

Assessment of farmers' needs in Ibarapa East Local Government area of Oyo State, Nigeria



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Abstract

Government and non-government organizations (NGOs) interventions to local farmers in the recent past had not yielded the desired result because these interventions were not tailored towards the needs of farmers. However, most information on the needs of target farmers have been very scanty thus, the need to use a bottom top approach to assess farmers' needs in Ibarapa East, Oyo state. A three-stage sampling technique was used to purposively select about 225 respondents. Parameters measured were household characteristics, farm sizes, farm labor availability, seasonal pattern and need to be assessed using a participatory rural appraisal approach comprising of focus group discussion (FGD) and structured questionnaire. Data were analyzed descriptively and the need assessed using the pair-wise ranking and simple matrix. Of challenges listed in FDG among crop-livestock farmers, only five (5) were prioritized as follows; wastage of agricultural products (Pb1), bad road network (Pb2), high cost of agricultural inputs (Pb3), lack of potable water (Pb4) and animal invasion (Pb5). The pairwise comparison of the percentage of Pb1 versus (vs.) Pb2 was 80/20%, Pb1 vs. Pb3 was 90/10%, Pb1 vs. Pb4 was 70/30%, Pb1 vs. Pb5 was 20/80%, Pb2 vs. Pb3 was 70/30%, Pb2 vs. Pb4 was 30/70%, Pb2 vs. Pb5 was 10/90%, Pb3 vs. Pb4 was 20/80%, Pb3 vs. Pb5 was 10/90%, vs. Pb4 vs. Pb5 was 30/70%, respectively. There were proffered solutions to the problem(s) itemized by the FGD. The animal invasion was ranked highest as farmers' need assessed for possible intervention in Ibarapa East. Governments and NGO funds should be addressing animal invasion for desirable project impact assessment.

Keywords: Donor agencies, interventions, participatory approach, production system, project implementation

Une Évaluation des besoins des agriculteurs dans la zone de gouvernement local de 'Ibarapa East' de l'État d'Oyo, Nigéria



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Résumé

Les interventions des gouvernements et des organisations non gouvernementales (ONG) auprès des agriculteurs locaux dans un passé récent n'avaient pas donné le résultat souhaité car ces interventions n'étaient pas adaptées aux besoins des agriculteurs. Cependant, la plupart des informations sur les besoins des agriculteurs cibles ont été très rares, ce qui nécessite d'utiliser une approche ascendante pour évaluer les besoins des agriculteurs de l'est d'Ibarapa, dans l'État d'Oyo. Une technique d'échantillonnage en trois étapes a été utilisée pour sélectionner environ 225 répondants. Les paramètres mesurés étaient les caractéristiques des ménages, la taille des exploitations, la disponibilité de la main-d'œuvre agricole, le profil saisonnier. Ils doivent être évalués à l'aide d'une approche d'évaluation rurale participative comprenant des discussions de groupe et un questionnaire structuré. Les

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données ont été analysées de manière descriptive et le besoin évalué en utilisant le classement par paires et une matrice simple. Parmi les défis énumérés dans le 'FDG' chez les agriculteurs et les éleveurs, seuls cinq (5) ont été classés comme suit ; gaspillage des produits agricoles (le 'Pb' 1), mauvais réseau routier (le 'Pb' 2), coût élevé des intrants agricoles (le 'Pb' 3), manque d'eau potable (le 'Pb' 4) et invasion animale (le 'Pb' 5). La comparaison par paire du pourcentage de 'Pb' 1 versus (vs) 'Pb' 2 était de 80/20%, Pb1 vs Pb3 était de 90/10%, Pb1 vs Pb4 était de 70/30%, Pb1 vs Pb5 était de 20/80% Pb2 vs Pb3 était de 70/30%, le 'Pb' 2 vs le 'Pb4' était de 30/70%, le 'Pb' 2 vs le 'Pb' 5 était de 10/90%, le 'Pb' 3 vs. le 'Pb' 4 était de 20/80%, le 'Pb' 3 vs. le 'Pb' 5 étaient 10/90%, vs le 'Pb' 4 vs le 'Pb'5 était respectivement de 30/70%. Des solutions ont été proposées au (x) problème (s) détaillé (s) par le FGD. L'invasion animale a été classée au premier rang des besoins des agriculteurs évalués pour une éventuelle intervention à l'Est d'Ibarapa. Les gouvernements et les fonds d'ONG devraient s'attaquer à l'invasion animale pour une évaluation de l'impact souhaitable du projet.

Mots clés : Bailleurs de fonds, interventions, approche participative, système de production, mise en œuvre de projets

Introduction

Most government agricultural programs, projects and policies are not producing the desired benefits to host communities despite the huge resources channeled to them. The project objectives and focus of most government and donor agencies do not often meet farmers' expectations. Many had reported the various interventions of donor agencies towards improving the living standard of the resources poor rural populace running to several billions of dollars. In line with the current sustainability drive of the world bank towards rural or third world development (FAO, 2015), there is a dearth of relevant information that could enhance and facilitate proper project implementation (Babayemi *et al.*, 2014). Rather than reliance on foreign data or similar terrain, there is the need for on the spot assessment of the populace's need or approach towards the development of their living standard through agriculture (Sosina *et al.*, 2019). There are inherent ecological and socio-cultural diversities on the development approach from place to place that do influence to implementation and assessment of such a project (Sosina, 2017). Previous execution and implementation of

agricultural development programs and projects revealed the use of the 'top-bottom' approach. In this approach, the targeted respondents have little or no stake in the decision making process on project scope or its implementation. The object of the project might be to ameliorate the production constraints or improve the living standard of the rural resource-poor populace (FAO 2015). Viable research should be geared towards solving the clients' problem or contribution to farmers' livelihood at the system level (Sosina, 2020), a bottom-top approach is preferred (ILRI, 2015). In the past farmers were used to test information without any thought being given feedback on the various test results and the implication of such findings on or to their needs (Van and Rao, 2014). The ideal way to exchange information is to involve the tripartite format: farmer, researcher and development partners. The scientist needs to understand why the farmer does what he/she does because this allows researchers to provide the solutions needed by the farmer. Participatory rural appraisal (PRA) is an opportunity for a robust discussion or interaction among the various stake holders with a view of proffering solutions to specific or group of

challenges (ILRI, 2015). It also allows researchers and farmers to learn from the target people about the situation confronting them (Babayemi *et al.*, 2014). Target groups can be involved at several points in the process: investigation, identification, and prioritization of needs planning and implementation monitoring and evaluation (Herrero *et al.*, 2010). The PRA is a method that allows researchers and farmers to exchange knowledge. This will enable researchers to design programs that will meet the needs of the farmers. The PRA offers a robust discussion among the participant, with a view charting a progressive way forward or finding a solution to a common problem or issue (Sosina, 2017). The PRA operated with the following principles as outlined by Babayemi *et al.* (2014); Amole and Ayantunde (2016) and Herrero *et al.* (2010) as Participatory, Flexible, Teamwork, Optimal ignorance and Systematic. Conclusively, the study aimed at assessing the needs of the crop-livestock farmers in Ibarapa East axis towards coming up with an accepted production approach that will produce an intervention that will improve the living standard of the farmers.

Materials and methods

The study took place in the Ibarapa East of Oyo State of Nigeria. The area is ethnically heterogeneous with a high concentration of smallholder crop and livestock farmers, considered as the occupational group with a high incidence of poverty. The population is 81,115 out of which 52% are males and 48% are females. The area lies within Longitudes 1°5' W and 1°39' W and Latitudes 7°9' N and 7°36' N, covering an area of 1,782.2 km². It has a bimodal rainfall pattern ranging between 1200 and 1500 mm with a major rainy season from April to August, and a minor rainy season from August to November (Sosina, 2017). A three-tier multi-stage sampling technique was used to elicit information from a total of 225

respondents in the study area. Fifteen (15) respondents per village were randomly selected from five villages and three cells from the study area with high intensity of crop-livestock production systems. Parameters measured with the structured questionnaire were bio-data of the farmers, household characteristics, farm sizes, farm labor availability, seasonal pattern, types of animals raised by households, the purpose of raising animals' and farmers' needs. Farmers' needs were assessed using the Participatory Rural Appraisal (PRA) technique. PRA offers a unique opportunity for a robust discussion among the participant towards proffering solutions to the production constraints identified. PRA has two main components namely Focus Group Discussion (FGD) and structured questionnaire. Data obtained were analyzed using descriptive statistics with frequency distribution, means, percentages, pair-wise ranking.

Results and discussion

The need assessment of respondent farmers involved in the crop-livestock production system in Ibarapa East was evaluated using the PRA technique (as in Table 1). The information elicited after robust discussion among respondents from the FGD were itemized. Out of about ten (10) challenges facing crop-livestock farmers, only five (5) were listed in terms of priority which included the following: wastage of agricultural products (Pb1), bad road network (Pb2), high cost of agricultural inputs (Pb3), lack of potable water (Pb4) and animal invasion (Pb5). Along with the priority list of challenges, the would-be-solutions to the problems were also listed as in Table 2. This solution becomes imperative to look inward towards ameliorating their problems through robust discussion in the FGD (employing the Bottom-Top approach) as against the usual norms of Top-bottom approach whose solutions proffered might not solve the peculiar problems at the system level.

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Table 1: The need assesment of Ibarapa East using PRA technique

| Problem | Solution |
|---------------------------------|--------------------------------------------------------------------------------------------------|
| Wastage of Agricultural product | Value addition and processing of agricultural products into other uses especially during harvest |
| Bad road network | Local authorities should be involved in road rehabilitation |
| High cost of inputs | Subsides of farm input should be done by the government |
| Lack of portable water | Construction of deep wells and sinking of bore-holes in affected rural communities |
| Animal invasion | Adoption of Crop-livestock production system |

Table 2: Pair-wise comparison of problems at Ibarapa East

| Comparison | More Important |
|-----------------------|-----------------------|
| Problem 1 v Problem 2 | 1 |
| Problem 1 v Problem 3 | 1 |
| Problem 1 v Problem 4 | 1 |
| Problem 1 v Problem 5 | 5 |
| Problem 2 v Problem 3 | 2 |
| Problem 2 v Problem 4 | 4 |
| Problem 2 v Problem 5 | 5 |
| Problem 3 v Problem 4 | 4 |
| Problem 3 v Problem 5 | 5 |
| Problem 4 v Problem 5 | 5 |

Problem 5- Animal Invasion.

Wastage of agriculture products (Pb1): The solution proffered from the FGD was the new approach and technique of value addition and processing of agriculture products into other uses especially during the period of a bumper harvest. Value addition was not just the current panacea to wastage of agricultural products but also increased product price, improved product shelf life, and business profitability. Most farmers plant and harvest crops almost at the same time because of over-dependence on rain-fed agriculture. Hence, agricultural produce gets matured and comes to the market almost at the same time thus leading to higher commodity supply and consequently lower commodity price supplied. The solution proffered from the FGD (to Pb1) was the new technique of value addition and processing of agricultural products into other uses especially during the period of a bumper harvest. Value addition measure to curb wastage of agricultural produce during bumper harvest agreed with the objective of ATA (2013) and FAO (2015) as a panacea to poverty among farmers in the developing countries. This submission alluded to

Sosina (2020) who reported contributions of agriculture to farmers' livelihood in the crop-livestock production system. The economic sustainability of farmers is also enhanced as a result of the reduction in agricultural wastage among farmers (Adesina, 2003; FAO, 2014).

Bad road network (Pb2): The solution proffered to the Pb2 was the involvement of the Third tier of government (LGA) on their responsibility for rehabilitation of rural roads. The role of those feeder roads to the transportation of rural farmers cannot be overemphasized. The movement of farm produce to the urban or rural market will be enhanced with these roads. The bad road network will no doubt lead to an increase in the production cost and commodity cost with its attendant effect on the crop-livestock production systems. Most agricultural products and livestock are wasted due to the high cost of transportation arising from bad roads. Farmers might prefer to leave the product on the farm because of the menace of the bad road network, especially during the rainy season. The solution proffered to (Pb2) was the involvement of the third tier of government

(LGA) on their responsibility for the rehabilitation of rural roads. NGO, corporate bodies and philanthropists can also be called upon to repair rural roads for improved living standards. As part of the Millennium Development Goal (MDG), the recommendation of the provision of infrastructure and basic amenities especially in the rural areas (Lennie and Thomas, 2005), rural roads construction and rehabilitation will go a long way in the provision of necessary support for agricultural development of the rural areas where the bulk of agricultural produce comes from (FAO, 2015; Babayemi *et al.*, 2014).

The high cost of the input (Pb3): The solution proffered to the Pb3 was a subsidy to farm input by the government. The subsidy program should be cardinal to government agricultural policy. To keep the peasant farmers in business, government, corporate bodies, and NGOs should subsidize the crop and livestock input such as fertilizer for crops and feeds for livestock. The recent Growth Enhancement Scheme (GES) program between 2012/2013 by the federal government under the Agricultural Transformation Agenda (ATA) was a welcome development in this regard (ATA, MNAR, 2013). The concept or program will no doubt lead to improve productivity in the agricultural sub-sector of the economy. Under the GES program, fertilizers (Inorganic and organic fertilizers) for crops were subsidized, livestock feeds for poultry and ruminants were subsidized along with the de-wormer, antibiotics, anti-, etc as a complete package. Furthermore, the solution to (Pb3) was the provision of subsidy to farm input by the government was the remedy proffered by the respondents in the FGD. The subsidy program should be a cardinal government agricultural policy. To keep the peasant farmers in business, government, corporate bodies, and NGOs should subsidize the

crop and livestock input such as fertilizer for crops and feeds for livestock. Under the GES program (ATA.MNAR, 2013). The fertilizers (Inorganic and organic fertilizers) for crops were subsidized. Livestock feeds for poultry and ruminants were subsidized along with the dewormer, antibiotics, anti-, etc. as a complete package. Furthermore, the construction of deep wells and the sinking of boreholes in affected rural communities as a possible panacea to the lack of potable water. Provision of water forms an integral part of development especially in the rural areas which are part of the focus of the Sustainable Development Goal (SDG) objectives (FAO, 2015).

Lack of potable water (Pb4): Construction of deep wells and sinking of boreholes in affected rural communities as a possible panacea to the lack of potable water. The provision of potable water was of great importance to the communal health, international donor agencies, NGO and some other philanthropist can be called upon (along with the government) in the provision of potable water to the rural community. Health is Wealth! Water is indispensable to both humans and livestock especially during the dry season when most of the water bodies would have been dried. Moreover, for livestock, it is very imperative for the construction of deep wells along the *stock-routes* or grazing reserves for livestock production sustainability. The provision of potable water is very crucial to human survival and health status to stem the tide of water-borne diseases like Guinea worm infection etc. There can be serious economic losses to farmers with health challenges as a result of the lack of potable water.

Animal invasion (Pb5): The solution proffered to animal invasion (Pb4) was the adoption of the crop-livestock production system. Crop-livestock production system refers to the integration of crop production

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with livestock production for mutual benefits (Sosina, 2017). The waste from one (crop production) enterprise becomes the resources for another (livestock) enterprise (and vice versa). In the current trend of economic diversification, agricultural production system could be a panacea as opined by Sosina (2017).

Crop Sole (CS) and or Livestock Sole (LS) production should metamorphous into crop-livestock (integration) production systems (Sere and Steinfeld, 2006; Sosina, 2017). Animal invasion is a problem that needs a possible intervention in Ibarapa East. This result was in contrast to the high cost of veterinary drugs reported by some farmers in Niger (Amole and Ayantunde, 2016) and low-quality feed (Wassena *et al.*, 2014) in Ethiopia when the farmers' needs were assessed.

Pair-wise comparison of problems among respondent farmers at Ibarapa East: In the FGD among respondent crop-livestock farmers in Ibarapa East, the pair-wise ranking technique was used to compare (2) two problems at a time with the farmers deciding which of the problem was more important compared with the other (as in Table 3). When Pb1 was compared with Pb2, 3, 4 and 5 i.e wastage of agricultural products (Pb1) appeared (3) three times in the frequency order of more importance. When Pb2 was compared with other problems 3, 4 and 5, it occurred once in the frequency order of more importance. Problem 4 occurred twice in the more important order of frequency. In Table 3, the Pb5 occurred four (4) times in the more important order of frequency. The problem with the highest frequency was Pb5 (i.e Animal invasion). Thus the area of possible intervention by respondent farmers after the pair-wise ranking in the crop-livestock production system (CLPS) in Ibarapa East was an animal invasion. This was followed by the problem of wastage of agricultural products in that order.

The pairwise comparison of problems among respondent farmers at Ibarapa East LGA gave an insight into the area(s) of possible intervention for donor partners or agencies. It agreed with the report of Sosina (2017) on the challenges often faced by donor agencies, institutions in agricultural project financing. The area of possible intervention by respondent farmers after the pair-wise ranking in the crop-livestock production system in Ibarapa East is Animal invasion. This result agreed with the report of Olafadehan and Adewumi (2011) that corroborated conflict among agro-pastoralist in the Savannah area especially during the dry season (Lawal-Adebowale, 2012) but in contrast to inadequate provision of feed resources reported by Amole and Ayantunde (2016).

With this results in Tables 1 and 2, the suggested problems and solutions from the FGD coupled with the pair-wise ranking and matrix scoring technique affected the respondent farmers the fair opportunity to come up with an acceptable and consensus possible intervention in Ibarapa East.

The result of the study in Table 3 also shows that the majority (56.90%) of the respondents were male and the remaining 43.10% were female. The majority (83.80%) of the respondents were married, with few (6.10% and 5.40%) Divorcees and widows. Only 3.8% of the respondents were singles. The results of the study show that the majority (56.90%) of the respondents were literates. About 60% of the respondents fall with in the age bracket of 30-39 years old which is the workable age range. The majority (50%) of the respondents had an average household size of 6-10 compared with other household sizes in the study area. Moreover, the majority (50%) of the respondents had no formal education while engaging in farming.

Table 3: The socio economic characteristics of respondents in the study area

| Variable | Frequency (225) | Percentage (%) |
|----------------------------------|-----------------|----------------|
| Sex | | |
| Male | 153 | 68 |
| Female | 72 | 32 |
| | 225 | 100 |
| Educational Qualification | | |
| No formal education | 113 | 50 |
| Primary School | 68 | 30 |
| Secondary | 34 | 15 |
| Tertiary | 11 | 5 |
| Age (Years) | | |
| 20-29 | 56 | 25 |
| 30-39 | 135 | 60 |
| 40-49 | 23 | 10 |
| above 50 | 11 | 5 |
| House hold sizes | | |
| <5 | 34 | 15 |
| 6 to 10 | 113 | 50 |
| 11 to 15 | 45 | 20 |
| 16 to 20 | 23 | 10 |
| >20 | 11 | 5 |
| TOTAL | | |
| Marital Status | | |
| Divorced | 11 | 5 |
| married | 146 | 65 |
| Widow | 23 | 10 |
| Single | 45 | 20 |
| | | 100 |
| Literacy status | | |
| Literate | 101 | 45 |
| Illiterate | 124 | 55 |
| | | 100 |

The result in Table 3 shows the average age of the respondents was 30-30 bracket and this implies that the respondents in the study area are within the age range regarded as economically active innovative and productive. The result was however lower than 44 years reported by Danguguwa *et al.* (2020) for productive age. According to Danguguwa *et al.* (2020), young or middle age farmers are more flexible in decision making, risk-taking and adoption of new ideas and technologies than older ones. The average household size of the respondents was eight persons (as indicated in Table 3). This implies that the more the household members, the more their contribution to the family farm/flock activities. The result

agreed with Bakoji *et al.* (2012) who stressed that large household size assists to provide cheap family labor for an entrepreneurship activity like farming. It also agreed with Danguguwa *et al.* (2020) that reported similar socioeconomic characteristics for goat farmers in Kano state.

Conclusion

The need assessed for farmers in Ibarapa East was Animal invasion; the challenge with the highest frequency. The probable solution is the adoption of the crop-livestock production system synergy that will allow mutual benefits and environmental sustainability of the

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different enterprises. This information is pivotal to any intervention from the donor agency and international organizations. This is imperative to the effective utilization of the various financial and moral support as well as the overall impact assessment of the project funding.

Recommendation

The need assessment of respondents using the top-bottom approach of Participatory Rural Appraisal becomes very imperative for decision-making processes or interventions by relevant government, non-governmental organizations, philanthropies, and donor agencies.

Conflict of interest

The author declares there is no conflict of interest.

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