

Review Paper

Systematic Review: Training Needs of Agriculture Extension Workers

ABSTRACT

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 focused on environment to identify which attitude, skills or knowledge need training due to any village (area) and farmers need different training.

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

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

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

1-INTRODUCTION

A Google Scholar search with the keyword "Training Needs" found 4,800,000 scholarly positions for that term, but when search with the model Borich's yielded 5,550, which means the availability of many studies in this area. Agriculture is the main nerve in the economic life and in the development of the economy of countries and growth and development, and has an impact on

31 the stability of any country through the provision of manpower and provide appropriate food for
32 the citizen (Saleh et al, 2016). Where the lack of food will lead any country to provide food
33 through the import and therefore needs a difficult currency and therefore to higher prices because
34 of the import of these essential materials for life in addition to transport and storage and
35 intermediaries and transfer work all factors will increase the price of any commodity (Saleh and
36 Man, 2017). Training needs is one of the most important steps in the development of the
37 performance and factors that will effect on the performance.

38 Therefore, it is necessary to provide food security and give priority. Hence comes the role of
39 agricultural extension through guidance and awareness. This provides appropriate training
40 methods and methods in order to use the best methods of technology and the latest and delivery
41 to the farmer to adopt the use of the appropriate form (Salman, et al, 2012). Hence the
42 importance of this study in order to know the best and most appropriate scientific methods and
43 appropriate methods to be used in the training of agricultural extension staff as well as to know
44 the best ways for the training needs of all the staff of the guidance organization and the field of
45 need training for training to be done with the most appropriate training time, and what skill or
46 knowledge required focus on her (Umar et al, 2017). Training needs analysis is the first and
47 probably the most important step toward making sure your organizational training resources are
48 used most effectively. In addition, take a look at organizational willingness for training. This
49 contains identifying and removing (or at least minimizing) difficulties that might make the
50 training less effective (Zina, 2011). This analysis can be performed by managers who are able to
51 observe their staff and make recommendations for training based on performance issues or gaps
52 between performance and objectives. Therefore, analysis can also be performed in an
53 organization-wide level of Training and Development managers who survey the organization to
54 identify needs.

55 **2- Levels of Training Needs**

56 The training module is not designed only to address the weaknesses in the performance of the
57 teachers, but also to fulfill their own needs and to raise their competencies (Saleh and Man,
58 2017). There are four (4) levels that can help us to identify training needs Wentling (1993).

59 **1) Needs at Organizational Level**

60 Overall management needs seek to improve service levels and morale, and these requirements
61 are derived from the analysis of the objectives and priorities of the Organization, which are

62 affected by economic and social realities and the prevailing political and technological
63 environments;

64 2) **Needs at Job Level**

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

68 3) **Needs at Individual Level**

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

73 4) **Needs at Group Level**

74 They relate to specific functional levels or certain categories of workers, such as managers and
75 supervisors, which directly implement and so on. Through analyzing the needs of the
76 community, it may show the need for a certain type of training programs, which aimed at the
77 composition of the team spirit and leadership training, supervision and problem-solving.

78 Therefore, it is possible to add a fifth level of training needed and important (**Need at National**
79 **Level**), you might need a state or an entire country on a particular train. For example, attack
80 insects, flood, pests or the country's vulnerability to the blockade, or higher prices for certain
81 crops and thus put the government's policy that is a special circumstance (Saleh and Man, 2017).
82 Which requires the concerted efforts of all to all government and agricultural departments, to
83 minimize the risks arising from those risks. This is an important level, at the level of the entire
84 country for need training. Therefore, the researcher defines the training needs as "The training
85 needed to improve the staff" skills and knowledge for his professional development to enable
86 them to perform their responsibility exactly and completely to overcome the gap between what
87 he or she should do and what exists in the reality" Silva (1997). Moreover, should be focuses on
88 environment to identify which attitude, skills or knowledge need training due to any village
89 (area) and farmers need different training.

90 **3- Some Methods Used In Determining Training Needs**

91 Cunningham (1967) pointed out that an in-service educational program such as the one held by
92 the Ohio Cooperative Extension Service in late 166 provided excellent opportunities for staff

93 members to make suggestions and indicate areas in which they felt the need for more competent.
94 Flint (1961) made a rather comprehensive study of the training needs of the white Extension
95 Service Personnel of the Northern Extension District of Louisiana. The nine major areas of
96 emphasis of the extension subcommittee report on the "Scope of Cooperative Extension Service
97 Responsibilities" and the competencies necessary for the implementation of this report provided
98 the basis from which certain items were selected for use in the study. Forty-five specific were
99 used that were related to following nine areas; 1) program planning; 2) program execution; 3)
100 evaluation; 4) efficiency in agricultural production and marketing; 5) farm and home
101 management; 6) family living and youth development; 7) leadership; 8) public affairs; 9)
102 community and resource development.

103 Soobitasky (1971) did a similar study of the perceived training needs of urban cooperative
104 extension agents working with the disadvantaged audience in 12 Northeastern states of the
105 United States. The framework of his study was based upon the work of the National Task Force
106 on Cooperative Extension In-service Training. He used a questionnaire that included 127 specific
107 items that were related to the importance of job performance and additional training needs. These
108 items were related to the following nine areas; 1) extension organization and administration; 2)
109 human development; 3) program planning and development; 4) educational process; 5) social
110 systems; 6) communications; 7) effective thinking; 8) technical knowledge; 9) research and
111 evaluation. Santos (1961) conducted a study on the scope of in-service training needs
112 participation in in-service training programs by teachers of agricultural schools of the
113 Philippines. He collected his data by means of questionnaires sent to 25 teachers and 32
114 administrators of agricultural schools and 7 teacher-training institutions. He had 27 items
115 grouped into 6 areas; 1) research and experiment; 2) subject-matter content; 3) extension
116 methods; 4) co-curricular activities 5) general education and 6) administration and supervision.

117 Phanom (1961) did a study on training programs for extension field workers in Thailand. He
118 used mailed questionnaires and his respondents were made up of 360 Thai extension personnel
119 out of a total of 441. His study was based on; 1) age status; 2) official status; 3) position,
120 academic status, experience in extension work, their expressed needs in the field of professional
121 and human relations, skills, extension methodology and practices, and technical agricultural
122 subject-matters. A study Corty et al (1970) on employment characteristics of trained man-power
123 needed in Malaysian agriculture, involved personal interviews by 32 staff members of the

124 College of Agriculture Malaysia to the employees of some 73 agricultural firms in the country.
125 Among others, the questionnaires included; 1) job titles; 2) trained man-power needed; and 3)
126 desirable areas of instruction. In a recent study for determining training needs of extension
127 agents in the area of dairy science. Verma (1971) used Tyler's concept of educational objectives
128 and Bloom's taxonomic classification of cognitive behavior, along with the element of work
129 effectiveness, to build a conceptual framework. The data, which collected from 20 extension
130 agents engaged in dairy work in Louisiana, 5 state specialists in dairy and veterinary science, and
131 86 dairymen over the state, was analyzed on two major dimensions, namely, agent cognitive
132 ability and relative work value of dairy science concepts. The concepts (from breeding, nutrition
133 and management) were rated by the agents and specialists in terms of importance in the job of
134 the agent and were also tested on agents at three levels of cognitive behavior. Therefore, Needs
135 Assessment: the process to identify "gaps" between current performance and department/
136 organizational objectives than should be focuses on experiences, skills and knowledge that will
137 be effect on need training for the employees that also assert on job performance.

138 **4- Classification of The Training Needs and Method of Its Measurements**

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

149 Theories uses are skill-gap analysis/ intercept theory (Ovwigbo, 2011). Developing a skill gap
150 analysis typically involves defining the skills and knowledge required to complete a task and
151 then comparing a person's current level to that requirement. After identifying the gap between
152 the two, training professionals work with personnel to create a plan to remedy the situation.
153 According to the American Society for Training and Development, the underlying causes of
154 skills gaps typically include changing jobs and lack of education and training. Determining the

155 required skill levels usually includes defining the job responsibilities when companies introduce
156 new technologies or processes.

157 The study adopted survey method with three-stage sampling was used in which random sampling
158 procedures were followed to select 176 respondents from the population. Structured interview
159 schedule and FGD (Focus group discussion) were used to collect the data from the sampled
160 respondents, (Bekele and Pillai, 2011). Free recall knowledge questions were examined before
161 and after participation in a student gatekeeper training program, (Christa, Sarah, Christine, Marc,
162 2015). Training needs were assessed using the Borich Needs Assessment Model. The study took
163 a descriptive approach using the Hicks-Hennessey Training Needs Analysis (H-HTNA)
164 Questionnaire tool. The tool comprises four separate elements that support the development of
165 understanding of the training needs along with preferred performance improvement strategies.
166 Two of these elements concern the skilled activities (perception of importance and assessment of
167 current performance) and the other two consider the potential mechanisms for development(i.e.
168 specific training or policy change) (Kathryn et al, 2018). Study by Fernando and Walter (2018),
169 this study to assesses a non-traditional training methodology for extension agents, focused on the
170 exchange of experiences among peers and the reflection on practice, with the aim of exploring its
171 potential as a training strategy. approach: A quantitative investigation was conducted, that
172 included interviews with employees working as extension agents, the use of different
173 questionnaires. Training is directly related to the skills, knowledge and strategies essential to do
174 a particular job. It may include offices staff members' new skills, revealing them to common
175 ideas, giving them the chance to the preparation and get feedback on particular techniques or
176 styles of working with people or just induce them to discuss their work with one another. It is
177 important to distribute information about new technologies so that the farmers are able to make
178 use of the latest agricultural developments. There also exists a gap between research findings and
179 the needs of farmers. For technology to be successful, it is important that it should serve a useful
180 purpose to the end user. The institution that bridges the gap between farmers and agricultural
181 research scientists is the Agricultural Extension Service. This service works through an
182 Agricultural Research System in the States (Saleh et al, 2016). Abdel-Maksoud and Saknidy
183 (2016) used a modified version of the model using MWDS to develop seven (7) educational
184 technologies (Use of Computer, Use of Internet, Use of E-mail, Use of Word documents, Use of
185 PowerPoint, Making Sites and Use of Facebook), collaborating the request of the new

186 approaches and the previous methods for training needs assessment. This is an assessment that
187 looks at employee and organizational skills, knowledge, attitudes and abilities, to identify any
188 gaps or areas of need training. Therefore, if extension agents are to improve their on-the-job
189 effectiveness, they must receive continuous inservice training in line with their training needs
190 about sustainability. As such, in-service training needs assessments are essential for a productive
191 workforce. Once these needs are determined and prioritized, training resources can be utilized
192 more efficiently (Niven, 1993).

193 **5- Borich Needs Assessment Model**

194 A simple random sampling technique was used to select 40 respondents from whom data were
195 collected using a structured and face-validated questionnaire, (Department of Agricultural
196 Economics and Extension, North-West University, Mmabatho, Mafikeng Campus, South Africa,
197 2015). This article explores the history and evolution of needs assessment in Cooperative
198 Extension, as well as in a broader educational context. While tracing needs assessment through
199 the decades, this article examines the needs assessment opportunities and challenges faced by
200 Cooperative Extension.(Umar et al, 2017).

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

210 The approach used included responses from county staff and Extension specialists. First, agents
211 were asked to identify training needs in three areas--subject matter, professional development,
212 and technology, (Rama, and Smith, 2015). Sampling procedures were not utilized and the results
213 are limited to the study population. Factor analysis and ranking indicated that the five most
214 important training needs of extension workers researchers developed a questionnaire consisting
215 of two sections: (1) training needs and (2) demographic data. A Likert-type scale was used to
216 assess the respondents, (Chizari, 2009). Random sampling was used to select 65 extension

217 personnel of the Himachal Pradesh State Department of Agriculture (HPSDA) from within ten
218 districts of the state.(Dinesh et al, 2013). To identify the constraints, agriculture source of
219 information and training needs of extension Agents, (Vishal et al, 2014).

220 This study assesses the training needs of agricultural extension workers in Gombe state
221 Agricultural Development Programme. Four objectives and four research questions were used,(
222 Halilu, 2012). The study uses questionnaire to measurement training needs through authors do
223 this questionnaire to achieve your objectives. The data were analyzed statistically using
224 computer software MS Office (2000) and the percentages of the respondents were calculated,
225 (Vishal et al, 2014). The theoretical framework for this study is based on the theory espoused by
226 Baker and Trussell (1981) as cited in Findlay (1992) that the gap between theory and practice
227 could be eliminated by reducing theory to what was needed to perfect the practice (teaching), (
228 Peake, 2007). The data on training needs as assessed by the VLEWs were used to find out the
229 training importance score of each item Most of them had favorable attitude towards their
230 profession and majority of them were satisfied with their jobs. Senior officer and progressive
231 farmers were most frequently used source of information, (Hemanga, 2014).

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

243 In-service training is an important component of professional development provided by Ohio
244 State University Extension (OSU Extension). In autumn 2000, a team of OSU Extension
245 professionals conducted a comprehensive needs assessment process using four instruments:
246 (Conklin, et al , 2015). 1. To determine factors impacting personnel participation in in-service
247 opportunities. 2. To identify barriers coordinators faced in providing professional development

248 and to identify support needed in this role. 3. To determine both technical subject matter and
249 process skill developmental needs of program and support personnel. Several expert panels
250 established content and face validity for each of the research instruments. This study determined
251 professional competence needs of extension workers through the application of the Borich needs
252 assessment model. A simple random sampling technique was used to select 40 respondents from
253 whom data were collected using a structured and face-validated questionnaire containing 40
254 professional tasks. Professional competence needs were analyzed and ranked using Mean
255 Weighted Discrepancy Scores (MWDS). Ability to prepare visual aids to help deliver
256 information (7.23), finding ways to encourage farmers to adopt innovations (7.19), and
257 commitment to extension work (6.88) were the most prominent competences for which there is
258 need for prioritized training for extension officers in the study area.

259 **6- Modified Model Borich's**

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

273 The modified Borich's model described in this study was used in the needs assessment in an
274 effort to more valid measure perceived educational needs of extension field faculty (Umar et al,
275 2017). Based on an analysis of data, the Borich needs assessment model is developed to assess
276 the beginning teachers' perceived level of importance, and perceived level of competence
277 regarding professional competencies. A need is described as a discrepancy or a gap between

278 "what is", or the present state of affairs in regard to the group, and the situation of interest and
279 "what should be", or desired state of affairs (Witkin et al, 1989).

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

$$285 (I - K) \times I + (I - O) \times I / 2$$

286 I = Importance Score, K = Knowledge Score, O = Opportunity Score

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

288 The following of areas in agricultural extension;

289 **1) Teaching Methods:** How to use distance or remote teaching approaches in order to reach
290 sparsely populated clientele groups. How to write and publish quality extension fact sheets, and
291 how to use the extension methods in the training courses to understand all employees that skills,
292 knowledge and new information, or a new way to improve job performance. This area used
293 extension method with many important ways.

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

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

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

307 **5) Group Process Skills:** Effectively managing undertakes. Education group enabling
308 techniques. That means any skills and knowledge in agriculture area and field, in this field, were

309 chosen seven (7) areas that important (plant technical skills, irrigation and drainage, fertilization,
310 animal husbandry, machines and equipment, plant protection and horticultural crops) these areas
311 are very important in Iraq.

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

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

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

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

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

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

344 **7- Types of Training Needs Analysis**

345 Many public officials, developmental planners, extension administrators and educators have
346 expresses their needs for the demands of trained agricultural workers in any country. The extent
347 of desired level of training and the rate at which they can be available are crucial at this point in
348 time when the country is undergoing rapid national development as this will determine the
349 ultimate degree of success. The analysis of training needs is not a task for specialists alone.
350 Effective TNA is particularly vital in today's changing office, as new technologies and flexible
351 working performs are becoming prevalent, leading to conformable changes in the skills and
352 abilities needed. Analyzing what the training needs are required is an active prerequisite for any
353 effective training programs or event. Many needs assessments are available for use in different
354 employment contexts to help determine which needs analysis is appropriate for a particular
355 situation. The different parameters of training needs analysis are described in the sub-sections
356 below (Kessy, 2014).

357 **a- Organizational Analysis**

358 Training Needs Analysis (TNA) is defined as the “Identification of training requirements
359 and the most cost-effective means of meeting those requirements”. The identification of training
360 needs in an organization is for the purpose of improving employee job performance. Today's
361 work environment requires employees to be highly skilled in performing complex tasks in an
362 efficient, cost-effective and safe manner. Training is a performance improvement tool that is
363 needed when employees are not performing up to a certain standard or at an expected level of
364 performance. The purpose of this examination is to identify problems that can be found in the
365 above-mentioned aspects to know what is required of the organization as a whole, which in turn
366 allows effective training to be conducted. The important questions being answered by this
367 analysis include who decides that training should be conducted? Why are training programs seen
368 as the recommended solution to a business problem? What is the relationship between the history
369 of the organization and employee training and other management interventions? (Chizari, 2006).

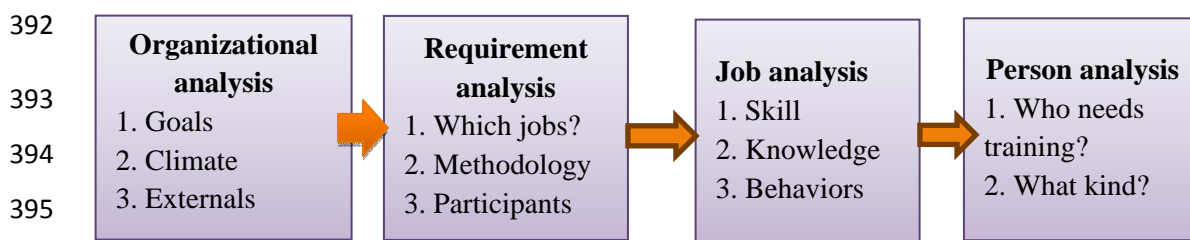
370 Therefore, TNA is used to assess an organization's training needs. The root of the TNA is the
371 gap analysis. This is an assessment of the gap between the knowledge, skills and attitudes that
372 the people in the organization currently possess and the knowledge, skills and attitude that they
373 require to meet the organization's objectives.

374 **b- Person Analysis**

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

382 **c- Work Analysis**

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



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

397 Source: Boydell and Leary, (2003)

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

401 **d- Performance Analysis**

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

412 **e- Content Analysis**

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

419 **f- Training Suitability Analysis**

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

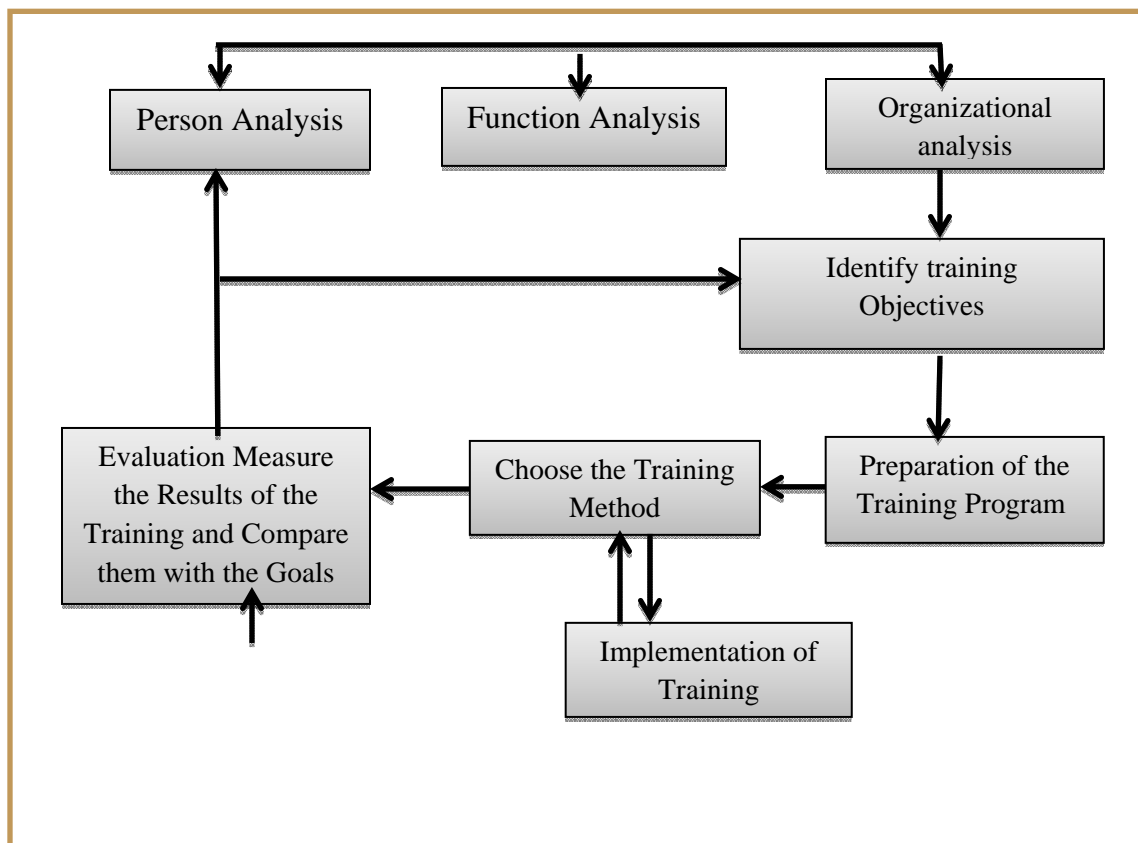
427 **g- Cost-benefit Analysis**

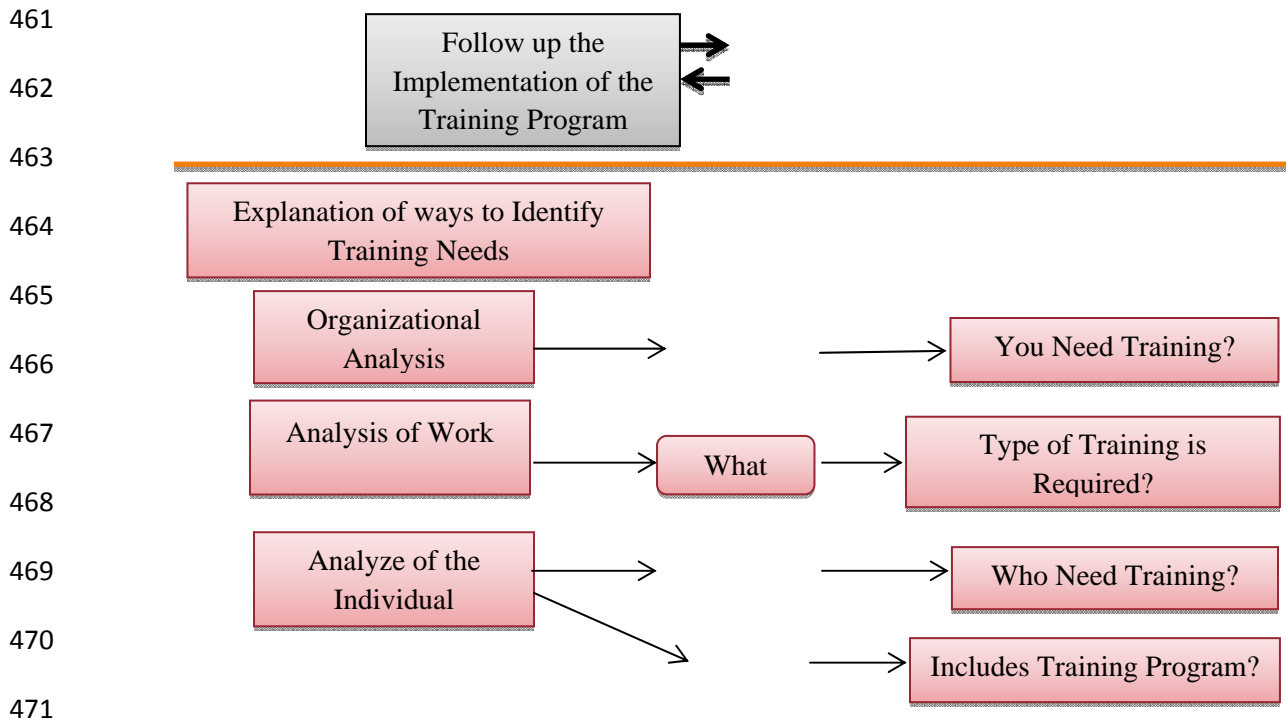
428 This analysis of the Return on Investment (RoI) of training. The effective training results in a
429 return of value to the organization that is greater than the initial investment to produce or
430 administer the training (RoI). The principle of assessment: use assessment instruments for which
431 understandable and comprehensive documentation is available. Today's workplace often requires

432 employees to be independent thinkers and responsible for making good decisions based on
433 limited information. This kind of work may require training if the employee does not have these
434 skills. Below is a list of countless competencies that employees require in order to perform their
435 jobs effectively. Examples of the competencies include technology, communication, action
436 orientation, decision making, innovation, leadership, business knowledge-acumen, coaching-
437 employee development, analytical skills, customer focus, problem-solving, fiscal management,
438 global perspective and risk management (David and Rodrech, 2013). The survey should produce
439 the following elements in its report: training subject(s); importance that training; the time of
440 requirements; current target group; potential target group; frequency of training; and required
441 outputs of the training.

442 The needs analysis course can be developed as described in Figure 2, which provides a complete
443 picture of the needs of the organization in general and the best perception of the employee's need
444 for training. Therefore, appropriate future plans can be developed to develop the organization's
445 work and thus perform better to achieve the required goals. Figure 2 shows that organizational
446 analysis, job analysis and individual analysis are the most important entry points for integrated
447 programs that improve performance at the level of individual, work unit and organization as a
448 whole.

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472 **Figure 2: Training Needs Assessment Course (source: This study)**

473 **8- CONCLUSION**

474 This research study provided all method that used for the training needs to the workers in
 475 agricultural extension. The study reveals that, the most important pre-service/in-service need is
 476 training that addresses integrating current advances in agricultural technology into the
 477 curriculum. This competency should be addressed in university teacher preparation curricula as
 478 well as by the agricultural education state staff. State staff can increase in-service training in this
 479 area for current agriculture teachers, as well as update their existing curriculum resources, to
 480 include recent advances within the curriculum. Therefore, a task analysis is usually done by
 481 collecting information from subject matter experts through interviews, focus groups, or surveys.
 482 The final output should include a detailed description of manual activities, mental activities, task
 483 durations and frequency, any necessary equipment, and the skills and competencies required to
 484 perform a given task. Meanwhile, the need to compare performance levels before the process of
 485 identifying training needs and after selecting and implementing training programs. Intensive
 486 studies on how to determine training needs, training needs identification models in other
 487 organizations, and choose what best fits the circumstances of the particular organization.
 488 Extension agents should possess professional competencies in many areas, which provide the

489 critical skills and knowledge for them to be able to perform the work assigned to them. It is
490 further recommended that a training course should be held for extension agents in areas where
491 respondents showed a middle and high level of training needs. Conduct similar studies in other
492 provinces to determine if the training needs of extension agents vary according to the
493 provinces.

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