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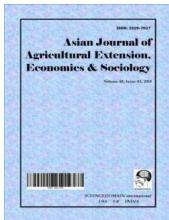
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Sustaining Agricultural Cooperative: The Picture in the United Kingdom, Japan and Nigeria

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Authors' contributions

This work was carried out in collaboration with both authors. Author OIA designed the study, managed the literature searches, performed the statistical analysis, wrote the protocol, and wrote the first draft of the manuscript. Author AAJ managed the analyses of the study. Both authors read and approved the final manuscript.

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ABSTRACT

This study was conducted to understand how agricultural cooperatives in the United Kingdom and Japan have managed to remain resilient compared to Nigeria in their roles in the farming sector. A comparison of the development of agricultural cooperatives in United Kingdom (UK), Japan and Nigeria was carried out using secondary data obtained from the ministries of agriculture, international organisations. Data obtained was analysed with descriptive statistics. The results reveal that the total number of agricultural cooperatives in Nigeria was about a hundred times more than that in the UK and eight times that in Japan suggesting that numbers decline with development. In the UK membership declined from 324,772 in 1982 to 150,000 in 2011, a 53.8% decline while the number increased in Japan (5%) from 9,234,138 in 2006 to 9,740,311 in 2011. Membership increase was considerable (65.4%) in Nigeria from 2.6 million in 1989-1992 to 4.3million in 2005.

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The turnover values for the UK and Japan were \$4 billion and \$50 billion respectively. The paper recommends the need for amalgamation of agricultural cooperatives, strengthening the 3-tiered cooperative structure and appropriate institutional environment to foster development of agricultural cooperatives in farming sector laden with peasant farmers such as in Nigeria. This would increase their effectiveness, competitiveness and position *viz a viz* other player on the food chain.

Keywords: Farmer organisation; development; United Kingdom; Japan; Nigeria.

1. INTRODUCTION

Agricultural cooperation can be defined as an act of coming together by farmers to share resources in groups for farming. Such groups go by various nomenclatures such as simply farmers' group/organisation and farmer cooperatives. The International Cooperative Alliance (ICA) defines a cooperative as "an autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly owned and democratically controlled enterprise" [1]. The key features of a cooperative are shared-ownership, shared-control and shared-benefit by users, and it is founded on the values of self-help, responsibility, democracy, equity and solidarity.

Agricultural cooperative is classed as either specialised or multi-purpose in nature depending on its role along the production and market flow of the food chain. The specialized types include the requisite (supply) cooperatives which integrate vertically backward (upstream), and the marketing cooperatives which integrate vertically forward (downstream), and the service cooperatives e.g. machinery, processing, storage cooperatives. Whereas, the multi-purpose cooperative combines some or all of the functions of specialized cooperatives. The primary economic purpose of collective action is vertical integration and overcoming scale discrepancies that will normally exist between the farm sector and the upstream or downstream industries [2]. The reasons why farmers join cooperative include service shortfalls or exorbitant prices for available services, market failures, transaction cost, discriminatory treatment from contract growers and increased monopsony in buyer markets [3], [4] adds that cooperatives also enhance their position in the market to determine prices instead of being price-takers. Further, consumer prices are significantly lower in markets with strong cooperative organisations thereby serving as a competitive yardstick in markets against

oligopolistic food industries [5]. It has also been understood that agricultural cooperatives can potentially sustain agricultural production and the supply of food [6].

On the international scene, the cooperative sector is very strong and makes substantial contribution to world economy. The cooperative sector is valued at about \$ 2.5 trillion annually and of this agriculture/food processing contributes 32-33% [7] and [8]. Agricultural cooperatives contribute considerably to national economies such as Japan with an average of \$50 billion annually [9]. In recognition of its potential to support world economy, the United Nations declared 2012 as the International Year of Cooperatives; it also described it as a resilient model in times of crisis to support its members and a typical example is the 2008 financial crisis [10]. Similarly, [11] stated that in the past four years the cooperative sector has outperformed the UK economy, typically demonstrating resilience in difficult economic times. Cooperatives have been suggested as an alternative to austerity.

Historically, modern cooperatives can be traced back to around the mid nineteenth century in Rochdale where a group of twenty eight weavers set up shops as a means of survival against the ills of industrialisation on craftmen [12]. The success of their business became widespread and was adopted in different regions of the world. However, the development of cooperatives is widely varied depending on the challenges and circumstances for its formation. [13] believed cooperation was mostly reactionary, a response to challenges and conditions of discomfort. Modern agricultural cooperation is believed to have been partly shaped as a reaction to socialist critique of capitalism and innovations that accompanied industrialisation [14]. Similarly, Japan agricultural cooperatives formation can be traced back to strong European influences particularly the German Raiffeisen and eventually modified as deemed suitable [9].

Likewise, agricultural cooperative formation in Africa was predicated on European ideals of their colonial masters for their economic agenda and not based on the people's interest [15]. Even so, the type of cooperative model in Africa varied with colonialization: the British used a unified multistage system, the French adopted a social economy model, while the Belgian applied a social movement style and the Portuguese went with a producer tradition [16]. For Nigeria, a colony of Britain, the unified multistage structure of cooperatives was in practice and the focus then was on export crops to generate revenue for the colonial government as well as provide raw materials for industries in Britain [17]. Therefore, cooperatives can be formed either from a spontaneous-liberal approach as in the United Kingdom or as an ideological-utopian approach such as in Japan and Nigeria.

[18] in the European Commission external study on supporting farmers' cooperatives proposed that factors affecting success of cooperative in the food chain are embedded in the interrelatedness between three elements. This includes institutional environment/policy measures, internal governance and position in the food chain. However, this has been modified to show cooperative structure and institutional environment as considerable influence on cooperative development and consequently its competitiveness on the chain (Fig. 1).

[19] stated that internal governance is a function of its structure and it is an indicator of its internal stability. So structure herein is considered in terms of total number of cooperatives, total number of members and membership penetrative rate, etc at a national scale. These elements provide a fundamental understanding to the development of cooperatives. Agricultural cooperatives in these countries have all faced their unique difficulties which are intrinsic

(structure) and extrinsic (environment). The coping responses by these cooperatives affects its structure and even its survival.

This work will attempt to show how agricultural cooperative development can be influenced by cooperative structure and institutional environment which ultimately affects its competitiveness *viz-a-viz* other stakeholders along the production chain. To achieve this, a case study approach has been adopted using three countries namely United Kingdom, Japan and Nigeria. It is hoped that Nigeria can learn a few lessons to form, revive and sustain agricultural cooperatives.

2. MATERIALS AND METHODS

This study was conducted in July 2013 using a case study approach for an in-depth understanding of cooperative development. A purposive method of sampling was used to select three countries to represent developed and developing country setting based on the following reasons. First, availability of data for Japan and the UK and Nigeria as a home-country for comparison basis. Second, the UK is known as the cradle of modern cooperation; Japan has the strongest agricultural cooperative movement in the world with about 91% membership and Nigeria for having over 60% of its population are dependent on agriculture. Data was collected from secondary sources which included annual reports of cooperatives UK, ministries of agriculture in Nigeria and Japan, international organisations like International Labour Organisation (ILO) and International Cooperative Alliance (ICA); academic journals and other publications. Data was analysed using descriptive statistical tools, tables and charts in grouping data. Google translator was used in the translation of documents and data from Japanese to English.

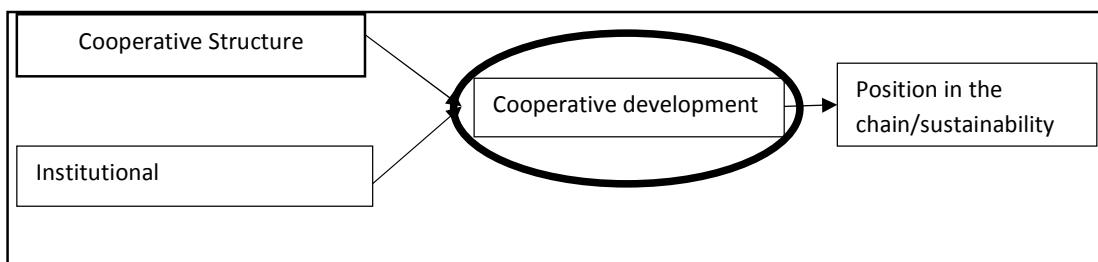


Fig. 1. Core concepts of the study and their interrelatedness

Source: [18] (modified)

3. RESULTS AND DISCUSSION

3.1 Agricultural Cooperatives in the UK

Table.1 shows the results of UK agricultural cooperative Statistics for a period of over 10 years. The results show on one hand an initial increase in number of cooperatives while on the other hand, a decrease in, membership from 1982 to 1987. For the period considered, the highest number of cooperatives was recorded in 1987 (Fig. 2) with 670 cooperatives and today, the total agricultural cooperatives in UK is 419 (Table 1). The average membership for agricultural cooperatives is at 333 per cooperative. Based on the farming population, this means that one in every two farmers in the UK belongs to a cooperative [11]. Although the precise reason for decline in membership is not certain, it could be that members were not getting benefits from collective action or it is probably due to the declining farming population. The former reason suggests that farmers in the UK have resorted to individualism which Fulton, (1995) cited In: [20] which is a potential reason for cooperative decline. It could also be as a result of the dissolution of the then commodities marketing boards in the UK [21]. Farm produce marketing is more convenient when sourced from farmer organizations such as cooperatives.

Agricultural cooperatives have the second largest turnover after retail in the UK [22], even though agricultural contribution to the GDP is decreasing. The percentage of agricultural cooperatives turnover has increased from 11.4% in 2011 to 14.6% in 2012 [11] and [22]. This also explains the reason for having about 50% of the top 100 ranked cooperatives in the UK from the agriculture and food sector. On the average, the range of turnover for these top agricultural cooperatives is between £8million to £700 million annually [22]. In addition, [18] in their study found that some sub-sectors (e.g. dairy) are actually providing a competitive yardstick for Investor Owned Firms (IOFs) because of they have significant market share and have increased price level for farmers, reducing price volatility.

The institutional environment includes legislation and laws, and policies. There is no single legal structure specifically for cooperatives in the UK, they can be registered and incorporated under the Industrial and Provident Act, 1995 [23], Companies Act as private companies [24], Community Interest Companies (CIC) [23]. But, the most beneficial registration platform

statutorily assuring the seven International Cooperative Alliance Principle (ICA) is the Industrial Act. Additionally, there is leniency with regards to competition for cooperatives, competition law permits collaborations and control up to 40% except price fixing. Likewise, taxes for cooperatives are computed differently from other corporations, for instance, interests and dividends are first deducted before taxation. Furthermore, there is historical evidence to show government policies as paternalistic towards agricultural cooperatives both nationally and regionally (The European Union). The formation of English Farming and Food Partnerships (EFFP) was as a result of recommendations from the Curry Commission Report, *Future of Farming and Food*, aimed specifically at development of agricultural cooperatives [23]. The European Cooperative Statute (ECS) strengthened under the Council Regulation Act of July, 2003 enabled the creation of European Cooperatives and also facilitated their cross-boundary operations. The Common Agricultural Policy (CAP) also provides interventions for cooperatives though it varies with sectors and the EU funding is paid through cooperatives for some sectors such as the Fruits and Vegetables Producer Organisation [23].

3.2 Agricultural Cooperatives in Japan

The result of total number of cooperatives, members and turnover for Agricultural Cooperatives (JA) in Japan is presented in Table 2 and Fig. 3. It reveals that total number of cooperatives declined considerably since the 1950s from 31,000 to 23,000 in 1969 [25]. Recent statistics show that the numbers have continue to decline to 723 in 2011, Fig. 3. Shows a steady fall while membership is slowly increasing. Membership of JAs is quite unique and open, it comprises farmers and non-farmers who constitute the associate. The associate membership is actually responsible for the increasing membership. This membership composition indicates a cooperative structure moving towards an investor-driven model which Murray (1983) In: [20] proposed as an imminent stage of survival in a cooperative lifecycle.

A consideration of JAs membership constitution reveals an inverse relationship between associate and regular members. This suggest a possible hijack of JA by non farmers probably due to its multi-function role. This can change its core responsibility (agriculture) to peripheral functions e.g. banking. It is however a disturbing trend if out of the average membership of

13,472, farmers (regular members) constitute less than 50% (6,438). [26] and [27] believe that low farmer membership is because farming population has declined significantly from 11.8 million in 1960 to 1.9 million in 2009 and a

decline in farm households (Table 2). It is worthy to consider that the enormous organisational structure of JA might be a likely source in creating farmer-member disinterest [28].

Table 1. UK agricultural cooperative statistics (1982- 2016)

Year	No of cooperatives	Membership	Turnover (\$Billion) ¹
1982	606	324,772	2.46
1983	622	322,295	2.63
1984	638	321,214	2.83
1985	655	317,296	2.88
1986	662	307,454	2.76
1987	670	296,320	2.87
¹ 1992	602	327,955	2.19
2009	442	155,000	7.48
2010	446	153,700	6.71
2011	450	150,000	6.26
2012	491	140,937	8.09
2013	442	133,972	8.84
2014	430	136,972	9.28
2015	428	134,690	9.44
2016	416	134,566	9.28

Source: [29,30,31]

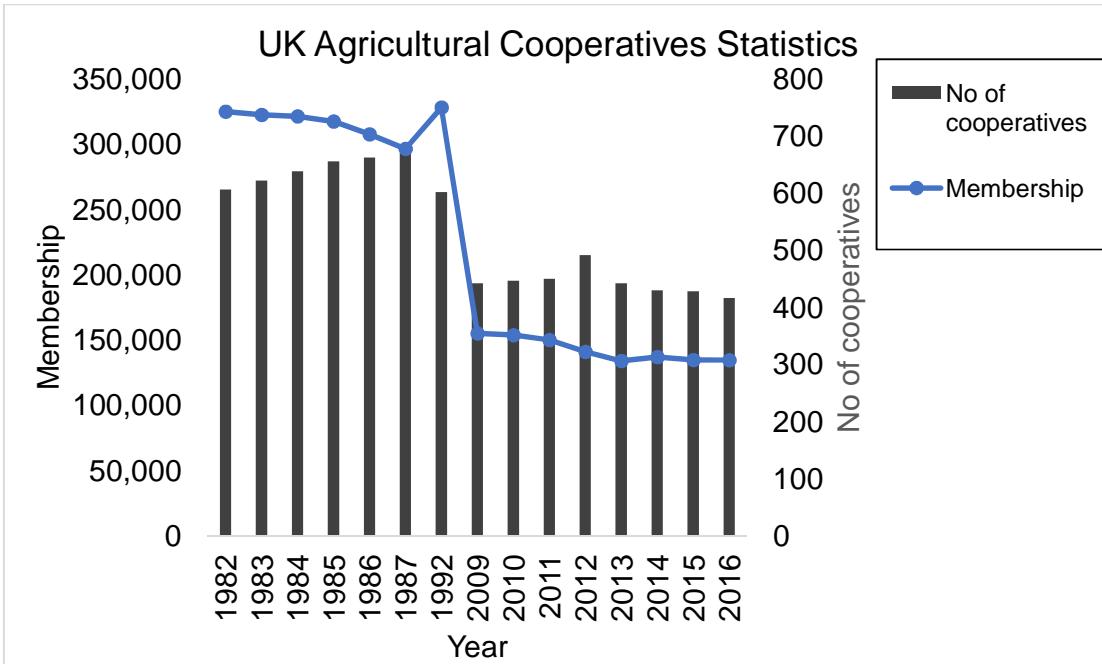


Fig. 2. UK agricultural cooperative structure

¹Turnover refers to the value of income received from operations excluding income from grants and interest received from investments.

In general, [32] attributes the high agricultural cooperative membership of 91% [33] to social and economic influence. Farmers have been accustomed to belonging to cooperatives during the war and have benefitted from services they render as input supply as well as marketing. So it was only rational for most farmers to be a co-op members. Perhaps this influence was not limited to only farmers but non-farmers and also groups [34]. Turnover of JAs is substantial with an average of \$50 billion added to Japanese economy. This is about ten times more than what agricultural cooperatives contribute to the UK economy (see Tables 1 and 2).

The institutional environment which agricultural cooperatives operate in Japan has not been as advantageous as that in the UK. There is no direct government support for cooperatives in Japan but they are indirectly assisted via lower tax rates and intervention for farmers in long-term loans, and price support system is administered through cooperatives. The JA system is undergoing some reforms to enhance its competitiveness. The main changes occurring in JA are in the areas of trade liberalisation, agricultural structural system and political dynamics [34].

Japan has focused on supporting the growing of rice called production adjustment while limiting the growth in area of land used in production by keeping the domestic price of rice high [35]. This favours small part-time farmers which are more or less unproductive instead of the full-time large scale farmers. This policy is however environmentally friendly because it checks the expansion of land used in cultivation and might help reduce climate change. Furthermore, JA has enjoyed a protectionist trade policy particularly for rice, its main crop. But recent trade agreements under the World Trade Organisation (WTO) have resulted in enormous external pressure on Japan to provide more enabling environment for global food trade. Consequently, JA has found itself in a difficult situation surviving in an open economy, hence its numerous reforms which includes restructuring for mergers and amalgamation [26]. In addition, the Trans-Pacific Trade (TPP) initiative implies that import tariffs to Japan have to be lowered allowing free movement of cheap food from the US and Australia [36].

The success of JA has not been without political connections. [34] points to the long-standing

affiliation of JA's to the Liberal Democratic Party (LDP) which has been in power for over three decades until 2009. But things have changed with the Democratic Party of Japan (DPJ) in power now; its policies have not been so favourable to the JA. For instance, the introduction of direct subsidies to farmers is weakening the JA system as [34] suggest by bringing down prices creating an environment to further liberalise the market. The LDP agricultural policy aimed at consolidating small scale farms into larger farms for more efficient and market oriented type of farming. But the DPJ's policy on direct subsidy payment is counterproductive to consolidation because part-time farmers with small scale land are likely to retain it for subsidy when the land could have been put into more productive use. Nonetheless, findings from a recent article show that JA's political influence may not be completely waned because it was able to gain support of some 10 million signatures against Japan joining the TPP initiative [37]. The JA also influenced the election of substantial numbers of representatives on the LDP platform who promised that they would vote against the TPP initiative in the parliament. It is pertinent to mention that JA's influence grew as a result of their choice to support many small-scale farmers not few large-scale farmers thus spreading its extent of coverage [37]. Unfortunately, the JA is widely criticized today as obstructing and resisting agricultural reforms since the status quo is being challenged.

3.3 Agricultural Cooperatives in Nigeria

The findings for total number of agricultural cooperatives and membership in Nigeria are presented in Table 3. Agricultural cooperatives have continued to increase in Nigeria post-independence i.e. 1960. The total number of cooperatives before independence in 1959 was 3,115 and it has increased tremendously to 50,000 in 2005 (Table 3). Increasing numbers of cooperatives usually suggest a response to distress in market conditions [38]. It could also be as a result of increasing imbalance of power asymmetry for farmer cooperatives along the food chain. Decreasing numbers are usually due to an outright dying or merging of the cooperatives like in UK and Japan. Japanese agricultural cooperatives have undergone more of mergers than dying-out [9]. It would be appropriate to suggest that Nigeria considered mergers of cooperatives like Japan in order to expand its scale of operations. However, even if

deliberate efforts for mergers are not considered soon, the numbers will eventually reduce. [39] proposed that cooperatives eventually die out in the same “waves” that they cropped up due to challenges of economies of scale and industrialization. Conversely, [40] believed that the same industrialization would encourage continuation of consolidation and cooperation.

The need to consolidate may have played out with the JAs and the UK cooperatives which even operate transnational today. Industrialization comes with pressure to be efficient and the response by cooperatives viz a viz other types of agribusiness organizations such as IOFs is to be as competitive as possible which may include restructuring.

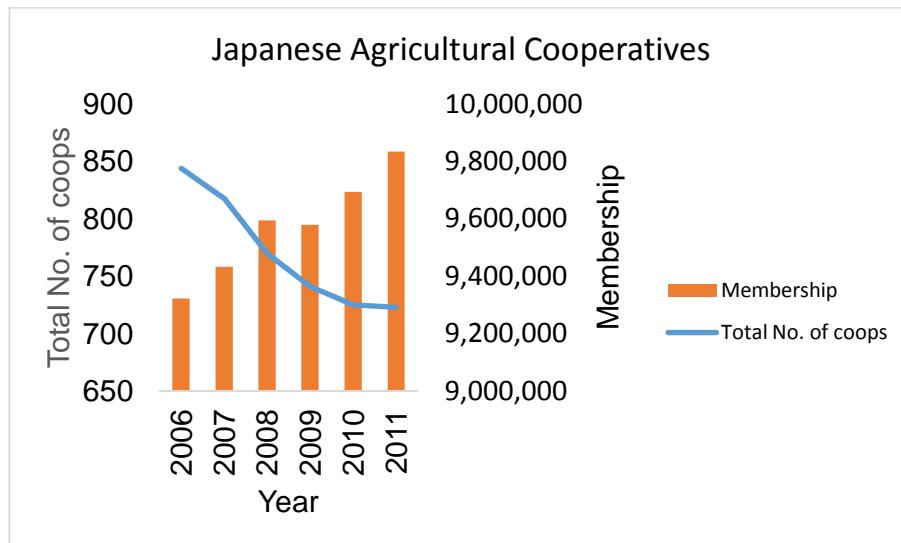


Fig. 3. Chart showing trend in no. of cooperatives and membership in JA

Table 2. Total number of cooperatives, members and turnover for agricultural cooperatives in Japan (JA)

Year	Total No. of coops	Of which specified coops	Individuals (Associate Membership)	Individuals (Regular Membership)	Associate member households	Turnover ² (\$Billion)
1950s	31,000	-	-	-	-	-
1969	23,000	-	-	-	-	-
2006	844	188	4,302,285	4,931,853	3,603,866	-
2007	818	169	4,466,327	4,877,364	3,719,601	54.2
2008	770	167	4,685,398	4,816,570	3,824,465	52.7
2009	741	161	4,725,052	4,762,961	3,931,565	48.5
2010	725	152	4,892,873	4,707,348	4,060,925	49.2
2011	723	156	5,085,096	4,655,215	4,195,486	48.9
Average members per coop	-	-	7,033.3	6,438.7	5,802.9	-

Source: [40,41]

²Turnover is an aggregate of all agricultural business enterprises e.g. rice, livestock, fruit and vegetables, etc. Also this turnover is for ZEN-NOH, the Federation of Agricultural Cooperatives in Japan not ZEN-CHU.

Membership has more than doubled in each of the periods shown in Table 3 for Nigeria. This shows an increasing number of members with an average of 86 members per cooperatives. Membership is a livewire of any organisation, so such low numbers indicate a weak organisation and capitalisation would be a challenge. The efficiency of cooperatives is closely related to membership drive. In order to get new members, the organisation should economically justify to prospective members the benefits they will get coming on board [28]. Agreeing on the minimum membership required for a cooperative and their ability to raise sufficient capital is debatable. Nevertheless, the profile of an average farmer in Nigeria is peasant, then certainly larger membership is important to raise capital. The weak structure is an indicator to its ineffectiveness. There are actually no official data on the turnover of cooperatives in Nigeria. The turnover of agricultural cooperatives for Japan and the UK are quite significant to their respective national economies (see Tables 2 and 1).

3.4 Summary of Agricultural Cooperatives Features in the Case Studies

The numbers of agricultural cooperatives in the three countries varied over time. In the UK, the numbers have fluctuated over three decades as shown in Table 1.

Cooperative structure for Japan (Fig. 4.) and Nigeria are similar with 3-tiered system. But with the JA system, [42] indicates that it comprises federations at the national and prefectural level while primary cooperatives are limited to the municipal/local level. This collaborates claims by [18] that it is typical to find federation cooperatives in the areas with smaller cooperatives but as the primary cooperatives become larger and consolidated, their relevance reduces. Assumedly, the majority of the primary cooperatives in the UK are products of consolidation. Hence, the absence of an apex cooperative body. A look at the farm structure in UK is an indication that the above assumption is realistic because the average farm size in the UK is 57ha with Scotland providing a greater proportion of this figure. The average farm size for Scotland is 100ha while it is 50ha and 40ha for England and Northern Ireland respectively [43]. Conversely, the average farm size in Japan is 1.5 ha and Nigeria 1.0ha.

Table 3. Total number of cooperatives and membership in Nigeria

Year	Number of cooperatives	Number of members
1959	3115	154,420
1989-1992	29,000	2.6 million
2005	50,000	4.3 million

Sources: U.K Information Service, 1961; Porvali, 1993
In: [44]

Table 4. Summary of agricultural cooperative features

Feature	UK	Japan	Nigeria
Average farm size	57ha	1.5ha	1-1.5a
³ Membership Penetration rate	28%	252.2%	30.7%
⁴ Av. no of members per cooperative	333	6,438	83
Type of Membership	Individuals Farmers only	Individuals/Groups Open- farmers and non- farmers	Individuals Farmers only
Number of cooperatives	416	723	50,000
Formation	Self-Help	Paternalistic	Paternalistic
Coop structure	Unitary	3-tier	3-tier
⁵ Mergers	Yes	Yes	No
Transnational/ International affiliates	Yes	No	No
Government support/policy	Direct	Direct	Nil

³Penetration rate is derived as a percentage of cooperative members to the total number of farming population or farmers. This is just a guide to predict the extent of cooperation penetration in the farming community.

⁴ Average number of members of cooperatives is derived as a fraction of the total number of agricultural cooperative members and the total number of cooperatives.

⁵ Merger refers to horizontal integration between cooperatives

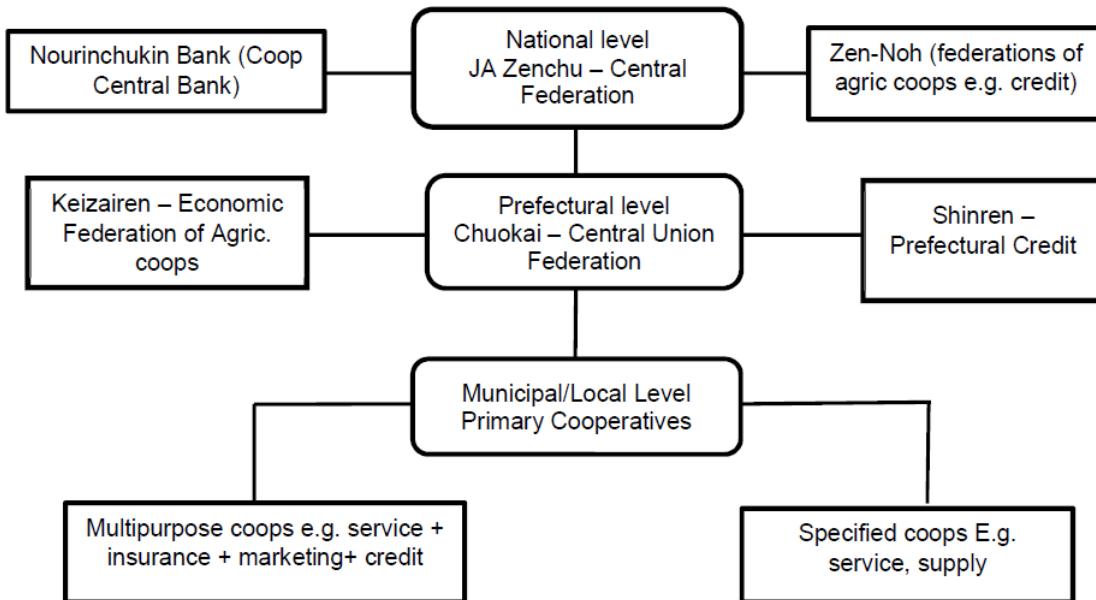


Fig. 4. The three-tiered JA System

In the UK, agricultural cooperatives have evolved to maximising not just scale but also the economics of scope by extending across national, regional and international boundaries. This is particularly common to the fruit and vegetables sub-sector where it is expedient to breach the gap of seasonality in food supply, and this has resulted in sourcing from farmers internationally [23] and [45]. In the European Union (EU), there are about 46 transnationals and 45 international cooperatives mainly found in the Northwest in the dairy and fruit & vegetables sub-sectors [18]. The example includes Berry Gardens with host countries as Belgium, Germany, Netherlands, Spain and Egypt. However, their activities in these host countries are mostly limited to processing and agricultural marketing, but not necessarily globalisation of membership. On the other hand there are also international agricultural cooperatives trading in the UK e.g. Arla Food of Denmark, Kerry Cooperative Ltd of Ireland, Limagrain of France to mention but a few [23].

Membership in Nigeria and the UK constitute only individuals while JA comprises individuals, groups and even non-farmers. The membership penetration rate in relation to the farming population in the UK and Nigeria are quite low whereas the JA penetration rate is about eight times more. This is not surprising that JA membership is as high as 91% as reported by [11]. The UK agricultural cooperatives can be

considered as the true cooperatives from the approach of self-help in its formation [29] whereas formation in Nigeria and Japan were formed from paternalism. [44] believes that the formation of cooperatives in Africa by colonials was for ease of harnessing raw materials for industries in Europe. They were however, more successful then compared to post-independence in those African countries e.g. Nigeria. Even though cooperatives in UK and Japan have undergone mergers, it is only in the UK where cooperatives have consolidated across borders. Nigerian cooperatives have neither undergone mergers nor expanded its scope of operations internationally.

The institutional environment in both the UK and Japan fosters support for agricultural cooperatives compared to Nigeria where there is practically no form of support. Government interventions in these two countries has been either direct or indirect or both in some instances at least tracing through history. Japan has influenced the price of rice to discourage increase in area of land but this is somewhat counterproductive to consolidation of small-scale farmlands and as a result discourages cooperation amongst large-scale, full-time productive farmers. Direct support to farmers can be retrogressive to cooperation. For instance, [46], believes that direct support to individual farmers instead of groups after World War II has been identified as a disincentive to cooperation in

Britain, so Japan might just be heading in the wrong direction. Therefore, some tact is required in farming interventions so as not to disincentivise cooperation and overall agricultural production at large.

4. CONCLUSION

The formation of agricultural cooperatives is considered mostly a response to challenges and conditions of discomfort e.g. response to distress or failure in markets, achievement of economies of scale and scope. Agricultural cooperatives are initiated spontaneously as liberal self-help organisation like in the UK or as a paternalistic, ideological form by the state e.g. Japan and Nigeria (colonials). The findings from the case studies illustrate that the number of cooperatives might be higher in a developing country than a developed country. The total number of cooperatives in Nigeria is about a hundred times more than that in the UK and eight times that in Japan. This suggest that market failures such as transaction cost might be more prominent in a developing country hence the large numbers. It can be inferred from the study that cooperative numbers decline over time with development. This reduction might be as a result of mergers/amalgamations and outright dying. Industrialisation in some instance will force agricultural cooperatives to exit whereas sometimes it causes them to continue but with adjustments in structure towards investor-driven model or consolidation and merger. However, this process potentially increases their effectiveness as it places them on a better position to achieve economies of scale and scope. There is need for the amalgamation of agricultural cooperatives in Nigeria to enhance efficiency in scale and scope. There are a few transferrable competencies from Japanese agricultural cooperatives to Nigeria primarily because of the similarity in farm structure. This include strengthening of the 3-tiered cooperative structure and the use of cooperatives as a platform in implementing agricultural policy. In addition, there might be a need to encourage non-farmers to join agricultural cooperatives to expand capital base but the burden will be to justify to prospective members what they will benefit. Alternatively, if the agricultural cooperative federations increase their advocacy for improved production environments for small-scale farmers like the JAs initially did then it will be easier to get farmers to enlist as members of primary cooperatives in their local communities. Agricultural cooperatives can be modified to

multipurpose cooperatives particularly where small-scale farmers abound but care must be applied not to lose focus with the core responsibility of benefitting farmers.

Finally, a well-developed agricultural cooperative will contribute substantially to the sector as well as the national economy like in Japan. This study suggest that a restructured cooperative will survive development in an agribusiness environment viz-a-viz other players in the food chain. However, a further study should find out the proportion of development which cooperatives can contribute to agricultural sector in monetary terms particularly for small-farmers' laden economy.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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