

Principal-agent model in agricultural based projects in the Republic of Armenia (the problem statement)

Davit Babayan¹, Maria Kadlečíková²

Slovak University of Agriculture in Nitra^{1,2}

Faculty of Economics and Management, Department of Management

Tr. A. Hlinku 2

Nitra, Slovakia

e-mail^{1,2}: davit.babayan@uniag.sk, maria.kadlecikova@uniag.sk

Abstract

The rural development projects in emerging countries are tight lines for developing the agriculture. They are considered important, as they provide the inputs for industrial development and increase export earnings, they contribute to food security as well as provide agricultural products for local markets. In the Republic of Armenia there are number of agricultural based projects that were implemented and are being implemented. Usually these projects are financed by international donors and are realised by locally selected institutions.

We have adopted principal-agent model in the process of project implementation to show the possible information asymmetries that could be raised between international donors and implementers. The parties involved in the project implementation are the principal (i.e. Project donor), and agent (i.e. Project implementer). When donors are delegating the agents to complete the project there is a risk of information asymmetry. If the implementer behaves opportunistically, it could use it into its utility maximization. The outcome could be the decrease of project contribution allocated for beneficiaries. In this paper, we show the probable risks of parties' relations. We propose too, some risk minimization strategies that we think will alter the information asymmetry. First, prior to project delegation there is strictly recommended to study the implementer experience and the path that he/she has completed. Second, during implementation process increase the monitoring of specific tasks that were proposed by project plan.

The following suggestions are made for projects that are existent in Armenia; however, we think that they are applicable in use of other countries examples as well.

Keywords: Armenia, Principal-Agent Theory, Agricultural Project

JEL Classification: H43, O22

1. Introduction

The agricultural sector plays a crucial role in economy of Republic of Armenia. Except government strategies to develop the rural sector, some contribution for rural development is done by rural development projects. Rural development projects are considered as important drivers of development, as they provide the inputs for industrial development and increase export earnings, and contributed to food security. In the mentioned agricultural projects the direct beneficiaries are the community members i.e. farmers. In some projects, the society is considered as an indirect beneficiary, which is not directly involved in the project. The next player in this chain is the project implementer. This party implement the projects as beforehand planned. The direct and indirect beneficiaries are the final particle of this chain.

In the Armenia the agricultural based projects cycle starts from the contributor who finances the implementation of designed project. The contributor is international donor who in other hand receives money from governments as the membership's fees or from various donor agencies. The principals (project donors) are delegating the agents (project implementers) for projects implementation. Delegation of tasks establishes a principal-agent relationship between the project owner and contractor (Müller & Turner, 2005). During the project implementation, the information asymmetry could be raised as in classical example of principal-agent problem,

and in this case, the good communication between project participants will be crucial for project success. Information asymmetry is the situation in which one of the two parties is better informed than the other (e.g., Jäger, 2008). In this case, the good communication between project participants is crucial for project success.

As the principal-agent theory shows that, the asymmetry of information exchanged between the agents and their principals may lead to significant problems. In this research, we demonstrate the possible risks that could potentially decrease the effectiveness of the project in relation with principal and agent. We show too, some risk minimization strategies during the project implementation processes. Within the frames of this study, the diagram was created in which possible information asymmetries have been demonstrated. This is very important for increased effectiveness of the projects for beneficiaries.

2. The Principal-Agent Model and its Application

The relationship of agency is one of the oldest modes of social interaction. An agency relationship has arisen between two or more parties when one, designated as the agent, acts for, on behalf of, or as representative for the other, designated the principal (Ross, 1973). It occurs in direct measure to a decreased risk of the probability of cheating on the parts of both the principal and agent. In its context the principal-agent problem could be characterized as delegated decision-simulation, where one economic subject, referred as principal, strikes a bargain with the second subject (agent) while there is expectation that the agent would decide for the benefit of the principal (Hlavacek, 2006). In the case of the principal-agent framework, this is structured as a method for analysing problems where one party i.e. the principal, hires another party i.e. the agent, to perform certain task for him or her (Miller, 2005). There is a possibility when principal delegates an agent a task could be raised a situation in which one of the two parties is better informed. In these kinds of situations because of communication barriers, asymmetric information could be developed. As it is assumed that all individuals are expected utility maximizers and are risk-aversers (Pauly, 1968) in this case the agent could behave opportunistically, and use the information asymmetry in favour to own utility maximization (e.g. salary, power status, reputation etc.).

Following types of information asymmetries apply for acting parties: hidden characteristics, hidden information, and hidden intention. Respectively, these three types of information asymmetries create following risks: adverse selection, moral hazard, and hold-up.

Adverse selection problem is the phenomenon where people in the informed side select an option that is harmful to the side of people that are uninformed (Katz & Rosen, 2009). In both sides could happen that some are informed and some are not informed. This is then translated into a coordination problem among uninformed parties. This coordination problem plays an explicit or implicit role in a wide variety of the models (Akerlof, 1970).

Moral hazard economic concept was introduced in 1963. In the moral hazard, is the principal loses ability to control the actions done by agent, and those actions cannot be contracted upon, because no one can verify the value of the agent's actions (Laffont & Martimort, 2001).

Williamson (1985) defined the hold-up problem when either of the two sides of the parties make an up-front investment in the transaction which causes the other side to behave opportunistically and make ex-post bargaining. He noted also, that the hold-up situation allows the side, which invested less in the transaction, to force its conditions opportunistically on the side, which made the upfront investment. Consequently, in a situation when projects require the participation of more than one party, the hold-up problem arises when the party who undertakes the investment (the investor) cannot recover the fixed cost of the investment ex-

post, because once the investment has been made, it is sunk and has no other use. As a result, the other party (the contractor) will have every incentive to squeeze the investor ex-post so that it makes only enough to cover its operating costs.

According to Schieg (2008), there are six strategies for minimizing information asymmetries between project participants:

1. Bureaucratic control
2. Information systems
3. Incentives
4. Corporate culture
5. Reputation
6. Trust.

The bureaucratic control is about the contracts. There is endorsement to keep all the actions and any kind of action by signing mutual contracts between principal and agent. These will influence the agents' behavior, by keeping them more accurate in any decision that they will act. The second point, the economic models of information are often about the information environment – who knows what when. Specifying these features carefully in the model is critical for understanding what will follow. Information is not a standard market good i.e. it has no marginal cost to each person knowing it, it is not consumed, not a typical experience good where you can try before you buy, it is extremely difficult to measure, observe, verify (Autor, 2010). Therefore, there is a need to construct a strategic information system, which will ensure the flow of information openly and appropriate to all users. Regarding to incentives Schieg (2008) refers to bonuses which could be motivating too, and to keep agent to work for principal accurately. However, if the agent thinks that the bonus is less than the expected action, which will bring him or her an output, maybe he or she could choose to behave opportunistically.

It has been suggested, that trust can substitute for monitoring in agency situations, and vice versa that a failure of trust significantly reduces the gains of economic cooperation (Putnam, 1992). However, the trust factor is non - calculative behaviour. Trust occurs neither randomly, nor in advance. (Williamson, 1993). Therefore, the trust factor is very critical for both sides.

3. Data and Methods

In the study the data have been taken from the reports of the organizations implemented various projects with the purpose of agricultural development. The principal-agent model was adopted to the agricultural based projects implemented in Armenia. Upon the model, the diagram has been constructed, which helps to demonstrate the possible information asymmetries between project implementers and donors.

This study is showing the problem, which has negative influence to the projects outcome. This approach could be used for development of further studies.

4 The Principal-Agent Model Adoption in Agricultural Based Projects in Armenia

Contemporary projects are rapidly different as it was in the early stages of project management development. The style, period, complexity of the project with its minor and major number of inputs and outputs now are different. Nowadays, we have more interested parties who are ready to contribute to projects' implementations in Armenia. As the result, the number of projects

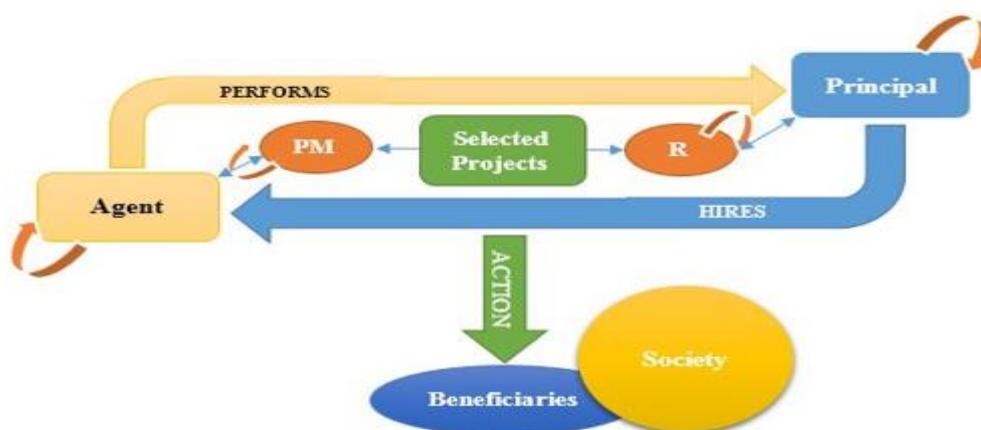
have been increased in the society. Now donors/international agencies are more demanding the implementation process, as well as the successful completion of the objectives. In other side, project implementers are more attentive and vigilant during the implementation process. Complex projects and rapidly growing opportunities with contemporary information technology generate number of risks and challenges, which are going together with project implementation path. Thus, the attentive eye is vital throughout the implementation of the project. In addition, the contact between project donors/international agencies and project implementers are based on direct cooperation. However, sometimes this can proceed with information asymmetry, and if the project implementer will behave opportunistically, he or she could use the information asymmetry in favour to own utility maximization.

Projects, mainly agricultural based are important tool for development of agriculture in less developed countries. They help to increase agricultural outputs, to organize effective and efficient agriculture, in total support communities to grow. In addition, projects help community members to meet with new trends, which are in agriculture. Thus, taking into consideration the project importance in development of agriculture we should strive to find ways to maximize projects effectiveness for beneficiaries. In Armenia, there are implemented and continuing projects in rural sector as well as in other sectors.

In our study, we have the same situation where the donors are delegating the implementers to complete the project. As noted earlier, delegation of tasks establishes a principal-agent relationship between the project owner and manager, where the principal (project owner) depends on the agent (contractor or project manager) to undertake a task on the principal's behalf. It can be assumed that an agent will try to maximize his or her own benefit even when that may involve a higher damage to the client (Schieg, 2008). Good communication between key participants is most important for the success of every project (Ceric, 2003). Because of communication barriers, asymmetric information could be raised, and this is nothing more than the one party is better informed with specific information rather the other one.

In our case, the principal is considered the project provider or the same as project supporter and the agent is considered the project implementer. During the implementation, of the project there could be a potential conflict of interests between project participants because they all have their own interests, as well. Underneath is the constructed figure showing the parties involved in the project, their self-interests, information flow, and the delegation of the job.

Figure 1. Principal-Agent Problem in the System of Agricultural Based Projects in Armenia



Source: Own results

Note: PM-Project manager of implementer, R-Representative from the donor side

In the figure above, we express the four parties and their self-interests even though the project objectives are the same. The parties are the following: principal, agent, project manager,

representative, beneficiaries and the society. The self-interest relevancy is extended in the case of principal, agent, project manager and representative from the principal side.

We have considered the agricultural project in where the principals hire an agent and delegate the project. In this turn, agent hires a project manager and delegates the project implementation process to him or her. The representative from principal side regularly monitors and controls the workflow and gets the reports from the project manager side. The orange curved arrows are showing that each participant has his or her self-interest. For instance, the project manager could apply discretion in making and implementing policies to maximize its own utility rather than maximizing the utility of project donor, which in this case is the increase of project effectiveness, which eventually brings positive changes in the economic conditions of project beneficiaries. Therefore, the management utility maximization is applied.

Thus, indeed there should be developed strategies that will control the self-interest of acting parties. We think that donors should construct it, as there is no incentive for implementer for that. This problem is vital for project success.

5. Conclusion

In this study, the principal agent model is applied and we showed that in agricultural based projects when the donors are delegating the implementers to complete the project the information asymmetry could be raised and if the implementer behaves opportunistically it could use it into own favour for utility maximization.

There are some risk minimization strategies that will alter the information asymmetry which has the direct influence on project success that could be outlined: Prior to project delegation there is strictly recommended to study the implementer experience on the area of the project and the path that it completed – sometimes this basically creates environment when the implementer is not so professional in the specific issues and the work that it will do will not be so efficient as planned, during the implementation process increase the monitoring – this will increase the implementer’s responsibility towards the completion of objectives.

During implementation process, increase the monitoring of beforehand allocated tasks that were proposed by project plan. This will increase the implementer’s responsibility towards the completion of objectives more carefully. The following suggestions are made in the case of Armenian projects however; we think that they are applicable in use of other countries examples as well.

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