

## Review Paper

### Systematic Review: Training Needs of Agriculture Extension Workers

#### ABSTRACT

The objectives of the study were to identify training needs of agricultural extension officers to choose which employees need training and what training should be used to improve job performance. However, training needs it's important to give a clear picture to the strategy for the planning of the future. This study focuses on using model Borich's to identify the training needs. Meanwhile, the study was the training requirements deviate by knowing performance problems for agricultural extension staff to develop appropriate solutions. Tentatively chosen a vocation or discipline, but require basic education to function effectively. Identify the training needs of agricultural extension agents, validate them and develop a theory of identification of training needs for agricultural extension agents. Therefore, you've identified a problem in your organization, and should be thinking training is part of the solution. Also, maybe you have a strategic goal where training can play a key role to improve performance. This paper contributes to understanding, the sharing of experience and reflection on the necessary practices to be trained in the future as well as in generating transformations in the approach and training of extension agents. Then study assesses systematically by assessing the implications and identify of training needs on all extension workers.

**Purpose:** This paper aims to contribute to the body of knowledge around best to identify training needs of the Agricultural Extension Workers (AEW).

**Methodology:** Borich's need assessment model used to identify training needs of the workers in agricultural extension. Also, to know which method is suitable to identify training needs.

**Finding:** Every area needs different training and any skills, knowledge and attitude need another training also should be focuses on environment to identify which attitude, skills or knowledge need training due to any village (area) and farmers need different training.

30 **Practical Implication:** This study is important for the development of skills, attitude, knowledge  
31 and information for workers in agricultural extension, as well as to raise the efficiency and  
32 ability of the employees and develop their abilities to raise productivity and increase income in  
33 general.

34 **Theoretical Implication:** This research highlights the important role training needs plays in job  
35 performance for the planning in the future. Also, to know which skills, knowledge or attitude  
36 need more training.

37

38 **Keywords:** Systematic Review, Training Needs, Model Borich's, Agricultural Extension  
39 Workers.

40

## 41 **1-INTRODUCTION**

42 A Google Scholar search with the keyword "Training Needs" found 4,800,000 scholarly  
43 positions for that term, but when search with the model Borich's yielded 5,550, which means the  
44 availability of many studies in this area. Agriculture is the main nerve in the economic life and in  
45 the development of the economy of countries and growth and development, and has an impact on  
46 the stability of any country through the provision of manpower and provide appropriate food for  
47 the citizen (Saleh et al, 2016). Where the lack of food will lead any country to provide food  
48 through the import and therefore needs a difficult currency and therefore to higher prices because  
49 of the import of these essential materials for life in addition to transport and storage and  
50 intermediaries and transfer work all factors will increase the price of any commodity (Saleh and  
51 Man, 2017). Training needs is one of the most important steps in the development of the  
52 performance and factors that will effect on the performance.

53 Therefore, it is necessary to provide food security and give priority to the important and hence  
54 comes the role of agricultural extension through guidance and awareness and provide appropriate  
55 training methods and methods in order to use the best methods of technology and the latest and  
56 delivery to the farmer to adopt the use of the appropriate form (Salman, et al, 2012). Hence the  
57 importance of this study in order to know the best and most appropriate scientific methods and  
58 appropriate methods to be used in the training of agricultural extension staff as well as to know  
59 the best ways for the training needs of all the staff of the guidance organization and the field of  
60 need training for training to be done with the most appropriate training time, and what skill or

61 knowledge required focus on her (Umar et al, 2017). Training needs analysis is the first and  
62 probably the most important step toward making sure your organizational training resources are  
63 used most effectively. In addition, take a look at organizational willingness for training. This  
64 contains identifying and removing (or at least minimizing) difficulties that might make the  
65 training less effective (Zina, 2011). This analysis can be performed by managers who are able to  
66 observe their staff and make recommendations for training based on performance issues or gaps  
67 between performance and objectives. Therefore, analysis can also be performed in an  
68 organization-wide level of Training and Development managers who survey the organization to  
69 identify needs.

## 70 **2- Levels of Training Needs**

71 The training module is not designed only to address the weaknesses in the performance of the  
72 teachers, but also to fulfill their own needs and to raise their competencies (Saleh and Man,  
73 2017). There are four (4) levels that can help us to identify training needs Wentling (1993).

### 74 **1) Needs at Organizational Level**

75 Overall management needs seek to improve service levels and morale, and these requirements  
76 are derived from the analysis of the objectives and priorities of the Organization, which are  
77 affected by economic and social realities and the prevailing political and technological  
78 environments;

### 79 **2) Needs at Job Level**

80 They represent weaknesses and deficiencies in the job, due to the lack of skills, information, and  
81 directions required to perform various functions, and identify the problems and difficulties of  
82 functionality which can be treated with structured training.

### 83 **3) Needs at Individual Level**

84 These requirements stem from the work of an individual, recognizable by identifying  
85 deficiencies in information, skills, individual and trends that can be developed. So that the  
86 individual can perform his functions well and has added all of the Tris (1991). Abdul-Jalil (1994)  
87 adds the fourth level of training needs is:

### 88 **4) Needs at Group Level**

89 They relate to specific functional levels or certain categories of workers, such as managers and  
90 supervisors, which directly implement and so on. Through analyzing the needs of the

91 community, it may show the need for a certain type of training programs, which aimed at the  
92 composition of the team spirit and leadership training, supervision and problem-solving.  
93 Therefore, it is possible to add a fifth level of training needed and important (**Need at National**  
94 **Level**), you might need a state or an entire country on a particular train. For example, attack  
95 insects, flood, pests or the country's vulnerability to the blockade, or higher prices for certain  
96 crops and thus put the government's policy that is a special circumstance (Saleh and Man, 2017).  
97 Which requires the concerted efforts of all to all government and agricultural departments, to  
98 minimize the risks arising from those risks. This is an important level, at the level of the entire  
99 country for need training. Therefore, the researcher defines the training needs as "The training  
100 needed to improve the staff' skills and knowledge for his professional development to enable  
101 them to perform their responsibility exactly and completely to overcome the gap between what  
102 he or she should do and what exists in the reality" Silva (1997). Moreover, should be focuses on  
103 environment to identify which attitude, skills or knowledge need training due to any village  
104 (area) and farmers need different training.

### 105 **3- Some Methods Used In Determining Training Needs**

106 Cunningham (1967) pointed out that an in-service educational program such as the one held by  
107 the Ohio Cooperative Extension Service in late 166 provided excellent opportunities for staff  
108 members to make suggestions and indicate areas in which they felt the need for more competent.  
109 Flint (1961) made a rather comprehensive study of the training needs of the white Extension  
110 Service Personnel of the Northern Extension District of Louisiana. The nine major areas of  
111 emphasis of the extension subcommittee report on the "Scope of Cooperative Extension Service  
112 Responsibilities" and the competencies necessary for the implementation of this report provided  
113 the basis from which certain items were selected for se in the study. Forty-five specific were  
114 used that were related to following nine areas; 1) program planning; 2) program execution; 3)  
115 evaluation; 4) efficiency in agricultural production and marketing; 5) farm and home  
116 management; 6) family living and youth development; 7) leadership; 8) public affairs; 9)  
117 community and resource development.

118 Soobitasky (1971) did a similar study of the perceived training needs o urban cooperative  
119 extension agents working with the disadvantaged audience in 12 Northeastern states of the  
120 United States. The framework of his study was based upon the work of the National Task Force  
121 on Cooperative Extension In-service Training. He used a questionnaire that included 127 specific

122 items that were related to the importance of job performance and additional training needs. These  
123 items were related to the following nine areas; 1) extension organization and administration; 2)  
124 human development; 3) program planning and development; 4) educational process; 5) social  
125 systems; 6) communications; 7) effective thinking; 8) technical knowledge; 9) research and  
126 evaluation. Santos (1961) conducted a study on the scope of in-service training needs  
127 participation in in-service training programs by teachers of agricultural schools of the  
128 Philippines. He collected his data by means of questionnaires sent to 25 teachers and 32  
129 administrators of agricultural schools and 7 teacher-training institutions. He had 27 items  
130 grouped into 6 areas; 1) research and experiment; 2) subject-matter content; 3) extension  
131 methods; 4) co-curricular activities 5) general education and 6) administration and supervision.  
132 Phanom (1961) did a study on training programs for extension field workers in Thailand. He  
133 used mailed questionnaires and his respondents were made up of 360 Thai extension personnel  
134 out of a total of 441. His study was based on; 1) age status; 2) official status; 3) position,  
135 academic status, experience in extension work, their expressed needs in the field of professional  
136 and human relations, skills, extension methodology and practices, and technical agricultural  
137 subject-matters. A study Corty et al (1970) on employment characteristics of trained man-power  
138 needed in Malaysian agriculture, involved personal interviews by 32 staff members of the  
139 College of Agriculture Malaysia to the employees of some 73 agricultural firms in the country.  
140 Among others, the questionnaires included; 1) job titles; 2) trained man-power needed; and 3)  
141 desirable areas of instruction. In a recent study for determining training needs of extension  
142 agents in the area of dairy science. Verma (1971) used Tyler's concept of educational objectives  
143 and Bloom's taxonomic classification of cognitive behavior, along with the element of work  
144 effectiveness, to build a conceptual framework. The data, which collected from 20 extension  
145 agents engaged in dairy work in Louisiana, 5 state specialists in dairy and veterinary science, and  
146 86 dairymen over the state, was analyzed on two major dimensions, namely, agent cognitive  
147 ability and relative work value of dairy science concepts. The concepts (from breeding, nutrition  
148 and management) were rated by the agents and specialists in terms of importance in the job of  
149 the agent and were also tested on agents at three levels of cognitive behavior. Therefore, Needs  
150 Assessment: the process to identify "gaps" between current performance and department/  
151 organizational objectives than should be focuses on experiences, skills and knowledge that will  
152 be effect on need training for the employees that also assert on job performance.

#### 153 **4- Classification of The Training Needs and Method of Its Measurements**

154 The process of analysis of training needs of an organization as stated by Mc Gee and Paul (1961)  
155 comprised a threefold approach, namely: organizational, job or occupational and man analysis. A  
156 study by Omoregbee and Ajayi, (2009) this study focus on adopting the job or occupational  
157 analysis. It entails classifying tasks performed by the organizational workers and identifying the  
158 jobs in which staff necessitate for further re-training to implement them well. Among need  
159 assessment models, a discrepancy model proposed by Borich (1980) is widely used in  
160 agricultural education and it was determined to be the best instrument to achieve the purpose and  
161 objectives of this study. Borich (1980) pioneered his methodological model in an effort to design  
162 such a survey instrument that would allow one to collect data that can be weighed and ranked in  
163 order of priority.

164 Theories uses are skill-gap analysis/ intercept theory (Ovwigbo, 2011). Developing a skill gap  
165 analysis typically involves defining the skills and knowledge required to complete a task and  
166 then comparing a person's current level to that requirement. After identifying the gap between  
167 the two, training professionals work with personnel to create a plan to remedy the situation.  
168 According to the American Society for Training and Development, the underlying causes of  
169 skills gaps typically include changing jobs and lack of education and training. Determining the  
170 required skill levels usually includes defining the job responsibilities when companies introduce  
171 new technologies or processes.

172 The study adopted survey method with three-stage sampling was used in which random sampling  
173 procedures were followed to select 176 respondents from the population. Structured interview  
174 schedule and FGD (Focus group discussion) were used to collect the data from the sampled  
175 respondents, (Bekele and Pillai, 2011). Free recall knowledge questions were examined before  
176 and after participation in a student gatekeeper training program, (Christa, Sarah, Christine, Marc,  
177 2015). Training needs were assessed using the Borich Needs Assessment Model. The study took  
178 a descriptive approach using the Hicks-Hennessey Training Needs Analysis (H-HTNA)  
179 Questionnaire tool. The tool comprises four separate elements that support the development of  
180 understanding of the training needs along with preferred performance improvement strategies.  
181 Two of these elements concern the skilled activities (perception of importance and assessment of  
182 current performance) and the other two consider the potential mechanisms for development(i.e.  
183 specific training or policy change) (Kathryn et al, 2018). Study by Fernando and Walter (2018),

184 this study to assesses a non-traditional training methodology for extension agents, focused on the  
185 exchange of experiences among peers and the reflection on practice, with the aim of exploring its  
186 potential as a training strategy. approach: A quantitative investigation was conducted, that  
187 included interviews with employees working as extension agents, the use of different  
188 questionnaires. Training is directly related to the skills, knowledge and strategies essential to do  
189 a particular job. It may include offices staff members' new skills, revealing them to common  
190 ideas, giving them the chance to the preparation and get feedback on particular techniques or  
191 styles of working with people or just induce them to discuss their work with one another. It is  
192 important to distribute information about new technologies so that the farmers are able to make  
193 use of the latest agricultural developments. There also exists a gap between research findings and  
194 the needs of farmers. For technology to be successful, it is important that it should serve a useful  
195 purpose to the end user. The institution that bridges the gap between farmers and agricultural  
196 research scientists is the Agricultural Extension Service. This service works through an  
197 Agricultural Research System in the States (Saleh et al, 2016). Abdel-Maksoud and Saknidy  
198 (2016) used a modified version of the model using MWDS to develop seven (7) educational  
199 technologies (Use of Computer, Use of Internet, Use of E-mail, Use of Word documents, Use of  
200 PowerPoint, Making Sites and Use of Facebook), collaborating the request of the new  
201 approaches and the previous methods for training needs assessment. This is an assessment that  
202 looks at employee and organizational skills, knowledge, attitudes and abilities, to identify any  
203 gaps or areas of need training. Therefore, if extension agents are to improve their on-the-job  
204 effectiveness, they must receive continuous inservice training in line with their training needs  
205 about sustainability. As such, in-service training needs assessments are essential for a productive  
206 workforce. Once these needs are determined and prioritized, training resources can be utilized  
207 more efficiently (Niven, 1993).

#### 208 **5- Borich Needs Assessment Model**

209 A simple random sampling technique was used to select 40 respondents from whom data were  
210 collected using a structured and face-validated questionnaire, (Department of Agricultural  
211 Economics and Extension, North-West University, Mmabatho, Mafikeng Campus, South Africa,  
212 2015). This article explores the history and evolution of needs assessment in Cooperative  
213 Extension, as well as in a broader educational context. While tracing needs assessment through

214 the decades, this article examines the needs assessment opportunities and challenges faced by  
215 Cooperative Extension.( Umar et al, 2017).

216 The Borich Need Assessment Model, a Delphi technique was used to develop 26 competencies  
217 needed to assess needs of Agricultural Extension Agents, (Alibaygi, and Zarafshani, 2008). The  
218 data of this study was collected from through questionnaire prepared by the researcher. The  
219 questionnaire composed of two parts; one for personal characteristics and, the second,  
220 information from their job. The questionnaires were shown to a number of experts and arbitrators  
221 to assure usefulness and efficiency, as well as the coefficient of validity and reliability for some  
222 variables in the study.( Al – Shadiadeh, 2007). Then determine the desired outcomes from the  
223 training to address these needs. These outcomes could serve as measures of success (validation)  
224 of the training.

225 The approach used included responses from county staff and Extension specialists. First, agents  
226 were asked to identify training needs in three areas--subject matter, professional development,  
227 and technology, (Rama, and Smith, 2015). Sampling procedures were not utilized and the results  
228 are limited to the study population. Factor analysis and ranking indicated that the five most  
229 important training needs of extension workers researchers developed a questionnaire consisting  
230 of two sections: (1) training needs and (2) demographic data. A Likert-type scale was used to  
231 assess the respondents, (Chizari, 2009). Random sampling was used to select 65 extension  
232 personnel of the Himachal Pradesh State Department of Agriculture (HPSDA) from within ten  
233 districts of the state.( Dinesh et al, 2013). To identify the constraints, agriculture source of  
234 information and training needs of extension Agents, (Vishal et al, 2014).

235 This study assesses the training needs of agricultural extension workers in Gombe state  
236 Agricultural Development Programme. Four objectives and four research questions were used,(  
237 Halilu, 2012). The study uses questionnaire to measurement training needs through authors do  
238 this questionnaire to achieve your objectives. The data were analyzed statistically using  
239 computer software MS Office (2000) and the percentages of the respondents were calculated,  
240 (Vishal et al, 2014). The theoretical framework for this study is based on the theory espoused by  
241 Baker and Trussell (1981) as cited in Findlay (1992) that the gap between theory and practice  
242 could be eliminated by reducing theory to what was needed to perfect the practice (teaching), (  
243 Peake, 2007). The data on training needs as assessed by the VLEWs were used to find out the  
244 training importance score of each item Most of them had favorable attitude towards their



245 profession and majority of them were satisfied with their jobs. Senior officer and progressive  
246 farmers were most frequently used source of information, (Hemanga, 2014).

247 The data collected for this study was analyzed using frequency, percentage, and weighted  
248 arithmetic mean, simple correlation and Chi-square, A sample random sample of 36 fish farmers  
249 were selected from the population by using a systematic sampling technique The current study  
250 was conducted to identify the training needs of the fish farmers In Babylon province within  
251 Some fish farming practices, (Saleh et al, 2016). Questionnaire and interview of a random  
252 sample of agricultural agents, percentage 70% for 114 extension agents distributed on 6  
253 governorates (Babylon, Wasit, Karbala, Najaf, Anbar and Diyala).( Salman et al, 2012). The  
254 survey instrument was developed to determine the current situation of the North Carolina  
255 Extension agents' competency levels and the new competencies they need to develop to be  
256 successful in the NCCE. The survey instrument contained close-ended and open-ended  
257 questions. The instrument consisted of three major sections, (Jayaratne, 2010).

258 In-service training is an important component of professional development provided by Ohio  
259 State University Extension (OSU Extension). In autumn 2000, a team of OSU Extension  
260 professionals conducted a comprehensive needs assessment process using four instruments:  
261 (Conklin, et al , 2015). 1. To determine factors impacting personnel participation in in-service  
262 opportunities. 2. To identify barriers coordinators faced in providing professional development  
263 and to identify support needed in this role. 3. To determine both technical subject matter and  
264 process skill developmental needs of program and support personnel. Several expert panels  
265 established content and face validity for each of the research instruments. This study determined  
266 professional competence needs of extension workers through the application of the Borich needs  
267 assessment model. A simple random sampling technique was used to select 40 respondents from  
268 whom data were collected using a structured and face-validated questionnaire containing 40  
269 professional tasks. Professional competence needs were analyzed and ranked using Mean  
270 Weighted Discrepancy Scores (MWDS). Ability to prepare visual aids to help deliver  
271 information (7.23), finding ways to encourage farmers to adopt innovations (7.19), and  
272 commitment to extension work (6.88) were the most prominent competences for which there is  
273 need for prioritized training for extension officers in the study area.

274 **6- Modified Model Borich's**

275 In 1989 Randol and Larry modify model Borich's to can use for the agricultural extension  
 276 personal. The application of the training needs models in each country has a different standard.  
 277 In the past, it was the traditions that needs were informally done by observations and  
 278 assumptions of managers. To analyze the training needs of responders "Borich Need  
 279 Assessment" technique was used for training needs. Borich (Randol and Larry 1989) has defined  
 280 a training need as "a discrepancy between an educational goal and trainee performance in  
 281 relation to this goal. Borich Needs Assessment Model is designed around the skills individuals,  
 282 and groups need to be effective in the future and are used for making, human resource  
 283 decisions." He further suggested that training programs could utilize his model by employing the  
 284 two extreme positions: what are (the measured behaviors, skills, and competencies of trainees),  
 285 and what should be (the goals of the training program). Note the concept of competency implied  
 286 by the needs assessment model: Competencies are the application of knowledge, technical skills  
 287 and personal characteristics leading to outstanding (Borich, 1980).

288 The modified Borich's model described in this study was used in the needs assessment in an  
 289 effort to more valid measure perceived educational needs of extension field faculty (Umar et al,  
 290 2017). Based on an analysis of data, the Borich needs assessment model is developed to assess  
 291 the beginning teachers' perceived level of importance, and perceived level of competence  
 292 regarding professional competencies. A need is described as a discrepancy or a gap between  
 293 "what is", or the present state of affairs in regard to the group, and the situation of interest and  
 294 "what should be", or desired state of affairs (Witkin et al, 1989).

295 The instrument was assessed for content and face validity by graduate associates, teacher  
 296 educators and state supervisors in agricultural education. Reliability of the instrument will be  
 297 analyzed. 95 (Cornbrash's Alpha Coefficient). It includes the following knowledge and skills  
 298 (Randol and Larry, 1989). In summary, the following equation produced the score used for  
 299 ranking each topic:

$$300 (I - K) \times I + (I - 0) \times I / 2$$

301 I = Importance Score, K = Knowledge Score, 0 = Opportunity Score

302 Therefore, scores per topic could theoretically range from +20 to -4.

303 The following of areas in agricultural extension;

304 **1) Teaching Methods:** How to use distance or remote teaching approaches in order to reach  
 305 sparsely populated clientele groups. How to write and publish quality extension fact sheets, and

306 how to use the extension methods in the training courses to understand all employees that skills,  
307 knowledge and new information, or a new way to improve job performance. This area used  
308 extension method with many important ways.

309 **2) Program Planning, Implementation and Evaluation:** How to conduct impact studies  
310 which determine the long-range effectiveness and accountability. Developing a program  
311 assessment tools, attitudinal measures and other surveys. In this area used one part of the  
312 questionnaire.

313 **3) Professional Improvement:** Using program assessment data to improve personnel  
314 evaluations. Writing professional goals which are tailored to meet annual evaluation needs. This  
315 is a yearly assessment that does not depend on the employee's skill and knowledge. Used  
316 management in this area.

317 **4) Program Funding:** Improving grant-writing skills. How to identify sources of funding  
318 for programs, for any activity in the agriculturalists or in preparation training courses in the  
319 officers. Financing of the programs and activities of guidance in Iraq only government funding  
320 can apply any application only through the Government and the Department of agriculture. In  
321 this area, used financial on job satisfaction and management skills.

322 **5) Group Process Skills:** Effectively managing undertakes. Education group enabling  
323 techniques. That means any skills and knowledge in agriculture area and field, in this field, were  
324 chosen seven (7) areas that important (plant technical skills, irrigation and drainage, fertilization,  
325 animal husbandry, machines and equipment, plant protection and horticultural crops) these areas  
326 are very important in Iraq.

327 **6) Marketing Extension:** How to "package" and market extension education programs.  
328 How to make the "proper" image for the Supportive Extension System. There are needs to focus  
329 on the market and the market needs to get reasonable prices for the crop production  
330 requirements, in this study use customer skills and business skills.

331 **7) Technical Training in Horticulture and Plant Science:** Identification of horticultural  
332 insect destruction problems. Identification of horticultural plant diseases and integrated pest  
333 management (IPM).

334 **8) Technical Training in Use of Computers and ICT:** Selecting hardware and software.  
335 Training in basic microcomputer uses (word processing, data management, etc.). Also, used ICT  
336 for the new communication and information technology skills.

337 **9) Extension Philosophy:** Discussion of the part of each extended professional as he or she  
338 fits in any area of governance, organizational Model. Understanding the extension philosophy  
339 and task. Also, those policies used in agricultural extension in Iraq to develop adult education  
340 and whole working in rural. In this study used six (6) influential variables that important, special  
341 skills, job satisfaction, specialization, number of training courses, information and social  
342 demography factors with model Borich to modify this model to training needs. Due to these  
343 variables important and vitality in this model for the development of the functionality of the  
344 agricultural extension workers. Also, to know that these variables effect on model Borich's for  
345 training needs ( Saleh and Man, 2017).

346 The agricultural assistants and the junior agricultural assistants of the department of agriculture  
347 man their extension activities along five major areas of responsibility, namely; the extension  
348 education programs, the extension support activities, the ancillary activities, the administration  
349 and regulatory functions (Hemanga, 2014). The smallest administrative extension unit is the  
350 district office which is headed by an agricultural assistant as a supervisor and administrator, and  
351 depending on the size of the population, he is assisted by three to six a junior agricultural  
352 assistants to perform the extension work. Generally, a junior agricultural assistant has to cover  
353 two to four Mukims (wards) encompassing 1,000-4,000 farm-families.

354 A training program should be such that it not only stimulate the extension worker to re-define his  
355 job, but it should also relate the subject-matter areas in which he is to work to the kind of  
356 audience he is required to teach. For agriculture, practical experience and good understanding of  
357 the economic, social and cultural environment in which agriculture is practiced are very  
358 necessary if teaching to be related to the needs and problems of agricultural improvement.

### 359 **7- Types of Training Needs Analysis**

360 Many public officials, developmental planners, extension administrators and educators have  
361 expresses their needs for the demands of trained agricultural workers in any country. The extent  
362 of desired level of training and the rate at which they can be available are crucial at this point in  
363 time when the country is undergoing rapid national development as this will determine the  
364 ultimate degree of success. The analysis of training needs is not a task for specialists alone.  
365 Effective TNA is particularly vital in today's changing office, as new technologies and flexible  
366 working performs are becoming prevalent, leading to conformable changes in the skills and  
367 abilities needed. Analyzing what the training needs are required is an active prerequisite for any

368 effective training programs or event. Many needs assessments are available for use in different  
369 employment contexts to help determine which needs analysis is appropriate for a particular  
370 situation. The different parameters of training needs analysis are described in the sub-sections  
371 below (Kessy, 2014).

### 372 **a- Organizational Analysis**

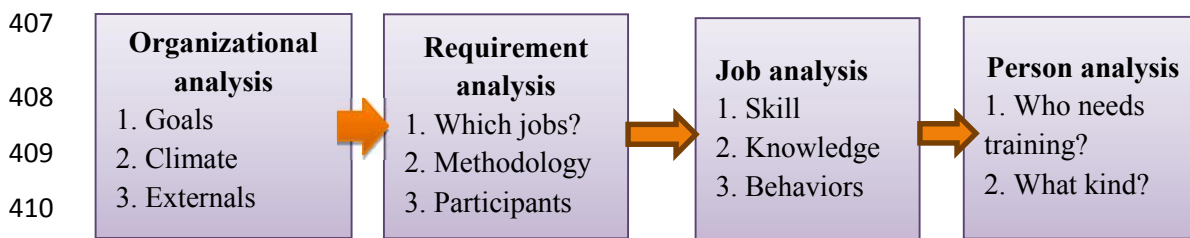
373 Training Needs Analysis (TNA) is defined as the “Identification of training requirements  
374 and the most cost-effective means of meeting those requirements”. The identification of training  
375 needs in an organization is for the purpose of improving employee job performance. Today's  
376 work environment requires employees to be highly skilled in performing complex tasks in an  
377 efficient, cost-effective and safe manner. Training is a performance improvement tool that is  
378 needed when employees are not performing up to a certain standard or at an expected level of  
379 performance. The purpose of this examination is to identify problems that can be found in the  
380 above-mentioned aspects to know what is required of the organization as a whole, which in turn  
381 allows effective training to be conducted. The important questions being answered by this  
382 analysis include who decides that training should be conducted? Why are training programs seen  
383 as the recommended solution to a business problem? What is the relationship between the history  
384 of the organization and employee training and other management interventions? (Chizari, 2006).  
385 Therefore, TNA is used to assess an organization’s training needs. The root of the TNA is the  
386 gap analysis. This is an assessment of the gap between the knowledge, skills and attitudes that  
387 the people in the organization currently possess and the knowledge, skills and attitude that they  
388 require to meet the organization’s objectives.

### 389 **b- Person Analysis**

390 This analysis deals with potential participants, skills, and trainers involved in the training  
391 process. The analysis resolves issues such as who will receive the training and their level of  
392 existing knowledge on the subject? What is their learning style, and who will conduct the  
393 training? Do the employees have the requisite skills? Are there any changes to policies,  
394 procedures, software or equipment that require or demand training? That training can alter an  
395 individual's motivation and develop or modify them, and then it can identify the motives of  
396 individuals which could, later on, affect the training (Wabb, 2002).

### 397 **c- Work Analysis**

398 When analyzing functions, management attempts to answer the following questions: what is the  
 399 type of training required? What should employees be taught in order to be more efficient in their  
 400 jobs? Therefore, the analysis of tasks is a careful study of the functions of an organization and  
 401 the requirements of the job, location, and content. This helps to determine the appropriate  
 402 contents for training programs. This analysis depends largely on the information learned from the  
 403 analysis and design work. Task analysis functions are similar to the job analysis; however, they  
 404 focus more on what the trainee needs to perform work as required. It involves the analysis of  
 405 tasks through personal observation, examination of records and official documents and  
 406 interviews or questionnaires (Saleh et al., 2016).



411 **Figure 1: Learning needs analysis process**

412 Source: Boydell and Leary, (2003)

413 To analyze training and improvement needs of the employees to support performance and  
 414 professional objectives in current and future situations, the following steps are four (4) methods  
 415 to TNA (Boydell and Leary, 2003), as shown in figure 1.

416 **d- Performance Analysis**

417 This analysis is based on knowing the performance and the proper training methods for workers,  
 418 which will help to increase performance. The performance analysis of performance gaps of  
 419 knowledge can then develop successful solutions to improve performance. Are the employees  
 420 performing up to the established standard? If the performance is below expectations, can training  
 421 help to improve this performance? Is there a gap in the job performance? (Kessy, 2014). This  
 422 technique is used to identify which employees need the training. Performance appraisals need to  
 423 be reviewed. Managers and supervisors must undergo interviews. Relevant parties need to look  
 424 for the performance measures such as benchmarks and goals. Are there differences between high  
 425 and low performing workers on specific competencies? Would providing training in those  
 426 competencies, improve staff job performance (Ovwigbo, 2011)?

427 **e- Content Analysis**

428 This analysis involves the analysis of documents, laws and procedures applied on the job. This  
429 analysis answers questions regarding what knowledge or information are used on this job. This  
430 information is derived from manuals, documents or regulations. It is imperative that the content  
431 of the training does not conflict or go contrary to job requirements. An experienced worker can  
432 assist (as a subject matter expert) in determining the suitable content. This is because different  
433 content needs different kinds of training to improve the job (Salman et al, 2012).

#### 434 **f- Training Suitability Analysis**

435 This entails an analysis of whether training is the preferred solution. Training is one of the  
436 numerous answers to employment problems. However, it may not always be the best solution. It  
437 is important to determine if training will be effective in its application. Today's work  
438 environment requires employees to be skilled in performing complex tasks in an efficient, safe  
439 manner and cost-effective. The difference between the actual level of job performance and the  
440 expected level of job performance indicates a need for training. The identification of training  
441 needs is the first step in a uniform method of instructional design (Saleh et al, 2016).

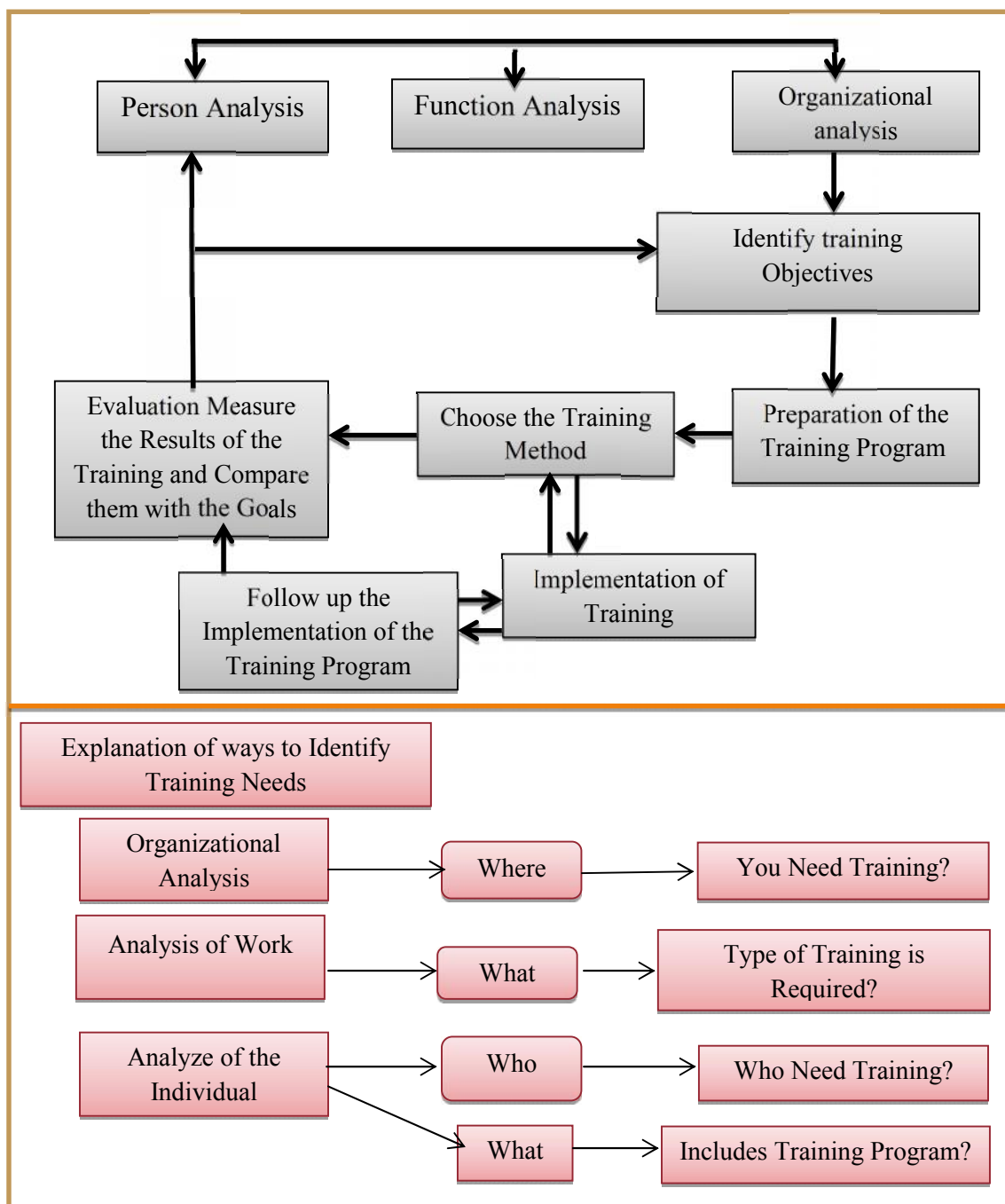
#### 442 **g- Cost-benefit Analysis**

443 This analysis of the Return on Investment (RoI) of training. The effective training results in a  
444 return of value to the organization that is greater than the initial investment to produce or  
445 administer the training (RoI). The principle of assessment: use assessment instruments for which  
446 understandable and comprehensive documentation is available. Today's workplace often requires  
447 employees to be independent thinkers and responsible for making good decisions based on  
448 limited information. This kind of work may require training if the employee does not have these  
449 skills. Below is a list of countless competencies that employees require in order to perform their  
450 jobs effectively. Examples of the competencies include technology, communication, action  
451 orientation, decision making, innovation, leadership, business knowledge-acumen, coaching-  
452 employee development, analytical skills, customer focus, problem-solving, fiscal management,  
453 global perspective and risk management (David and Rodrech, 2013). The survey should produce  
454 the following elements in its report: training subject(s); importance that training; the time of  
455 requirements; current target group; potential target group; frequency of training; and required  
456 outputs of the training.

457 The needs analysis course can be developed as described in Figure 2, which provides a complete  
458 picture of the needs of the organization in general and the best perception of the employee's need

459 for training. Therefore, appropriate future plans can be developed to develop the organization's  
 460 work and thus perform better to achieve the required goals. Figure 2 shows that organizational  
 461 analysis, job analysis and individual analysis are the most important entry points for integrated  
 462 programs that improve performance at the level of individual, work unit and organization as a  
 463 whole.

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487 **Figure 2: Training Needs Assessment Course**488 **8- CONCLUSION**

489 This research study provided all method that used for the training needs to the workers in  
490 agricultural extension. Training is an important process of capacity building of individuals as to  
491 improve the performance. Hence, training needs assessment is a vital to the training process. It  
492 helps to identify present problems and future challenges to be met through training and  
493 development. According to this study, the most important pre-service/in-service need is training  
494 that addresses integrating current advances in agricultural technology into the curriculum. This  
495 competency should be addressed in university teacher preparation curricula as well as by the  
496 agricultural education state staff. State staff can increase in-service training in this area for  
497 current agriculture teachers, as well as update their existing curriculum resources, to include  
498 recent advances within the curriculum. Therefore, a task analysis is usually done by collecting  
499 information from subject matter experts through interviews, focus groups, or surveys. The final  
500 output should include a detailed description of manual activities, mental activities, task durations  
501 and frequency, any necessary equipment, and the skills and competencies required to perform a  
502 given task. Meanwhile, the need to compare performance levels before the process of identifying  
503 training needs and after selecting and implementing training programs. Intensive studies on how  
504 to determine training needs, training needs identification models in other organizations, and  
505 choose what best fits the circumstances of the particular organization. Extension agents should  
506 possess professional competencies in many areas, which provide the critical skills and  
507 knowledge for them to be able to perform the work assigned to them. It is further recommended  
508 that a training course should be held for extension agents in areas where respondents showed a  
509 middle and high level of training needs. Conduct similar studies in other provinces to determine  
510 if the training needs of extension agents vary according to the provinces

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