# Can management advice to small-scale farmers trigger strategic thinking?

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**Abstract:** To contribute to the question of what fosters entrepreneurial learning, we consider the building of strategic thinking to be an entrepreneurial learning process, identified through the concept of proactivity. We consider that entrepreneurs are not "born" but "made". We analyze the role of management advice on entrepreneurial learning, exploring the building of proactivity of small-scale farmers. We assume that all farmers, whatever their resources and education levels, can build more proactivity through the learning process triggered by advice, through training and exchange about agriculture, and through better command of management tools.

Through a field work in Benin based on the analysis of learning processes in a management advice for family farm (MAFF) approach, we considered a sample of nineteen farmers before and after one year of training, to analyze the evolution of their proactivity. Through technical and management training based on planning, follow up and evaluation tools, for both literate and illiterate farmers, MAFF approach enables farmers to better understand their environment, assess their own resources and situation with "new eyes" and enact differently in this environment. The level of proactivity before the training is also a strong element influencing the learning process: proactive farmers act more quickly toward change, but farmers considered as "not proactive" before training attribute important changes triggered by MAFF, discovering their power on their environment and the possibility of change, acting toward more planned activities, leading to more reflexive strategic thinking.

Farmers' entrepreneurship is triggered by MAFF, enabling them to build their strategic thinking, being more proactive towards change. Those results also show that change, especially on entrepreneurship, is quick, built during the first year of MAFF, but longer time is needed for a full learning process leading to more autonomous strategic thinking and good command of management tools.

**Keywords:** farm management, strategic thinking, proactivity, learning process, entrepreneurial learning, agricultural advisory services, extension

## Context and purpose of the study: analyzing learning processes at strategic farm management level

In Africa, extension has strongly evolved during the past twenty years. Extension approaches were oriented toward more participative and capacity building demand-based methods, with advisers going from an "extensionist / teacher" role to a "facilitator" one, enabling participants to lead the learning processes (Röling & Jong, 1998; Waddington et al., 2010). This shift is going from advice as "knowledge-transfer" to an advice as a support to "knowledge-building" among

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different actors, leading to a great diversity of financial, institutional and organizational set up (Birner et al., 2006), with advice considered as a tool for problem solving (Faure et al., 2012).

In Bénin, following this global trend, MAFF (Management advice to family farms - conseil à l'exploitation familiale / CEF) is a farm management advice approach, chosen to be the lead approach for rural advisory services in the last rural advisory services' national strategy (MAEP, 2008). MAFF is delivered by different institutions: farmers' organizations, local NGO or state advisory organization. MAFF is an agricultural advisory method for small scale farmers consisting in individual and group trainings, field visits and learning of management tools, based on the analysis of their management system and decision making process for their farm and family. This global method integrates management and technical advice, associated with a diagnosis of the socio-economic environment of the producers, in order to identify their main constraints, explore new opportunities and widen their social networks to make their on-going activities more profitable and/or select more profitable ones. This approach has been adapted to fit producers' needs, in terms of advice but also in terms of educational levels. In the last MAFF project in Bénin (PADYP – Projet d'Appui aux Dynamiques Productives), three different types of groups have been developed, to reach all kinds of producers, from literate ones, able to write, take notes of their results and do their own follow-up, to non-literate ones, working on literacy methods for management follow-up, or non literates without any kind of written follow-up.

MAFF is aiming at building producers' entrepreneurship, enabling them to know better their activities, and monitor them through a more reflexive look, feeding strategic thinking and eventually have a more precise strategic vision and act toward it more adequately. Some questions were raised about the efficiency of MAFF beyond adoption of management tools (Moumouni et al., 2011) to fully address the strategic management level. Furthermore, in agriculture, learning processes through extension have been documented, but more at a transformative level (Percy, 2005; Taylor et al., 2012) rather than on a strategic management and entrepreneurship level. In developing countries, where knowledge-based approaches are promoted for agriculture (GFRAS, 2012), few studies have highlighted the role of management advice in strategic learning process.

The aim of this communication is to understand how MAFF builds entrepreneurship, through learning processes, especially at the level of strategic management. Entrepreneurship is often described in the agricultural sector as a quality or an ability that some individuals have (Aouni & Surlemont, 2007), enabling them to be innovative, leaders and proactive in creating new opportunities. Here, we consider that entrepreneurs are not "born" but "made" (Gibb, 2005; Henry et al., 2005). We choose not to focus on the individuals themselves but on the learning processes taking place for each individual. We want to consider here entrepreneurship as both the trigger and the result of a recursive learning process (Mintzberg et al., 1999), in a dialogic relationship between strategic vision and strategic actions (Morin & Le Moigne, 1999), where planning activities (including planning, monitoring and evaluation) are not important as such, but feed the strategic thinking process (Heracleous, 1998; Liedtka, 1998). Strategic thinking here is the combination of strategic vision and strategic actions toward this vision, linked in a non linear, recursive and complex way, characterized through the concept of proactivity (Laberge, 2003). Proactivity is not a static profile but a dynamic construct, which can be enhanced through learning processes such as training and advice. In order to develop a "flexible expertise, based on a complex worldview to meet the demands of innovation in a changing environment" (Gielen et al., 2003), farmers that are considered to have more "proactive" strategic thinking have a clear anticipated vision of their future, and act toward it with strategic actions adapted to those objectives. They generally have a reflexive look on their own practices and experiences in order to enact (Weick, 1999), enhance their own strategic thinking and achieve their goals.

To contribute to the question of what fosters entrepreneurial learning (Lans et al., 2008), we explore the role of farm management advice on entrepreneurial learning processes in agriculture,

exploring the evolution of proactivity of small-scale farmers. We assume that all farmers, whatever their resources and education levels, can build more proactivity through the learning process triggered by the relationship and exchanges through advice.

### Analytic framework, design and methodology

To characterize producers' situation before and after MAFF, we selected three main elements of this situation to be analyzed: their strategic thinking, their activity system including their level of resources and their management practices. We consider that strategic thinking is the element that is going to change during the first year of MAFF; the other elements may change afterwards.

The first element is related to producers' strategic thinking (Torset, 2002) and may be characterized by farmer's proactivity. We adopt an interpretativist point of view, to analyze producers' perception and interpretation of their situation and constraints, to see how MAFF can make them evolve. Proactivity is identified through producer's strategic vision (vision of the future, specification of a project) linked to the source of change perceived by farmers (if they consider having power on their situation and change) and strategic actions (if they undertake actions to reach this strategic vision). Strategic vision is identified through producers' discourse on their vision of future, on a detailed project, on their perception of their power on change and on their situation (source of change). Their strategic actions are identified in their discourse by analyzing the actions, experimentations and tests undertaken to achieve their strategic vision, to reach their objectives. We categorize producers according to four proactivity trends: passive (no strategic vision and no strategic actions), reactive (no strategic vision; strategic actions when induced by external forces); constrained imaginative (strategic vision; no strategic actions toward it, mainly because of perceived constraints); proactive (strategic vision and strategic actions toward it).

This proactivity is characterized before MAFF started and after one year of MAFF, to see what changes producers attribute to MAFF and, within those changes, what can be seen as proactivity building. We differentiate producers evolving on one of the three proactivity attributes (strategic vision, source of change, strategic action) (+) from those not attributing to MAFF any change for this proactivity component (=). To explore the recursivity of this learning process, we identify the situation of producers before MAFF through their proactivity, but also though their activity systems and through their management planning practices, to cross this different elements and explore their influence on the entrepreneurial learning process.

Their activity systems are characterized through the level of diversification of activities (Chambers & Conway, 1991; Farrington et al., 1999): main activity, level of diversification (farm, on farm, off farm, nonfarm activities), role and frequency of nonfarm and off farm activities. Their activity system (AS) is also characterized through their level of resources, identified by their livelihoods (Ellis, 2000; Scoones, 2009), seen through different kind of capitals: human capital; social capital; financial capital; physical capital; natural capital. According to those factors, we categorized producers before MAFF in four activity system groups: group 1 of activity systems with limited diversification of agricultural and non agricultural activities and limited level of resources; group 2 with strong activity diversification, and medium level of resources; group 3 specialized in agriculture and with high level of resources; and group 4 with agriculture as a secondary activity and high level of resources.

The third level defining producers' situation before MAFF is their management planning practices, identified through indicators related to seven management domains: cropping system planning; monitoring and evaluation of agricultural activities; work force management; inputs management, cash flow management; harvest storage management, and investments planning. For

each of the seven management "domains", we analyzed the level of planning, and attributed trends ("+" if they had indicators to schedule and evaluate in each domain, "-" if they didn't). We added the result of each domain to categorize each producer according to a planning gradient (from 0 to 7). Planning practices give us an understanding of the level of prevision and monitoring in farm management. Planning practices can be compared for each producer with strategic thinking and proactivity, to see if planning is linked with strategic thinking.

Based on this framework, adopting an interpretativist posture, we conducted semi-structured interviews with 42 producers in two regions of Southern Bénin (Mono Couffo and Ouémé Plateau) before MAFF started, and with 19 producers after one year (with all producers remaining from the previous sample). Producers were selected among four different MAFF groups supervised by four different advisors. Even if the groups and advisors were different, this first year of MAFF is considered as "standard", advice consisting more in technical and management collective training and discussion than individualized advice. We controlled that the type of advisors and the type of advice were not a major influence on proactivity building during this first year.

To detect the evolution of proactivity for the 19 producers of our sample, we analyzed producers' discourse before and after MAFF on their future, their project and the actions undertaken to reach their vision. To identify the changes that were relevant and that could be considered as proactivity changes, we analyzed the changes spontaneously attributed to MAFF by the 19 producers after one year of advice and the changes in their answers to similar question before and after MAFF. We discussed those changes with the producers, to be able to conclude to proactivity changes.

The findings of this study are interesting both to analyze entrepreneurial learning through management advice leading to proactivity building and to design recommendations for improving MAFF methods.

## **Findings**

#### **Producers' situation before MAFF**

The results regarding producers' situation before MAFF are presented in table 1 below.

Table 1: Situation of 19 producers before MAFF

	ic 1. Situation (		Activity		Farm planning process								
N°	Proactivity	Sex		Education	Land use planning	Evaluation	Inputs	Labour	Cash flow	Storage	Invest-ment	Planning profile	
6		F	1	_	-	-	-	-	-	-	-	0	
25	Passive	F	1	_	-	+	-	-	-	-	-	1	
27		F	1	<u></u>	-	-	-	-	-	-	-	0	
30		F	2	Primary	-	-	-	-	-	-	-	0	
2	Reactive	F	3	-	+	+	-	-	+	+	-	4	
5		M	4	Primary	+	-	-	+	-	-	+	3	
32		F	2		-	+	-	-	+/-	+	-	2	
7	Constrained	M	3	Primary	-	+	+	-	+	-	-	3	
29	imaginative	M	3		+	+	+	-	-	+	-	4	
11		M	4	Primary	-	-	-	-	-	-	-	0	
4		M	2	Primary	-	ı	+	+	+	ı	•	3	
22		F	2	Adult literacy	-	•	-	+	-	+	+	3	
34	1		2		+	+	-	+	+/-	+	+	5	
1			3	Secondary	+	+	+	-	+	+	+	6	
3			3	Secondary	+	+	+	+	+	+	+	7	
8	8	M	3	Secondary	+	+	+	+	+	+	+	7	
9			3	Primary	+	+	+	-	-	+	-	4	
14			3	Secondary	+	-	+	-	-	-	-	2	
10		M	4	Secondary	+	+	+	-	1	-	-	0	

The data collected before MAFF started shows a great diversity of situations, according to our three levels of analysis. Those results reveal trends: passive farmers are generally less educated, with limited resources (activity system group 1), including only women. Producers who have more proactive strategic thinking have generally better resources levels (activity system groups 2 to 4), better education and more planned management practices. Reactive farmers and constrained imaginative farmers are diversified in terms of sex, level of resources and education. But we can also see that proactivity, resources and planning practices are not directly linked. Proactive producers are not always the one with greater resources and more planned management. Producers with resources are not always the proactive ones and with more planned practices. Producers with less resources (and less educated) are more often less proactive, but can be proactive in some situations (3 producers from the activity system group 2 are proactive). We can also see that producers that have attended secondary education are all proactive but proactive producers are not all educated: proactivity is not directly linked to education, but education seems to facilitate proactivity building. Moreover, even if we recognize some potential bias in the sample (proactive farmers might be more inclined to participate to advisory project), all types of producers, whatever their activity systems, their planning practices and their proactivity, participate in MAFF.

#### Proactivity changes: building producers' strategic thinking

After one year of participation in MAFF, farmers attributed several kind of changes to MAFF, going from individual changes on their reflection and behavior with other, to agricultural techniques, farm management practices and family budget management practices, to more result oriented changes on family well being, expenses management practices and investments perspectives (see table 2 below).

Table 2: Types of changes spontaneously attributed to MAFF by producers after one year

Table 2: Type	s of changes spontaneously attributed to MAFF by produ-	cers after one year			
Change	Types of changes based on farmers' discourse	Number of producers	Number of producers		
domains		attributing intention	that have undertook		
		of change on this	change on this domain		
		domain (over 19)	(over 19)		
Individual and	Autonomous thinking	5	11		
cognitive	Change is possible and greater power on change	4	7		
changes	Ask for help around instead of working alone	2	5		
	Communication is important and want to be a change agent for others	0	2		
Agricultural	Changes of agricultural techniques (fertilization, inputs				
practices	use, seedling, weeding)	7	10		
practices	Changes on agricultural and breeding systems,				
	intensification and better complementarities between	6	10		
	activities	0	10		
Farm manage-					
ment	calendar	8	12		
men	Changes on the measure of fields and land use				
	management	7	8		
	Changes on field performance evaluation and activities	-	10		
	profitability	5	10		
	Changes in cash flow management	7	8		
	Changes in harvest storage management	4	5		
	Changes in investment strategies	3	5		
Family	Changes in labor force management and collective discussions around work	3	5		
	Better knowledge of family needs	3	7		
	Changes in types of expenses	6	15		
	Changes in use of saved money and discussion around				
	money allocation (food, health, education)	3	4		
	Changes in the gender work distribution	3	3		
Relation-	Changes in the collective rules (better negotiation of	(	4		
ships outside	change at village level)	6	4		
family	Collective actions (for MAFF group members)	0	6		
	Transmission of experience outside of the group and informal training of relatives and friends	3	5		
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Producers link this changes to several results that they attribute to MAFF: better production and incomes, food security and better nutrition, school fees covered (no choice to make between the children for school attendance), health (less illnesses by better nutrition, health expenses covered), savings ("tontine" which a traditional saving mechanisms, investments (house, roof, conveyance), agricultural investments (land, boat, agricultural and processing tools).

Based on the changes attributed to MAFF by each farmer, we analyzed underlying proactivity changes, on the strategic vision, source of change and strategic actions (presented in table 3).

Table 3: Synthesis of proactivity changes during the first year of participation to MAFF

Table	3. Symmesis of pr	oactiv	ity Chan	participation to MAFF						
	Pro	file b	efore N	Proactivity building after one year of MAFF						
			AS	Dlanning		Strategic thinking				
N°	Proactivity	Sex		Planning profile	Educ.	Strategic	Change	Strategic		
			group	prome		vision	source	actions		
6		F	F 1 0		-	=	=	=		
25	Passive	F	F 1		-	=		=		
27		F	1	0	-	=	+	=		
2		F	2	4	-	=	+	+		
30	Reactive 5		F 2 0		Primary	=	+	+		
5			1 4 3		Primary	=	+	+		
7		F	3	3	Primary	+	+	+		
29	Constrained	M	3	4	-	+	+	=		
32	imaginative	M	3	2	-	+	+	+		
11		M	4	0	Primary	+	+	+		
4		M	2	3	Primary	+	+	+		
22		F	2	3	Adult	+	+	+		
34		M 2 5 -		-	+	=	+			
1		M	3	6	Secondary	=	+	+		
3	Proactive	M	3	7	Secondary	=	=	+		
8		M	3	7	Secondary	=	+	+		
9		M	M 3 4 Prima		Primary	+	+	+		
14		M		2	Secondary	+	+	+		
10		M	143Secondary		+	+	+			
		C	hanges			10	15	15		
		No	changes	9	4	4				

According to the changes attributed to MAFF, ten producers attributed changes in their strategic vision, explaining that MAFF, through the use of management tools and better ability to measure, but also through exchange and discussions, gives them better knowledge of their system, resources and situation, and enable them to have a more precise strategic vision for the future and helped them precise their project. One producer explained that "MAFF gave us visibility on what we're doing; it showed us what was underneath what we're doing. MAFF helps us understand what is not clear and gives us a clearer idea of what we want to do in the future". Fifteen producers evolved through MAFF in their source of change: MAFF reveled or reinforced their perception of power on change, enabling them to act on their situation and their environment: "now, I know that I can change the environment and people around me. I can have new ideas that can motivate me and others to evolve toward a better situation". Fifteen producers attributed to MAFF changes in strategic actions, linked to changes in their perceived constraints: "I have the same ideas than before, but MAFF gave me tools to understand that I have everything that I need to achieve my goals". Those results reveal that a great majority of producers attributes an evolution of the different aspects of proactivity to MAFF during the first year (only two producers don't attribute change of proactivity to MAFF during this first year, even though they attribute other changes). Those changes give us insight to understand what entrepreneurial learning process is triggered by MAFF. This diversity in proactivity building is explained mostly by the producers' proactivity before MAFF.

## A recursive learning process: proactivity before MAFF is the main influence factor on proactivity building

If we look at the proactivity changes that producers attribute to MAFF in table 3, we can assume that the main influence factor is not the type of activity system or the previous level of planning, but the proactivity level or profile before MAFF started.

Passive producers don't really attribute change of proactivity to MAFF. They mainly attribute change on the possibility of change, but they don't perceive changes in strategic vision or strategic actions, and don't become really aware of their power on change. One of them expressed a change in her power of change, but still rely on external help to undertake changes in their system. Passive producers evolve toward a more positive perception of change, without really building new proactivity during this first year.

For reactive producers, MAFF changes mainly their perception of their own power on change, going from an external source to a more internal source of change. Even if they don't express real changes in strategic vision yet, MAFF helps them to have a more precise vision of their system, act more adequately and be actors of their own development. They express intention to have a precise project (and develop eventually a strategic vision) in the future.

Constrained imaginatives attribute great changes to MAFF. MAFF enable them to see their situation with « new eyes » and see differently what they formerly perceived as constraints. They know their system and situation more precisely, feel more powerful to act toward change, and mobilize their resources more adequately. Those changes lead to strategic actions that they were unable to undertake before MAFF started. They all attribute a strong shift in their strategic vision and actions to MAFF, talking about "rupture" in their way of perceiving their environment and their role in this environment, and already undertaking strategic actions during the first year of participation to MAFF.

Proactive producers attribute changes of different intensity to MAFF, mainly according to their previous planning practices. For those with less planned farm management practices before MAFF (0 to 5), MAFF changes all components of proactivity, enabling them to have a more precise strategic vision, more internal source of change and act toward this vision more adequately. For those already planning strongly their management of activities before MAFF (6 and 7 domains planned), their strategic vision doesn't change, but MAFF enables them to optimize their system, without really changing their strategic vision and/or their source of change. For the majority of proactive producers, even if they had an internal source of change before MAFF, MAFF reinforces this source of change, giving them a full perception of their power on change.

More broadly, MAFF seems to first change the already existing part of proactivity of each initial profile (strategic actions for reactive, strategic vision for constrained imaginative), but all producers change through MAFF, with different intensity. Passive producers change only on the possibility of change, which can be considered as a great change for producers thinking beforehand that change was not possible, but not yet on strategic thinking itself.

The table 4 presents the synthesis of proactivity building for the 19 producers (adding the different proactivity attributes – vision, source of change, actions) from 0 to 3, according to the different influence factors.

Table 4: Synthesis of proactivity building according to different influence factors

	. 0 ) 11011			tivity	o um um	AS group		Education			Plan	ning	Advisory group			
Proactivity building for producers		Passive	Reactive	Const. Imag.	Proactive	1 & 2	3 & 4	-	AL et prima- ry	Secon-	0-3	4-7	1 (L)	2 (NL)	3 (NL)	4 (NL)
ving on x	0 +	3	0	0	0	3	0	3	0	0	3	0	0	1	2	0
Number of producer evolving on x proactivity attributes	1 +	0	0	0	1	0	1	0	0	1	0	1	0	1	0	0
	2 +	0	3	1	3	3	4	3	2	2	2	5	1	3	0	3
	3 +	0	0	3	5	2	6	1	5	2	7	1	4	2	1	1
Total			1	9		1	9		19		19		19			

We see in this table that proactivity before MAFF is the main factor explaining proactivity building during MAFF, enabling us to conclude to the recursivity of the learning process.

Those results underline the role of MAFF as a revealer of producers' resources and role upon change. Producers who change are not necessarily producers with more resources, more educated and with planning practices before MAFF: even if activity systems and planning practices can have a secondary role on proactivity building, the main factor is proactivity before MAFF, catalyzing proactivity building. Proactivity is both a product and an influence factor of entrepreneurial learning, in a recursive learning process.

Those results also confirm that learning processes induced by MAFF go beyond management tools adoption (Moumouni et al., 2011), this first year of MAFF being more targeted to discussion and collective reflection on what management tools can be used for rather than management tools training itself. The different activities undertaken by advisors trigger reflexive thinking and proactivity building for producers, mainly by changing their perception on their situation systems and environment.

## **Discussion and practical implications**

In this study, the concept of proactivity was used to analyze producer's situation and the changes in strategic thinking, to identify entrepreneurial learning through MAFF.

The first level of results raises the importance of proactivity in identifying producer's situation before MAFF, cross-analyzing producer's proactivity, their activity systems and resources and their planning practices. We showed that those three levels are not directly linked, proactive farmers are not necessarily planning their activities and don't necessarily have more resources. At theoretical level, we see an opportunity in the concept of proactivity, to enrich the literature on farm strategic management. Research work on farm strategic management have been scarce the past years (Jeanneaux & Blasquiet-Revol, 2012), and more focused on the use of management tools rather than the process of strategic thinking itself. Our work present the concept of proactivity as an indicator of the recursive and permanent learning process that strategic thinking is. This analysis of strategic thinking enables us to explore the emergence and elaboration of strategy, beyond a « management cycle » defined by sequenced and sequential steps. Strategy building is both deliberate and emergent (Mintzberg et al., 1999), linking strategic vision and strategic ac-

tions, in a complex, non linear and recursive way. Moreover, without trying to define stables psychological profiles or permanent personality attributes, we now better understand how MAFF triggers and reinforces this dynamic learning process for farm managers depending on the farmer' proactivity profile. This study is based on producers' interpretation and perception of their situation and environment. Analyzing those results from an exploration and exploitation point of view (March, 1991), proactivity building enables producers to switch from exploitation of « perceived » resources to exploration of « revealed » resources and enable them to create new opportunities in their environment. Managers don't define their strategy in reaction of their environment anymore, but enact in this environment with their « revealed » resources, and progressively become autonomous in this reflexive strategic thinking.

Those different dimensions of strategic thinking (vision, source of change, actions) enable us to analyze the role of advice in this learning process on the dialogic relationship between individuals and their farm (Morin & Le Moigne, 1999; Fonrouge, 2002; Martinet, 2006). MAFF acts on this dialogic relationship between producers and their activity system by decreasing the strategic "tension" existing between their defined objectives and their perceived resources to reach them (Prahalad & Hamel, 1995). MAFF empowers producers by working mainly on their interpretation of the world around them, their system and situation, rather than acting directly on them. Our results clearly show that proactivity rapidly evolves in one year of MAFF which was not obvious before that research. Such a result is of interest to better design MAFF approach, especially on the targeting of producers and the methods to be deployed to reach more producers (Faure et al., 2014).

This study also gives some insight regarding the difference between planning and strategic thinking, and to what extent management tools and planning tools have a role in this strategic thinking learning process. In our work, we differentiate strategic thinking (proactivity) and planning (planning management practices). The results show that both dimensions are not directly linked, proactive producers don't necessarily plan farm management, and producers having strong planning practices are not always proactive producers. As shown by Liedtka (1998), we can confirm that planning tools are not essential to strategic thinking, but feed the strategic thinking process, reinforcing proactivity building. Indeed, the "trails" given by MAFF and management tools mobilized through MAFF enable producers to build plans: those plans are not themselves the turning point of proactivity building, but enable mental scheme and strategic vision modification, (Heracleous, 1998), leading to more proactivity.

Those results seems relevant to questions the targeting of advisory approaches often based on "leaders" and "innovators", that are often considered to be the most educated and resourceful farmers. Our results show here that all kind of producers participate and change through MAFF, and more resourceful farmers are not necessarily the proactive ones. MAFF is an interesting approach, promoting a global analysis of the system farm-family, enabling producers to build their proactivity and strategic thinking, already during the first year of advice. All producers evolve, at different pace: MAFF could trigger greater changes if better adapted to each proactivity level, working on the main perceived constraint of each proactivity level. Nonetheless, we don't think that targeting advice by proactivity profile would be necessary. We think that proactive producers play a great role of "enrolment" of other producers in the entrepreneurial learning process, sometimes leading to greater changes for the non proactive farmers that they enroll rather than themselves.

More research is needed to explore the changes on the longer term, to see if identified changes after one year are stable or evolve again (i.e. if passive producers' proactivity evolve later on), to see if proactivity is "stable" or can be destructed. Analyzing changes in strategic thinking on the longer term can also highlight potentials links between proactivity building and economical and

social performance, to see if strategic thinking and the specification of a project for farmers leads to better well being for the family.

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