NEEDS ASSESSMENT: AN EFFECTIVE TOOL IN RURAL SOCIOLOGY AND AGRICULTURAL EXTENSION FOR RURAL DEVELOPMENT.

Adegbola Adetayo Jacob[1*], Olatilewa Oladuntan Mufuliat[2], Akor Sunday[3], Obarein Obozokhai [4]
[1]Department of Research Outreach, Nigerian Stored Products Research Institute, Nigeria
[2]Department of Research Outreach, Nigerian Stored Products Research Institute, Nigeria
[3] Department of Sociology, University of Ilorin, Nigeria
[4] National Youths Service Corps, Nigeria
*Corresponding author: tayoadegbola@yahoo.com; Telephone: +2348165720737

ABSTRACT
This article offers an essential and précis introduction to the topic of needs assessment, and practice. It expounded the term needs assessment, and showed the indispensible nature of the process and why it must be undertaken for success of government or donor funded intervention and projects that have relevance to rural development in all sphere. The article also delved into germane subtopics as: when and why to conduct a needs assessment; methods to conducting a needs assessment; stages involved in carrying out needs assessment; and models of needs assessment. It alluded to the fact that needs assessments have impacted positively to the success of most agricultural development cum rural development projects, but advocated for it to be complemented with other relevant project management processes in light of present realities. The authors suggest that governments, project sponsors, development partners, and other relevant bodies make it obligatory for implementing agencies to conduct credible, verifiable, and inclusive needs assessment before releasing funds for Projects and intervention purposes.
Key words: Needs assessment, Intervention, Rural development, Technology needs, Training Needs

INTRODUCTION

Nigeria is a resource based economy, and agriculture is its mainstay (Ayuk & Klege, 2017). Consequently, sustainability of agriculture is a major precondition for attaining and sustaining the health of the Nigerian economy and its citizens. Thus, there are three possible approaches to accomplish this; increasing the area under cultivation, increasing productivity per unit area per unit time, or utilization of improved post harvest technologies and practices to reduce postharvest loses of crops. Since the crop area expansion option is not always feasible because cultivatable land is almost fixed, the available option is to take up better management practices and or use improved agricultural technologies at pre-harvest and postharvest stages (Pandey, Doharey, Singh, Mishra, Pandey, Kumar, & Dawivedi, 2015).

This review is fundamental because understanding the needs of farmers /agro-processors and how they themselves prioritized them is essential to planning and executing training or technology related programs for meeting the challenges of food security in Developing countries, Nigeria inclusive. It is hoped that information presented herein will be useful in helping practitioners of rural development/community development address the issues that affect them; improving programs in all its facets.

NEEDS ASSESSMENT

A need is something that is needed; it connotes deficiency or an unmet problem. It is a gap between "what currently is" and "what should be" (Altschuld & Watkins, 2014). Needs are value judgments: that a target group has problems that can be solved (McKillip, 1987). They are influenced considerably by group interaction and are not fixed; they also change with time (Duvel, 2002). Needs are distinguished from wants in that, in the case of a need, a deficiency causes a clear adverse outcome or and a dysfunction. In contrast, a want is just a desire, wish or aspiration.

Needs are often classified into known and unknown needs; some needs people know about and are willing to speak in relation to, but other needs are concealed to the laid-back observer. Needs that are known can be determined through these methods amongst others: Interviews; Group methods; Surveys; Observation (Donaldson, 2008). Needs that are unknown are usually determined through these methods amongst others: Environmental Scanning; Document Reviews. Assessment is akin to evaluation, appraisal, and analysis. It involves taking into account all the information about a situation or a person and making a judgment about it. Recently, data gathering has been a sine qua non component of a good number of assessments (Hanna & Dettmer, 2004).

Needs assessment is a term with copious meanings. Nonetheless, for all intents and purposes, needs assessment is an investigation (Donaldson, 2008). For instance, it could imply surveying clients concerning what they wanted, consequently making wants equivalent to needs. Needs assessment comprises all activities used to gather information about a people or group needs, wants, wishes, and desires; it identifies and prioritizes what people need where they live, work or play (Steadham, 1980). As said by Patton (1982), needs assessment is a process motivated by the question: What do clients need, and how can those

needs be met? That is, the overall objective of the process is to use the information gained to make strategy to meet those needs.

Needs assessment entails the identification and appraisal of needs; an instrument for choice making. Choices can be diverse; they could be any one of these: resource allocation, planning, and grant funding. The first step in a needs assessment is to understand the problem (Haselip, Narkeviciute, & Rogat, 2015). This is because, needs assessment is a process of identifying and evaluating problems, and fashioning a way out for a target population; it accentuates the significance and importance of the problems and the way outs. Needs assessments is a methodical process of ascertaining priorities; it is a way of asking a group or community members what they see for the most part as the most important needs of that group or community.

Data for needs assessment can be categorized by how they are sourced; that is, primary or secondary sources. Primary data are obtained without circumlocution; they are directly collected firsthand by a researcher through interviews, questionnaires, and focus group discussion et cetera. While, secondary data are sourced from a third party, that is to say, data which have before now been collected by somebody; example is census data, government reports, organizational records, and data that were originally collected for other researches in the past (Bhanu, 2011). Usually, needs assessment that uses a mix of primary and secondary sources makes available a rich and wide-ranging assessment (Borden, 2004).

NEEDS ASSESSMENT: WHY & WHEN

Huge investments in the agricultural sector by governments and international donors have not translated to matching step up in the socioeconomic status of farmers in developing countries. For example in Nigeria, a number of schemes such as Operation Feed the Nation (OFN), National Accelerated Food Production Program (NAFPP), and Green Revolution amongst other interventions have not achieved their intended goal mainly; increased agricultural production, reduction in rate of hunger and poverty, optimum utilization of agricultural innovations, and reduction in postharvest loses of agricultural products. The reasons for these failures amongst others include utilization of traditional /obsolete technologies (Adegbola, Wegh, Ikwuba, & Nwafor, 2019), and badly chosen training(s) given to farmers without discerning their particular areas of need (Madukwe & Ozor, 2004).

Needs assessment or analysis plays a significant role in the success and sustainability of projects. Pholonngoe & Richard (1995) accentuated the importance of need assessment whilst affirming that if extension hopes to advance momentous agricultural development, it needs to operate bearing in mind that human need is not static. Individual and group needs alter over time, and an intermittent assessment is essential to comprehend changing needs and new situations that people face in everyday life. Needs assessments elucidate the effort of public service agencies and support effective program planning; it helps them put up a more objective picture of needs than they would get from observation or public conversation only (Donaldson, 2008). Categorically, it inspires governments, agencies, and or international donors focus on priority areas. What is more, governments, departments, and or donors nowadays regularly require a need assessment that includes breakdown that entails plainly identifying the benefits, costs, and risks of different alternatives prior to yielding to a large investment in changing the existing agricultural/developmental technologies or practices.

Time and again, need assessments are carried out when there are uncertainties as to what the most vital needs are; needs that are rated most important are the ones to be addressed (Berkowitz & Nagy, 2014). The world today more than ever before faces unlimited needs, but limited resources, as such needs assessments help identify areas that will do the most good for the most people overtime. Accordingly, it evaluates the current system and determines whether or not there is a case for action to enhance, modify, or replace it based on the gap between the capabilities of the current system (Rowan, Shayne, & Robert, 2002). However, because needs assessments take time, energy, money and other resources, it is critical to decide if a needs assessment is warranted for your program from the onset (Angima, Etuk, & King, 2014, and Patton, 1982).

The following amongst others are situations or circumstances when need assessment may perhaps be embarked on: when you want to find out more concerning what a people or group needs related to a particular condition; When you need to document needs for grant applications and other funding proposals; when you need extra information and perspectives to correspond with donors, advisory groups, elected officials and other stakeholders; when you want to center the appraisal of a given program on how well it meets the needs of its intended audience; when the project to be undertaken or need to be met are relevant to people it is intended for; when present technologies or systems have major deficiencies and these deficiencies are linked to obsoleteness of the technology or systems. On the other hand, needs assessment may not be a worthwhile activity if: the group or community views the assessment as redundant or wasteful; the issue at hand is urgent and requires quick action; recently needs assessment has already been conducted, and the results are still timely.

NEED ASSESSMENT: THE METHODS

Needs assessment methods include but are not limited to the following: Document review; Key informant; Advisory group; Focus group methods; Delphi Technique; On-line method; In-person method; Mail method; Open listening sessions; and Environmental scan. Reviewing existent data is a constituent in conducting a needs assessment. Document review is a valuable starting point for an all-encompassing needs assessment. Data sourced from document review are vital and fundamental. The method offers in-depth information from a large sample size that would be hard and impractical for an individual to gather alone. For instance, census data can provide information over numerous years, allowing a researcher the opportunity to spot trends. Most importantly, document review comes handy when dealing with sensitive issues that may perhaps be hard for people to talk about. It can be of assistance in identify what is known and isolate what you still want to know. Like every other data gathered from secondary sources, when gathering data from document review it is imperative to collect them from trustworthy sources.

A key informant provides important perspectives and has a firsthand knowledge of phenomenon under inquiry. Take for example; conducting a needs assessment of health needs of the gay community in a conservative country like Nigeria would need the services of a key informant/member of the gay community because people do not always talk about their sexuality let alone a queer one in this part of the world. However, it is not ideal to use key informants exclusively for a needs assessment for the reason that it could place undue importance to the judgment of a few persons.

An advisory group also referred to as a panel is at hand to offer advice; they make available input and advice in the form of thoughts, ideas and opinions to people conducting research. Advisory groups would include but are not limited to members from diverse racial, political, geographical, ethnic and socioeconomic groups; they help assess needs and plan programs to meet those needs (Cummings & Franck, 2014). A focus group discussion entails gathering people from related milieu or and experience together to discuss a particular subject of concern. Here, questions are asked about their beliefs, attitudes, ideas or opinions. With focus groups, researchers can get detailed information about an issue. Focus groups have distinctive characteristics that make them compatible for Extension work as well as the needs assessment process (Donaldson, 2008). Foremost, focus groups have flair for open-ended questions which let respondents include more information; this lets researchers to better access the respondents' spot on feelings on an issue. The information gotten from focus groups can help address problems at the program design stage. What is more, with the method sufficient partakers can be recruited to participate in an assessment; it typically consists of 6 to 12 participants.

Various public extension organizations have used the Delphi Technique for needs assessments purposes (Rowan, Shayne, & Robert, (2002). The technique is a procedure for asking for ideas from a designated group of experts by means of a series of questionnaires. The technique agrees to gathering information from various groups; it allows diverse groups to identify their own pressing needs and issues exclusive of influence from other groups. Strong points of the Delphi Technique include the following amongst others: every person is anonymous, as such a single person cannot control the group; diverse group can be incorporated, but confidentiality can be maintained; participants identify and prioritize the needs and issues so that the process and outcomes are controlled by participants and not by the investigator(s).

An online survey is targeted at online audience and can be completed over the internet; online method can be completed swiftly and it is economical. Additionally, it allows researchers to show images, videos and audio as stimuli; it is a great way to engage your audience and get insightful feedback. However, online method may not always be right to use for needs assessment in third world countries where internet data is expensive, population lack email address, and are characteristically illiterate.

In-person method is a face-to-face meeting of the interviewee with the interviewer; it explores the responses of the people to gather more and deeper information. In-person method can be conducted anywhere qualified respondents may be found; it can be conducted at the market, at home, at work places, on the farms et cetera. In-person interview gives a direct knowledge of a circumstance and about why something is occurring; it examines issues profoundly to find out how individuals reflect and feel about a matter and why they embrace particular views. This method allows the interviewer to provide assistance and ensure respondents remain focused and engaged while completing the survey. The method is about the handiest in conducting needs assessments in that it provides the additional advantage of getting to be acquainted with people (Witkin & Altschuld, 1995). It also ensures high response rate, and survey instrument is easy to distribute.

One of the most commonly used methods for gathering primary data from individuals when conducting needs assessment in developed countries is the mail method. Mail method involves the assessment team mailing questionnaire to potential respondent/ target individuals; the mailed questionnaire is an assortment of questions on a particular research topic. Here, potential respondent/ target individual fill out the

questionnaire and returns same by mail. This method works best in developed countries where mail system is effective; target individuals for this method must have a functioning mailing address. A foremost impediment to success of this method though, is obtaining a good enough rate of response (Hawes, Varble, & d'Amico, 2015). The advantages of this method include: can incorporate a large number of people, and instrument is easy to dispense (Donaldson, 2008).

Open listening sessions is a needs assessment technique analogous to a focus group. Major divergences are that open listening sessions can be small or large, and the sessions are typically open to every person to be there. Listening sessions are opportunities for the community to provide input on specific issues that affect them. This method is among the best ways to get constructive feedbacks; it involves a group of people in a room listening to and discussing and addressing issues that concerns them. The facilitator(s) that will guide the conversations of the listening session for a needs assessment will be the person(s) conducting the needs assessment. Conversations are guided based on series of questions, and answers or responses to the questions are recorded and kept by the facilitator(s). However, listening session can be a flop if their purpose is not clear or well set out (University of Wisconsin, 2015). Environmental scanning is a trended analysis of historical events and their relationships to project future needs and how to meet them. This method helps governments and donor organizations determine the future direction of, and type of aids or interventions they provide.

NEEDS ASSESSMENT: THE STAGES

Impact assessment involves three key stages according to McKillip (1998), they are: exploration, data gathering and utilization stages

Exploration Stage:

In this stage, the purpose of the needs assessment is determined. What are the likely uses of the assessment information and who are the prospective users of the assessment information? Parameters for the assessment are identified. Specific place and audience are identified. If you believe fish farmers will be the users of the assessment information, for example, a general agricultural stakeholder assessment would not suffice unless you break out data by specialization. Furthermore, it is imperative to identify all of the existing information that fits your parameters and also, establish if other data still need to be collected (Borden, 2004). And lastly, identify the methods to collect this information.

Data Gathering Stage:

At this stage data are collected, analyzed and amalgamated. It is at this stage that needs assessment plan is implemented. Let's say you find from surveys or literature that for some times now smoked fish exported from the West African sub-region to United Kingdom and the European Union are being rejected. You also, discovered that the rate of rejection is much higher for Nigeria than for other counties in the sub-region. It could be helpful to determine the challenges of fish processors bordering on their technology for fish smoking with the view of determining what intervention could be provided them in terms of improved fish processing technologies. Succinctly, this stage deals with: data gathered; how data was gathered; implication of gathered data.

Utilization Stage:

At this stage, data gathered is used to set program, intervention priorities, build up an action plan to deal with the needs or issues, appraise the needs assessment, and communicate the results amongst others. It is worthy of note that a needs assessment course of action is not completed until the results are shared and utilized. Concisely, this stage deals with: affirming need priorities based on the result of the needs assessment; sharing outcomes of need assessment with others if and when necessary.

NEEDS ASSESSMENT: THE MODELS

A model is the categorization of key elements of a phenomenon with regards to their function and interrelationships (Age, 2013). The three models of needs assessment as stated by McKillip (1987) are: marketing, decision-making, and discrepancy model.

Marketing Model: This model terms needs assessment as a feedback course of action used by organizations to gain understanding of and to adapt to the needs of their patrons. A marketing approach of needs analysis has three key elements: selection of the intended population, those in actual fact or likely qualified for the service and proficient to make the needed exchanges; choice of adversarial position, making a distinction of the organization's services from those offered by other organizations; creating of a well-organized marketing mix, deciding on a variety and quality of services that will make the most of utilization by the target population.

Decision-Making Model: This model is an adaptation of multi-attribute utility analysis to problems of modeling and synthesis in applied research. The model has three phases: First is problem modeling stage; here, need identification takes place. The decision problem is envisaged by options and decision characteristics. Second is quantification stage; here, measurements integrated in the need identification are transmogrified to mirror the decision makers' values and interests. Third is synthesis stage; here, an amalgamated appraisal that orders options on need are readily obtainable; this stage makes available information on the comparative position of these needs.

Discrepancy Model: This model is the most clear-cut and frequently used, particularly in education. It accentuates normative expectations and entails the three phases: goal setting, identifying what should be; performance measurement, ascertaining what is; incongruity detection, ordering discrepancies between what should be and what is.

NEEDS ASSESSMENT: A DICHOTOMY

Needs assessments are time and again in developmental and interventional parlance dichotomized into technology and training needs assessment.

Technology Needs Assessment:

Advances in agricultural technology have led many governments, agencies and or donors to consider replacing obsolete agricultural technologies. Yet, often they find it difficult to comprehensively assess whether the current technologies meet technological needs, whether a substantial investment should be made in research and development, or if there are other alternatives commendable of consideration.

A technology needs assessment attempts to systematically determine gaps between user needs and current system capabilities; example is needs assessment of postharvest technology of Kauran Mata farming community, Kano state, Nigeria by Adegbola & Awagu (2012). Technology needs assessment is conducted with the aim to scale up investment in technology transfer thus enabling developing countries to address their needs for improved technologies. It leads to the identification, selection and implementation of technological innovations (Haselip, Narkeviciute, & Rogat, 2015). Technology needs assessment is a participatory practice and thus essential to engage all important stakeholders, on the supposition that any given technology is more prone to be understood, accepted, supported and implemented at all important levels, that is, commencing from government ministries to farmers or households et cetera. Nevertheless, it is imperative to know that stakeholders are diverse in nature, for the reason that they stand for dissimilar interest groups, and therefore, should take up different roles, at different moments, in the technology needs assessment process. However, identifying them at an early stage is a key to successful involvement and engagement.

Technology needs assessment evaluates the current situation, and appraises the context in which technology needs assessment is conducted with a view to amongst others: identify and prioritize mitigation/adaptation technologies for selected sectors/sub-sectors; identify, analyze and address hurdles encumbering the deployment and diffusion of the prioritized technologies including enabling the framework for the said technologies; and present based on the inputs obtained from the two preceding steps, a Technology Action Plan with suggested measures/actions presented in terms of project ideas.

When conducting technology needs assessment, all technology choices should be presented to and discussed with relevant stakeholders, to ensure a high level join in on the assessment. Also technology prioritization is done; technology options are evaluated based on a pre-constructed scoring matrix, and weighted score. A fit for purpose technology needs assessment supplies decision makers, international donors, and technology acceptors with an objective assessment of a range of choices of technology available to them. Objectivity is emphasized here because it is imperative that the body or persons conducting the assessment be unbiased, however, freedom from dependence is vital to attain objectivity. Furthermore, it is also essential that the source carrying out the technology needs assessment is knowledgeable in each operational area in which it is rendering guidance.

Training Needs Assessment:

Training is an integral part of any development activity, especially in agriculture (Pandey, Doharey, Singh, Mishra, Pandey, Kumar, & Dawivedi, 2015). Training is a process of gaining of new skills, attitude and understanding in the framework of getting ready for entry into a profession or improving one's efficiency or output in an organization or enterprise (Rahman, Khatun, Rahman, & Haque, 2018). It is the act of passing on and procuring the capability to do something well; the bedrock of organizing (Obama, 2019). Training is the most singular factor affecting individuals' attitude, productivity, improvement, and minimization of risks (Meenambigai & Seetharaman, 2003). It is a process of gaining new ability, attitude and understanding, however, it does not imply knowing more but conducting oneself differently; it is attainment of best way of utilizing knowledge and skill (Sajeev & Singha, 2010). Knowledge and skills of farmers in agricultural technologies are important factors for increased agricultural production, as such adequate training is essential for farmers to acquire necessary knowledge and skills in different aspects of farming.

Training needs assessment is one of the most important steps to recognizing the area of farmers' interest, design and development of program that can best suit to the existing real situations of farmers. A training needs assessment or human resource development needs assessment leads to the identification, selection, implementation, and bridging of training gaps for improved performance. Example is training needs assessment of women cassava processors in Ibadan, Oyo State, Nigeria by Oyediji, Yekini, & Taiwo (2015), and training needs assessment on crop

production for farmers in Bangladesh by Rahman, Khatun, Rahman, & Haque (2018).

Basically, training needs is practically the same as human resource development in agriculture (Rahman, Khatun, Rahman, & Haque, 2018). Consequent on the fact that human need is not fixed, it becomes imperative that training needs assessment has to be carried out to design relevant and need based training programs that can accommodate changes over time (Barbazett, 2006). Training needs assessment process helps determine the priority of changes in knowledge, skill, attitude and behavior that will provide the greatest impact on achieving technology transfer; it is one of the key steps to recognizing the area of farmers' interest. Moreover, the deficiency of farmers training is a major failing of agriculture sector in developing countries.

Schemes, programs, and interventions have been targeted towards the progress of rural folks in agriculture. Nevertheless, the desired goals have not been achieved by most of these schemes with regards to taking up of improved agricultural practices by farmer folks (Madukwe & Ozor, 2004). The reasons for this may perhaps include dearth of trainings, or irrelevant trainings given to these farmer folks by government bodies, international organizations, and non-governmental organizations without discerning the specific areas of their need. Training need assessment thus determine whether there is a disparity between what is required and what is available; difference between what exist and what is desired (Barbazette, 2006). This difference is usually visualized in knowledge, skills, and attitudes of individual or a group of people, and meeting this need is expected to lead to efficiency in the occupational performance of the recipients (Gupta, 2007).

CONCLUSION AND RECOMMENDATION

Success of governments and most especially international donors at projects and interventions continue to face serious challenges because most of these projects or interventions have not been able to resolve the recurrent challenges faced by communities in the areas where these intervention or projects are cited or located, especially in developing countries. This is so because project and intervention priorities in modern times are based on needs assessment, and when this is not done before project implementation, project(s) often do not have intended consequences in terms of making relevant impact(s).

Though needs assessment have impacted positively to the success of most agricultural development-cum-rural development projects where it was used, we urge it should be complemented with other germane project management processes in light of present realities. Again, every needs assessment or analysis that is worth its salt would source data for such from a reliable source or sources, especially when using secondary data; community must also be involved in relevant stages of the assessment as much as possible. We also suggest that government, project sponsors, development partners, and other relevant bodies make it compulsory for implementing agencies to conduct credible, verifiable, and inclusive needs assessment before releasing funds for Projects and intervention.

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