

Influence of Monitoring and Evaluation on the Agriculture Project Productivity at Kirehe District, Rwanda

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Abstract: - The study examined the relationship between monitoring and evaluation on the agriculture project productivity. The objectives of the study was to find out how strength of monitoring team, planning process and selection of tools & technics in the Agriculture project productivity. The explanatory research design method was adopted using quantitative methods and used closed ended questionnaire as a data collection instrument. The study was conducted at Kirehe District, KWAMP Project. The target population was 247 with 153 respondents and descriptive statistics, regression analysis, T-test and Significance P-value was used to test the hypothesis. Purpose and stratified sampling techniques were used to select respondents. Data was analyzed by using SPSS software. Data analyzed with regression model where p-value of strength of monitoring team, planning process in monitoring & evaluation and selection of tools and technics is less than 5% which means that all variables are statistically significant. Therefore the researcher concluded that strength of monitoring team, planning process in Monitoring & Evaluation and Selection of tools and technics have significance on the Agriculture project productivity at Kirehe District, Rwanda. This study recommend that there is a need in limiting urban farming and delegate proper zone farming and livestock. This can be done by encouraging people to work in cooperative and find appropriate land for cultivation concerning crop production and harvesting. Lastly, there is still a need in boosting management and trainings programs for youth involvement in agriculture. However, this point should discover closely the risk identification in agriculture operations.

Keywords: - Monitoring and Evaluation, Strength of monitoring team, Planning process in monitoring & evaluation and Selection of tools and technics and Agriculture project productivity.

1. General Introduction:

The World Bank has long been a major lender to Agricultural Project Management (APM), and investments in APM have greatly contributed to meeting escalating food demands and fostering rural development in developing countries. Yet pressures on agricultural projects are intensifying, with the need to meet ever-rising food demands while at the same time increasing farmer incomes, reducing poverty, and protecting the environment, all from an increasingly constrained productivity resource base. The performance of agricultural projects has improved in many aspects over the years, but evaluations continue to report major weaknesses in their M&E systems whilst the challenging context would require a much better understanding of what works and does not works. Reducing hunger and

food insecurity is an essential part of the international development agenda, as stated in the Rome Declaration of the World Food Summit in 1996 and re-affirmed by the participants in the World Food Summit: five years later (WFS:fy1). The Millennium Declaration reflected the WFS target by making hunger part of the first Millennium Development Goal. This is not surprising given the now well-known fact that hunger can be an important cause of poverty, (World Bank, 2008).

Monitoring agricultural performance, in the context of the shared regional goals and targets, needs to receive urgent and increasing attention. It is expected that monitoring agricultural sector performance will be an important function of SADC's agricultural information management system (AIMS), which is

currently under development. In addition, monitoring targets as those spelt out in CAADP will allow for mutual review at continental level to reveal progress in implementing CAADP and for peer review at sub-regional and national levels to align sub-regional and national targets to CAADP regional targets (ReSAKSS, 2008). Monitoring in this context is expected to involve repeated observation of status and trends in agricultural performance, especially to identify and signal progress towards the shared targets and goals. This will provide information on whether each member state, and the region as a whole, are making substantial progress towards achieving the shared goals and targets. This type of monitoring may benefit from the use of performance indicators, (ReSAKSS, 2008).

Ministry of youth affairs in Kenya highlights that monitoring and evaluation systems have been widely integrated in local youth projects and programs thus highlighting the success of these programs (NYSAP, 2009). Through the information sourced in the course of these projects, the management can be able to make more informed decisions as well as enhance the performance of projects. In regard to the determinants of effective monitoring and evaluation systems in Kenya, there is lack of a standard monitoring and evaluation policy (Bornd, 2013). Bornd alludes that the majority of the baseline systems adopted are merely guidelines and policies as well as working papers written by different stakeholders. He further highlights that to address this problem, firms should increase resources allocation to M & E systems as well as involve all relevant stakeholders, enhance the capacity of the systems and ensure better communication is established within organizations. Monitoring and evaluation systems are widely hindered by both internal and external pressure and factors that manifest themselves in the project cycle as different stakeholders push for the fulfillment of their agenda (Otieno, 2014).

In Rwanda assess agricultural policies is very significance, the latest program in relation with intensification of agricultural policy in Rwanda was having the objectives to increase the production from

farming through the modern usage and training, irrigation coverage and soil quality, (Nicola Cantore, 2012). Due to the growing importance of the monitoring & evaluation all-over the world, many projects identified the benefits and they are trying to establish it in their operations (Baker, 2011). At regional and sub-regional scales M&E is important for assessing the sustainability of local practices, and can be an important tool to assist with management planning in Non-Government Projects (Margoluis, & Salafsky, 2010). Hence, currently most M&E works related to performance of the projects, internal accounting control and security over assets rather sustainability of the project outcome. It is felt necessary to study the role of M & E to the project sustainability in Rwanda. Although, the Government of Rwanda in 2010 has established a programme for Monitoring & Evaluation, till now, many of Government projects do not sustain their outcomes (Ministry of Finance and Economic Planning (MINECOFIN, 2013).

2. Statement of the Problem

The monitoring and evaluation of these projects' execution revealed that the project management in Rwanda encounters many problems including inadequate follow up of the project management by the officials in charge of project management; technical and financial capability as well as professionalism to execute contracts among local companies, the poor or lack of project studies, lack of clearly defined roles and responsibilities of officials involved in contract management, etc. The same monitoring and evaluation exercise also revealed that there are contractors' payment problems due to incomplete documents, poor performance by contractors, untimely and inappropriate follow up on payment, budget problems, poorly prepared tender documents and contracts that lead to disputes, etc. (RPPA, 2014). Even if there has been an effort to mitigate all those problems there still many things to be done to make the situation better than today (MINECOFIN, 2014).

Additionally, the implementation of most of projects in Rwanda, especially those concerning the public works use to take more time than the scheduled one

due to poorly estimated costs which use to be revised and involve additional costs and poor technical designs which use to be modified during the project's implementation implying therefore, the unplanned additional works which involve additional costs. Several civil work projects in general have had additional contracts related to unplanned works and therefore additional cost which is not planned before their beginning. To execute the additional works, the contractor has to be given additional time and therefore, the objectives and purpose of the projects is not achieved on scheduled time which results in poor performance of the projects. (RPPA, 2014).

KWAMP objectives would be the to increase the level of food sufficient in Kirehe District, as evidenced by a step improvement in family mal nutrition, asset ownership and quality of life indicators, particularly amongst vulnerable groups. The immediate objectives converge in improving sustainable profitable small-scale commercial agriculture in Kirehe District. Sustainable incremental income from farming and related economic activities is the operational instrument for poverty reduction among the poor majority, (KWAMP, 2016). The objectives was to ensure land tenure security, to strengthen tenure security for family owned/occupied land, mainly on the hill-sides and to strengthen security of tenure of individuals and groups that accessed state owned land in the cultivated wetlands. At design, this sub-component sought to achieve the following results: better project performance vested in the benefits tenancy of property security; all agriculturalists benefitting from poverty reduction interventions having land access with registered rights (statutory /customary); all land under project area registered, especially land under specific investment interventions; and better capacity installed within governmental establishments (especially local government) and civil society organizations to address land tenure needs, (KWAMP, 2016).

3. Specific Objective:

1. To find out how strength of monitoring team effect on agricultural project productivity at Kirehe District Rwanda.

2. To examine the influence of planning process in monitoring and evaluation on agricultural project productivity at Kirehe District Rwanda,
3. To evaluate the effect of selection of tools and technics on agricultural project productivity at Kirehe District Rwanda.

4. Literature Review:

4.1. Strength of monitoring team and Agricultural productivity

Providing support and strengthening of M & E team is a sign of good governance. Providing support and strengthening of M&E team will also play a key role in ensuring that the M & E team adds value to the organizations operations (Naidoo, 2011). A motivated team usually achieves high performance (Zaccaro et al, 2002). This implies that the more a team is strengthened, the better the performance and value addition to the organization. This also applies to the monitoring and evaluation teams in project management. Interestingly Pretorius et al (2012) observed that there was no significant association between the maturity of quality management practices in project management organizations and the results of the projects that they produce.

M&E of agricultural development projects often gathers data on progress towards planned milestones and timelines, which were selected to outline the sequence of steps by which the project should unfold. Those plans are typically predicated on a set of assumptions that consider that the underlying theory of change is correct; and those assumptions are typically neither tested nor questioned by the project team or by their sponsors. The intended beneficiaries are sometimes reported to be skeptical and cautious, but their voices are rarely heard by researchers or their sponsors (Chambers et al. 1989; Scoones & Thompson 2009).

4.2. Planning process in monitoring and evaluation process and agricultural productivity

Developing an M&E plan requires a proper understanding of the project, inputs, processes, output and outcomes according to (Cooke, Bill, &Uma, 2001). The inputs required would include human resources with M&E technical capacity and

resources, authority and mandate to develop the M&E plan and technology infrastructure as noted by (Kalali & Davod, 2011). The process would involve advocating for the need for M&E, assessing strategic information needs (including planning for M&E utilization dissemination), achieving consensus and commitment among stakeholders, particularly on indicators and reporting structure & tools, developing mechanism for M&E plan review, and preparing document for final approval. Detailed M&E planning commences by breaking down the components into sub-components to produce a product (deliverables) breakdown structure as far as breakdown is feasible, (Kalali & Davod, 2011).

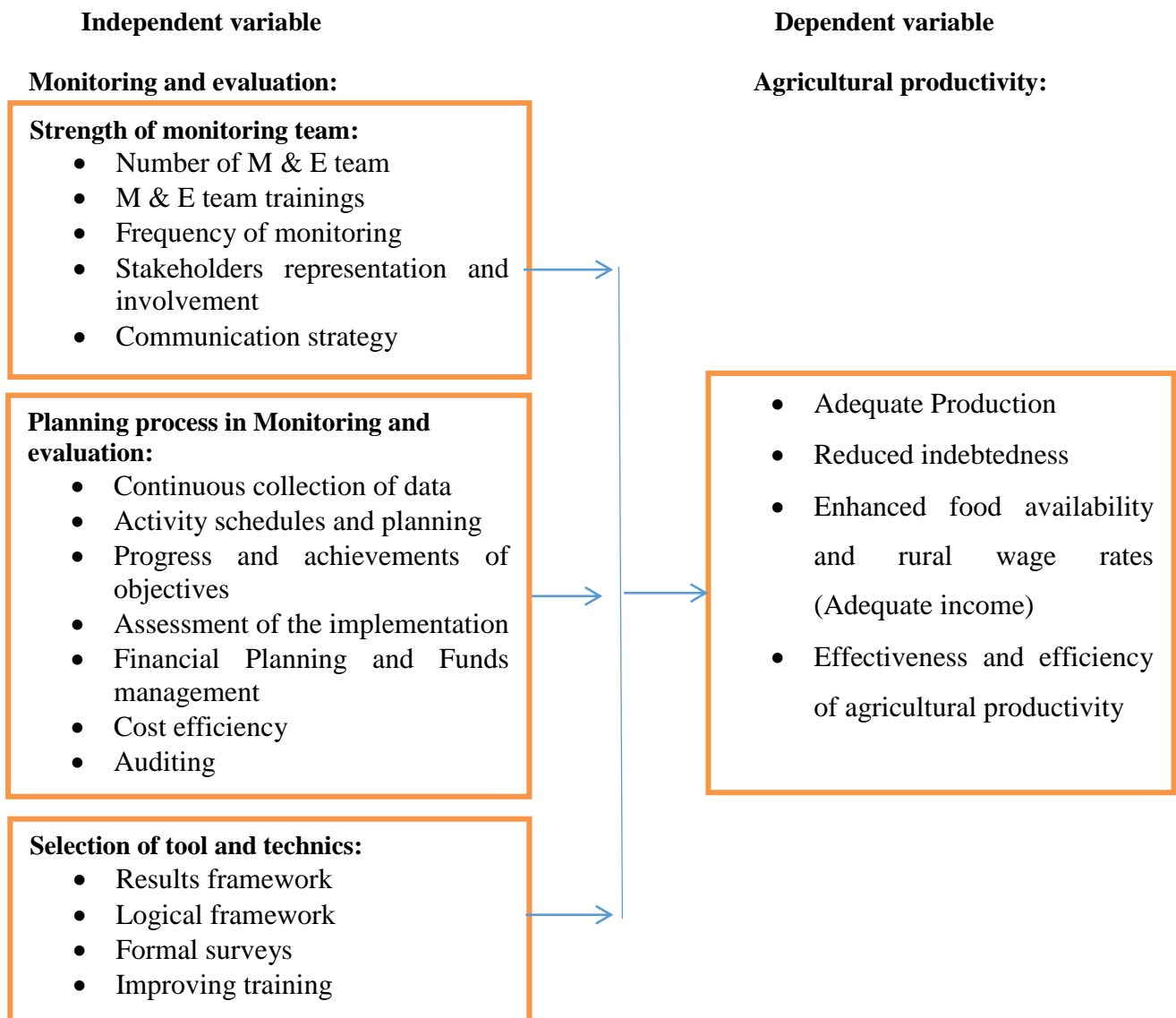
On the other hand, a study by Muhammad et al (2012) on project performance, with the variables, Project Planning, Implementation and Controlling Processes in Malaysia College of Computer Sciences and Information, Aljuf University, noted project management offers an organization with control tools that advance its capability of planning, implementing, and controlling its project activities. The study was to identify those project performance enhancements through planning, implementation and monitoring processes. Variable models used to identify how each stage is helpful in the process of managing project performance. To achieve this objective, information relating to different projects and models related to project planning, execution, control, and proposal of project performance explored; the findings showed project-planning processes contribute to the project performance.

4.3. Selection of tools & techniques and agricultural productivity

Most projects mainly use two principal frameworks: result framework and logical framework (Jaszczolt et al., 2010). A framework is an essential guide to monitoring and evaluation as it explains how the project should work by laying the steps needed to achieve the desired results. A framework therefore increases the understanding of the project goals and objective by defining the relationships between factors key to implementation, as well as articulating the internal and external elements that could affect the project's success. The M&E framework should also include details on budgeting and allocation of technical expertise, as well as inform donors and project management on the its implementation (Guijt et al., 2012).

The criticism on this theory is that, M&E systems use different tools and approaches, some of which are either complementary or substitute to each other, while others are either broad or narrow. An evaluator however may choose to use a combination of methods and sources of information in order to cross-validate data. The selection of these tools however depend on the information needed, stakeholders and the cost involved. Less formal methods which are as well rich in information are subjective and intuitive, hence less precise in conclusion. They include, among others, field visits and unstructured interviews. In order to increase the effectiveness of an M&E system, the monitoring and evaluation plan and design need to be prepared as an integral part of the project.

5. Conceptual framework



Source: Researchers illustration, 2021

Figure 2.1: Conceptual framework

Conceptual framework is a research tool intended to assist a researcher to develop awareness and understanding of the situation under scrutiny and to communicate this (Kombo and Tromp, 2006). From the discussion provided above, monitoring and evaluation having determinants such as strength of monitoring team; budgetary allocation; planning process in monitoring & evaluation and selection of tools and technics were applied as an independent variable and agricultural productivity as a dependent variable. When monitoring and evaluation effectiveness increase in project management, then agricultural productivity level/status increase therefore agricultural productivity projects outcome

may change when intervened with Statutory laws & regulations, and suitable practice of Technology.

3.1. Research design

The explanatory research design method was used in this study; Explanatory research is actually a type of research design that focuses on explaining the aspects of your study. The researcher starts with a general idea and uses research as a tool that could lead to the subjects that would be dealt with in the incoming future (Muhammad, 2021). It was focused on explaining the aspects of the study in a detailed manner. This research design served as a tool for initial research that provides a hypothetical or theoretical idea of the research problem. Explanatory

research was quantitative in nature and was typically tested prior hypotheses by measuring relationships between variables; the data was analyzed using statistical techniques.

3.2. Sampling design

This part of the study presents the population of research, sample size determination and sampling technique. The sample design provides information on the target and final sample sizes, strata definitions and the sample selection methodology. The term "sampling plan" may be restricted to mean all steps taken in selecting the sample; the term "sample design" cover in addition the method of estimation; and "survey design" may cover also other aspects of the survey, e.g. choice and training of interviewers, tabulation plans, etc. "Sample design" is sometimes used in a clearly defined sense, with reference to a given frame, as the set of rules or specifications for the drawing of a sample in an unequivocal manner (The International Statistical Institute, 2013).

3.2.1. Target population

Schuman, (2014), said that the target population means all members of specified group that is concerned or associated with the research. This research had sought to evaluate the role of monitoring and evaluation on agricultural project productivity. Hence the population under this study involved 247 composed by project staff, project support (technical staff), monitoring and evaluation department and beneficiaries of Kirehe Community-based Watershed Management Project (KWAMP).

3.2.2. Sample size determination

By determining the population, the research used both stratified and purposive sampling methods. The reason for stratified technique is that the sample for the current study is grouped into different characteristics called stratum and also, divided in different department allocated in entire District. By using purposive sampling method was for selecting people to include in target population. The main characteristic of random when selecting population is that it was a type of non-probability where people with a particular characteristic was purposively

selected for the inclusion in part of targeted population.

According to Grinnell and Williams (1990), the sample size for this study was determined using the Slovin's formula which was equals to 153 respondents.

3.2.3. Sampling technique

Kothari (2014) defines sampling design/technique as a definite plan for obtaining a sample from the sampling frame. The sampling techniques used were universal and purposive sampling technique. Purposive technique judgment or subjective technique was used in selecting target population to be a part of sample size when choosing participants to be interviewed and answer back the questionnaires.

3.3. Data Collection Procedures

Most. Et al, (2003), defined data collection as the techniques to be used on the research interest basis when collecting data from participants, where the target population are interviewed and asked to give concerned responses to questions asked in relation with the research.

The study used both primary and secondary data; for the secondary data collection, researcher reviewed books, articles and documents from different sources relate to the topic under the study; thereafter, the researcher used questionnaires as a major toll of primary data collection.

3.4. Reliability

This study used Test-retest reliability for measuring the consistence obtained and to ensure that data are reliable when conducting the same test more than one time over period of time with the participation with the similar sample group, (Kenton, 2019). Basically, test-retest allowed the researcher to do the comparison of the average values from the data of two sets, where the researcher determined if are from the same population or not.

5.4 Summary of Objectives Finding

The R value printed out from the data was estimated to 0.523 indicating a positive relationship existing

between the factors. The meaning behind this value show that the binding point that links the strength monitoring and agricultural product productivity is oriented in a positive sense. Referring to the R2 value, the total variation to which the two variables exist is shown to be 0.273 indicating the effects at which two variable exist and could be expressed as 27.3%. All in all, we have concluded that monitoring strength contribute to the agricultural product productivity as all variables are significant.

Both R and R2 values supported in explaining the relationship between planning process in monitoring and evaluation on agricultural project productivity. As indicated in the table, the R value printed out from the data was estimated to 0.489 indicating a positive relationship existing between the factors. This value shows that the there is a positive existing relationship that links the planning process in monitoring and evaluation on agricultural project productivity oriented in a positive sense. In the end, we have concluded that there two variables are in a close relation from one another. Again, referring to the R2 value, the total variation to which the two variables exist is shown to be 0.239 indicating the effects at which two variable exist and could be expressed as 23.9%. In a nutshell, we have concluded planning process in monitoring and evaluation contribute to the agricultural product productivity as all variables are significant.

The R value is estimated to 0.522 indicating a positive relationship existing between the factors. The meaning behind this value show that inevitable relationship linking selection of tools and technics and agricultural product productivity as oriented in a positive sense. Therefore, we have concluded that there two variables are in a close relation from one another and the effects occur at the rate of 0.522. Not only that but also referring to the R2 value, the total variation to which the two variables exist is shown to be 0.273 indicating the effects at which two variable exist and could be expressed as 27.3%. To summarize, the researcher has concluded that selection of tools and technics contribute to the agricultural product productivity as all variables are significant.

5.4 Summary of Hypothesis Finding

The Strength of monitoring team effect on agricultural project productivity at Kirehe District Rwanda. The test for regression was done and the sig. value indicated the results to be 0.020. We can notice that the p value for this case is still less than 0.05 which indicate how we are lucky in determining the relationship existing between the two variables study. However, it has been proven that monitoring could be taken as positive only in bringing quality outputs, keeping the rules and procedures, and reducing the cost by improving the efficiency in production activities. Note that we have applied 5% indicating the degree of significance for all factors. We also valued the p value across the factors which could be estimated to 0.020. While concluding, I am delighted to reject the null hypothesis and consider it's alternate. In fact, strength monitoring contribute to the agricultural product productivity.

The test for the planning process in monitoring and evaluation on agricultural project productivity at Kirehe District Rwanda. The test for regression was done and the sig. value indicated the results to be 0.002 which is less than 0.05. As a conclusion, there is a tangible relationship existing between the two variables study and the regression model was statistically strong and significant predicting the changes in the variables. Note that we have applied 5% as the significance degree for all factors. We also valued the p value across the factors which could be estimated to 0.002. As a conclusion, the researcher proudly rejected the null hypothesis and consider it's alternate. In fact, Planning process in monitoring and evaluation contribute to the agricultural product productivity.

The test for the selection of tools and technics on agricultural project productivity at Kirehe District Rwanda is indicated. The regression model predicts that the changes happening on the dependent variable affect how the independent variable is going to behave and vice-versa. However, the dependent variable should be strongly significant and predict the behavior changes for both of the variables. The value printed was 0.017 which indicate how we are lucky in determining the relationship existing

between the two variables study as the rate indicated is in a positive sense. To wind up, the experimenter rejected the null hypothesis and consider it's alternate. Therefore, Selection of tools and technics contribute to the agricultural product productivity.

5.5. Conclusions

Based on the result in table 4.18, $\beta = .514$ which means change on Strength of monitoring team causes increase of 0.514 (51.4%) of Agricultural project productivity. The ratio of β test modal results into t value. $t = 2.663$ hence the probability value has significance on Agricultural project productivity since t value is less than, $\text{Sig} = .020$, since p value (0.020) is less than 0.05 and this confirm the first hypothesis of this research which says that Strength of monitoring team has a statistically significant effect on the agricultural project productivity.

$\beta = .610$ which means change on Planning process causes an increase of .610 (61%) of agricultural project productivity. The ratio of β test modal results into t value. $t = 2.392$ hence the probability value has significance on agricultural project productivity since t value is less than, $\text{sig} = .002$, p value (0.002) is less than 0.05 and this confirm the second hypothesis of this research which says that Planning process in monitoring and evaluation has a statistically significant effect on agricultural project productivity.

$\beta = .570$ which means an increase on transparency practices causes an increase of .570 (57%) of Selection of tools and technics has a significance influence on agricultural project productivity. The ratio of β test modal results into t value. $t = 3.654$ hence the probability value has a significance (Selection of tools and technics have a statistically significant effect on agricultural project productivity, p value (0.017) is less than p value (0.05) and this confirm the third hypothesis of this research which says that Selection of tools and technics have a statistically significant effect on agricultural project productivity.

5.6. Recommendations

To begin with, citizens need to recognize the importance that agriculture and farming brings in

accordance with the current population increase. In order to make it possible and exploit these advantages, different factors rather both private and public institutions need to come together in bring such appropriate contribution and empower small farming cooperatives and individuals to protect and maintain a sustainable and secured distribution channels which have to empower farmers more than probably consumers.

We have noticed that there is a need in limiting urban farming and delegate proper zone farming and livestock. This can be done by encouraging people to work in cooperative and find appropriate land for cultivation concerning crop production and harvesting. In fact, it is very easy to manager cooperative more than going through each individual harvest to know the needed policies to support. This will increase the feasibility also focusing on land ownership of land to some cooperative and the government could propose specific type of crop to cultivate in one type of land. Even though there might be some challenges regarding choosing the proper type of crop to begin with, the government should also collaborate with different cooperative and create internal working system governing farming cooperatives and establish how these cooperatives should work together and exchange techniques and habits.

In addition, the location of farming activities might be also causing poor performance in agriculture related activities. As a solution to the problem that most people face, there is a need in empowering farmers with modern agriculture tools including farming machines to boost the amount harvested. Manual usage of cultivating might be challenging and requiring expensive labor presence compared to the usage and application of machines. This will improve the productivity and increase the pace on which farmers claim to last long period harvesting or storing their yields. With this being said, both private and government institutions need to cooperate with farming cooperative to help in monitoring investments and attributing the gate beginning capital. The availability of resources should be solved by both individuals operating in agriculture

field and create internal control system allowing all farmers to have access to some common resources including land and the seeds to cultivate. Otherwise, projects proposals should be encouraged allowing new recruitments of plant species and farming techniques for agriculture.

Lastly, there is still a need in boosting management and trainings programs for youth involvement in agriculture. However, this point should discover closely the risk identification in agriculture operations. According to Oliver Wyman (2021), the future of agriculture could not be determined unless young generation and emerging technologies work on improving industrial based technics in adapting to the changing world in terms of population increase and hazards. Like he says, the report carried out 50 years ago demonstrate that the scarcity in natural resources continue to increase proportionally to the changing climatic condition which should actually cause trouble to humans. Unless new emerging technology and youth involvement work together, there is no other ways that we meeting these challenges could not cause fears inside human race. In fact, there is still a need in figuring out the best techniques of involving young generations in agriculture which can also bring some percentage of trust in adapting to the new technology to conquer and predict the changes.

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