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# Socio-economic differentiation from a class-analytic perspective: The case of smallholder tree-crop farmers in Limpopo, South Africa

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## Abstract

South African agrarian policy aims to integrate smallholder tree-crop farmers into high-end value chains with growth and employment potential, generally neglecting socio-economic differentiation amongst them. This paper aims to analyse socio-economic differentiation amongst tree-crop farmers in Vhembe District, Limpopo, using a class-based analysis based on livelihood diversification and accumulation. Cluster analysis of survey data and semi-structured interviews reveals that most tree-crop farmers engage in petty commodity production, internally differentiated by their combination of income sources and livelihood strategies. Farmers' ability to engage in accumulation and upward class mobility is generally severely constrained by limited access to capital. Agricultural diversification offers livelihood potential but limited possibility for accumulation, whereas salaried nonfarm work offers more promising prospects for accumulation but limited livelihood opportunities. A minority demonstrated characteristics of small-scale capitalist farmers, internally differentiated by their reliance on salaried employment or agricultural production. The findings challenge the notion of an undifferentiated class of market-oriented smallholders.

## KEYWORDS

class-based analytic, smallholders, socio-economic differentiation, tree-crops, South Africa

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## 1 | INTRODUCTION

South Africa's former homelands continue to exhibit some of the highest levels of poverty and unemployment in the country. National policy has favoured agricultural development as the driving force for rural development by focusing on linking smallholders<sup>1</sup> to national and global commodity chains of specific agricultural commodities deemed to have the highest potential for growth and employment (DAFF, 2013; EDD, 2011; NPC, 2011). Amongst these commodities are subtropical tree crops such as macadamia nut, avocado pear, litchis, and mangoes.<sup>2</sup> This approach tends to view market-oriented smallholders as largely undifferentiated, as if they were economically, socially, and politically homogenous, assumed to be equally capable of developing along a linear path of expansion and commercialization.

A growing body of literature has illustrated that South African smallholders are highly differentiated and land- and nonland-based livelihoods are highly interdependent (Francis, 2002; Neves, 2017; Neves & Du Toit, 2013). Evidence comes from case studies of smallholder irrigation schemes (Cousins, 2013; van Averbeke & Mohamed, 2006) and amongst smallholders more generally (Aliber et al., 2009; Aliber & Hall, 2010, 2012; Cousins, 2010; Greenberg, 2013; Hazell, Poulton, Wiggins, & Dorward, 2007; Hebinck & Cousins, 2013; HLPE, 2013; Okunlola, Ngubane, Cousins, & Du Toit, 2016), including rural Africa more broadly (e.g., Akram-Lodhi & Kay, 2010a, 2010b). This calls into question transition narratives such as the one that broadly informs current agrarian policy in South Africa, which sees the category of market-oriented smallholders as largely undifferentiated with limited consideration of contextual factors that produce and exacerbate the potential and unevenness between them. These narratives assume such smallholders are equally able and aspiring to "graduate" via what is commonly referred to as "emerging" farmer into fully fledged commercial farmers that resemble the existing class of large-scale white commercial farmers. Such narratives echo mainstream thinking as articulated in the World Bank's Agriculture for Development Report (World Bank, 2008) that follows the same linear trajectory as modernization thinking of the 20th century. Stereotypes such as "smallholder" therefore need to be deconstructed in order to better understand socio-economic differentiation processes and vulnerabilities and inequalities resulting from them. Furthermore, where heterogeneity is acknowledged to some degree, what shapes the understanding of these differences and their underlying processes illustrates important assumptions about smallholders and their livelihood trajectories.

Despite growing acknowledgement of smallholder diversity, there is a gap in knowledge of socio-economic differentiation amongst market-oriented smallholders engaged in commodities prioritized for smallholder development, such as avocado and macadamia. It is to these specific cases that this paper turns, asking what is the nature and extent of socio-economic differentiation amongst tree-crop farmers engaged in macadamia and/or avocado production and which dynamics are shaping this. This paper employs a class-based analytic as it is deemed to have the most analytical traction in this particular case study in its ability to foreground the processes of rural social differentiation by its focus on social relations of production and accumulation within the context of contemporary capitalism (Bernstein, 2001, 2010; Cousins, 2010). It also brings to light the inequalities that emerge and are perpetuated as part of the social-economic differentiation processes by focusing on the social relations between land, labour, and capital and related processes that facilitate and constrain accumulation. Highlighting these aspects is critical in the context of agrarian reform policy in South Africa if a broad-based and inclusive trajectory for agricultural development is to be achieved.

Current efforts to promote the commodification of macadamia nuts and avocado pears amongst smallholders are most prominent in the Vhembe District of Limpopo. Smallholders in this region have a long history of growing subtropical tree crops mainly for subsistence and locally distributing surpluses. After 1994, with the dawn of democracy, smallholders growing these crops have become increasingly more market oriented and numerous initiatives have been implemented by both the state and private sector to increase the pace and extent of commercialization of

<sup>1</sup>The term smallholder is used in this paper in its broadest sense and is considered synonymous with small-scale farmer.

<sup>2</sup>This study focuses on macadamia and avocado as these commodities are being most prominently promoted amongst smallholders on the grounds of the rapid increase in market demand, high value, and labour intensiveness.

these commodities amongst smallholders. To date, there has been little analysis of socio-economic differentiation processes amongst commercially oriented macadamia and avocado smallholders. This paper explores these processes to illustrate that these smallholders are highly diversified, with access to capital through different livelihood sources as a key mechanism of differentiation, which subsequently determines the capacity for accumulation and socio-economic differentiation within class categories.

This paper proceeds by exploring the conceptualization of socio-economic differentiation, with a focus on a class-based analytic, followed by an elaboration on the methodology and a contextualization of the study. The findings reveal four distinct profiles of tree-crop farmers in Venda. The key processes shaping socio-economic differentiation will be discussed, and lastly, the implications of these findings for smallholder development in South Africa will be addressed.

## 2 | CONCEPTUALIZING SOCIO-ECONOMIC DIFFERENTIATION

Any attempt to create a farmer typology illustrates a compromise between capturing the infinitely diverse nature of reality, where each individual is unique, and the need to reduce this complexity into meaningful categories (van Averbeke & Mohamed, 2006, p. 139). How this compromise is managed depends largely on the analytical purpose, for example, to identify class relations, property relations, support needs, or development interventions. Depending on the analytical purpose, the unit of analysis differs and can focus on, for example, the farmer, household, commodity or geographic area. The classification criteria differ accordingly—for example, land holding, type of agricultural practices, livelihood strategy, or level of diversification. On a more fundamental level, typologies represent different assumptions about the world and how social phenomena can be interpreted and explained, each differing in terms of how they emphasize the relationship between observation (empirical), representation (experience), and theory (explanation). Hence, their ability to explain and describe social phenomena varies significantly (Whatmore, 1994, p. 32).

Many different metrics and approaches have been used in the study of socio-economic differentiation. Analysing these different approaches in terms of the context in which they emerged and the reason for which they were developed provides a useful means to explore their utility to describe social and economic characteristics and other dimensions of farmer diversity. This section highlights the potential strengths and weaknesses of different approaches, ultimately arguing for the utility of using a class-based analytic (Cousins, 2010) in order to capture the dynamic relations of social production.

### 2.1 | Mainstream approaches: Smallholders from an international and national policy perspective

Mainstream approaches to the study of farmer diversity are rooted in a positivist epistemology that focus on observable phenomena (physical characteristics such as farm size, income, assets and resources, labour, market integration, and livelihood diversification) as a basis for classification. Such typologies are technically easy to reproduce over time and across space for their use of standardized units of measurement that are relatively accessible from official data sources (Whatmore, 1994). Farm size appears as the main criterion to define smallholders, generally set at a limit of 2 ha (UNCTAD, 2015; World Bank, 2003) or an upper limit of 10 ha (FAO, 2012). This obscures enormous variance in average farm size across countries and regions (c.f. 50 ha in Brazil versus 0.5 ha in Bangladesh; UNCTAD, 2015, p. ix). It also obscures the types of production systems, focus of production, level of market integration, yields and so forth. Despite these differences, land size can be useful where land-holding patterns are quite uniform and limits are set in relation to average large farms. This particularly holds when used in combination with other qualifying characteristics that differentiate farmers and allows for a more nuanced and situated understanding of smallholders. Examples of such qualifiers are those used by the World Bank (2003) of having a low asset base or UNCTAD (2015) that

farmers cultivating larger sized plots are still considered smallholders when “they are small relative to the median farm size; they use primarily family labour; and they have limited interaction with input, output and credit markets” (UNCTAD, 2015, p. ix). The choice of such indicators sheds light on some of the underlying assumptions and objectives that inform the construction of these definitions. For example, the World Bank’s focus on “low asset base” points to its objective to address rural poverty through increased investment as a basis for improving farmers’ asset base and their returns on labour, land, and capital (World Bank, 2003, p. 16). Similarly, UNCTAD’s (2015) additional qualifier points to its objective of increasing farmers’ access to markets and—assumedly—associated increase in productivity and incomes.

Turning to the South African context, policy and planning documents in general tend to use the term smallholder synonymously with “emerging” farmer (DAFF, 2012, 2013, 2014; DRDLR, 2009), implying that they are not considered a category of farmers in their own right but in a process of “becoming.” Only once they come to resemble existing commercial (White) farmers are they considered “real” farmers. The development of the smallholder sector is thus premised on creating an enabling environment for farmers to progress in a linear trajectory towards becoming increasingly commercially oriented and finally operating as fully fledged commercial farmers and thus build “a modern and competitive smallholder sector” (ANC, 2007). A taxonomic approach has underpinned most conceptualizations of farmers, with scale and objective of production being the most important criteria for differentiation. Table 1 summarizes the main classifications, showing a shift from broad stroke typologies to more nuanced conceptualizations of smallholder farmers, acknowledging that the first are highly deficient in terms of capturing the diversity that exists amongst smallholders and focused policy development (Aliber et al., 2009; Cousins, 2010; Greenberg, 2013; Hebinck & Cousins, 2013; Okunlola et al., 2016).

The typology in DAFF (2010; Table 1) remains extremely vague in terms of describing the qualitative differences within and between each of the categories. In the Rural Economy chapter of the National Development Plan, land access is the key determinant of difference between farmers in communal areas (NPC, 2011, p. 220; Table 1). The key objective of this typology is to identify where opportunities for job creation or livelihood improvement exist, identified as being smallholders farming between 0.5 and 5 ha. In this context, land area as a criterion for differentiation becomes questionable both due to the lack of reliable data on smallholders and land access (Aliber et al., 2009,

**TABLE 1** Prevailing smallholder typologies in South African policy documents

Policy	Typology	Criteria	Reference
Department of Agriculture, Fisheries, and Forestry (DAFF)	Subsistence, smallholder, and commercial farmers	Diffuse mixture of orientation of production and land size	DAFF (2010)
National Planning Council (NPC)	Subsistence farmers (<0.5 ha) and smallholder farmers (0.5–5 ha or >5 ha)	Land area	NPC (2011)
Department of Rural Development and Land Reform	Landless households, commercial-ready subsistence producers, expanding commercial smallholders, well-established black commercial farmers, and financially capable, aspirant black commercial farmers	Assets, aspirations	DRDLR (2009)
DAFF	(a) Part-time smallholders for whom agriculture contributes only a small share on livelihood (b) middle-of-the-spectrum smallholders for whom agriculture is the main livelihood source (c) commercial smallholders who have not reached the threshold for income tax or VAT registration	Importance of agriculture in farmers’ livelihood and degree of commercialization.	DAFF (2013)

p. 86) and also because the relationship between land access and livelihood opportunities is not elaborated, calling into question the credibility of the proposal (Cousins, 2015, p. 265). The DRDLR (2009) typology was developed in response to criticism of land reform projects for ineffectual targeting of land redistribution beneficiaries, which had previously been done only on a demand-driven basis (DRDLR, 2009, p. 18). This typology, comprising five categories (Table 1), includes farmers that represent the whole spectrum from subsistence to commercial farmers and illustrates a new focus on individual's aspirations, resources, capabilities, and constraints unseen in other policy documents, albeit with not such obvious distinctions between especially the last two categories. The typology in the Strategic Plan for Smallholder Support (DAFF, 2013) acknowledges the varying role that agriculture plays in farmers' livelihoods but seems to problematically imply that the part-time smallholders who only rely in part on agriculture as a livelihood and those for whom agriculture provides the main livelihood are not commercial smallholders. Although the latter two typologies represent significant steps towards acknowledging and unpacking diversity amongst smallholders and black farmers, in both cases, the typologies have not been linked to strategies and plans for addressing this diversity in any significant manner and the concepts used to define the different categories are not consistently applied. None of the typologies say anything substantive about the coherent patterns of social and economic relations between farmers and the structuring context, which form the basis of analysing diversity in a class-based approach.

## 2.2 | A class-based approach

Class-based analysis has informed many studies of rural differentiation amongst agrarian political economy scholars (e.g., Bernstein, 2001, 2010; Cousins, 2010; Oya, 2004; Scoones et al., 2012; Zhang, 2015). It is an approach to understanding agrarian social relations by foregrounding the "social relations and dynamic of production and reproduction, property and power in agrarian formations and their processes of change, both historical and contemporary" (Bernstein, 2010, p. 1). This approach centres the analysis of rural social relations within contemporary capitalism, a "distinctive socioeconomic system, established on a world scale, which is based on the class relations between capital and labour" (Bernstein, 2010, p. 124). From this perspective, the relations between different classes are seen as essentially exploitative, with capital or capital classes extracting surplus value from labour or the working class. Under constant pressure to remain competitive, there is a compulsion for capitalists to reinvest surplus into production in order to generate further profits, fuelling the dynamic process of accumulation. Those who do not own the means of production are compelled to sell their labour to enable their social reproduction. The capitalist system is inextricably linked to commodity circuits and peasants who were once able to reproduce themselves outside of commodity relations became compelled to enter into a wider division of labour and markets through the process of the "commodification of subsistence" (Bernstein, 2010). The process is essentially the driving force of the development and expansion of capitalism. Once peasants are compelled into wider commodity circuits within capitalism, they become "petty commodity producers" (PCP; Bernstein, 2010), essentially "small-scale" producers who combine in varying degrees the class places of capital and labour. PCPs are under constant pressure to reproduce themselves as capital or labour, referred to as the "simple reproductive squeeze" (Bernstein, 2010). This in turn leads to "class differentiation" through pressure of competitive market forces to generate surplus through accumulation, reinvestment, and expansion. This process can lead to the emergence of successful PCPs and possibly small-scale capitalists; however, if unable to remain competitive, PCPs can be compelled into wage labour. In the case of wage labour, the concept of "fragmented classes of labour" is used to encapsulate the effects of increasing pressure under the conditions of contemporary globalization on classes of labour to meet their simple reproduction, which has increasingly meant combining wage labour and small-scale agricultural production (Bernstein, 2006, p. 455).

The trajectories of rural social differentiation are highly uneven and non-linear (Li, 2014). In the South African context, however, as a result of apartheid's racialized class relations, inequalities between rural households in the former homelands tend to be downplayed (Cousins, 2010, p. 12). A class-based analytic can provide a useful lens for

exploring the processes of rural class relations, enabling a deeper appreciation of the varied and uneven manner in which the processes of social differentiation unfold.

Cousins (2010) developed a class-analytic typology for small-scale agricultural producers in South Africa, which identifies six class categories: supplementary food producer, allotment holding wage workers, worker-peasants, PCPs, small-scale capitalist farmers, and capitalists whose main income is not from farming. This typology highlights the combination of agriculture, wage labour, and the varying degrees to which these contribute to social reproduction and/or accumulation. It further emphasizes the structural context within which agricultural practices operate—land access, capital, labour markets, and employment opportunities. Unlike other studies that have used a class-based approach to analyse the agrarian structure quite broadly,<sup>3</sup> this study applies it to commercially oriented smallholders engaged in tree-crop farming, a subcategory within the broader agrarian landscape.

### 3 | METHODS

Data collection comprised an initial quantitative survey ( $n = 80$ ) conducted between August–October 2015 and March–May 2016. This was followed up by qualitative in-depth interviews ( $n = 26$ ) conducted between March–May 2016 and August–September 2016. Respondents for the survey were identified from the Department of Agriculture's database and from the supplier database of three key processors and exporters of macadamia and avocados. From the respective databases, an attempt was made to cover all three local municipalities in Limpopo where tree crops are being cultivated, namely, Makhado, Thulamela, and Muthale, and included only individual smallholders growing in these areas and not land reform beneficiaries. In addition to the geographical spread, an attempt was made to ensure an as diverse a sample as possible. Farmers were included if they were growing macadamia or avocado trees regardless of scale or primary focus of their production. In order to avoid a sample bias in favour of those already integrated into markets and visible to the state<sup>4</sup>—which could have been the case if only the above-mentioned databases were used—snowball sampling followed the initial farmer interviews. In this way, farmers working outside of state support structure and/or not selling through formal channels were also included, comprising about 50% of the final sample. Respondents were individuals who had the de facto use rights to the land where their orchards were planted.<sup>5</sup> The final sample ( $n = 80$ ) was made up primarily of farmers whose primary crop was macadamia<sup>6</sup> ( $n = 37$ ), avocado ( $n = 22$ ), and vegetables with tree crops only having secondary importance ( $n = 21$ ).

In addition to demographic and income-related variables are farm-related variables (total land area under the control of the interviewee and access to and use of land and other natural resources), nature of labour and market relations, ownership and access to capital assets, focus of production, and livelihood diversification. In addition, data were collected on gender relations and changes in agricultural production over time.

The qualitative in-depth interviews were conducted to elaborate on the class-based typology generated by the survey. These farmers were selected based on a preliminary analysis of the survey data in an attempt to capture a cross section of farmers based on demographics and farm- and production-related variables and represent farmers from each of the different clusters identified. Audio recordings of these interviews were transcribed and analysed using selective coding in ATLAS.ti.<sup>7</sup>

Survey data were processed in Statistical Package for Social Sciences using cluster analysis, which is designed to reveal natural groupings (clusters) within a dataset that would otherwise not be apparent (Norusis, 1994). These natural groupings are established by classifying a set of individuals into a smaller number of mutually exclusive groups,

<sup>3</sup>C.f. Levin, Russon, and Weiner (1997) for South Africa; Cousins, Weiner, and Amin (1992) and Scoones et al. (2012) for Zimbabwe; and Zhang (2015) for China.

<sup>4</sup>Only 9.9% of households reported receiving agricultural-related support from the government (StatsSA, 2017, p. 59).

<sup>5</sup>Ownership was usually determined by the person having the permission to occupy registered in his or her name or the de facto rights to the orchards in the case of inheritance where the permission-to-occupy certificate had not yet been transferred.

<sup>6</sup>Note that very few farmers focus on a single tree crop.

<sup>7</sup>German acronym for Archive of Technology, Life world, and Language, with ti referring to text interpretation.

based on their shared or similar attributes. This technique seeks to maximize the homogeneity within a cluster while maximizing the heterogeneity between them (Blaikie, 2003). Two-step clustering was chosen based on its ability to process different types of variables simultaneously, because the data comprised both scale and categorical variables. Moreover, this method is able to identify the optimal number of clusters. The two-stage approach comprises, first, the creation of preclusters by measuring the variation between cases. Similar cases are grouped together, creating a relatively homogenous cluster with minimal variation within the cluster (Mooi & Sarstedt, 2011, pp. 255–256). Second, a modified hierarchical clustering method uses an algorithm to combine the preclusters sequentially to form homogeneous clusters (Mooi & Sarstedt, 2011, p. 259). This is done by measuring the distance between the preclusters to determine how far apart (different) or close together (similar) they are.<sup>8</sup>

Key to any clustering method is the selection of variables against which the cases are clustered. Initially, 29 variables were selected from the total of 155 variables to run the two-step cluster analysis. These variables collectively covered the key aspects from the survey: the nature of production, market orientation, assets (especially focused on access to water, land agricultural equipment, and capital), labour, livelihood diversification, income, and demographics. The results derived from these initial 29 variables were “poor” in terms of “goodness of fit,” illustrating that a number of the variables used were not useful in determining the cluster formation. The “predictor importance” indicates which variables are considered most important in determining the clusters and which are the weakest, mapped on a scale of 0–1. In order to arrive at a better cluster solution,<sup>9</sup> only the variables that fell above 0.2 were selected, and based on these 15 variables,<sup>10</sup> the cluster analysis was rerun and the cluster quality that resulted was considered “fair.”<sup>11</sup> It was decided for the purpose of this study to conduct the analysis based on the “fair” result, which allows for a nuanced analysis that could illustrate both similarities and differences between the clusters. One of the advantages of two-step clustering is that the number of clusters can be automatically determined by way of two different measures of goodness of fit.<sup>12</sup> The final solution used for this analysis is based on the AIC measure and comprises four clusters.

The choice to use a multivariate grouping procedure such as cluster analysis as a tool to explore socio-economic differentiation amongst farmers is due to the highly diversified nature of rural livelihoods. In this context, the nature, focus, and objective of agricultural production are highly varied along the degree of market integration and resource access. Cluster analysis presents one way to address this complexity: It is a convenient way of grouping data and identifying similarity measures when the data are highly varied and composed of both scale and categorical variables (Mooi & Sarstedt, 2011). It also has limitations though clusters emerge based on a few predefined key variables, potentially overlooking other relevant factors, whereas they also share to varying degrees other characteristics. Boundaries separating the clusters are therefore often fluid, reflected in the cluster quality being considered “fair.” However, as a heuristic tool, cluster analysis conveniently helps to identify key characteristics that illustrate social differentiation from a class-based perspective.

When interpreting the data, it should be noted that the orchards of most farmers in the sample are in varying stages of development, often not having reached full maturity, and hence, current yields are much smaller than

<sup>8</sup>The log-likelihood criterion was used as a distance measure due to its ability to accommodate both continuous and categorical variables.

<sup>9</sup>The cluster solution is determined by the similarity (cohesion) within the cluster and the differences (separation) between the clusters.

<sup>10</sup>Three variables were identified as the most important by the “predictor importance”: the importance of farming in the overall livelihood portfolio, the source of additional income, and the amount of additional income. There were followed by land size, ability to employ labour, education, age, access to finance, production costs, area cultivated, ability to hire seasonal labour, income from tree crops, year in which the land was acquired, total income from tree and other crops, and nature of labour. These fell within the range of 0.2–1.

<sup>11</sup>The fact that only three variables were considered strong predictors of importance in the clusters, with the remaining variables being of less importance to the overall cluster solution, largely accounts for the quality being “fair.”

<sup>12</sup>Schwarz's Bayesian Criterion (BIC) and Akaike's Information Criterion (AIC) are two measures of the goodness of fit, which can be used to compare solutions with different numbers of clusters. The AIC is known for overestimating the “correct” number of clusters, whereas the BIC is considered to underestimate this number. Hence, it is generally recommended to compare results and evaluate each solution on practical grounds in light of the solutions interpretability (Mooi & Sarstedt, 2011, p. 279). In this case, the BIC criterion resulted in a three-cluster result, whereas the AIC resulted in a four-clusters result. It was decided to proceed with the four-cluster result as this one split the largest cluster into two smaller ones and thus provided scope for a more nuanced analysis of the emerging forms of social differentiation. Clustering illustrated lower standard deviations (SD) within clusters as compared with the general SD, which demonstrates the validity of the clusters.

anticipated future yields. This makes it difficult to do any substantial analysis of profitability at this stage, as illustrated by the high standard deviations of income and costs data. Hence, the data on yields and income and ultimately farm profitability and level of surplus generation need to be considered as a tentative measure and considered alongside the current size of land under cultivation and level of mechanization.

#### 4 | CONTEXTUALIZING SMALLHOLDER TREE-CROP FARMERS IN VENDA

This study was carried out in Vhembe District, Limpopo Province, in the northeast periphery of South Africa as part of a larger research programme.<sup>13</sup> The Soutpansberg mountain range divides this district in two agro-ecological systems. The northern side is largely semi-arid, with livestock farming and game ranching being the main activities and some limited horticulture where water is available. The southern side is a subtropical regional hub with high rainfall, in excess of 700 mm per annum, making it suitable for the cultivation of subtropical fruits, cereals, vegetables, and nuts (Oni, Nesamvuni, Odhiambo, & Dagada, 2012). The district includes three former homelands (Venda, Lebowa, and Gazankulu), which like most former homelands are characterized by high levels of poverty, economic marginalization, poor infrastructure, and fragmented institutions<sup>14</sup> (Hall, Wisborg, Shirhami, & Phillan, 2013). Black small-scale and subsistence farmers continue to be confined to overpopulated areas where land access is severely limited and land is governed by traditional authorities under a communal land tenure system.

With 41% involved in agricultural production of some kind (StatsSA, 2017), Limpopo Province has the highest number of households involved in agriculture in the country. However, 91.5% of these households practise farming on a subsistence level as an additional source of food, and only a small minority (4.4%) is engaged in agriculture as an additional source of income (StatsSA, 2017, p. 58). It is within this small niche that the majority of the smallholder tree-crop farmers in this study fit. In terms of crop choice, the main focus is on grains and staple food (73.6%), with fruit and vegetables also very common (57.6%), whereas fewer households (32.2%) are engaged in livestock farming compared with in other provinces (StatsSA, 2017, p. 59).

Honing in on Venda, the overall number of households involved in agricultural production is much higher than the provincial aggregates cited above, with most homesteads having a few fruit trees and many also cultivating vegetables, indigenous leafy greens, and maize within their residential stand. Many villages maintain access to communal land for ploughing maize and other staple crops, but this is in decline due to multiple factors, including increasing (residential) pressure on land and “people losing interest” as many villagers commented. The deagrarianization process is well documented in Sub-Saharan Africa (Bryceson, 1996, 2002) and in South African (de la Hey & Beinart, 2017) and not unfamiliar in Venda. However, counter to this process, Venda has witnessed the increase of commercially oriented orchards since the 1950s. Orchards comprising mainly avocados and mangoes were promoted by the Venda Department of Agriculture and facilitated to some degree through apartheid spatial planning, commonly referred to as “betterment.” Survey data revealed a rapid growth in orchards in the 1980s and the first decade after the transition to democracy in 1994. During this period, macadamia trees were first introduced, both on newly demarcated land and planted in existing orchards. Land access, similar to other former homelands, is governed by traditional authorities, and use rights are secured via a “permission-to-occupy” certificate. The municipality issues the certificate on approval from the relevant traditional authority. The exact size of this sector is difficult to determine, but 2018 data acquired from the Limpopo Department of Agricultural and Rural Development indicate that there are 1,163 smallholder orchard owners in Vhembe District<sup>15</sup> although the actual number could be substantially higher

<sup>13</sup><https://InclusiveVCC.wordpress.com>.

<sup>14</sup>For example, the colonial era and apartheid policies saw the migrant labour system completely distorted and the institutions of family and land transformed from being one which represented layered and fluid decision-making into one in which power was concentrated in the hands of traditional leaders.

<sup>15</sup>Data acquired from LDARD records updated in 2018.

based on data collected from eight tribal authorities<sup>16</sup> who collectively reported to have 4,713 registered orchards covering 9,746 ha. The area of land allocated to individual orchards<sup>17</sup> was on average 6 ha, but the sizes are highly vary depending on available land, geographic features, and patronage.

The introduction and promotion of subtropical tree crops in home gardens and orchards were initially aimed primary at home consumption, although in some cases, a small surplus is sold at local markets (De Hon, 2015). This has significantly changed over the past decade as state actors have identified these crops as important commodities that can be harnessed as drivers of economic growth and employment in the area (DAFF, 2014; LDARD, 2015; NPC, 2011). This is illustrative of a broader trend in agricultural policy towards a commodity-focused approach to agricultural development and is especially visible with regard to macadamia and avocado where the focus has shifted entirely towards integrating small-scale farmers into national and international markets (Chawiche, 2015; Jaskiewicz, 2015).

Agricultural extension exemplifies this commodity-focused approach with extension officers each having a specific commodity specialization and support and training provided to farmers grouped according to their production focus. This commodity-focused approach has also translated into a growing role for commodity organizations in supporting small-scale farmers (Aliber, Maluleke, Manenzhe, Paradza, & Cousins, 2013). In Venda, this is particularly evident where the South African Subtropical Grower Association (Subtrop) and the Southern African Macadamia Growers Association (SAMAC)—both representing White commercial farmers in the region—have taken an active role in supporting smallholders who produce avocados and macadamia. Their support includes training and skills development and provision of inputs. This is particularly the case for smallholder macadamia farmers where a statutory levy was implemented in 2014, of which 20% of the revenues are earmarked for smallholder “transformation” (DAFF, 2014) amounting to around R2 million<sup>18</sup> in the first 4-year period. The majority of this money has been spent on enterprise development of smallholder macadamia farmers. Despite these initiatives to support smallholders' integration into high value commodity chains, there are substantial barriers to entry beyond access to land, related to the capital-intensive nature and long maturation period of these commodities. Establishment costs are substantial. Subtrop (2015) estimates that to establish a commercial macadamia orchard under a dryland scenario (which is the case for most of the smallholders), the cumulative investment cost after 6 years is R121,356 per hectare. Orchards are estimated to become profitable around Year 10 with returns estimated at R100,000 per annum.<sup>19</sup> In addition to these substantial capital requirements, control over access to the market and all the highly profitable downstream activities such as processing, logistics, and marketing remains highly concentrated and dominated by White-owned capital. In order for smallholders to gain access to markets, they need to compete on the same terms as the large-scale commercial farmers, with payment terms, minimum volumes, quality, and communication requirements proving exceedingly difficult for most black smallholders whose historically determined class position puts them in a highly disadvantaged position vis-à-vis White commercial farmers.

## 5 | DYNAMICS OF CLASS FORMATION AMONGST SMALLHOLDERS

This section explores and elaborates the nature and dynamics of the four clusters (Table 2) and associated class positions. Three variables appeared to have disproportionately high influence over determining cluster membership,

<sup>16</sup>These tribal authorities were selected based on the proliferation of orchards in their respective territories and included Tsianda, Lwamondo, Khaku, Njhakanjaka, Tshakuma, Rambuda, Mphephu, and Tshivase.

<sup>17</sup>This number was determined from the data collected from the records of eight tribal authorities that comprise the main growing areas.

<sup>18</sup>SAMAC Evolution project PowerPoint presentation 2017.

<sup>19</sup>There are a number of variables that determine such a cash flow projection model such as distance between trees, cultivar, and agro-ecological zone, so these figures are merely a rough estimate. In addition, this model was generated based on the experience of large commercial agricultural developments in a corporate environment, and smallholders operate on a much lower cost structure SAMAC (nd) estimates somewhat lower average costs for establishing an orchard: R100,000 per hectare in the first year, followed by around R25,000 per hectare per year until the trees come into full production after 7–8 years.

**TABLE 2** Key characteristics of farmer clusters

Variables	Characteristics	Cluster 1	Cluster 2	Cluster 3	Cluster 4
		(n = 33; 41%)	(n = 17; 29%)	(n = 23; 21%)	(n = 7; 9%)
		Welfare-dependent petty	Agricultural petty commodity	Salaried small scale	Agricultural small scale
		Commodity producer	Producer	Capitalist	Capitalist
Nonfarm income	Average annual nonfarm income	Median R16,920	Median R0	Median R168,000	Median R154,800
		IQR R1,200	IQR R9,000	IQR R156,000	IQR R300,000
		Min, max R0, R132,000	Min, max R0, R80,004	Min, max R0, R448,920	Min, max R0, R480,000
	Income % from agriculture	Median 18%	Median 100%	Median 3%	Median 78%
		IQR 54%	IQR 92%	IQR 16%	IQR 83%
		Min, max 0%, 100%	Min, max 0%, 100%	Min, max 0%, 100%	Min, max 1%, 100%
Importance of nonfarm income	High	Very low	High	Low	
Origin of additional income sources	Pensions	Very limited and varied	Civil servants	Diversified sources	
Farm income	Average annual gross income from tree crops	Median R3,840	Median R0	Median R4,000	Median R420,500
		IQR R11,737	IQR R11,250	IQR R11,000	IQR R769,000
		Min, max R0, R52,840	Min, max R0, R195,000	Min, max R0, R56,000	Min, max R0, R812,000
	Average annual gross income from nontree crops	Median R0	Median R4,650	Median R0	Median R0
		IQR R620	IQR R67,800	IQR R670	IQR R90,000
		Min, max R0, R55,000	Min, max R0, R350,000	Min, max R0, R130,000	Min, max R0, R100,000
	Average annual gross farm income	Median R4,000	Median R14,000	Median R5,000	Median R420,500
		IQR R24,550	IQR R96,125	IQR R16,750	IQR R737,200
		Min, max R0, R67,500	Min, max R0:350,000	Min, max R0:130,000	Min, max R4,000, R812,000
	Diversification of farm income between tree crops and other crops	Tree crops important, with secondary importance given to nontree crops	Nontree crops important	Both important	Tree crops important
On-farm expenses	Average annual variable costs	Median R8,325	Median R8,380	Median R19,300	Median R230,000
		IQR R12,670	IQR R68,098	IQR R39,600	IQR R323,500
		Min, max R250, R61,000	Min, max R0, R144,600		

(Continues)

TABLE 2 (Continued)

Variables	Characteristics	Cluster 1	Cluster 2	Cluster 3	Cluster 4
		(n = 33; 41%)	(n = 17; 29%)	(n = 23; 21%)	(n = 7; 9%)
		Welfare-dependent petty	Agricultural petty commodity	Salaried small scale	Agricultural small scale
		Commodity producer	Producer	Capitalist	Capitalist
				Min, max R500, R85,000	Min, max R33,000, R473,400
Agricultural surplus	Net annual agriculture surplus (median)	None –R4,325	Yes R5,620	None –R14,300	Yes R190,500
Labour	Type of labour	Own labour, limited hired labour and some family labour	Own labour and limited hired labour	Hired labour and some family labour	Hired Labour
	Number of labourers (median)	Fulltime median 0 Seasonal median 2	Fulltime median 0 Seasonal median 2	Fulltime median 1 Seasonal median 2	Fulltime median 6 Seasonal median 20
Type of farmer	Reliance on own labour	Mostly fulltime farmers	Mostly fulltime farmers	Part-time farmers and employers	Fulltime and employers
Land	Land size	Median 7 ha IQR 6 ha Min, max 5 ha, 22 ha	Median 5 ha IQR 9 ha Min, max 5 ha, 15 ha	Median 7 ha IQR 5 ha Min, max 5 ha, 54 ha	Median 40 ha IQR 24 ha Min, max 22 ha, 54 ha
	Percentage of area cultivated	Median 80% IQR 47% Min, max 4%, 100%	Median 50% IQR 71% Min, max 8%, 100%	Median 65% IQR 60% Min, max 9%, 100%	Median 67% IQR 52% Min, max 17%, 100%
Year land acquired		Median 1986	Median 1998	Median 2003	Median 2004
Capital and assets	Source of investment capital	Personal	Personal	Personal	Bank
	Value of agricultural equipment	Median R500 IQR R4,260 Min, max R0, R70,640	Median R200 IQR R41,100 Min, max R0, R500,000	Median R7,000 IQR R24,400 Min, max R150, R149,750	Median R155,000 IQR R482,640 Min, max R19,600, R950,000
	Access to finance	None/limited	None/family	None/banks	Banks and other

(Continues)

TABLE 2 (Continued)

Variables	Characteristics	Cluster 1	Cluster 2	Cluster 3	Cluster 4
		(n = 33; 41%)	(n = 17; 29%)	(n = 23; 21%)	(n = 7; 9%)
		Welfare-dependent petty	Agricultural petty commodity	Salaried small scale	Agricultural small scale
		Commodity producer	Producer	Capitalist	Capitalist
Demographics	Education level	Low (primary)	Medium to high (secondary through tertiary)	High (tertiary)	Medium (secondary)
	Age category	Retired, early retirement	Early to mid	Mid to late	Mix
	Gender	Proportionally similar	Proportionally similar	Proportionally similar	Proportionally similar

namely, the primary means of securing a livelihood, capital investment in agricultural production, and the degree to which hired labour could be accessed. Of these, the nature of livelihood diversification—measured by the proportion of nonfarm income in relation to agricultural income—emerged as the single most important differentiating variable. For the majority of farmers, nonfarm income comprises the most important livelihood source, with state pensions and salaries being the principal means of livelihood (Figure 1). Nonfarm income sources proved to be of critical importance in sustaining agricultural activities by cross-subsidizing initial capital investments, running costs, and labour. The fact that these dimensions emerged as the most influential in determining the clusters affirms the appropriateness of using a class-based analytic to explore socio-economic differentiation.

Two class categories are distinguishable, namely, a large group of PCPs (70% of the sample) and an emerging class of “small-scale capitalist” farmers (30%). These class positions are internally differentiated based on the primary livelihood source. The PCPs comprise those who rely primarily on social welfare and those for who derive their main source of livelihood from a diversified agricultural portfolio. The small-scale capitalists are differentiated according to

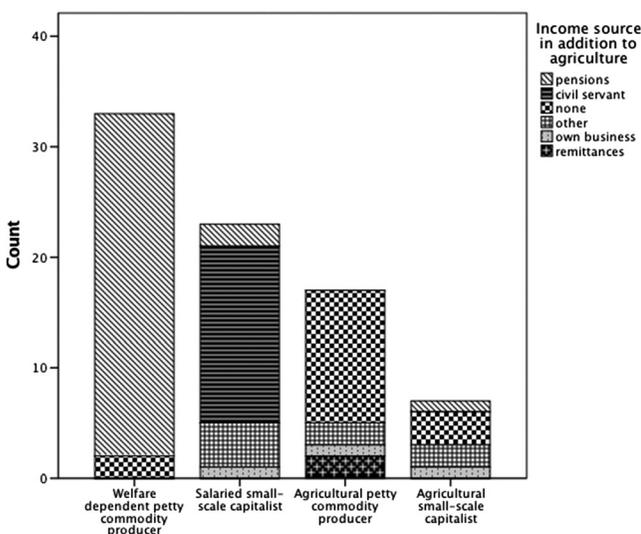
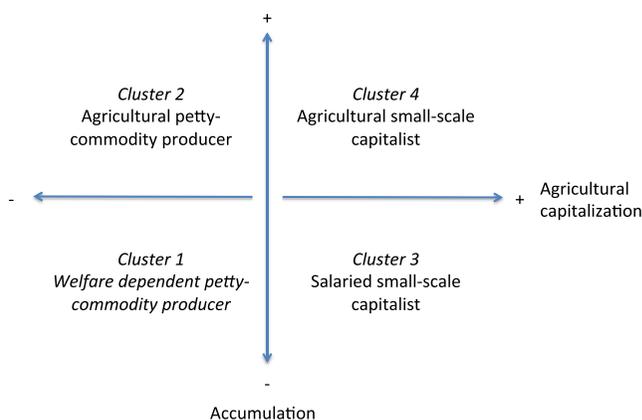


FIGURE 1 Income source in addition to agriculture

**FIGURE 2** Farmer typology in relation to accumulation and agricultural capitalization



those relying primarily on salaried income and those whose main livelihood comes from their agricultural enterprise. The class places that emerge and the lines along which they are internally differentiated illustrate distinct differences in terms of accumulation capacity and degree of agricultural capitalization (investment in labour, inputs, and mechanization; Figure 2).

### 5.1 | Welfare-dependant PCP: Ageing farmers “hanging in”<sup>20</sup>

The majority (41%) depends primarily on welfare in the form of state pensions (available from 60 years onwards<sup>21</sup>) as their main livelihood source (median nonfarm income being R1,410 per month<sup>22</sup> or 18% of total income). They are characterized by very low total farm variable costs (median R8,325 annually), illustrating very low levels of mechanization, with plough and hoe and sometimes a small backpack spray being the most important farming implements. Their median gross farm income is lower than the farm expenses, indicated by the negative value of agricultural surplus. This requires cross-subsiding from other income sources, whereby social grants, in most cases, pensions, account for meeting the deficit. These investments are generally rationalized as being worthwhile based on anticipated future returns from their orchards once they reach maturity. Annual tree-crop income, although still very limited (median R3,840), constitutes the main agricultural income, whereas in the few cases that there is additional income from nontree crops (median R0; IQR R620<sup>23</sup>), it is generated from a wide range of vegetable crops and contributes a very small share of agricultural income. For those who are producing vegetable crops alongside tree crops, these are marketed primarily through informal markets via traders, with only a small portion being consumed at a household level. These farmers rely primarily on their own labour, with some additional help coming from seasonal labour and family members. Land access was around 7 ha (median), which is comparable with the other PCPs. However, farmers in this group are cultivating around 80% of land available to them, which is comparatively high in relation to the other clusters. These farmers reported either having no access to finance or were risk averse in the few cases where they did have access, choosing not to make use of credit. In terms of demographics, these farmers are mostly elderly in retirement and their general formal education is very low, with most having only completed primary school. In sum, these farmers have access to the means of production, their production is primarily market-oriented,

<sup>20</sup>The labels given to the different categories—“hanging in,” “inching up,” and “stepping up and out”—draw from Dorward et al.’s (2009) typology of livelihood strategies available to the poor.

<sup>21</sup>An individual needs to earn less than R78,120 per year and have a net asset value below R1,115,400.

<sup>22</sup>At the time of data collection (May 2, 2016) R1 was equivalent to USD 0.07.

<sup>23</sup>IQR = the interquartile range or middle 50% between the second and third quartile. This measure was preferred above the average for better indicating the spread where the standard deviation is high.

they rely mainly on their own labour with occasional hired labour, and their scale of production is relatively small. Farming alone is not sufficient to facilitate their simple reproduction, and there is currently very little scope for engaging in accumulation.

It is the demographic dimension that speaks most prominently to many of the features and shared experiences that distinguish this cluster. Most of the farmers attached important value to farming beyond economic motives, with farming representing strong links to a past and lifestyle that they felt nostalgic about. Farmers became animated when reflecting on their youth and memories of growing up in a largely subsistence agricultural context. Herding cattle, ploughing the fields, and helping parents with seasonal agricultural activities were fondly remembered, and many considered these experiences as formative moments that inspired their interest in agriculture. Many also commented that by working the land, they were somehow connecting to the past, which gave a sense of belonging, meaning, and well-being. As one old man explained, "I continue farming because it's in my blood." Another farmer commented, "I'm a pensioner, but I choose to be here [on the farm]. If I don't have a place to go during the day I will die soon." Another farmer echoed similar sentiments, "Even when I'm sick I will get a driver to bring me here to the farm and drive me around and I will feel better."

Farming can also be considered as a very pragmatic activity. "If you are a pensioner you can choose farming because it gives you something to do." These sentiments partially explain why many of these farmers continue farming but can obviously not be separated from the potential economic dimensions that remain the overarching motive for production. Although future gains remain elusive at this stage, muddling through under the present circumstances that require significant personal financial investments can be better understood if one considers the nonmaterial benefits that these farmers gain from farming.

Future goals are often contingent on prospects for succession. The majority of farmers bemoaned the reality that the next generation is not interested in farming, leading to critical concerns about the future and succession. "No children want to farm; they grow up seeing that people who are in agriculture are failures so they don't want to do it." Beyond the hardships and lack of profitability that most of the young people associate with agriculture, new opportunities available to the youth make farming less desirable in comparison. "My children don't want to get involved, my child has a PhD and is lecturing; the other working on Bloemfontein and studied agriculture; the third one did chemical engineering and is working in Pretoria; and the only son did a bachelor of commerce in accounting; and the last born [is a] mining engineer. I don't think they can take over the farm." These succession challenges have prompted a particular emphasis on ways to get the next generation interested in farming. "None of my children are interested in farming. Maybe I will be able to recruit one of my sons ... I will never sell my farm ... I will call him one year when the fruit is ripe and say here, it is for you, take all the responsibility and all the money you find keep it." Few cases were found in which the next generation of these elderly farmers considered farming as a potential career. Rather the orchard was considered as an asset that could potentially look after itself and provide some additional income.

An ageing farmer population and a lack of succession plans have resulted in a growing number of widows who end up the primary custodian of established orchards. With limited skills and experience, these women are largely motivated to keep the orchards out of a sense of duty and respect for the project of their deceased partners, with little apparent emphasis placed on its economic value.

Situating our understanding of welfare-dependent PCP in terms of their generational characteristics (ageing pensioners) provides important context for our understanding of their persistence despite relative unprofitable farming enterprises. The stable, albeit very meagre, monthly pension provides a basic social safety net that ensures their reproduction and enables farm production through cross-subsidizing their farming enterprise with pension income. With their basic needs being met by the state, these farmers pursue farming in the hope of muddling through and someday becoming profitable, but this is not their sole motivation. The nonmaterial dimensions of farming such as nostalgia for a past in which agriculture played a central role and the sense of well-being that is experienced working the land provide important noneconomic rationales of this ageing cohort of farmers.

## 5.2 | Agricultural PCP: “Inching up” via diversification within agriculture

The differentiation between PCPs is largely demographic, conditioned by the requirement for state pensions (i.e., 60 years and above). This has meant that younger farmers, in the absence of welfare grants and a highly constrained labour market with very few employment opportunities, have demonstrated a higher degree of agricultural entrepreneurialism. Because tree crops are unable to sustain their immediate needs of social reproduction, these farmers are diversifying into cash crops, largely sold through informal markets, demonstrating in this way that a small degree of accumulation can be achieved in the absence of nonagrarian capital. Capital thus generated is then reinvested in tree crops, bridging the long maturation period until tree crops come into production. In addition to generating agrarian livelihoods, these strategies have implications for local food production as these high-value crops are stimulating the production of food cash crops, which are sold into local markets.

The agricultural PCPs represent 29% of the sample and share similar characteristics to the welfare-dependent PCPs, but with an agricultural income constituted by a median of 100% of total income (monthly median R1,167; IQR R8,010). Hence, agriculture plays a far more critical role in terms of social reproduction than for the state-assisted PCPs. Nontree crops, mostly vegetables, are primarily responsible for the agricultural income (annual median R4,650; IQR R67,800) and are perceived to be a short-term strategy for income generation while tree crops reach maturity. Their overall on-farm variable costs are similar to the state-assisted PCPs, but their agricultural income is 3.5 times higher. Despite their significantly higher proportion of total income coming from agriculture (median 100% and IQR 92%), the total average monthly income is substantially lower than the welfare-dependent PCPs, making them by and large the poorest in economic terms of the whole sample. These farmers are able to generate a marginal agricultural surplus, sufficient only to reinvest in the farm and meet the needs of social reproduction, leaving little scope for potential expanded reproduction. Access to capital is considerably restrained, and very few farmers have access to external finance or appear to be credit averse. Demographically, this group demonstrates significantly different characteristics to the previous cluster. They are on average much younger than other PCPs, falling mostly into the early and midcareer category, and their average educational level is much higher, most having completed secondary school and some with tertiary qualification.

For many of the farmers in this cluster, they entered into farming when they inherited relatively established farms. These young farmers have long-term plans and aspirations of becoming commercially oriented and profitable, with aspirations including expansion and upgrading within the value chain into processing. “I did research on what crops to grow, I looked at mangoes, but the mangoes don't have a market, but I see the macadamia tree is not all over and the price is high. I want to get into business, not only farming; I want to get into farming business. I also want to learn how to make profit with this macadamia. I want to make butter and oil from macadamia.” However, farmers' goals and related strategies are contingent on their ability to access capital, which is severely limited under current circumstances (i.e., no land title, nonfarm income, cash transfers, and remittances). In the absence of access to finance, intercropping is largely used as a temporary cash flow strategy, with high expectations of income-generating possibilities of tree crops once they come into full production. “I'm doing veg only for intercropping before the mac gets too big ... Cash crops I'm only doing so I can get money to do macadamia. I maintain the macadamia and buy chemicals and fertilizers and buy electricity with the money from the cash crops.” Besides facilitating regular income generation, diversification is also perceived as a strategy for risk mitigation. “I decided to diversify across three different crops because I want to divide my year according to the crops so [that] I can get harvest throughout the year and spread risk.”

Limited financial resources coupled with ambitious goals and strategies have stimulated both production and labour-related innovations. Crop choice and crop combinations have been used as means to mitigate damage and loss from pests, for example, by planting mangoes, which has resulted in significant reduction in pest damage to the litchis. Another innovation observed was the use of livestock to replace the manual labour of “cleaning” the farm and thus saving on labour costs. With labour being the largest expense in most cases, this poses particular challenges as one farmer articulated: “My father had a pension grant so he could employ workers, but I can't afford because I don't

have a salary anywhere. I only rely on the production of this farm.” Three innovative avenues were found amongst this cluster for accessing labour through nonmonetary exchanges. First, the state-funded “Expanded Public Works Programme”<sup>24</sup> effectively provides a team of workers, paid by the Department of Public Works, who are able to perform the required work functions on the farm. Second, collaborating with training providers contracted by AgriSETA<sup>25</sup> allows farmers to receive labour in return for providing training opportunities on their farms. Third, a few cases were found where workers provided labour in exchange for agricultural inputs such as fertilizers.

Despite clear goals to grow and expand into more commercially oriented businesses, current strategies are largely curtailed by the immediate imperative to generate sufficient income from cash crops for their productive and reproductive needs. To this end, they employ entrepreneurial and innovative strategies to generate income from the farm with limited resources, whereas expected returns from tree crops materialize. They are gradually “inching up through innovation.”

### 5.3 | Salaried small-scale capitalist: “Stepping out” into agriculture via salaried work

Farmers in this cluster generate their main income from nonfarm employment, mostly as teachers (median monthly income R14,000; IQR R13,000). Their fulltime employment status means that farm labour is performed primarily by hired labour with the farm owners playing more of an oversight, managerial role. Despite this primary reliance on hired labour, the number of workers remains low, on average one fulltime and two seasonal workers, only marginally more than the PCPs. Their annual on-farm variable expense (median R19,300), which is used as a proxy for the degree of farm capitalization, is relatively high compared with the two clusters of PCPs (median around R8,300), and the gross annual farm income (median R5,000)—which originates primarily from tree crops (median R4,000)—is just over a quarter of the farm expenses (median R19,300), leaving the farming operation running at a loss. With the median for nonfarm monthly income being R14,000 (IQR R13,000), this results in a significant cross-subsidization of the agricultural enterprise by the nonfarm income. This translates into an increasing pressure on the way capital is expended in the enterprise. As the investment is greater than in the case of PCP, there is increased pressure for it to translate into market competitiveness. Labour is squeezed with wages in most cases well below the sectorial minimum.<sup>26</sup>

Individuals in this cluster fall largely into the mid- to late-career category and are the most educated of the whole sample with most having tertiary education. Salaried small-scale capitalists have fulltime nonfarm employment effectively turning them into farm managers or absentee farmers. Nonfarm employment provides for slow but consistent investment in the farm, with a tendency towards less diversified farming systems, largely modelled on the commercial white farmers. “I looked at the farm and how we were farming and [how the] white counterparts [do it], and I thought, this is not the way of farming, we must have one or two fruits in which we must specialize.”

Nonfarm employment is critical for sustaining and developing the farm in the years leading up to full production; it stabilizes household consumption so profits can be reinvested, facilitating a higher level of farm capitalization than the PCP clusters. Although nonfarm employment sustains and facilitates capitalization of the farm, it also translates into marginalization and exclusion of these farmers from accessing information, training, and other state and private sector opportunities, which are premised on the expectation that you are a fulltime farmer and therefore available during working hours. “If you stay away, the government will not help you so much. If these people [government officials] come and see you working they know you are serious. If you are a teacher you need to be on the farm after work.” The main strategy to deal with this situation has been to gain access to information and support via alternate channels such as the internet, industry journals, and White commercial farmers. This has seen the emergence of new actors in the form of White commercial farmers who in some cases have taken on the informal role of “knowledge

<sup>24</sup>The Expanded Public Works Programme (EPWP) is implemented by the Department of Public Works and has its origin in the 2003 Growth and Development Summit. The aim is to create decent work opportunities for the unemployed.

<sup>25</sup>The Agricultural Sector Education and Training Authority (AgriSETA) was set up under the Skills Development Act with the mandate to provide training and skills development for the agricultural work force.

<sup>26</sup>Sectorial determination for agricultural workers (2017–2018) is set at R135.52 per day.

brokers," which is not without its own controversies that will not be addressed here. Educational level has also played a critical role here as it provides access to alternative resources and facilitates a certain confidence that enables the development of social relations across racial and class barriers in order to access knowledge and support from these "knowledge brokers."

Labour relations play a far more critical role in this cluster than in any of the others, as hired labour constitutes the only source of labour. Labour issues have been cited as one of the main challenges. Unsupervised labour is believed to be the main cause of labour performing acts of "covert resistance" (Scott James, 1985), whereby workers do not apply chemicals or steal inputs. A strategy to dealing with this issue remains largely absent, and farmers simply hold on to the expectation that returns from their orchards will eventually outstrip their current earning and facilitate them leaving fulltime employment and being fulltime on the farm. Although for the younger farmers, this is seen as a viable option in the coming years, for many others who are nearing retirement age, fulltime farming is something that will only become possible after retirement.

The key strategy here hinges on the ability of individuals to capitalize the farm more intensively through nonfarm income. Hence, their focus is less on production diversity, as they do not need to ensure a farm income from cash crops while waiting for their crops to mature. Farming represents a strategy towards ensuring an additional income and is largely seen as an investment for retirement or presenting the possibility of early retirement from formal employment, enabling them to become fulltime farmers.

#### 5.4 | Agricultural small-scale capitalist: "Stepping up" within agriculture

This small cluster of farmers (9%) is characterized by their larger scale of production, higher level of mechanization, and high reliance on hired labour compared with the other clusters, along with the ability to accumulate capital. These dimensions enable reinvestment, expanded production, and further accumulation, setting farmers in this cluster apart as relatively successful "small-scale capitalists," in stark contrast to the other three clusters. Of particular significance is their access to land, which is much higher than that of the other three clusters, with a median of 40 ha, ranging from 22–54 ha, compared with the other three clusters that averaged between 5 and 7 ha. Patterns of acquiring land access and land holdings are highly varied within this cluster and comprised both communal land held under customary law and private land held under title. In most cases, land was acquired in stages: via the tribal authority in cases where land was readily available but, in some cases, via purchase from orchard owners. The latter consisted of those who were no longer interested in farming, unable to capitalize their orchards sufficiently to make them productive, or simple under pressure for cash and compelled to distress sales. In two cases, titled land was purchased on the outskirts of the communal area (formerly White owners farms), based on the proximity to services and the fact that the land was already partially developed. In one case, an individual leased a large orchard from a tribal authority, established under the former Venda government.

In terms of income, just over half reported having an additional income other than farming, with a monthly median nonfarm income of R12,900, similar to the salaried small-scale capitalists. However, the nonfarm income contributed a proportionally much smaller share of total income, with the agricultural income accounting for 78% (median). The average gross annual agricultural income is R420,500 (IQR R737,200), mainly generated from tree crops. This clearly sets them apart from the other clusters in income terms, despite the fact that income within this cluster is highly differentiated. The farming operations of this cluster are relatively mechanized compared with the other clusters, with vehicles, tractors, and processing machinery constituting the most valuable equipment. This differs from the other clusters in which hand tools, basic irrigation equipment, and backpack sprayers played a similar function. Labour relations are also distinctly different for this cluster with hired labour constituting the main source of labour, with on average six fulltime and 20 seasonal workers and no family labour being reported. The individuals in this cluster considered themselves as farm managers as opposed to farmers, and many combine farm management with other activities. All these farms operate along the lines of a formal business, with access to finance from commercial banks; are tax registered; have well documented administrative systems; and so forth. Importantly, all of

these farming enterprises were established and developed with nonagricultural capital acquired prior to embarking on farming, mostly from small business of salaried work. It was only in one case that an established orchard was inherited, and hence, a young farmer without any capital or additional income was able to gain access. In terms of demographics, they represented a cross section of age categories, and their educational level is also highly varied.

These farmers aim to closely resemble existing commercial White farmers by becoming increasingly more mechanized and productive. The idea of success is closely linked to growth and accumulation. These goals are accompanied by three main strategies—on-farm investment, nonfarm investment, and expansion. On-farm investment usually takes the form of increased mechanization by purchasing equipment and inputs. Off-farm investments are generally seen as a strategy to spread risk and are taking the form of speculative investment in property and other small businesses. Expansion is taking place by acquiring access to additional land to establish new orchards or via purchase of abandoned orchards. The diversity between the farmers in this cluster largely hinges on different emphases and combinations of these three strategies. These strategies all hinge on access to capital, which is largely generated from nonfarm sources in the case of the older farmers or from intergenerational wealth transfer in the form of inheritance of already significantly capitalized farms by younger farmers.

## 6 | DISCUSSION AND CONCLUSIONS

This paper challenges the simple notion of an undifferentiated class of market-oriented smallholders and has illustrated the multiple axes along which these smallholders are differentiated. It highlights the degree and nature of livelihood diversification that enables entry into and prospects for accumulation through the production of highly capital-intensive and high-value tree crops such as macadamia and avocado. The critical roles of welfare grants, skilled and semiskilled salaried work, and participation in the informal agricultural economy were identified in this regard and found to largely determine material differences between farmers that affect their class position, degree, and scope for accumulation or the lack thereof. Livelihood diversification as a strategy of rural people across the developing world is well documented (Ellis, 2000), and rural South Africa is no exception in this regard. The importance of nonfarm income and welfare grants was also found in a study in North West Province (Francis, 2002) and two studies in the rural Eastern Cape (Neves, 2017; van Averbek & Hebinck, 2007). However, what this study has demonstrated is how the general patterns of livelihood diversification and the multiplicity and interconnectedness of livelihood strategies employed by rural population more generally are reflected amongst this subcategory of tree-cropping smallholders whose niche market orientation and shared commodity focus have generally led to them being considered as relatively undifferentiated (c.f. DAFF, 2013; DRDLR, 2009). Recognizing the nature and interdependence between different livelihood sources and agricultural production is particularly important in the context where these high-value tree crops are considered as the cornerstone for rural job creation and growth (Cousins & Genis, 2018; NPC, 2011, p. 201).

On a methodological level, this study has demonstrated the usefulness of the two-step clustering approach; an exploratory technique primarily associated with market research (Mooi & Sarstedt, 2011), but seldom used in the agrarian context of exploring socio-economic differentiation. Its particular strength in this context is its ability to combine multiple different variables (both scale and nominal) in the analysis and to point to the importance of different variables in determining the clusters. As such, it can be usefully employed as a heuristic device that avoids the discursive erasure of intragroup variations.

On a theoretical level, this study points out that a class-based analytic captures structural dimensions that emphasize the social relations of capital, labour, and land that are critical to explore processes of accumulation. Using a class-based lens for identifying the nature and degree of socio-economic differentiation has highlighted the primary importance of access to capital in differentiating PCPs from small-scale capitalists, in addition, demonstrating the important role of livelihood domains in interclass and intraclass differentiation and related possibilities for accumulation. Although the class-analytic typology developed and elaborated in this paper may appear somewhat static—the

inherent risks of using such a heuristic device—the processes through which livelihoods are constructed and evolve over time are dynamic and contingent. A brief attempt is made at exploring some of the key dynamics and outcomes emerging from this class-analytic typology. However, a more theoretical account of the emergent processes, especially how class relations and dynamics explain these outcomes, is not taken up here due to the empirically focused nature of this paper.

Class formation and the hybrid class categories identified illustrate how they intersect with demographic, material, and aspirational characteristics in highly dynamic ways, facilitating or constraining accumulation. Exploring these emergent trajectories of accumulation, it is useful to distinguish between “accumulation from below” whereby farmers use their own resources to expand into capitalist production and “from above,” which involves sponsored accumulation facilitated by the interests of capitalist elites and/or the state (Cousins, 2013; Neocosmos, 1993). The former is considered to hold the most potential to generate long-term and broad-based growth and benefits for rural populations (Scoones et al., 2012). This has been demonstrated in Zimbabwe in the wake of radical agrarian reform where a significant group of PCPs is “accumulating from below” via agricultural production with limited access to capital identified as the key constraint to the emergence of a significant class of small-scale capitalists (Scoones et al., 2012, p. 523). “Accumulation from below” via agricultural petty commodity production has also been demonstrated amongst smallholders on irrigation schemes in South Africa (Cousins, 2013; van Averbeke & Mohamed, 2006). Unlike these cases where “accumulation from below” and the emergence of a class of small-scale capitalists were largely facilitated via agricultural production and constrained by access to land, water, and markets, the returns on high-value tree crops and a growing lucrative market pose significantly higher potential for “accumulation from below.” However, as demonstrated, reaching this potential for those already engaged in tree-crop farming is a highly uneven and contingent process.

The concept of “classes of labour” (Bernstein, 2006, p. 455) is useful here in understanding the uneven trajectory that underpins the scope for accumulation and emergence of small-scale capitalist production. This concept captures the increasing fragmentation of labour across multiple sites of reproduction (urban and rural, agricultural and non-agricultural, and waged employment and self-employment). In the case of the small-scale capitalist identified in this study, “agrarian capital beyond the countryside” (Bernstein, 2010, p. 110) has proved key for investing in farming and sustaining the long duration until trees reach maturity. This capital was acquired largely via skilled or semiskilled work (mostly civil servants) and/or formal or informal businesses outside of agriculture, as pension grants alone are insufficient to meet the investment requirements for tree crops in addition to the simple reproductive needs. Only in cases of wage work and agricultural diversification did farmers demonstrate upwards class mobility. For the agricultural PCPs, this remains highly contingent on access to water and markets, and for salaried workers, it hinges on the degree to which they are able to use their capital competitively and valorise it within agricultural markets.

The limited size of the cluster of small-scale capitalists in comparison with the other clusters speaks to the broader constraints in terms of skills and employment. This casts doubt on the prospects for significant rural development and job creation more broadly being achieved via this route. Agricultural PCPs on the other hand appear to hold much more potential via their diversified agricultural strategies that are proving to facilitate “accumulation from below,” albeit limited for now. The future prospect for increased accumulation and expanded reproduction appears promising for this group albeit slower and more limited compared with accumulation from below via access to non-agrarian capital in the form of salaried work.

In sum, three broad livelihood trajectories can be observed amongst smallholder tree-crop farmers, which draws on Dorward et al.'s (2009) typology of livelihood strategies available to the poor—“hanging in,” “inching up,” and “stepping up and out.” For the majority of welfare PCPs, their prospects for accumulation are limited leaving most at present “hanging in” via their pension grants with uncertain prospects for tree crops to generate any significant income under present conditions. However, considering the demographics of this ageing population, there are significant prospects via inheritance and agricultural diversification for “inching up” as is currently demonstrated by agricultural PCPs who are diversifying into cash crops as a means to engage in limited accumulation. With access to nonagrarian capital in the case of small-scale capitalists, there are possibilities for “stepping up” within agriculture via

more intensive and extensive tree-cropping practices. Significant accumulation is occurring through integration into a high-value tree-crop commodity chain where capital can be generated via nonagricultural sources. This is usually through informal or formal businesses or salaried work considering the context of high unemployment and a highly restrained labour market.

Despite the differentiated prospects for accumulation and employment generated through smallholder tree-crop farming, there are very significant constraints to its growth. Foremost amongst these is the very limited access to land and the related agro-ecological conditions and access to water, as well as socio-political and spatial dimensions. Further research is required into how and to what extent these factors impact farmers' prospects for "accumulation from below" before embarking on policies that assume that high-value tree crops such as macadamia and avocado will generate the growth and jobs that are needed.

Policy makers promoting agricultural development strategies that focus on tree-crops as high-value niche commodities should take into account that tree-crop farming is primarily a part-time activity with strong linkages to wage work and other economic activities. Second, it is important to take the generational cycle into account in support strategies, considering that the majority of farmers are pensioners whose possibilities for succession need to be ensured. Third, and related to the foregoing, the materiality of tree crops—capital intensive and slow to mature—poses particular challenges for young farmers to gain entry and sustain themselves, suggesting that particular attention is to be paid to intergeneration knowledge transfer, tenure security, and opportunities for both on- and off-farm livelihood diversification.

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