International Refereed Journal of Engineering and Science (IRJES)
ISSN (Online) 2319-183X, (Print) 2319-1821 *Volume 1, Issue 1 (September 2012), 65-70*
www.irjes.com

Effect of Scheduling towards increase agricultural production in Libya.

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Abstract *:In project management, a schedule consists of a list of a project's terminal elements with intended start and finish dates. Terminal elements are the lowest element in a schedule, which is not further subdivided. Those items are often estimated in terms of resource requirements, budget and duration, linked by dependencies and scheduled.*
Project scheduling looks at which tasks need to be performed for a project and assigns deadlines for their completion. The project scheduler sets these deadlines by calculating how long each task should take to perform. Scheduling requires a comprehensive understanding of which action steps and possibilities need to In all phases of the project

I. Introduction

Project schedule is a strategic and an important tool in a project manager's portfolio for guiding a project successfully to its target completion date. For simple projects, a project schedule is basically a timeline or calendar which lists tasks and activities with expected start and finish dates. For more complex projects, a project schedule can be layered with different details to enable project managers to direct and manage resources more smoothly, communicate more frequently and effectively with stakeholders, and identify and monitor dependencies and constraints between tasks to avert preventable delays. The project schedule can be expressed in several display forms depending upon the purpose of the schedule, the stage of the development of the project Failure to meet schedule goals is most often due to unrealistic deadlines, passive project execution, unforeseen problems, or things overlooked in the plan.

Studies indicated that the agricultural sector in Libya suffers from many difficulties, including the misuse of human and material resources, low productivity, high costs and the continuing decline in production levels. In addition, low and weak administrative and financial control, which led to the phenomenon of corruption in public projects, which led to a lack of access to the target of production in the agricultural sector? First National Conference for Public Policy at the University of Libya, Benghazi Garyounis Issa Abdul-Latif (2007)

The studies indicated. That Project scheduling looks at which tasks need to be performed for a project and assigns deadlines for their completion. The project scheduler sets these deadlines by calculating how long each task should take to perform. Scheduling requires a comprehensive understanding of which action steps need to get done and when. (Moehring et al. 2000)

Scheduling is an inexact process in that it tries to predict the future. While it is not possible to know with certainty how long a project will take, there are techniques that can increase the likelihood of being close (Brucker et al. 1999). If the organization is close in its planning and estimating, it can manage the project to achieve the schedule by accelerating some efforts or modifying approaches to meet required deadlines.

One key ingredient in the scheduling process is experience in the project area; another is experience with scheduling in general. In every industry area there will be a body of knowledge that associates the accomplishment of known work efforts with time duration (Dorndorf et al. 2000 and Moehring et al. 1998). In some industries, there are books recording industry standards for use by cost and schedule estimators. Interviewing those who have had experience with similar projects is the best way to determine how long things will really take In this study we tried to know what the schedule application in agricultural projects in Libya. As one of the important factors in the production process. And try us out with findings and recommendations useful to work in agricultural projects in Libya

II. The problem statement

The basic problem in this study is the lack of production quantities of agricultural projects in general in Libya. Where there are many factors that affected the quantities of production and in this paper we will study one of the most important of these factors, a worker scheduling of agricultural operations and its significant impact in controlling the completion of the work required in the time allotted

III. The objective of this paper

Objective of this study is to investigate the processes in the scheduling of agricultural projects and how to take advantage of the time factor to increase production in agricultural projects in Libya

IV. Methodology

Will form an integral part of this methodology is to conduct basic research in order to further demonstrate the relationship between the schedule in agricultural projects in Libya and its effects on productivity The size of the study sample included 179 of staff and workers in the agriculture sector in Libya. Was chosen as the 5 agricultural projects in Libya. Has been asking some questions about scheduling operations in agricultural projects. And will provide results that are obtained through the assessment of respondents to the questionnaire as a whole is fixed by the figures, graphs or any other form of graph that would be relevant and useful to provide this information. Been Guidance them some questions. Then took the results, and then the data were analyzed by statistical software packages (SPSS). Statistical analysis were performed where the task and of the arithmetic mean and standard deviation of percentages and ratios to the samples. It will allow the respondent put one option for each statement according to the Liker scale. Are as follows.

1 - Strongly Agree 2 - tend to agree 3-undecided.4- tend to Disagree5 - Strongly Disagree. According to the following questions

Q1 Is there a table of quantities and specifications in the workplace

In question 1, we ask the participants if there is a table of quantities and specifications in the workplace, the result of our survey showed that among the 179 participants; (8 workers strongly agree, 9 workers tend to agree, 28 workers undecided, 73 workers tend to disagree, and 61 workers strongly disagree), The overall percentage of workers; (4.50% strongly agree, 5.00% tend to agree, 15.60% undecided, 40.80% tend to disagree, 34.10% strongly disagree) as shown in Fig-1 below.

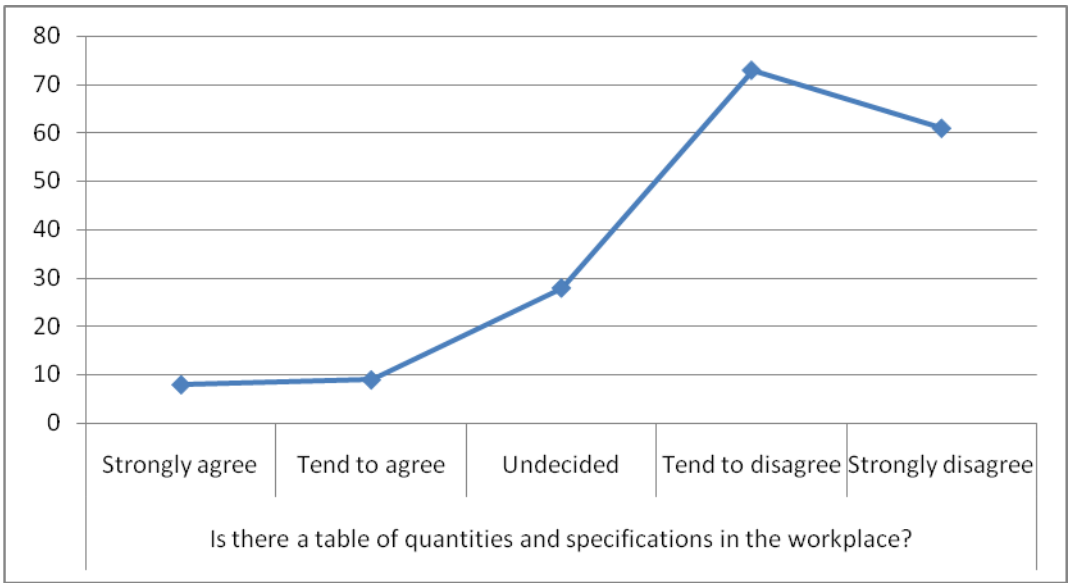


Fig-1 (A chart showing quantities and specification)

It is obvious form the above chart, the majority of workers affirms that no table of quantities available at work, this lead to unorganized operations at work, and most of the participants confirm there are no table of quantities and specification, they never have received any kind of such details about specification or quantities with production, they have never been introduced on how to schedule their works. It is significant to know that 40.80% tend to disagree, 34.10% strongly disagree, if we sum both percentages of groups who either tends to

disagree or strongly disagree then the sum equal to 74.90%, it means that the current scheduling is very bad at site of works in public agricultural projects. The statistical mode value (the most frequent number) equal to 4 (tends to disagree), in this question the statistical mode value is equal to the mean value (3.9497≈4) with a higher standard deviation (1.05081≈1), which is equal to one. We conclude from this result that biggest number of the study sample tend to disagree with the current situation regarding scheduling the daily activities in table of quantities and specifications, the other numbers are distracted far away from the mean value and have quite opposite opinion The basic relationship between scheduling practices and project outcome success is transferable to other categories of projects and other stages in the project life (Dr. Andrew F. Griffith, PE, 2005). Few workers were not decided have uncertainty about this issues. According to that the study emphasize on the fact that public agriculture projects in Libya have very weak scheduling techniques and workers must received detailed information about what they should do and what is the specification of their work exactly, neglecting to do so will delay production and in many cases cause series problems to the supply chain which is directly affected with the supply of products from the public agriculture projects

Q2 Is there a schedule before the start of agricultural operations

In question 2 we ask the participants if they receive work schedule before starting of agricultural jobs, the result of our survey showed that among the 179 participants; (8 workers strongly agree, 17 workers tend to agree, 58 workers undecided, 58 workers tend to disagree, and 38 workers strongly disagree), The overall percentage of workers; (4.50% strongly agree, 9.50% tend to agree, 32.40% undecided, 32.40% tend to disagree, 21.20% strongly disagree) as shown in Fig-2 below.

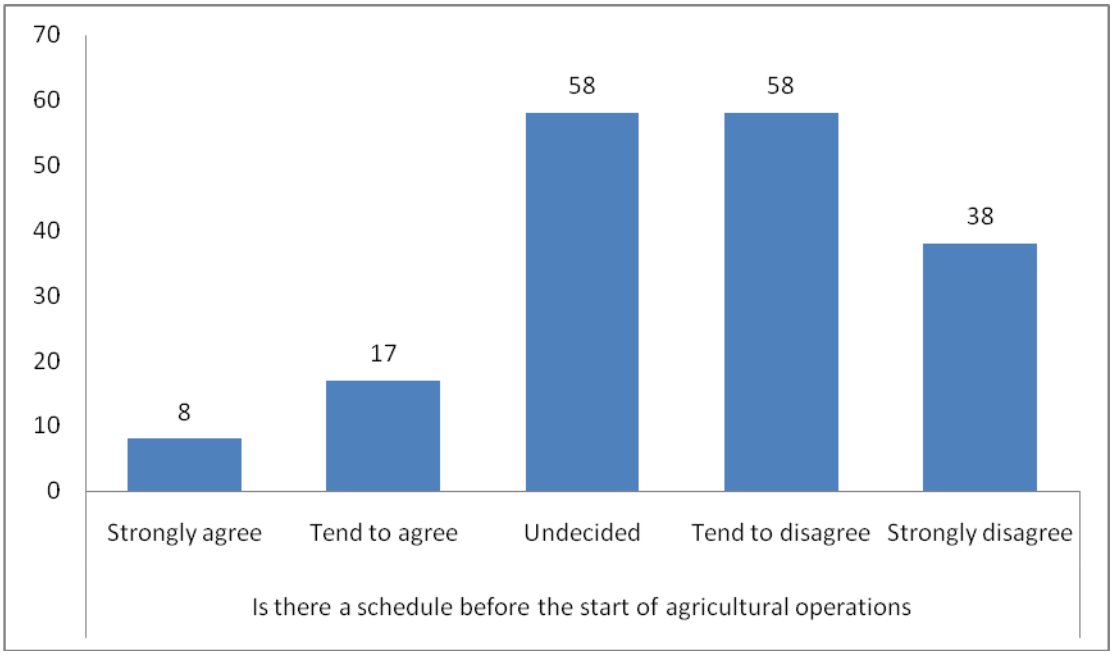


Fig-2 (A chart showing scheduling the operation)

We understand from this chart and percentages that we have a double statistical mode values (the most frequent numbers), both number 3 (undecided) and number 4 (tend to disagree) are the mode of the sample. The multi-modal outcome would require some tie-breaking procedure to take place in order to know exactly the most frequent decisions of the participant about scheduling the operations. The mean value (3.5642>3) and a high standard deviation (1.06531≈1) shows that part group of workers tends to disagree or strongly disagree, whereas the other away from the mean and tends to agree.

Operation scheduling and control refers to the planning, diagrams to identify critical activities and calculate the scheduling and control of projects' operations, which consist of minimum time required for their completion and in the case numerous activities. (Blazewicz, J., K.H., Ecker, 1996). Most of the workers agreed that no schedule at all has been submitted to the workers. Workers did not know what is the exact date and time to finish their operation daily and monthly. This is a series issue that needs to be solved by the CEOs and head managers in public agriculture projects in order to let the workers the value of time. Without providing a time schedule to accomplish the daily operation, workers will behave careless about their time and this matter will affect the productivity very much.

The chart above showed that 32.4% are undecided and the same percentage is tending to agree, and 21.22% strongly agree there is no operation schedule at all.
Whereas only 4.50% and 9.5% of workers believe there is such a schedule for doing daily and monthly operation, but this percentage is very small and not reliable.
This is one of the main reasons why productivity is always facing delay, and the distribution channels of agriculture products is directly affected by the delay resulting from non-scheduled production.

Q3 is there a start the agricultural operations in a timely manner and have the specified

In question 3, we ask the participants if they is there a start the agricultural operations in a timely manner and have the specified, the result of our survey showed that among the 179 participants; (0 workers strongly agree, 24 workers tend to agree, 50 workers undecided, 80 workers tend to disagree, and 25 workers strongly disagree), The overall percentage of workers; (0% strongly agree, 13.40% tend to agree, 27.90% undecided, 44.70% tend to disagree, 14.00% strongly disagree) as shown in Fig-3 below.

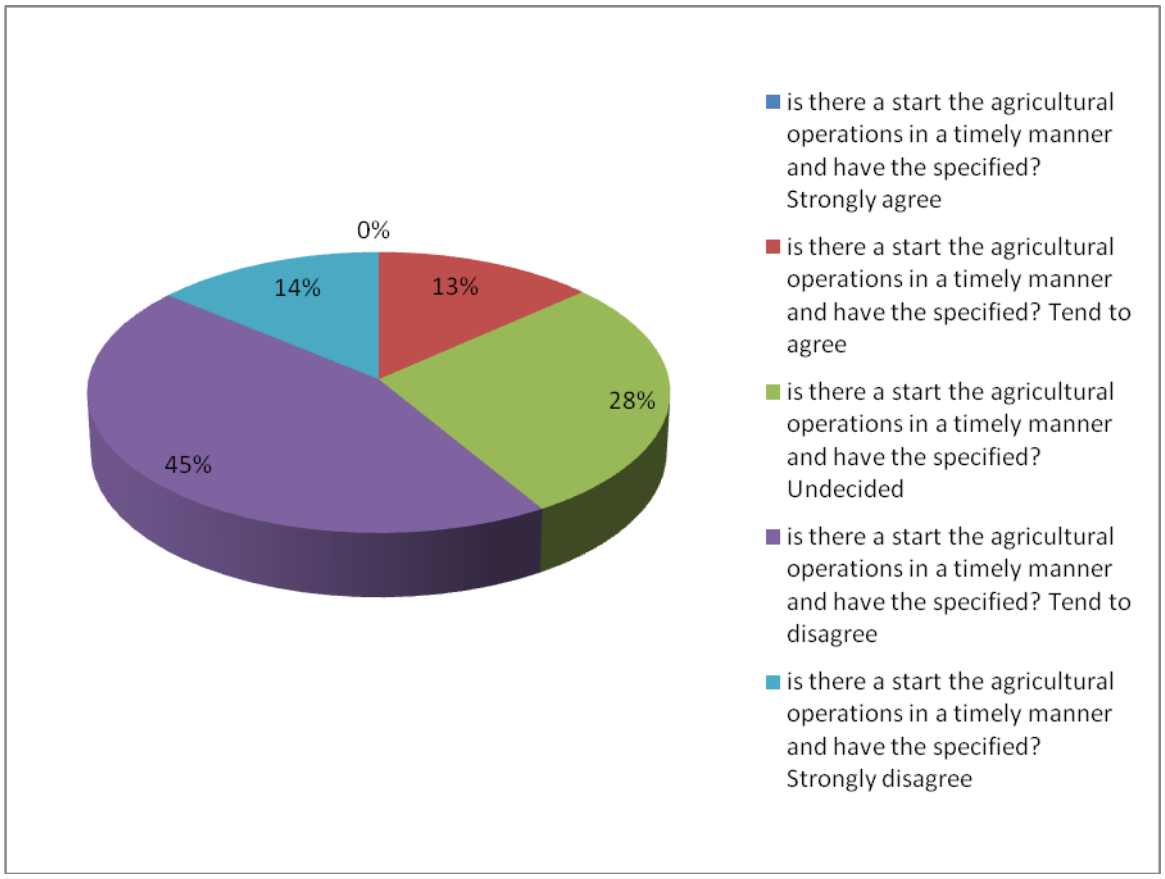


Fig-3 (A chart showing time schedule)

The mean value (3.5922>3) and the standard deviation (0.89074<1), this result shows correlated opinions to the mean value. Workers in public agriculture projects declare they have not be notified about exact timing to start and finish their daily works, and they did not know what is the exact quantities need from them in a daily bases. The chart below showed that 45% of workers do not know what is the exact time to start their job or operation daily, and 14% are strongly believe there is no information has been giving to them before about when exactly to start and end their daily operations. If we combine both percentage and consider it one group then it will be equal to 59%, and this is big value.

The time factor is very important to achieve the desired goals and accomplish projects with delays. Time is a very critical factor and the most valuable resource in a project. Every delivery in public or private projects is to make is time-bound. Therefore, without proper time management, a project can head towards a disaster.

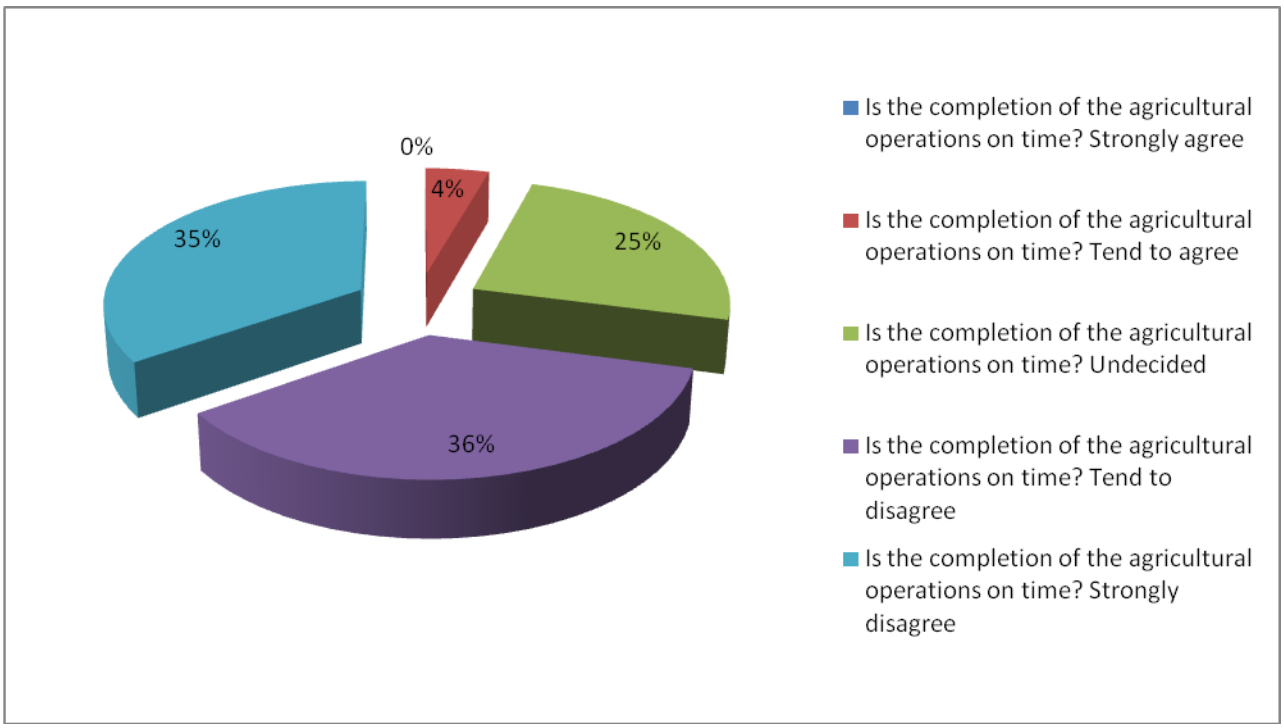
When it comes to project time management, it is not just the time of the project manager, but it is the time management of the project team.

Scheduling is the easiest way of managing project time. In this approach, the operations of the project are estimated and the durations are determined based on the resource utilization for each operation. Some activities of project are critical in the sense that delay in their commencement will delay the overall project completion time. Therefore, management and scheduling of projects is inevitable. (S.M. Fahimifard and A.A. Kehkha, 2009).

In addition to the estimate and resource allocation, cost always plays a vital role in time management. This is due to the fact that schedule over-runs are quite expensive.

Q4 Is the completion of the agricultural operations on time

In question 4, we ask the participants whether the completion of the agricultural operations was in time, the result of our survey showed that among the 179 participants; (0 workers strongly agree, 8 workers tend to agree, 44 workers undecided, 65 workers tend to disagree, and 62 workers strongly disagree), and the overall percentage of workers; (0% strongly agree, 4.50% tend to agree, 24.60% undecided, 36.30% tend to disagree, 34.60% strongly disagree) as shown in Fig-4below.



- **Fig-4(A chart showing project accomplishing)**

The mean value is (4.0112>4) and the standard deviation (0.88043<1), we understand from this result that participants have relatively close opinions to the mean in regards executing the agricultural operations in time. The result shown in the chart below shows that the majority of workers (36.30%, and 34.60%) both agreed groups, they declare that all agriculture operations were delayed and not in time, the study emphasize that this is a series problem need to be solved and its impact on the supply chain for agriculture products is great. The absence of project schedule will produce delays and all farm operations will face disruption and incomplete tasks.

In every project including agriculture projects the uncertainty is involved, the schedule should be reviewed regularly, and it is often revised while the project is in progress. It continues to develop as the project moves forward, changes arise, risks come and go, and new risks are identified. The time schedule essentially transforms the project from a vision to a time-based plan.

According to that the study emphasize on the importance of providing clear time schedule to accomplish the daily operation by farm workers. The survey result shows that 36% and 35% do not believe that the daily operations were accomplished in time, where only 4 % of workers believe so. Project professionals should use these findings to help explain the benefits of sound planning and scheduling to project sponsors and team members. The results should also be used to help acquire the resources needed to develop and use a comprehensive project schedule (Dr. Andrew F. Griffith, PE)

The final statistics of schedule survey is shown in table-1 below

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Is there a table of quantities and specifications in the workplace	179	1.00	5.00	3.9497	1.05081
Is there a schedule before the start of agricultural operations	179	1.00	5.00	3.5642	1.06531
is there a start the agricultural operations in a timely manner and have the specified	179	2.00	5.00	3.5922	.89074
Is the completion of the agricultural operations on time	179	2.00	5.00	4.0112	.88043
Valid N (listwise)	179				

Table -1 (Descriptive Statistics of schedule)

V. Summary

There are a number of ways to improve the schedule, including adding more people to the schedule of daily operation. Additional staff must be added early in the agriculture project. The result shows that the weak productivities of public agriculture projects is the result of bad scheduling or no schedule at all.

The public agriculture projects in Libya needs to review schedule dependencies and look for opportunities to overlap tasks or make serial tasks concurrent or parallel activities. This requires greater coordination and sometimes involves increased risks which need to be managed carefully.

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