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STAKEHOLDER ANALYSES FOR SWEETPOTATO SEED SYSYTEM IN NIGERIA

[1]Okoye, A. C, [1]Dainel-Ogbonna, C, [2]Umeh, O.J., [1]Eluagu, C., [3]Amanza, P. U., [4]Okoye, F.U and [1]Okoye, B.C
[1]National Root Crops Research Institute, Umudike, Abia State, Nigeria.
[2] Michael Okpara University of Nigeria, Umudike, Abia State, Nigeria
[3]Alvan Ikoku Federal College of Education, Owerri, Imo State, Nigeria
[4] Federal College of Agriculture, Ishiagu, Ebonyi State, Nigeria
Correspondence email: okoyeamalac@yahoo.com

ABSTRACT
The study presents empirical evidence on stakeholder analyses for sweetpotato seed system in Nigeria. The study adopted a multi-stage purposive sampling procedure to select 102 sweetpotato actors along the sweetpotato seed value chain. Data were collected in 2019 with the aid of structured questionnaire using monkey survey and focus group discussion (FGD). Descriptive statistics such as charts, and tables, Likert-type scaling and IIM (importance and influence matrix) model were used to identify and describe the stakeholders, determine the level of importance and influence, and their position in the system. The result showed that the actors- NGO, root producers, National Agricultural Seed Council (NASC), farmer's cooperatives and Business Support Services had high importance with low influence, while University, Private sectors and financial agencies had both low level of importance and influence. The researchers, Varietal Release Committee and donor agencies were found to have both high level of importance and influence while government had low importance with high influence. The results indicated that the position of each stakeholder determined the effectiveness of the role they play in the system. The study therefore called on interventions to involve all actors at "the involvement stage" through advocacy visits and sustained lobbying in the interest of the government. Exclusive inclusion and protection of all stakeholders in the system through participatory, empowerment and supportive approaches will go a long way to improving the system. Efforts should be made to retain those already at the stage by initiating more scientific programmes.
Keywords: Sweetpotato, Actors, interest, decision and position

INTRODUCTION

Sweetpotato (*Ipomea batata*) is grown in almost every part of theNigeria, the highest producer of sweetpotato in West Africa, 2nd in Africa and 3rd in the world (FAO, 2017). Sweetpotato is propagated through its vegetative part called seed (vine). Sweetpotato seed or planting materials are cuttings from vines; which can be planted and are genetically identical to the mother plant (Stathers *et al*., 2018). Sweetpotato seed production is majorly carried out by persons or group of people in the value chain described as stakeholders or actors. A stakeholder is an agency, organisation, group or individual who has an (direct or indirect) interest in the

project / programme, or who affects or is affected positively or negatively by the implementation and outcome of it (Gordijn, 2011).

The stakeholders regulate the functioning of the value chain from policy implementation down to the farmers, either in informal or formal seed system. A seed system is the network of stakeholders involved in producing and planting the seed (including vegetative seed) of a particular crop in a certain area. The seed system is associated with certain agricultural and seed-production technologies, and with the genetic resources needed to produce the seed (Root Tuber and Banana RTB, 2016). The formal or informal system depends on the extent of regulation and integration with the public and commercial seed sector. Formal seed sector regulation varies by crop and context, but by definition includes some form of an inspection process known as "certification" and control over crop varieties, to ensure that available seed is healthy and of a recognized variety. Informal seed systems are less regulated. A seed system is the network of stakeholders involved in producing and planting the seed of a particular crop in a certain area. The seed system is associated with certain agricultural and seed-production technologies, and with the genetic resources needed to produce the seed (RTB, *ibid*).

In Nigeria, sweetpotato seed system is operating informally and in order to formalize the system, stakeholder analysis is essential to identify the major/key players that can facilitate the process or affected by an intervention. Stakeholder analysis is a range of techniques for mapping and understanding the power, positions and perspectives of the players (stakeholders) who have an interest in, and/or are likely to be affected by a particular policy reform (Lehmann and Matwa, 2008). Stakeholder analysis can be of use in understanding the prospects for reform, and the ways in which particular system might influence the outcome of the policy process. The analysis is very useful in understanding the need and interest, prospects of policy change but, as all stakeholder analyses are focused on particular policy reforms, they provide information that is useful only for understanding that particular reform. This is a tool which provides a highly specific mapping of political context.

RTB (2016) identified various groups of stakeholders (e.g., actors, organizations involved in a given activity) that are involved in a seed system or intervention as policymakers (seed quarantine, seed certification, and research and extension), donors (private and multilateral e.g., UN agencies). Others are bilateral (e.g., the United States Agency for International Development), national governments, agricultural researchers (scientists at national and international centres, plant breeders) and for seed management (e.g., storage, planting densities), social scientists (such as anthropologists, economists, and gender), traders (the private seed sector includes companies), farmer organizations and specialized seed producers, extension, private food sector processors, and seed users. Seed users are the most important stakeholders, because they are the farmers who buy or trade for the seed, accept or reject the new crop varieties, and still manage the bulk of crop seed on their own farms.

Identifying and examining the stakeholders in sweetpotato seed system with respect to their position, stake and interest will unveil a pattern of interaction to make a start with understanding the needs and interest of the key stakeholders. The broad objective of this study therefore is to analyse the sweetpotato seed stakeholders in Nigeria with the following specific objectives; identify all actors (individuals, groups or institutions) who might be affected by an intervention or can affect its outcome, map the sweetpotato seed stakeholders identified in the system and their roles; and identify their position and involvement in decision making in seed system.

Acronyms	Meaning
ADP	Agricultural Development Programme
ARMTI	Agricultural and Rural Management Training Institute
BDS	Business Development Services
CRS	Catholic Relief Services
DVMs	Decentralized Vine Multipliers
FAO	Food and Agricultural Organization
FGD	Focus Group Discussion
IIM	Importance and Influence Matrix
NASC	National Agricultural Seed Council
NGO	Non-Governmental Organization
NRCRI	National Root Crops Research Institute
RTB	Root, Tuber and Bananas
ToTs	Train of Trainees
VRC	Varietal Release Council

METHODOLOGY

The study was carried out in Nigeria with a combination of secondary and primary data used for the study. Secondary data such as books, documented minutes of meetings and conferences were used to identify the stakeholder in sweetpotato system and their roles in the chain. Structured questionnaire was administered to the specified sweetpotato stakeholders across the states (including monkey survey).

Quotas and convenience sampling procedure was used to collect cross-sectional data across the states following multi-stage method. Three stakeholders were sampled across each state based on their interest in sweetpotato seed system irrespective of their profession. The selection includes: One BDS staff per state was interviewed at the sweetpotato meeting and training held in 2019 at ARMTI, Ilorin state. One government (official) stakeholder was also sampled in each state based on their contribution in sweetpotato production using monkey survey and some at stakeholder meeting). And finally, one farmer in each state were purposively selected during the sweetpotato farmers meeting held at Abia State in 2019 giving a total of 102 respondents for detailed study.

Descriptive statistics (graphs, charts, and mean), IIM (Importance and Influence Matrix) model and Likert rating scale analyses were used to describe the stakeholder, map the stakeholders and level of involvement respectively.

DFID- IIM model following Gordign (2011) made use of four columns matrix to describe the position of the stakeholder as shown in Figure 1. A stakeholder belongs to either of the columns: Group A (those that make the "difference", high importance and influence and with policy to involve them), Group B (called the "Victims", are those with high importance and low influence, with policy to protect them), Group C (the "Non-Responsive", those with low importance and high influence, with policy to handle with care and Group D (the "bystanders" low importance and influence with policy to ignore them) (Fig. 1).

This study made use of 5-point Likert rating scale to identify the group each stakeholder belongs to in the matrix, using very high VH (5), high H (4), Medium M (3) low L (2) and very low VL (1). Respondents with mean score of 3.0 and above implied they were in agreement that the stakeholders are important/influential, while respondents with mean score of less than 3.0 were not in agreement. To determine the mean likert level = Xs = ΣX. Xs of each item was computed by multiplying the frequency of each response pattern with its appropriate nominal value and dividing the sum with the number of respondents to the items. This is summarized thus:

$$Xs = \Sigma fn/N \quad (1)$$

Where,
Xs =mean score
Σ = summation
f= frequency
n = Likert nominal value
N= number of the respondents
Xs=1+2+3+4+5/5 = 15/5 =3

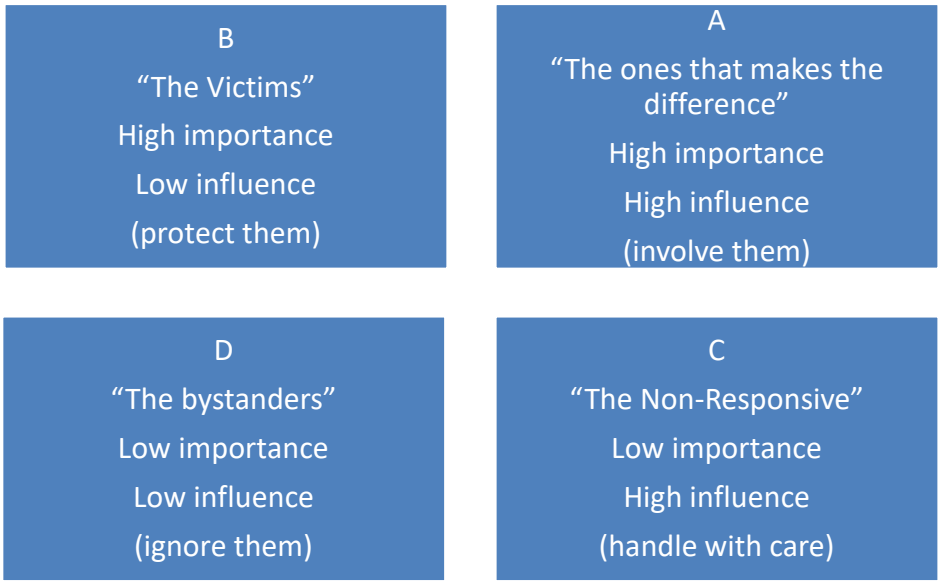


Figure 1: Model Specification for DFID-IIM Matrix

RESULTS AND DISCUSSION

Description of respondents

The result in Figure 2 showed the distribution of the respondents according to Profession in relation to sweetpotato seed system. The results showed that 22.55% of the respondents were from the Agricultural Development Programmes (ADPs), 19.61% farmers, and 14.71% researchers and DVMs each. Others were about 8.82% from the University (agri-related field lecturers), NGOs (5.88%), Breeders (4.9%), NASC (3.92%), financial agencies (2.94%) and donor agencies and VRC (0.98% each).

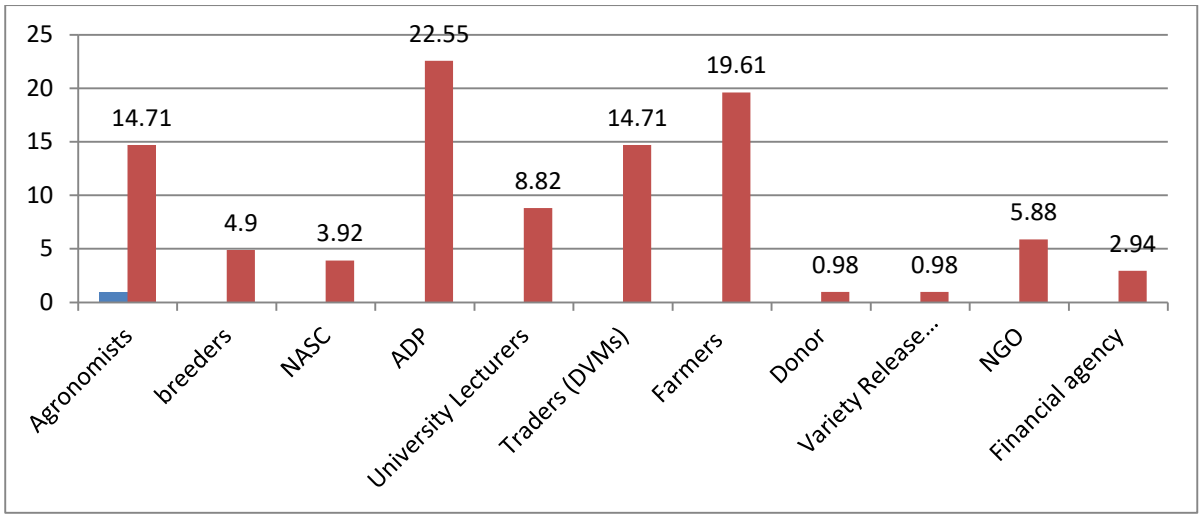


Figure 2: Percentage distribution of respondents according to Profession

Roles of Sweetpotato Seed Stakeholders

Results in Table 1 showed the identified stakeholders in the sweetpotato seed system and their roles in Nigeria.

Table 1: Stakeholders' Roles in Sweetpotato Seed System

Stakeholders	Roles
Government	Provides enabling environment
Researchers (Agronomists, Breeders, University Lecturers)	Generating new varieties and maintain purity of seeds from the research station and evaluating them under farmer conditions. Building the capacity of NGOs/government staff /farmer representatives as ToTs(Trainer of Trainees) on quality vine multiplication.
DVMs (Decentralized Vine Multipliers)	Undertake the recommended practices for quality vine conservation, multiplication and production.
NGOs (Catholic Relief Services- CRS, Kolping Society of Nig.)	Multiplication of seeds and seed business. Responsible for building the capacity of farmers in managing multiplication at the decentralised level.
Root producers	Buy seeds from the seed multipliers for root production.
National Agricultural Seed Council (NASC)	Developing national seed standards, inspection procedures and certification in consultation with key seed system stakeholders.
Variety Release Committee	Ensure new variety of seeds are released
Private sectors (e.g. Seed companies, tissue culture laboratories and seed entrepreneurs)	Invest in the seed system, complementing public sector investment.
Financial agencies (eg. World Bank, International donors, Banks)	Financial service providers.
Farmers' seed cooperatives	Strengthen the collective action and voice of individual vine multipliers; provide capacity building and strong links between the regulatory body and seed producer associations.
BDS (Business Development Services eg.ADP, NRCRI)	Soft skill providers and extension services.

Source: Stathers*et al.,* (2018) and Field survey, (2019)

Importance of Sweetpotato Seed Stakeholders (SSS) in Nigeria

The results on Table 2 show the Likert rating scale analyses of level of importance of stakeholders in sweetpotato seed system in Nigeria. The result showed that the average score of actors-breeders (3.75), agronomists (3.77), NGOs (3.33), root producers (3.52), NASC (3.44), VRC (3.46), farmers' cooperative (3.33), BDS (3.92) and donor agencies (3.44) were greater than 3.00. This implies that they were interested (important stakeholders) stakes in sweetpotato seed system in Nigeria. This also signifies how big their stakes were in the sweetpotato seed system. RTB (2016) noted the importance of these stakeholders in seed intervention and production. The highest mean (3.92) from BDS might be because of the position of National Root Crops Research Institute (NRCRI) that has the mandate for sweetpotato research in Nigeria and also their recent activities in execution of national and international projects on quality sweetpotato seed production. The second (3.77) and third (3.75), Agronomists and Breeders respectively, were next important probably because they were also products and staff of BDS followed by the root producers (3.52). The root producers are also identified important stakeholders being that the farmers are those who buy or trade the seed, accept or reject the new crop varieties, and still manage the bulk of crop seed on their own farms, following RTB (*ibid*).

Among the least scores were: Government (2.42), University (2.23), Private Sectors (2.35), and Financial Agencies (1.71) with less than 3.00, indicating that these stakeholders were least important in the sweetpotato seed system. This implied that these stakeholders had no or little interest and stake in sweetpotato seed system. This might be because of limited or no funds from the financial agencies to run the activities in sweetpotato seed system. University and private sectors were not interested as indicated in the result probably due to no support from the government. The low level of interest found by the government indicates unfavourable environment and policies which will impend the activities in the seed system and other stakes.

Table 2: Likert Scale Analyses of Importance of stakeholders in Sweetpotato Seed System (How interested and How big is their stake in it?)

	VH	H	M	L	VL	Total	Mean
Government	7(35)	9(36)	42(126)	6(12)	38(38)	247	2.42
Breeders	40(200)	24(96)	19(57)	10(20)	9(9)	382	3.75
Agronomists	39(195)	23(92)	27(81)	4(8)	9(9)	385	3.77
University Lecturers	6(30)	19(76)	11(33)	21(42)	45(45)	226	2.23
NGO	34(170)	23(92)	9(27)	15(30)	21(21)	340	3.33
Root producers	34(170)	13(52)	36(108)	10(20)	9(9)	359	3.52
NASC	29(145)	28(112)	16(48)	17(34)	12(12)	351	3.44
VRC	19(95)	47(188)	17(51)	0(0)	19(19)	353	3.46
Private Sectors	13(65)	17(68)	13(39)	9(18)	50(20)	240	2.35
Financial Agencies	4(20)	10(40)	10(30)	27(34)	51(54)	175	1.71
Farmers cooperatives	31(155)	20(80)	15(45)	24(48)	12(12)	340	3.33
BDS	52(260)	13(52)	21(63)	9(18)	7(7)	400	3.92
Donor Agencies	51(255)	10(40)	1(3)	22(44)	18(9)	351	3.44

Source: Field survey, 2019. Figures in parentheses are Likert frequencies

Influence of Sweetpotato Seed Stakeholders in Nigeria

The results on Table 3 showed the Likert scale analyses of level of influence of stakeholders in the sweetpotato seed system. The result showed that out of 13 stakeholders analysed, only 5 had a mean score of 3.00 and above indicating poor influence of stakeholders in decision making process in the sweetpotato seed system. The result of situation analysis showed that Government (3.26), Breeders (3.14), Agronomist (3.18), VRC (3.00) and Donor Agencies (3.63)

had a mean score of or greater than 3.00 indicating their position in influenced decisions and initiatives in sweetpotato seed system. The high level of influence of government, researchers and VRC indicated that most decisions made in the sweetpotato seed systems are been done by these three stakeholders.

Other stakeholders with mean score less than 3.00 identified in the analysis were the university (1.93), NGO (2.67), root producers (2.51), NASC (2.05), private sector (2.14), financial agencies (1.72), farmer's cooperative (2.60), and BDS (2.98). This implies that these stakeholders had little or no influence in the sweetpotato seed system and therefore their decision does not matter in the whole process.

Table 3: Likert Rating Scale Analyses of Influence of Stakeholders in the Sweetpotato Seed System

Stakeholders	VH	H	M	L	VL	TOTAL	Mean
Government	35(175)	14(56)	17(51)	15(30)	21(21)	333	3.26
Breeder	29(145)	13(52)	19(57)	25(50)	16(16)	320	3.14
Agronomy	28(140)	14(56)	25(75)	19(38)	16(16)	325	3.18
University Lecturers	5(25)	7(28)	14(42)	26(52)	50(50)	197	1.93
NGO	12(60)	21(84)	19(57)	22(44)	28(28)	273	2.67
Root producers	10(50)	20(80)	22(66)	10(20)	40(40)	256	2.51
NASC	5(25)	10(40)	23(69)	12(24)	52(52)	210	2.05
VRC	25(125)	19(76)	10(30)	27(54)	21(21)	306	3.00
Private Sector	10(50)	4(16)	22(66)	20(40)	46(46)	218	2.14
Financial Agency (bank)	3(15)	10(40)	6(18)	30(60)	53(43)	176	1.72
Farmers cooperative	9(45)	21(84)	20(60)	25(50)	27(27)	266	2.60
BDS (eg. NRCRI, ADP)	28(140)	6(24)	23(69)	26(52)	19(19)	304	2.98
Donor Agencies	48(240)	13(52)	9(27)	19(38)	13(13)	370	3.63

Source: Field survey, 2019. Figures in parentheses are Likert frequencies

Distribution of level of importance and influence among Sweetpotato Seed Stakeholders

The results in Figure 3 showed the compared mean distribution of stakeholders according to their importance and influence in sweetpotato seed system (Tables 1 and 2). The results showed that Breeders, Agronomists, BDS and Donor Agencies had a mean of 3.0 and above for both level of importance and influence. For importance, the government had a mean greater than 3.00 indicating it is an important stakeholder and for influence less than 3.00 indicating no influence. The result showed that NGO, root producers, and cooperatives had mean score greater than 3.00 for importance but less than 3.00 for influence while University, private sector and financial agencies had mean score less than 3.0 for both importance and influence.

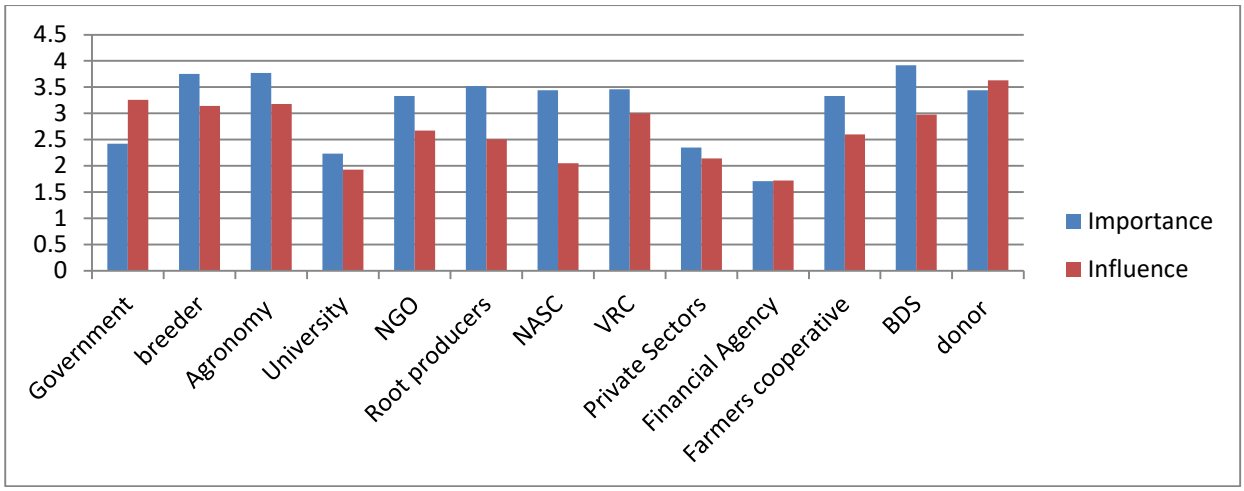


Figure 3: Distribution of Level of Importance and Influence among Stakeholders in the Sweetpotato Seed System

Position of the stakeholder in the Matrix

The results in Figure 4 showed the position of the stakeholders in the matrix. The results show that NGOs, root producers, NASC, farmer's cooperatives and BDS had high importance but low influence and therefore belong to the upper left column (group B) of the DFID-II matrix known as the "Victims". This group are called the "victims" because they suffer or are being short-changed in the system. The second category of stakeholders (bottom left in the column of the matrix-group D) as university, Private sectors and financial agency and described as "the bystanders". This implies that these stakeholders have no concern or business with the sweetpotato seed system.

Government as shown within the downright column of the matrix (group C) in the third category is referred to as the "non-responsive". This is because of their intended nonchalant attitude to the system since they are highly influential yet not important. Finally, the result in the matrix showed that the researchers, VRC and donor agencies indicated at the upper right column of the matrix -group A, were the stakeholder that can make a difference in the sweetpotato seed system as indicated in the upper right column of the matrix (group A).

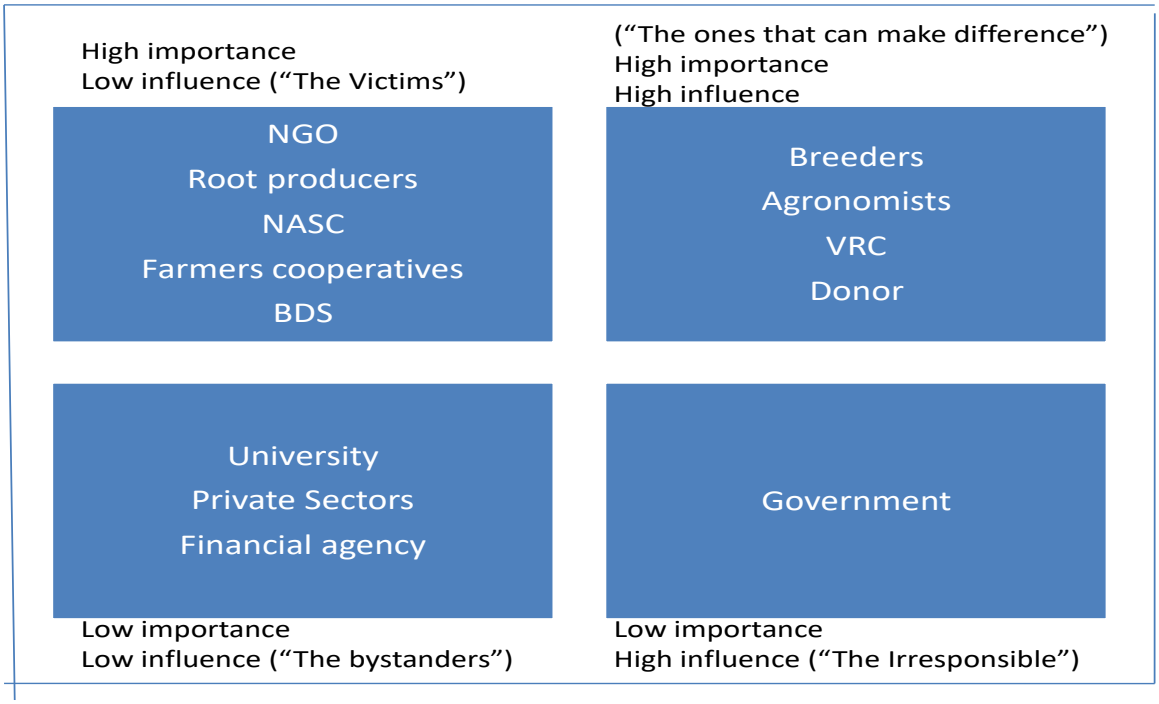


Figure 4: Position of Stakeholders in Sweetpotato Seed system in Nigeria

CONCLUSION

The situation analyses carried out showed that the actors- NGO, root producers, NASC, farmer's cooperatives and BDS had high importance with low influence, while the university, Private sectors and financial agencies had both low level of importance and influence. The researchers, VRC and donor agencies had both high level of importance and influence while government had low importance with high influence. The results indicate that the position of each stakeholder determined the effectiveness of the role they play in the system. Considering the importance and role of each stakeholder, efforts should be made to involve all actors towards to the upper right column of the matrix- "the involvement stage". The study therefore called for policies aimed at:

1. Government involvement with emphasis on providing the enabling environment and possibly funds, effort should be made by relevant authorities to bring the influence of government to bear in the system through possibly lobbing and advocacy visits.
2. Effort should be made to develop the interest of the bystanders, although the rule of the thumb suggests we should ignore. The Universities should be provided with the necessarily infrastructure that will enable them to participate in the seed system and curriculum also reflect the aspect of seed. Bank of Agriculture should develop a special loan package or credit facilities for sweetpotato seed investors, and insurance agencies should put in policies to protect seed investors. Public Private Participation (PPP) should be re-emphasised in sweetpotato seed system.
3. Policies should be made to protect the "victims". The sweetpotato seed NGOs, root producers and farmers' cooperative should be protected by supporting and empowering them to ensure that their opinion counts. The NASC and BDS should be protected by involving them in the decision making meetings of the seed system.
4. The researchers, VRC and donor agencies were at the involvement stage. Measures should be put in place to retain them in the position. This can be done by initiating

more innovative and scientific topics/projects and gaps to remain relevant in the position. This may be in form of release of new varieties and agronomic innovations etc. that will improve the livelihood of the farmers which is the target of most donor agencies.

REFERENCES

FAOSTAT (2017). Food and Agriculture Organization Statistical Data Base result, Retrieved June, 2018 from FAO 2017

Gordign, F (2011). Stakeholder Analysis in Market Access for Sustainable Development. A handout for Centre for Development Innovation, Wageningen, UR. 13pp

Lehmann U and Matwa P (2008) 'Exploring the concept of power in the implementation of South Africa's new community health worker policies: A case study from a rural sub-district,' EQUINET Discussion Paper Series 64. EQUINET, CHP: Harare.

RTB (CGIAR Research Program on Roots, Tubers and Bananas). 2016. Multi-stakeholder framework for intervening in RTB seed systems. Lima: RTB Working Paper No. 2016-1. ISSN 2309-6586. 13pp.

Stathers, T., Low, J., Mwanga, R., Carey, T., McEwan, M., David., S., Gibson, R., Namanda, S., McEwan, M., Malinga, J., Ackatia-Armah, R., Benjamin, M., Katcher, H., Blakenship, J., Andrade, M., Agili, S., Njoku, J., Sindi, K., Mulongo, G., Tumwegamire, S., Njoku, A., Abidin, E., Mbabu, A., Mkumbira, J., Ogero, K., Rajendran, S., Okello, J., Bechoff, A., Ndyetabula, D., Grant, F., Maru, J., Munyua, H., Mudege, N., Muzhingi, T. (2018). Everything You Ever Wanted to Know About Sweetpotato: Reaching Agents of Change ToT Manual. International Potato Center, Lima, Perú. https://hdl.handle.net/10568/98337 12 vols., 664 pp.