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VALUATION OF AGRICULTURAL PROPERTIES: EMPIRICAL EVIDENCE FROM OXFARMS MINNA, NIGERIA

Ottaniyi, V., Adama, U., Adoga, O., Ojetunde, I., & Shittu, A.
[illegible]; jonathan.adama@futminna.edu.ng; i.ojetunde@futminna.edu.ng;

Corresponding email: tunji.avo@futminna.edu.ng

Abstract:

This study aims to examine the anecdote that the Valuation Standards template for valuing specialized property, suffices for valuing a Non-Performing Agricultural Entity, NPAE. Data from a purposive case study of OxFarms and interviews with 7 practising Estate Surveying and Valuation firms and a questionnares-survey of 29 commercial Farms in Minna environs were applied using qualitative theme analysis. The main objectives are to analyse existing valuation standards template for specialized properties, and benchmarking of NPAEs, with reference to OxFarms case study. A collective grade point index, CGPI, was developed to assess and classify Farms' operational performances. The study found out and concluded that the general standards for valuing specialized property do not fully recognize the operational performance state of agricultural entities. It was recommended that the appplication of an appropriate classification model to assess the operational performance status of an identified specialized property and combined techniques of a mix of multiple bases and methods matching the purpose of valuation would provide a pathway to best practices in valuing NPAEs. By implication, this approach would potentially move valuation practice closer to the reasonable level of accuracy expected by users of valuation services.

Keywords: Agricultural Entity, Performance, Specialized Properties, Valuation Standards.

1.0 INTRODUCTION

Valuing any nonperforming enterprise for sale could be challenging, primarily because the expectations gap could be so wide between the two respective parties disposing and acquiring. Thus, value and valuation become very critical to the decisions of both parties, and are dependent on entrenched constraints and circumstances. With particular reference to agricultural properties Hayward (2009) acknowledged the changing and growing nature of the challenges entailed and the fact that specialized agricultural valuation was not well documented. In recognition of the specialist nature of agricultural valuation, the Central Association of Agricultural Valuers, CAAV (2019), is set up in England, Scotland, Wales and Northern Ireland to regulate the practice notwithstanding the roles of the Royal Institution of Chartered Surveyors, RICS and International Valuations Standards Council, IVSC in the UK. A couple of literature have attempted to lay out road maps for agricultural valuation. Onyejiaka & Emoh (2014) in Nigeria and Kartomo & Aronsohn (2019) in a perspective paper for IVSC Tangible Asset and Business Valuation Boards are some examples. Also, Josiah (2016) alluded to a type of apathy by valuation surveyors in favour of urban as against rural valuation practice, in Tanzania, also apparent in Nigeria. Furthermore, Udoekanem (2012), demonstrated the use of contemporary approaches for buy-out valuations; while the author's research was based on leasehold real estate, the OxFarms case is slightly different because it is a real estate cum

business interest and more importantly in a state of economic distress. None of these references, in spite of a long history of farm appraisal and valuation (Murray, 1969) focuses specifically on valuing non-performing or distressed Agricultural entity undergoing a buy-out, and so, this study seeks to lead the way in this regard.

Conceived and set up in 2013 as a multipurpose agro-allied business with requisite equipment and ancillary facilities, OxFarms in 6 years of its existence failed to achieve any major activities for which it was designed, thus it fell short of a critical element in the definition of Specialized Property by IVSC, RICS, European Valuation Standards, EVS and Nigerian Practice Standards, NPS. In the case study, substantial real estate of over 7.0 ha and buildings, structures and ancillary facilities were acquired and developed to support a range of potential farm operations including training and agro-allied consultancy, crop cultivation, fish, poultry and feeds production, yoghurts production, meat processing, cattle breeding, fattening and sales. Thus, it is a mystery that a Farm estate of this nature and magnitude has failed thus far to achieve fulfilment: this calls for a cursory research into the raison d'être behind the non-performance as a prelude to understanding the optimal approach and best practice for valuing the entity.

From anecdotal observations, the main constraints were economic, technical and cultural in nature. Having expended huge capitals hitherto, the operators were apparently unwilling to commit further funds needed to hire qualified personnel to run the Farm professionally, as expected of such a specialized outfit where specific skills are absolutely required. As Hayward (2009) argued further, Farm enterprises are very demanding of expertise to manage. It is no surprise that the Farm remains underperforming in spite of the vast internal prospects and opportunities offered by the entity and the external market potentials for its products from within and outside Minna. Consequently, besides the risk of assets redundancy, the risks of depreciation and obsolescence are great. An underlying case of overinvestment could also be reasonably suggested by analysing rational and empirical facts in OxFarms.

The farm, which, for want of an appropriate name is referred to as OxFarm Estate; is contiguous with a Higher Educational Institution offering academic training and courses at the highest levels. Thus a special spatial relationship which may impact valuation process is prima facie established. This is buttressed by an apparent encroachment detected upon valuation inspection. This implies that the basis of value has to be chosen with greater vigilance that recognizes and respects the special relationship. A brief survey of Minna revealed a few, but growing number of, modern large farm estates that seem to be undergoing a state of economic distress the consequence of which led to the phenomenon of endemic under-performing or non-performing. The purpose of valuation is the critical starting point in any valuation exercise including agricultural assets; Onyejiaka & Emoh (2014) and Kartomo & Aronsohn (2019) are unanimous on this. The latter identify 5 purposes and the former 6; it is noteworthy that asset disposal and acquisition are listed as first. The logical activity sequence in valuation process is to establish the purpose of valuation as a prelude to adopting the appropriate basis or bases of valuation; both will provide the valuer with a clue as to the appropriate method as depicted by Fig 1.

The understanding that a general template for valuing a specialized property, would suffice for agricultural assets is open to argument. Specialized properties are diverse (Appraisal Institute,

2013) and not broad as classifications to symbolize agricultural properties which as well have their own intra-class diversities, thus, a gap still exists as to the best practices in valuing them particularly if found in under-performing states. The study aims to expose some vital underlying issues that merit due attention in the valuation of a distressed agricultural property when a buy-out is contemplated, where the possibilities of overvaluation or undervaluation exist. To achieve this aim the study examined the general template for valuing specialized properties and developed an index for assessing and classifying the performance status of agricultural entities and applied same on 29 commercial Farms including OxFarms.

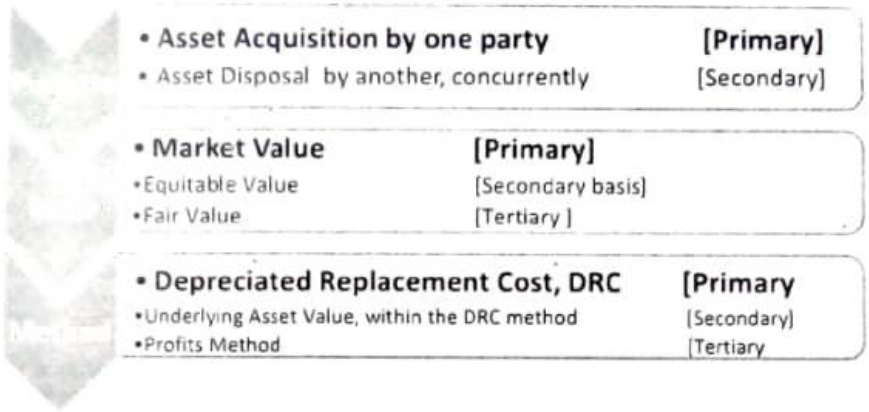

Fig. 1: Valuation Activity Sequence: Purpose, Basis and Method.
Source: Authors, 2019

Theme approach was complementarily adopted in that it allows crucial facts that impact value to be identified, as well as other underlying issues of interest that might not be so obvious without special attention, using the identified themes to address the research and interpret the data sensibly. Maguire and Delahunt (2017) affirmed the usefulness of thematic analysis for qualitative data. Defined as the process of identifying patterns and themes within qualitative data, theme analysis has advantages of not being tied to any particular epistemological or theoretical perspective, thus making it a flexible method of research where qualitative data are predominant (Clarke and Braun, 2013 in Maguire and Delahunt, 2017).

Estate Surveyors and Valuers, ESVs are data-rich sources for the property market information and constitute a primary source (Olatunji, 2010). Direct knowledge and experience of the researchers coupled with limited interview survey of some non-performing commercial agro-allied properties in Minna is also an asset in data mining for this study. The report of OxFarms valuation case study by Olatunji et al., (2019) is the main secondary data source and considered as good as a primary data source with relevant literary materials which are characteristically sparse. Agriculture entities under valuations are the population of the study. However, the population frame is virtually indeterminate probably because valuation is largely a confidential matter: owing to privity of contracted briefs, the value and valuation are hardly disclosed. In rare cases where it was disclosed that a valuation was carried out, the valuation reports could not be sighted. This explains the adoption of a purposive selection of OxFarms valuation case study. It has been argued by Ibanez and Daly (2007) that a fewer case with rich data can compensate for large samples with sparse information. Ibanez et al., (2007) found in http://www.etcproceedings.org/paper/optimality argued that by extracting a richer data

cannot from each observation in a small sample (a case study), optimal results equivalent to that obtainable from a large sample can be achieved. Narratives, tables, charts are utilized to present some data and information with clarity.

A highlight of the basic contents of the case study valuation was made in Olatunji et al., (2019), wherein the techniques, approach and bases of valuation were detailed. These include the process of crunching the figures to obtain the opinion of value for acquisition of the farm estate. This present study focuses on the minimum standards set by local and global setters as well as ideas of authors and literature with particular emphasis on agricultural properties. Then the application of the standards in the subject empirical case was demonstrated.

2.0 LITERATURE REVIEW

2.1 General template for valuing specialized properties

The term "specialized property" can be nebulous unless defined in the valuation terms set by the global valuation standard setters. Thus defined, a specialized property is one that is rarely, if ever, sold in the market, except by way of sale of the business or entity of which it is a part, due to the uniqueness arising from its specialized nature and design, configuration, size, location or otherwise (RICS, 2014; NPS, 2018). This definition is however silent about the operational performance status of the property so defined. A whole range of value attributes of a specialized property could alter when the core functions become dormant, and only a distinct class would sufficiently address them. IVSC (2017) further mentions "specialised or special-use" assets in IVS 300 Section 70 and describes how to proceed with their valuation in paragraph 70.1.

2.2 Valuation Standards

The global standards, (RICS, 2014; EVS, 2016; IVS, 2017) as well as local standards, (NPS, 2018) are unanimous that specialized properties should be valued by the depreciated replacement cost concept, DRC on existing use basis, EUV. Where evidence suggests otherwise, recourse should be made to alternative approaches. Apparently, RICS offers the most comprehensive view of SP as regards its definition, basis and method of valuation. While adopting the aforestated definition in its glossary, RICS (2014, 2017) states that an SP should be valued using the DRC approach referred to in FRS 15 as a basis. RICS (2014) offers another avenue to decide whether or not a property is a SP: the possibility or otherwise of providing only an Existing Use Value, EUV; Valuation could be done by reference to its trading potentials, (Profits method) or by logical extrapolation of any available market evidence. Though not so stated explicitly, projections ought to be based on current operational capacity. A 'no-EUV' scenario may arise either because the property is not in use at all (non-performing), or not in use for the purpose for which it is designed and constructed. The latter case is construed as alternative use implying an Alternate Use Value, AUV. The RICS further recommended the DRC method for valuing SPs with evidence of adequate potential profitability.

According to IVS 300 asset standard, the cost approach will be applied in three steps beginning with an estimate of the cost to a market participant of replacing the subject asset by reference to the lower of either the reproduction or replacement cost. The replacement cost is the cost of obtaining an alternative asset of equivalent utility, either a modern equivalent providing the same functionality or the cost of reproducing an exact replica of the asset; the details of the application are expressed in IVS 105 paragraph 70.1 to 70.14. In addition, special consideration for Real Property interest are described in IVS 300 section80. In a general overview, TEGoVA (2016) under its sub-section 6.4.1 affirms that the cost approach is the most commonly used to

estimate the replacement value of SPs and other property that seldom, if ever sold or let in the market. The Nigerian valuation standards, NPS (2018), accept the positions of IVSC and RICS discussed above.

It is quite obvious from the foregoing discourse that, in defining and recommending valuation bases and methods for a SP the existing main Standards do not clearly recognise the importance of the current operational performance status in valuing an entity slated for valuation. This means an SP is assumed to be operationally working as designed and constructed, with no clear statements that could be applied to a NPAE. Reasons for not recognizing this dimension of SPs in existing standards are not known. However one could take the risk to attribute non-recognition perhaps to the fact that only scattered references are given to SPs in all valuation Standards literature. None has treated SPs as a distinct class of assets. For example IVSC2019 Assets Standards did not offer a distinct class of assets to SP. A snapshot into the Assets Standards of RICS VPGA 1-13 and IVS 101-105 adopted by NPS (2018) shows that all the major international valuation standards setters are accountable for this omission.

A way forward is to sub-classify SPs into less heterogeneous categories based for example on their performance statuses: producing SP (PSP) or non-producing SP (NPSP), as illustrated in Fig. 2. While PSPs are in active production state and operational performance with active men, money and machine, NPSPs are not.

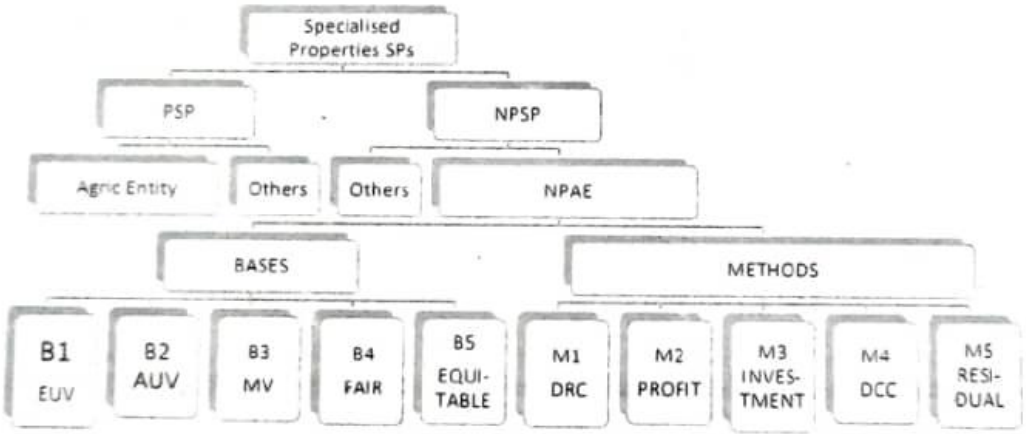

Fig2: Existing Bases and Methods of Valuing Non-Performing Agricultural Entities, NPAEs

Key: EUV= Existing use value; AUV= alternate use value; MV= market value; DRC= depreciated replacement Cost; DCC = direct capital comparison; PSP= performing specialised property; NPSP= non-performing specialised property; NPAE= nonperforming agricultural entity.

Source: Extracted and modified from Valuation Standards

For the purpose of classification, a producing SP could be defined as one that is actively continually performing to a significant proportion of its designed capacity. Conversely, a non-producing SP lacks all the qualities of continuity, performance to capacity as defined. Thus defined, the appropriate basis and method of valuation could be explicitly chosen: Income or profit method for a Producing SP, otherwise, the DRC method. Appropriate classification therefore, should be the first step in the valuation process of an identified SP; then, the valuation would proceed as prescribed by the valuation standards being applied. From another perspective, the use of mass appraisal technique was suggested by Walt (2016), with particular

emphasis on all asset components including biological assets. Olatunji et al (2017) demonstrated the application of applied principles and ICT tools in valuing commercial properties. RICS (2016) professional guidance for UK on Farm Stocktaking. Valuation is inapplicable here because it excludes fixed assets and DRC method. Only biological assets, stock and such items, which are not present in OXFARMS case, are covered. All these are different dimensions possible in valuing SPs beyond the present scope.

All the global, regional and local literature examined in this study apparently did not specifically address non-performance as classification criteria for specialised properties for the purpose of valuation. For example, Kartomo & Aronsohn (2019) focused on the adequacy of IVS for valuing agricultural and biological assets, and concluded that the standards are adequate but remain silent on performance status. The CAAV saw reasons to regulate the practice of agricultural valuation generally. On the part of Josiah (2016), rural valuation practice, including farm valuation is not popular with valuers in the east African nation of Tanzania; hence no motivation for agricultural valuations which are now being conducted by non-valuers. For Onyejiaka & Emoh (2014), the main issue is the content of agricultural valuation reports. With the exception of Boulder County, Colorado, USA, which specifies statutory criteria, all literature and Standard setters, ignore the need to offer specific guidelines for valuing non-performing entities including NPAEs. IVS, NPS and EVS remain limited to specialized properties as a broad class of assets. From the RICS (2017) perspective, the recognition of Special Purpose properties is a tacit recognition that the use and performance status are very important in the valuation of specialised properties. The gap in knowledge therefore exists to justify the development of a model for valuing NPAEs as specialised properties.

2.3 Characterization of Ox-Farms as a specialized property, SP

A superficial look into valuation practice tends to suggest that an entity like OxFarms is viewed as a specialized property, and may be valued as such without any further considerations. However, a closer observation in the case study revealed that OxFarms fulfills only parts of the attributes of a specialized property defined by RICS (2014) and adopted by NPS (2018). Table 1 is an attempt to depict this observation more clearly.

Table 1. Characterisation of OxFarms as a Specialised Property

Specification	1 Design/ Construction	2 Configuration/arrangement	3 Size	4 Location	5 Performance	6 Others
Status as SP	√	√	√	√	×	Unclear

Source: Case Study, 2019

Key: √ = Fully met √= Partially met × = Not met

It is noteworthy that the EUV does not connote performance status as envisaged within the context of this study. Thus, failing to meet up substantially with these prescriptions, it became inevitable to apply appropriate modifications and adopt multiple bases and approaches to value OxFarms. Although IVS 105 does not impose the adoption of alternative approaches in valuation practice, special constraints and circumstances in the process of the subject exercise demanded so, principally for value-crosschecking purposes.

3.0 RESULTS

3.1 Benchmarking the Performance Statuses of Agricultural Entities through a Capacity Survey

There are a number of ways to measure the performance status of a business-oriented entity. One method adopted by Academy Treasurers (2019) is the annual financial reports like profit and loss, assets and liability. Viewing its present state of sheer inertia, OxFarms can be anecdotally described as non-performing. However, a more appropriate method is one that can be used to assess performance relative to, and in comparison, with other businesses of its kind. Most plant and equipment have designed capacities; agricultural and non-agricultural businesses alike have maximum production capacities which can be gauged over a specific period, usually one year. For example in Colorado (US), agricultural properties are those so classified by Statute (CRS 39-1-102) for valuation purposes and productive capacity is one of the two recognized performance measurement criteria (www.bouldercounty.org). Using this method, a schedule of capacity utilization table was produced for 29 Farms studied in Minna, including OxFarms (Table 2)

Table 2: Capacity utilization survey of 29 selected agriculture and agro-allied farms in Minna environs

	Capacities of Production per annum, (Subject to max. of 3 Leading Products)									
	PRODUCT 1			PRODUCT 2			PRODUCT 3			
FARMS S/N	Max Installed	Present Output	%	Max Installed	Present Output	%	Max Installed	Present Output	%	Mean % 1, 2, & 3
1	3000	2680	89.3	24000		0.00	-			44.7
2	45	35	77.8	3570	980	27.5	270	38	14.1	39.8
3	120000	35000	29.2	200	89	44.5	-			36.9
4	345	224	64.9	4500	540	12.0	-			38.0
5	84	68	81.0	54000	9000	16.7	-			49.0
6	253	128	50.6	30000	2000	6.7	4500	1580	35.1	30.8
7	6700	4300	64.2	3500	2800	80.0	-			72.1
8	90200	71000	78.7	-			-			78.7
9***	220	39	17.7	125000		0.00	220000		0.00	6.0***
10	2700	1280	47.4	45000	5041	11.2	280		0.00	19.5
11	32500	22000	67.7	250		0.00	-			34.0
12*	75300	61900	82.2	-			-			82.0*
13	7580	3000	39.6	3800		0.0	410	145	35.4	25.0
14	100000	28000	28.0	-			-			28.0
15**	54000	30000	56.0	3025	300	9.9	-			33.0**
16	7800	5500	70.5	-			-			70.5
17	450	380	0.84	20000		0.00	7800		0.00	28.0
18	4500	2800	62.0	-			-			62.0
19	36000	9200	26.0	-			-			26.0
20	40	25	63.0	4500	2500	5.6	375	204	54.4	41.0
21	250000	160000	64.0	800		0.00	-			32.0
22	35000	15500	44.3	380	35	9.2	360		0.00	17.8
23	2530	1200	47.0	7080	700	9.9	-			29.0
24	45000	29000	64.0	-			-			64.0
25	8050	200	2.5	3500	870	24.9	500	210	42.0	23.1
26	2500	1540	61.6	78000	34000	44.0	-			52.8
27	65000	20500	31.5	-			-			31.5
28	5280	4300	81.0	350		0.00	450		0.00	27.0
29	7280	300	4.1	-			-			4.1

			10.0			14.0	17.0
			19.0			18.0	18.0
			23.0			21.0	19.0

Note: Best Performing Farm; ** Median Performing Farm; *** Least Performing Farm

Source: Field surveys of 29 Farms from list obtained from Niger State Ministry, of Agriculture & Natural Resources, Oct/Nov 2019

A study of 29 corporate Farms in Minna produced the Capacity Utilization Schedule in Table 1.

The products include fish, beef; poultry, fruits and feeds. Their productive capacities are measured as a ratio of output and installed capacities. For convenience, the respondents were restricted to maximum of 3 leading products as observations supported. Production capacities were recorded in terms of quantities such as weights (kilograms), number or, packs (sacks). The units of measurement will even-out when converted to percentiles. As shown most farms have one product, some have two while a few have three. Oxfarms occupy serial number 9*** on the Table with only one product but huge capacities for two others for which production was nil. The result is a subsequent 6.0% mean capacity performance compared to 33% for the Median Farm, (Serial 12) and the highest at 82%. The results of the analysis are transformed into an index for clearer understanding of the Farms' performance statuses in Table 3.

Table 3: Performance index measured using collective grade points of farm productions

Product	Weight	Output as % of Capacity	Grade	Point	Grade Point	Collective Grade Point	CGPI
Best Performing Farm							
P1	3	62.50	B	4	12		
P2	2	55.56	C	3	6		
P3	1	54.40	C	3	3		
	6					21	3.50
OXFARMS							
P1	3	0.00	F	0	0		
P2	2	0.00	F	0	0		
P3	1	17.73	F	0	0		
	6					0	0
Median Farm							
P1	3	69.87	B	4	12		
P2	2	0.00	F	0	0		
P3	1	0.00	F	0	0		
	6					12	2.00

Source: Extracted from field survey, 2019

In column 1 are the Products with assigned weights; each Farm is restricted to its best 3 products designated as P1, P2 and P3 with weights of 3, 2 and 1 respectively according to the level of attention and prominence it receives in the farm's Management. Actual output of a responding farm as a percentage ratio of its designed capacity was applied, with assigned weights and gradings. 6-scale grades system on A to F was matched with respective points from 5 downwards to 0. The CGPI is obtained by dividing the total grade points by the total weight, 6. The result shows the performance indices of all Farms studied. Results of 3.5CGPI for the best Farm and 0.00 for OxFarms and a mean of 2.7 were obtained as part of the

benchmarks which rated 0-1.99 as non-performing, 2.00-2.99 as low, 3.00-3.99 as moderate and 4.00-5.00 as high performing farms. Thus, it is justifiable to rank OxFarms at 0.00 as a non-performing agricultural entity, NPAE. The outcomes of Table 1 and Table 2 are also useful in assessing the potential returns of OxFarm, and the subsequent Bid Figures and Ceiling Figures for purchase negotiations.

Operating at 0.0% of its designed capacity or 0.00-0.99 on the CGPI scale of 5.00, the farm could be classified as NPAE. First, the valuer could be restricted in the choice of methodology, when it is imperative to combine methods and bases: this represents a contradictory demand paradox. For example, the Profits method is the method of choice, first among others, when valuing a corporate commercial-oriented entity. In principle, theory and practice standards it is to take precedence over all other methods. But in reality, a NPAE lacks the basic data to support the use of Profits method, and recourse has to be made to the next-best method. It remains debatable whether the value arrived at using a secondary method could sufficiently produce the best result.

The classification model used in this study recognizes that all types of farm products (fish, dairies, fruits, grains and so on) would ultimately fit into the Best-3 pattern in terms of capacity hierarchy of products, regardless of types. Thus a Farm with many products types would certainly have its Best-3.

3.2 Benchmarking the performance status of OxFarms

For the purpose of this study, there is need for a more scientific method with benchmarks for assessing organizational performance more objectively through an index. No satisfactory operational performance measurement index for a multi-product establishment could be found as most available are used for single-product farms. Patterned in the form and functions of CGPA used to assess a student's overall performance at most Universities worldwide, the collective grade point index, CGPI was developed and used with modifications as a performance measurement index depicted in Table 3. The table revealed that the best performing Farm has a CGPI of 3.50 while the Median Farm is indexed 2.0. The comparative CGPI of 0.00 clearly reveals the non-performing status of OxFarms more vividly than does a percentile in Table 2. The valuation will proceed with OxFarms appropriately classified as a NPSP, which NPAE is a subset of.

4.0 FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

A whole range of scenarios emerged and altered where the agricultural property identified as a Specialised Property laid redundant, underperforming, outrightly non-performing or operationally inactive for a substantial period of its existence.

1. Based on empirical survey of similar commercial bodies in Minna, and beyond mere conjecture and visualization, OxFarm is classifiable as a non-performing Agricultural entity. Only an empirical research involving its competitors could reveal the true activity-status of performance of a commercial entity, slated for valuation for the purpose of classification as NPAE.
2. It is appropriate to value OxFarms as a specialised property with identified peculiar characteristics, the result of its non-performing status.

Dwelling on these major findings, it is concluded that

3. The general DRC template for valuing SPs needs to be tinkered with, in order to arrive at an appropriate approach to valuing NPAEs. More specific and restrictive bases and methods of valuation are required for valuing SPs rather than the general template prescribed by most Valuation Standards.

In the valuation of NPAEs, this paper puts forward a 2-pronged approach founded on any appropriate classification model (ACM) and applying a mix of multiple bases and methods, (MMBM). The following recommendations are made upon the findings and conclusion:

4. Using an appropriate assessment index, an identified SP slated for valuation should first be graded to justify classification or otherwise as a NPAE, by any ACM.
5. To value a Specialised Property certified as a Non-Performing Agricultural Entity, valuers should adopt multiple bases and methods MMBM, as may be deemed appropriate.

The implication of this findings is that the application of this approach may move valuation practice closer to the reasonable level of accuracy is expected by users of valuation services.

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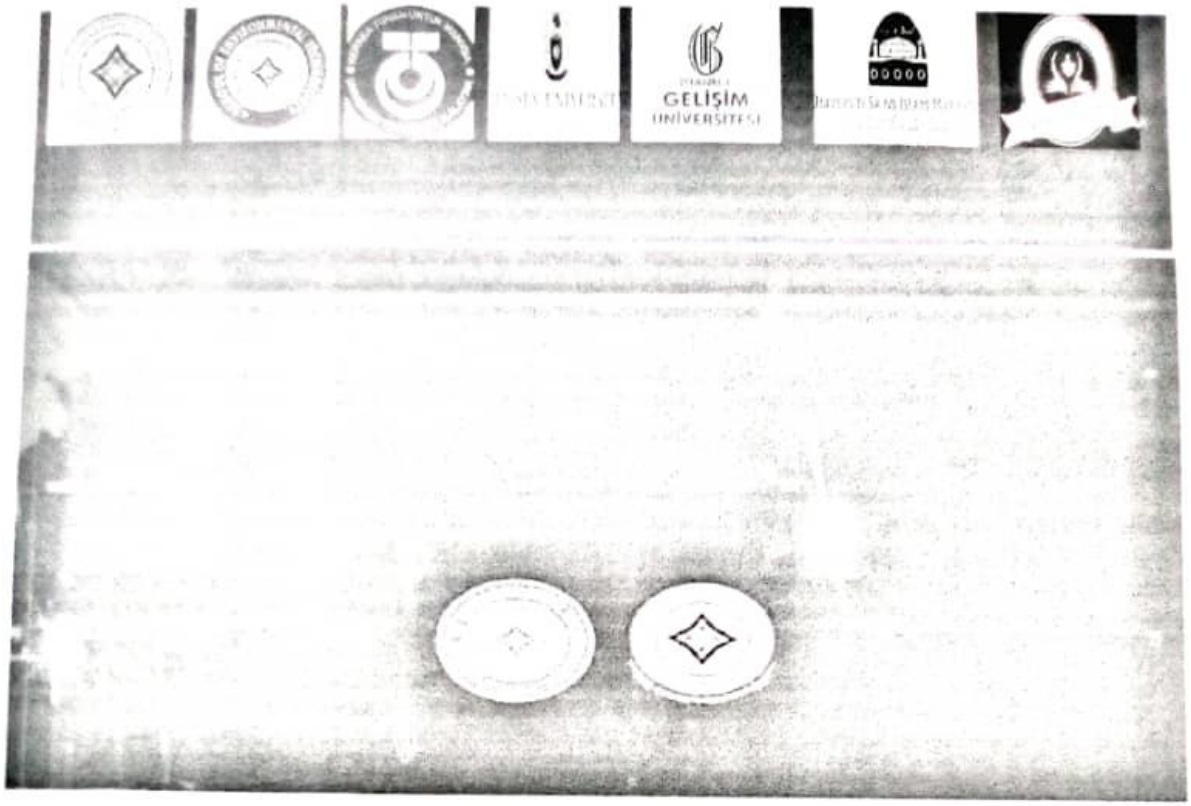
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