the extension and training related activities after participation in the



CAFT programmes in areas related the theme/ subject of CAFT programmes by giving the response of “Agree”.

**Table 39. Assessment of peer group and the deputing authority towards performance of CAFT participants (N=129)**

Performance assessment indicators	Perception score
Designing new course curriculum	3.90
Refining existing course curriculum	4.02
Style of explaining the subject to the students	4.26
Preparation of teaching resource materials/ manuals	4.39
Presentation of subject information	4.35
Level of scientific interaction	4.26
Selection of research topics for PG/ PhD students	3.97
Style of guiding the PG/ PhD Students research	3.97
Preparing proposal for new research projects	4.27
Refining the methodology of on-going research projects	3.99
Applying for external-funded projects	4.04
Procurement of lab equipment	3.98
Establishment of new laboratories	3.84
Offering consultancies	3.73
Research publications	4.33
Designing and organizing training programmes for stakeholders	3.82
Organizing farmers training programmes	3.90
Organizing outreach programmes	3.63

5-Strongly agree; 4-Agree; 3-Undecided; 2-Disagree; 1-Strongly disagree

## Conclusions and Recommendations

### Conclusions

- Majority of the respondents of the study were middle to old aged, male, belonging to Assistant Professor cadre, had doctoral qualification, had 6-20 years of service, fairly distributed among 25 states and CAFT centres and up to 80 days of training experience. These results imply that they had sufficiently aged, experienced, qualified and had adequate training experience to the extent either to apply the knowledge and skill gained through CAFT at their job environment or to comprehend the survey and respond accordingly in an appropriate manner. Further, it could be implied that the response of these CAFT participants had ample scope for generalization of results due its wider representation from CAFT disciplines as well as states.
- The source of information about CFAT programme implies the conducive environment available at Universities and that may facilitate effective training participation by the faculty. The motivation behind participation in CAFT programmes as expressed by the respondents tells about value assumed by the participants towards CAFT programmes. This also can be further be confirmed through the response towards pre-training preparation of the participants.
- Majority of the participants shared their CAFT experiences with their colleagues in an informal manner and utilized such experience in strengthening their research capabilities apart from that of education. Thus, the enhanced competency in research areas in turn enhanced their confidence in teaching the UG students and guiding the PG research scholars also.
- By and large, the respondents had favourable opinion towards variables of their attributes, training design and delivery, organizational climate and transfer outcome, the four components of training transfer system. However, there was comparatively lesser average score towards their organizational

climate and this might have resulted in still lesser average score towards transfer outcomes.

- The correlation studies suggested that the organizational climate is very important for facilitating transfer of knowledge and skill gains acquired by respondents back at their job conditions. The factors of the training transfer system that influenced the transfer outcomes provide hints for improvement for all the participants, training managers and authorizes of the Universities.
- The respondents in general had favourable opinion towards pedagogy, andragogy and training environment of CAFT programmes.
- The handholding support by the CAFT centres after CAFT programmes helped the participants to refine existing or establish/ initiate new activities towards research, education and extension mandate of their organizations. This fact is again supported by the finding pertaining to organization-wise impact of CAFT (SKUAST, Jammu).
- The participants of the live CAFT programmes appreciated the pedagogy of such programmes. They also suggested strategies also for further improvement in terms of training facilities.
- The information from handholding support extended by CAFT Directors implies the pointers for documentation of impact and scope for further enhancement of such efforts.
- The peer group and deputing authorities opined that the competency of CAFT participants in terms of education, research and extension have been enhanced as a result of participation in CAFT programmes.

## Recommendations

After finalizing the study results a background paper was prepared for presentation and discussion in a peer and expert review workshop organized specially for the purpose. Five experts, 24 participants of CAFT training who responded to the survey and 11 faculty members from NAARM attended this workshop. Based on study results presentation, participants opinions, expert comments and the deliberations that followed the following recommendations are made for improving the CAFT training for effectiveness and training transfer during XII plan:

- In order to attract wider participation of most eligible faculty for the CAFT programmes, the CAFT Directors should announce the programmes at least three months ahead. Multiple communication modes (mail, e-mail and uploading in website) may be employed to ensure that the training information reaches the intended participants in time.
- The study conducted by NAARM reveals that selection of appropriate participants is crucial for effectiveness and training transfer. Hence, utmost care must be taken to delineate eligibility criteria for participant's selection and the same should be explicitly spelt-out in all communications related to training dissemination and these criteria must also be adhered to.
- The training brochure must contain the key contents of the programme as well as the resource persons who will deal such contents. This will provide the participants a clear idea about the extent of advanced and updated contents expected to be covered in the CAFT programme.
- CAFT centres should prepare day-wise training schedule of the programme well ahead and communicate the same to the confirmed participants. If followed properly, this practice can help to have realistic expectations from the programme.
- CAFT centres must ensure that a bound volume of the resource material is distributed to the participants on the first day of the programme. This is intended to facilitate the application of enhanced self-efficacy and

conscientiousness during the programme and intent and motivation to transfer the learning after the programme.

- The study reveals that there is vast scope for improving the design and delivery of training of CAFT programmes, thereby enhancing the training transfer and effectiveness. To enable this, it is recommended that NAARM shall design and organize a week long training workshop on “Effective training management strategies” for the CAFT Directors.
- Regular feedback and follow-up have been the grey areas in training management by CAFT centres. To augment this, the CAFT centres should organize at least one follow-up workshop in a block of five years, wherein 20-25 trained participants may be invited to share their training transfer experiences. The CAFT centres may incorporate this follow-up workshop in their training proposals for seeking necessary administrative and financial approval from Education Division of ICAR.
- All the CAFT centres have the onus of enhancing the academic competencies of the participants. Due emphasis must be given on “educational technology” relevant to the major content of the training programme. For this purpose, faculty from NAARM and other similar Academies and training organizations may be sourced-in.
- There is a need for regular updating of subject and training competency of CAFT faculty. Therefore, there should be adequate provisions for training of CAFT faculty at national as well as international platforms.
- For facilitating training effectiveness in its entirety, CAFT centres should maintain a database of participants consisting of their personal profile, training expectations, pre and post exposure knowledge and skill gains and the impact of training transfer efforts taken by the participants.
- The purpose of CAFT centres is to impart training in latest/ advanced developments in their respective domain areas. To achieve this, the CAFT centres should proactively ensure selection of appropriate faculty who are abreast with latest developments and up to date content.

- Achieving training effectiveness is a combined responsibility of participants, his or her organization and the training organization. The sponsoring organization must ensure that suitable candidates are nominated for CAFT programmes. While nominating candidates, the sponsoring organization may record major expectations from the participants after training.
- A Centre of Faculty Excellence may be started in each State Agricultural University to address the capacity building needs of the faculty of University. Such centre may assess the capacity building needs of faculty at different levels, prepare a capacity building plan and implement such capacity building schedule at regular intervals on top priority with view to enhance educational, research as well as extension competencies of faculty.
- The study findings also revealed that supporting organizational climate in terms of peer support, supervisor support and strategic linkage leverage effective training transfer. Hence, the sponsoring organization should extend necessary facilitation in terms of peer and supervisor support, resource commitment and suitable incentives to the trained participants.
- The best way to ensure transfer of knowledge and skills acquired during training to workplace is by formal sharing of the learning experiences and resources gained during training. Hence, it should be made mandatory for the CAFT participants to formally share their training experiences and resources through departmental seminars or regular monthly interface meetings within a month of CAFT participation.
- All the CAFT centres should have a webpage linked to the website of the host organization (SAUs/ ICAR organizations). The CAFT webpage should be a one-stop information repository on training database, resource material etc in sharable and downloadable formats.
- All the CAFT centres should organize appropriate fora for identifying and documenting training needs in their respective domain areas by involving a cross-section of the stakeholders. A structured training needs assessment should precede this event. A base paper prepared on the basis of such survey findings may be used for discussion during the event.

- Training logistics including comfortable accommodation, boarding etc also account for creating a conducive mind set among the participants during training programme. In view of the increased cost on account of inflation, per day expenses towards boarding and lodge may be doubled from the existing provisions.
- Provision of contractual services comes very handy for managing the exigencies in CAFT centres. Hence, CAFT centres may build-in provisions for context-specific contractual services under contingencies head of the CAFT budget while sending the proposal for approval to ICAR.
- CAFT centres should make efforts to invite the best of guest resource persons. To enable this, the existing provisions for inviting guest faculty may be suitably enhanced in terms of number and amount of honorarium/remuneration.
- The restriction in inviting the number of external experts for CAFT programmes may be lifted, so that experts from all over the country specialized in the disciplines related to the CAFT programmes may be involved in training the CAFT participants; the experts of CAFT programmes must give their 5 best papers to the CFAT participants for further references.
- Interactive lectures, method demonstrations and hands-on practical or experience are the most preferred training methodologies by the respondents. Hence, these methods must be utilized adequately by the CAFT directors while imparting training in addition to relevant field exposure visits.
- There should be either 60:40 or 50:50 theory: practical proportion in the pedagogy. The duration of the programme may be 16 to 21 days. Winter season is the most preferred season for CAFT programmes.
- There should be mandatory training evaluation. This can be done through appropriate pre and post-exposure knowledge or skill or both tests. This will give indication about the performance effectiveness of both participants and the CAFT training programme itself.
- To track the impact of CAFT training programmes, the CAFT Directors must document the handholding support extended by them to the participants

after training in terms of educational, research and extension activities. For this they can use the indicators used by NAARM (Annexure-II and Annexure-III in the discussion paper).

- Performance assessment of CAFT centres may be done every year in terms of pedagogy, training environment, training effectiveness and impact. Based on such criteria best CAFT must be selected every year and awarded. This will motivate the CAFT centres to put-in best efforts to have enhanced training effectiveness and impact.
- Outputs of CAFT in terms of effectiveness in teaching/ preparation of course resource materials, course manuals, practical manuals by the CAFT participants back at their job environment must be documented to track the impact of CAFT in terms of improving teaching competency, which is the prime objective of CAFT programmes. To facilitate this, the teaching activities must be given adequate priority in career advancement to improve their teaching ability. The course / resource material prepared by the faculty must carry adequate weightage towards the career advancement scheme. Further, the career advancement of faculty must have provision for considering the rating by the students about the teaching performance of the CAFT participants through confidential computerized evaluation. Award/s may be constituted for rating by students about the teaching performance of the faculty.
- Selected CAFT programmes may be exclusively utilized for training of newly recruited faculty of SAUs/ AUs with the aim of building their capacity in terms of teaching competency. Preferences must be given for selection of participants from the same disciplines to the maximum extent possible. Participation in CAFT must be made compulsory for the all the newly recruited faculty of SAUs/ AUs by linking CAFT participation and career advancement schemes.
- The changing dynamics of agricultural scenario necessitates rationalization of the subjects/ disciplines representation in CAFT centres. Adequate representation must be given for all the major disciplines of agricultural



sciences by appropriately increasing the number of CAFT centres in the country.

- Adequate care must be taken in deciding the calendar of programmes for CAFT programmes and summer/ winter schools so as to avoid overlapping of schedule of these programmes.
- Provision of airfare for CAFT participants may be considered to avoid low level of participants by faculty; such measure will solve the problem of last minute drop-outs; this may also motivate the faculty of SAUs and AUs even from interior and far-flung areas.
- More visits to the experimental and farmers' fields may be included; adequate provision for such visits may be included in the budget for CAFT programmes. Sessions for practical exposures and demonstrations must be adequately included; afternoon sessions may be planned with practical and hands-on experiences and demonstration sessions and theory-based interaction sessions may be scheduled during morning hours.

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**Research Study on Assessment of Training Transfer and Impact of Centre for  
Advanced Faculty Training (CAFT) at National Agricultural Research System  
(NARS)**

**Survey Questionnaire**

**Please Note**

- Your willing cooperation and active involvement in this survey is of immense importance to make CAFT training programmes more relevant and useful to the National Agricultural Research System.
- Your responses will be kept confidential.
- The information elicited through this questionnaire will be used for the purpose of this study alone. Complete anonymity of the respondents will be ensured in project report as well as other publications emanating from this study.

**Part: I Personal profile**

Name			
Age (years)		Gender (Indicate with ✓ mark)	Male / Female
Designation/cadre	i) Scientist/ Scientist (SS)/ Senior Scientist/ Principal Scientist ii) Assistant Professor/ Associate Professor/ Professor/ Others (specify)		
Discipline			
Address for correspondence:			

Phone#:		Fax#:		Mobile#:	
E-mail ID:					
Total experience (Years)					
Experience in the present organizations (Years)					
Experience in the present designation/ cadre (Years)					
Educational qualification (Highest degree)					
Specialized training (national/abroad)			Number of programmes		
programmes undergone			Total duration months		
Number of colleagues in your section/ division					

### Part-II: Details of CAFT Training Undergone

1. Programme Title	
2. Organized by (Name of the CAFT)	
3. Programme dates & duration:	
4. Who informed /recommended this training programme to you? (Please check the appropriate answer using ✓ mark)	
a) Self b) Colleague in the same department / organization c) Immediate superior (like HoD)	
d) Head of the organization e) Friend in other organization f) Personally contacted by CAFT Director / Faculty g) Any other (specify):	
5. What was your main motive to attend this training? (Please check the appropriate answer using ✓ mark)	
a) Training theme was relevant to my job b) Training was related to my subject c) To update my knowledge and skills d) To fulfill CAS / promotion requirement e) Instructed by Head of Organization f) To seek change from daily routine	
g) Any other (please specify):	

<p>6. Did you make any pre-training preparation to be well prepared in this training? Yes/No. If yes, please indicate your preparatory arrangement by checking the appropriate answer</p> <p>a) By reading literature on training theme      b) By internet browsing on training theme</p> <p>c) By visiting website of CAFT Organization      d) By discussion with colleagues/ boss</p> <p>e) Any other (please specify):</p>
<p>7. Did you share your learning experiences of CAFT training with colleagues of your department / organization? Yes/No. If yes, please indicate sharing mechanisms by checking the appropriate answer</p> <p>a) By giving a seminar      b) By informal discussion with colleagues</p> <p>c) By sharing training material with others      d) By conducting in-house workshop/training</p> <p>e) Any other (please specify):</p>
<p>8. List three major areas /topics covered during training in which you had significant learning in terms of acquisition of new knowledge, skills and attitude.</p> <p>i)</p> <p>ii)</p> <p>iii)</p>
<p>9. How did you make use of the knowledge and skills acquired during training?</p> <p>a) To develop new research proposal</p> <p>b) To develop/refine methodology for research</p> <p>c) To develop research publications like research/ technical / popular articles</p> <p>d) To develop training programme      e) To develop /revise course material</p> <p>f) To develop material for extension / outreach programmes</p> <p>h) Any other (please specify)</p>

**Part-III: Opinion towards training preparation, participation and transfer  
behaviour**

Based on your experience towards one or more CAFT programmes, kindly rate the following statements in a 10-point continuum starting from 10 (strongly agree) to 1 (strongly disagree)

Opinion towards training-related attributes	Rating
I have competency to complete any job assigned to me to the best satisfaction of my superior	
I rise to the occasion when new tasks are assigned to me	
I like to gain new knowledge and skills to perform effectively the task assigned to me and committed	
I had high perceived utility and value towards topic(s) of the CAFT training programme(s)	
I had put-in honest efforts to learn the content covered during CAFT training programme	
I whole-heartedly tried to learn the knowledge and skills taught to me during CAFT programme	
I was meticulous and careful enough in learning the content covered in CAFT training programme	
I acquired the training content by relating it to my work conditions	
I involved in learning, with a way to apply them back at my work place	
I had self-motivation to apply the knowledge and skills acquired during CAFT training programme, back at my work place	
I had honest intention to apply the training content back at my work place	
I believed if I apply the training content at my work place, it would improve my job performance	
My job performance improvement was dependent to the extent of training transfer back at my work place	
I had adequate time to transfer the training knowledge and skills I acquired at CAFT training programmes	

I had adequate resources (in terms of human, material and financial) to transfer the training knowledge and skills	
--	--

<b>Opinion towards training design and delivery</b>	<b>Rating</b>
The CAFT training programme I participated was designed based on felt-needs of the faculty	
The CAFT training was tuned towards the demands of NARS faculty	
The content of the CAFT training was relevant to the job profile of target group	
The content of the CAFT training was in line with the NARS priorities	
The course materials were designed as per the objectives of the training	
The training was effectively designed to involve the participants	
The training activities were arranged in such a way that even dull participants involved themselves in the learning activities	
During training, many practical examples were dealt	
The training content was dealt through varied and relevant methodologies	
The tools/ techniques used during the training were adequate	
The effectiveness of the training was improved by the use of tools/ techniques	
The evaluation of training at the end revealed the participants about their level of learning during training	
The results of training evaluation conveyed the participants about the extent of efforts they have to put-forth to transfer the training learned at CAFT	

<b>Opinion towards organizational (support) climate</b>	<b>Rating</b>
My institute work environment encouraged me to participate in training programme with a purpose of applying the learnt knowledge and skills back at my job environment	
My colleagues encouraged me to attend training to gain new knowledge and skills	
My colleagues took care of my job responsibilities during the tenure of my training participation	



My supervisor encouraged me to participate in training to gain new knowledge and skills	
My supervisor supported me by arranging my colleagues to take care of my job responsibilities during the tenure of my training participation	
My institute management is interested in encouraging scientists to participate in CAFT training to gain new knowledge and skills to achieve the mandate	
My institute management has been committed to improved organizational performance through training-induced job performance improvement of scientists	
My institute management made me responsible for training-induced improved organizational performance by applying the knowledge and skills I acquired during CAFT training	
Use of knowledge and skills acquired during CAFT training, fetched me a good reputation and name from my institute management	
Effective use of knowledge and skills gained during CAFT training in my job, was appreciated by my supervisors and peer group	
My supervisor did not allow me to transfer the knowledge and skills I learned back at work place	
My supervisor had insecurity feeling when I tried to apply the learned training knowledge and skills	
I had to overcome many hurdles to apply training learned at CAFT	
The hurdles which I had to face in applying training learned, really discouraged me	
My peer group gave me constructive criticisms for effective training transfer	
My supervisor supported me by giving meaningful suggestions time to time throughout the period during which I tried to apply the training acquired	
My peer group and supervisor were skeptical about the impact of training transfer	
My peer group and supervisor discouraged me about the outcomes of training transfer	

My work environment gave me enough resources to apply the training acquired	
The post-training tasks assigned to me gave me opportunities for effective training transfer	

<b>Opinion towards training outcomes</b>	<b>Rating</b>
Improvement in knowledge relevant to the theme	
Improvement in skills relevant to the theme	
Transfer of the theme to colleagues through informal discussion	
Transfer of the theme to colleagues through formal meetings/ presentations	
Proposal of new research projects on the theme	
Approval of new research projects on the theme	
Publication of research papers on the theme	
Publication of technical/ popular papers on the theme	
Improvement in research efficiency	
Improvement in performance of the peer group/ section	
Improvement in organizational performance	
Preparation of resource material for teaching / training	
Selection of new research idea/topic for students' research (masters and doctoral)	
Others, if any	

#### **Part IV: Effectiveness of CAFT training programme**

**Based on your participation experience in one or more CAFT programmes, please rate the following training aspects on a 10 point scale starting from 10 (very good) to 1 (very poor)**

<b>Sl . No.</b>	<b>Training aspects</b>	<b>Rating</b>
1	Relevance of training theme to NARS faculty	
2	Importance of training theme to NARS faculty	
3	Training objectives of CAFT programme	

4	Content covered during CAFT programme	
5	Resource material provided	
6	Training methodology adopted	
7	Lab facilities	
8	Use of various tools and techniques	
9	Adequacy of resource persons	
10	Boarding and lodging facilities	
11	Transport facilities	
12	Exposure visits/ practical exposure/ field orientation	
13	Involving multi-stakeholders in imparting training	
14	Providing platform for future networking	
15	Follow-up/ handholding support	

### Part-V Constraints in training transfer

Please give your opinion about constraints in training transfer

Constraints in training transfer	Response Continuum				
	SA	A	UD	DA	SDA
The training was not effective enough to transfer to work situation					
Lack of peer support					
Lack of supervisor support					
Lack of motivation and encouragement by superiors					
Lack of adequate resources					
Over burden with other responsibilities					
Lack of time					
Lack of like-minded team					
Discouraging office procedures					
Lack of responsibility and authority to transfer					
No strategic link between training content and mandate of					

my organization					
Lack of autonomy to transfer training					
'Resistance to change' attitude of the peers and supervisor					
Lack of personal incentives to transfer training					
Others (if any,)					

(SA - Strongly Agree; A - Agree; UD - Undecided; DA - Disagree and SDA - Strongly Disagree)

### Part-VI: Strategies to Improve CAFT Training Programmes

Please give your suggestions for improvement of CAFT Training Programmes

Strategies to refine CAFT programmes	Response Continuum				
	SA	A	UD	DA	SDA
The theme should be relevant to NARS					
Coverage of content needs improvement					
Resource material provided should be adequate					
Lab facilities of CAFT centre should be improved					
Use of various tools and techniques needs improvement					
Need to use well-known and experienced resource persons					
Boarding and lodging facilities need improvement					
Transport facilities need improvement					
More exposure visits/practical exposure/field orientation					
Multiple stakeholders are to be involved in imparting training					
Need to provide platform for future networking					
Follow-up support by CAFT for effective training transfer					
Others, if any					

(SA - Strongly Agree; A - Agree; UD - Undecided; DA - Disagree and SDA - Strongly Disagree)

## G. Your Concerted Opinion on Improving Training Effectiveness of CAFT

Please express your free and frank opinion either by putting a *tick mark* (✓) or by *briefly answering to the* following items to improve the overall effectiveness of training)

1. Preferred Ratio of Theory to Practical: 50-50/60-40/75-25/Any other (specify ratio)		
2. What should be the optimum duration of CAFT training programme? days		
3. What would be your most preferred time to undergo CAFT training?  Summer/ Monsoon/ Winter [Please name the month(s) also _____]		
4. Preferred Training Methods (please rank the following in terms of degree of preference on a 10 point scale with 10 for most preferred and 1 for least preferred)		
Sl. No.	Training Methods	Rank
x.	Interactive Lectures	
xi.	Demonstrations	
xii.	Hands-on practical	
xiii.	Field studies	
xiv.	Project work	
xv.	Group exercises	
xvi.	Institutional exposure visits	
xvii.	Case Studies/analysis	
xviii.	Behavioural Games/role plays	
	Others, if any	
xix.		
xx.		
xxi.		

5. Should there be a formal trainee evaluation at the end of training? Yes/No

*Date:*

*Signature (Optional):*

Thank you very much for taking up this survey and responding to it. Your valuable responses, judgments and opinions would be of utmost utility in making CAFT training more effective and useful to the NARS.

NAARM Project Team

**National Academy of Agricultural Research Management**

**(Indian Council of Agricultural Research)**

**Rajendranagar, Hyderabad**

**Research Study on “Assessment of Training Transfer and Impact of CAFT at  
NARS”**

**Role of CAFT Directors in Training Transfer**

**Part: I CAFT Profile**

Name and address of the CAFT centre	
Establishment year of CAFT centre	
Name and address of CAFT Director (Including phone, fax, mobile and e-mail ID)	
No. of CAFT programmes organized	
No. of participants trained through CAFT	

**Part: II Efforts of CAFT Directors to facilitate Training Transfer**

(Please give your response towards the following training transfer efforts made by you before, during and after CAFT training programme)

<b>Directors' efforts before training</b>	<b>Yes</b>	<b>No</b>
Regularly assess the 'training needs' of the target group in the proposed theme		
Designed the course curriculum of the CAFT training as per the identified training needs		
The goal of CAFT training was set to facilitate the participants to transfer knowledge and skills on the theme to their work and organization		
The content was designed in such a way to facilitate transfer of knowledge and skills by the participants to their work and organization		
Pre-training evaluation was conducted to assess the level of		

knowledge of the participants		
The expectations of the participants were compiled to structure the training to suit the demands of the participants		
<b>Directors' efforts during training</b>	<b>Yes</b>	<b>No</b>
The CAFT programme was designed in a manner that both the knowledge as well the skills of the participants were enhanced		
Ensured good blend of theory and practical exposure to maximize participants' learning		
Used a variety of training methods in accordance with the learning objective and the type of subject covered.		
<b>Directors' efforts after training</b>	<b>Yes</b>	<b>No</b>
Post-training evaluation was organized to assess the level of knowledge and skill gain of the participants		
The feedback given by participants was used for refining the subsequent programmes		
Encouraged participants to plan for 'training transfer' after they return to their workplace		

### **Part: III Follow-up and Handholding Support after Training**

(Kindly respond about your efforts on training transfer after training was over)

#	Handholding by CAFT Directors	Response
10.	Number of projects formulated by you or other participants on the theme utilizing the network of participants of CAFT	
11.	Number of Professional forums (seminars/workshops/brainstorming sessions etc.) organized by you or other participants utilizing the network of participants of CAFT	
12.	Approximate number of participants contacted you after CAFT for help in formulating research projects pertaining to CAFT theme	
13.	Approximate number of participants contacted you after CAFT for help in updating the course content of UG, PG, PhD programmes	



14.	Approximate number of participants contacted you after CAFT for help in formulating extension programmes like training etc.	
15.	Approximate number of participants contacted you after CAFT for help in offering consultancies	
16.	Approximate number of participants contacted you after CAFT for help in establishing laboratories	
17.	Approximate number of participants contacted you after CAFT for help in international research collaboration	
18.	Approximate number of participants contacted you after CAFT for help in organizing professional forums (seminars/workshops/brainstorming sessions etc)	

**If any other training transfer efforts made by you on theme of the CAFT programme, please explain.**

**Please indicate name and contact details of five participants (of CAFT programmes organized during 2008 - 11) who have successfully integrated their training learning experience in to their work (research, teaching, training, extension, management, etc.).**

**(Name and Signature of CAFT Director)**

## National Academy of Agricultural Research Management

(Indian Council of Agricultural Research)

Rajendranagar, Hyderabad

Research Study on "Assessment of Training Transfer and Impact of CAFT at  
NARS"

## Case Study on Organization-wise Impact of CAFT programmes

## Part: I Profile

Name	
Designation/ Cadre	
Mobile No.	
CAFT programme undergone	
CAFT centre	
Year of participation in CAFT programme	

## Part: II Impact on research

Kindly give your valuable response as an impact of CAFT programme on your research activities pertaining to the topic of the CAFT training, wherever applicable

Research activities	Yes/ No	No./ Rs.
No. of University-sponsored research projects initiated		
No. of external funded research projects initiated		
No. of technologies developed/ recommended		
No. of patents applied		
No. of patents obtained		
No. of research papers published in national journals		
No. of research papers published in international journals		
No. of Papers presented in scientific forums		
No. of collaboration with national institutes		
No. of collaboration with international institutes		

No. of foreign visits made		
Others if any pl. specify with no.		
Extent of external funds brought (Rs.)		
Cost of lab equipment's purchased (Rs.)		
Cost of laboratories created (Rs.)		
No. of consultancies offered		
Revenue generation (Rs.)		

**No. =Number; Rs. =Worth in rupees**

### **Part: III Impact on teaching**

**Kindly give your valuable response as an impact of CAFT programme on your teaching activities pertaining to the topic of the CAFT training wherever applicable**

<b>Teaching activities</b>	<b>Yes/ No</b>	<b>No.</b>
Courses initiated for undergraduate students		
Courses initiated for postgraduate students		
Teaching/ resource material/ manuals developed		
M Sc/ M V Sc students guided on the topic		
Ph D students guided on the topic		
Teaching collaboration initiated		
Others, if any		

**No. =Number**

### **Part: VI Impact on extension**

**Kindly give your valuable response as an impact of CAFT programme on your extension/ training activities pertaining to the topic of the CAFT training wherever applicable**

<b>Extension activities</b>	<b>Yes/ No</b>	<b>No./Rs.</b>
No. of trainings organized for extension personnel		
No. of off-campus trainings organized for farmers		
No. of on-campus trainings organized for farmers		
No. of diagnostic/ study visits organized		

No. of off-campus campaigns/ inter-face meetings organized		
No. of on-campus farmers days/ ghostis organized		
No. of method demonstrations organized		
No. of result demonstrations (FLDs) organized		
No. of on-farm trials (OFT) organized		
No. of popular/ technical articles published for farmers		
No. of leaflets/ folders/ booklets for farmers		
No. of books/ technical bulletins published for extensionists		
No. of video films produced		
No. of newspaper features written		
No. of radio talks delivered		
No. of exhibitions organized		
Revenue generation through sale of planting material/ bio-control agents/ vaccines (Rs.)		

**No. =Number; Rs. =Worth in rupees**

**Please mention and explain about significant developments other than the above-listed aspects, if any, that occurred as an impact of your participation in CAFT programme.**

- 1.
- 2.
- 3.
- 4.
- 5.

**(Name and Signature)**

**National Academy of Agricultural Research Management**  
**(Indian Council of Agricultural Research)**  
**Rajendranagar, Hyderabad**  
**Research Study on “Assessment of Training Transfer and Impact of CAFT at**  
**NARS”**  
**Case Study on Training Effectiveness**  
**Part: I Profile**

Name and address for correspondence with mobile and E-mail ID	
Name and address of Organization	
Designation/ Cadre	
Discipline	
Educational qualification (Highest Degree)	
Age (Years)	
Experience (Years)	
Title of CAFT programme	
CAFT centre	

### Part: II Expectations from CAFT Programme

We are sure you may have several expectations from the CAFT training you are undergoing currently. Based on your expectations, please rank the following in the table below:

S. #	Areas of expectations	Your rank
1.	Know the current research trends to plan new research project	
2.	Learn new knowledge and skills for improving my research competencies	
3.	Learn new knowledge and skills for improving my academic and teaching competencies	
4.	Learn new knowledge and skills for improving my extension competencies	
5.	Establish and strengthen professional network with other participants	
6.	Create new facility at my institute (lab, farm, etc.)	
7.	Organize professional events (seminar, conference, etc.) in collaboration with CAFT centre / other participants	
8.	To fulfill career advancement obligation	
Others (if any, pl. specify)		
9.		
10.		
11.		
12.		

### Part: III

Kind give your rating ( √ ) about the CAFT programme/ centre based on your present experience

CAFT Training activities	5	4	3	2	1
Pedagogy					
Theoretical back-up and content coverage					

Opportunities for hands-on experience					
Resource material provided					
Extent of involvement of guest faculty					
Level of training seriousness maintained					
<b>Training facilities</b>					
Boarding facilities					
Lodging arrangements					
Transport facilities					
Learning environment					
Capacity of institute's faculty					

5-Excellent; 4-Very good; 3-Good; 2-Average; 1-Poor

#### Part: IV

Kindly mention suggestions if any, for improving the effectiveness of programmes organized by this CAFT centre

(Name and Signature)

## Annexure-V

National Academy of Agricultural Research Management  
(Indian Council of Agricultural Research)  
Rajendranagar  
Hyderabad-500 030

### Study on “Effectiveness and training transfer of CAFT programmes at NARS”

#### Peer review questionnaire to assess the performance of CAFT participants

#### Part: I: Personal Profile

Name of the assessee:

Name	:	
Address with e-mail, phone, mobile No. etc	:	
Age (years)	:	
Cadre	:	
Discipline	:	
Experience (years)	:	
Your formal job relationship with assessee	:	Colleague/ Reviewee/ Employer
Period of such relationship (From-to : in year)	:	

#### Part II: Perception about the performance of CAFT participants after CAFT programmes

Based on your experience on formal job relationship, kindly give your perception about the improvement in performance of your colleague/ reviewee/ employee after participating in the CAFT programme.

Job performance indicators	Perception continuum				
	SA	A	UD	DA	SD
Designing new course curriculum					
Refining existing course curriculum					
Style of explaining the subject to the students					



Preparation of teaching resource materials/ manuals					
Presentation of subject information					
Level of scientific interaction					
Selection of research topics for PG/ PhD students					
Style of guiding the PG/ PhD Students research					
Preparing proposal for new research projects					
Refining the methodology of on-going research projects					
Applying for external-funded projects					
Procurement of lab equipments					
Establishment of new laboratories					
Offering consultancies					
Research publications					
Designing and organizing training programmes for stakeholders					
Organizing farmers training programmes					
Organizing outreach programmes like FLDs, OFTs, diagnostic study visits, campaigns etc					
Any other information, pl. specify					

**SA-Strongly agree; A-Agree; UD-Undecided; DA-Disagree; SDA-Strongly disagree**

**Part III: Kindly explain briefly about the changes that occurred in teaching, research and extension activities of your colleague/ reviewee as an impact of participation in CAFT programme.**

**(Signature)**

## Annexure-VI

National Academy of Agricultural Research Management

(Indian Council of Agricultural Research)

Rajendranagar

Hyderabad-500 030

Study on “Effectiveness and training transfer of CAFT programmes at NARS”

Questionnaire to assess the performance of CAFT participants from deputing authorities

### Part: I: Personal Profile

Name	:	
Designation	:	
Address with e-mail, phone, mobile No. etc	:	
Age (years)	:	
Discipline	:	
Total experience (years)	:	

### Part II: Perception about the performance of CAFT participants after CAFT programmes

Based on your experience through formal job relationship, kindly give your perception about the improvement in performance of your faculty staff after participating in the CAFT programme/s, by making a ‘√’ in the appropriate column as judged by you.

Job performance indicators	Perception continuum on improvement in job performance				
	SA	A	UD	DA	SD
Designing new course curriculum					
Refining existing course curriculum					
Style of explaining the subject to the students					
Preparation of teaching resource materials/ manuals					
Presentation of subject information to the students					

Level of scientific interaction with the students					
Selection of research topics for PG/ PhD students					
Style of guiding the PG/ PhD Students research					
Preparing proposal for new research projects					
Refining the methodology of on-going research projects					
Applying for external-funded projects					
Procurement of lab equipments					
Establishment of new laboratories					
Offering consultancies					
Research publications					
Designing and organizing training programmes for stakeholders					
Organizing farmers training programmes					
Organizing outreach programmes like FLDs, OFTs, diagnostic study visits, campaigns etc					
Any other information, pl. specify					

**SA-Strongly agree; A-Agree; UD-Undecided; DA-Disagree; SDA-Strongly disagree**

**Part III: Kindly explain briefly the measures taken by your university to facilitate participation of your staff in CAFT programmes and application of knowledge and skills by them after CAFT programmes.**

**Part IV: Kindly offer your valuable suggestions for effective application of knowledge and skills by your faculty.**

**(Signature)**

## Workshop Report

### Policy Workshop on “Effectiveness and training transfer of CAFT at NARS” (September 10-11, 2012)

1.	<b>Name of the course</b>	Policy Workshop on “Effectiveness and training transfer of CAFT at NARS”
2.	<b>Objectives</b>	<ul style="list-style-type: none"> <li>To capture the perception of participants towards CAFT programmes in terms of effectiveness, impact and training transfer</li> <li>To recommend strategies for refinement of CAFT programmes to be organized during XII plan period</li> </ul>
3.	<b>Workshop Directors</b>	Dr. R.Venkattakumar and Dr. BS Sontakki
4.	<b>Sponsoring authority, if any</b>	Education Division of ICAR
5.	<b>Duration with dates</b>	2 days (September 10-11, 2012)
6.	<b>Number of participants</b>	40 from SAUs, ICAR organizations and private organizations
7.	<b>Course material provided</b>	<ul style="list-style-type: none"> <li>Discussion paper on the study topic</li> <li>Technical bulletin on “Training transfer at NARS its implications”</li> </ul>
8.	<b>Financial details</b>  <b>Receipts:</b>  <b>Expenditure:*</b>	Rs. 600000/-
9.	<b>Feedback from participants</b>	Given as workshop recommendations
10.	<b>Constraints &amp; suggestions on how to overcome them</b>	Nil

### List of Workshop Participants

S.N.	Name, Designation and address details
1.	<b>Dr Vijay Kumar M</b> Assistant Professor, Department of <b>Veterinary Pharmacology &amp; Toxicology</b> , Veterinary College, KVAFSU, Bidar-585401, Karnataka, M: 09886154400, 09440926229, Email: <a href="mailto:vijaymatham@gmail.com">vijaymatham@gmail.com</a>
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22.	<b>Dr Mahalakshmi, V. Reddy</b> Director, CAFT – H.Sc. PG & RC, , Rajendranagar, Hyderabad
23.	<b>Dr P.A. Amala Kumari</b> Associate Professor, Dept. of HECM, C.H.Sc. Hyderabad
24.	<b>Dr K. Mayuri</b>

	Professor & Head, Dept. of HDFS, C.H.Sc. Hyderabad
25.	<b>Dr A. Sharada Devi</b> Dean of Home Science, ANGRAU, Hyderabad Ph. 9989625229
26.	<b>Dr Kusumakar Sharma</b> ADG (HRD), ICAR, New Delhi
27.	<b>Dr Kanhaiya Chaudhary</b> Deputy Secretary (Edn.), ICAR, New Delhi
28.	<b>Dr R.K. Samanta</b> Former Pr. Scientist, NAARM
29.	<b>Dr BR Virmani</b> Chairman, CORD-M, Hyderabad
30.	<b>Dr Bharat S. Sontakki</b> Pr. Scientist, NAARM, Hyderabad
31.	<b>Dr R. Venkattakumar</b> Pr. Scientist, NAARM, Hyderabad
32.	<b>Dr K.M. Reddy</b> Pr. Scientist and Head (ESM), NAARM, Hyderabad
33.	<b>Dr. G.P. Reddy</b> Principal Scientist and Head (ABM), NAARM, Hyderabad
34.	<b>Dr D. Rama Rao</b> Professor, NAARM, Hyderabad
35.	<b>Dr N. Sandhya Shenoy</b> Head, XSM Division, NAARM, Hyderabad
36.	<b>Dr V. K. J. Rao</b> Professor, NAARM, Hyderabad
37.	<b>Dr P. Ramesh</b> Professor, NAARM, Hyderabad
38.	<b>Dr Sumanth Kumar, VV</b> Scientist, NAARM, Hyderabad
39.	<b>Dr. Manoj Samuel</b> Senior Scientist, NAARM, Hyderabad
40.	<b>Dr. G. R. K. Murthy</b> Senior Scientist, NAARM, Hyderabad



## Workshop Agenda

### Day 1 (10 September 2012)

- 09:30 hours Registration & TA Bill Submission Formalities
- 10:00 hours Introduction and Workshop Overview
- 10:45 hours **Tea Break**
- 11:00 hours Experience Sharing on Training Transfer & Impact of CAFT by Participants of CAFT Programmes (5 minute each)
- 13:00 hours **Lunch Break**
- 14:00 hours Opening Remarks by ADG (HRD) - About CAFT Impact Study
- 14:15 hours Presentation of Study Results on Assessment of Training Transfer and Impact under Centre for Advanced Faculty Training (CAFT) at NARS by NAARM Team (R Venkattakumar & BS Sontakki, NAARM)
- 15:00 hours Remarks by Invited Expert-Dr. R.K. Samanta and Dr. Sharada Devi
- 15:30 hours Remarks by Director, NAARM
- 15:45 hours Closing Remarks by ADG (HRD), ICAR, New Delhi
- 16:00 hours Tea and Group Photo**
- 16:30 hours Experience Sharing on Training Transfer & Impact of CAFT by Participants of CAFT Programmes (5 minute each)
- 17:30 hours General Discussion to Finalize Recommendations and Action Plan
- 18:00 hours End of Day 1**

### Day 2 (11 September 2012)

- 09:30 hours Consolidation and Synthesis
- 11:00 hours Tea Break
- 11:15 hours Finalizing Framework for Improving CAFT for Effectiveness and Impact
- 12:00 hours Plenary and closing
- 13:00 hours Lunch

### End of Workshop

## Resource persons

- **Dr. R. Venkattakumar**  
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## Course Directors' Report

### Background

Capacity building is the crucial but expensive component of human resource development (HRD). Training is a planned effort that intends to improve the efficiency and effectiveness of performance of the members of organization. The performance improvement may be effected through planned learning and transfer of such knowledge learnt back at work place. Given such objectives, it has been reported widely that training programmes fail to inculcate 'training transfer' intent in trainees. Hence, there is an increasing concern over the effectiveness of training programmes and training transfer at work place and the resultant improved organizational performance in terms of productivity, efficiency, effectiveness and performance enhancement etc. Indian Council of Agricultural Research (ICAR) through its scheme on **Centres on Advanced Faculty Training (CAFT)** has been supporting the faculty of National Agricultural Research System (NARS) in the cutting edge areas of agriculture and allied sciences with respect to research, education and extension capacity demands. There are 31 such centres established all over the country. Such centres have been building the capacity of scientific faculty in terms of up-grading their skills since the inception of this scheme. There is a felt need to improve the design, pattern and content of CAFT capacity building programmes. Such need has been felt pertinent in order to match the evolving demands pertaining to the perspectives of contemporary agricultural dynamics. Hence a project was formulated as follows:

**Title of the project** - Assessment of effectiveness and training transfer of Centre of Advanced Faculty Training (CAFT) at NARS

### Objectives

- To assess the perception of CAFT participants, their peers, deputing authorities and CAFT Directors towards the effectiveness of CAFT programmes

- To capture the training transfer by CAFT participants and the resultant transfer outcomes
- To suggest strategies to improve the design, pattern and content of CAFT programmes

## Methodology

- Study duration: 3 months (June-August, 2012)
- Locale: CAFT Centres and NARS Institutions of India

Type of respondents	Data collection method	Sample size
Participants of completed CAFT programmes	Questionnaire survey	15 % of the total CAFT participants who attended during 2007-08 to 2009-10
Participants of on-going CAFT programmes	Questionnaire survey, FGD and observation	34 (2 programs)
Participants from same organization	Questionnaire survey	11 participants
CAFT Directors	Questionnaire survey	68 % of the total CAFT Directors

The data thus collected were analyzed and meaningful interpretations were drawn with recommendation. To validate these results with the survey participants, have their experience pertaining to CAFT programmes in terms of effectiveness and impact and to have their strategies to refine the programmes for XII plan period, we have organized this workshop.

## Aim

- To capture the perception of participants towards CAFT programmes in terms of effectiveness, impact and training transfer

- To recommend strategies for refinement of CAFT programmes to be organized during XII plan period

### **Participants**

- 4 from ICAR organizations
- 17 from SAUs
- 3 from other organizations like private colleges, rubber board
- Apart from these delegates, delegates 10 other delegates and NAARM faculty participated as experts
- Representation from Disciplines-Crop sciences- agricultural microbiology, plant breeding, entomology, agronomy; Horticulture-floriculture and vegetable science; Animal sciences-veterinary pharmacology, veterinary gynecology and obstetrics, animal physiology, veterinary parasitology, veterinary surgery and radiology, veterinary microbiology; Home sciences subjects; Agricultural Engineering, SWC Engineering and farm machinery and power; Social sciences-Agricultural economics, extension and home science extension
- Representation from States-Tamil Nadu, Karnataka, Andhra Pradesh, Jammu & Kashmir, Kerala, Uttar Pradesh, Punjab, West Bengal, Madhya Pradesh

### **Pedagogy**

- Capturing the perception and opinion of participants through video recording about their opinion on effectiveness, impact of CAFT programmes
- Presentation of study results by study team followed by brainstorming
- Capturing the opinion of participants on future strategies for CAFT in XII plan period

### **Resource Material**

- Background paper
- Technical bulletin in the similar line on “Training transfer at NARS and its implications”

### **Recommendations of the Workshop**

Given in the final recommendations of the study

