THE MATCHING GRANTS INSTRUMENT: AN EFFECTIVE WAY FOR RURAL DEVELOPMENT

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ABSTRACT

In recent years financing in the Albanian economy has experienced a steady growth, but the specific share of such financing directed towards the rural sector remains low. In light of this observation, further examination of the amount of financing of the rural sector and of alternative financing instruments remains a key objective for all the involved actors. This study aims to introduce and analyze one such instrument, the Matching Grant instrument, as a new financing tool in rural development efforts. It also examines the effectiveness of this tool in transferring innovative technologies to small producers, especially to those of low income. Although initially focused only on particular products and sectors of the economy, matching grants are increasingly being used at a large scale to finance productive assets and investment from communities, groups of interest, and individuals. Our empirical evidence suggests that a considerable share of the farmers that participated in such grant programs have used the received grants mainly in improving production technology and incorporating innovative methods of production, processing, and marketing. The study concludes that the majority of the small matching grants have been very effective in transferring the necessary technology. Moreover, every received small grant was on average translated into replication of the project by 5-9 other neighboring farmers and small enterprises.

Keywords: Matching grant; technology innovation grant; strategic investment program (SIP); value chain; Mountain Area Development Agency (MADA).

INTRODUCTION

Matching grants are increasingly being appropriated as a useful tool in the context of economic and social development by many development agencies and national and international institutions, including those supported by IFAD and the World Bank. The main objective of this study is to analyze the effects of the incorporation of matching grants in the financing of transfers of technologies into the agricultural sector in different stages of the value chain through Programs of Strategic Investment implemented by MADA. The study addresses a number of specific issues related to: how and to what extent have the activities supported by the program been able to stimulate the mobilization of additional resources by the clients of MADA?; what types of technology that were introduced and tested in the framework of this financing scheme were further adopted by other farmers as well at a larger scale?; and finally, was this financing scheme further appropriated as a model by other donors and financing agents to be implemented in other sectors of rural development?.

The transition into a system of research and development in agriculture reflects the broader de-bate concerning innovation systems in which agricultural development is not only directed towards the adoption of new technologies of production, but it also includes organizational and institutional changes which are continually informed by market indicators and relations with service suppliers (Klerkx and Leeuwis, 2008). The importance of research on matching grants for small farmers lies on the recent knowledge that innovation responds more

appropriately to the needs of its users when these users are involved in an integrated way in the process of innovation, are empowered financially and are vested with decision-making authority in influencing the research processes that support innovation (Klerkx and Leeuwis, 2009; Neef and Neubert, 2011).

Matching grants for agriculture are broadly speaking designed to address failures in innovation systems. Innovation grants have been increasingly used to stimulate the private sector and to engage farmers in the activities at various stages of technological generation, distribution, and innovation. Such grants have also been used in areas of agricultural research and development, with a special focus on the demand and participation of final recipients of funding (World Bank, 2010; Echeverria and Elliott, 2002).

LITERATURE REVIEW

Agricultural matching grants are discussed in the academic literature often focused on stimulating demand-driven research in favour of smallholder innovation. However, in general, matching grants support a variety of activities, not only research, and may also pay for material investments, coordination costs, risk capital. The organization of end users of the matching grants and the funds used have been in main focus of many studies and researches (for example Echeverria and Elliott, 2002, Ashby and Sperling, 1995). Several institutional arrangements like competitive funds, public private partnerships, end-user involvement in planning systems are covered (for example Klerkx and Leeuwis, 2008, Klerkx and Leeuwis, 2009, Hartwich and Tola, 2007, Vera-Cruz et al., 2008, Gandarillas et al., 2007).

Another branch of the literature looks at the conditions and institutional change necessary to support demand driven agricultural research and development (for example Hall et al., 2003, Dorward et al., 2003, Lettl, 2007, Jacob, 2005). The comparative literature elaborates on governance mechanisms of innovation funds, objectives of alternative funding mechanisms, and preconditions for functioning (for example Sperling and Ashby, 2001, Heemskerk and Wennink, 2005, Rivera and Alex, 2004, Elliott, 2010).

Recently some studies have identified comparative assessment criteria for impact analysis (for example Triomphe et al., 2010, Mudhara et al., 2008).

Many international organizations (World Bank, IFAD, FAO, DFID, USAID, etc) have produced a lot of information about impact of matching grants through their impact studies of their projects or programmes implemented.

METHODOLOGY

The methodology followed in this study in evaluating the effectiveness and the impact of matching grants on the program participants relies on a variety of direct and indirect empirical instruments, and more concretely:

- Examination and analysis of secondary data and data collected by MADA (preliminary reports, reports of interim evaluation of progress, previous reports of monitoring of progress and evaluation of impact on participants etc.). These sources have been useful in determining the appropriate indicators and carrying on preliminary comparative analyses;
- Examination of the data collected from the fieldwork (both qualitative and

quantitative data), for the collection of which three types of instruments were used:

- surveys with affected households, through which we acquired relevant information on the economic and social impact of the programs,
- semi-structured interviews with groups involved with the implementation of the pro-grams,
- focus groups with beneficiaries of the project through which we attained specific data on the social impact of the programs.

These instruments used in collecting input from beneficiaries of the matching grants enable a detailed evaluation of the variation in the economic impact of these grants according to their type.

RESULTS

MADA has used various financing models of the value chain, including direct financing for the rehabilitation of the infrastructure connecting producers with the market, the establishment of professional capacities for producers and processors, testing and demonstration of advanced technologies in the production, processing, and marketing of agricultural products etc. Among such supporting instruments of main importance is financing through competitive co financing grants. During the implementation period for two programs Sustainable Development in Rural Mountain Area (SDRMA) and Mountain to Market Project (MMP), MADA has awarded a total of 665 grants and mini-grants, among which 41 were technological innovation grants (TIGs) and 624 were grants and mini-grants. Regarding the amounts of financing, these grants involve amounts ranging from 5,000 USD and 10,000 USD to 15,000 USD and mini-grants of 2,500 USD, financed cooperatively with a sharing of contributions according to 60% - 40%, 70% - 30%, and 50% - 50% from MADA and beneficiaries respectively.

a. Technological innovation grants (TIGs) are designed as financing grants of up to 15; 000 USD, an amount planned to cover at most 70 % of the total cost of the investment and the remaining part of which is to be financed by the beneficiary. The performance of TIGs and the selection of their beneficiaries are considered to have been satisfactory, with an improved marketing for the primary producers. Broadly speaking, the subcomponent of technological innovation has shown potential in connecting the different elements of the SIP value chain with each other and in forming vertically integrated strategic SIPs aimed at maximizing the synergies among the participants in the value chain. Nonetheless, the marketing component of some of the TIGs, especially those focused on non-primary activities in agriculture, failed to receive the necessary level of attention and technical assistance for aspects related to the packaging, labeling, agreements with supermarkets etc.

Therefore, TIGs were used more extensively in supporting technical solutions regarding the type and capacity of equipments, the construction and rehabilitation of buildings, and the organization of plants following the highest standards (HAACCP) in food security. Although, the approach of TIGs has yielded positive results and the Ministry of Agriculture, Food and Consumer Protection (MAFCP) has embraced this approach in its own financing schemes in support of processing factories for more widespread agricultural products such as animal products (milk and meat processing), fruits (juice and fruit jams), grapes (wine production). The interventions that were funded by these grants (TIGs) were mostly in the areas of:

i. key investments, such as: establishment of nurseries for production of seedlings, services in setting up of new laboratories, livestock breeding etc., offering services for all actors involved within the technical structure of SIPs, and
ii. interventions aimed at strengthening aspects of the technical structure of SIPs, such as in the irrigation infrastructure for a group of farmers that supply raw products to a processor, in fermentation rooms with controlled temperature dedicated to wine production, in supporting the gradual alignment of national standards with international ones (see Table 1).

	Volume		Value (USD)				
			Total Inv.	Invest. Equity		SDRMA Co-Fin	
Type of Investment	**No**	**% of total**	**Value**	**Value**	**of total**	**Value**	**of Total**
Milk processing	7	29%	212810	108570	51%	104240	49%
winery	6	25%	149224	60596	41%	88628	59%
Grape produc.	1	4%	28475	13500	47%	14975	53%
Fruit storage	6	25%	141850	52700	37%	89150	63%
Meat processing	2	8%	46180	16300	35%	29880	65%
Fruits process.	2	8%	51910	22000	42%	29910	58%
Phase 1- Subtotal	***24***	***100%***	***630449***	***273666***	43%	***356783***	57%
Milk processing	7	41%	191920	116720	61%	75200	39%
winery	1	6%	21560	10650	49%	10910	51%
Fruits storage	1	6%	33456	22086	66%	11370	34%
Meat processing	1	6%	29040	19470	67%	9570	33%
Fruits process.	3	18%	56030	28690	51%	27340	49%
Veg. production	1	6%	21405	10275	48%	11130	52%
Food production	1	6%	18560	7850	42%	10710	58%
Honey process.	2	12%	57130	33360	58%	23770	42%
Phase 2- Subtotal	***17***	***100%***	***429101***	***249101***	58%	***180000***	42%
Total	**41**	***100%***	**1059550**	**522767**	49%	**536783**	51%

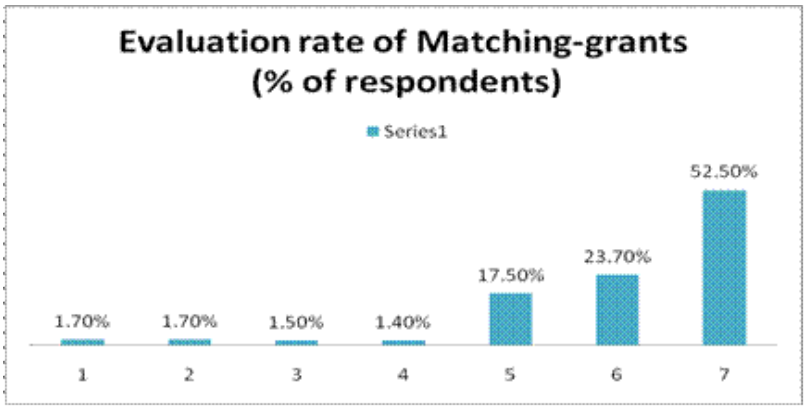
Table 1: Type and investment value of Technology Innovation Matching Grants

b. Mini grants dedicated to technology financing are designed at three levels of USD 2,500, 5,000 USD, and USD 10,000, varying according to sectors and time periods, but planned to cover no more than 60 % of the total cost of the intervention with the remaining 40 % to be financed by the beneficiary. The interventions that were financed through these grants have a horizontal SIP structure while incorporating a thematic approach that aims to demonstrate the necessary technologies in the improvement of the key functions within a particular SIP, such as: drip irrigation, breeding practices, post-harvest products, promotion, labeling, GGAP standards etc. Some of the interventions through mini grants have experienced an important effect in the improvement of the particular functions SIP and SEIP. The selection of the interventions was undertaken strategically, for instance the financial support for the production of wine varieties known as Kallmet was offered for three different greenhouses, each of which used a different root approved for different agro-ecological conditions. Some other similar instances include the support provided to producers of chestnuts, which use varieties that have been selected by farmers throughout many years, the support given to small

fruit trees (fruits, walnuts, vineyards) for drip irrigation to be used for demonstration, and the support provided to small processors of milk for technological improvement purposes. The selected interventions directly respond to market demand in terms of varieties, quality, and quantity.

It is generally considered that the majority of the small matching grants have been very e effective in transferring the necessary technology; moreover, every received small grant was on average translated into replication of the project by 5-9 other neighboring farmers and small enterprises. The Albanian government has approved the mini grant concept and it is now implementing it in the entire country, emphasizing further the importance of mini grants as a tool for demonstrating aspects related to the improvement of value chains. Also, it is obvious from our frequent field visits that new enterprises have increasing their primary production as a result of recurring financing that they have received through mini grants.

From a survey-based evaluation undertaken with a representative sample of beneficiaries of these grants and mini grants, it can be concluded that their impact has been positive for the majority of beneficiaries in terms of investments made in their respective businesses. Based on a 7-point evaluation scale (where a value of 7 denotes maximal positive impact), more than half of the survey respondents (52.5 %) rate the impact of the grants and mini grants maximally (with a response of 7). Many of them, including those beneficiaries that received mini grants of amounts between $2 500 - $5 000, respond that despite the small amount of the received grant compared to the total value of the investment, these mini grants have stimulated their investment e orts through appropriate and effective incentives (see Graph 1 in this section and tables 2 and 3).



Graph 1: Source: MADA Database (Range of values: 1 denotes the minimum level & 7 denote the maximum level).

		Value (usd)		
Type of investment	**No**	**Total Investm.**	**Project. Co-fin**	**Beneficiaries**
Chestnuts	16	223349	130589	92760
Fruit trees / Drip Irrigation	6	59795	18000	41795
Cooling room for fruit storage	9	777271	40900	736371
Meat processing and storage	1	99500	2500	97000
Fruit & veg. process.	22	1074533	104329	970204
Livestock	5	43050	20800	22250
Milk production	6	276475	28072	248403

Tourism	9	75226	28500	46726
Potatoes production	4	36705	19000	17705
Vineyard	18	155845	76140	79705
Wine production technol.	3	27400	14700	12700
Honey production	8	70790	35490	35300
Medic. Herbs	3	36579	16989	19590
Mushrooms processing	1	13000	5000	8000
Handicraft	4	55150	20000	35150
Total	**115**	**3024668**	**561009**	**2463659**

Table 2: SDRMA Matching Grants

		Value (usd)		
Type of investment	**No**	**Total Investm.**	**Project. Co-fin**	**Beneficiaries**
Livestock&milk processing	70	678711	338076	340635
Potatoes and arable crops production	12	126566	55215	71351
Fruit trees &mechanisation&chestnuts	196	1861126	892365	968761
Tourism	39	645528	298617	346911
Vineyard	28	272620	93113	179507
Wine production technol.	6	52490	15000	37490
Beekeeping	68	560892	252918	307974
Processing fruits and vegetables	25	320175	158182	161993
Medicinal plants	30	391620	190778	200842
Traditional dishes	4	43010	17300	25710
Handicraft	16	155001	46135	108866
Others	7	44819	25541	19278
Total	**501**	**5152558**	**2383240**	**2769318**

Table 3: MMP Matching Grants

DISCUSSION

We find that a considerable number of the farmers who were part of the grant program have e effectively used the received funds towards the improvement of their production technology and the implementation of modern methods in production, processing, and marketing. Moreover, it is to be noted that not only the direct beneficiaries of these advanced models, but also indirect beneficiaries (i.e. non-applicant farmers or farmers who applied but were not selected) have benefited from the positive impact of innovation related to the increase in their productive capacity and increase in their willingness to appropriate such production models for their own businesses.

The innovative technological instruments introduced by the programs of MADA in the majority of instances have proved to be e effective and efficient in the transfer of technology and the improvement of the various stages of the value chains.

- **Impact in poverty reduction.** The matching grant model demands that the beneficiaries of the grant scheme co finance a part of the investment. A number of low-income beneficiaries living in mountain areas who were targeted by these programs have had it impossible to acquire the necessary cofinanced amount (around 30 - 50 % of the total investment) and as a result were not able to benefit from such grants.
- The synergy between matching grants and microcredit. TIGs and mini grants have in some cases catalyzed the facilitation of access to microcredit for the purpose of purchasing machinery and tools, thus assisting in the improvement of physical assets of the beneficiaries. The synergy created between TIGs, mini grants, and microloans and their targeting of basic technology improvement in particular has resulted in a positive trend on the productivity and commercialization of agricultural and livestock production.
- **Economic growth**. The most important contribution towards the increase of agricultural production has come from financing through matching grants, targeting the improvement of the production process, the incorporation of new technologies, the improvement of professional capacities through trainings, study visits and experience exchanges, the improvement of road infrastructure, the intensification of access to marketplaces etc. The effective implementation of matching grants has as a result ensured the following:

  - A general increase in production after the investment through grants in all the steps of the value chain: production, processing and marketing (number of livestock, technological lines, machinery, tools and cooling rooms). Our empirical results indicate that there is a positive effect in the number of livestock and the amount of milk produced (as documented in 65 out of 100 survey respondents who engage in livestock production). Approximately 43 % of the respondents declare an increase in the number of livestock, while 91 % declare an increase in the number of sheep and an increase in milk production as a result.
  - Revenue growth due to an increase in the quantity and quality of the marketed products. Our survey data suggest that approximately 27% of the respondents who engage in livestock and agricultural processing declare an increase in revenue of greater than 20% after acquiring the grant; similarly, around 12.9 % of those in agricultural production and 9:5% of those in livestock production declare increased revenue.
  - Increase in storage capacity that directly affects the quantity, quality, and prices of the marketed products.
  - Increased employment that especially affects seasonal workers, but also full time workers. Our survey data confirms that one of the factors related to economic growth is the positive change in the number of employed workers after the receipt of the grants or mini grants. This result to be a growing trend affecting especially seasonal employment (around 48%).
  - Beneficiaries of matching grants have been able to mobilize a total amount of US$ 5; 232; 007 from their savings as cofinancing funds for the schemes of mini grants, grants, and TIGs. In some occasions, bank loans have served co financing purposes.
  - After receiving a matching grant and investing it into their business, many grant beneficiaries have continued investing in it through financial support from other grant schemes provided by the Ministry of Agriculture or through loans from commercial banks and micro financial institutions. Although, it is worth

emphasizing that access to loans from microfinance institutions remains very problematic.

Around 33% of the surveyed farmers claim that the limited availability of financial resources and limited access to financing were the key problem for the development of businesses. Such an observation relates to the extent of opportunities available to entrepreneurs for growing their own businesses.

- **Innovative technological instruments.** The adoption of technologies and improved practices has increased considerably due to the successful demonstration of TIGs and matching grants. Despite this, the need for technological investment is enormous. Around 15% of survey respondents identify the need for investment into new technologies, machinery, and equipment, and investment in additional cooling equipments and product storage (especially for fruit producers and livestock farmers who need to guarantee the storage of milk during transportation) as key problems.

CONCLUSIONS

Considering the findings of this paper discussed above, we have the following recommendations for practitioners working on this area:

- **Improvement of eligibility criteria for beneficiaries with the aim of increasing cofinancing efficiency**
  Due to the required cofinancing criterion (30% or 50% of the total investment) a large number of farmers have not been able to benefit from these grants. Therefore, there is a need for revision and improvement of the eligibility criteria for potential beneficiaries by reducing the co financing amount that is to be covered by the beneficiary, so that financial support is not limited only to certain business categories. Such an improvement becomes even more urgent for programs that focus specifically on the rural poor and their business needs.

- **Assistance to clients after the disbursement of the grants**
  After receiving grant support from MADA, many beneficiaries realize their limitations in human capital. It is precisely at this moment that they need the most assistance in in-creasing the professional capacities of their employees. To address this need, MADA should simultaneously provide professional training programs to accompany the disbursed grants.

- **Implementation of region-based quota policies**
  A reasonable region-based quota policy accompanied by a competitive application process for applicants from a certain region, who is also supported with parallel activities of capacity growth, can be considered by MADA in their future interventions. Nonetheless, a quota policy does not imply loss in focus. Such a policy can be implemented focusing on a limited number of value chains in every region so as to ensure a systematic effect.

- **Field demonstration of technology diffusion with the aim of compensating for the lack of motivation among clients**
  MADA should consider addressing the lack of motivation on the part of its clients in transferring the technology to other businesses. Through frequent visits and field

demonstrations of the technology, accompanied by trainings and workshops, the current technology that is presented can become known by a greater number of interested businesses.

- **Increased focus on marketing improvement**
  The activities of MADA have improved the hygiene and the quality of the product mostly by supporting investment in milk cooling tankers and wine storage tankers. Nonetheless, the improvement of hygiene conditions and the increased product quality have not resulted in a significant increase in prices.

The marketing of products from rural areas marked as “high-quality products" seemingly remains a weak critical point in the value chain, especially in the value chains for milk, wine, and fruit trees. Product branding is an unknown practice among the majority of wine and cheese producers. The protection of products bearing a good reputation" remains a concern for producers of both wine and cheese. Therefore, greater focus is currently needed in promoting the values of the products from rural areas. One realistic way of accomplishing this would be to introduce \regional brands" to consumers while supporting the stores and products from rural areas in the major cities of the country, but mainly in Tirana.

To conclude, matching grants have served and currently serve as a key instrument in the creation of new employment opportunities, the improvement of food security, product growth, as well as storage techniques that result in increased revenue for farmers and other beneficiaries. This instrument has been appropriated and used also by the Albanian government and other donors.

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