

Rural Class Structure and Transitions in Family Farming: What Do the Moderate Prosperity Households in Rural Itasy (Madagascar) Tell Us?

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This article studies the changes and diversification of family farming in Itasy region of Madagascar through the analysis of the class structure of this rural area. We are mainly interested in the Moderate Prosperity class and its formation process through the analysis of its members' trajectories. Using detailed data from 508 households in the 2008 Itasy Observatory, we first identify the Moderate Prosperity groups by applying a clustering method based on four socioeconomic factors: household income, head of household's education level, income structure and land tenure. Second, using a panel data from 2005 to 2008, we assess their trajectories by carrying out a sequence analysis. Third, we make a qualitative analysis of interviews conducted among 27 Moderate Prosperity households to explain these pathways. We identify four Moderate Prosperity groups reflecting three levels of accumulation potential. The Vulnerable Moderate Prosperity Households who adopt coping and defensive strategies have a diversified portfolio of on- and off- farm activities. The Emerging and Traditional Moderate Prosperity groups that are involved in adaptive strategies respectively rely on polyculture and rice farming. The Upper Moderate Prosperity households who clearly adopt accumulative strategies combine intensive farming with high-return non-farm activities or employment. The development of these livelihoods seems to result from a progressive integration into larger markets and different types of capital endowments. Findings show that changes in family farming in Itasy maintain strong rural roots, are developed around on- and off-farm diversification, and are still based on the family production unit.

Key words: rural livelihoods, family farming, moderate prosperity, rural Madagascar, clustering methods, sequence analysis

1. Introduction

In Madagascar, as in most Sub Saharan African agriculture-based countries, the majority of the population is rural and 68% of the households, who are generally smallholders, live mainly from agriculture which is exclusively family farming i.e. using the family labours (Andrianatoandro and Bélières, 2015; Instat, 2011). The rural sector and especially family farming thus play an important social and economic role for the country in terms

of employment, on- and off-farm production, food security and economic growth (25% of GDP in 2008)¹. Therefore, studying the forms of and transitions in family farming is a crucial issue in as much as it enables the speed, scale and nature of the ongoing structural transformations and dynamics in rural Madagascar to be assessed and better understood.

As a contribution to this debate, we suggest adopting the analysis of the rural class structure as an analytical framework. In such a rural context,

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the forms of and changes in both class structure and family farming are intimately linked. In fact, the nature of family farming, considered as the main source of income, is a factor of differentiations in rural area. It shapes the households' life chances and then their social position. Likewise, a class position is a major determinant of the rural households' prospects and strategies in their life. It can therefore impact their productive organization and their capacity of accumulation in family farming.

In the approach proposed in this study, we are mainly interested in the Moderate Prosperity class which refers to all households whose livelihoods allow them not only to make a living out of insecurity, but also to have a capacity of micro-investment and micro-accumulation (Andrianampiarivo, 2016; Darbon, 2012). This class relates to an intermediary position in the wide base of the social structure in most of agricultural-based countries like Madagascar and would provide an interesting analytical framework for studying the class formation and social inclusion in rural area. By virtue of the number and the capacity – albeit small – to act of its members, this class is at the heart of the ongoing dynamics in rural areas. Understanding the formation process of the Moderate Prosperity class through the analysis of its members' specific trajectories might thus provide some interesting insights concerning changes in family farming.

We test the relevance of this approach empirically using the case of the Malagasy region of Itasy by linking rural livelihoods approaches and traditional class analysis. Itasy is situated in the central highlands, being one of the twenty-two regions in Madagascar and is composed of three districts and fifty one communes. We define the concept of class as individuals' links to income sources and assets that is in line with the traditions of class analysis in sociological research – following Marx, Weber and Bourdieu – that explain inequalities in life chances

(Wright, 2005). We assume that rural livelihoods are the main sources of socioeconomic inequality and distinctions that could explain the unequal distribution of life chances within rural areas. Ellis (2000:10) defines livelihood as “the assets (...), the activities, and the access to these (...) that together determine the living gained by individual or household.” It provides a relevant framework to study the class structure and stratification of our study area by taking into account its complexity and diversity (Chambers and Conway, 1991; Ellis, 2000; Scoones, 2009).

Based on the socioeconomic structure of the Itasy area, with respect to rural livelihood strategies, we stratify the social space on two interrelated scales: horizontal, reflecting the nature of households' livelihoods and vertical, based on the profitability of the households' livelihoods. Following Barrett et al. (2001), we stratify the livelihoods space by taking into account households' activities, assets and income. First, to differentiate the rural households in the rural production system, we consider the four types of activities that represent the main sources of income in Itasy: rice production; polyculture farming; livestock farming; agricultural employment and other non-farm and independent activities. Second, two types of capital are chosen: the education level of households' heads and the land tenure form. These two assets are relevant for our case study and are not directly correlated with the typology of households' activities or with their income. The education level of households' heads differentiates them in terms of their human capital, which is determinant in income strategies (Ellis, 2000). Since land is the primary resource in rural areas, access to it is a major factor in inequality of status, which is particularly acute in the Malagasy central highlands (Andrianatoandro and Bélières, 2015; Droy et al., 2010; Rabearimanana, 1994; Rako-to-Ramanantsoa, 1994; Stavenhagen, 1969).

Finally, income is an outcome variable, used in many studies of Malagasy rural areas (Andria-nirina et al., 2010; Bockel, 2005; Randrianarison et al., 2007), that allows households' well-being and the degree of success of their strategies to be assessed.

Using household-level panel data from the ROR²⁾ (rural observatory network), we first statistically identify the Moderate Prosperity groups and the typology of their trajectories. Then, based on a qualitative analysis, we explain the latter by studying the local representations of the Moderate Prosperity situation and the implementing process of the livelihoods. This could help us to better understand the determinants and implementation mechanisms of successful strategies in family farming.

This article is organized as follows. First we describe the study context and data. Second, we address our methodology based on a three-step procedure. Third, we present the main results of our empirical investigation.

2. Context and data

(1) The Itasy region

In Malagasy rural areas, particularly in the central highlands, farmers must cope with market failure and instability (agriculture, insurance and finance), the problem of pressure on land and the lack of basic infrastructure that isolates many areas. In Itasy, despite these common difficult conditions, some features suggest that the Moderate Prosperity approach is relevant to the context. Indeed, despite the existence of some isolated areas, the region has the advantage of being close to the capital Antananarivo and some small towns. Moreover, Itasy portrays a significant aspect of Malagasy rural areas given the preponderance of rice production in the agricultural sector. In

fact, it is among the rural regions that achieve the highest average rice yield (3.5 tons/ha against 3 tons/ha in Alaotra in 2007) and it also manages to market a large proportion of rice produced outside the region (almost 50% of production in 2001). The region also benefits from good agro-climatic conditions for crop diversity thanks to the presence of volcanic zones. The practice of growing off-season crops provides households with important food resources during seasons of scarcity that may also be used as cash crops. Income diversification is also a particular characteristic of the region with off-farm activities providing additional sources of income for households. The presence of agriculture-based industries, such as OFMATA (a tobacco manufacturing company) and LECOFRUIT (a vegetable canning company that collects green beans from the Itasy area) may also give some opportunity for households despite their monopolistic nature. Lastly, the region is a prime area for development projects in various fields with the participation of the Malagasy Government, many international partners (IFAD, FAO) and some NGOs operating in diverse fields (microfinance, education, health etc.).

(2) Data source

The data used in our study are from the ROR, a network of rural observatories³⁾, which is a statistical information system for Malagasy rural areas. It currently has several observatories strategically located in rural Madagascar in order to apprehend the diversity of issues in Malagasy agriculture. Each observatory is related to a particular issue and is composed of four villages (survey locations) that are roughly representative of the social and productive systems in the zone (Gondard-Delcroix, 2009). Annual surveys are conducted in each observatory using the household as the statistical unit (around 500 households surveyed per

observatory). The household structure is a nuclear family which is also the basis of the production unit. A common methodology is adopted using a similar questionnaire which consists of various detailed modules that allow households' strategies, living conditions and income diversity to be assessed. In addition, the surveys are based on a purposive sampling approach to illustrate the diversity of the Malagasy agro-climatic zones and the contrasting living conditions of rural households (Droy and Dubois, 2001). This method allows comparative approaches and the constitution of panel data.

The ROR surveys have been used in several studies on poverty, income diversification, family farming and other agricultural and rural issues (Andrianatoandro and Bélières, 2015; Andrianarina, 2015; Andrianirina et al., 2010; Gondard-Delcroix, 2009; Thomas and Gaspard, 2015; Vaillant, 2012) and in inter-country comparative studies such as the RuralStruc program, managed by the World Bank (Losch et al., 2011). They are also suited to our analytical framework, particularly to the statistical analysis of the Moderate Prosperity class. In our empirical study, we use data from the Itasy Observatory which is composed of four zones (Ambohidanerana, Anosibe Ifanja, Antanetibe and Merinavaratra). The data cover 508 households from the 2008 survey and a panel of 415 households from 2005 to 2008, to which we add interviews conducted among 27 households in November 2013.

3. A three-step empirical procedure

(1) Class structure from a clustering method

The identification of the Moderate Prosperity groups is based on a multidimensional stratification of rural Itasy households. This first step is based on the 2008 survey which is a turning point that

marked the end of a period of relative growth with the beginning of the political crisis of 2009. To achieve this, we conduct a mixed classification method that involves grouping individuals from four variables: the household income quintile (the annual per capita income), its income structure (rice farmers, agricultural workers, polyculture farmers, livestock farmers and self-employed individuals and non-agricultural workers), the education level of the household head (illiterate, literate, primary school completed and secondary school completed and more) and the form of land tenure (no title, traditional authorization, locally-issued papers, and formal title).

The mixed classification method combines the advantages of two classification techniques, namely k-means clustering and Ascending Hierarchical Classification (AHC). K-means clustering consists of partitioning n (where n is a large number) observations into k homogenous clusters. Each observation is assigned to the cluster with the nearest centre of gravity. AHC aims to gradually agglomerate the nearest pairs of observations and groupings in order to provide a hierarchy of partitions (each partition is composed of a number of clusters). This is presented in a hierarchical tree or a dendrogram. In the mixed classification procedure, an initial k-means clustering partitions the surveyed households into a limited number of subgroups. After this, an AHC of the created subgroups provides the dendrogram. Then, the relevant partition is chosen and consolidated by k-means iterations which both maximize inter-cluster variance and minimize intra-cluster variance. The procedure allows us to define social groups that are different from each other but internally homogenous. Amongst the latter, we then define Moderate Prosperity groups as those who have the above-mentioned characteristics.

(2) Moderate Prosperity pathways from sequence analysis

Once the static identification of the Moderate Prosperity groups is set, using a panel data from 2005 to 2008, we study the pathways of individual households on the basis of changes in their positions over the period. From the same 2008 stratification and using a clustering method, we first determine each household's social position respectively in 2005, 2006 and 2007 according to the values classifying variables take each year. The succession of class positions from 2005 to 2008 provides a sequence describing each household's social mobility. Then, we carry out a sequence analysis of all the 263 Moderate Prosperity households' shifts in class position in order to provide a typology of the most followed pathways class membership over the period. Sequence analysis is a statistical method initially used in the study of proteins and DNA sequences in biology. It has been adopted in social science and applied in professional careers and life course analysis (Abbott, 1995; Abbott and Tsay, 2000; Robette, 2011). The method follows a two-stage procedure. First, an Optimal Matching algorithm measures the dissimilarity between each pair of sequences in order to create a distance matrix.⁴⁾ Second, an AHC based on the matrix aims to regroup the nearest sequences in order to provide a typology of the most salient of them.

(3) Studying the Moderate Prosperity representation and understanding sequences from qualitative analysis

Once the Moderate Prosperity groups and their social mobility are statistically identified, we make a qualitative analysis of interviews carried out on 27 households each of them belonging to one of the Moderate Prosperity clusters. Adopting a purposive sampling, each interviewed household is the most representative of the Moderate Prosperity

cluster to which it belongs with respect to the classification factors. This analysis serves several purposes: to verify whether the intuition of the Moderate Prosperity concept and its definition reflect the social reality in Itasy and whether the statistically identified classes correspond to the social representations of the households; to highlight some main features of the classes with respect to productive behaviours, accumulation strategies, needs and aspiration of their members in order to understand the previously identified sequences and their determinants and to assess the households' social and economic potentials. To this end, the fieldwork consisted of recording the households' opinions on their own living conditions, the implementing process of their livelihoods, their progress and their mutations.

4. Empirical results

(1) The heterogeneous Itasy Moderate Prosperity class

Based on the analysis of the dendrogram and the between- and within-cluster variance gains, the first clustering procedure allows us to define seven groups of Itasy rural households that are strongly influenced by the agro-economic characteristics of each site. We divide them into two main categories: the insecure groups and the Moderate Prosperity groups. Table 1 provides a specification for each social group based on the four classificatory variables. According to our definition of the class, the rural Moderate Prosperity households will be those that escape from insecurity and are able to adopt evolving strategies in spite of their vulnerability. Among the seven social groups, four clusters (D, E, F and G) match this definition much more closely. Nevertheless, although Moderate Prosperity households benefit from relatively better

economic and living conditions than those in the insecure category, they have quite heterogeneous profiles in terms of wealth, sources of livelihood and accumulation potential.

The cluster D or the Vulnerable Moderate Prosperity represents the typical case of Itasy rural households, and generally of the Imerina

peasantry (Andrianatoandro and Bélières, 2015; Rakoto-Ramiarantsoa, 1994), who invest in multiple activities and agricultural diversification by combining livestock rearing with rice farming and probably some non-agricultural activities for additional income. This cluster includes a majority of households who belong to the third income

Table 1. Stratification of the Itasy households by classification variables¹⁾

	Insecure clusters			Moderate Prosperity clusters				All
	A	B	C	D	E	F	G	
	N=65	N=79	N=34	N=79	N=75	N=94	N=82	N= 508
<i>Income quintile (%)</i>								
Q1	93.8	<i>0.0</i>	38.2	0.0	30.7	<i>4.3</i>	0.0	19.9
Q2	<i>0.0</i>	100.0	29.4	0.0	<i>4.0</i>	<i>7.4</i>	<i>3.7</i>	20.1
Q3	<i>0.0</i>	<i>0.0</i>	20.6	98.7	21.3	<i>0.0</i>	<i>1.2</i>	20.1
Q4	<i>3.1</i>	<i>0.0</i>	8.8	<i>1.3</i>	16.0	85.1	<i>4.9</i>	20.1
Q5	<i>3.1</i>	<i>0.0</i>	2.9	<i>0.0</i>	28.0	3.2	90.2	19.9
<i>Education level (%)</i>								
Illiterate	<i>0.0</i>	<i>0.0</i>	100.0	<i>0.0</i>	<i>0.0</i>	0.0	<i>0.0</i>	6.7
Literate	80.0	75.9	<i>0.0</i>	65.8	62.7	77.7	<i>47.6</i>	63.6
Primary completed	20.0	21.5	<i>0.0</i>	21.5	37.3	18.1	18.3	21.1
Secondary completed and more	<i>0.0</i>	2.5	<i>0.0</i>	12.7	<i>0.0</i>	4.3	34.1	8.7
<i>Income structure (%)</i>								
Rice farmers	<i>4.6</i>	3.8	11.8	25.3	0.0	52.1	15.9	18.1
Agricultural workers	60.0	26.6	29.4	<i>10.1</i>	0.0	<i>2.1</i>	<i>0.0</i>	15.7
Polyculture farmers	<i>0.0</i>	22.8	29.4	<i>2.5</i>	100.0	<i>6.4</i>	<i>0.0</i>	21.9
Livestock farmers	<i>4.6</i>	13.9	8.8	26.6	0.0	10.6	35.4	15.2
Non-Agriculture Independents and workers	30.8	32.9	20.6	35.4	0.0	28.7	48.8	29.1
<i>Land tenure (%)</i>								
No title	20.0	16.5	8.8	12.7	13.3	10.6	4.9	12.4
Traditional authorization	32.3	26.6	47.1	<i>27.8</i>	42.7	61.7	42.7	40.4
Locally-issued papers	9.2	16.5	8.8	19.0	4.0	6.4	18.3	12.0
Formal title	38.5	40.5	35.3	40.5	40.0	21.3	34.1	35.2

Source: Author from ROR data.

1) Bold characters within the table mean that the value is significantly higher in the cluster than in the rest of the population (adjusted standardized χ^2 residuals for category variables, $p < 0.05$ and independent samples t-test for continuous variables, $p < 0.10$); italic characters mean the same for values significantly lower in the cluster than in the rest of the population.

quintile, who hold a paper from Local Land Agents and whose heads are at least literate. It represents the bottom stratum of the Moderate Prosperity class.

The cluster E or the Emerging Moderate Prosperity is exclusively represented by polyculture farming households whose head has a relatively good level of education. This group brings together households in the lowest and highest income quintiles. It provides a profile of skilled rural households who have good control over the cropping calendar and crop rotation or intercropping practices that allows them to limit periods of scarcity and probably to speculate in cash crops. They can be described as risk takers. The Ambohidanerana zone, where the majority of households in this group are found, is well known for the presence of OFMATA that contracts with farmers. This cluster represents an intermediate group of the Moderate Prosperity class.

The cluster F or the Traditional Moderate Prosperity represents households who have a relatively well-established situation in rice farming which is renowned in the Malagasy central highlands. This group includes a majority of households in the fourth income quintile, who have traditional authorizations as proof of ownership of their rice land and whose heads are generally literate. Households in this group are representative of the Anosibe Ifanja zone where 45% of the cultivated land is rice paddy (ROR, 2007). This cluster also represents an intermediary category of the Moderate Prosperity class.

The cluster G or the Upper Moderate Prosperity is a diversified group that consists mainly of intensive livestock farmers and the few schoolteachers and households having the most profitable independent activities. Some administrative employees in the study areas have also been classified in this cluster. It is mostly composed of households in the highest income quintile, who hold a paper from Local Land Agents for their rice land and whose head

has a high education level. This group of educated households clearly represents the upper category of the Moderate Prosperity class.

The use of panel data allows us to complement the static identification by dynamic approach, namely sequence analysis, in order to study the class formation and social inclusion within the Moderate Prosperity class.

(2) Diversity of Moderate Prosperity pathways

The sequence analysis provides five types of trajectories followed by the Moderate Prosperity households from 2005 to 2008. The typology of trajectories can be presented as “index plots” with different horizontal coloured segments⁵⁾ each representing the sequence followed by a household over the reference period (Fig.1.). The five types of trajectories generally show a certain permeability of inter-group boundaries. However, they are marked by the characteristics of each Moderate Prosperity group, particularly in terms of stability and social mobility that, thus, highlight the heterogeneity of profiles. In fact, the Moderate Prosperity class is composed of three levels of hierarchical positions: a weak position related to the Vulnerable Moderate Prosperity group, an intermediary position related to the Traditional and, finally, the Emerging Moderate Prosperity group and the highest position related to the Upper Moderate Prosperity category.

The third type of trajectory with the predominance of the darkest colour reveals the high stability of the latter group over the period. It confirms that this category enjoys relatively high socio-economic status and is therefore not readily accessible to other social groups, especially the poor. The two first types of trajectory show a relative stability of respectively the Traditional and the Emerging Moderate Prosperity groups. A positive dynamic of some initially poor households (the lightest colour)

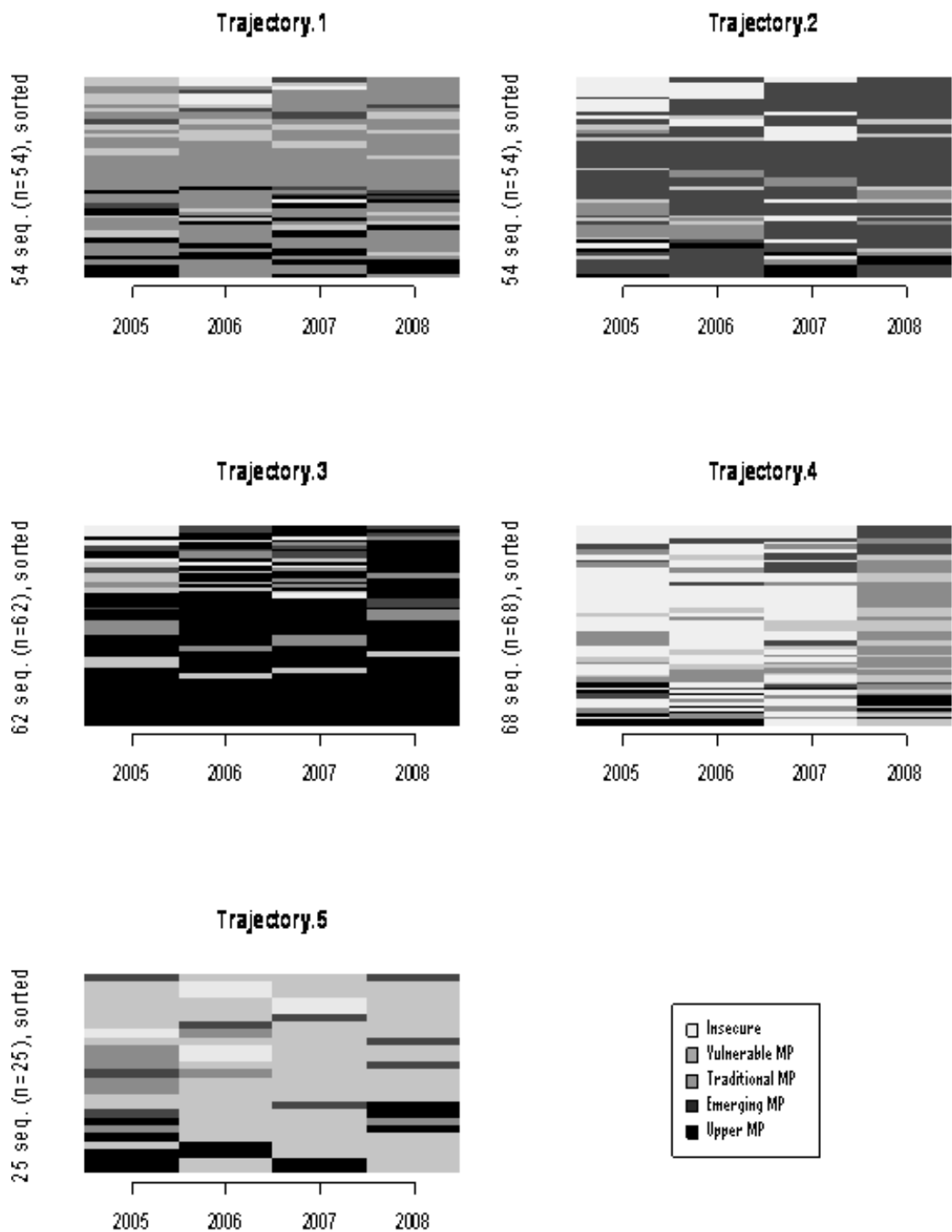


Fig 1. Typology of the Itasy households' trajectories

Source: Author from ROR data.

also appears, especially in trajectory 2. This upward mobility of initially insecure households is clearly illustrated in the fourth type of trajectory consisting of the Traditional, the Vulnerable and, to a lesser extent, the Emerging Moderate Prosperity groups which all seem accessible. This may also suggest that the three categories are characterized by some degree of vulnerability. The last trajectory shows that the Vulnerable Moderate Prosperity group is the most unstable and seems to be a “pivotal class”. Almost all the households of this category transit through one of the other social groups over the observation period.

The results of the qualitative analysis allow us to better understand these various trajectories and to identify the underlying mechanisms. They highlight some common features shared by the four Moderate Prosperity groups on the one hand and a number of differentiation factors that confirm the heterogeneity of their respective positions on the other hand (Table 2).

Table 2. The interviewed Moderate Prosperity households

Moderate Prosperity groups	Count
Vulnerable Moderate Prosperity	6
Traditional Moderate Prosperity	7
Emerging Moderate Prosperity	5
Upper Moderate Prosperity	9
Total	27

Source: Author from ROR (2008).

(3) The characteristics of the Moderate Prosperity class

Some of our findings substantiate common characteristics of rural households in various regions of the world that are pointed out in several studies on rural livelihoods and family farming (Bosc et al., 2015). Whatever the livelihood profiles adopted by the interviewed Moderate Prosperity households, they all maintain strong

rural roots because both farming activities and access to land occupy a central position in any strategy. Very few, if any, expect to leave rural areas or farming activities. This would suggest not only the strong rural identity of the Itasy households, but also the atrophy of the labour market in this rural area. In addition, food security remains a major concern for all households making production for personal consumption normal, if not indispensable, farming practice. As expected, pluriactivity and on- or off-farm diversification are the main features of all livelihood strategies. Almost all households combine a diversity of crops (rice and off-season crops) with livestock rearing or off-farm activities (small businesses, carpentry, spinning and weaving silk, metal-working etc.) or off-farm employment (schoolteachers, administrative employees etc.) as sources of income.⁶⁾ This risk management strategy has always been a defining feature of the rural Madagascar, particularly in the central highlands (Andrianatoandro and Bélières, 2015; Andrianirina, 2015; Andrianirina et al., 2010; Gondard-Delcroix, 2009; Raison, 1994; Rako-to-Ramiarantsoa, 1994). Nevertheless, as we are going to see further on, the use and success of this strategy depends on each Moderate Prosperity group. There are also strong complementarity and interdependence between these different activities, especially in terms of financing support. Lastly, three-quarters of the interviewed households stated to have experienced stability or even an improvement in their living conditions between 2008 and 2013. This suggests that the Moderate Prosperity households in rural Itasy can enjoy positive dynamics thanks to their livelihood strategies. In addition, the 2009 political crisis does not seem to have had a noticeable impact on their livelihoods. The interviewed households describe their situation as relatively better off than that of the most insecure households, while stressing a strong idea of caution and relativity which would

reveal a certain vulnerability, shown, for instance, through permanent fear of decline in case of negative shocks. Furthermore, they generally aspire to a better situation through individual efforts rather than collective interdependence, except for family supports. Yet, the four Moderate Prosperity groups differ from each other in terms of the level of profitability of their respective strategies (Orr and Orr, 2002).

(4) Diversity and inequality of accumulative strategies

The Vulnerable Moderate Prosperity Households adopt coping and defensive strategies that allow them to secure their well-being relatively well but may prevent them from entering a rapid process of accumulation. They have a diversified portfolio of on- and off- farm activities which enables them to maintain their standard of living stable. Because of financial and time constraints, the weakest of them are struggling to significantly improve their farming production and their non-farm activities. This, added to the lack of social and human capital, makes finding and integrating markets with better prospects difficult. This situation makes these households vulnerable to any decline in their activities such as crop failure or drop in sales.

The Emerging and Traditional Moderate Prosperity groups both become involved in adaptive strategies by seizing market opportunities with relatively low barriers to entry and moderate risks. The success of their strategy depends on their production capacity through access to lands mostly rented for a period of one year renewable. The Traditional Moderate Prosperity households organize their strategy around two main activities: rice farming for consumption and commercial purposes and oxen for farming activities. The wealthiest and oldest households employ temporary paid agricultural workers in certain farming

activities. Although Emerging Moderate Prosperity households adopt the same strategy, they are more market-oriented and risk-taker than the rice farmers. They are mainly engaged in cash-cropping other than rice (tobacco, tomatoes, green beans etc.). They are able to sell under contract or integrate larger and stable markets by using their social networks. They also borrow on the formal financial market to develop their activity or invest in small commercial rearing for additional income.

The Upper Moderate Prosperity households are clearly using accumulative strategies but with high barriers to entry. Almost all the interviewed households in this category enjoy the highest levels of all types of capital (human, physical, financial and social capital). Their livelihoods structure combines intensive farming with high-return non-farm employment or activities which both have a quasi-entrepreneurial form. Although their accumulative strategies consist of mutual financing between different income sources, non-agricultural activities based on family know-how are often the starting point. Most of the interviewed households then maintain a balance between on- and off-farm activities and some others choose to focus on very profitable and stable non-agricultural activities. Members of this category have a high capacity to strengthen and develop their livelihoods through different means. They take advantage of their participation in different associations or in development projects that may, however, cause a crowding out effect on insecure households. They have also ease of access to training related to their activities, to financial market to develop their capital, and to great and stable markets often under contractual arrangements. Their non-farm activities are mostly family businesses relying on family labours (from different households), for some in the shape of cooperatives in order to reduce risks and achieve economies of scale. The members of the

larger family often support each other especially in case of negative shocks. These households naturally have a great capacity of resilience. Some of them are able to make a rapid reconversion by adopting new more profitable off-farm activities that can provide them higher social status.

We can therefore conclude that high barriers to entry make the shift from coping and defensive strategies to adaptive and accumulative strategies difficult, especially for the insecure households.

(5) Mobility within and beyond the Moderate Prosperity Class

It appears clearly that social reproduction is very strong within the Upper Moderate Prosperity group. This explains the very low probability of insecure households reaching it. However, the Traditional and Emerging Moderate Prosperity groups seem to be much more accessible to them. Land rental (or sharecropping) markets play a significant role in these two strategies and allow poor households to progressively evolve towards these livelihood profiles. Particularly, they can rapidly reach the Emerging Moderate Prosperity category if they have access to credits to develop their farming activities and if they find contract or market opportunities. The Vulnerable Moderate Prosperity group is the most accessible category. For the insecure households, this group can lead to either an upward or downward mobility. It all depends on whether or not they access training, financing or a much bigger market through networks (especially through development projects or associations), or have a good harvest. For the wealthier households, the Vulnerable Moderate Prosperity category represents a transitional situation.

Given these differing accumulation capacities and these barriers to enter some social groups, the needs and aspirations of the different Moderate Prosperity households are unlikely to be similar.

(6) Needs and aspirations of the Moderate Prosperity households

The Vulnerable, Traditional and Emerging Moderate Prosperity households are all eager to extend their cultivated lands and enhance their harvest and farming production. In addition, the Vulnerable Moderate Prosperity households particularly wish to develop their off-farm activities through the participation in development projects or the access to credit in order to accelerate their accumulation process. However, the uncertainty of harvest often deters many of them to take such a risk. The Traditional and Emerging Moderate Prosperity households both aim to strengthen and secure their main farming activities, particularly by investing in the land tenure security. They are also improving their living conditions, notably by building new accommodation. The Upper Moderate Prosperity households as well aim to develop their income sources especially the non-farm activities. They are evolving towards more entrepreneurial and formal form. These households also begin to change their consumption behaviours by buying durable goods like motorbike, television, generator to supply electricity and so on. Lastly, almost all interviewed households are investing in their children's education in order to enable them to be free to choose and to successfully shape their own destiny, preferably outside agriculture.

5. Conclusion

Using a methodological framework adapted to the analysis of class structures, our empirical investigation of the Moderate Prosperity class in Itasy allows us to bring the complexity and the diversity of the social fabric in an agriculture-based country, particularly in rural area. Unlike one big homogenous peasantry living from agriculture, the

wide base of the social structure in such a country is highly stratified. The four Moderate Prosperity groups and their specific development processes confirm the heterogeneity of the Moderate Prosperity class and thus of the forms of and transitions in family farming in Itasy. Changes in family farming in Itasy, as in other regions of the world (Bosc et al., 2015), are complex and ongoing processes built around different livelihood strategies in order to achieve stable and evolving social and productive organization. The different Moderate Prosperity profiles allow us to highlight the main opportunities for productive organization within the region. They can be considered as successful livelihood strategies that could provide proposals for implementing pathways that are well-adapted to lift people out of poverty in Itasy. The analysis of these different production patterns enables us to determine that changes in family farming in Itasy maintain strong rural roots, are developed around on- and off-farm diversification and are still based on the family production unit. Almost all the Moderate Prosperity households, even if they do not have the same social and economic potential, aspire to adopt an accumulative strategy by developing their activities and to reach a better social status by investing in accommodation and durable goods. The development of these livelihoods seems to result from a progressive integration into larger markets often with contractual agreements that partly explains the differences in the households' accumulation capacities. The most evolved and modern form of family farming is that of the Upper Moderate Prosperity group where high-return, non-agricultural activities can evolve into formal family businesses. Supporting and improving these different production patterns and assisting insecure people in carrying them out deserve further attention in policy design. Our analysis point out two main joint lines of action:

developing both on- and off-farm activities. In order to achieve this, an improvement of household's capital endowments is necessary. We found that all types of capital play an important role in the implementing process of the different livelihoods in an interactive way. For human capital, trainings in farming and marketing, in agriculture business or in small business management according to each Moderate Prosperity profile can be very helpful to increase household's potentials. Social capital, especially participation in different development projects, cooperatives or professional organizations, is a significant determinant of access to markets and trainings. The development of land markets is a key factor in extending the cultivated lands and increasing production. Access to finance can considerably accelerate the development process of the livelihoods by investing in physical capital (agricultural materials, oxen for farming activities, lands etc.) or in high-return non-farm activities. The households' risk aversion may suggest the necessity of an agricultural insurance system. In rural development interventions, greater attention should be given to the target population of the insecure households who need support the most. Finally, in order to achieve a comparative analysis in terms of rural class structure and family farming, the approach we proposed requires other empirical studies in different rural zones in both Madagascar and other African countries.

Notes

- 1) World Bank: <http://www.worldbank.org/>.
- 2) ROR: Réseau des Observatoires Ruraux.
- 3) The ROR is attached to the Action Plan for Rural Development (PADR) which is run by the Prime Minister's Office of the Malagasy government.
- 4) Although shifts from one social group to another can be weighted differently by assigning various "cots", we hold them constant.
- 5) Social classes are colour coded ranging from light to dark

shades. The brightest colour corresponds to the insecure and the darkest to the Upper Moderate Prosperity.

- 6) Temporary migration is not very frequent among the interviewed households. Very few use the agricultural employment for additional income.

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